

Exhibit P

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JUN 30 2006

EL DORADO CO. SUPERIOR COURT
BY P13 (DEPUTY)

1 LOUIS B. GREEN
County Counsel, State Bar #057157
2 PATRICIA E. BECK
Principal Ass't. County Counsel, State Bar #109389
3 County of El Dorado
330 Fair Lane
4 Placerville, CA 95667
Telephone: (530) 621-5770

5 ALICE M. BEASLEY, No. 56523
6 JOHN H. ERICKSON, No. 43996
DANTE FORONDA, No. 142443
7 ERICKSON, BEASLEY, HEWITT & WILSON LLP
483 Ninth Street, Suite 200
8 Oakland, California 94607
Telephone: (510) 839-3448; Fax: (510) 839-1622

9 Attorneys for Plaintiff
10 EL DORADO COUNTY

**PUBLIC ENTITY: Exempt from
fees pursuant to Gov. Code §6103**

11
12 SUPERIOR COURT OF THE STATE OF CALIFORNIA
13 COUNTY OF EL DORADO

14
15 EL DORADO COUNTY,) Case No. PC 20050276
16 Plaintiff,) Assessor's Parcel Nos. 107-010-32, 107-041-03
17 v.) and 107-120-06
18 SERRANO ASSOCIATES, LLC, et al.,) JUDGMENT IN CONDEMNATION
19 Defendants.)
20) Date Filed: May 19, 2005
Trial Date: July 10, 2006

21
22 In the above-entitled cause, plaintiff El Dorado County and defendant Serrano Associates,
23 LLC, having stipulated that judgment be entered as follows:

24 IT IS HEREBY ORDERED, ADJUDGED AND DECREED that upon payment to
25 defendant of \$4,900,000, inclusive of interest and costs, less the \$3,280,802 previously deposited
26 in escrow by plaintiff and withdrawn by defendant, the property described in the Complaint shall
27 be condemned for the public use of plaintiff. The net amount payable to defendant under this
28 judgment is \$1,619,198.

1 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that payment to defendant
2 of said sum of money as hereinabove specified, is the full payment for the property so taken, and
3 for all claims of compensation, including but not limited to, compensation for land, severance
4 damages, interest, attorneys' fees and costs, liens or damages of every kind and nature, suffered
5 by defendant by reason of the taking of the property or by reason of any action or inaction
6 whatsoever on the part of plaintiff or its agents in relation to the property.

7 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that payment of the
8 judgment award shall be made by checks or warrants payable to Serrano Associates, LLC, and
9 delivered to it in care of:

10 Desmond, Nolan, Livaich & Cunningham
11 15th & S Building
12 1830 15th Street
13 Sacramento, CA 95814

14 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that any taxes, penalties or
15 assessments of El Dorado County or any other taxing agency accruing on the property actually
16 taken in fee from and after September 3, 2004 are hereby canceled, and the plaintiff shall take
17 free and clear of any lien or encumbrances therefor on said parcel.

18 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the use for which said
19 real property is sought to be condemned, to wit, the construction of the US Highway 50 /
20 El Dorado Hills Boulevard-Latrobe Road Interchange Project, is and was a public use, and the
21 taking in condemnation by plaintiff of said property is and was necessary for said public use.

22 THE PARTIES HAVING FURTHER AGREED, AND THE COURT FURTHER
23 ORDERS, ADJUDGES AND DECREES AS FOLLOWS:

24 (A) As to defendant's remaining property identified as the remainder of Assessor's Parcel
25 Number 107-041-03, plaintiff has approved the grant of two vehicular access driveways along
26 Saratoga Way between Arrowhead Drive and Mammoth Way to provide full turning movements
27 for the remainder property, and one vehicular driveway on Saratoga Way between Mammoth
28 Way and El Dorado Hills Boulevard to provide right-in, right-out turning movement only for the
remainder property, at precise locations to be determined by the County upon the submission of a

1 commercial driveway encroachment permit for driveway entrances with a development proposal
2 or parcel map on the remainder parcel, and subject to review and approval of design specifics by
3 the County and consistent with all applicable standards and policies including but not limited to
4 the provisions of County Encroachment Ordinance and any amendments thereof, and subject
5 further to the requirements of the California Environmental Quality Act and health and safety.

6 (B) As to defendant's remaining property identified as the remainder of Assessor's
7 Parcel Number 107-010-32, upon submission of a project application for this property, the
8 County Department of Transportation will work with the applicant to identify vehicular access
9 driveway(s) to serve the ultimate uses developed on the property, and plaintiff will not prohibit
10 access to Saratoga Way in connection with the construction of the US Highway 50 / El Dorado
11 Hills Boulevard-Latrobe Road Interchange Project; provided, however, that this provision does
12 not restrict, limit or otherwise modify the authority of the County Planning Commission and/or
13 Board of Supervisors regarding the provision of access and access location to this property.

14
15 Dated: 6/30/06

DANIEL B. PROUD
JUDGE OF THE SUPERIOR COURT

16
17
18 Approved as to form:

19
20 
21 Gary Livaich
22 Desmond, Nolan, Livaich & Cunningham
23 Attorneys for Defendant Serrano Associates LLC

24
25 Q:\El Dorado County\Interchange Project 1316\Pld\JudgmentL.wpd
26
27
28



Community Design Standards

In accordance with the Zoning Ordinance Update

Parking and Loading Standards

Adopted December 15, 2015

Community Design Standards

Parking And Loading Standards

PARKING AND LOADING

Sections:

- 4.1 Purpose and Intent
- 4.2 Definitions
- 4.3 Parking Plan Required
- 4.4 Special Parking Requirements and Adjustments
- 4.5 Material and Passenger Loading/Unloading Areas
- 4.6 Recreational Vehicle Parking
- 4.7 Parking Lot Design Standards
- 4.8 Parking Lot Construction and Maintenance Standards
- 4.9 Non-conforming Parking

4.1 Purpose and Intent

The purpose of this Chapter is to ensure the provision and maintenance of safe, adequate, and well-designed off-street parking facilities in conjunction with a use or development in order to protect the public health, safety, and welfare. The intent is to reduce road congestion and traffic hazards, to promote storm water quality and management practices, to provide safe and convenient access to businesses, public services, and places of public assembly, and to promote an attractive environment through design and landscape standards for parking areas.

4.2 Definitions

“**Active use area (AUA)**” shall mean all developed areas within a building except for storage areas, restrooms, and employee lunchroom/cafeteria(s).

“**Gross floor area (GFA)**”. See Article 8

“**Outside use area (OUA)**” shall mean the total square footage of an area enclosed by fences, gates, walls, buildings, landscaping or other features which define the perimeter of the outdoor area where uses and activities are or may be conducted, including, but not limited to recreational use, retail sales, rentals, and restaurant seating.

“**Transportation Demand Management Plan (TDM)**” shall mean a program designed by an employer to reduce the amount of traffic generated by either new nonresidential development or the expansion of existing nonresidential development, by using a combination of services and incentives to maximize the potential for alternative transportation usage and encourage efficient utilization of existing transportation facilities.

4.3 Parking Plan Required

- A. A parking plan showing all off-street parking spaces, parking aisles, and access to parking areas shall be required, as follows:

Community Design Standards

Parking And Loading Standards

1. At the time of submittal of an application for a building permit for construction of any building or structure that requires parking under this Section;
 2. For an expansion or addition to increase the floor area, lot coverage, or seating capacity of an existing use or structure that requires additional parking under this Chapter;
 3. When a more intensive land use is established requiring more parking than a previous use; or
 4. At the time of submittal of any discretionary application.
- B. The parking improvements shown on the approved plan shall be constructed prior to occupancy of any structure, or the commencement of any approved use.
- C. Minor revisions to an approved parking plan may be approved by the Director. If the parking plan was approved as a part of a discretionary permit, the Director shall refer revisions to the review authority if the revisions have the potential to raise new issues that were not reviewed or are substantial enough to warrant further review at public hearing.

4.4 Special Parking Requirements and Adjustments

The following special requirements and adjustments may apply to the parking standards set forth in Section 17.35.040:

- A. **Increases and Decreases in Requirements.** The required number of parking spaces may be increased or decreased by the Director or review authority, as part of a discretionary permit, as follows:
1. The number of parking spaces required by this Chapter may be increased when it is determined that the proposed use would have a parking demand in excess of the requirements of this Chapter.
 2. The number of parking spaces required for commercial and industrial uses may be decreased from the requirements of this Chapter where the review authority finds all of the following:
 - a. The intent of the parking ordinance is preserved;
 - b. The parking provided is sufficient to serve the use for which it is intended; and
 - c. The modification will not be detrimental to the public health, safety, or welfare.

Community Design Standards

Parking And Loading Standards

3. In considering requests for an increase or decrease in the number of parking spaces, the review authority shall consider:
 - a. Size and type of use or activity;
 - b. Composition and number of tenants;
 - c. Peak traffic and parking loads;
 - d. Rate of turnover based on the following criteria, as applied in Table 17.35.040.1:
 - (1) High intensity areas are those having rapid turnover of less than two hours;
 - (2) Medium intensity areas are those where vehicles are parked from two to four hours;
 - (3) Low intensity areas have minimum turnover and few repeat users, such as long-term and employee parking lots.
 - e. Availability of public transportation including carpools or employer-provided transportation.
 - f. Payment of in-lieu fees authorized by the County Transit Authority for public transportation facilities, if available, or other options that support mass transportation alternatives.
 - g. The extent and effectiveness of a proposed TDM program including its monitoring plan.
- B. **Reduction Methods.** The following reductions in required parking can be applied separately or in concert with each other, providing findings under Paragraph A.2 above can be made.
 1. **Reduction for On-street Parking.** Where on-street parking is available on public streets fronting the subject property, the required off-street parking may be reduced by one space for each available on-street space adjoining the property. Determination of availability of on-street parking shall be made by the review authority after consultation with the Department of Transportation and the local fire district.
 2. **Reduction for Rear-lot Parking.** The required off-street parking for commercial and civic uses located in a community region or rural center may be reduced by 10 percent when the project locates the parking area behind the structure(s) so that the parking area is not visible from the road frontage, sidewalks or other pedestrian accessways are available, and a transit stop is within 300 feet of the site.
 3. **Shared Parking.** Shared parking shall be permitted as follows:

Community Design Standards

Parking And Loading Standards

- a. Where two or more nonresidential uses on a single site or adjacent sites are developed, a parking analysis shall be required demonstrating parking demand based on distinct and differing hours of use and peak traffic periods. Table 4.4.A below shall be the default method of calculation, however, variations may be allowed subject to Director review and approval.

Table 4.4.A Calculating Shared Parking by Use Types (in percents)

Use Type	Weekday		Weekend		Nighttime
	Daytime 8 am - 6 pm	Evening 6:01 pm – 12am	Daytime 8 am - 6 pm	Evening 6:01 pm – 12am	12:01am – 7:59am
Office/Industrial	100%	10%	10%	5%	5%
Retail/Service	60	90	100	70	5
Lodging	75	100	75	100	75
Restaurant	50	100	100	100	10
Recreation/Entertainment	40	100	80	100	10
Churches/Assembly	40	80	100	100	5
Schools	100	75	40	40	5

- b. Shared parking shall be calculated as follows:
- (1) Parking shall be determined for each use as though it were a separate use, based on Table 4.4.A;
 - (2) Each amount of required parking shall be multiplied by the corresponding percentage for each time period;
 - (3) The parking requirement shall be totaled for each column; and
 - (4) The column with the highest value shall be the total parking space requirement.

Example: Calculating Shared Parking Requirement

For a development of office, retail, and restaurant uses that require the following number of spaces for each separate use:

Office	50
Retail	75
Restaurant	60

Community Design Standards

Parking And Loading Standards

185 Total required spaces

Under shared parking requirements using Table 4.4.A:

Use Type / Space Requirements	Weekday		Weekend		Nighttime 12:01am – 7:59am
	Daytime 8 am - 6 pm	Evening 6:01 pm – 12am	Daytime 8 am - 6 pm	Evening 6:01 pm – 12am	
Office / 50	(50 x 100% =) 50	(50 x 10% =) 5	(50 x 10% =) 5	(50 x 5% =) 3	(50 x 5% =) 3
Retail / 75	(75 x 60% =) 45	(75 x 90% =) 68	(75 x 100% =) 75	(75 x 70% =) 53	(75 x 5% =) 4
Restaurant / 60	(60 x 50% =) 30	(60 x 100% =) 60	(60 x 100% =) 60	(60 x 100% =) 60	(60 x 10% =) 6
Total	125	133	140	116	13

The “weekend daytime” is the highest use period and the hypothetical mixed use project would require 140 parking spaces, thereby reducing the parking requirement by 45 spaces.

- c. The following restrictions shall apply to shared parking provisions:
 - (1) Reserved parking spaces shall be prohibited.
 - (2) Where shared parking occurs on adjoining lots, a maintenance agreement, in a form acceptable to the County. Said agreement shall provide for common maintenance of the parking area and shall state that any change in occupancy shall be subject to proof that sufficient parking is available.

4. Off Site Parking. Required parking for commercial or industrial uses may be located off site when all of the following requirements are met:

- a. Off-site parking is located on a site where parking is otherwise allowed and is located within 500 feet of the site which it is intended to serve.

Community Design Standards

Parking And Loading Standards

- b. Parking requirements shall be met for both on site and off site uses either in total or as allowed by any of the reduction methods under this Subsection.
 - c. There shall be no hazardous traffic safety conditions for pedestrians utilizing an off site parking facility.
 - d. An off site parking easement is granted ensuring the continued availability of the off-site parking facilities for the life of the use that it is intended to serve, in compliance with Chapter 17.65 (Covenant of Easement).
- C. **Handicap Parking.** Parking for the physically handicapped shall be provided as required in the building code, in compliance with the Americans with Disabilities Act (ADA).
- D. **Compact Car Spaces.** Where 10 or more parking spaces are required for commercial, industrial, recreational, or civic uses, compact spaces may be incorporated for up to ten percent of the required spaces. Multi-unit residential developments containing ten or more units may incorporate compact spaces for up to 20 percent of the required visitor parking. All compact parking spaces shall be clearly marked by surface paint or signage reserving each parking space for compact car use, only. Compact spaces shall be evenly distributed throughout the parking lot.
- E. **Carpool/Vanpool.** Voluntary installation of carpool/vanpool parking may be allowed in return for a reduction in total parking requirements as part of a Transportation Demand Management Plan approved by the review authority.
- F. **Motorcycle Parking.** Parking areas accommodating 100 cars or more shall designate five percent of their required parking space for motorcycle use, rounded to the nearest whole number. General space requirements shall measure four feet wide by eight feet long per motorcycle, with adequate maneuvering space around the motorcycle. Two such spaces shall count as one car space.
- G. **Bicycle Parking.** Bicycle racks shall be designed to enable a bicycle to be locked to the rack and shall be installed in a manner that allows adequate access to the bicycle. General space allowances shall measure two feet wide by six feet long per bicycle, with a five foot maneuvering space behind the bicycle. Surfacing shall be consistent with adjacent sidewalk or parking areas. Bicycle parking shall be required for the following development:
- 1. **Office and Retail Commercial.** One bicycle space per every five required vehicle parking spaces up to the first 25 vehicle spaces. An additional bicycle space is required for every ten additional vehicle spaces or portion thereof. The maximum number of bicycle spaces required is 20, unless more are deemed necessary by the Director for major employment and commercial facilities.
 - 2. **Community Services - Minor and Public Recreation Facilities.** Thirty percent of the required number of vehicle spaces, to a maximum of 25 bicycle spaces, unless more are deemed necessary by the Director.

Community Design Standards

Parking And Loading Standards

3. **Elementary, Middle and High Schools.** One bicycle space per student at 25 percent of peak enrollment.
- H. **Drive-through Facilities.** Sites containing these facilities shall be in compliance with the following circulation and traffic control standards:
1. A drive-through facility shall be located at the rear or side of a commercial structure and not within any front setback area.
 2. Ingress to and egress from a drive-through facility shall be prohibited from driveway(s) directly facing a residential zone.
 3. A drive-through facility, including stacking areas for vehicles awaiting service, shall be a minimum of 50 feet from the nearest property line of any residentially zoned lot.
 4. Stacking lane(s) shall be physically separated from other traffic circulation on the site by concrete or asphalt curbing. The stacking lane(s) shall accommodate a minimum of four cars per drive-through window in addition to the car receiving service. The lanes shall be a minimum width of ten feet.
 5. Signage shall be provided to indicate the entrance, exit, and one-way path of drive-through lanes in compliance with Chapter 17.37 (Signs).
 6. Stacking areas shall not block access to any parking area or space required of a business. Lane striping to separate drive-through traffic from parking areas shall be provided from the nearest point of site access, as feasible, to the stacking lane(s).
 7. Where a facility exceeds the standards of Paragraphs 1 through 6 above, and is not located within a development that is subject to a discretionary permit, such as a Conditional Use, Design Review, or Development Plan Permit, a Conditional Use Permit shall be required.
 8. When a drive-through facility requires a Conditional Use Permit or is within a development that is subject to a discretionary permit, the review authority may impose a greater setback than is required under Paragraph 3 above, when it is determined necessary to mitigate impacts from noise, air pollution, lights, or other land use conflicts. The review authority may deny any application for a drive-through facility if it finds that the facility will add to the cumulative air quality impacts for a specified pollutant and the County is found to be in non-attainment status of either federal or state air quality standards for that pollutant.
- I. **Historic Structures.** The following exemptions and reductions in parking standards shall apply to all historic structures, as designated by the County:

Community Design Standards

Parking And Loading Standards

1. When a change or increase in intensity of use occurs in a historic structure no additional parking spaces shall be required.
2. When expansions or additions to an historic structure increase its square footage by more than 25 percent, additional parking shall be required. The revised parking requirement shall be calculated on the resultant total square footage of the structure, whether such total increase occurs at one time or in successive stages, such as with a phased project.

4.5 Material and Passenger Loading/Unloading Areas

- A. **Materials.** All uses which require the receipt or distribution of materials or merchandise by vehicle shall provide off-street loading spaces in the amount specified under Table 4.5.A, based on the projected demand intensity for the use as provided by the applicant, subject to approval by the review authority:

Table 4.5.A Loading Bay Requirements

Use Area (in square feet)	NUMBER PER LOADING BAY DEMAND		
	High	Medium	Low
Less than 10,000	1	0	0
10,000 to 30,000	2	1	0
30,001 to 60,000	3	2	1
60,001 to 100,000	4	3	2
100,001 to 150,000	5	4	3
Each additional 50,000	1	0.5	0.25

1. Area(s) provided for passenger loading and unloading required under Subsection B below, may be utilized for material loading/unloading at the discretion of the review authority based on the type of use and material, expected demand for loading/unloading the material, time of material delivery, and other relevant factors.
2. Industrial sites shall be self-contained and capable of handling all truck loading, maneuvering, and docking on site. The use of public roads for staging and/or maneuvering is prohibited.
3. The review authority may modify the loading zone requirements in special circumstances based on the specific nature of the use or combination of uses, the design characteristics of the project and site dimensions, the impacts to surrounding properties, and public safety.

Community Design Standards

Parking And Loading Standards

- B. **Passengers.** Vehicle turn-out lanes for passenger loading and unloading shall be provided outside of the normal circulation lane for the following uses:
1. Apartments/condominiums containing 50 units or more.
 2. Retail sales and service uses containing 30,000 square feet or more of building area.
 3. Hotels/motels containing 50 units or more.
 4. Schools and child day care facilities with 50 or more students.
 5. Public buildings open for general use by the public.
 6. Public transportation facilities.
 7. River recreational use areas.
 8. Ski areas.
- C. All loading/unloading areas shall conform to the dimensions under Table 4.5.B:

Table 4.5.B Dimensions of Loading/Unloading Areas

Use Type	Width	Length	Vertical Clearance
Commercial Office, Recreational, and Civic	12 ft.	25 ft.	14 ft.
Other Commercial and Industrial	12 ft.	40 ft.	14 ft.

- D. All loading and unloading areas shall be marked appropriately with curb painting and/or signs that prohibit parking.

4.6 Recreational Vehicle Parking

- A. Recreational vehicle (RV) parking spaces shall be required as set forth in Table 17.35.040.1.
- B. In residential zones, RV parking or storage shall be limited to one such vehicle per lot. RV parking or storage shall not encroach into any required setback area and shall be screened from public view.

Community Design Standards

Parking And Loading Standards

- C. Where RV parking and storage areas are provided in association with a mobile/manufactured home park, townhouse, apartment, or other multi-unit residential development, such parking shall be screened with fencing or landscaping.

4.7 Parking Lot Design Standards

The following standards shall apply to all parking lots required under this Chapter.

- A. **Parking Lot Dimensions.** Parking lot dimensions shall conform to requirements under the El Dorado County Standard Plans Manual, Standard Plan RS-90.
- B. **Controlled Access.** Every parking and loading stall shall be accessible from the drive aisle without displacement of other vehicles.
- C. **Public Road Access.** Except for single-unit residential dwellings, as defined in Article 8, parking stalls shall be designed so as to prohibit the backing of vehicles directly into any public road right-of-way or easement in order to exit the site.
- D. **Vertical Clearance.** Every parking stall and drive aisle shall have a minimum of eight feet vertical clearance.
- E. **Snow Removal Storage.** Parking areas located at the 4,000 foot elevation or higher shall provide snow removal storage areas. Such storage areas shall be equivalent to 10 percent of the surface used for parking and access and shall not utilize any required parking spaces. Landscaping areas may be utilized for this purpose in compliance with Section 17.34.060 (Maintenance and Protection).
- F. **Parking Area Gradient.** All parking areas shall be graded to provide adequate drainage of all surface areas into an on-site drainage improvement or stormwater drainage system, in compliance with the gradient standards in the Land Development Manual (LDM).
- G. **Landscaping Required.** Landscaping shall be required for all parking lots consistent with the requirements set forth in Chapter 17.33 (Landscaping Standards).

4.8 Parking Lot Construction and Maintenance Standards

Based on parking lot turnover set forth in Table 4.8.A, all required parking and loading areas shall conform to the following surfacing requirements, as provided in the LDM, unless otherwise allowed under Article 4 for a specific use:

Table 4.8.A Parking and Loading Area Surfacing Requirements

Location	PARKING LOT TURNOVER		
	High	Medium	Low
A. Community Region	Asphalt / Concrete	Asphalt / Concrete	Asphalt / Concrete
B. Rural Center	Asphalt / Concrete	Asphalt / Concrete	Chip Seal
C. Rural Region	Asphalt / Concrete	Chip Seal	Gravel

Wheel Stops.

1. All parking spaces adjacent to sidewalks or landscaping, other than for single-unit residential dwellings, shall provide concrete wheel stops a minimum of three feet between the farthest edge of the wheel stop and the nearest edge of the sidewalk or landscaped area.
2. Wheel stops may be eliminated adjacent to landscape areas in compliance with Paragraph 17.33.050.C.3 (Landscape Standards).
3. Wheel stops shall be anchored securely to the asphalt.

D. Directional Arrows and Signage. Aisles, approach lanes, pedestrian crossings, and loading/unloading areas shall be clearly marked with directional lines, arrows and/or signs to facilitate traffic movement and ensure pedestrian safety.

E. Maintenance. All parking and loading areas, drive aisles, and access drives shall be maintained in good condition and kept free of outside storage and debris.

4.9 Non-conforming Parking

No additional parking spaces shall be required for those existing uses made noncompliant with parking standards on the effective date of this Chapter, subject to the following:

- A. Whenever the existing use is enlarged, expanded, or intensified, additional parking spaces shall be provided only for the enlargement, expansion, or intensification subject to the standards in this Chapter.

Community Design Standards

Parking And Loading Standards

- B. Whenever the existing use is changed to a new use where the parking requirement becomes 50 percent higher, parking for the entire site shall be consistent with the requirements and standards of this Chapter.

Scope of Work

- A B C** NEW 5'-0" ILLUM. "CHICK-FIL-A" CHANNEL LETTERS SIGN
- D** NEW 5'-0" ILLUM. "CHICK-FIL-A" ICON LOGO CABINET
- E F G** NEW D/F ILLUM. DIRECTIONAL SIGN
- H** NEW D/F ILLUM. MONUMENT SIGN

Install Only
Manufacturing By Others

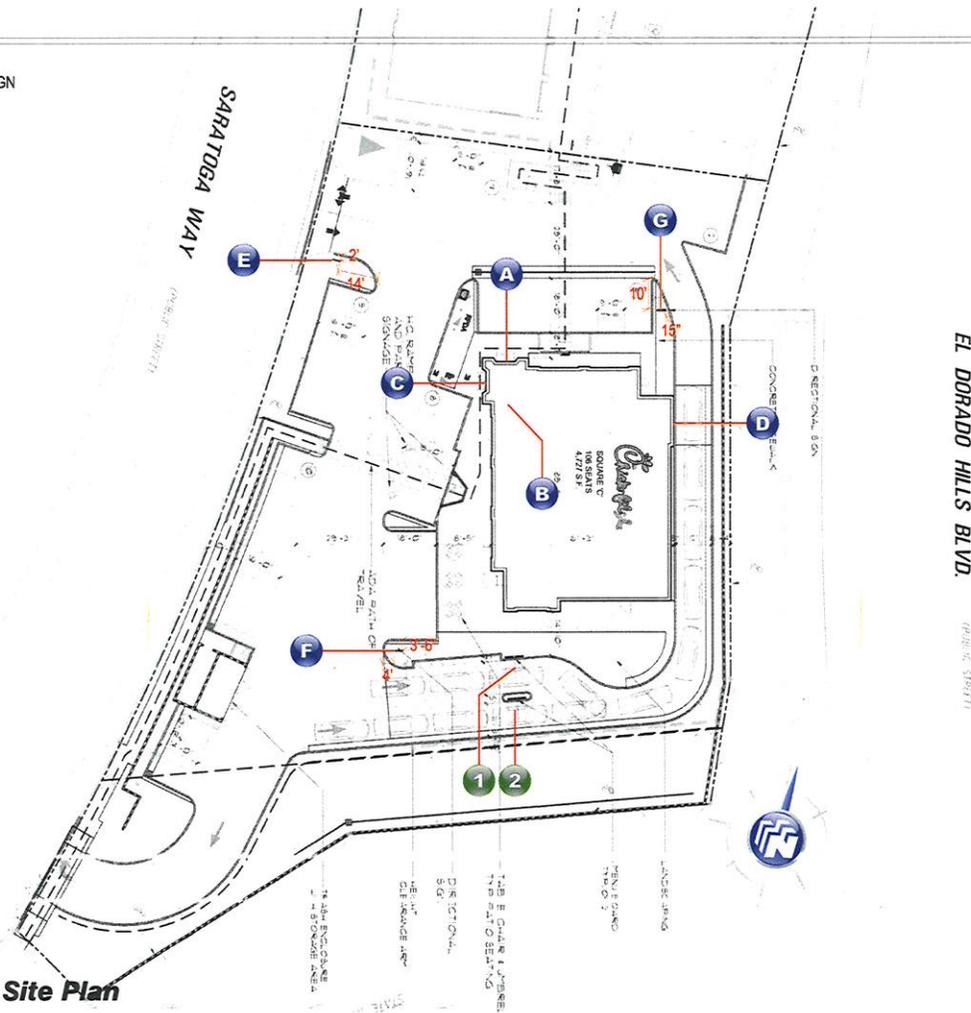
- 1 2** DRIVE-THRU CANOPY

NOTE

ALL NEW SIGNAGE TO CONNECT TO CLIENT PROVIDED ELECTRICAL CIRCUITS

CHICK-FIL-A - El Dorado Hills, CA. - Site Plan

SCALE: 1" = 40'-0"



VICINITY MAP

SIGN ID LETTER	FACE A	FACE B
A B C		N/A
D		N/A
E		
F		
G		
H		
1 2		N/A

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National Sign & Marketing Corporation
13580 5th St., Chino, CA 91710
Tel 909.591.4742 Fax 909.591.9792
e-mail : sales @nsmc.com
Lic# 745030 - Exp. 01/31/18

Project: Chick-Fil-A #3889 (El Dorado Hills Blvd @ Hwy 50)
Address: NWC of El Dorado Hills Blvd @ Hwy 50, El Dorado Hills, CA 95762
Phone: _____ **Account Mgr.** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
[Signature]
Date: 10-13-16

This sign intended to be in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of this sign.



Revisions:
08/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
R1



Exhibit R

Scope of Work

- I** NEW SINTRA ADDRESS NUMERALS
- J K** NEW HANDICAP PARKING SIGNS
- L M** NEW PEDESTRIAN SIGNS
- N O P** NEW WAYFINDING SIGNS
- Q** NEW WINDOW VINYL
- A 1 A 2 A 3 A 4 A 5** NEW ALUMINUM AWNING

Install Only Manufacturing By Others

- 3 4** DRIVE-THRU CLEARANCE ARM
- 5** FLAG POLE



VICINITY MAP

CHICK-FIL-A - El Dorado Hills, CA. - Site Plan

SCALE: 1" = 40'-0"



SIGN ID LETTER	FACE A	FACE B
I	0000	N/A
J		N/A
K		N/A
L		N/A
N		N/A
O		
P		N/A
Q	0000 E	N/A
3		N/A
4		N/A
5		N/A

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 13580 5th St., Chino, CA 91710
 Tel 909.591.4742 Fax 909.591.9792
 e-mail : sales@nsmc.com
 Lic# 745030 - Exp. 01/31/18

Project: Chick-Fil-A #3889 (El Dorado Hills Blvd @ Hwy 50)
Address: NWC of El Dorado Hills Blvd @ Hwy 50, El Dorado Hills, CA 95762
Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:

 Date: 10-13-14

This sign intended to be in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of this sign.

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 08/15/2017 SO: Rotate dir, relocate B

Drawing Number
27675
 R1



- A** NEW 5'-0" ILLUM. "CHICK-FIL-A" CHANNEL LETTERS SIGN
- I** NEW SINTRA ADDRESS NUMERALS
- A1** **A2** NEW ALUMINUM AWNING

North Elevation

SCALE: 3/32" = 1'-0"



- B** NEW 5'-0" ILLUM. "CHICK-FIL-A" CHANNEL LETTERS SIGN

South Elevation

SCALE: 3/32" = 1'-0"



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National Sign & MARKETING CORPORATION
 13580 5th St., Chino, CA 91710
 Tel 909.591.4742 Fax 909.591.9792
 e-mail : sales @nsmc.com
 Lic# 745030 - Exp. 01/31/18

Project: Chick-Fil-A #3889 (El Dorado Hills Blvd @ Hwy 50)
Address: NWC of El Dorado Hills Blvd @ Hwy 50, El Dorado Hills, CA 95762
Phone: _____ **Account Mgr.** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
S. Rosenbloom
 Date: 10-13-16

This sign intended to be in accordance with the requirements of Article 610 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of this sign.

Revisions:
 08/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
 R1



- C** NEW 5'-0" ILLUM. "CHICK-FIL-A" CHANNEL LETTERS SIGN
- Q** NEW WINDOW VINYL
- A₃** **A₄** **A₅** NEW ALUMINUM AWNING

West Elevation

SCALE: 3/32" = 1'-0"



- D** NEW 5'-0" ILLUM. "CHICK-FIL-A" ICON LOGO CABINET

East Elevation

SCALE: 3/32" = 1'-0"



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Address: NWC of El Dorado Hills Blvd @ Hwy 50, El Dorado Hills, CA 95762
Phone: _____ **Account Mgr.** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

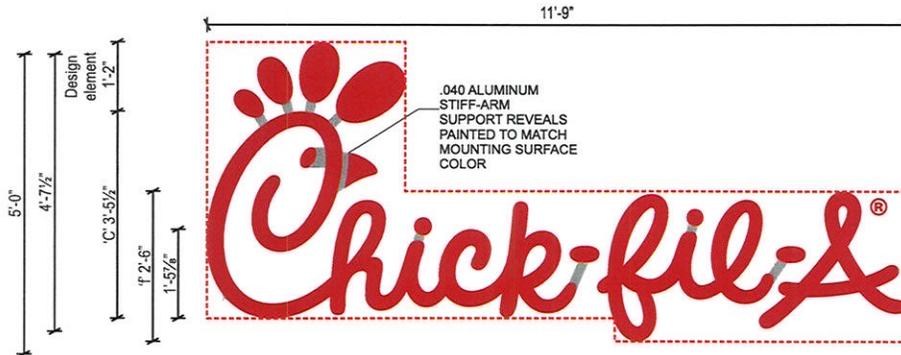
Client Approval:
S. Rosenbloom
 Date 10-16-16

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Revisions:
 08/15/2017 SD: Rotate six, relocate B

Drawing Number
27675
 R1

VISEO
 ELECTRONIC SIGNS



A B C NEW 5'-0" ILLUM. "CHICK-FIL-A" CHANNEL LETTERS SIGN

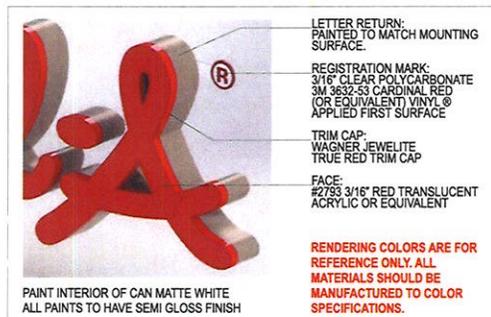
AREA: 58.75 SQ. FT.
AREA: 35.15 SQ. FT.
8 STRAIGHT LINES

Specifications:

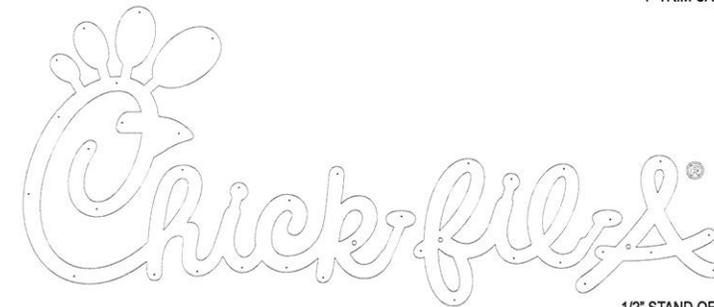
- BODY:** S/F CUSTOM FABRICATED ALUMINUM CABINET CONSTRUCTED OF .040 WITH .080 ALUMINUM BACKS. ALUMINUM RETURNS MECHANICALLY FASTENED TO BACKS. INTERIOR OF SIGN TO BE PAINTED MATTE WHITE.
- FACES:** 3/16" #2793 RED ACRYLIC OR EQUIVALENT.
- TRIM CAP:** 1" TRUE RED JEWELITE TRIM CAP (ADHERED VIA WELD ON RETURNS)
- RETURNS:** 5" DEEP RETURNS PAINTED TO MATCH MOUNTING SURFACE COLOR
- STANDOFF:** 3/8" SLEEVE ANCHORS WITH 1/2" ALUMINUM SPACERS.
- REGISTERED:** 3/16" CLEAR POLYCARBONATE FLAG WITH 3M 3632-53 CARDINAL RED VINYL @ APPLIED FIRST SURFACE ATTACHED TO BACK OF 'A'
- DISCONNECT:** ELECTRICAL TOGGLE DISCONNECT SWITCH WITH WATERPROOF BOOT
- ILLUMINATION:** RED LED LIGHTING WITH REMOTE TRANSFORMERS.

ALL WIRING & COMPONENTS TO MEET U.L. STANDARDS

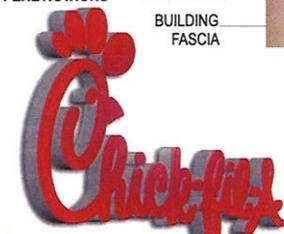
- R & H 2793 / 3M RED 3632-53
- SW 7541 GRECIAN IVORY



PAINT INTERIOR OF CAN MATTE WHITE
ALL PAINTS TO HAVE SEMI GLOSS FINISH



MOUNTING AND ELECTRICAL PENETRATIONS

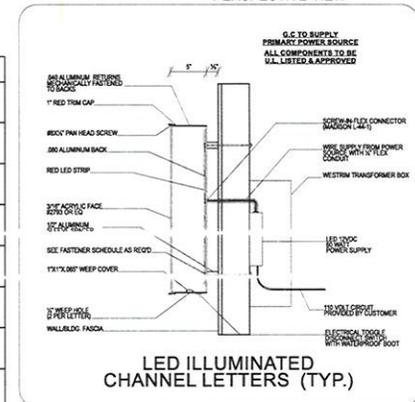


PERSPECTIVE VIEW

NOTE: THRU-BOLT FASTENERS ARE THE PREFERRED METHOD FOR ATTACHMENT

FASTENER SCHEDULE		
	3/8" LAG SCREW	FOR USE WITH WOOD OR EIFS WALL SYSTEMS. 1-1/2" MIN PENETRATION (EXCL. TIP)
	3/8" DIA. THREADED ROD	FOR USE WITH WOOD, CONCRETE BLOCK OR EIFS WALL SYSTEMS.
	3/8" RED HEAD L.D.T. (LARGE DIAMETER TAPCON)	FOR USE WITH CONCRETE BLOCK, BRICK OR CONCRETE. EMBED A MIN. OF 2 1/2".
	3/8" DIA. HILTI HIT ROD WITH HY20 MAX ADHESIVE	FOR USE WITH CONCRETE. EMBED A MIN. OF 2"
	3/8" DIA. HILTI HIT ROD WITH HY20 ADHESIVE	FOR USE WITH MASONRY AND BRICK. EMBED A MIN. OF 3 3/8"
	3/8" DIA. HILTI HIT ROD WITH HY20 ADHESIVE	FOR USE WITH CONCRETE BLOCK. EMBED A MIN. OF 2".
	3/8" DIA. HILTI HLC SLEEVE ANCHOR	FOR USE WITH CONCRETE, MASONRY AND BRICK. EMBED A MIN. OF 3 3/8".

INSTALLER SHALL VERIFY THAT FASTENERS CHOSEN ARE SUITABLE WITH WALL CONDITIONS.



LED ILLUMINATED CHANNEL LETTERS (TYP.)

CHICK-FIL-A S/F LED ILLUMINATED CHANNEL LETTERS

SCALE: 1/2" = 1'-0"

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Address: NWC of El Dorado Hills Blvd @ Hwy 50, El Dorado Hills, CA 95762
Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
S. Novara
Date: 10-13-16

This sign intended to be in accordance with the requirements of Article 650 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of this sign.

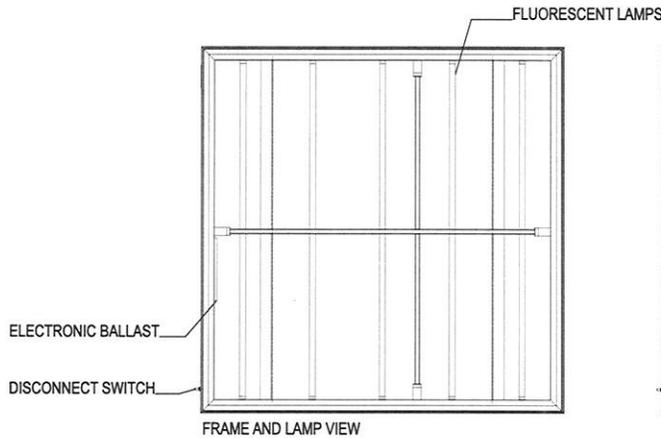
Revisions:
06/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
R1





FACE VIEW
AREA: 25.00 SQ. FT.



FRAME AND LAMP VIEW

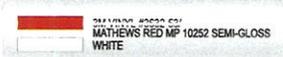


SIDE VIEW

Specifications:

- CABINET: INTERNALLY ILLUMINATED SIGN CABINET.
- FACES: ALUMINUM FACE PAINTED RED WITH ROUTED OUT 1/2" PUSH THRU LOGO.
- RETAINER: 2" ALUMINUM RETAINER PAINTED MATHEWS RED MP 10252.
- RETURNS: 8" DEEP ALUMINUM RETURN PAINTED MATHEWS RED MP 10252.
- ILLUMINATION: 800MA HO FLUORESCENT LAMPS PLACED ON CENTER FOR EVEN LIGHTING.
- DISCONNECT: ELECTRICAL TOGGLE DISCONNECT SWITCH WITH BOOT

ALL WIRING & COMPONENTS TO MEET U.L. STANDARDS



D NEW 5'-0" ILLUM. "CHICK-FIL-A" ICON LOGO CABINET

NEW S/F ILLUMINATED ICON LOGO CABINET

SCALE: 1/2" = 1'-0"

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Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
[Signature]
 Date: 10-13-16

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Revisions:
 06/15/2017: SD: Rotate dir, relocate B

Drawing Number
27675
 R1



Specifications:

CABINETS: FABRICATED .080 ALUMINUM 8" DEEP, WITH ALUMINUM ANGLE FRAME CABINET PAINTED MATTE BLACK.

FACES: WHITE #7328 ACRYLIC WITH APPLIED FIRST SURFACE 3M RED #3632-53 TRANSLUCENT VINYL. RETAINERS TO BE 1".

POST: 4"X4" SQUARE STEEL TUBE WITH MATCH PLATE POLE PAINTED MATTE BLACK.

ILLUMINATION: WHITE LED.

SWITCH: ELECTRICAL TOGGLE DISCONNECT SWITCH WITH BOOT

NOTE: TRY TO KEEP DIRECTIONALS 5'-0" FROM CURBS WHEREVER POSSIBLE TO INSURE VEHICLES WILL NOT HIT THEM.

ALL COMPONENTS TO BE U.L. APPROVED

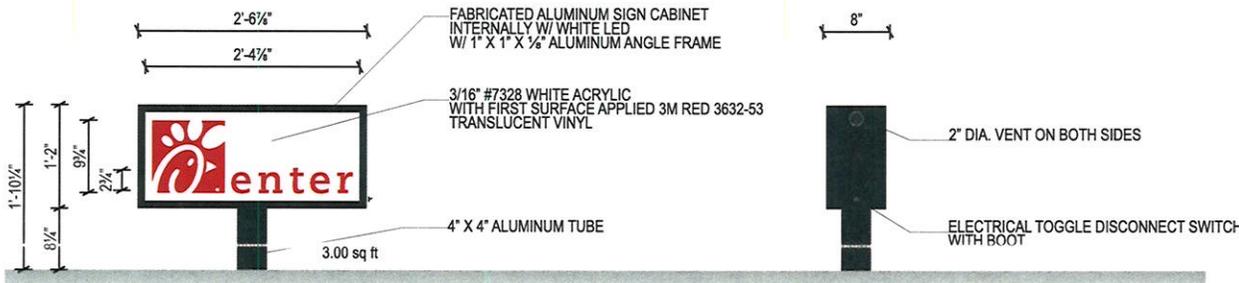
3M RED 3632-53
 MATTHEWS MP 929 MATTE BLACK
 WHITE / #7328 ACRYLIC



E NEW D/F ILLUM. DIRECTIONAL SIGN

F NEW D/F ILLUM. DIRECTIONAL SIGN

G NEW D/F ILLUM. DIRECTIONAL SIGN



CHICK-FIL-A - NEW D/F ILLUMINATED DIRECTIONAL SIGNS

SCALE: 3/4" = 1'-0"

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Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
S. Rosenbloom
 Date: 10.13.17

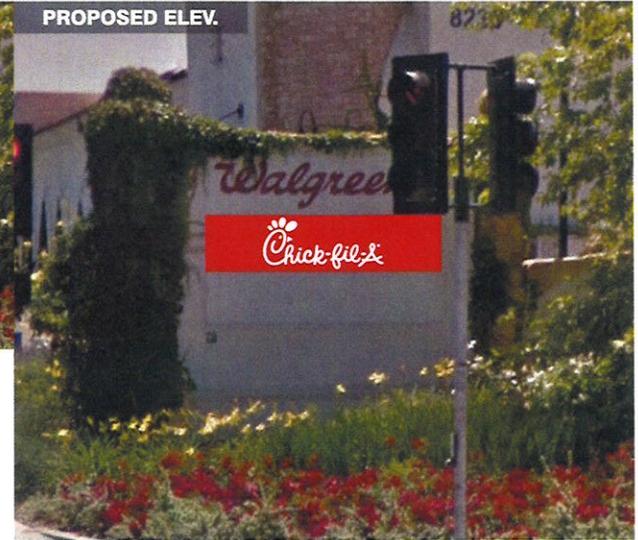
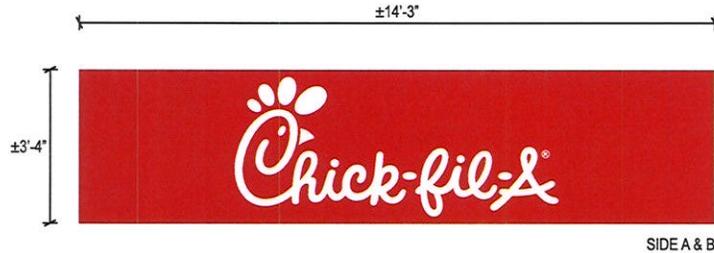
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Revisions:
 06/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
 R1



SURVEY REQUIRED PRIOR TO MANUFACTURING



Specifications:

- CABINETS: EXISTING CABINET.
- FACES: ALUMINUM PAN FACE PAINTED RED WITH ROUTED OUT BACKED UP WITH WHITE ACRYLIC COPY.
- ILLUMINATION: EXISTING
- ALL COMPONENTS TO BE U.L. APPROVED



H REFACE D/F ILLUM. MONUMENT SIGN TENANT PANEL

CHICK-FIL-A - REFACE D/F ILLUMINATED MONUMENT SIGN TENANT PANEL

SCALE: 3/8" = 1'-0"



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Phone: _____ **Account Mgr.** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
J. Narava
 Date: 10-13-16

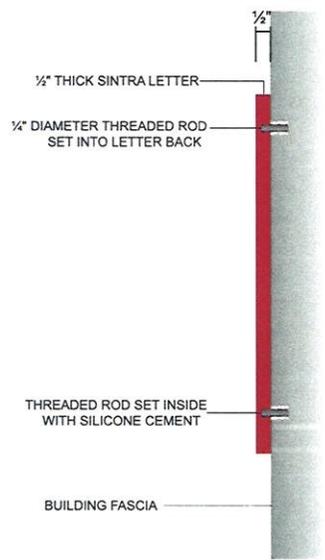
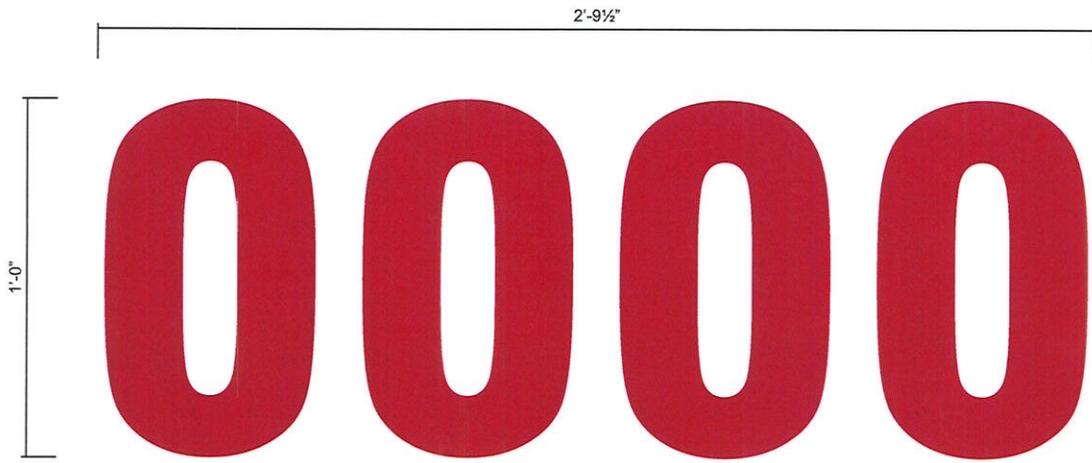
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Revisions:
 08/15/2017 SD: Rosate dir, relocate B

Drawing Number
27675
 R1



* 10-13-16
 This sign must meet the requirements of the Master Sign Plan with NO exceptions
 17-1316 F 24 of 506



SPECIFICATIONS:

NUMERALS: TO BE 1/2" THICK FLAT-CUT NON-ILLUMINATED SINTRA NUMERALS WITH FACES AND RETURNS EDGES TO BE PAINTED MATHEWS RED MP 10252.

MOUNTING: NUMERALS TO BE FLUSH MOUNTED TO FASCIA WITH THREADED ROD INTO LETTER BACKS & SET INTO PRE-DRILLED HOLES WITH SILICONE.



I NEW SINTRA ADDRESS NUMERALS

NEW SINTRA NON-ILLUMINATED ADDRESS NUMERALS

SCALE: 3" = 1'

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Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
[Signature]
 Date: 10.13.14

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Revisions:
 08/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
 R1

VISEO
 ELECTRONIC SIGNS

**BOLLARD TO BE SET BY OTHERS
FINISHED WITH POST AND PANEL SIGN BY NSMC**

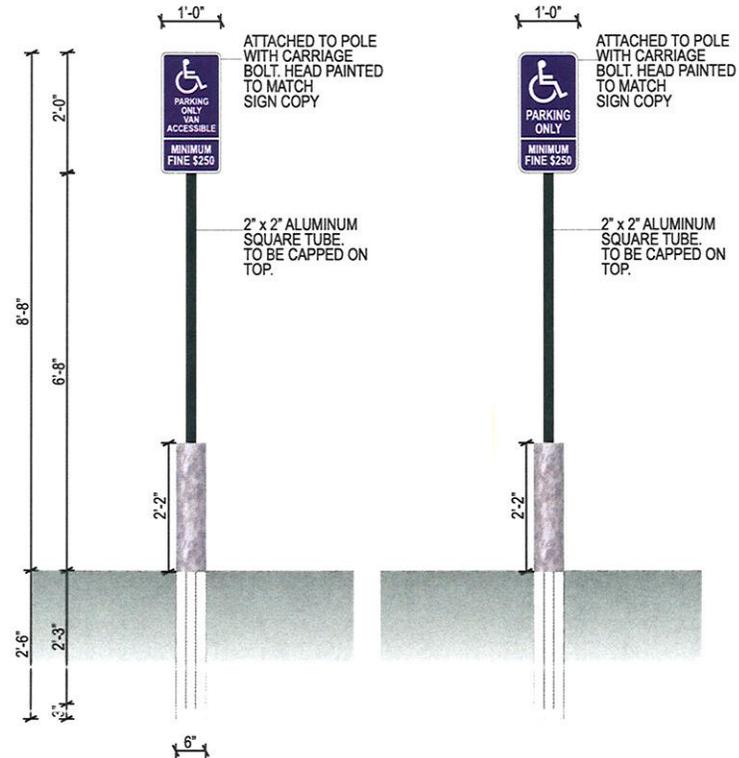
Specifications:

PANEL: .080 ALUMINUM PANELS WITH 1" RADIUS CORNERS, ATTACHED TO POLE WITH CARRIAGE BOLTS. BACKS PAINTED MATTE BLACK.
 BACKGROUND: REFLECTIVE WHITE.
 COPY & GRAPHICS: TO BE REFLECTIVE PANTONE REFLEX BLUE, PANTONE 3282 C, AND WHITE.
 POST: 2" x 2" ALUMINUM POLE CAPPED ON TOP, WITH 6" DIAMETER CONCRETE BOLLARD. POST TO BE PAINTED MATTE BLACK.
 FOOTING: CONCRETE FOOTING PER CITY REGULATIONS.

PANTONE REFLEX BLUE C
 MATTHEWS #N8425SP WHITE
 MATTE BLACK / MP 929

J NEW HANDICAP PARKING SIGNS

K NEW HANDICAP PARKING SIGNS



NON-ILLUMINATED HANDICAPPED PARKING SIGN (CALIFORNIA)

SCALE: 1/2" = 1'

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Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
S. Rosenbloom
 Date: 10.16.16

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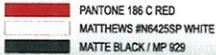
Revisions:
 06/15/2017 SD: Rotate dir, relocate B

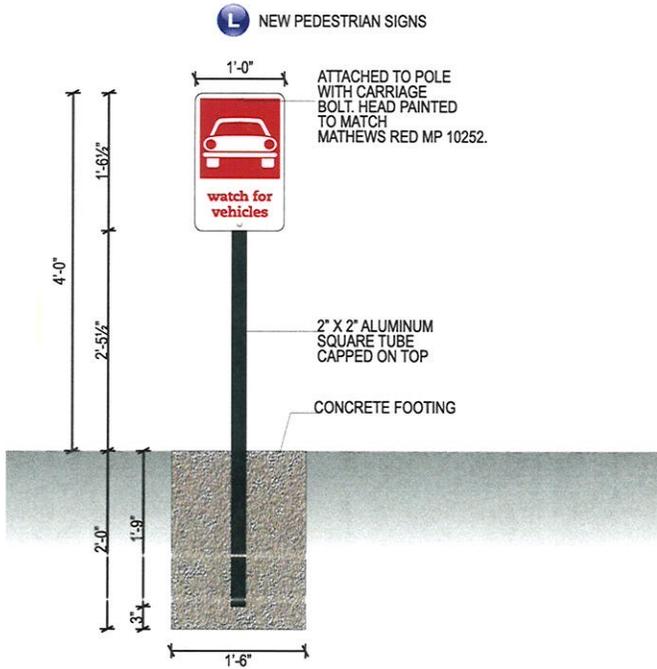
Drawing Number
27675
 R1



Specifications:

PANEL: .080 ALUMINUM PANELS WITH 1" RADIUS CORNERS. ATTACHED TO POLE WITH CARRIAGE BOLTS. BACKS PAINTED MATTE BLACK.
 BACKGROUND: REFLECTIVE WHITE.
 COPY & GRAPHICS: TO BE REFLECTIVE PANTONE 186C, AND WHITE
 POST: 2" X 2" ALUMINUM POLE PAINTED MATTE BLACK.
 FOOTING: CONCRETE FOOTING PER CITY REGULATIONS.

 PANTONE 186 C RED
 MATTHEWS #N6425SP WHITE
 MATTE BLACK / MP 929



NON-ILLUMINATED S/F PEDESTRIAN CROSSWALK AND VEHICLE CROSSING SIGNS

SCALE: 3/4" = 1'

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Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
S. Thorne
 Date: 10.13.17

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Revisions:
 08/15/2017 SD: Robb, dir, relocate B

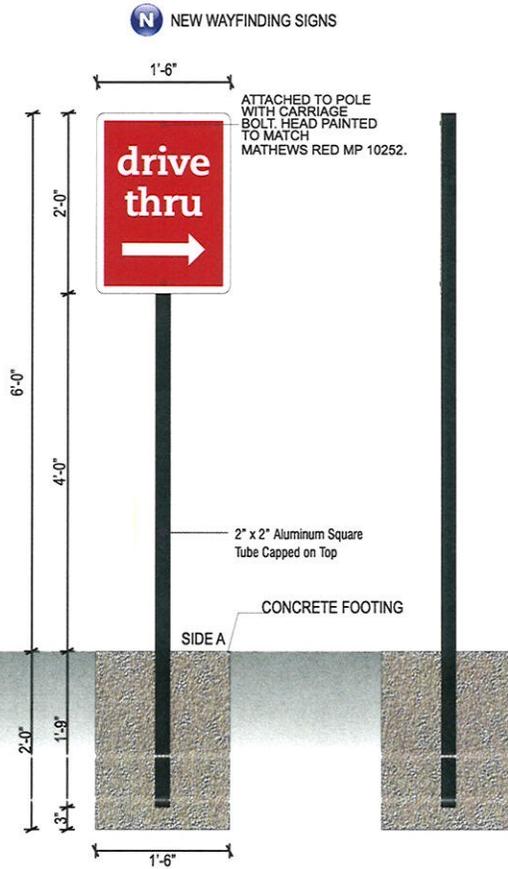
Drawing Number
27675
 R1



Specifications:

PANEL: .080 ALUMINUM PANELS WITH 1" RADIUS CORNERS. ATTACHED TO POLE WITH CARRIAGE BOLTS. BACKS PAINTED MATTE BLACK.
 BACKGROUND: REFLECTIVE WHITE.
 COPY & GRAPHICS: TO BE REFLECTIVE PANTONE 186C, AND WHITE
 POST: 2" X 2" ALUMINUM POLE PAINTED BLACK.
 FOOTING: CONCRETE FOOTING PER CITY REGULATIONS.

 PANTONE 186 C RED
 MATTHEWS #N6425SP WHITE
 MATTE BLACK / MP 829



NEW WAYFINDING SIGN

SCALE: 3/4" = 1'

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Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
[Signature]
 Date: 10.13.16

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Revisions:
 08/15/2017 SD: Rozanne dir, relocate B

Drawing Number
27675
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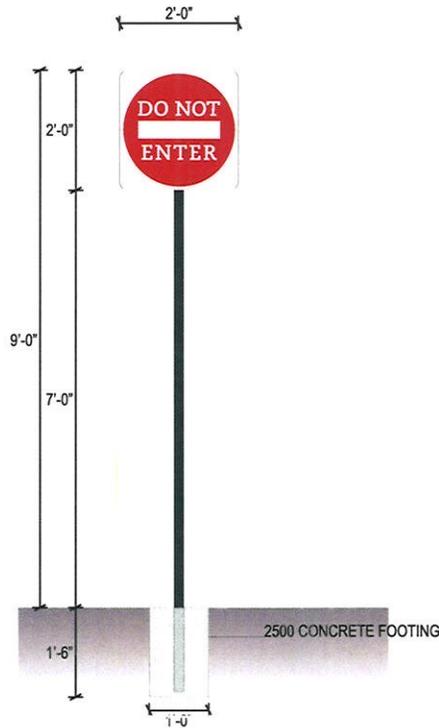


SPECIFICATIONS:

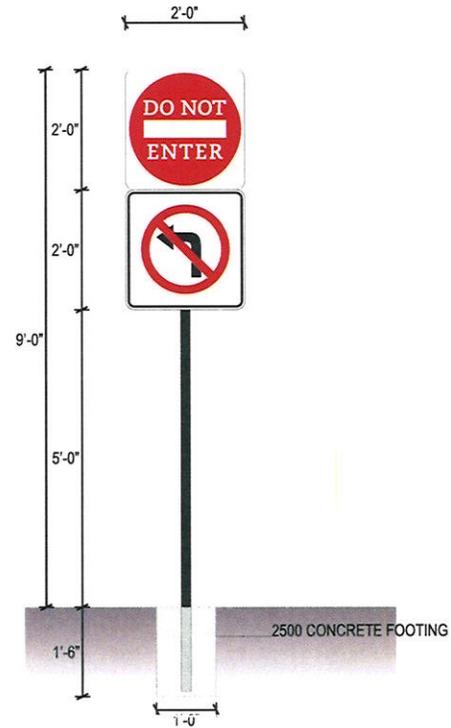
FACE: .080 ALUMINUM FACE WITH 3M REFLECTIVE COPY (#3272 RED, #3290 WHITE.)
 POLE: 2"x2"x1/4" ALUMINUM TUBE TO BE CAPPED ON TOP. PAINTED MATTE BLACK.

3M REFLECTIVE RED #3272
 3M REFLECTIVE WHITE #3290
 MATTE BLACK / MP 929

O NEW WAYFINDING SIGNS



P NEW WAYFINDING SIGNS



NON-ILLUMINATED STOP SIGN

SCALE: 1/2" = 1'



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Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
 [Signature]
 Date: 8.13.17

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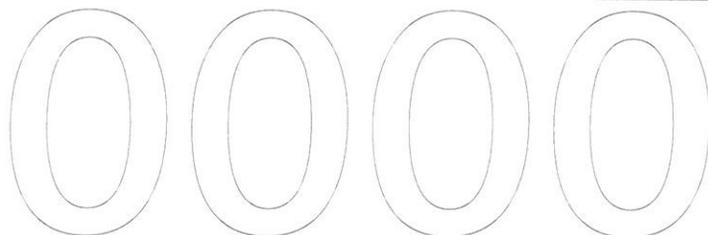


Revisions:
 08/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
 R1



8"



ADDRESS APPLIED
FIRST SURFACE

12"

DINING HOURS APPLIED
SECOND SURFACE

1 1/2"
5/8"
10"

dining hours

monday - saturday
6:30 a.m. - 10:00 p.m.
closed sunday

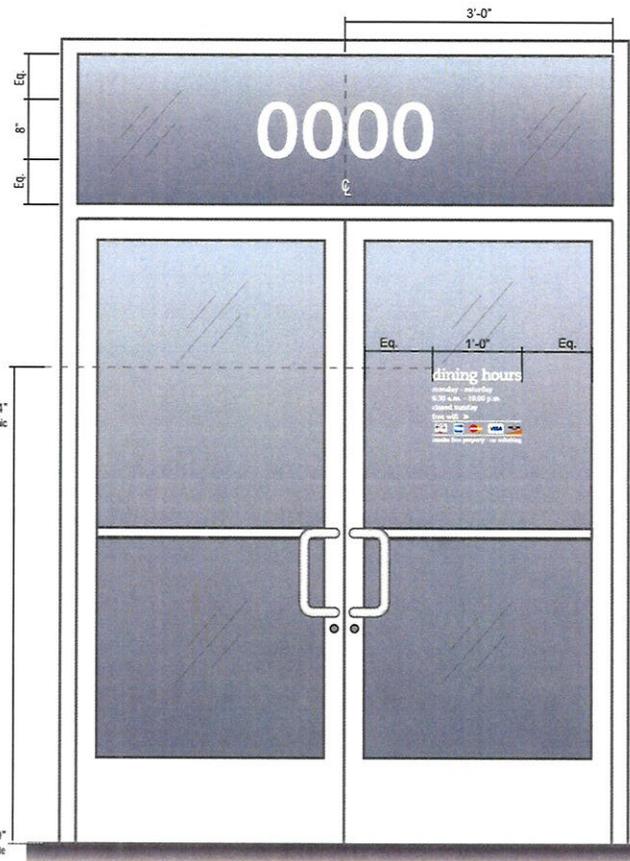
free wifi



smoke free property · no soliciting

STORE HOURS TO BE VERIFIED

Credit Card icons should be individually
cut out, not printed on clear substrate
Blue line around credit cards represents
the die line DOES NOT PRINT



DOOR ELEVATION
SCALE: 3/4" = 1'

NEW WINDOW VINYL

WHITE DOOR WINDOW VINYL APPLIED SECOND SURFACE
SCALE: 3" = 1'

3M 7025-510 OPAQUE WHITE

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Address: NWC of El Dorado Hills Blvd @ Hwy 50, El Dorado Hills, CA 95762
Phone: _____ **Account Mgr.:** S. Rosenbloom
Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
S. Rosenbloom
Date: 10.15.17

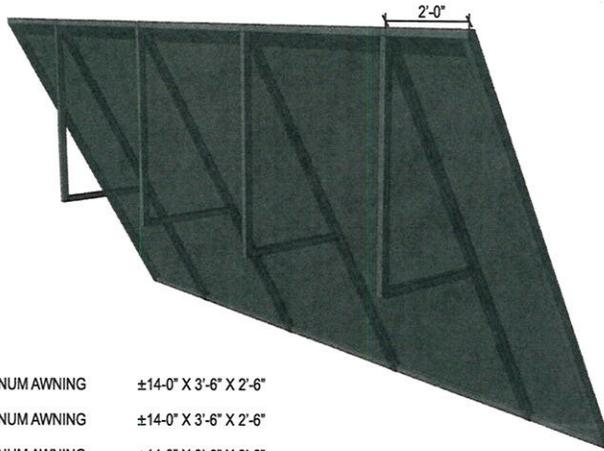
This sign intended to be in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of this sign.

Revisions:
08/15/2017 SD: Rotate die, relocate B

Drawing Number
27675
R1



SURVEY REQUIRED PRIOR TO MANUFACTURING



- A1 NEW ALUMINUM AWNING ±14'-0" X 3'-6" X 2'-6"
- A2 NEW ALUMINUM AWNING ±14'-0" X 3'-6" X 2'-6"
- A3 NEW ALUMINUM AWNING ±14'-0" X 3'-6" X 2'-6"
- A4 NEW ALUMINUM AWNING ±14'-0" X 3'-6" X 2'-6"
- A5 NEW ALUMINUM AWNING ±14'-0" X 3'-6" X 2'-6"

Specifications:

ILLUMINATED AWNING:

STRAIGHT AWNINGS:
 MANUFACTURE AND INSTALL NEW ILLUMINATED WEDGE AWNING WITH 1/2"X1/2"X1/8" ALUMINUM SQUARE TUBE WITH VERTICAL SUPPORTS PAINTED MATTE BLACK STARTING FROM 2'-0" OF THE SIDE OF THE AWNING AWNING FRAME TO BE COVERED WITH ALUMINUM STANDING SEAM PAINTED BLACK.

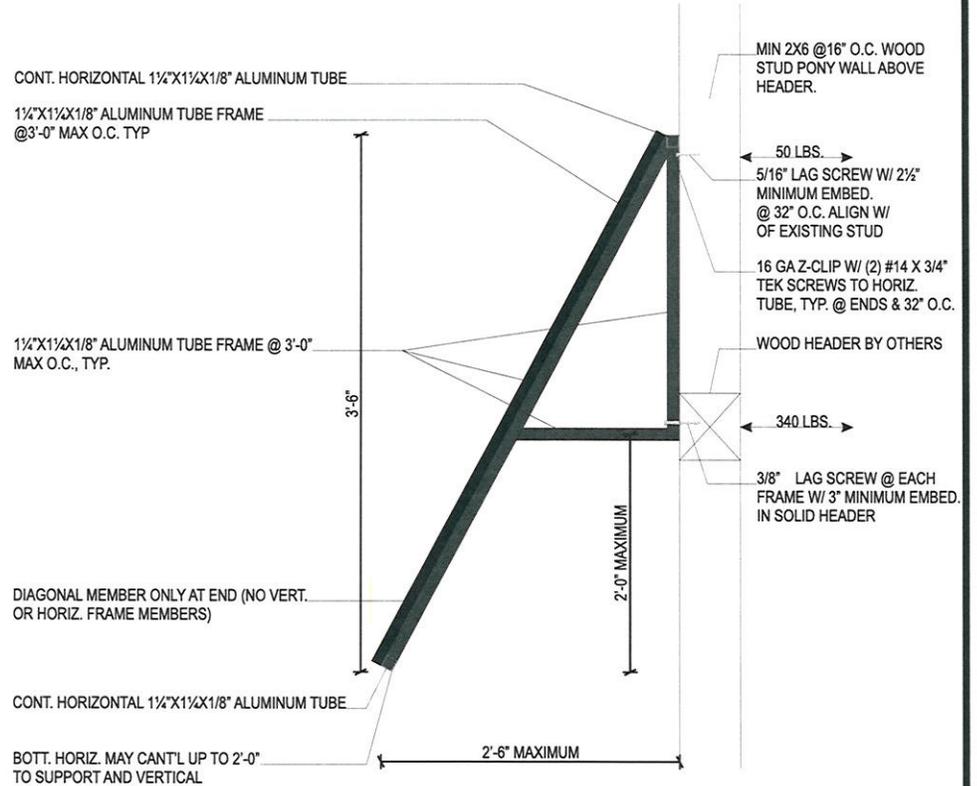
NOTE:

NEW AWNINGS TO BE ILLUMINATED USING EXISTING LIGHTING SYSTEM.
 INSTALL AWNING USING EXISTING STRUCTURE AND METHOD-SURVEY REQUIRED

■ MATTE BLACK

NEW AWNING SPECIFICATIONS

SCALE: NTS



EACH AWNING TO HAVE 4 SUPPORT FRAMES
 LIGHT FIXTURE @ MIDDLE
 DOOR BELOW AWNING @ 8'-1" AWNING TO CLEAR DOOR
 BY ONE INCH MINIMUM.

NOTES:

- 1) ALL DIMENSIONS ARE APPROXIMATE.
- 2) PROVIDE SUPPORT FRAME SHOWN 3'-0" MAX. O.C. & AT 2'-0" MAX FROM ENDS
- 3) CONNECTIONS TO AND ADEQUACY OF BUILDING STRUCTURE TO BE VERIFIED BY OTHERS FOR THE REACTIONS SHOWN.

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National Sign & Marketing Corporation
 13580 5th St., Chino, CA 91710
 Tel 909.591.4742 Fax 909.591.9792
 e-mail : sales@nsmc.com
 Lic# 745030 - Exp. 01/31/18

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Client Approval:
S. Rosenbloom
 Date: 10/13/16

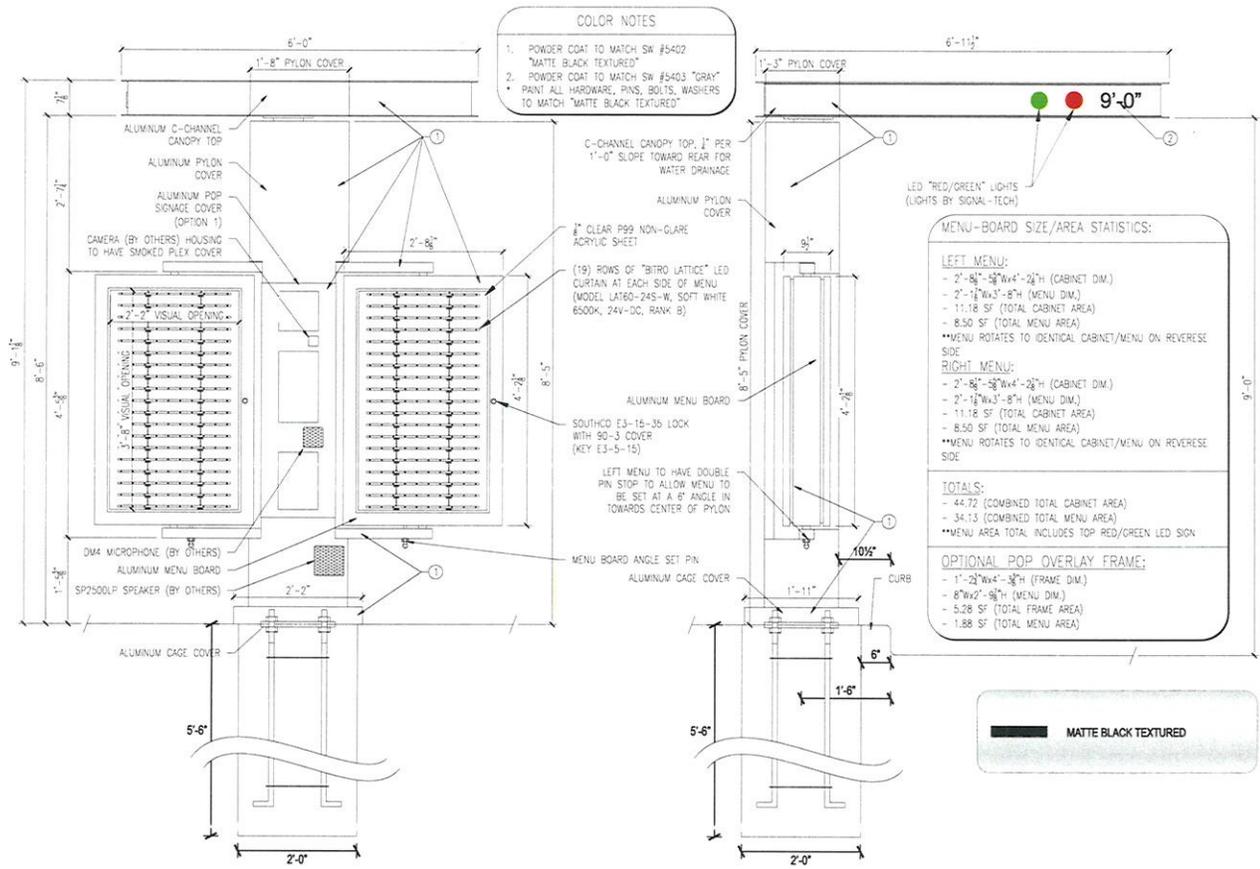
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 06/15/2017 SD: Rotate dir, relocate B

Drawing Number
27675
 R1



FOOTINGS BY OTHERS, FINAL SETTING BY NSMC



- COLOR NOTES**
- POWDER COAT TO MATCH SW #5402 "MATTE BLACK TEXTURED"
 - POWDER COAT TO MATCH SW #5403 "GRAY" PAINT ALL HARDWARE, PINS, BOLTS, WASHERS TO MATCH "MATTE BLACK TEXTURED"

LED "RED/GREEN" LIGHTS
(LIGHTS BY SIGNAL-TECH)

MENU-BOARD SIZE/AREA STATISTICS:

LEFT MENU:

- 2'-8 1/2" Wx 4'-2 1/2" H (CABINET DIM.)
- 2'-1 1/2" Wx 3'-8" H (MENU DIM.)
- 11.18 SF (TOTAL CABINET AREA)
- 8.50 SF (TOTAL MENU AREA)
- **MENU ROTATES TO IDENTICAL CABINET/MENU ON REVERSE SIDE

RIGHT MENU:

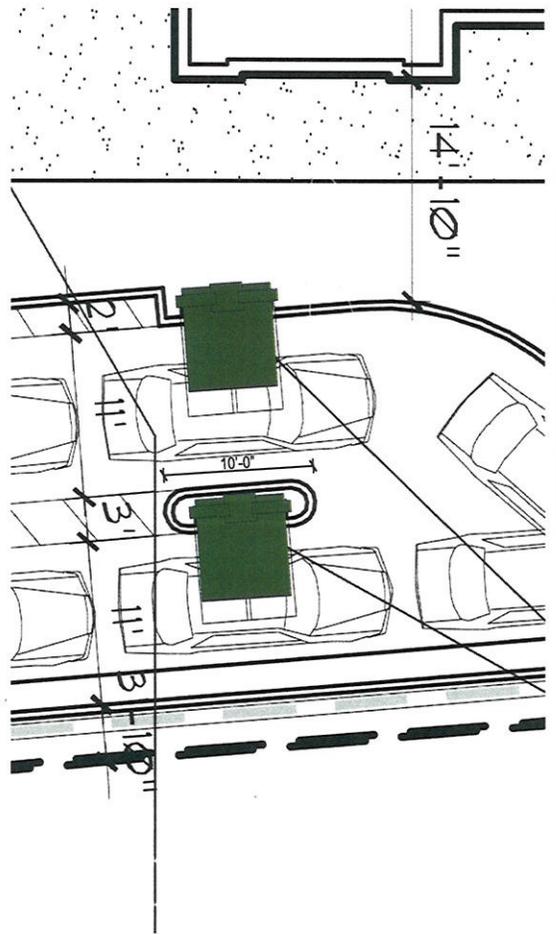
- 2'-8 1/2" Wx 4'-2 1/2" H (CABINET DIM.)
- 2'-1 1/2" Wx 3'-8" H (MENU DIM.)
- 11.18 SF (TOTAL CABINET AREA)
- 8.50 SF (TOTAL MENU AREA)
- **MENU ROTATES TO IDENTICAL CABINET/MENU ON REVERSE SIDE

TOTALS:

- 44.72 (COMBINED TOTAL CABINET AREA)
- 34.13 (COMBINED TOTAL MENU AREA)
- **MENU AREA TOTAL INCLUDES TOP RED/GREEN LED SIGN

OPTIONAL POP OVERLAY FRAME:

- 1'-2 1/2" Wx 4'-3 1/2" H (FRAME DIM.)
- 8" Wx 2'-9 1/2" H (MENU DIM.)
- 5.78 SF (TOTAL FRAME AREA)
- 1.88 SF (TOTAL MENU AREA)



1 2 DRIVE-THRU CANOPY

DRIVE THRU CANOPY WITH MENU BOARD (TO BE FABRICATED BY OTHERS)

SCALE: 1/2" = 1'-0"

NOTE: ALL WORK TO COMPLY WITH 2013 CALIFORNIA ELECTRICAL CODE (CEC)

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Designer: Duffy, S. **Scale:** Noted **Date:** 07/28/2017

Client Approval:
[Signature]
 Date: 07/13/17

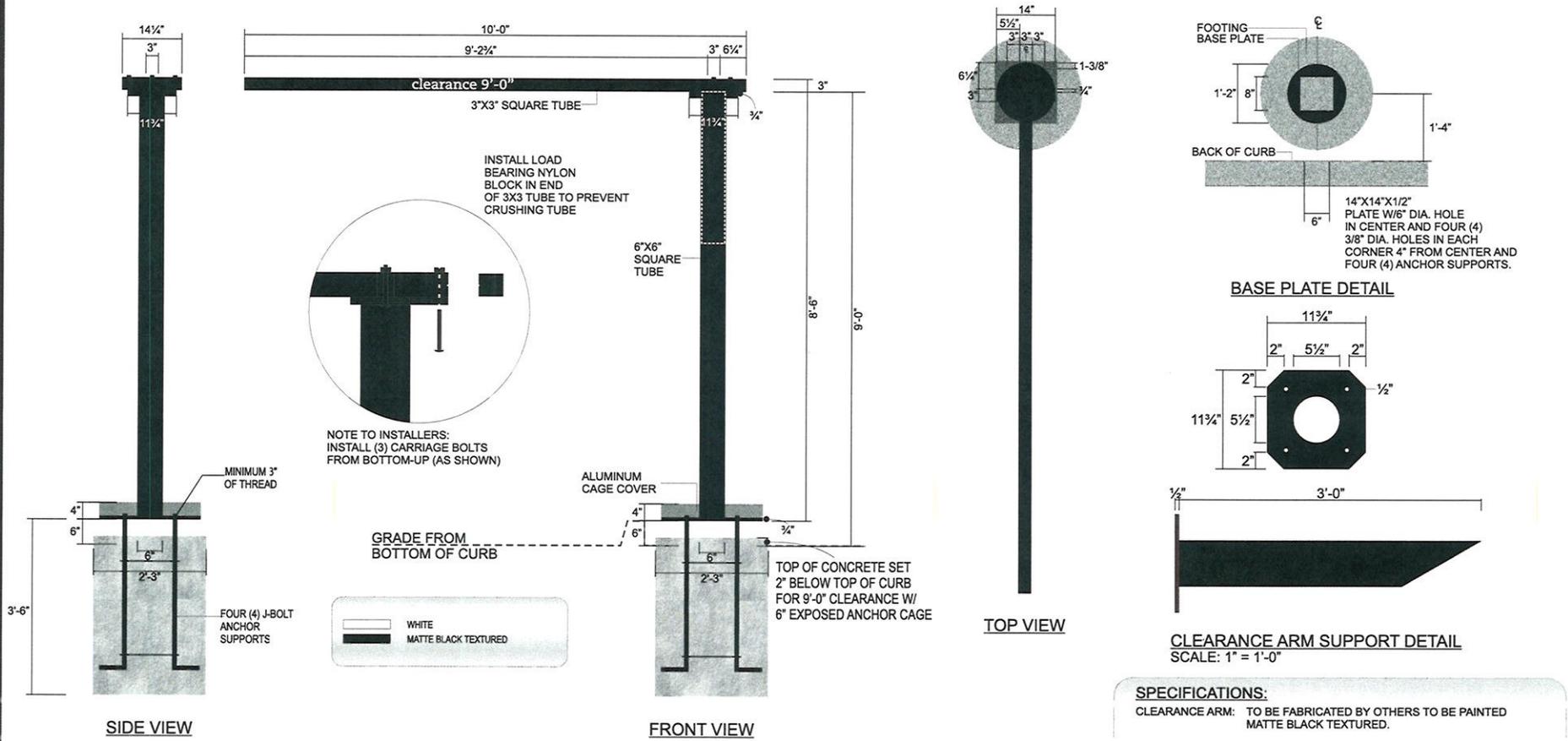
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27675
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FOOTINGS BY OTHERS, FINAL SETTING BY NSMC



4 DRIVE-THRU CLEARANCE ARM

CHICK-FIL-A - NEW CLEARANCE ARM (TO BE FABRICATED BY OTHERS)

SCALE: 1/2" = 1'-0"

SPECIFICATIONS:

CLEARANCE ARM: TO BE FABRICATED BY OTHERS TO BE PAINTED MATTE BLACK TEXTURED.

COPY: CLEARANCE COPY TO BE WHITE OPAQUE HIGH PERFORMANCE VINYL APPLIED FIRST SURFACE.

NOTES: STANDARD HEIGHT ACCORDING TO CLEARANCE. DRIVE THRU GRADE TO BOTTOM OF CLEARANCE BAR. HEIGHT OF CAGE WILL NEED TO BE ADJUSTED TO ACCOMMODATE THE DISTANCE BETWEEN THE BAR AND GRADE. THERE MUST BE AT LEAST 3" OF BOLT THREAD ABOVE BASE PLATE.

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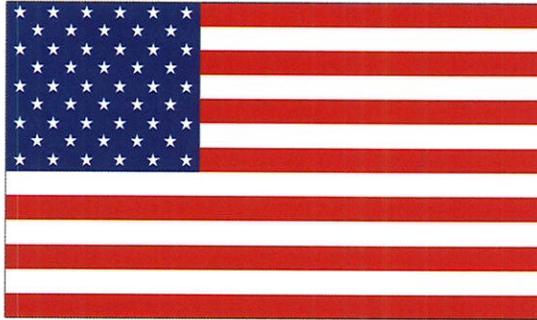
Client Approval:
S. Rosenbloom
 Date: 07/28/17

This sign intended to be in accordance with the requirements of Article 650 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of this sign.

Revisions:
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27675
 R1

FOOTINGS BY OTHERS, FINAL SETTING BY NSMC



Flag

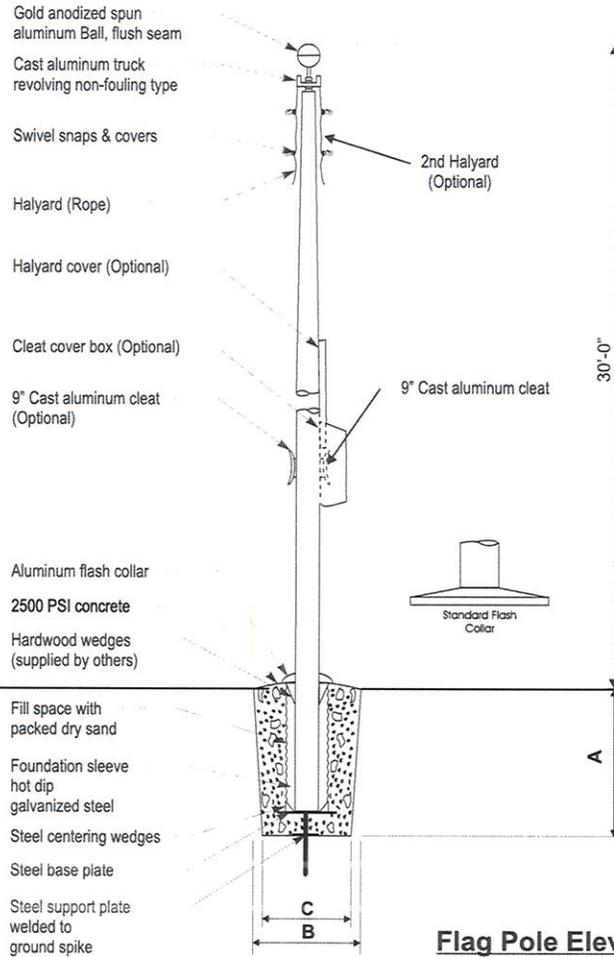
FOUNDATION SIZES

HEIGHT	A	B	C	FLAG SIZE
20'	3'-6"	30"	24"	6'-10'
25'	3'-6"	30"	24"	6'-10'
30'	3'-6"	30"	24"	6'-10'
35'	4'-0"	36"	30"	6'-10'
40'	4'-6"	42"	36"	12'-18'
45'	5'-0"	48"	42"	12'-18'
50'	5'-6"	48"	42"	12'-18'

Size Chart

Ground sleeve and concrete installed by the general contractor

Pole installed on pre-installed ground sleeve by sign contractor



Flag Pole Elevation

5 FLAG POLE
FLAG POLE
SCALE: NTS

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Client Approval:
[Signature]
Date: 8/13/17

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Drawing Number
27675
R1





September 7, 2017

Peter Navarra
Central Pacific Development
3220 Northrop Avenue
Sacramento, CA 95864

RE: Saratoga Retail - Phase 2

Dear Pete,

Please let this brief letter serve as documentation that Serrano Associates, LLC, the Declarant under the Covenants, Conditions, and Restrictions recorded on February 1, 2007, has approved of the following submitted plans:

1. **Saratoga Way Site Improvement Plan Set** prepared by TSD Engineering dated April 28, 2017, amended as follows:
 - a. Sheet C3.1 dated 8/2/17 changing the color of the on-site truncated domes to Dark Terracotta.
 - b. Sheet L2.1 (Yamasaki) adding dwarf Italian Cypress to the south elevation of Building 2B.
 - c. Sheet E1.1 (Pitman) eliminating the scrollwork from the site lighting

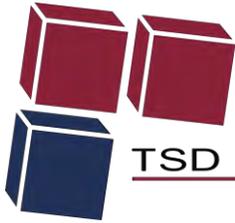
2. **Saratoga Retail Shell Buildings 2A and 2B Plan Sets** prepared by CSHQA dated April 27, 2017, amended as follows:
 - a. Sheets A5.1, A7.2, and A7.3 Owner Revision #2 dated 8/2/17 eliminating the stone on the buildings and simplifying the decorative foam / plaster details and window grids.

If you have any questions or need anything further, please call me at 916-939-4060 or email me at ahoward@parkerdevco.com.

Sincerely,

Andrea Howard
Principal Planner / Architectural Coordinator

Exhibit S



TSD ENGINEERING, INC.
expect more.

Memo

To: Efren Sanchez; Assistant Planner – County of El Dorado
From: Chris Schulze; TSD Engineering, Inc.
CC: Rommel Paballinas, Senior Planner – County of El Dorado
Peter Navarra
Date: October 10, 2017
Re: RESPONSE MEMO; Saratoga Retail Design Review – Project File No. DR08-0003-R

This Memo is provided in response to your Letter regarding the subject project dated September 11, 2017 Letter.

1. **Air Quality:** The Owner/Applicant and consultant team continue to work through AQMD comments as it pertains to Green House Gas. We are working directly with AQMD to address this and we anticipate having resolution of this item by October 13, 2017.
2. **RV Parking:** Due to the fact that the County's extension of Saratoga Way created an odd-shaped parcel, onsite circulation has been compromised to some extent with respect with the site's ability to handle large vehicles such as recreational vehicles and delivery trucks. Based on the constraints of the property providing a pull thru 38' x10' RV parking space is not feasible based on the shallow depth of the property. Per the County zoning code based on the proposed land use (and building square footages) Saratoga Retail Phase 2 is required to provide 38 parking stalls. The proposed project proposes a total of 68 parking stalls. The additional 30 parking stalls provided could be used by RV's/Trailers by parking over 4-5 of these parking stalls. This would give the project to provide flexibility in its parking management to provide both additional standard vehicle stalls and/or RV parking based on demand. Thus, based on the constraints on the property configuration and the additional parking provided (over code requirement) the need for RV parking spaces can be waived.



3. **Colors of Building:** Please see Attachment 1 for Building 2A and Building 2B; Serrano Design Review Approval letter. Chick-Fil-A continues to pursue Serrano Design Review approvals. Currently Serrano has approved the building architecture however Serrano and Chick-Fil-A are working through proposed building signage. Once Serrano design review issues their approval this document will be forwarded to the County.
4. **Signs:** Saratoga Retail has an approved Master Sign Program that has been previously approved for this property. Any development of the property must comply with the Approved Sign Program (see attachment 2).
5. **Driveway:** Per Court Order Case No. PC 20050276 Saratoga Retail was approved for two full turn driveways associated with the project (see attachment 3). Under existing conditions Walgreens constructed the first full turn movement driveway. The current proposed project currently being reviewed is allowed per the court order to develop the second full turn movement driveway as proposed between building 2B and Chick-Fil-A.
6. Drive-Thru Queuing: Site Plan has been updated to depict the drive thru window locations as well as the vehicle staking in the drive thru que. Both the Chick-Fil-A and Building 2A either exceed or meet the 13 car que requirement identified in the traffic study associated with the proposed project.

Should you have any further questions please let me know.

Sincerely
Chris Schulze, PE 59220

ATTACHMENT 1
SERRANO DESIGN REVIEW APPROVAL – BLDG 2A & 2B



September 7, 2017

Peter Navarra
Central Pacific Development
3220 Northrop Avenue
Sacramento, CA 95864

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Sincerely,

Andrea Howard
Principal Planner / Architectural Coordinator

ATTACHMENT 2
SARATOGA RETAIL – SIGN MASTERPLAN

SERRANO ASSOCIATES, LLC
Non-Residential Submittal Form
For Architectural Control Committee ("Committee") Review

Project: Walgreen's Store
Contact: Tim MacDonald
Address: 90 S Cascade Ave, Ste. 330
City & Zip: Colorado Springs, CO 80903
Phone #: 719-447-9902

Approved

Office Use:
Date Received: 9.24.11
Date Reviewed: 9.26.11

<input type="checkbox"/> Conceptual Plan Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit 2 sets of hard line drawings, including: (No plan size larger than 24"x36") <ul style="list-style-type: none"> ➤ Grading / Site Plan ➤ Elevations (4 sides) ➤ Floor Plans
--	--

<input type="checkbox"/> Final Plan Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit (2) half size scalable sets of full construction drawings, including: <ul style="list-style-type: none"> ➤ Grading / Site Plan ➤ Elevations (4 sides) ➤ Floor Plans ➤ Electrical and Mechanical Plans for the site and building ➤ Full construction detail pages ➤ Dimensioned details (to scale) of all exterior elements
---	--

<input type="checkbox"/> Modification to Final Plan or As-built Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit (2) half size scalable sets of elevation and floor plans showing the modification. Indicate the change in a highlighted cloud.
---	--

<input type="checkbox"/> Landscape Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit 2 sets of landscape and irrigation plans, including: <ul style="list-style-type: none"> ➤ Grade contours (existing and proposed) ➤ All plant material, patios, walkways, shade structures, trellises, fountains, statues, rocks, and landscape lighting ➤ Retaining walls, fence locations, and gates
--	---

<input checked="" type="checkbox"/> Signage: <i>Master sign criteria</i> <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification <i>Final word doc dated 7-29-11 (yjf)</i>	Submit 2 sets of plans for signage review, including: <ul style="list-style-type: none"> ➤ Site plan showing signage location(s) if applicable. ➤ Elevations, if applicable, showing all signage locations identifying tenant name, logo(s), service doors, address identification, etc. ➤ Dimensioned signage details (to scale) including colors and materials call outs.
--	---

<input type="checkbox"/> Miscellaneous Exterior Changes <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit 2 sets of plans for miscellaneous items review, such as: <ul style="list-style-type: none"> ➤ Awning, seat walls, wrought iron, fountain, shade trellis, etc. ➤ Other: _____
--	---

<input type="checkbox"/> Inspection Request	<input type="checkbox"/> Mid-construction (optional) <input type="checkbox"/> Final (mandatory)
--	---

The Committee meets on an as-needed basis. Once the Committee has reviewed the submittal, the contact shown above will be notified in writing within three (3) weeks of the meeting date. For more information, please contact Andrea Howard at (916) 939-4060

Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

PLANNED SIGN PROGRAM
Commercial Buildings
El Dorado Hills Boulevard at Saratoga Way
El Dorado Hills, California

I. Introduction

Objective

The Saratoga Retail Commercial Center Master Sign Criteria (“Master Sign Criteria”) has been established to provide a first class and professional sign and graphics program that is beneficial to the County of El Dorado (the “County”) and to the Saratoga Retail Commercial Center’s (“Shopping Center”) tenants and the public. In support of this objective, the following qualities are required for signs in the Shopping Center.

- Creative and original designs
- Integration with project architecture
- The use of the highest quality workmanship and materials
- The use of industry Best Practices in design and construction of all signs

Each Owner and/or its tenant in the Shopping Center will be provided with a copy of the Master Sign Criteria as their first step in obtaining signs within the Shopping Center. Each Owner and its tenants will be required to comply with the si

Applicability

The Shopping Center is approx follows:

- Parcel A1 and Parce (hereinafter collecti
- Parcel B as shown o

Parcel A and Parcel B are hereir map recorded in Book 50, Page 1

The Property is governed by t recorded by Serrano Associates, and the second set was recorde (“ECC&Rs”). The sections of t are hereby incorporated into an the criteria set forth in this Mas are prioritized by parcel as follo



Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

PLANNED SIGN PROGRAM
Commercial Buildings
El Dorado Hills Boulevard at Saratoga Way
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- Creative and original designs
- Integration with project architecture
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- The use of industry Best Practices in design and construction of all signs

Each Owner and/or its tenant in the Shopping Center will be provided with a copy of the Master Sign Criteria as their first step in obtaining signs within the Shopping Center. Each Owner and its tenants will be required to comply with the sign criteria.

Applicability

The Shopping Center is approximately 3.3 acres in size and is currently divided into three parcels as follows:

- Parcel A1 and Parcel A2 as shown on that certain parcel map recorded in Book 50, Page 90 (hereinafter collectively known as “Parcel A”)
- Parcel B as shown on that certain parcel map recorded in Book 50, Page 90

Parcel A and Parcel B are hereinafter collectively known as the “Property”. A copy of that certain parcel map recorded in Book 50, Page 90 is provided as **EXHIBIT A**.

The Property is governed by two sets of Covenants, Conditions, and Restrictions. The first set was recorded by Serrano Associates, LLC on February 1, 2007, Document Number 2007-007347 (“CC&Rs”) and the second set was recorded by Navarra et al on April 9, 2009, Document Number 2009-0016187 (“ECC&Rs”). The sections of the recorded CC&Rs and ECC&Rs that regulate signage on the Property are hereby incorporated into and made a part of this Master Sign Criteria. If a discrepancy exists between the criteria set forth in this Master Sign Criteria and the recorded CC&R’s and ECC&R’s, the documents are prioritized by parcel as follows:

Priority as to Parcel A

- 1st priority CC&R's
- 2nd priority Master Sign Criteria
- 3rd priority ECC&R's

Priority as to Parcel B

- 1st priority CC&R's
- 2nd priority ECC&R's
- 3rd priority Master Sign Criteria

The ECC&R's set forth the owner of Parcel A as the Shopping Center manager for the common area of all three parcels. The Shopping Center manager is labeled as the "Managing Owner". For purposes of this Master Sign Criteria, the owner of Parcel B shall be referred to as the "Parcel B Owner". The CC&R's grant Serrano Associates, LLC certain design approval rights and for purposes of this sign master plan, Serrano Associates, LLC shall hereinafter be referred to as "Serrano". Serrano, Parcel B Owner and the Managing Owner shall hereinafter be referred to as the "Parties".

The Parcel B Owner is constructing a building which has been leased to Walgreen Company.

The wall and fascia signs located on Parcel A, and the Parcel A tenant panels on the freestanding multi-tenant monument sign are referred to as the "Parcel A Signage".

The wall and fascia signs located on Parcel B and the Parcel B tenant panels on the freestanding multi-tenant monument sign are referred to as the "Parcel B Signage".

The Parties that have sign approval rights are as follows:

- A). Serrano has approval rights for all signs on the Property.
- B). The Managing Owner has sign approval rights for Parcel A Signage.

Design variances on this Master Sign Criteria may be granted on Parcels A and / or Parcel B if granted proper approval by Serrano, however in no event shall any variances granted by Serrano override any requirements imposed by the County.

II. Freestanding Multi-Tenant Monument Sign

The following section outlines the acceptable scope of work, quality standards and materials for a freestanding multi-tenant monument sign in the Shopping Center.

A. Quantity:

- 1. There shall be one (1) freestanding multi-tenant monument sign for the Shopping Center.

B. Location:

- 1. The freestanding multi-tenant monument sign shall be located as set forth on **EXHIBIT B**, Architectural Site Plan.

C. Height and Overall Sign Area:

1. The freestanding multi-tenant monument signboard shall not exceed twelve (12) feet in height above finish grade, excluding the architectural appendage.
2. The maximum area of each sign face, excluding the base and/or embellishments, shall be no larger than eighty (80) square feet per face.
3. The overall square footage of the freestanding multi-tenant monument sign shall not be deducted from the allowable square footage used on the individual building signage.

D. Materials:

1. General:

- a. The materials and colors, as shown in the attached **EXHIBIT C**, Site Wall Details AO-3, shall be compatible with the building
- b. The sign board in the freestanding multi-tenant monument sign shall be all aluminum construction and painted with a smooth finish color to match the building colors.
- c. The freestanding multi-tenant monument sign base shall be a custom cast, sculptured, stained concrete column as shown in **EXHIBIT C**.

2. Multi-Tenant Monument Sign

- a. The individual tenant panels (for both Parcels A and B) shall be routed out aluminum, backed with 1" clear acrylic which shall project no less than 3/4" beyond the face of the aluminum sign board and shall be back illuminated with fluorescent lamps. The face of the acrylic may be colored. Tenant panels shall also be painted with a smooth finish to match the building colors. The panels are to be flush mounted so that no frame is visible.
- b. All tenant typestyle and logos for Parcel A tenant panel shall be approved by Managing Owner and Serrano. All tenant typestyle and logos for Parcel B tenant panel shall be approved by Serrano.
- c. As it relates to Parcel A tenant panel, the Managing Owner shall have the final determination as to which tenants will be allowed space on the freestanding monument sign, but the Managing Owner shall have no right to determine the Parcel B tenant panel.
- d. The Parcel B tenant panel is **approved** by Serrano and shall be as shown in **EXHIBIT D**. Any modification requires Serrano approval.

III. Wall/Fascia Sign: Parcel A Tenants

A. Number of Wall Signs:

1. Each tenant is permitted one (1) sign on the storefront, and one (1) sign on the rear elevation of each building.
2. Tenants located on an end-cap space will be permitted one (1) additional sign on their end elevation.

B. Location of Wall Signs:

1. Wall signs shall not extend above or below the fascia band and /or wall facade line on which it is placed and shall not interrupt major architectural features on the building, such as doors, windows and reveal lines.

C. Area of Wall Signs:

1. The area of wall signs for each tenant shall not exceed two (2) square feet for each one (1) lineal foot of building façade the signs are mounted on. However, the Managing Owner may, at his sole discretion, reduce the square foot area of wall signs if, in his determination, the proposed sign is too large and out of scale for the wall the sign is placed on and/or the signage on adjacent building façades.
2. In addition to the square footage listed in C.1 above, end-cap spaces shall receive additional signage not to exceed one (1) square foot for each one (1) lineal foot of side building elevation of tenant frontage.
3. Where any façade (exterior, front, side or rear wall area) of a tenant space is forty feet (40') wide or less, the length of wall signs shall not exceed seventy percent (70%) of the length of that façade.
4. Where any façade (exterior, front, side or rear wall area) of a tenant space is greater than forty feet (40') wide, the length of wall signs shall not exceed fifty percent (50%) of the length of that façade.
5. "Area of wall sign" means the total area of the sign contained within a rectangle or square drawn completely around the display surface. The sum of the area will determine the square footage for each tenant and shall conform to the County sign ordinance.

D. Size of Wall Signs:

1. Sign characters shall have a maximum height of thirty inches (30"), and logos shall have a maximum height of forty-two inches (42") and a maximum length of fifty-four (54") inches.
2. An additional six inches (6") will be allowed for ascenders and/or descenders. An ascender is a letter which extends above the mainline of copy, i.e. 't' using lower case letters. A descender is a letter which extends below the mainline of copy. i.e. 'p' using lower case letters.
3. Tenants may have two lines of copy with an overall combined height of thirty inches (30") and with a single line maximum letter height of twenty inches (20"). The allowance for ascenders and/or descenders described above also applies.

E. Wall Sign Construction and Design:

1. All tenant signs shall be of fabricated aluminum letter construction (except when letters, graphic representations and/or borders are connected and combined to form the company logotype as a single unit). Panels behind letters shall be reviewed and approved by

Serrano and Managing Owner. See **EXHIBITS E, F AND G** for examples of tenant signage, logos and pedestrian signage.

2. A sign may consist of a company name, or company name and logo. Other wording is permitted at the discretion of the Managing Owner, Serrano and approval of the County.
3. Each letter, number or logo shall be designed as follows:
 - a. Each letter, number or logo shall be mounted 1 ½” from the building fascia.
 - b. Fascia signs shall be made up of individual fabricated aluminum letters with LED HALO internal illumination.
 - c. No acrylic faces shall be permitted except for logos and for push through acrylic letters which may be approved at the discretion of the Managing Owner and Serrano. The depth of the Letters shall be 5” (for taller letters) or 4” (for shorter letters) to achieve the appropriate scale, unless otherwise approved by the Managing Owner and Serrano. The face color shall include the return color. Return colors differing from the face color may be approved at the discretion of the Managing Owner and Serrano.
4. Tenants may have, in conjunction with the fascia sign and upon receiving the Managing Owner and Serrano’s approval, one illuminated sign logo. Logo may be a sign cabinet with push through acrylic and/or fabricated letters, provided the Managing Owner and Serrano approve the same. Said logo, if approved, shall not exceed the allowable sign area for the combined logo and fascia letters.
5. Letter style and letter face color to be Tenant’s choice with the Managing Owner, Serrano’s and the County’s approval.
6. No pan channel constructed cabinets with secondary copy will be allowed in conjunction with fabricated letters. Individual illuminated and non-illuminated copy will be allowed as secondary copy or “tagline” and will be counted in the overall square footage of the sign. Size of individual non-illuminated letters are subject to Managing Owner and Serrano approval, but shall not exceed size otherwise permitted for overall height of sign (i.e., 20” for single-line copy and 30” for stacked signage copy).

IV. Wall/Fascia Sign: Parcel B Tenant

A. Number of Wall Signs:

1. The Parcel B tenant will be allowed to attach their primary identification signs (trade name) on the primary and other elevations of the building, as they face public streets, parking lots, or public areas as set forth on **EXHIBIT H**.

B. Location of Wall Signs:

1. Wall signs shall not extend above or below the fascia band and /or wall facade line on which it is placed and shall not interrupt major architectural features on the building, such as doors, windows and reveal lines.

C. Area of Wall Signs:

1. The area for wall signs shall not exceed two (2) square feet for each lineal foot of building façade the signs are mounted on. However, Serrano may, at their sole discretion, reduce the square foot area of wall signs if, in their determination, the proposed sign is too large and out of scale for the wall the sign is placed on and/or the signage on adjacent building façades.
2. “Area of wall sign” means the total area of the sign contained within a rectangle or square drawn completely around the display surface as measured in accordance with the County sign ordinance.

D. Wall Sign Construction and Design:

1. All signs shall be of individual letter construction (except when letters, graphic representations, and/or borders are connected and combined to form the company logotype as a single unit).
2. A sign may consist of a company logo and/or company name only. Other wording is permitted at the discretion of Serrano and the County.
3. Each letter, number, or logo shall be formed with individual pan channel construction. Standard signage is designed as follows:
 - a. Primary Sign Letters: A maximum of twenty-one inch (21”) lower case, thirty-six and one-half inch (36.5”) upper case letters in height, by eighteen feet four and one-half inches (18’, 4-1/2”) in length; exceptions to the 21” lower case dimension shall be allowed for the “l” at a maximum of thirty-one and one-quarter inch (31-1/4”) and for the “g” at a maximum of twenty and one-half inch (20-1/2”); internally illuminated with low voltage LED; colored acrylic lens faces; 5” bronze returns; and 1/8”x1” bronze trim caps. Letters shall be mounted to 2”x1-1 1/2”x3/16” aluminum channel mounting clips with 3/8”- 16 hex head bolts. The bronze returns and bronze trim caps shall be “dark bronze” to match the storefront. See **EXHIBIT I**, “Walgreens” shop drawing prepared by Icon Identity Solutions, received by Serrano June 29, 2011.
 - b. Secondary Sign Letters: Letters for standard signs, e.g. reading “PHARMACY” and “PHOTO”, shall be maximum eighteen inch (18”) high letters; internally illuminated with low voltage LED; acrylic lens faces; maximum 5” bronze returns; 1/8”x3/4” bronze trim caps. Letters shall be mounted to 2”x1-1 1/2”x3/16” aluminum channel mounting clips with 3/8”- 16 hex head bolts. The bronze returns and bronze trim caps shall be “dark bronze” to match the storefront. See **EXHIBIT J**, “Pharmacy” shop drawing prepared by Icon Identity Solutions, received by Serrano June 29, 2011.
4. Secondary signs, e.g. reading “DRIVE THRU” and “EXIT”, shall be six inches (6”) in height by a maximum of four feet six inches (4’-6”) in length; internally illuminated; colored acrylic lens faces, 5” bronze returns; 1/8” x 3/4” bronze trim caps; and flush mounted to fascia. The bronze returns and bronze trim caps shall be “dark bronze” to match the storefront. See **EXHIBIT K**, “Drive Thru” and **EXHIBIT L**, “Exit” shop drawing prepared by Icon Identity Solutions, received by Serrano July 6, 2011.
5. Letter style and letter face color to be tenant’s choice with Serrano and County approval.

6. If the Parcel B tenant changes after Serrano's approval of this Master Sign Criteria, Parcel B Owner will submit an amendment to this section of the Master Sign Criteria for Serrano approval.

V. Directional and Site Signage

A. Subsequent Approval Required

1. Prior to development of Parcel A and notwithstanding the examples provided as **EXHIBIT M**, Managing Owner shall prepare and submit a plan for directional and site signage for Serrano approval as a supplement to this Master Sign Criteria.

VI. General Information - Tenant Signage

The following section outlines the acceptable scope of work, quality standards and materials for all building signs within the Shopping Center.

A. General Requirements:

1. Tenant shall submit, before fabrication, four (4) copies of the proposed signs, including one (1) copy, which is to be colored, to the Parcel B Owner as to the Parcel B Signage or to the Managing Owner as to the Parcel A Signage for written approval pursuant to the approval rights outlined on page 2 of this Master Sign Criteria. The drawing shall show the sign(s) in relationship to the fascia over the storefront. The four (4) copies must include total number, location, size and style of lettering, material, type of illumination, installation details, color selection, logo design and wall graphics, and must comply with this Master Sign Criteria. Serrano approval must be obtained prior to submittal to the County.
2. All permits for signs shall be obtained and paid for by the tenant. Tenant shall pay for all signs and their installation and maintenance.
3. Tenant shall be responsible for the fulfillment of all requirements and specifications, and construction shall adhere to all codes and ordinances.
4. The size, location, design, color, texture, lighting and materials of these signs shall in no way detract from the design of the shopping center and the surrounding properties.
5. Signs shall be installed within (30) thirty days of occupancy of premises by the tenant.
6. No sign installation shall take place until the tenant has received Serrano's approval and applied for and received a permit from the County Building Department.
7. End cap stores that have multiple elevations may have signage on all building sides which front a street, parking lot, or public area.
8. The amount of signage on each face is always counted separately for conformance.

B. Parcel A Insurance Requirements:

Managing Owner requires all sign manufacturers/installers to submit with drawings a copy of the appropriate contractor's license number, as well as a Certificate of Insurance for Workman's Compensation, Property Damage and Public Liability. The insurance requirements are as follows:

1. Worker's Compensation as required by law and Employer's Liability \$1,000,000.
2. Commercial General Liability: \$1,000,000 per occurrence, \$2,000,000 general aggregate \$2,000,000 products aggregate including products and completed operations during life of the agreement. Claims made forms are not acceptable.
3. Additional Insured Endorsement CG2010 11/85 as published by Insurances Services Office (or its' equivalent) naming (**Owner**) and (**Owner's Agent**), their officers, directors and employees.
4. Primary Endorsement: "This insurance shall apply as primary insurance as respects liability of the designated additional insured, arising out of the insured's performance or operations as described in the additional insured endorsement. Any other insurance available to be designated additional insured shall apply on an excess basis".
5. Automobile Liability: \$1,000,000.
6. Policies shall have a mandatory 30-day cancellation notice, except 10-day for non-payment.
7. The following lines should be stricken from the cancellation block: "endeavor to" and "but failure to mail such notice shall impose no obligation on liability of any kind to the company, its agents or representatives".

C. Parcel B Insurance Requirements:

1. The insurance requirements for Parcel B shall be as set forth in the ECC&Rs and the Parcel B lease.
2. If the Parcel B tenant changes after Serrano's approval of this Master Sign Criteria, Parcel B Owner will submit an amendment to this section of this Master Sign Criteria for Serrano approval.

VII. Parcel A and Parcel B Restrictions:

The following signs are not permitted on the Property. Serrano, in its sole and absolute discretion, may reject any sign, flag or banner and the following list shall not be construed as all inclusive.

- A. Painted, "A-frame", flashing, moving, human directional, animated, audible, revolving or other signs that create the illusion of animation are not permitted.
- B. No exposed neon shall be used for individual letters, logos, or on the building fascia. Exposed bulb signs are not permitted.
- C. No exposed junction boxes, lamps, tubing, conduits, raceways or neon crossovers of any type are permitted.
- D. There shall be no roof top signs, or signs which extend above the parapet wall or the roofline of the building to which they are attached.

- E. Vertical copy or signs projecting perpendicular to the building are prohibited unless approved by the Managing Owner and Serrano with respect to Parcel A, and unless approved by Serrano with respect to Parcel B. Pedestrian-scale signs that are perpendicular to the building on Parcel A are required and shall not be counted in the overall maximum sign size calculation. Any pedestrian-scale signs and the size of the sign shall require approval from the Managing Owner and Serrano as to Parcel A, and Serrano as to Parcel B.
- F. Logos or manufacturer's decals, hours of business, telephone numbers, etc. shall not exceed 144 square inches per single door entrance or 25% of store front window area, whichever is the lesser. Signage shall be vinyl Scotchal #3680-20 white lettering, letter style Helvetica. All "sale" signs, special announcements, etc. are not permitted on exterior or interior glass. Such advertising materials must be set back 24" from glass surface and all window signs are not to exceed a maximum total of 25% of total window area. No "going out of business", "Lost Our Lease" or other similar signage is allowed on building, storefront or glass area.
- G. Rear entry door signs shall be upper case Helvetica medium typestyle numerals and /or letters. Materials will be Scotchal Vinyl or equal, color to be black. Letter height shall be 3" and centered horizontally. Copy will be limited to tenant name and address. Top of sign will be 6' (six feet) from grade.
- H. Advertising devices such as attraction boards, posters, banners and flags will not be permitted.
- I. No signs that create a traffic safety hazard by interfering with a driver's sight line shall be allowed.
- J. No inflated/Lighter-Than-Air signs shall be allowed.
- K. No off-premises signs shall be allowed.
- L. No portable signs shall be allowed.
- M. No signs on natural features or other structures shall be allowed.
- N. No signs without a permit shall be allowed.
- O. No simulated traffic signs shall be allowed.
- P. No signs on vehicles, including trailers, when a vehicle is parked or stored on the Property for the purpose of identifying a business or advertising a product on the same site or a different site, unless the sign is permanently fixed to the vehicle, and the vehicle is used by the business to conduct its daily operations on a regular basis.
- Q. No externally illuminated tenant wall signs shall be allowed unless approved by the Managing Owner and Serrano with respect to Parcel A, and Serrano with respect to Parcel B.
- R. No electronic readerboard window signs shall be allowed in the Shopping Center.
- S. If a fascia sign is ever removed for replacement or because of termination of lease, tenant shall leave the fascia panel in good condition, normal wear and tear excepted. Without limitation, tenant shall specifically be required to fill, in a workmanlike manner, any holes

left in the fascia panel, and paint and texture to match surrounding fascia. All repair work shall be at tenant's sole cost and expense, and shall be completed within twenty-one (21) days of expiration of term or earlier termination of the tenant's lease.

- T. All Parcel A Signage is subject to review and approval by the Managing Owner, Serrano and the County through a sign permit process and must meet this Master Sign Criteria. All Parcel B Signage is subject to the review and approval by Serrano and the County. In all cases where Serrano and County review of signs is required, said review must be secured prior to fabrication or installation. Any signage not permitted per this Master Sign Criteria shall be removed at tenant's sole expense provided that tenant and Parcel B Owner or Managing Owner are given written notice at the address set forth in Section IX and tenant has three days after written notice to remove the sign or provide Serrano with evidence of its approval.
- U. The wall and fascia signs shall be controlled by tenant and the multi tenant monument sign shall be illuminated daily from dusk to a designated time set by the Managing Owner of the Shopping Center in accordance with the ECC&Rs.
- V. The electrical power required for sign operation will be recorded on the house electric meter and tenants will be responsible for all associated electrical expenses.
- W. With respect to Parcel A, signs or lettering shall be prohibited on awnings, unless approved by Serrano, at its sole discretion, and at the discretion of the Managing Owner. With respect to Parcel B, signs or lettering shall be prohibited on awnings, unless approved by Serrano, at its sole discretion.

VIII. Protection of Property:

- A. Each tenant's sign contractor shall design and erect his/her sign in such a manner that it will not overstress, deface or damage any portion of the building.
- B. Any sign, temporary or permanent, capable of exerting damaging pressures on the building due to the signs size, weight, or design, shall have the design examined, at the tenant's sole cost, by a structural engineer. Said structural engineer shall provide to the Managing Owner or Parcel B Owner his written approval verifying that no unsafe condition will be imposed upon the building, or other structure, to which the sign may be attached. If safe conditions cannot be guaranteed, the sign shall be immediately removed at the tenant's sole cost.
- C. All exposed parts of any sign or sign support subject to corrosion or other similar damage shall be protected in a manner acceptable to the Parcel B Owner with respect to the Parcel B Signage and the Managing Owner as to the Parcel A Signage.
- D. Any sign on which stains or rust appear, or which becomes bent, or which in any manner whatsoever is not maintained properly shall be promptly repaired. The Parcel B Owner with respect to the Parcel B Signage and the Managing Owner as to the Parcel A Signage may remove and store, at tenant's expense, any signs not maintained properly or not in accordance with this criteria pursuant to notification requirements and remedies available to the Parties contained in the CC&R's and/or ECC&R's.

IX. Notices:

All notices hereunder shall be in writing and sent by United States certified or registered mail, postage prepaid, or by overnight delivery service providing proof of receipt addressed to the following:

Managing Owner

Central Pacific Development Company
3220 Northrop Avenue
Sacramento, CA 95864
Attn: Pete Navarra

Parcel B Owner

Bencor/Saratoga L.P., a California Limited Partnership
90 S. Cascade Avenue, Suite 330
Colorado Springs, CO 80903
Attn: Tim MacDonald

Parcel B Tenant

Walgreen Co.
104 Wilmot Rd.
Deerfield, IL, 60015,
Attn: Real Estate Law Department, MS #1420, Re: Store No. 12840

Serrano

Serrano Associates, LLC
4525 Serrano Parkway
El Dorado Hills, CA 95762
Attn: James E. Parker

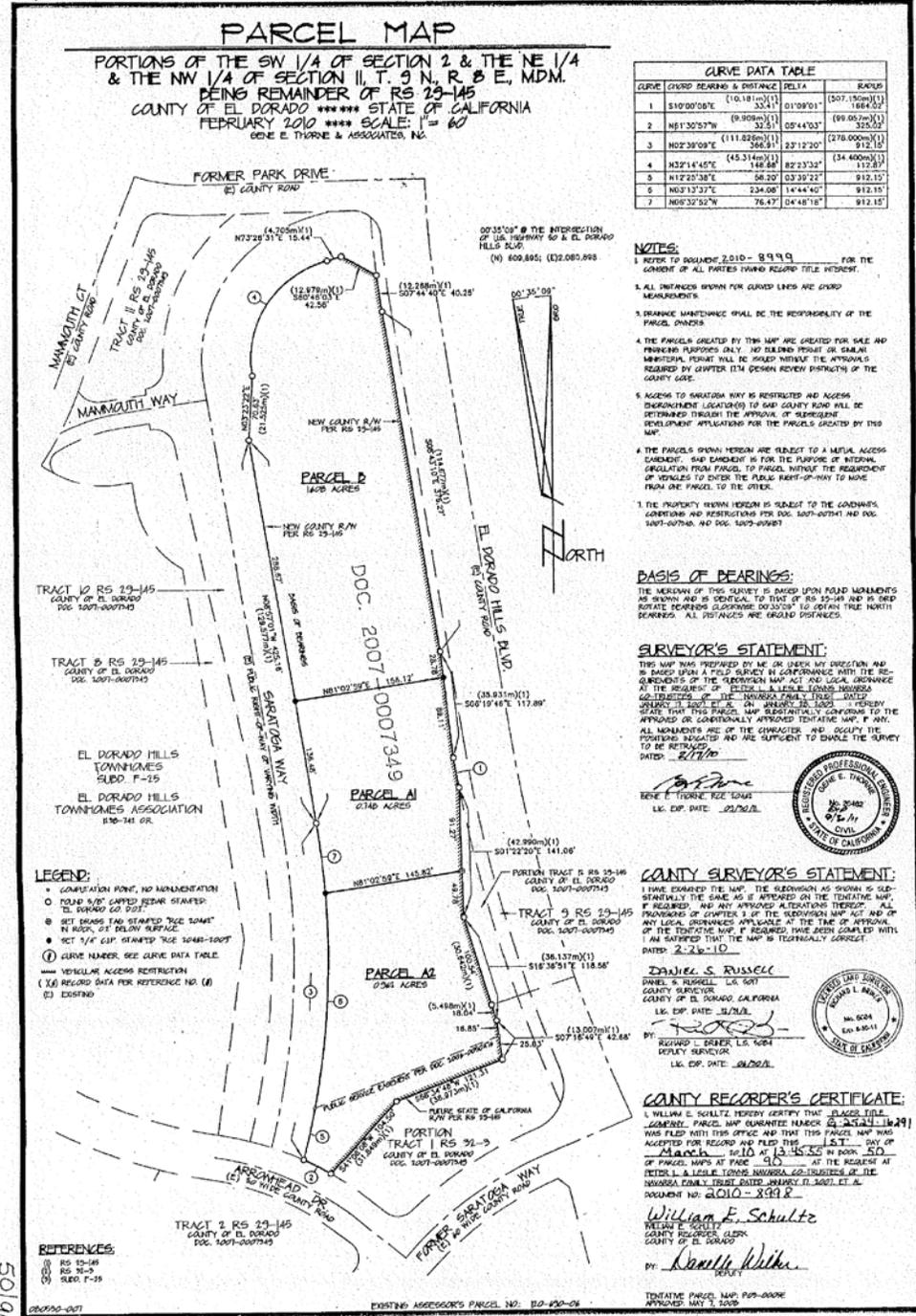
Exhibit List

Exhibit A	-	Property (Parcel A & Parcel B)
Exhibit B	-	Free-Standing Multi-Tenant Monument Sign
Exhibit C	-	Site Wall Details
Exhibit D	-	Parcel B Tenant Panel Approved by Serrano
Exhibit E	-	Tenant Signage
Exhibit F	-	Tenant Logo
Exhibit G	-	Pedestrian Signage
Exhibit H	-	Parcel B Primary Identification Sign
Exhibit I	-	Walgreens Shop Drawing
Exhibit J	-	Pharmacy Shop Drawing
Exhibit K	-	Drive-Thru Shop Drawing
Exhibit L	-	Exit Shop Drawing
Exhibit M	-	Plan for Directional & Site Signage for Serrano Approval

EXHIBIT A
PROPERTY
(Parcel A & Parcel B)

06/05

06/05



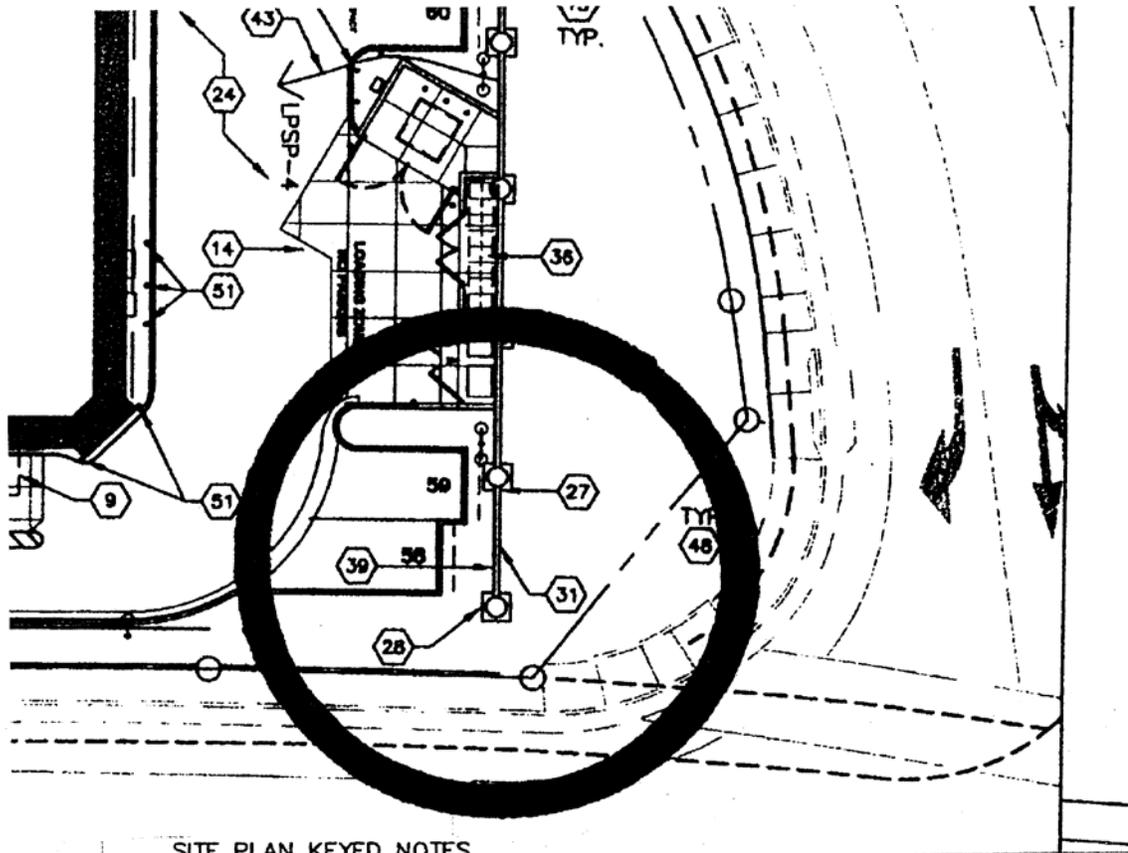
06/05

06/05

EXHIBIT B

FREE-STANDING MULTI-TENANT MONUMENT SIGN

(See Attached)



SITE PLAN KEYED NOTES

- | | |
|--|---|
| <p>(24) ASPHALT PAVING.</p> <p>(25) YELLOW PAINT STRIPING (TYPICAL). BLACK OUTLINE ON CONCRETE PAVEMENT.</p> <p>(26) ACCESSIBLE PARKING DESIGN TO MEET ALL GOVERNING CODES. QUANTITY AS REQUIRED BY A.D.A.-ACCESSIBLE PARKING SPACES AND THEIR ACCESS AISLES SHALL BE 1 1/2% (2% MAX.) SLOPE IN ALL DIRECTIONS.</p> <p>(27) TOP OF SIGN FOUNDATION TO BE AT TOP OF PARKING LOT HEIGHT (MIN.).</p> <p>(28) PLACE SIGN WITH MINIMUM SETBACKS. COORDINATE WITH ZONING AND DIMENSION ACCORDINGLY.</p> <p>(29) N/A</p> <p>(30) N/A</p> <p>(31) MONUMENT SIGN. CONCRETE BASE FOR SIGN TO BE INSTALLED AS SOON AS POSSIBLE. ORIENT PERPENDICULAR TO MAJOR TRAFFIC STREET. SEE SHEET A0.3.</p> <p>(32) N/A</p> <p>(33) N/A</p> | <p>(34) RETURN SIDEWALK TO EXIT DOOR. (ADA ACCESSIBLE EXIT ROUTE REQUIRED).</p> <p>(35) N/A</p> <p>(36) TOTE ENCLOSURE.</p> <p>(37) DETECTABLE WARNING SURFACE, 36" DEEP OR FULL LENGTH OF RAMP. SEE CIVIL DRAWINGS.</p> <p>(38) STORM CATCH BASINS AND GRATED MANHOLES TO BE 40' MINIMUM AWAY FROM 2% ACCESSIBLE PARKING ZONE AND ACCESSIBLE ROUTES. SEE CIVIL DRAWINGS</p> <p>(39) LIGHT POLES, LANDSCAPINGS, AND OTHER SITE EQUIPMENT SHALL NOT OBSCURE SIGHT LINES TO SIGNAGE.</p> <p>(40) SEVEN-BIKE TUBULAR STEEL BIKE RACK. ALLOW FOR 5' ACCESS AISLE BEYOND PARKING AREA, BOTH SIDES OF RACK. SEE CIVIL DRAWINGS</p> <p>(41) ISLAND WITH 6" CURB.</p> <p>(42) 7'-3" X 8'-8" MIN. ALLOWABLE AREA FOR SEVEN-BIKE PARKING.</p> <p>(43) SEE SITE ELECTRICAL "ES" AND ELECTRICAL "E" DRAWINGS FOR CONTINUATION.</p> <p>(44) METAL COLUMN AND TRELIS. SEE SHEET A0.3.</p> |
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Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

**EXHIBIT C:
SITE WALL DETAILS**

Note: This Exhibit C is provided as an illustration only.
Final materials, colors and dimensions of the site wall
and free standing monument sign are subject to
separate approval by Serrano.

EXHIBIT D

PARCEL B TENANT PANEL APPROVED BY SERRANO

(See Attached)

SERRANO ASSOCIATES, LLC
Non-Residential Submittal Form
For Architectural Control Committee ("Committee") Review

Project: Walgreen's Store
Contact: Tim MacDonald
Address: 90 S Cascade Ave, Ste. 330
City & Zip: Colorado Springs, CO 80903
Phone #: 719-447-9902

Office Use:
Date Received: 5/13/11
Date Reviewed: 5/17/11

<input type="checkbox"/> Conceptual Plan Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit 2 sets of hard line drawings, including: (No plan size larger than 24"x36")
	<ul style="list-style-type: none"> ➤ Grading / Site Plan ➤ Elevations (4 sides) ➤ Floor Plans

<input type="checkbox"/> Final Plan Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit (2) half size scalable sets of full construction drawings, including:
	<ul style="list-style-type: none"> ➤ Grading / Site Plan ➤ Elevations (4 sides) ➤ Floor Plans ➤ Electrical and Mechanical Plans for the site and building ➤ Full construction detail pages ➤ Dimensioned details (to scale) of all exterior elements

<input type="checkbox"/> Modification to Final Plan or As-built Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit (2) half size scalable sets of elevation and floor plans showing the modification. Indicate the change in a highlighted cloud.
	<p>Serrano ACC APPROVED</p> <p>Approved with conditions, as noted on this plan and in your letter.</p>

<input type="checkbox"/> Landscape Review <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit 2 sets of landscape and irrigation plans, including:
	<ul style="list-style-type: none"> ➤ Grade contours (existing and proposed) ➤ All plant material, patios, walkways, shade structures, trellises, fountains, statues, rocks, and landscape lighting ➤ Retaining walls, fence locations, and gates
	By <u>5-17-11 AH</u>

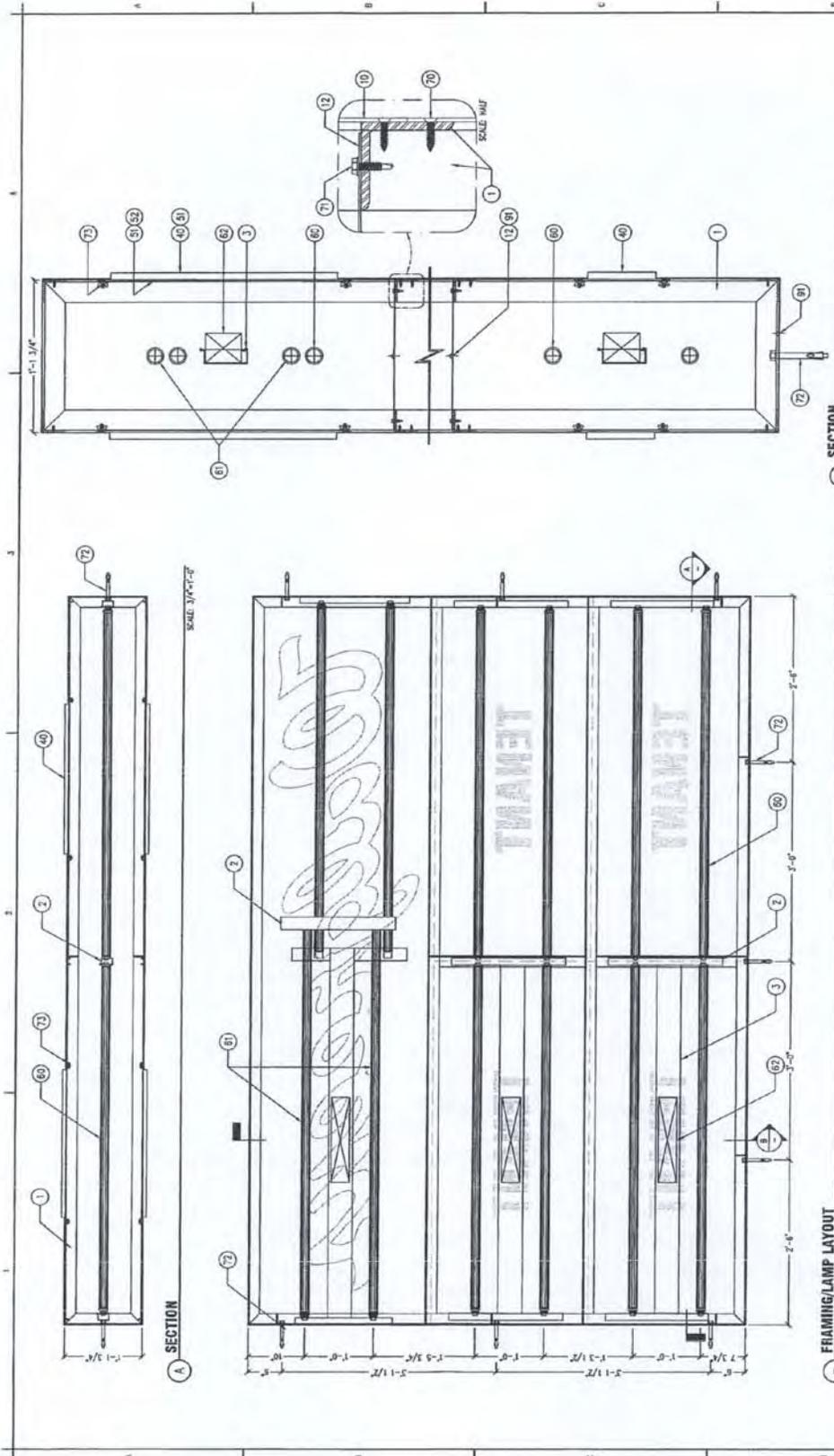
<input checked="" type="checkbox"/> Signage <input checked="" type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification <i>monument sign shop drop.</i>	Submit 2 sets of plans for signage review, including:
	<ul style="list-style-type: none"> ➤ Site plan showing signage location(s) if applicable. ➤ Elevations, if applicable, showing all signage locations identifying tenant name, logo(s), service doors, address identification, etc. ➤ Dimensioned signage details (to scale) including colors and materials call outs.

<input type="checkbox"/> Miscellaneous Exterior Changes <input type="checkbox"/> 1 st Review <input type="checkbox"/> Resubmittal <input type="checkbox"/> Revision / Modification	Submit 2 sets of plans for miscellaneous items review, such as:
	<ul style="list-style-type: none"> ➤ Awning, seat walls, wrought iron, fountain, shade trellis, etc. ➤ Other: _____

<input type="checkbox"/> Inspection Request	<input type="checkbox"/> Mid-construction (optional) <input type="checkbox"/> Final (mandatory)
--	---

The Committee meets on an as-needed basis. Once the Committee has reviewed the submittal, the contact shown above will be notified in writing within three (3) weeks of the meeting date. For more information, please contact Andrea Howard at (916) 939-4060

REV 10-5-10



icon
 1418 KRAMERTST RD.
 ELK GROVE VILLAGE
 ILLINOIS 60007
 SIGN ID: 1 -

Walgreens

LOCATION: EL DORADO HILLS, CA
 LOCATION No.: 12840
 REQUEST No.: 98818
 DRAWN BY: ALEY HANSEVOCH
 DATE DRAWN: 1/07/2011
 DRAWING SCALE: AS NOTED

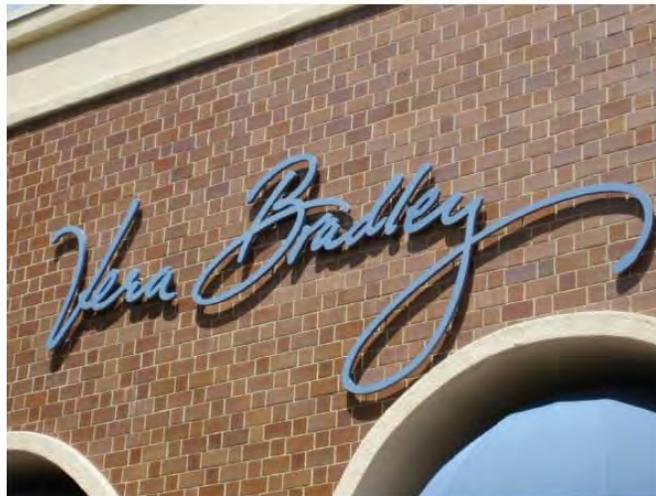
CHECKED BY: R. BAUREZ
 DATE CHECKED: 3/10/2011
 FILE: WAL3949F (SHEET 23)

SCALE: 3/4"=1'-0"
 7'-3" X 11'-0" X 12'-0" OAH DIF MONUMENT
 W/ TENANT PANELS

CONTRACTOR: [REDACTED]
 ARCHITECT: [REDACTED]
 ENGINEER: [REDACTED]
 SIGN ID: 1 -

Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

**EXHIBIT E:
PARCEL A TENANT SIGNAGE**



Note that all letters are fabricated and back lit but have different and interesting letter thickness.



Note the Sunglass Hut store front is 20' wide and covers 70% of store front width and the Aveda store front is 40' wide and covers 50% of storefront width.



Note different styles of sign lighting.



The above logo sign is unacceptable, see Exhibit F for acceptable logo signs.



Note creative use of vertical signage in combination with the horizontal fabricated backlit lettering.



Note two very different style signs, both high quality state of the art signage.

All the sign styles in Exhibit E are conditionally acceptable.

The above five pages comprise Exhibit 4. This is the end of Exhibit E.

Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

**EXHIBIT F:
PARCEL A LOGO SIGNS**



Note raised lettering and various materials are used. In addition the lettering varies in the distance from the main sign face. Also note that letters are back lit.

This page comprises Exhibit F.

This is the end of Exhibit F.

Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

**EXHIBIT G:
PEDESTRIAN SIGNAGE**



All tenant spaces shall have pedestrian signs that are vertical to the store fronts. See above pedestrian scale signage. The above signs are shown here only to illustrate the acceptable scale and size of the pedestrian signs. More detailed and elaborate metal scroll work than seen above is encouraged and will be required.

The above page comprises Exhibit G.

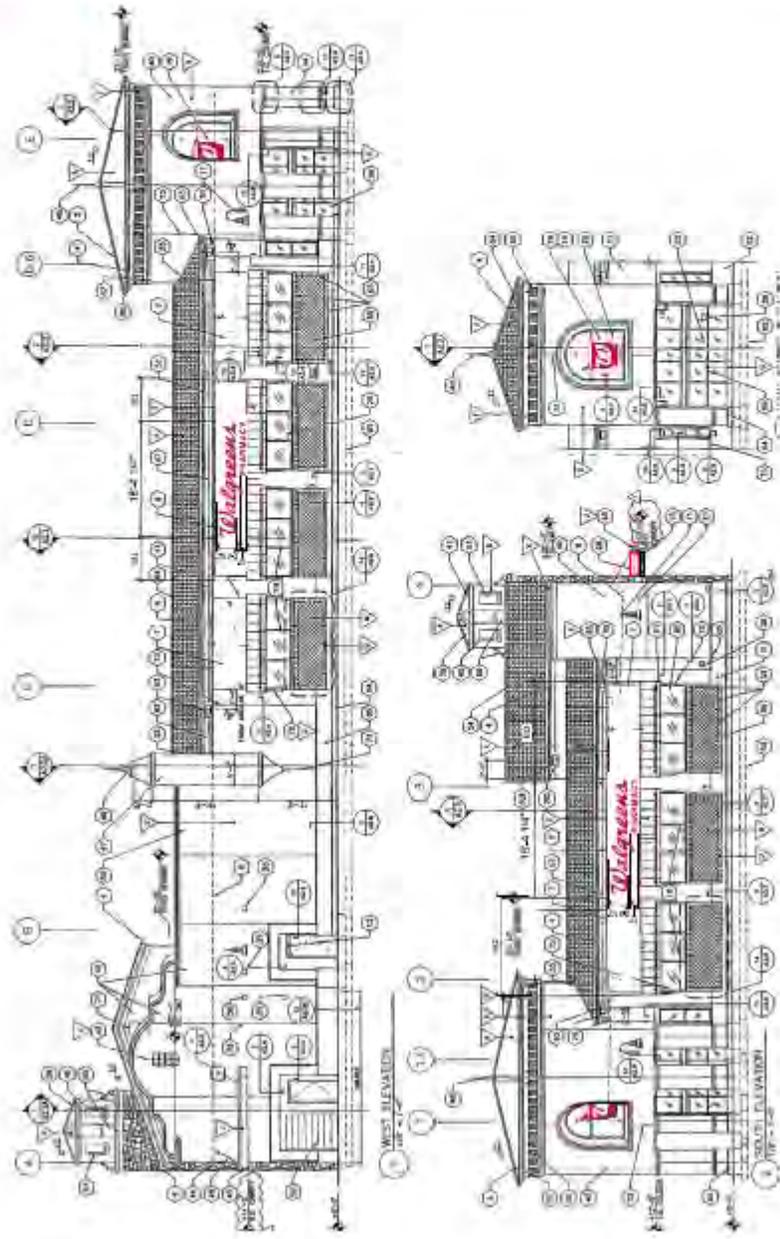
This page is the end of Exhibit G.

EXHIBIT H

PARCEL B PRIMARY IDENTIFICATION SIGN

(See Attached)

Walgreens	
ADDRESS: CITY/STATE: ZIP:	8322 Lakeside Way El Dorado Hills, CA 95761
PROJECT #:	821
ISSUANCE #:	12840
SCALE:	1/18" = 1'-0"
DATE:	04/11/11
BY:	BY
DATE:	1
Approved Aspects: Walgreens Mechanical/Structural Title: 1718 - 16 - 1000	
DATE:	04/11/11
NO. 1:	04/08/11
NO. 2:	04/08/11
NO. 3:	04/08/11
NO. 4:	04/08/11
NO. 5:	04/08/11
NO. 6:	04/08/11
NO. 7:	04/08/11
SECTION CUTS: <input type="checkbox"/> SECTION 1 <input type="checkbox"/> SECTION 2 <input type="checkbox"/> SECTION 3	
Notes: 1. See all the notes on sheets 1718-16-1000-1 to 1718-16-1000-6 for details and general conditions.	
The Icon Companies icon ims Architecture	





ADDRESS: 1123 Saratoga Way
CITY/STATE: El Dorado Hills, CA

PROJECT #: 981

LOCATION #: 12840

SCALE: AS NOTED

DATE: 3/1

FIG. #: 2

CONTRACTOR: Walgreens
PROJECT: 1123 Saratoga Way, El Dorado Hills, CA

DATE: 3/1/11	REV: 1	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA
DATE: 3/1/11	REV: 2	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA
DATE: 3/1/11	REV: 3	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA
DATE: 3/1/11	REV: 4	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA
DATE: 3/1/11	REV: 5	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA
DATE: 3/1/11	REV: 6	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA
DATE: 3/1/11	REV: 7	DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NOTES:

1. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

2. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

3. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

4. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

5. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

REVISIONS:

NO. 1: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 2: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 3: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 4: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 5: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 6: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 7: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

PROJECT INFORMATION:

PROJECT NAME: 1123 Saratoga Way, El Dorado Hills, CA

PROJECT NUMBER: 981

LOCATION: 1123 Saratoga Way, El Dorado Hills, CA

SCALE: AS NOTED

DATE: 3/1/11

FIG. #: 2

CONTRACTOR: Walgreens

PROJECT: 1123 Saratoga Way, El Dorado Hills, CA

NOTES:

1. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

2. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

3. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

4. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

5. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

REVISIONS:

NO. 1: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 2: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 3: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 4: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 5: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 6: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

NO. 7: DATE: 3/1/11 BY: [Redacted] DESCRIPTION: 1123 Saratoga Way, El Dorado Hills, CA

PROJECT INFORMATION:

PROJECT NAME: 1123 Saratoga Way, El Dorado Hills, CA

PROJECT NUMBER: 981

LOCATION: 1123 Saratoga Way, El Dorado Hills, CA

SCALE: AS NOTED

DATE: 3/1/11

FIG. #: 2

CONTRACTOR: Walgreens

PROJECT: 1123 Saratoga Way, El Dorado Hills, CA

NOTES:

1. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

2. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

3. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

4. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

5. SEE ARCHITECT'S DRAWINGS FOR DETAILS.

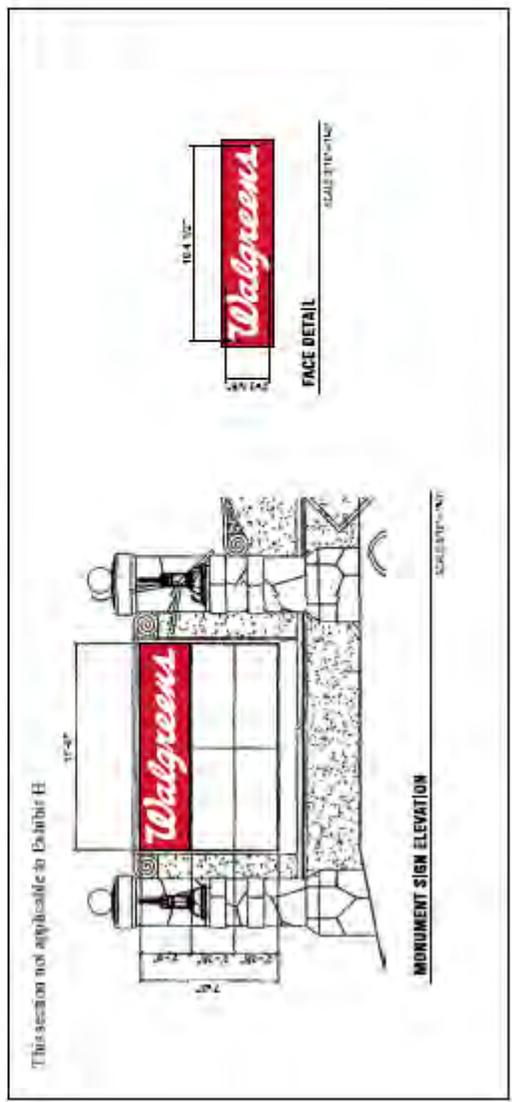
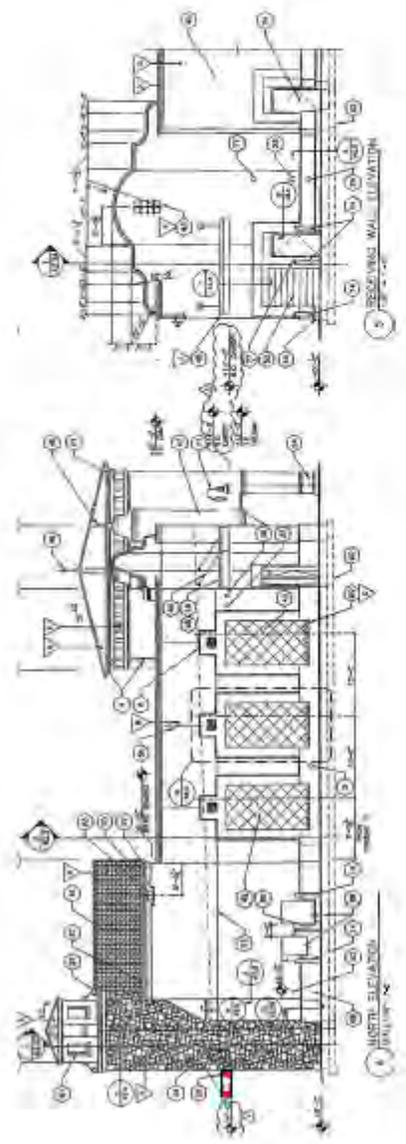


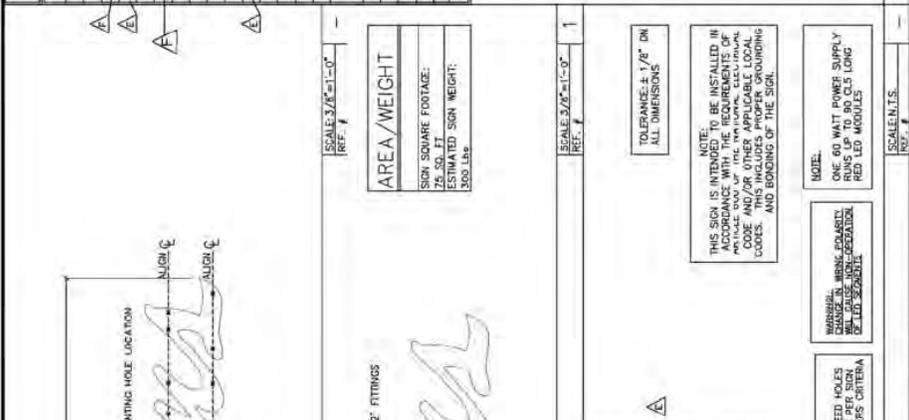
EXHIBIT I

WALGREENS SHOP DRAWING

(See Attached)

BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION
1	36	2" X 1-1/2" X 3/16" #861 ALUM. CHANNEL MOUNTING CLIPS
2	75 SQ FT	.080 ALUM. LETTER BACKING FASTENED TO ALUM. FILLER
3	118 FT.	.040 ALUMINUM DARK BRONZE FRODOAT - (L) WRAPPED
9	147	LED SLOAN #CL5-M8 RED MODULES-74"
10	75 SQ FT	3/16" THICK #293 RED ACRYLIC FACE
11	118 FT.	1" BRONZE TRM CAP
12	AS REQD.	PAINT INTERIOR FLAT REFLECTIVE WHITE
13	AS REQD.	WELD-ON 40 & RESIN BAND
16	AS REQD.	4 X 4 X 1-1/2 ELECTRICAL JUNCTION BOX
18	2	60 WATT, 12V POWER SUPPLY (SLOAN# 701501-MP)
21	AS REQD.	PLATE (2) 20#SS. ANCHOR BOLT (SEE SHEET) FOR OPTIONS
22	36	1/4-20 RIVET W/ 3/8-16 HEX HEAD BOLTS AND LOCK WASHER
23	36	1/4-20 RIVET W/ 3/8-16 HEX HEAD BOLTS AND LOCK WASHER
29	AS REQD.	RIVET, ALUMINUM #4X, 1/8" X 1/4"
31	AS REQD.	U.L. LISTED CONDUIT AS PER LOCAL CODES
32	AS REQD.	PRE-DRILLED 5/16" DRAIN HOLE W/ LIGHT BAFFLE (1/4")
33	AS REQD.	LOCATION OF ELECTRICAL & U.L. LABELS
34	AS REQD.	U.L. WEATHERPROOF JOCKEY OUTLET BOX #13-71-LM
35	AS REQD.	IDEAL #M1-M2 U.L. LISTED WEATHERPROOF WIRE CONNECTOR
36	AS REQD.	#8 SS FLAT HEAD SCREWS
37	AS REQD.	IDEAL #50-146 PRE-INSULATED CRIMP CONNECTOR, UL
38	AS REQD.	UL 2 X 4 DAILY STEEL LAUNDRY BOX
43	AS REQD.	1/2" LOW DENSE WHITE (REGAL #191) W/ 1/2" LOCK NUT (REGAL#01)



BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION
1	36	2" X 1-1/2" X 3/16" #861 ALUM. CHANNEL MOUNTING CLIPS
2	75 SQ FT	.080 ALUM. LETTER BACKING FASTENED TO ALUM. FILLER
3	118 FT.	.040 ALUMINUM DARK BRONZE FRODOAT - (L) WRAPPED
9	147	LED SLOAN #CL5-M8 RED MODULES-74"
10	75 SQ FT	3/16" THICK #293 RED ACRYLIC FACE
11	118 FT.	1" BRONZE TRM CAP
12	AS REQD.	PAINT INTERIOR FLAT REFLECTIVE WHITE
13	AS REQD.	WELD-ON 40 & RESIN BAND
16	AS REQD.	4 X 4 X 1-1/2 ELECTRICAL JUNCTION BOX
18	2	60 WATT, 12V POWER SUPPLY (SLOAN# 701501-MP)
21	AS REQD.	PLATE (2) 20#SS. ANCHOR BOLT (SEE SHEET) FOR OPTIONS
22	36	1/4-20 RIVET W/ 3/8-16 HEX HEAD BOLTS AND LOCK WASHER
23	36	1/4-20 RIVET W/ 3/8-16 HEX HEAD BOLTS AND LOCK WASHER
29	AS REQD.	RIVET, ALUMINUM #4X, 1/8" X 1/4"
31	AS REQD.	U.L. LISTED CONDUIT AS PER LOCAL CODES
32	AS REQD.	PRE-DRILLED 5/16" DRAIN HOLE W/ LIGHT BAFFLE (1/4")
33	AS REQD.	LOCATION OF ELECTRICAL & U.L. LABELS
34	AS REQD.	U.L. WEATHERPROOF JOCKEY OUTLET BOX #13-71-LM
35	AS REQD.	IDEAL #M1-M2 U.L. LISTED WEATHERPROOF WIRE CONNECTOR
36	AS REQD.	#8 SS FLAT HEAD SCREWS
37	AS REQD.	IDEAL #50-146 PRE-INSULATED CRIMP CONNECTOR, UL
38	AS REQD.	UL 2 X 4 DAILY STEEL LAUNDRY BOX
43	AS REQD.	1/2" LOW DENSE WHITE (REGAL #191) W/ 1/2" LOCK NUT (REGAL#01)

LED CHART & NOTES

LED LIGHTS	700	800	900	10	13	14	15	16	17	TOTAL
# OF LED	36	15	14	19	10	13	13	13	14	147
AC-DC POWER SUPPLY	1160WATT 12V P.S.		1160WATT 12V P.S.		1160WATT 12V P.S.		1160WATT 12V P.S.		2 X 60 WATTS POWER SUPPLY	
AMPS LOAD	1.0 AMP		1.0 AMP		1.0 AMP		1.0 AMP		2.0 AMPS	
REMARKS	1 X 60 AMP BRACKET									

120 VOLTS ELECTRICAL SUPPLY

THIS SIGN TO BEAR THIS MARK

USE WHITE SIGNAGE TO CONTRAST LIGHT LEAKS

SIGN INTERIOR TO BE PAINTED FLAT ENAMEL WHITE FOR MAXIMUM REFLECTIVITY

NOTE: ELECTRICAL FEED HOLES SUPPLY REFLECTS SINGLE SIGN INSTALLATION ONLY MANUFACTURERS CRITERIA

NOTE: ELECTRICAL FEED HOLES SUPPLY REFLECTS SINGLE SIGN INSTALLATION ONLY MANUFACTURERS CRITERIA

NOTE: THIS SIGN IS INTENDED TO BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR OTHER APPLICABLE LOCAL CODES AND/OR BONDING OF THE SIGN.

NOTE: THESE DRAWINGS ARE THE PROPERTY OF ICON IDENTITY SOLUTIONS. THEY ARE NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF ICON IDENTITY SOLUTIONS. HOWEVER THEY CANNOT BE USED FOR THE MANUFACTURE OR INSTALLATION OF SIGNAGE BY ANY COMPANY OTHER THAN ICON IDENTITY SOLUTIONS. USE OF THESE DRAWINGS FOR ANY PURPOSE OTHER THAN REFERENCED IS STRICTLY PROHIBITED BY ICON IDENTITY SOLUTIONS.

REVISIONS

No.	DATE:	BY:	DESCRIPTION
1	10/12/10	KR	UPDATED LED LAYOUT TO SHOW SLIGHT CONVERSION ADDED POWER SUPPLY CONTROL PANEL DETAIL
2	06/08/11	RE	ADDED HEIGHT DIMENSION TO LETTERS A, L, AND S ADDED CALLOUT FOR COLOR AS DARK BRONZE

NOTES: THESE DRAWINGS ARE THE PROPERTY OF ICON IDENTITY SOLUTIONS. THEY ARE NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF ICON IDENTITY SOLUTIONS. HOWEVER THEY CANNOT BE USED FOR THE MANUFACTURE OR INSTALLATION OF SIGNAGE BY ANY COMPANY OTHER THAN ICON IDENTITY SOLUTIONS. USE OF THESE DRAWINGS FOR ANY PURPOSE OTHER THAN REFERENCED IS STRICTLY PROHIBITED BY ICON IDENTITY SOLUTIONS.

JOB

APPROVED BY / DATE	ENR. MR.:
DRAWN: ABP	DPI. MR.:
DATE: 03/07/08	PRJ. MR.:
SCALE: AS NOTED	SMS MR.:
FILE: WAL2562F	SHEET # 51 of 5

PROJECT: WALGREEN'S (SLOAN LED)

LOCATION: VARIOUS

SCALE: 1/8" = 1'-0"

TITLE: 18'-4 1/4" ILLUM. SCRIPT LETTER SET

1418 ELMBURST RD.
TEX SPRING VILLAGE
ILLINOIS 60087

icon
Identity Solutions

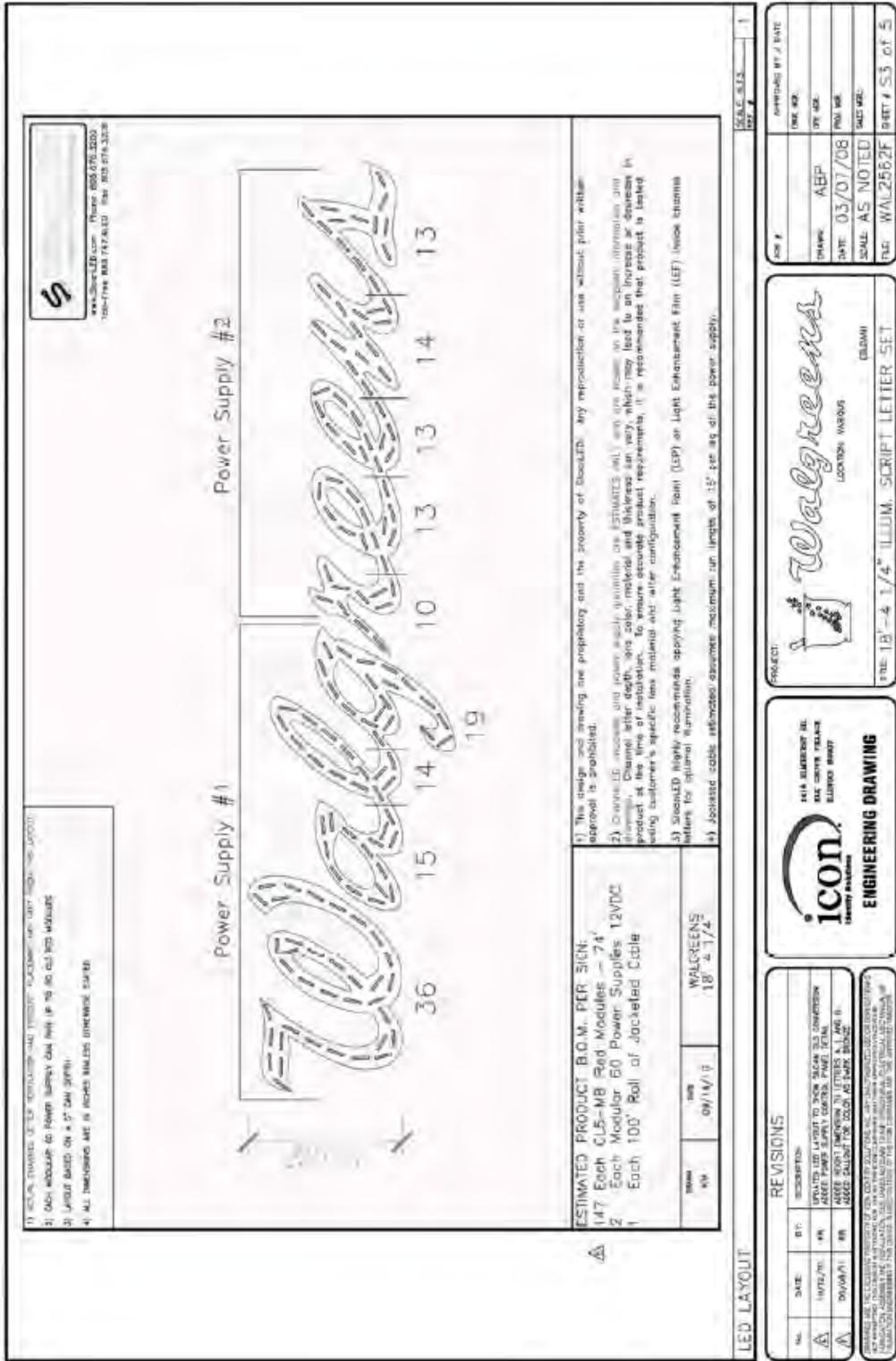
ENGINEERING DRAWING

REVISIONS

No.	DATE:	BY:	DESCRIPTION
1	10/12/10	KR	UPDATED LED LAYOUT TO SHOW SLIGHT CONVERSION ADDED POWER SUPPLY CONTROL PANEL DETAIL
2	06/08/11	RE	ADDED HEIGHT DIMENSION TO LETTERS A, L, AND S ADDED CALLOUT FOR COLOR AS DARK BRONZE

NOTES: THESE DRAWINGS ARE THE PROPERTY OF ICON IDENTITY SOLUTIONS. THEY ARE NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF ICON IDENTITY SOLUTIONS. HOWEVER THEY CANNOT BE USED FOR THE MANUFACTURE OR INSTALLATION OF SIGNAGE BY ANY COMPANY OTHER THAN ICON IDENTITY SOLUTIONS. USE OF THESE DRAWINGS FOR ANY PURPOSE OTHER THAN REFERENCED IS STRICTLY PROHIBITED BY ICON IDENTITY SOLUTIONS.

Received by Serrano ACC 6-29-11



www.SignLab.com Phone: 603.876.3200
 100 River St. #1414100 Nashua, NH 03063

- 1) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
- 2) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
- 3) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

ESTIMATED PRODUCT B.O.M. PER SIGN:
 1.47 Each CL5-MB Red. Modules - 7ft
 2 Each Modular 60 Power Supplies 12VDC
 1 Each 100' Roll of Jacketed Cable

- 1) This design and drawing are the property of SignLab. Any reproduction or use without prior written approval is prohibited.
- 2) Colors, LED, materials and power supply quantities are ESTIMATES only and are subject to the supplier's information and drawings. Channel letter depth, size, color, material and thickness can vary, which may lead to an increase or decrease in product at the time of installation. To ensure accurate product requirements, it is recommended that product is tested using customer's specific test material and after configuration.
- 3) Suggested highly recommended applying Light Enhancement Film (LEF) or Light Enhancement Film (LEF) (look through letters for optimal appearance).
- 4) Jacketed cable recommended diameter maximum run length of 15' per sq ft of the power supply.

LED LAYOUT SCALE: 3/16" = 1"

NO.	DATE	BY	DESCRIPTION
1	09/14/10	JP	UPDATES LED LAYOUT TO SHOW BEGAN TO CONSTRUCTION MARKET PAPER SUPPLY CONTROL PANEL DETAIL
2	09/14/10	JP	ADDED BEGON TO CONSTRUCTION MARKET PAPER SUPPLY CONTROL PANEL DETAIL

REVISIONS

DATE: 03/07/08
 DRAWN BY: ABB
 CHECKED BY: ABB
 SCALE: AS NOTED
 SHEET # 53 OF 53

PROJECT: **Wallyheena**
 LOCATION: WADSWORTH
 CLIENT: GSDMM

1/8" MINIMUM LINE WEIGHT
 1/8" MINIMUM LETTER HEIGHT
 1/8" MINIMUM LETTER SPACING

icon
 ENGINEERING DRAWING

EXHIBIT J
PHARMACY SHOP DRAWING

(See Attached)

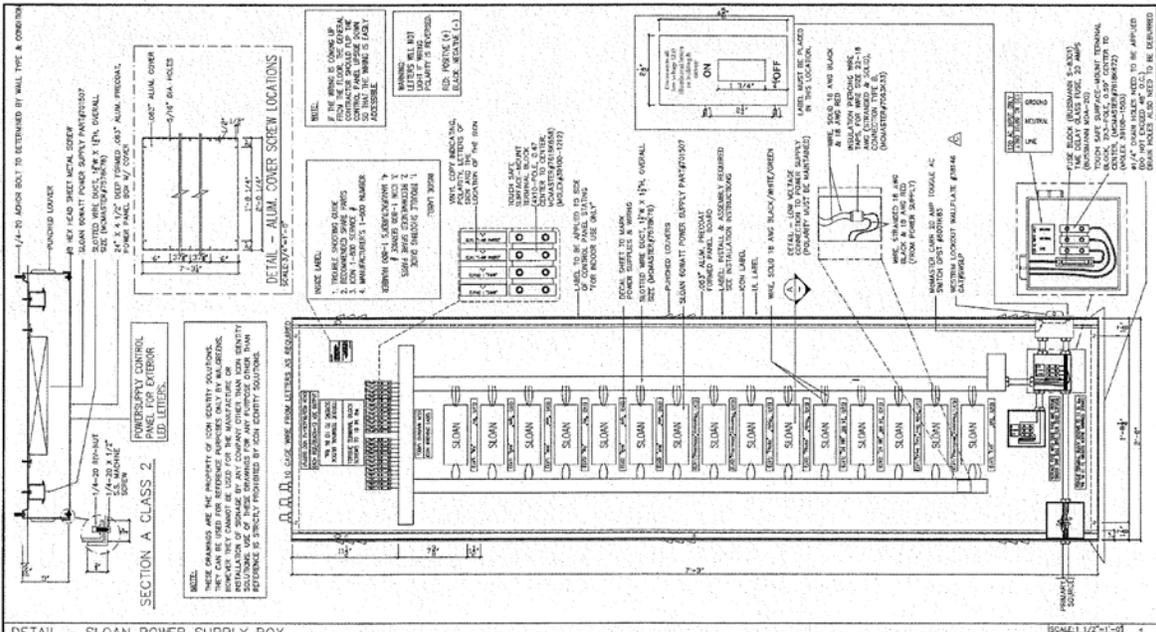
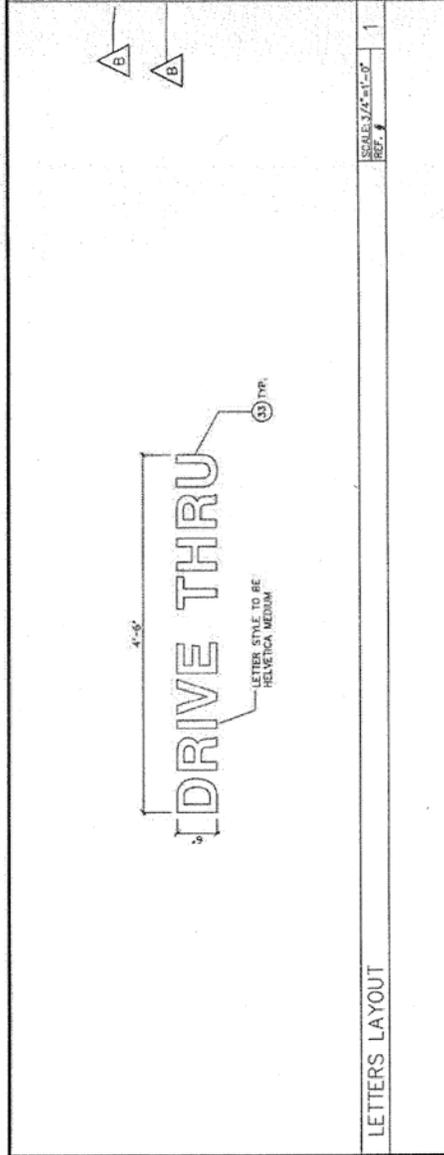


EXHIBIT K
DRIVE-THRU SHOP DRAWING

(See Attached)

BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION	SPECS.
2	AS REQD.	050 ALUM. LETTER BACKING FASTENED TO ALUM. FILLER	3003
3	AS REQD.	040" ALUMINUM BRONZE PRE-COAT - (L) WRAPPED	
8	59	SLOAN Y-SERIES RED MODULES - 13"	
10	AS REQD.	3/16" THICK #2033 RED ACRYLIC FACE	
11	AS REQD.	BRONZE TRIM CAP (1/8" X 3/4")	
12	AS REQD.	PAINT INTERIOR FLAT REFLECTIVE WHITE	
13	AS REQD.	WELD-ON 16 & RESIN BOND	
15	1	80 WATT, 12V POWER SUPPLY (SLOAN# 701507-MF)	
21	AS REQD.	AW#16, 2 CONDUCTOR, PVC JACKETED, NEC TYPE PLCS (100' ROLL)	
22	AS REQD.	1/4"-20 S.S. ANCHOR BOLT	
23	AS REQD.	1/4"-20 HEX HEAD BOLTS W/ NUT AND WASHER	
29	AS REQD.	PIVET, ALUMINUM #43, 1/8" x 1/4"	
31	AS REQD.	UL LISTED CONDUIT AS PER LOCAL CODES	
32	AS REQD.	PRE-DRILLED 1/8" DRAIN HOLE	
33	AS REQD.	LOCATIONS OF ELECTRICAL & VIL LABELS	
34	AS REQD.	TOUCH UP PAINT	
35	AS REQD.	WIRE NUT	
36	AS REQD.	#8 S.S. FLAT HEAD SCREWS	
37	AS REQD.	DEAL #30-146 PRE-INSULATED CRIMP CONNECTOR, UL	



LED LIGHTS	D R I V E T H R U					TOTAL		
# OF LED	5	5	2	4	5	5	4	38
AC-DC POWER SUPPLY	80 WATT, 12V POWER SUPPLY (RUNS UP TO 80 SEGMENTS)							1X60WATTS POWER SUPPLY
AMPS LOAD	1.0 AMP							1.0 AMP
CIRCUIT	1 X 20 AMP CIRCUIT							1-20 AMP CIRCUIT

AREA/WEIGHT
SIGN SQUARE FOOTAGE: 2.28 SQ. FT. SIGN WEIGHT: 11.28 LBS.

low voltage and power panel located in electrical room

NOTE: ELECTRICAL FEED HOLES SUPPLY REFLECTS SINGLE MANUFACTURERS CRITERIA

NOTE: SIGN SHOULD BEAR THIS MARK

120 VOLTS ELECTRICAL SUPPLY BEAR THIS MARK

USE WHITE BRASS TO CONCEAL LIGHT LEADS

Sign to be flush mounted to match master plan criteria

SIGN INTERIOR TO MATCH MASTER PLAN CRITERIA

MAXIMUM REFLECTIVITY

WARRANTY: 5 YEAR WARRANTY ON MATERIALS & LABOR

LED CHART, SIGN AREA & SIGN WEIGHT

REVISIONS
No. DATE BY DESCRIPTION
8 05/09/11 BR ADDED COLOR CALLOUT "DARK BRONZE"

WARNING: THE EXCLUSIVE PROPERTY OF ICON ELECTRIC SOLUTIONS INC. AND UNAUTHORIZED USE OR REPRODUCTION OF THIS DRAWING IS STRICTLY PROHIBITED. ANY REVISIONS TO THIS DRAWING MUST BE APPROVED BY THE ORIGINAL DESIGNER AND THE CLIENT. THE USER ASSUMES ALL LIABILITY FOR THE ACCURACY OF THE INFORMATION PROVIDED HEREIN.

PROJECT: WALGREEN

LOCATION: 12300

TITLE: 6" DRIVE THRU LED LETTERS

1418 BLAUGHER RD. ELK GROVE VILLAGE ILLINOIS 60007

icon ENGINEERING DRAWING

1418 BLAUGHER RD. ELK GROVE VILLAGE ILLINOIS 60007

1418 BLAUGHER RD. ELK GROVE VILLAGE ILLINOIS 60007

JOB #	77504	APPROVED BY / DATE	
REQUEST#	77504	ENR. WRL	
DRAWN	ABP/VH	OPR. WRL	
DATE	11/12/09	PROJ. WRL	
SCALE	AS NOTED	SALES WRL	
FILE	WAL3652B	SHEET #	S1 of 3

Received by Serrano ACC 7-6-11



- 1) ACTUAL CHANNEL LETTER POPULATION AND PRODUCT PLACEMENT MAY VARY FROM THIS LAYOUT
- 2) EACH MODULAR 60 POWER SUPPLY CAN RUN UP TO 90 VSERIES RED MODULES
- 3) LAYOUT BASED ON A 3" CAN DEPTH
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE STATED

D R I V E T H R U

5 5 2 4 5 4 4 5 5 4

ESTIMATED PRODUCT B.O.M. PER SIGN:
 39 Each VSeries Red Modules - 13'
 1 Each Modular 60 Power Supply 12VDC
 1 Each 100' Roll of Jacketed Cable

DRAWN	DATE	TITLE
JM	08/11/09	6" DRIVE THRU

- 1) This design and drawing are proprietary and the property of SloanLED. Any reproduction or use without prior written approval is prohibited.
- 2) ChannelLED modules and power supply quantities are ESTIMATES ONLY and are based on the supplied information and drawings. Channel letter depth, lens color, material and thickness can vary, which may lead to an increase or decrease in product at the time of installation. To ensure accurate product requirements, it is recommended that product is tested using customer's specific lens material and letter configuration.
- 3) SloanLED highly recommends applying Light Enhancement Point (LEP) or Light Enhancement Film (LEF) inside channel letters for optimal illumination.
- 4) Jacketed cable estimated assumes maximum run length of 15' per bag of the power supply.

SCALE, N.T.S.		APPROVED BY / DATE	
REF. #		ENR. MR.	
		OPR. MR.	
		PROJ. MR.	
		SALES MR.	

JOB #	77504
REQUEST#	ABP/VH
DRAWN	11/12/09
DATE	AS NOTED
SCALE	WAL3652B
FILE	SHEET # S2 of 3

PROJECT: **Walgreens**

MIAMI, FL
LOCATION: 12260

TITLE: 6" 'DRIVE THRU' LED LETTERS

ICON
Identity Solutions

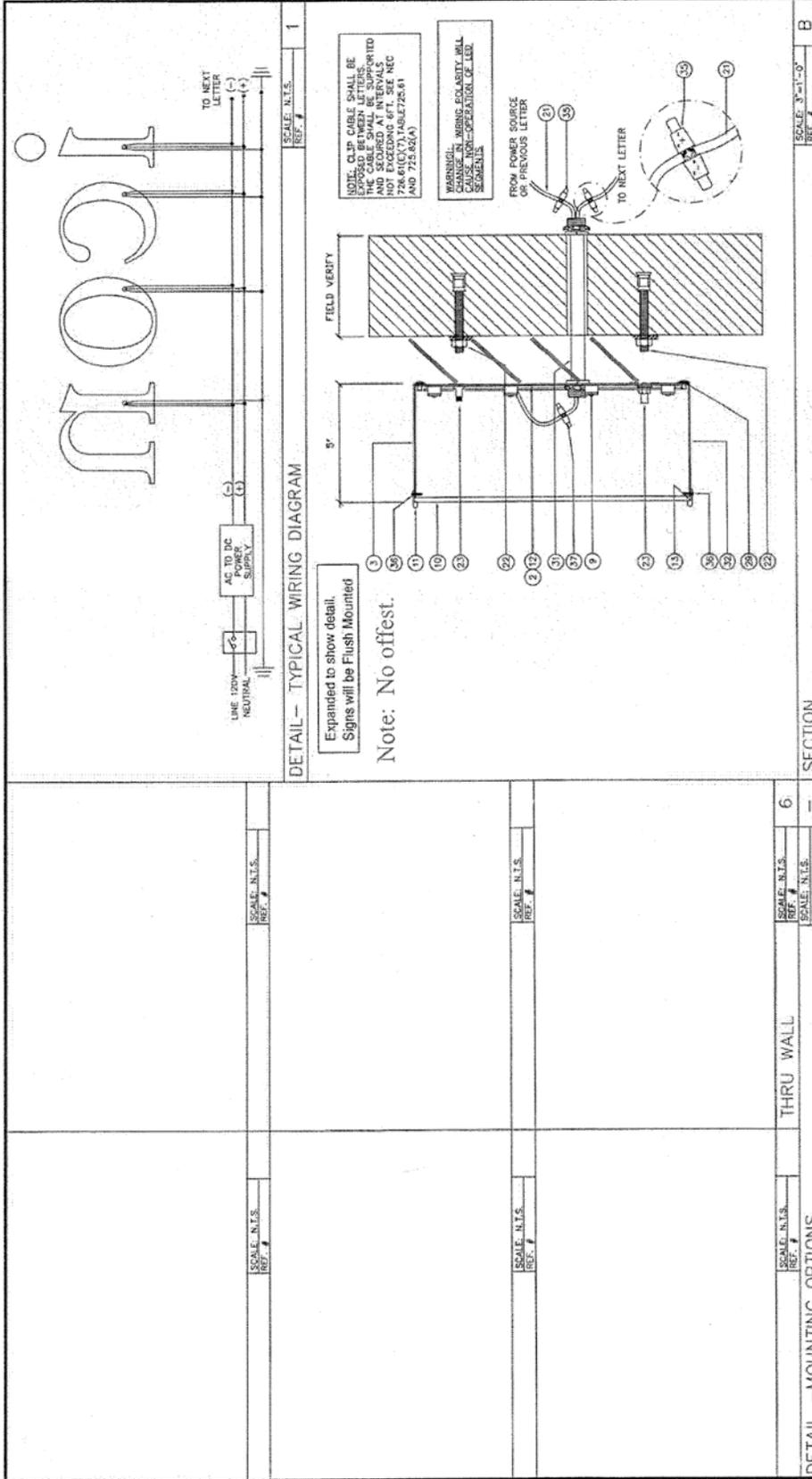
1418 BELMONT RD.
MIAMI GROVE VILLAGE
MIAMI, FL 33197

ENGINEERING DRAWING

REVISIONS	
No.	DESCRIPTION
B	ADDED COLOR CALLOUT "DARK BRONZE"

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LED LAYOUT



JOB #	APPROVED BY / DATE
REQUEST# 77504	DOR. MGR.
DRAWN: ABP/VH	OPR. MGR.
DATE: 11/12/09	FILE MGR.
SCALE: AS NOTED	SALES MGR.
FILE: WAL3652B	SHEET # S3 of 3

Walgreen's
 PROJECT: **DRIVE THRU LED LETTERS**
 MANUF. FL. LOCATION: 12260

icon
 Identity Solutions
 1418 ELMBURGH RD.
 BLK GROVE VILLAGE
 ILLINOIS 60007
ENGINEERING DRAWING

REVISIONS	
No.	DESCRIPTION
B	ADDED COLOR CALLOUT "DARK BRONZE"

DATE: 06/05/11 BY: RR

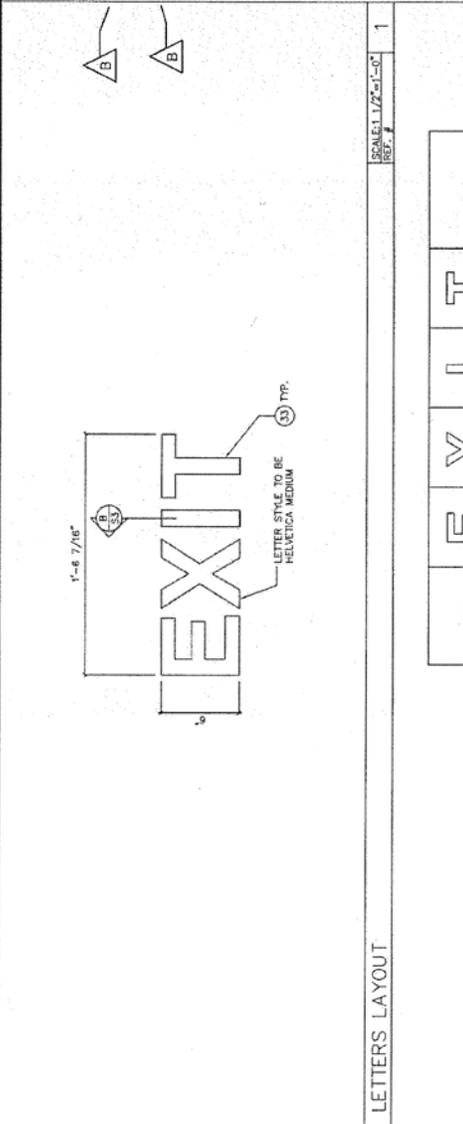
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EXHIBIT L
EXIT SHOP DRAWING

(See Attached)

BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION	SPECS.
2	AS REQD.	.050 ALUM. LETTER BACKING FASTENED TO ALUM. FILLER	3003
3	AS REQD.	.040 ALUMINUM BRONZE PRECOAT - (L) WRAPPED	
9	16	SLOAN V-SERIES RED MODULES-8"	
10	AS REQD.	3/16" THICK 42793 RED ACRYLIC FACE	
11	AS REQD.	TRIM CAP TO MATCH RETURNS (1/8" X 3/4")	
12	AS REQD.	PAINT INTERIOR FLAT REFLECTIVE WHITE	
13	AS REQD.	WELD-ON 18 & RESIN BOND	
19	1	60 WATT, 12V POWER SUPPLY (SLOAN# 701507-WP)	
21	AS REQD.	AWG#18 2 CONDUCTOR, PVC JACKETED, NEG TYPE PLOC (100' ROLL)	
22	AS REQD.	3/8"-16 S.S. ANCHOR BOLT	
23	AS REQD.	3/8"-16 RIVNUT W/ 1/4"-20 HEX HEAD BOLTS AND LOCK WASHER	
29	AS REQD.	RIVET, ALUMINUM #43, 1/8" X 1/4"	
31	AS REQD.	UL LISTED CONDUIT AS PER LOCAL CODES	
32	AS REQD.	PRE-DRILLED 5/16" DRAIN HOLE	
33	AS REQD.	LOCATION OF ELECTRICAL & ULL LABELS	
34	AS REQD.	TOUCH UP PAINT	
35	AS REQD.	WIRE NUT	
36	AS REQD.	PH S.S. PAN HEAD SCREWS	
37	AS REQD.	IDEAL #20-148 PRE-INSULATED CRIMP CONNECTOR, UL	



LETTERS LAYOUT

LED LIGHTS	E	X	I	T	TOTAL
# OF LED'S	5	5	2	4	16
POWER SUPPLY	60 WATT, 12V POWER SUPPLY (RUNS UP TO 90 SEGMENTS)				1 X 60 WATTS POWER SUPPLY
AMPS LOAD	1.0 AMP				1.0 AMP
CIRCUIT	1 X 20 AMP CIRCUIT				1 - 20 AMP CIRCUIT

SCALE: 1 1/2" = 1'-0"
REF. # 1

NOTE:
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MINIMUM: BRING POLARITY TO THE SIGN TO THE MANUFACTURER TO BE PAINTED FLAT ENAMEL WHITE FOR MAXIMUM REFLECTIVITY
USE WHITE SILICONE TO CONICAL LIGHT LENS

120 VOLTS ELECTRICAL SUPPLY
THIS SIGN TO BEAR THIS MARK

AREA/WEIGHT
SIGN SQUARE FOOTAGE: 1 X 60 WATTS POWER SUPPLY
ESTIMATED SIGN WEIGHT: 4 LBS

Sign to be flush mounted to match master plan criteria
low voltage and power panel located in electrical room

NOTE: ELECTRICAL FEED HOLES & FASTENERS PER SIGN MANUFACTURERS CRITERIA

NOTE: ELECTRICAL FEED HOLES & FASTENERS PER SIGN MANUFACTURERS CRITERIA

SCALE: N.T.S.
REF. #

LED CHART, SIGN AREA & SIGN WEIGHT

No.	DATE:	BY:	DESCRIPTION
B	06/08/11	RR	ADDED CALLOUT COLOR TO BE "DARK BROZE PRECOAT"

REVISIONS

FOR MORE INFORMATION CONTACT THE PROJECT MANAGER OR THE PROJECT ENGINEER. THE PROJECT ENGINEER IS THE AUTHORITY FOR ANY CHANGES TO THE DRAWINGS. THE PROJECT ENGINEER IS THE AUTHORITY FOR ANY CHANGES TO THE DRAWINGS. THE PROJECT ENGINEER IS THE AUTHORITY FOR ANY CHANGES TO THE DRAWINGS.

JOB #	77504	APPROVED BY / DATE
REQUEST #	ABP/VH	DMR. MR.
DRAWN	11/12/09	OPR. MR.
DATE	AS NOTED	PROJ. MR.
SCALE	WAL3651B	SALS. MR.
FILE	S1 of 3	

PROJECT: WALGREENS
M/JAM, FL
LOCATION: 12280

TITLE: 6" EXIT LED LETTERS

1418 BLUMENTH ID.
EIA GROVS VILLAGE
ILLINOIS 60007

Icon
Identity Solutions

ENGINEERING DRAWING

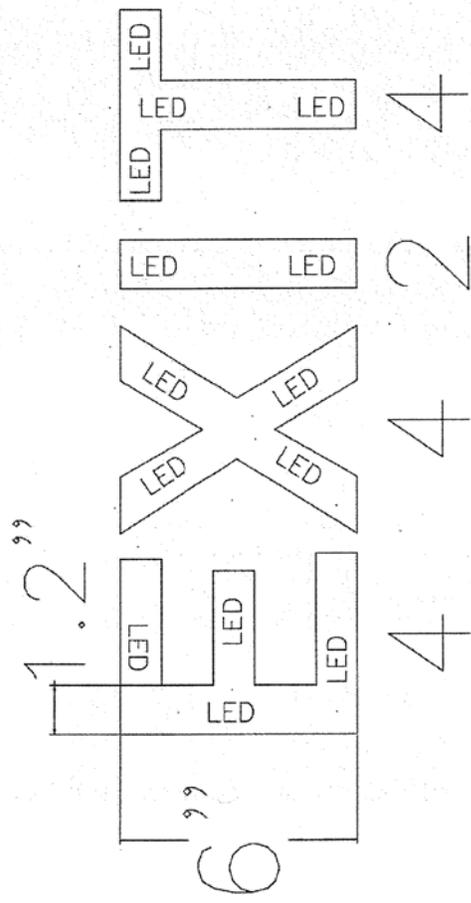
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Received by Serrano ACC 7-6-11



PART #701269-RLP-MB

- 1) ACTUAL CHANNEL LETTER POPULATION AND PRODUCT PLACEMENT MAY VARY FROM THIS LAYOUT
- 2) VSERIES RED LAD OUT AT 3 MODULES PER FOOT, 5" ON CENTER
- 3) EACH MODULAR 60 POWER SUPPLY CAN RUN UP TO 90 VSERIES RED MODULES
- 4) LAYOUT BASED ON A 5" CAN DEPTH
- 5) DIMENSIONS ARE IN INCHES UNLESS STATED OTHERWISE



- 1) This design and drawing are proprietary and the property of SloanLED. Any reproduction or use without prior written approval is prohibited.
- 2) ChannelLED modules and power supply quantities are ESTIMATES ONLY and are based on the supplied information and drawings. Channel letter, depth, lens color, material and thicker cable voltage drop will be considered for increase or decrease in product at the time of installation. Please see accurate product requirements, it is recommended that product is tested using customer's specific lens material and letter configuration.
- 3) SloanLED highly recommends applying Light Enhancement Point (LEP) or Light Enhancement Film (LEF) inside channel letters for optimal illumination.
- 4) Jacketed cable estimated assumes maximum run length of 15' per leg of the power supply.

ESTIMATED PRODUCT B.O.M. PER SIGN:
 14 Each Vseries Red Modules - 5'
 1 Each Modular 60 Power Supply 12VDC
 1 Each 100' Roll of Jacketed Cable

DRAWN	DATE	ICON IDENTITY
KM/jig	8/11/2009	EXIT

JOB #	APPROVED BY / DATE
REQUEST# 77504	ENR MR.
DRAWN: ABP/VH	DPL MR.
DATE: 11/12/09	PROJ. MR.
SCALE: AS NOTED	SALES MR.
FILE: WAL3651B	SHEET # S2 of 3

PROJECT: **Walgreens**
 MIAMI, FL
 LOCATION: 12260
 TITLE: 6" EXIT LED LETTERS

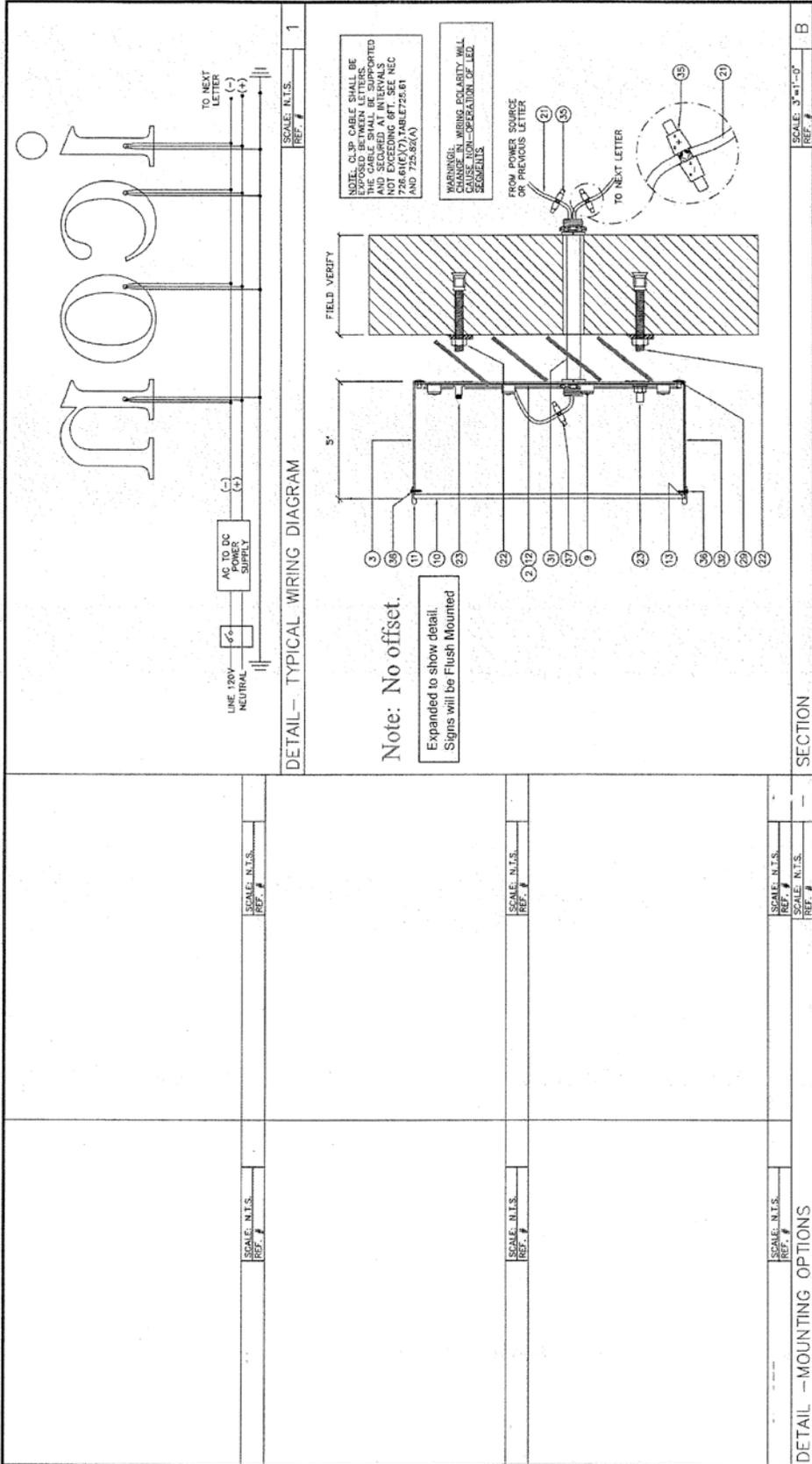
ICON
 1418 BELMONT RD.
 BIA GROVE VILLAGE
 ILLINOIS 60007
ENGINEERING DRAWING

REVISIONS	
No.	DESCRIPTION
8	ADDED CALLOUT COLOR TO BE 'DARK BROZE PRECOAT'

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LED LAYOUT

SCALE: N.T.S.
 100' = 1"



JOB #	APPROVED BY / DATE
REQUEST# 77504	DOR. MFL:
DRAWN: ABP/VH	OPR. MFL:
DATE: 11/12/09	PROJ. MFL:
SCALE: AS NOTED	SALES MFL:
FILE: WAL3651B	SHEET # S3 of 3

PROJECT:  WALGREENA

WH. MFL. IL
LOCATION: 7220

TITLE: 6" EXIT LED LETTERS

1416 BELMONT RD.
XIX GROVE VILLAGE
ILLINOIS 60007

icon
Identity Solutions

ENGINEERING DRAWING

REVISIONS	
No.	DESCRIPTION
B	ADDED CALLOUT COLOR TO BE "DARK, BROZE PRECOAT"

DATE: 06/09/11 BY: RR

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Saratoga Retail Commercial Center
M A S T E R S I G N C R I T E R I A

**EXHIBIT M:
PARCEL A DIRECTIONAL DRIVE THROUGH SIGNAGE**



Drive through directional signs shall incorporate sculptural metal logos into the signs located at the entry to each drive through lane. See above examples of metal logos.



This style of directional sign, without a sculptural metal element or logo, is acceptable at areas other than the main area of the drive through lane that is immediately at the entry to the drive through lane. For example, a second directional sign, as seen above, may be located in landscape areas across the parking lot drive isles.

Notwithstanding the examples provided here, Managing Owner shall prepare and submit a plan for directional and site signage for Serrano approval as a supplement to this Planned Sign Program.

ATTACHMENT 3
DRIVEWAY COURT ORDER

COPY

FILED

JUN 30 2006

EL DORADO CO. SUPERIOR COURT
BY P13 (DEPUTY)

1 LOUIS B. GREEN
County Counsel, State Bar #057157
2 PATRICIA E. BECK
Principal Ass't. County Counsel, State Bar #109389
3 County of El Dorado
330 Fair Lane
4 Placerville, CA 95667
Telephone: (530) 621-5770

5 ALICE M. BEASLEY, No. 56523
6 JOHN H. ERICKSON, No. 43996
DANTE FORONDA, No. 142443
7 ERICKSON, BEASLEY, HEWITT & WILSON LLP
483 Ninth Street, Suite 200
8 Oakland, California 94607
Telephone: (510) 839-3448; Fax: (510) 839-1622

9 Attorneys for Plaintiff
10 EL DORADO COUNTY

**PUBLIC ENTITY: Exempt from
fees pursuant to Gov. Code §6103**

11
12 SUPERIOR COURT OF THE STATE OF CALIFORNIA

13 COUNTY OF EL DORADO

14
15 EL DORADO COUNTY,) Case No. PC 20050276
16 Plaintiff,)
17 v.) Assessor's Parcel Nos. 107-010-32, 107-041-03
18 SERRANO ASSOCIATES, LLC, et al.,) and 107-120-06
19 Defendants.) **JUDGMENT IN CONDEMNATION**
20) Date Filed: May 19, 2005
Trial Date: July 10, 2006

21
22 In the above-entitled cause, plaintiff El Dorado County and defendant Serrano Associates,
23 LLC, having stipulated that judgment be entered as follows:

24 IT IS HEREBY ORDERED, ADJUDGED AND DECREED that upon payment to
25 defendant of \$4,900,000, inclusive of interest and costs, less the \$3,280,802 previously deposited
26 in escrow by plaintiff and withdrawn by defendant, the property described in the Complaint shall
27 be condemned for the public use of plaintiff. The net amount payable to defendant under this
28 judgment is \$1,619,198.

1 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that payment to defendant
2 of said sum of money as hereinabove specified, is the full payment for the property so taken, and
3 for all claims of compensation, including but not limited to, compensation for land, severance
4 damages, interest, attorneys' fees and costs, liens or damages of every kind and nature, suffered
5 by defendant by reason of the taking of the property or by reason of any action or inaction
6 whatsoever on the part of plaintiff or its agents in relation to the property.

7 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that payment of the
8 judgment award shall be made by checks or warrants payable to Serrano Associates, LLC, and
9 delivered to it in care of:

10 Desmond, Nolan, Livaich & Cunningham
11 15th & S Building
12 1830 15th Street
13 Sacramento, CA 95814

14 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that any taxes, penalties or
15 assessments of El Dorado County or any other taxing agency accruing on the property actually
16 taken in fee from and after September 3, 2004 are hereby canceled, and the plaintiff shall take
17 free and clear of any lien or encumbrances therefor on said parcel.

18 IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the use for which said
19 real property is sought to be condemned, to wit, the construction of the US Highway 50 /
20 El Dorado Hills Boulevard-Latrobe Road Interchange Project, is and was a public use, and the
21 taking in condemnation by plaintiff of said property is and was necessary for said public use.

22 THE PARTIES HAVING FURTHER AGREED, AND THE COURT FURTHER
23 ORDERS, ADJUDGES AND DECREES AS FOLLOWS:

24 (A) As to defendant's remaining property identified as the remainder of Assessor's Parcel
25 Number 107-041-03, plaintiff has approved the grant of two vehicular access driveways along
26 Saratoga Way between Arrowhead Drive and Mammoth Way to provide full turning movements
27 for the remainder property, and one vehicular driveway on Saratoga Way between Mammoth
28 Way and El Dorado Hills Boulevard to provide right-in, right-out turning movement only for the
remainder property, at precise locations to be determined by the County upon the submission of a

1 commercial driveway encroachment permit for driveway entrances with a development proposal
2 or parcel map on the remainder parcel, and subject to review and approval of design specifics by
3 the County and consistent with all applicable standards and policies including but not limited to
4 the provisions of County Encroachment Ordinance and any amendments thereof, and subject
5 further to the requirements of the California Environmental Quality Act and health and safety.

6 (B) As to defendant's remaining property identified as the remainder of Assessor's
7 Parcel Number 107-010-32, upon submission of a project application for this property, the
8 County Department of Transportation will work with the applicant to identify vehicular access
9 driveway(s) to serve the ultimate uses developed on the property, and plaintiff will not prohibit
10 access to Saratoga Way in connection with the construction of the US Highway 50 / El Dorado
11 Hills Boulevard-Latrobe Road Interchange Project; provided, however, that this provision does
12 not restrict, limit or otherwise modify the authority of the County Planning Commission and/or
13 Board of Supervisors regarding the provision of access and access location to this property.

14
15 Dated: 6/30/06

DANIEL B. PROUD
JUDGE OF THE SUPERIOR COURT

16
17
18 Approved as to form:

19 
20 _____
21 Gary Livaich
22 Desmond, Nolan, Livaich & Cunningham
23 Attorneys for Defendant Serrano Associates LLC
24

25 Q:\El Dorado County\Interchange Project 1316\Pld\Judgment.wpd
26
27
28

COUNTY OF EL DORADO

DEPARTMENT OF TRANSPORTATION



MAINTENANCE DIVISION:
2441 Headington Road
Placerville CA 95667
Phone: (530) 642-4909
Fax: (530) 642-9238

RICHARD W. SHEPARD, P.E.
Director of Transportation

Internet Web Site:
<http://co.el-dorado.ca.us/dot>

MAIN OFFICE:
2850 Fairlane Court
Placerville CA 95667
Phone: (530) 621-5900
Fax: (530) 626-0387



June 20, 2006

Board of Supervisors
330 Fair Lane
Placerville, California 95667

Title: US Highway 50/El Dorado Hills Blvd.-Latrobe Road Interchange Project #71318 – Consideration of Grant of Driveway Access to APN107-041-03 located at Saratoga Way and El Dorado Hills Blvd; El Dorado County v. Serrano Associates, LLC, El Dorado County Superior Court Case No. PC20050276

Meeting Date: June 27, 2006

District/Supervisor: District II, Supervisor Baumann

Dear Members of the Board:

Recommendation:

The Department of Transportation (Department) recommends as to Serrano Associates LLC's remaining property identified as the remainder of Assessor's Parcel Number 107-041-03, that the Board of Supervisors grant the following driveway access to the remainder property subject to the terms and conditions set forth herein:

- a. Two vehicular access driveways along Saratoga Way between Arrowhead Drive and Mammoth Way to provide full turning movements;
- b. One vehicular driveway on Saratoga Way between Mammoth Way and El Dorado Hills Boulevard to provide only right-in, right-out turning movement.

Such grant shall be subject to the precise locations being determined by the County upon the submission of a commercial driveway encroachment permit for driveway entrances with a development proposal or parcel map on the remainder parcel, and subject to review and approval of design specifics by the County and consistent with all applicable standards and policies including but not limited to the provisions of County Encroachment Ordinance and any amendments thereof, and subject further to the requirements of the California Environmental Quality Act and health and safety.

26-2

110

Reason for Recommendation:

As part of the US Highway 50 / El Dorado Hills Blvd-Latrobe Road Interchange Project, Saratoga Blvd. was realigned and El Dorado Hills Blvd was widened. This work required the acquisition of portions of APN 107-041-03, which is located as shown on the attached Exhibit Map. The County and the owners of the parcel, Serrano Associates, LLC entered into an Agreement for Possession and Use to allow construction of the project to move forward while just compensation for the acquisitions was determined.

Subsequently, the County filed a complaint in eminent domain to resolve the issue of just compensation. The parties attended two mediation sessions and were able to reach a tentative settlement that provided, in part, that the County Department of Transportation would make recommendations to the Board of Supervisors for access to the remainder of the subject parcel subject to the conditions set forth herein.

This item allows the Board to consider the recommended grant of access subject to the limitations indicated and allows the Board to consider public comment with regard to the access points.

The recommended action does not determine the precise locations of the driveways. This will be subsequently determined as a part of a project application process.

Fiscal Impact:

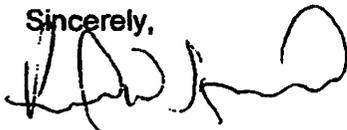
The grant of the access points has no fiscal impact. Payment of just compensation in accordance with a final settlement or entry of Judgment for the acquisition parcels will be funded out of the Interim 2004 General Plan Traffic Impact Mitigation Fee Program. Funds have been budgeted for this purpose.

Net County Cost: None.

Action to be Taken Following Approval:

Should the Board decide to approve the recommended access, staff will move forward with the settlement and judgment in the eminent domain case. Should the Board deny the recommended access; the case will proceed to trial.

Sincerely,



Richard W. Shepard, P.E.
Director of Transportation

Attachment: Exhibit Map showing location of subject parcel

RWS: ED

26-3

111

26. 06-1063

Transportation Department recommending the Board grant the following driveway access to the remaining property identified as the remainder of APN 107-041-03 (Serrano Associates LLC) as it relates to the US Highway 50/El Dorado Hills Boulevard-Latrobe Road Interchange Project 71318:

- (1) Two vehicular access driveways along Saratoga Way between Arrowhead Drive and Mammoth Way to provide full turning movements; and
- (2) One vehicular driveway on Saratoga Way between Mammoth Way and El Dorado Hills Boulevard to provide only right-in, right-out turning movement.

RECOMMENDED ACTION: Approve.

This matter was approved on the Consent Calendar.

27. 06-1019

Environmental Management Department recommending Resolution authorizing the submittal of grant applications to the California Integrated Waste Management Board for all available grants under the California Oil Recycling Enhancement Act and all available Household Hazardous Waste grants under the California Integrated Waste Management Act for the period June 30, 2006 through June 30, 2007; and authorize the Director of said Department, or designee, to execute all necessary applications, and payment requests for the purposes of securing grant funds and to implement and carry out the purposes specified in the grant application.

RECOMMENDED ACTION: Adopt Resolution 200-2006.

This matter was approved on the Consent Calendar.

28. 06-1020

Probation Department recommending Chairman be authorized to sign Software License and Maintenance Agreement 713-S0611 with AutoMon Corporation in an amount not to exceed \$205,500 for a four year term for a case management system for said Department.

RECOMMENDED ACTION: Approve.

FUNDING: General Fund.

This matter was approved on the Consent Calendar.

29. 06-1021

Sheriff's Department recommending Resolution authorizing the Sheriff, or his designee, to sign necessary documents for the purpose of obtaining federal financial assistance in the amount of \$394,653 provided by the federal Department of Homeland Security and subgranted through the State of California.

RECOMMENDED ACTION: Adopt Resolution 201-2006.

FUNDING: Grant.

This matter was approved on the Consent Calendar.





MAINTENANCE DIVISION
2441 Headington Road
Placerville CA 95667
Phone: (530) 642-4909
Fax: (530) 642-9238

RICHARD W. SHEPARD, P.E.
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Fax: (530) 626-0387



**NOTICE OF PREPARATION
OF AN
ENVIRONMENTAL IMPACT REPORT
FOR THE
SARATOGA WAY EXTENSION PROJECT**

DATE: May 18, 2006
TO: Interested Agencies and Individuals
FROM: El Dorado County Department of Transportation

The El Dorado County Department of Transportation (DOT) is preparing an Environmental Impact Report (EIR) for the proposed extension of Saratoga Way in western El Dorado County. DOT is soliciting the views of interested persons and agencies on the scope and content of the information to be included in the EIR. Agencies should comment with regard to information that is relevant to the agencies' statutory responsibilities, as required by Section 15082 of the California Environmental Quality Act (CEQA) Guidelines. DOT will also accept written comments regarding the scope and content of the EIR from interested persons and organizations concerned with the project, in accordance with State CEQA Guidelines Section 15083.

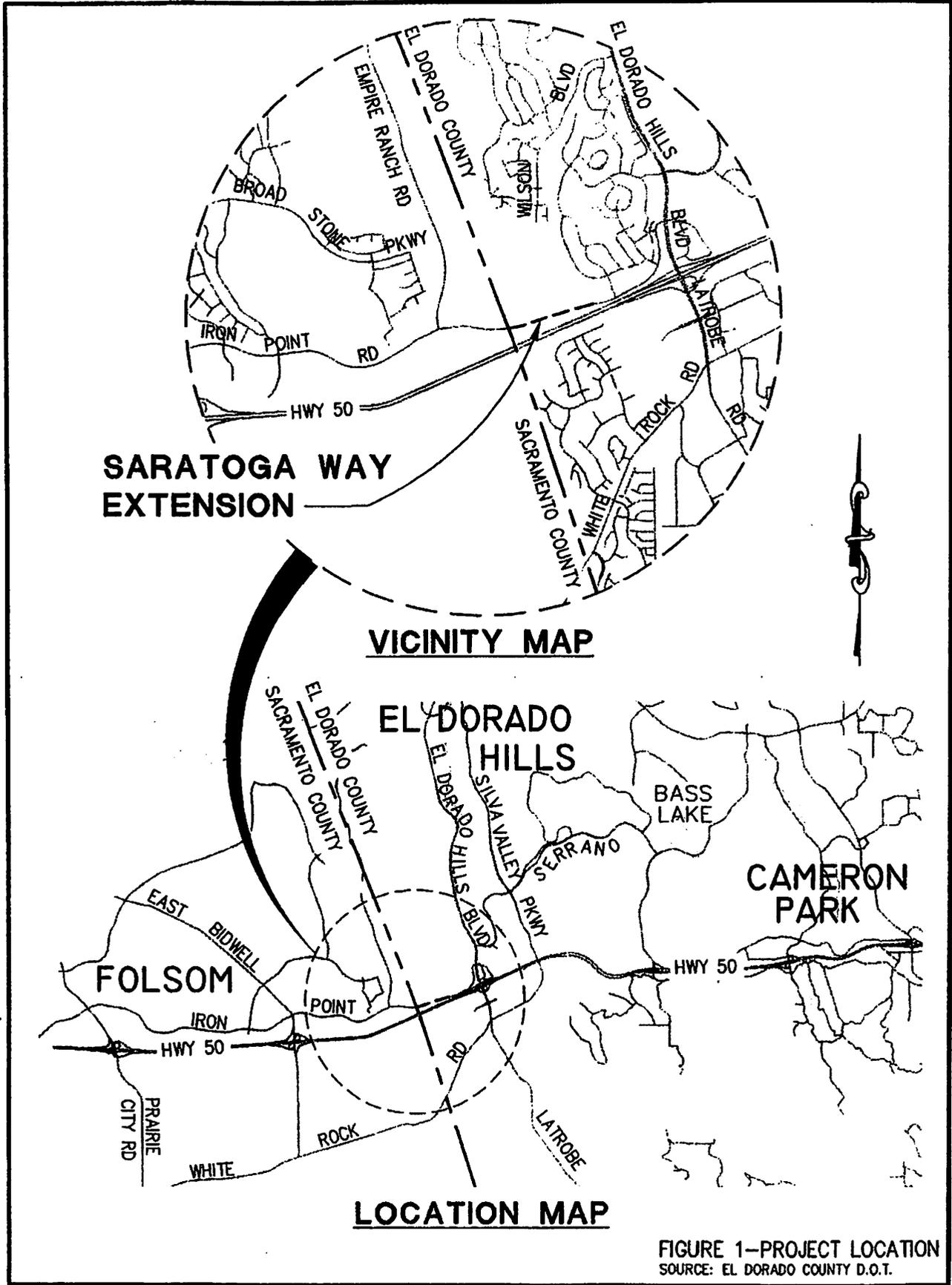
The 30-day NOP review and comment period begins May 18, 2006 and ends June 19, 2006. All written comments should be directed to: El Dorado County DOT, Attention: Ms. Janet Postlewait, 2850 Fairlane Court, Placerville, CA 95667. **Individuals and organization/agency representatives are invited to provide oral comments at an EIR scoping meeting that will be held on June 8, 2006 at 7:00 p.m. in the Double Classroom located at the east end of the Community Activities Building in Community Park at 1021 Harvard Way in El Dorado Hills, California.** Persons with disabilities that may require special accommodations at the scoping meeting should contact Janet Postlewait at the above address or by phone at: (530) 621-5993.

PROJECT LOCATION: The project is located in western El Dorado County in the unincorporated community of El Dorado Hills. See attached Figure 1.

PROJECT DESCRIPTION: The project would extend Saratoga Way approximately 0.5 mile from its existing western terminus to interconnect with Iron Point Road at the City of Folsom (Sacramento County) border. The County may also include an alternative in the EIR that would evaluate the option of extending Wilson Boulevard approximately 0.5 mile from its existing terminus to interconnect with Saratoga Way. The project would require the County's acquisition of right-of-way and may also require that temporary construction easements be obtained for access or construction activities within adjacent properties. The project would include provisions for the future extension of utilities within the roadway rights-of-way and would install drainage structures, as necessary to generally maintain existing stormwater runoff patterns.

ENVIRONMENTAL REVIEW: Environmental impacts anticipated to be addressed in the EIR include: land use, geology and soils; air quality; water resources; biological resources; noise; aesthetics; human health and safety; motorized and non-motorized transportation/circulation; public services and utilities; and cultural resources.

EIR PROCESS AND PUBLIC INPUT: Following the receipt of input during the NOP comment period, the County will prepare a Draft EIR which will describe the proposed project and alternatives (including a *no project* alternative as required by CEQA) and will identify the potential environmental effects and mitigation measures that may be necessary to minimize or avoid such effects. The Draft EIR will be made available for public review and input for a 45-day review period. The County will consider all comments received and will prepare a Final EIR which identifies any necessary changes to the Draft EIR and provides responses to all comments on the Draft EIR. The County Board of Supervisors will consider certification of the Final EIR prior to project approval.







TECHNICAL MEMORANDUM

DATE: May 6, 2005

TO: Kirk Bone, Serrano Associates, LLC.

FROM: Ron Milam and Jeff Clark, Fehr & Peers

RE: Saratoga/Westside Commercial Property Access Study

RS05-2056

INTRODUCTION

Fehr & Peers has completed an evaluation of access to the commercially zoned properties on the north side of Saratoga Way between Finders Way and Arrowhead Drive and between Saratoga Way and El Dorado Hills Boulevard south of the planned Saratoga Way/El Dorado Hills Boulevard intersection (see Figure 1). This technical memorandum summarizes the findings of our analysis. A brief discussion of the evaluation methodology is presented first followed by the recommendations for access to the Saratoga Way parcels and Saratoga Way/El Dorado Hills Boulevard parcels.

The conclusions contained in this memorandum are based on the initial widening of Saratoga Way to two lanes. The El Dorado County General Plan designated Saratoga Way as a four-lane divided arterial. Construction of this facility could restrict left-turn access into and out of the parcels evaluated.

METHODOLOGY

For ease of analysis the commercial properties were separated into two groups with the three parcels along the north side of Saratoga Way being one group (Saratoga) and the four parcels between Saratoga Way and El Dorado Hills Boulevard being the second group (Westside). For both groups a trip generation analysis was conducted to determine the level of transportation demand that would need to be accommodated by access to the land uses on the parcels. At a minimum the following factors need to be accounted for when evaluating access to a parcel: the need to move traffic on an adjacent roadway, the parcel size (width and depth), jurisdictional design guidelines, driveway spacing, on-site queuing, the type of land use on a parcel, sight distance, desired turn movements, and location of driveways across the street. Numerous driveways to a parcel can result in driver confusion on the adjacent street as well as a loss of parking spaces. Too few access points can result in long ingress vehicle queues on the adjacent street entering the site and long egress vehicle

queues exiting the site.

Saratoga Parcels

It was assumed that the three parcels (7.91 total acres) would be developed as a supermarket (Trader Joe's type) and supporting retail uses. A floor area ratio (FAR) of 0.25 was used to convert the gross parcel area to developed area. The result was a building area of 86,140 square feet. The trips generated by this level of development were calculated using trip generation rates from *Trip Generation*, Institute of Transportation Engineers, 2003. Trip generation for the Saratoga parcels is projected to be 8,807 daily trips, 280 AM peak hour trips, and 900 PM peak hour trips.

A trip distribution pattern of 25% to/from the west on Saratoga Way and 75% to/from the east on Saratoga Way was determined using the El Dorado County 2004 General Plan travel demand model. The distribution pattern assumes that Saratoga Way is extended west to connect with Iron Point Road.

Because the proposed land use generates substantially more traffic in the PM peak hour (900 vehicle trips) than the AM peak hour (280 vehicle trips), the access analysis was completed using the PM peak hour traffic. Using the trip generation and trip distribution and an assumed in/out factor of 50% in and 50% out it was determined that 337 vehicles would make a right-turn into the site from westbound Saratoga Way and 337 vehicles would make a left-turn onto Saratoga Way to leave the site. 113 vehicles would make a left-turn to enter the site from eastbound Saratoga Way and 113 vehicles would leave the site by way of a right-turn onto Saratoga Way.

It was assumed that cross access agreements would be required between each of the three parcels. The cross access agreements would allow vehicles to go from parcel to parcel without having to use the public street.

Westside Parcels

The four parcels at this location were assumed to be developed with the following land uses:

- Parcel 1 – Gas Station (12 fueling positions)
- Parcel 2 – Fast Food Restaurant (5,000 square feet)
- Parcel 3 – Bank (with drive-up facilities) (8,500 square feet)
- Parcel 4 – Family Style Sit-Down Restaurant (8,500 square feet)

The trip generation for the parcels was determined using trip generation rates from *Trip Generation*, Institute of Transportation Engineers, 2003. Table 1 presents the results of the trip generation analysis. The four parcels are expected to generate 5,989 daily trips, 574 AM peak hour trips, and 526 PM peak hour trips.

Table 1
Trip Generation Analysis – Saratoga Way/El Dorado Hills Boulevard Parcels

Parcel	Land Use	Quantity	Daily	Peak Hour	
				AM	PM
1	Gas Station	12 fueling positions	1,834	128	160
2	Fast Food Restaurant	5,000 sf	2,481	266	173
3	Bank	8,500 sf	619	82	100
4	Restaurant	8,500 sf	1,055	98	93
Total			5,989	574	526

The land uses on these parcels can be expected to attract "pass-by" trips or trips that are already on an adjacent roadway that "stop in" to a land use on its way to another destination. The trips are not new to the roadway system, therefore, have a lessened impact to the transportation system. Pass-by rates developed by the Institute of Transportation Engineers were used in this study. The rates are as follows:

- Gas Station – AM peak hour (58%) and PM peak hour (42%)
- Fast Food Restaurant – AM peak hour (49%) and PM peak hour (50%)
- Bank – AM peak hour (47%) and PM peak hour (47%)

An AM peak hour trip distribution pattern of 60% to/from the north on El Dorado Hills Boulevard, 30% to/from the south on El Dorado Hills Boulevard, and 10% to/from the west on Saratoga Way was determined using the El Dorado County 2004 General Plan travel demand model as well as current travel patterns in the area. The PM peak hour trip distribution pattern used is 40% to/from the north on El Dorado Hills Boulevard, 50% to/from the south on El Dorado Hills Boulevard, and 10% to/from the west on Saratoga Way. The distribution pattern assumes that Saratoga Way is extended west to connect with Iron Point Road. It can be expected that a majority of the AM peak hour pass-by trips will come from vehicles traveling southbound on El Dorado Hills Boulevard that continue south. In the PM peak hour the pass-by trips will be split between northbound El Dorado Hills Boulevard vehicles and southbound vehicles.

CONCLUSIONS

The following conclusions are based on the current improvement plans for Saratoga Way, which is realigning Saratoga Way and constructing a two-lane arterial. The El Dorado County General Plan designates Saratoga Way as a four-lane divided arterial. Construction of a four-lane divided arterial with a raised median would not change the recommended location of access locations, but it could result in a restriction of left-turn moves at some or all of the proposed access locations. If the accesses are restricted to right-turn in-and-out only then left-turn vehicles entering or existing the

sites would need to make u-turns at designated locations. We recommend that you meet with El Dorado County DOT staff to get direction on these issues.

Sight distance requirements need to be met with construction of each of the access locations. Left-turn pockets should include appropriate transition lengths in addition to the left-turn pocket length.

All of the recommendations contained in this memorandum would need to be evaluated again when a detailed site plan is developed and engineering plans are available.

Saratoga Parcels

It is recommended that three full accesses be constructed on Saratoga Way to accommodate projected traffic generated by development on parcels 1, 2, and 3. With construction of the driveways it is recommended that left-turn pockets be installed on Saratoga Way. The pockets should be a minimum of 150 feet long with appropriate pocket transitions to accommodate potential vehicle queues. The exact location of the driveways will need to be determined when a land use plan is developed, but the accesses should be designed to be a minimum of 300 feet apart.

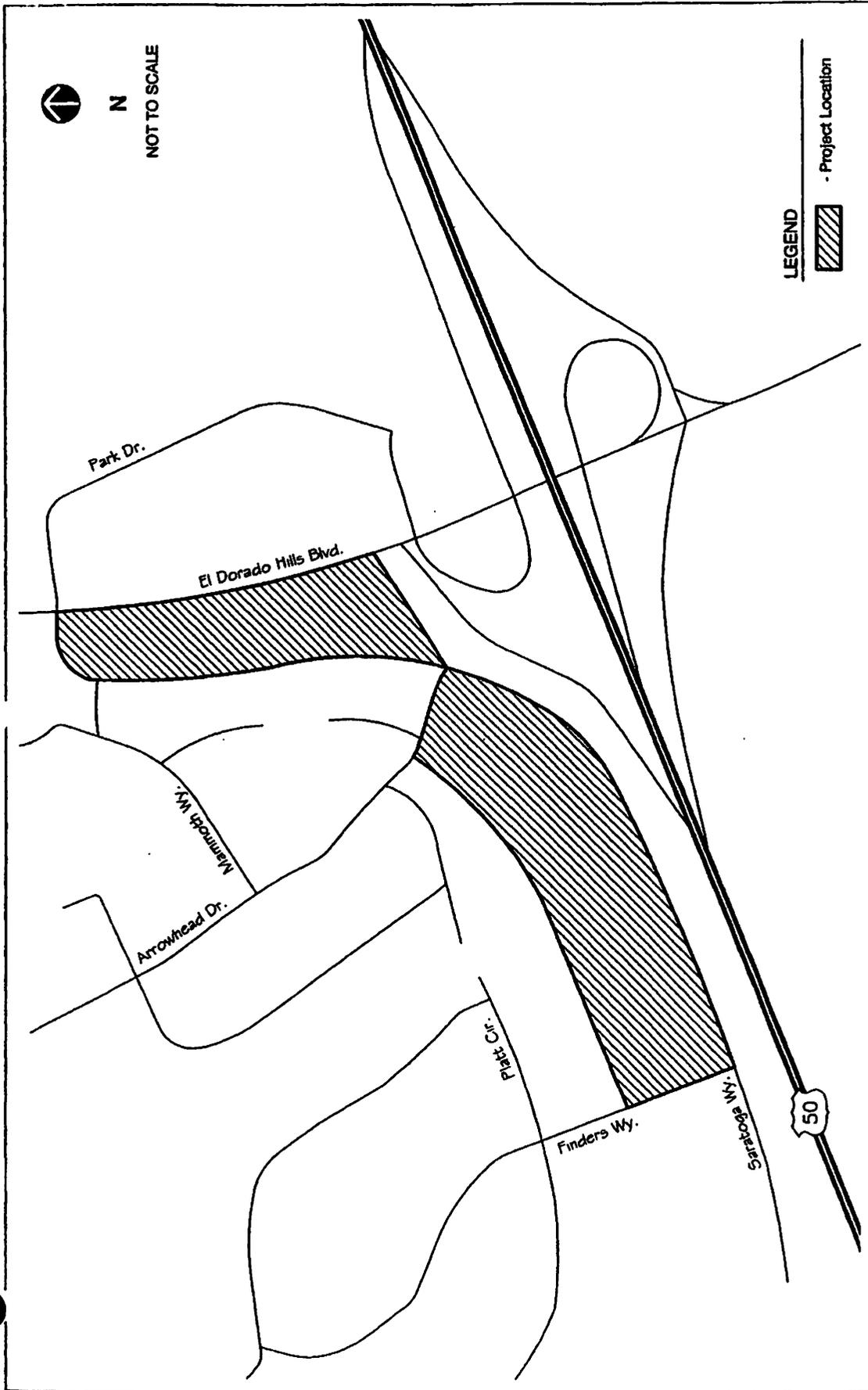
Westside Parcels

Two access alternatives were considered. One alternative would have access off Saratoga Way only and the second would have one right-turn in-and-out only access on El Dorado Hills Boulevard. It was assumed that cross access agreements would be required between each of the four parcels for each of the alternatives.

For alternative one, three full access driveways are recommended. They would be located on the parcel lines between parcels 3 and 4, between parcels 2 and 3 and as the fourth leg to the Saratoga Way/Mammoth Way Intersection. With construction of the driveways it is recommended that left-turn pockets be installed. The pockets should be a minimum of 150 feet long with appropriate pocket transitions to accommodate potential vehicle queues. For the driveways between parcels 3 and 4 and parcels 2 and 3 the left-turn pockets can be accommodated on the striped median by converting the median to a two-way left-turn lane. For the driveway at the Saratoga Way/Mammoth Way intersection a 100-foot long left-turn pocket should be constructed for southbound vehicles entering parcel 1. This location could be impacted by vehicle queues from the eastbound approach to the Saratoga Way/El Dorado Hills Boulevard intersection.

The second alternative would have the same access locations on Saratoga Way as alternative one, but would add a right-turn in-and-out access to El Dorado Hills Boulevard south of the Saratoga Way/El Dorado Hills Boulevard intersection. The driveway should be located on the parcel line between parcels 1 and 2 (see Figure 2) and should be designed to include a right-turn pocket on El Dorado Hills Boulevard. The advantage to this alternative is that the El Dorado Hills Boulevard driveway would allow pass-by trips on southbound El Dorado Hills Boulevard to proceed south

through the Saratoga Way/El Dorado Hills Boulevard intersection and then enter the site. Without the access, these trips entering the site would need to make a right-turn at the Saratoga Way/El Dorado Hills Boulevard intersection then a left-turn into the site. To return to southbound El Dorado Hills Boulevard the trips would need to make a right-turn from the site onto Saratoga Way and then a right-turn from Saratoga Way onto El Dorado Hills Boulevard at the Saratoga Way/El Dorado Hills Boulevard intersection. During the AM peak hour this amounts to 74 trips and during the PM peak hour it is 53 trips.



PROJECT LOCATION
FIGURE 1

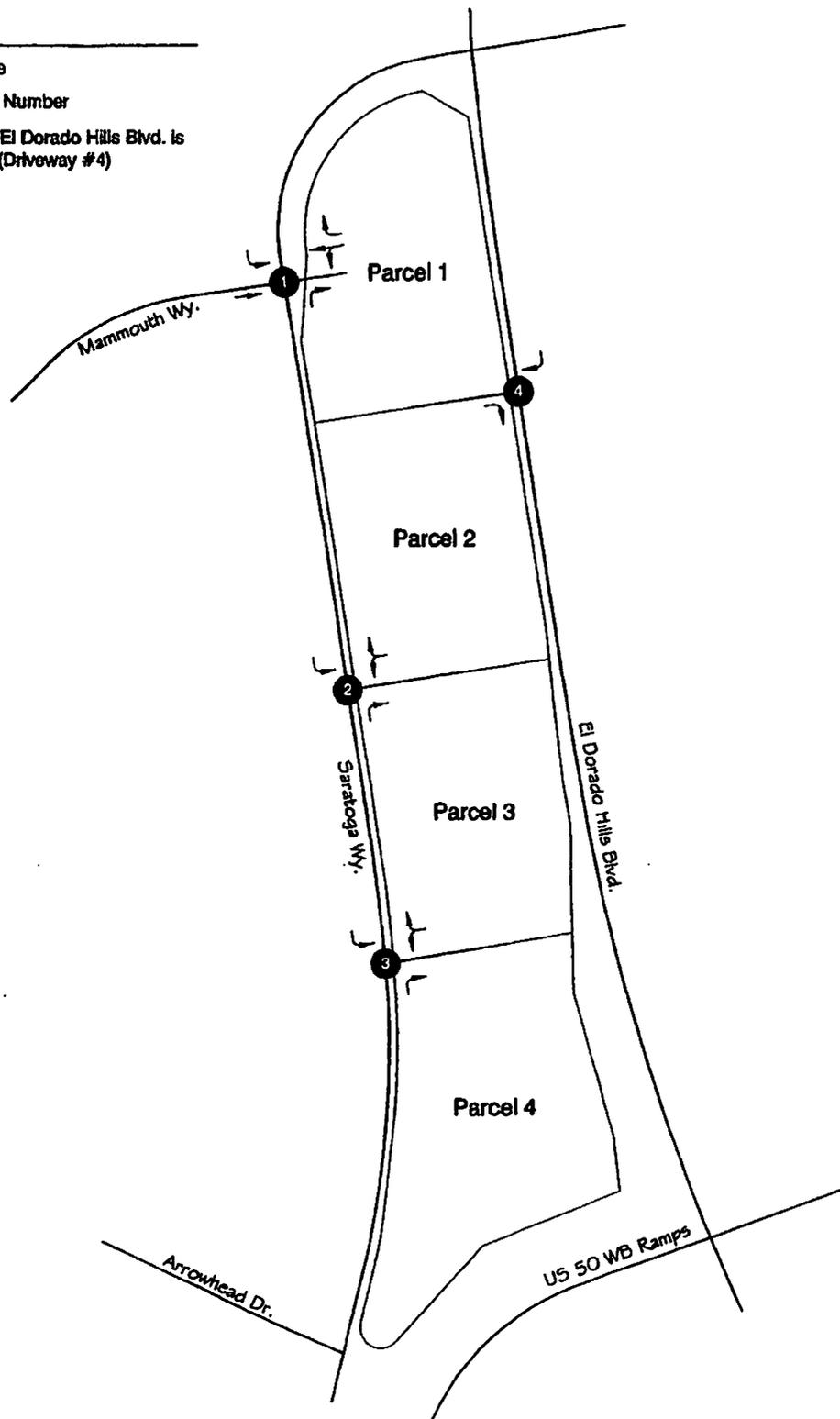
FEHR & PEERS
 TRANSPORTATION CONSULTANTS

May 04, 2005 MJC
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LEGEND

-  - Turn Lane
-  - Driveway Number

NOTE: Access to El Dorado Hills Blvd. is Uncertain (Driveway #4)



N

NOT TO SCALE



FEHR & PEERS
TRANSPORTATION CONSULTANTS

May 04, 2005 MAF
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PROPOSED DRIVEWAY LOCATIONS

FIGURE 2

Transportation Impact Study

**Saratoga Retail Phase 2
El Dorado Hills, California**

May 25, 2017

Prepared for:

Central Pacific Development Company

Prepared by:

Kimley»»Horn

555 Capitol Mall, Suite 300
Sacramento, California 95814

Phone: (916) 858-5800



Exhibit U

EXECUTIVE SUMMARY

This report documents the results of a transportation impact study completed for Saratoga Retail Phase 2 (the “proposed project” or “project”). The project represents an expansion and completion of the existing retail center located in the northwest corner of the US-50 interchange with El Dorado Hills Boulevard in El Dorado Hills. Kimley-Horn previously completed a traffic impact analysis for the Saratoga Way Mixed-Use Center project. At that time, a 32,900-square foot (sf) shopping center was contemplated. The project site has since been partially developed with a 13,368-sf Walgreens store on the northernmost portion of the property. The project now proposes to develop the remainder of project site with two restaurants and a small retail building totaling 10,400-sf of new uses. 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 approved by the County.

The existing center is comprised of a 13,368-square foot (sf) Walgreens store. The project proposes to develop the remainder of project site with two restaurants and a small retail building totaling 10,400-sf of new uses. The currently proposed project has identified tenants for the two restaurants (Chick-fil-A and Habit Burger) in addition to a small (3,000-sf) general retail component. Access to the site is provided at the existing main site driveway intersection with Saratoga Way. Two additional driveways will serve the site; one full access driveway south of the main site driveway, and one egress-only driveway at the south end of the project site. 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. White Rock Rd @ Windfield Way
7. White Rock Rd @ Post St
8. Saratoga Way @ Mammouth Way
9. Saratoga Way @ Main Project Dwy
10. Saratoga Way @ Arrowhead Dr

Roadway Segment:

1. Saratoga Way, west of El Dorado Hills Boulevard

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
2. US-50 Ramps
 - a. Eastbound, diverge to Latrobe Road
 - b. Eastbound, diverge to El Dorado Hills Boulevard
 - c. Eastbound, merge from Latrobe Road
 - d. Westbound, diverge to El Dorado Hills Boulevard/Latrobe Road
 - e. 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 (2017) Conditions
- B. Existing (2017) plus Proposed Project Conditions
- C. Cumulative (2035) Conditions
- D. Cumulative (2035) plus Proposed Project Conditions

Significant findings of this study include:

- The proposed project is estimated to generate approximately 3,529 new daily trips, with 286 new trips occurring during the AM peak-hour, and 241 new trips occurring during the PM peak-hour.
- The proposed project is understood to be consistent with the County's growth assumptions for Traffic Analysis Zone (TAZ) (#616) in which the project is located. However, in light of Measure E's requirements, although the County's Travel Demand Model (TDM) is considered to account for the project's proposed land use and the *General Plan's* cumulative traffic analysis should serve as the basis for the Cumulative (2035) traffic analysis of the project, a new evaluation of Cumulative (2035) conditions (with and without the proposed project) is included in this evaluation.
- As defined by the County, the addition of the proposed project to the Existing (2017) and Cumulative (2035) scenarios significantly worsens conditions at three study intersections. The impact can be mitigated to be *less than significant*.
- Measure E was passed by El Dorado County voters on June 7, 2016, and became effective on July 29, 2016. Measure E amended General Plan Policies TX-Xa, TC-Xf, and TC-Xg and included several "implementation" statements. At the time of this report, the Board of Supervisors (Board) had moved forward with the implementation of the voter approved Measure E Initiative "as written and as it was before the voters." Measure E specifically states (amended General Plan Policy TX-Xf) that "For all other discretionary projects that worsen...traffic on the County road system, the County shall condition the project to construct all road improvements necessary to maintain or attain Level of Service standards...", and that "All necessary road capacity improvements shall be fully completed to prevent cumulative traffic impacts from new development from reaching Level of Service F during peak hours..." (General Plan Policy TC-Xa 3). As such, the Saratoga Retail Phase 2 project is directly affected by Measure E. Accordingly, although the Board continues to work through the implementation of the measure, this project will be required to, at a minimum, demonstrate consistency with the Measure's requirements. Moreover, consistent with Measure E, the Proposed Project will likely be conditioned to construct all mitigations identified under Existing (2017) Conditions, and to pay its fair share of Cumulative (2035) Conditions mitigations.

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INTRODUCTION

This report documents the results of a transportation impact study completed for Saratoga Retail Phase 2 (the “proposed project” or “project”). The project represents an expansion and completion of the existing retail center located in the northwest corner of the US-50 interchange with El Dorado Hills Boulevard in El Dorado Hills. Kimley-Horn previously completed a traffic impact analysis for the Saratoga Way Mixed-Use Center project¹. At that time, a 32,900-square foot (sf) shopping center was contemplated. The project site has since been partially developed with a 13,368-sf Walgreens store on the northernmost portion of the property. The project now proposes to develop the remainder of project site with two restaurants and a small retail building totaling 10,400-sf of new uses. 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*², and the scope of work approved by the County³.

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 a 13,368-square foot (sf) Walgreens store. The project proposes to develop the remainder of project site with two restaurants and a small retail building totaling 10,400-sf of new uses. The currently proposed project has identified tenants for the two restaurants (Chick-fil-A and Habit Burger) in addition to a small (3,000-sf) general retail component. Access to the site is provided at the existing main site driveway intersection with Saratoga Way. Two additional driveways will serve the site; one full access driveway south of the main site driveway, and one egress-only driveway at the south end of the project site. 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 Way | 6. White Rock Rd @ Windfield Way |
| 2. El Dorado Hills Blvd @ US-50 WB Ramps | 7. White Rock Rd @ Post St |
| 3. Latrobe Rd @ US-50 EB Ramps | 8. Saratoga Way @ Mammouth Way |
| 4. Latrobe Rd @ Town Center Blvd | 9. Saratoga Way @ Main Project Dwy |
| 5. Latrobe Rd @ White Rock Rd | 10. Saratoga Way @ Arrowhead Dr |

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

Roadway Segment:

1. Saratoga Way, west of El Dorado Hills Boulevard

¹ *Traffic Impact Analysis, Saratoga Way Mixed-Use Center*, Kimley-Horn and Associates, Inc., October 9, 2008.

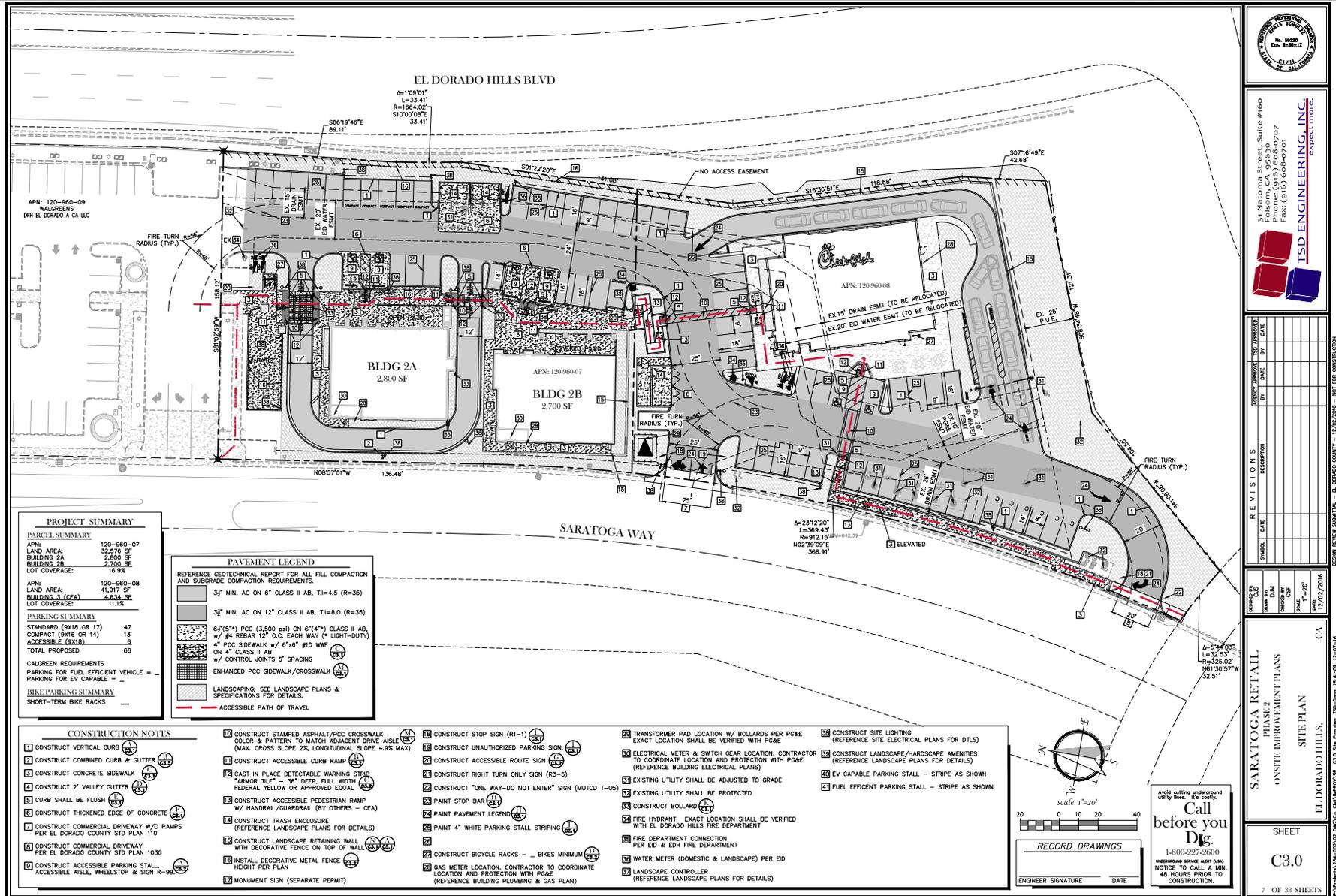
² *Transportation Impact Study Guidelines*, El Dorado County Community Development Agency, November 2014.

³ Memorandum from Cameron Shew, DKS, to Natalie Porter, El Dorado County Community Development Agency, March 6, 2017.

Saratoga Retail Phase 2 - Transportation Impact Analysis



Saratoga Retail Phase 2 - Transportation Impact Analysis

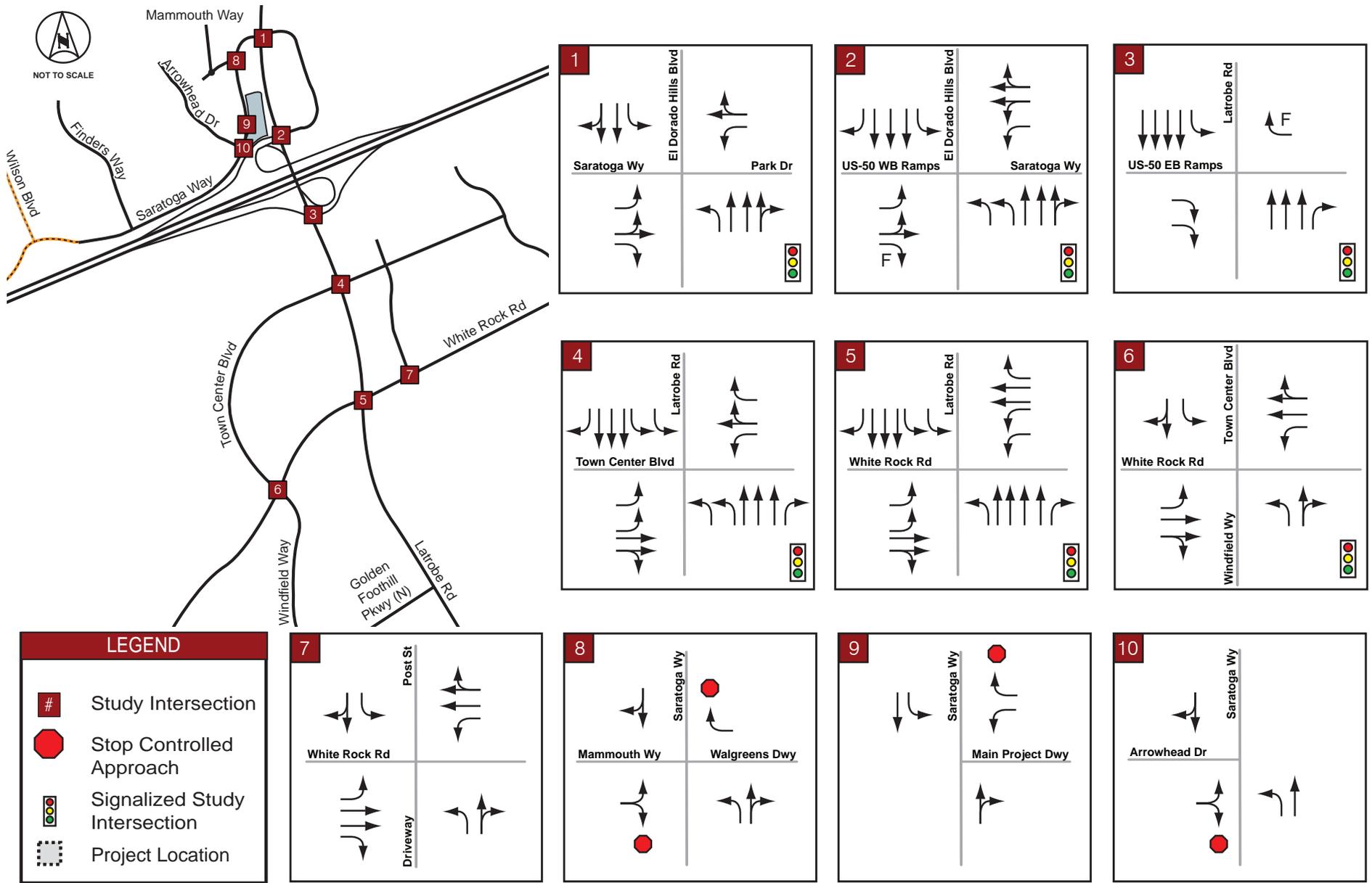


Source: TSD Engineering, Inc., February 3, 2017



Figure 2
 Proposed Project Site Plan

Saratoga Retail Phase 2 - Transportation Impact Analysis



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
2. US-50 Ramps
 - a. Eastbound, diverge to Latrobe Road
 - b. Eastbound, diverge to El Dorado Hills Boulevard
 - c. Eastbound, merge from Latrobe Road
 - d. Westbound, diverge to El Dorado Hills Boulevard/Latrobe Road
 - e. 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 98,000 vehicles per day⁴ (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 33,600 vpd⁵ with three through lanes in each direction. South of the interchange this roadway carries approximately 32,400 vpd⁵ also with three travel lanes in each direction.

Saratoga Way is currently a two-lane roadway which parallels the north side of US-50 and terminates approximately 2,500-feet east of the El Dorado County/Sacramento County line. This roadway has long been planned as a four-lane divided facility (to be initially constructed as a two-lane roadway) providing vital connectivity between El Dorado Hills and Folsom, north of US-50. Saratoga Way currently serves approximately 1,500 vpd just west of El Dorado Hills Boulevard. Similar to Saratoga Way, **Wilson Boulevard** will be extended from its existing terminus providing connectivity to the aforementioned extension of Saratoga Way. Wilson Boulevard currently carries approximately 5,000 vpd⁵ near El Dorado Hills Boulevard.

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** north of US-50, accommodates approximately 10,500 vpd⁵ in the vicinity of Latrobe Road.

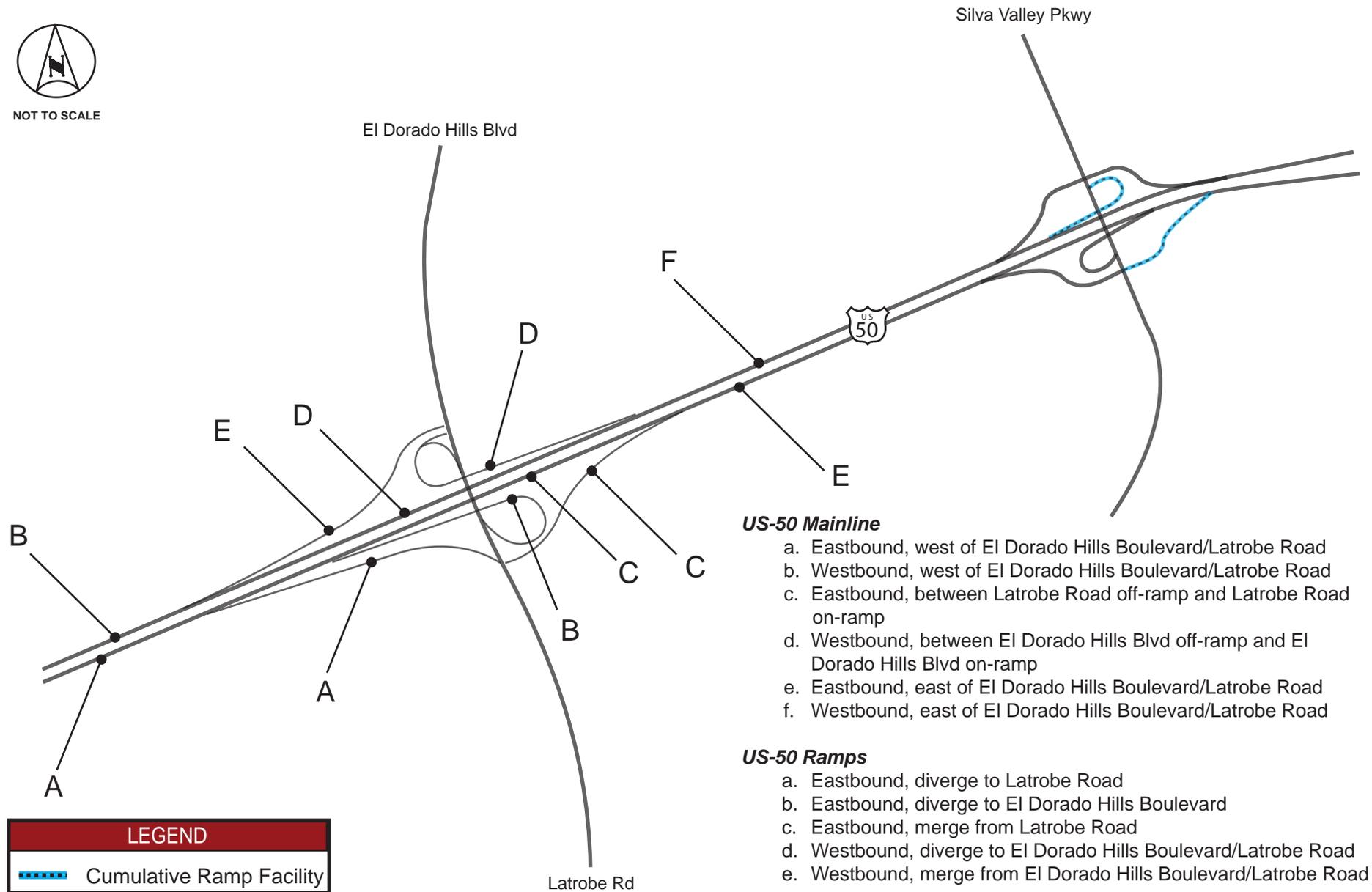
⁴ Caltrans, <http://www.dot.ca.gov/trafficops/census/volumes2015/>

⁵ El Dorado County Community Development Agency, 2015.

Saratoga Retail Phase 2 - Transportation Impact Analysis



NOT TO SCALE



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 Manual, 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)	Daily Trips	AM Peak-Hour				PM Peak-Hour					
			Total Trips	IN		OUT		Total Trips	IN		OUT	
				%	Trips	%	Trips		%	Trips	%	Trips
Chick-fil-A (934)	4.6	2,284	209	51%	107	49%	102	150	52%	78	48%	72
Habit Burger (934)	2.8	1,390	127	51%	65	49%	62	91	52%	47	48%	44
Shopping Center (820)	3.0	696	18	62%	11	38%	7	57	48%	27	52%	30
<i>Subtotal Trips:</i>		<i>4,370</i>	<i>354</i>		<i>183</i>		<i>171</i>	<i>298</i>		<i>152</i>		<i>146</i>
Internal Trip Reduction	5%	-219	-18		-9		-9	-15		-8		-7
Net New Driveway Trips:		4,152	337		174		163	283		144		139
Pass-By/Diverted Trip Reduction	15%	-623	-50		-26		-24	-42		-22		-21
Net New External Trips:		3,529	286		148		138	241		123		118

Source: *Trip Generation Manual, 9th Edition*, ITE.

As shown in **Table 1**, the proposed project is estimated to generate approximately 3,529 new daily trips, with 286 new trips occurring during the AM peak-hour, and 241 new trips occurring during the PM peak-hour. Project traffic was distributed to the roadway network based on existing traffic volumes, output from the County's travel demand model, and professional judgment. The project trip distribution percentages are provided in **Figure 5** (2017 scenario) and **Figure 6** (2035 scenario) and the assignment of project trips are depicted in **Figure 7** (2017 scenario) and **Figure 8** (2035 scenario).

TRANSPORTATION IMPACT STUDY METHODOLOGY

This transportation impact study was performed in accordance with the County's transportation impact study guidelines².

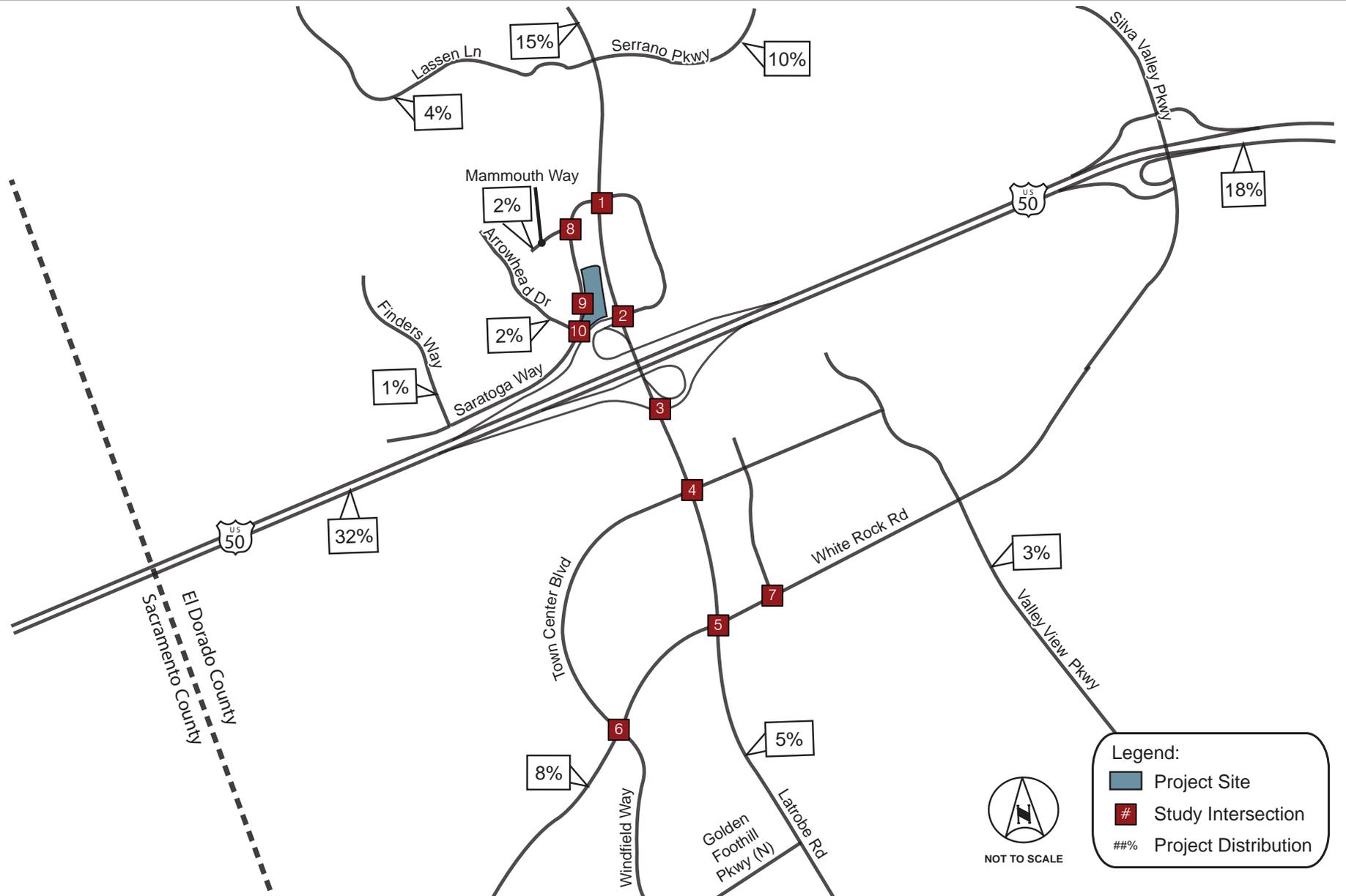
Level of Service Definitions

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*.

Intersection Analysis

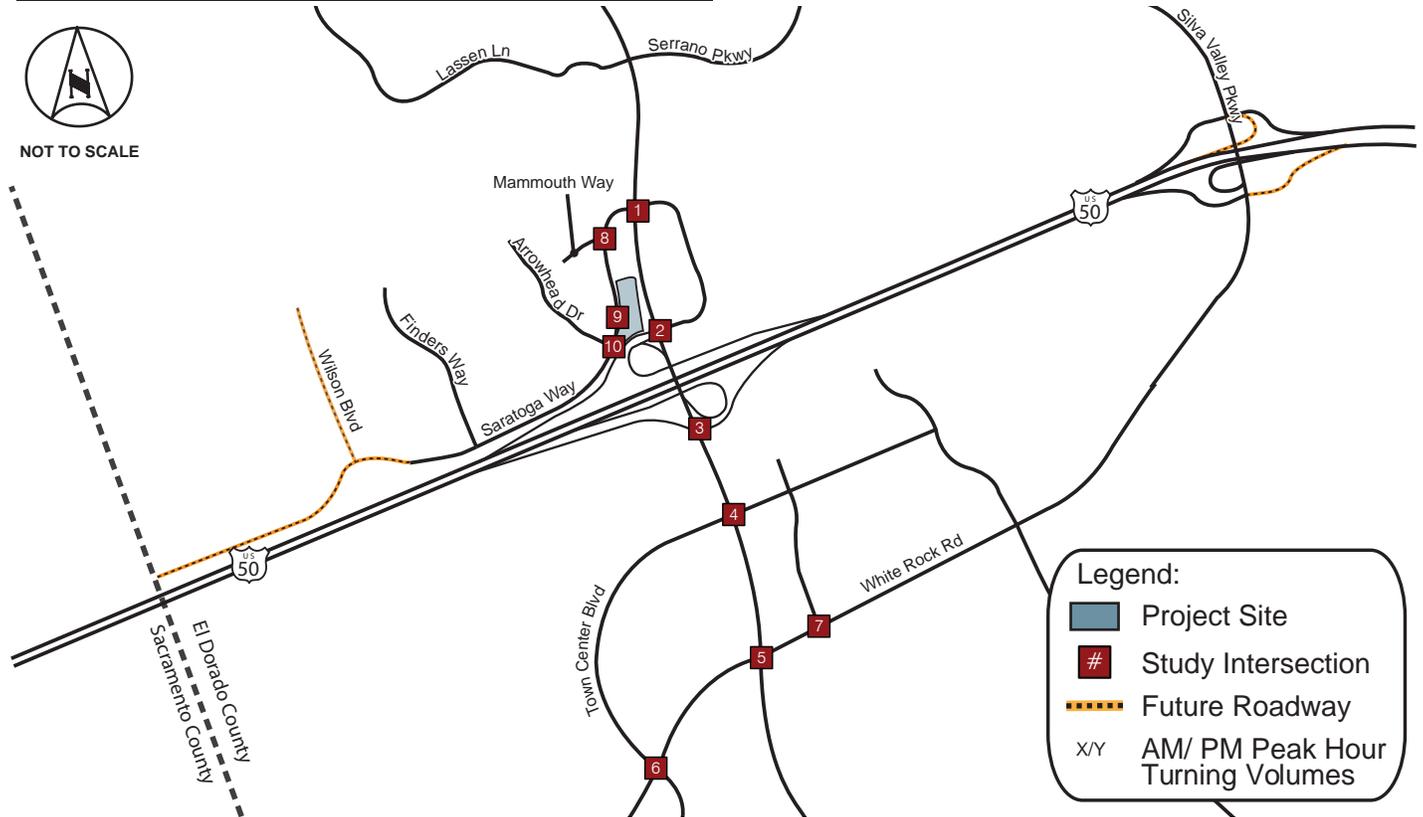
The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures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

Saratoga Retail Phase 2 - Transportation Impact Analysis



Saratoga Retail Phase 2 - Transportation Impact Analysis

1 51 / 42 ↕ ↕ El Dorado Hills Blvd Saratoga Wy Park Dr 40 / 34 ↕ 116 / 99 ↕ 116 / 96	2 53 / 45 ↕ ↕ El Dorado Hills Blvd US-50 WB Ramps Park Dr 36 / 30 ↕ 80 / 66	3 22 / 19 ↕ ↕ El Dorado Hills Blvd 56 / 47 US-50 EB Ramps 24 / 20	4 22 / 19 ↕ Latrobe Rd Town Center Blvd 24 / 20
5 11 / 9 ↕ ↕ Latrobe Rd White Rock Rd 4 / 4 7 / 6	6 Town Center Blvd 11 / 9 White Rock Rd Windfield Way 12 / 10 ↕	7 Post St 4 / 4 White Rock Rd 4 / 4 ↕	8 166 / 138 ↕ Saratoga Way Mammouth Wy Walgreens Dwy 3 / 2 ↕ 3 / 2 156 / 133 ↕
9 85 / 71 ↕ ↕ Saratoga Way 79 / 67 1 / 1 Main Project Dwy 80 / 68 1 / 1	10 3 / 2 1 / 1 ↕ ↕ Saratoga Way Arrowhead Dr 3 / 2 ↕ 1 / 1		



Saratoga Retail Phase 2 - Transportation Impact Analysis

1 51 / 42 ↕ ↕ El Dorado Hills Blvd Saratoga Wy Park Dr 40 / 34 ↕ 101 / 86 ↕ 100 / 83	2 41 / 35 ↕ ↕ El Dorado Hills Blvd US-50 WB Ramps Park Dr 27 / 22 ↕ 73 / 61	3 28 / 24 ↕ 25 / 22 ↕ El Dorado Hills Blvd 43 / 36 US-50 EB Ramps 30 / 25	4 28 / 24 ↕ Latrobe Rd Town Center Blvd 30 / 25
5 15 / 13 ↕ ↕ 8 / 7 ↕ ↕ 4 / 4 ↕ ↕ Latrobe Rd White Rock Rd 4 / 4 16 / 14 ↕ 9 / 7	6 Town Center Blvd 15 / 13 White Rock Rd 16 / 14 ↕ Windfield Way	7 Post St 4 / 4 White Rock Rd 4 / 4 ↕	8 151 / 125 ↕ Saratoga Way Mammouth Wy Walgreens Dwy 3 / 2 ↕ 3 / 2 141 / 120 ↕
9 77 / 64 ↕ ↕ 77 / 64 ↕ ↕ Saratoga Way Main Project Dwy 73 / 62 8 / 7 71 / 60 4 / 4	10 3 / 2 14 / 12 ↕ ↕ Saratoga Way Arrowhead Dr 3 / 2 ↕ 15 / 12		

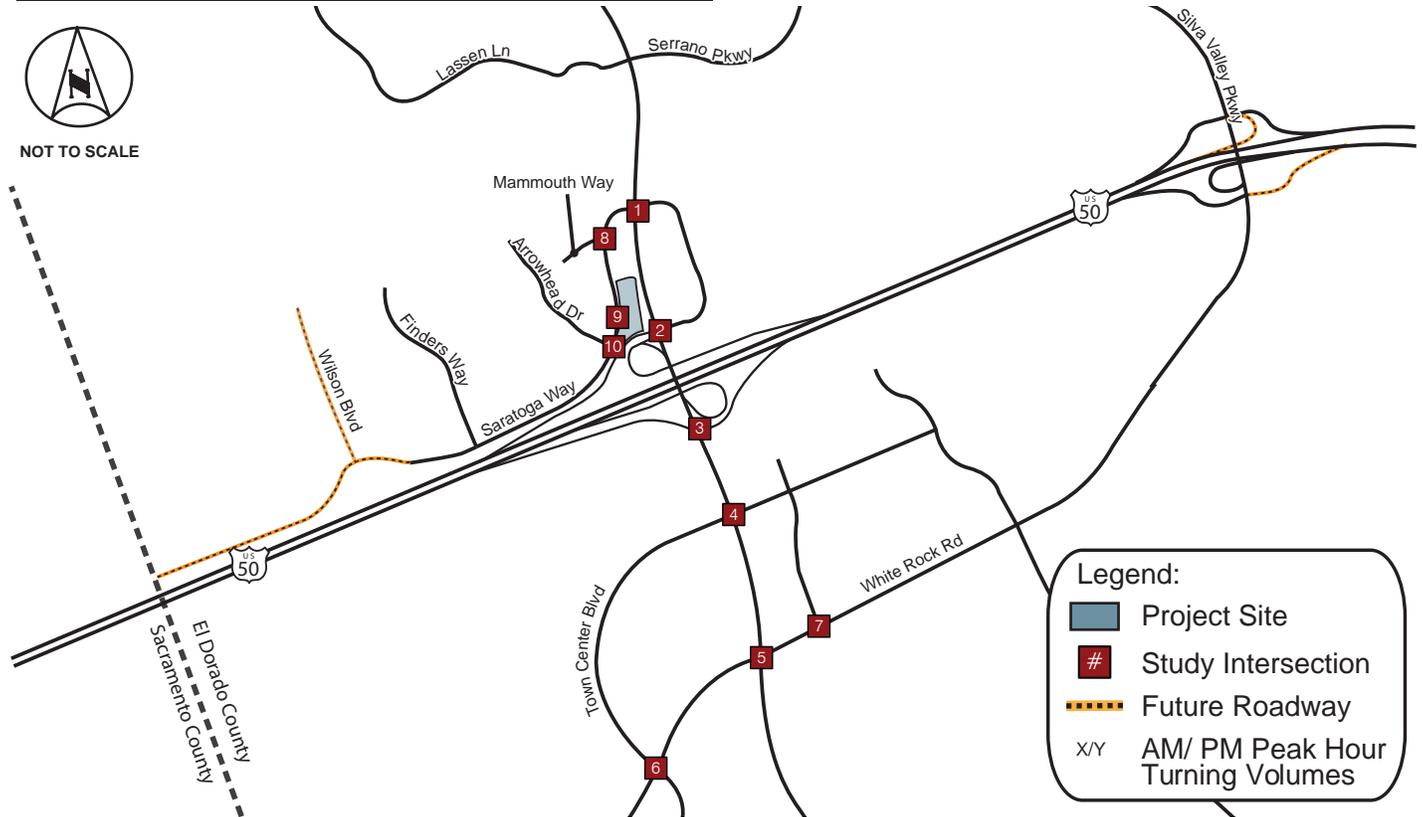


Table 2 – Intersection Level of Service Criteria

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-#5 and Intersections #5-7 was determined using the SimTraffic® micro-simulation analysis software. The existing conditions SimTraffic® models were originally provided by the County for use in this study⁶. 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. 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. Saratoga Way is either a Class III two-lane or a multi-lane roadway, depending on the analysis scenario. The LOS criteria for multi-lane and two-lane roadway segments are shown in **Table 3** and **Table 4**, respectively.

⁶ 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	> 35 – 40
	55	> 35 – 41
	50	> 35 – 43
	45	> 35 – 45
F (demand exceeds capacity)	60	> 40
	55	> 41
	50	> 43
	45	> 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 guidelines⁷ 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 Method⁸. 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

⁷ Guide for the Preparation of Traffic Impact Studies, Caltrans, December 2002.

⁸ Procedure for Analysis and Design of Weaving Sections, Federal Highway Administration, February 1984.

Land Use Consistency and Analysis Scenarios

The proposed project is understood to be consistent with the County's growth assumptions for Traffic Analysis Zone (TAZ) (#616) in which the project is located. However, in light of Measure E's requirements, although the County's Travel Demand Model (TDM) is considered to account for the project's proposed land use and the *General Plan's* cumulative traffic analysis should serve as the basis for the Cumulative (2035) traffic analysis of the project, a new evaluation of Cumulative (2035) conditions (with and without the proposed project) is included in this evaluation. Accordingly, this LOS analysis was conducted for the study facilities for the following scenarios:

- A. Existing (2017) Conditions
- B. Existing (2017) plus Proposed Project Conditions
- C. Cumulative (2035) Conditions
- D. Cumulative (2035) plus Proposed Project Conditions

EXISTING (2017) CONDITIONS

New weekday AM and PM peak-period intersection turning movement traffic counts were conducted on March 14, 2017 for all ten (10) study intersections. These counts were conducted between the hours of 6:00 a.m. and 9:00 a.m., and 4:00 p.m. and 7:00 p.m. Freeway mainline volumes were obtained from Caltrans' Performance Measurement System⁹ (PeMS) using data from March 4-26, 2015. When combined with the ramp terminal intersection turning movement counts, weaving segments and merge/diverge sections were also able to be evaluated.

Existing (2017) peak-hour turn movement volumes are presented in **Figure 9**, 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 D.

Roadway Segment

Table 7 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 7**, the study roadway segment operates from LOS A to LOS B.

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 D.

⁹ <http://pems.dot.ca.gov/>

Saratoga Retail Phase 2 - Transportation Impact Analysis

<p>1</p> <p>↔ 21 / 29 ↔ 1421 / 761 ↔ 146 / 164</p> <p>El Dorado Hills Blvd</p> <p>↔ 70 / 273 ↔ 10 / 18 ↔ 11 / 57</p> <p>Saratoga Wy</p> <p>Park Dr</p> <p>18 / 37 9 / 25 122 / 98</p> <p>↔ ↔ ↔</p> <p>71 / 122 696 / 1265 29 / 75</p>	<p>2</p> <p>↔ 665 / 319 ↔ 839 / 567 ↔ 50 / 30</p> <p>El Dorado Hills Blvd</p> <p>↔ 53 / 68 ↔ 82 / 82 ↔ 105 / 169</p> <p>US-50 WB Ramps</p> <p>Park Dr</p> <p>159 / 122 69 / 70 376 / 136</p> <p>↔ ↔ ↔</p> <p>495 / 985 584 / 1272 148 / 300</p>	<p>3</p> <p>↔ 1108 / 691 ↔ 212 / 181</p> <p>El Dorado Hills Blvd</p> <p>↔ 308 / 704</p> <p>US-50 EB Ramps</p> <p>1083 / 798</p> <p>↔</p> <p>919 / 1853 166 / 491</p>	<p>4</p> <p>↔ 297 / 15 ↔ 1454 / 925 ↔ 440 / 549</p> <p>Latrobe Rd</p> <p>↔ 271 / 604 ↔ 30 / 6 ↔ 70 / 58</p> <p>Town Center Blvd</p> <p>11 / 299 8 / 33 6 / 67</p> <p>↔ ↔ ↔</p> <p>61 / 2 803 / 1441 92 / 149</p>
<p>5</p> <p>↔ 326 / 223 ↔ 1112 / 584 ↔ 92 / 243</p> <p>Latrobe Rd</p> <p>↔ 120 / 194 ↔ 227 / 170 ↔ 298 / 194</p> <p>White Rock Rd</p> <p>235 / 349 87 / 336 60 / 86</p> <p>↔ ↔ ↔</p> <p>84 / 73 601 / 1049 131 / 346</p>	<p>6</p> <p>Town Center Blvd</p> <p>↔ 337 / 367 ↔ 300 / 99</p> <p>White Rock Rd</p> <p>303 / 532 115 / 71</p> <p>↔ ↔</p> <p>Windfield Way</p> <p>53 / 238 79 / 239</p>	<p>7</p> <p>↔ 104 / 175 ↔ 11 / 15 ↔ 40 / 186</p> <p>Post St</p> <p>↔ 204 / 178 ↔ 509 / 333 ↔ 42 / 43</p> <p>White Rock Rd</p> <p>75 / 205 226 / 699 9 / 21</p> <p>↔ ↔ ↔</p> <p>32 / 50 4 / 16 20 / 29</p>	<p>8</p> <p>↔ 74 / 69 ↔ 25 / 84 ↔ 3 / 16</p> <p>Saratoga Way</p> <p>↔ 5 / 32 ↔ 0 / 4</p> <p>Walgreens Dwy</p> <p>76 / 87 0 / 3 1 / 4</p> <p>↔ ↔ ↔</p> <p>0 / 2 68 / 41</p>
<p>9</p> <p>↔ 14 / 55 ↔ 12 / 33</p> <p>Saratoga Way</p> <p>↔ 7 / 13 ↔ 0 / 6</p> <p>Main Project Dwy</p> <p>↔ 61 / 30 ↔ 0 / 6</p>	<p>10</p> <p>↔ 1 / 11 ↔ 13 / 50</p> <p>Saratoga Way</p> <p>↔ 15 / 15 ↔ 0 / 1</p> <p>Arrowhead Dr</p> <p>↔ 46 / 21</p>		



Table 6 – Existing (2017) Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing (2017)	
				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/ Park Dr	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	White Rock Rd @ Windfield Wy/ Town Center Blvd	Signal	AM	11.9	B
			PM	13.9	B
7	White Rock Rd @ Post St	Signal	AM	23.5	C
			PM	43.7	D
8	Saratoga Wy @ Mammoth Wy/ Walgreens Dwy	SSSC	AM	10.6	B
			PM	11.1	B
9	Saratoga Wy @ Main Project Site Dwy	SSSC	AM	8.6	A
			PM	8.8	A
10	Saratoga Wy @ Arrowhead Dr	SSSC	AM	9.0	A
			PM	9.0	A

Notes:

Side Street Stop Controlled (SSSC) intersection LOS corresponds to the worst approach.

Table 7 – Existing (2017) Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	PFFS (%)	v/c
Existing (2017)	Saratoga Way, west of El Dorado Hills Blvd	AM	NB	A	92.0	0.06
			SB	A	92.0	0.03
		PM	NB	B	88.5	0.05
			SB	B	90.4	0.09

Notes:

PFFS = Percent Free-Flow Speed, v/c = Volume to Capacity

Table 8 – Existing (2017) Freeway Facility Levels of Service

US-50				Existing (2017)	
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	22.6	C
			PM	24.8	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	14.5	B
			PM	19.4	B
	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 to Silva Valley Pkwy Off-Ramp	Weave ^c	AM	-	A	
		PM	-	B	
Westbound	Silva Valley On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave ^c	AM	-	B
			PM	-	A
	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 (2017) 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 roadway network based on existing traffic volumes, output from the County’s travel demand model, and professional judgment. Using these volumes, levels of service were determined at the study facilities. Existing (2017) plus Proposed Project peak-hour turn movement volumes are presented in **Figure 10**. 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 D.

Table 9 – Existing (2017) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing (2017)		Existing (2017) plus Proposed Project	
				Delay (sec)	LOS	Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	12.9	B	26.4	C
			PM	22.6	C	38.5	D
2	El Dorado Hills Blvd @ US-50 WB Ramps/ Park Dr	Signal	AM	30.9	C	29.7	C
			PM	44.2	D	52.5	D
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	14.5	B	14.9	B
			PM	13.7	B	14.1	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	16.3	B	17.9	B
			PM	48.3	D	49.2	D
5	Latrobe Rd @ White Rock Rd	Signal	AM	33.2	C	34.4	C
			PM	33.4	C	33.3	C
6	White Rock Rd @ Windfield Wy/ Town Center Blvd	Signal	AM	11.9	B	11.9	B
			PM	13.9	B	13.9	B
7	White Rock Rd @ Post St	Signal	AM	23.5	C	23.9	C
			PM	43.7	D	44.6	D
8	Saratoga Wy @ Mammoth Wy/ Walgreens Dwy	SSSC	AM	10.6	B	18.8	C
			PM	11.1	B	15.8	C
9	Saratoga Wy @ Main Project Site Dwy	SSSC	AM	8.6	A	9.4	A
			PM	8.8	A	9.6	A
10	Saratoga Wy @ Arrowhead Dr	SSSC	AM	9.0	A	9.0	A
			PM	9.0	A	9.1	A

Notes:

Side Street Stop Controlled (SSSC) intersection LOS corresponds to the worst approach.

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<p>1</p> <p>72 / 71 ↔ 1413 / 755 ↔ 146 / 164 El Dorado Hills Blvd</p> <p>Saratoga Wy</p> <p>58 / 71 9 / 25 238 / 197</p>	<p>70 / 273 ↔ 10 / 18 ↔ 11 / 57 Park Dr</p> <p>187 / 219 ↔ 696 / 1265 ↔ 29 / 75</p>	<p>2</p> <p>718 / 364 ↔ 894 / 615 ↔ 50 / 30 El Dorado Hills Blvd</p> <p>US-50 WB Ramps</p> <p>195 / 152 69 / 70 376 / 136</p>	<p>53 / 68 ↔ 82 / 82 ↔ 105 / 169 Park Dr</p> <p>495 / 985 ↔ 664 / 1339 ↔ 148 / 300</p>	<p>3</p> <p>1130 / 710 ↔ 245 / 210 El Dorado Hills Blvd</p> <p>US-50 EB Ramps</p> <p>1083 / 798</p>	<p>↔ 364 / 751</p> <p>943 / 1873 ↔ 166 / 491</p>	<p>4</p> <p>297 / 15 ↔ 1476 / 944 ↔ 440 / 549 Latrobe Rd</p> <p>Town Center Blvd</p> <p>271 / 604 ↔ 30 / 6 ↔ 70 / 58</p>	
<p>5</p> <p>337 / 232 ↔ 1119 / 590 ↔ 96 / 247 Latrobe Rd</p> <p>White Rock Rd</p> <p>247 / 359 87 / 336 60 / 86</p>	<p>124 / 198 ↔ 227 / 170 ↔ 298 / 194</p> <p>84 / 73 ↔ 609 / 1055 ↔ 131 / 346</p>	<p>6</p> <p>Town Center Blvd</p> <p>348 / 376 ↔ 300 / 99 White Rock Rd</p> <p>Windfield Way</p> <p>315 / 542 115 / 71</p>	<p>53 / 238 ↔ 79 / 239</p>	<p>7</p> <p>104 / 175 ↔ 11 / 15 ↔ 40 / 186 Post St</p> <p>White Rock Rd</p> <p>75 / 205 230 / 703 9 / 21</p>	<p>204 / 178 ↔ 513 / 337 ↔ 42 / 43</p> <p>32 / 50 4 / 16 20 / 29</p>	<p>8</p> <p>74 / 69 ↔ 192 / 223 ↔ 3 / 16 Saratoga Way</p> <p>Mammoth Wy</p> <p>76 / 87 0 / 3 4 / 6</p> <p>Walgreens Dwy</p> <p>5 / 32 0 / 4 3 / 4 224 / 174</p>	
<p>9</p> <p>99 / 126 ↔ 97 / 103 Saratoga Way</p> <p>Main Project Dwy</p> <p>141 / 98 1 / 7</p>	<p>86 / 80 ↔ 1 / 7</p> <p>141 / 98 1 / 7</p>	<p>10</p> <p>4 / 13 ↔ 14 / 51 Saratoga Way</p> <p>Arrowhead Dr</p> <p>18 / 17 0 / 1</p>	<p>47 / 23</p>				



Roadway Segment

Table 10 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 10, the study roadway segment operates at LOS C.

Table 10 – Existing (2017) plus Proposed Project Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	PFFS (%)	v/c
Existing (2017) plus Project	Saratoga Way, west of El Dorado Hills Blvd	AM	NB	C	82.0	0.18
			SB	C	82.4	0.17
		PM	NB	C	82.1	0.17
			SB	C	81.4	0.2

Notes:

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 E.

Table 11 – Existing (2017) plus Proposed Project Freeway Facility Levels of Service

US-50				Existing (2017)		Existing plus Project (2017)	
Direction	Segment	Type	Peak Hour	Density ^a	LOS	Density ^a	LOS
Eastbound	West of Latrobe Rd Southbound Off- Ramp	Basic	AM	13.3	B	13.5	B
			PM	23.2	C	23.5	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	22.6	C	23.0	C
			PM	24.8	C	25.2	C
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	14.5	B	15.0	B
			PM	19.4	B	19.8	B
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	6.6	A	6.6	A
			PM	14.4	B	14.3	B
Latrobe Rd On-Ramp to Silva Valley Pkwy Off-Ramp	Weave ^c	AM	-	A	-	A	
		PM	-	B	-	B	
Westbound	Silva Valley On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave ^c	AM	-	B	-	B
			PM	-	A	-	A
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	19.4	C	19.3	C
			PM	12.2	B	12.2	B
	El Dorado Hills Blvd On-Ramp	Merge	AM	32.8	D	33.2	D
			PM	26.1	C	26.4	C
	West of El Dorado Hills Blvd On-Ramp	Basic	AM	34.4	D	35.2	E
			PM	24.2	C	24.7	C

Notes:

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

b- **Bold** represents unacceptable operations

c- Weave segment LOS calculated using Leisch Method

CUMULATIVE (2035) CONDITIONS

As described in the Land Use Consistency and Analysis Scenarios section of this report, future traffic estimates were prepared using the County's current TDM. The County provided the current draft Geodatabase associated with the TDM which has an updated roadway network per the County's 2016 Capital Improvement Program¹⁰. However, as the County indicated, this geodatabase "is still in draft form and has not been tested or used in any other project." As a result, Kimley-Horn reviewed the draft geodatabase and the roadway network for consistency with the 2016 Capital Improvement Program (CIP) to confirm its accuracy for use in this study.

In addition, in a manner consistent with other recent studies in the project area, analyses completed specifically considered the inclusion of the following projects¹¹:

- 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

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, including the restriction of left-turns out of Mamouth Way
- El Dorado Hills Boulevard @ Saratoga Way Intersection Improvements
- US-50/Silva Valley Parkway Interchange (Phase 2)
- US-50/Empire Ranch Road Interchange

The difference between the resulting 2035 traffic estimate and the 2010 baseline model results (the growth) was then added to Existing (2017) traffic volumes to establish Cumulative (2035) traffic estimates for this study. Cumulative (2035) lane geometries and peak-hour turn movement volumes are presented in **Figure 11** and **Figure 12**, respectively. Analysis worksheets for this scenario are provided in **Appendix F**.

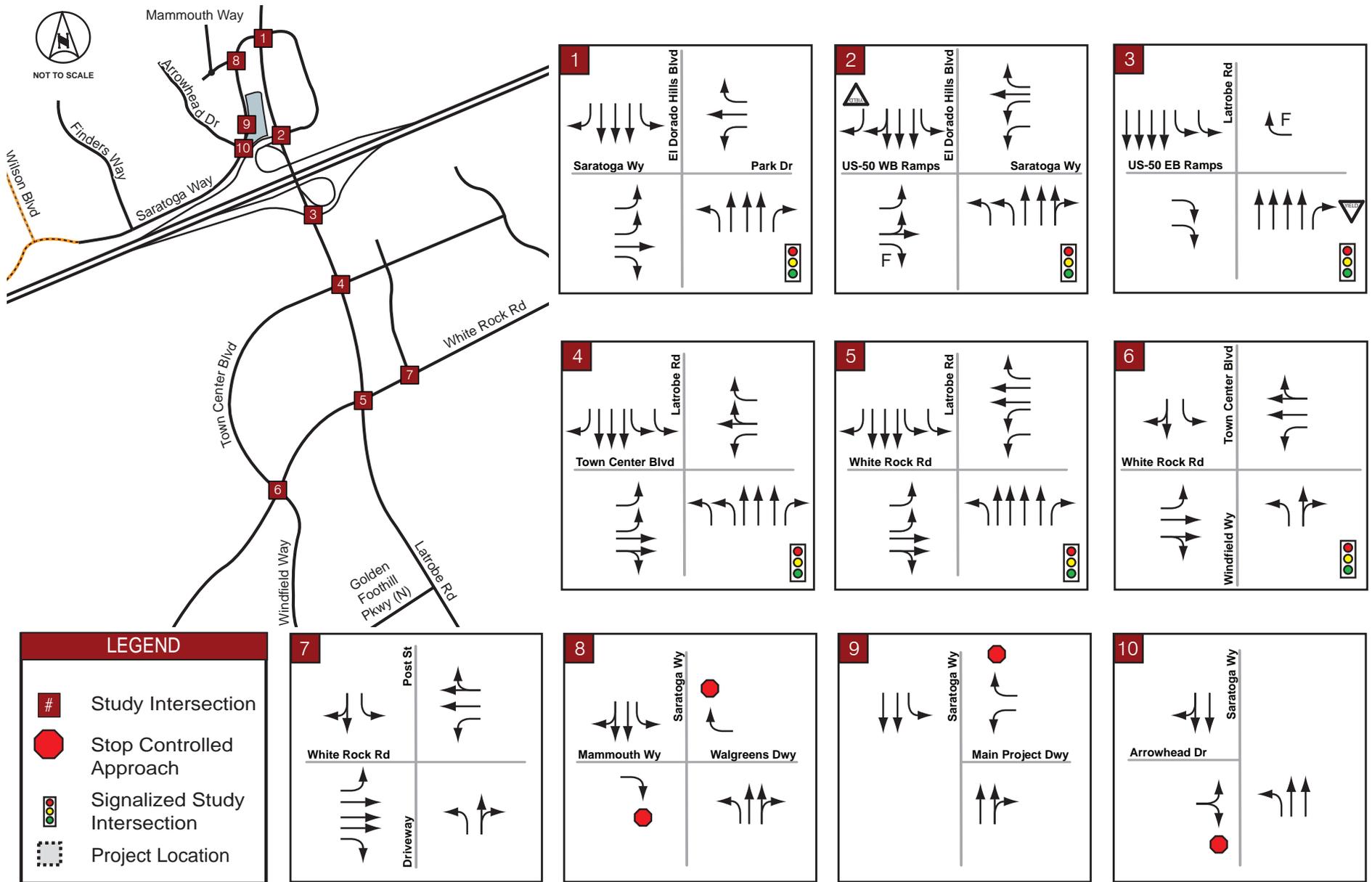
Intersections

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

¹⁰ Email from Katie Jackson, El Dorado County Community Development Agency, March 15, 2017.

¹¹ Email from Chirag Safi, Kittelson & Associates, Inc., October 20, 2014.

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<p>1</p> <p>↔ 133 / 44 ↔ 1456 / 930 ↔ 190 / 233</p> <p>El Dorado Hills Blvd</p> <p>↔ 153 / 327 ↔ 189 / 90 ↔ 163 / 256</p> <p>Saratoga Wy</p> <p>Park Dr</p> <p>69 / 284 116 / 339 145 / 313</p> <p>↔ 161 / 132 ↔ 699 / 1153 ↔ 1 / 22</p>	<p>2</p> <p>↔ 377 / 106 ↔ 1374 / 1387 ↔ 13 / 6</p> <p>El Dorado Hills Blvd</p> <p>↔ 40 / 21 ↔ 198 / 238 ↔ 109 / 173</p> <p>US-50 WB Ramps</p> <p>Park Dr</p> <p>99 / 87 134 / 127 189 / 29</p> <p>↔ 523 / 1156 ↔ 722 / 1199 ↔ 157 / 317</p>	<p>3</p> <p>↔ 1397 / 1346 ↔ 275 / 243</p> <p>El Dorado Hills Blvd</p> <p>↔ 218 / 338</p> <p>US-50 EB Ramps</p> <p>1146 / 374</p> <p>↔ 1184 / 2334 ↔ 381 / 705</p>	<p>4</p> <p>↔ 412 / 83 ↔ 1566 / 979 ↔ 565 / 658</p> <p>Latrobe Rd</p> <p>↔ 395 / 790 ↔ 35 / 12 ↔ 131 / 77</p> <p>Town Center Blvd</p> <p>49 / 413 11 / 39 4 / 54</p> <p>↔ 51 / 2 ↔ 1121 / 1836 ↔ 93 / 156</p>
<p>5</p> <p>↔ 631 / 229 ↔ 956 / 623 ↔ 114 / 258</p> <p>Latrobe Rd</p> <p>↔ 154 / 209 ↔ 555 / 371 ↔ 503 / 495</p> <p>White Rock Rd</p> <p>303 / 551 145 / 674 95 / 102</p> <p>↔ 201 / 97 ↔ 808 / 1234 ↔ 143 / 432</p>	<p>6</p> <p>↔ 26 / 53 ↔ 15 / 25</p> <p>Town Center Blvd</p> <p>↔ 691 / 536 ↔ 696 / 161</p> <p>White Rock Rd</p> <p>44 / 30 419 / 886 145 / 127</p> <p>↔ 85 / 310 ↔ 21 / 21 ↔ 124 / 441</p>	<p>7</p> <p>↔ 148 / 243 ↔ 10 / 12 ↔ 37 / 171</p> <p>Post St</p> <p>↔ 192 / 170 ↔ 1029 / 771 ↔ 38 / 41</p> <p>White Rock Rd</p> <p>136 / 290 248 / 1046 18 / 28</p> <p>↔ 35 / 61 ↔ 2 / 13 ↔ 20 / 28</p>	<p>8</p> <p>↔ 74 / 69 ↔ 406 / 181 ↔ 3 / 16</p> <p>Saratoga Way</p> <p>↔ 5 / 32</p> <p>Mammoth Wy</p> <p>↔ 1 / 4</p> <p>Walgreens Dwy</p> <p>↔ 0 / 2 ↔ 325 / 904</p>
<p>9</p> <p>↔ 395 / 152 ↔ 12 / 33</p> <p>Saratoga Way</p> <p>↔ 7 / 17 ↔ 0 / 6</p> <p>Main Project Dwy</p> <p>↔ 318 / 889 ↔ 0 / 9</p>	<p>10</p> <p>↔ 1 / 11 ↔ 394 / 147</p> <p>Saratoga Way</p> <p>↔ 91 / 105 ↔ 0 / 1</p> <p>Arrowhead Dr</p> <p>↔ 227 / 793</p>		



Table 12 – 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	29.1	C
			PM	94.7	F
2	El Dorado Hills Blvd @ US-50 WB Ramps/ Park Dr	Signal	AM	26.8	C
			PM	101.8	F
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	12.3	B
			PM	16.5	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	22.5	C
			PM	78.9	E
5	Latrobe Rd @ White Rock Rd	Signal	AM	52.7	D
			PM	76.0	E
6	White Rock Rd @ Windfield Wy/ Town Center Blvd	Signal	AM	32.3	C
			PM	37.2	D
7	White Rock Rd @ Post St	Signal	AM	44.2	D
			PM	133.7	F
8	Saratoga Wy @ Mammoth Wy/ Walgreens Dwy	SSSC	AM	9.9	A
			PM	12.4	B
9	Saratoga Wy @ Main Project Site Dwy	SSSC	AM	9.3	A
			PM	15.4	C
10	Saratoga Wy @ Arrowhead Dr	SSSC	AM	14.8	B
			PM	16.2	C

Notes:

Bold represents unacceptable operations.

Side Street Stop Controlled (SSSC) intersection LOS corresponds to the worst approach.

Roadway Segment

Table 13 presents the roadway segment operating conditions for this analysis scenario. As indicated in **Table 13**, the study roadway segment operates at LOS A or LOS B.

Table 13 – Cumulative (2035) Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)
Cumulative (2035)	Saratoga Way, west of El Dorado Hills Blvd	AM	NB	A	4.1
			SB	A	6.0
		PM	NB	B	11.6
			SB	A	3.3

Notes:

D = Density (passenger cars, per mile, per lane)

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 D.

Table 14 – 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	15.2	B
			PM	19.3	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	22.0	C
			PM	32.4	D
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	16.3	B
			PM	30.2	D
	El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	8.5	A
			PM	12.1	B
	Latrobe Rd On-Ramp to Silva Valley Pkwy Off-Ramp	Weave ^c	AM	-	A
			PM	-	B
Westbound	Silva Valley On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave ^c	AM	-	B
			PM	-	B
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	18.9	C
			PM	20.9	C
	El Dorado Hills Blvd On-Ramp to Scott Rd Off Ramp	Weave ^c	AM	-	D
			PM	-	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

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 roadway network based on existing traffic volumes, output from the County’s travel demand model, and professional judgment. Using these volumes, levels of service were determined at the study facilities. Cumulative (2035) plus Proposed Project peak-hour turn movement volumes are presented in **Figure 13**. Analysis worksheets for this scenario are provided in **Appendix G**.

Intersections

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

Table 15 – 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	29.1	C	45.0	D
			PM	94.7	F	101.8	F
2	El Dorado Hills Blvd @ US-50 WB Ramps/ Park Dr	Signal	AM	26.8	C	46.1	D
			PM	101.8	F	100.5	F
3	Latrobe Rd @ US-50 EB Ramps	Signal	AM	12.3	B	12.7	B
			PM	16.5	B	17.3	B
4	Latrobe Rd @ Town Center Blvd	Signal	AM	22.5	C	24.7	C
			PM	78.9	E	76.1	E
5	Latrobe Rd @ White Rock Rd	Signal	AM	52.7	D	55.5	E
			PM	76.0	E	71.7	E
6	White Rock Rd @ Windfield Wy/ Town Center Blvd	Signal	AM	32.3	C	32.7	C
			PM	37.2	D	37.6	D
7	White Rock Rd @ Post St	Signal	AM	44.2	D	50.9	D
			PM	133.7	F	121.2	F
8	Saratoga Wy @ Mammoth Wy/ Walgreens Dwy	SSSC	AM	9.9	A	10.6	B
			PM	12.4	B	13.2	B
9	Saratoga Wy @ Main Project Site Dwy	SSSC	AM	9.3	A	10.9	B
			PM	15.4	C	17.5	C
10	Saratoga Wy @ Arrowhead Dr	SSSC	AM	14.8	B	15.4	C
			PM	16.2	C	16.7	C

Notes:

Bold represents unacceptable operations. Shaded represents significant impact.
Side Street Stop Controlled (SSSC) intersection LOS corresponds to the worst approach.

Saratoga Retail Phase 2 - Transportation Impact Analysis

<p>1</p> <p>184 / 86 ↔ 1449 / 925 ↔ 190 / 233 ↔ El Dorado Hills Blvd</p> <p>Saratoga Wy</p> <p>109 / 318 ↔ 116 / 339 ↔ 246 / 399 ↔</p> <p>153 / 327 ↔ 189 / 90 ↔ 163 / 256 ↔</p> <p>Park Dr</p> <p>261 / 215 ↔ 699 / 1153 ↔ 1 / 22 ↔</p>	<p>2</p> <p>418 / 141 ↔ 1427 / 1433 ↔ 13 / 6 ↔ El Dorado Hills Blvd</p> <p>US-50 WB Ramps</p> <p>126 / 109 ↔ 134 / 127 ↔ 189 / 29 ↔</p> <p>40 / 21 ↔ 198 / 238 ↔ 109 / 173 ↔</p> <p>Park Dr</p> <p>523 / 1156 ↔ 795 / 1260 ↔ 157 / 317 ↔</p>	<p>3</p> <p>1425 / 1370 ↔ 300 / 265 ↔ El Dorado Hills Blvd</p> <p>US-50 EB Ramps</p> <p>1146 / 374 ↔</p> <p>261 / 374 ↔</p> <p>1214 / 2359 ↔ 381 / 705 ↔</p>	<p>4</p> <p>412 / 83 ↔ 1594 / 1003 ↔ 565 / 658 ↔ Laird Rd</p> <p>395 / 790 ↔ 35 / 12 ↔ 131 / 77 ↔</p> <p>Town Center Blvd</p> <p>49 / 413 ↔ 11 / 39 ↔ 4 / 54 ↔</p> <p>51 / 2 ↔ 1151 / 1861 ↔ 93 / 156 ↔</p>
<p>5</p> <p>646 / 242 ↔ 965 / 630 ↔ 118 / 262 ↔ Laird Rd</p> <p>White Rock Rd</p> <p>319 / 565 ↔ 145 / 674 ↔ 95 / 102 ↔</p> <p>158 / 213 ↔ 555 / 371 ↔ 503 / 495 ↔</p> <p>White Rock Rd</p> <p>201 / 97 ↔ 818 / 1241 ↔ 143 / 432 ↔</p>	<p>6</p> <p>26 / 53 ↔ 15 / 25 ↔ Town Center Blvd</p> <p>White Rock Rd</p> <p>44 / 30 ↔ 435 / 900 ↔ 145 / 127 ↔</p> <p>706 / 549 ↔ 696 / 161 ↔</p> <p>White Rock Rd</p> <p>85 / 310 ↔ 21 / 21 ↔ 124 / 441 ↔</p> <p>Windfield Way</p>	<p>7</p> <p>148 / 243 ↔ 10 / 12 ↔ 37 / 171 ↔ Post St</p> <p>White Rock Rd</p> <p>136 / 290 ↔ 252 / 1050 ↔ 18 / 28 ↔</p> <p>192 / 170 ↔ 1033 / 775 ↔ 38 / 41 ↔</p> <p>White Rock Rd</p> <p>35 / 61 ↔ 2 / 13 ↔ 20 / 28 ↔</p>	<p>8</p> <p>74 / 69 ↔ 557 / 306 ↔ 3 / 16 ↔ Saratoga Way</p> <p>5 / 32 ↔</p> <p>Walgreens Dwy</p> <p>4 / 6 ↔</p> <p>3 / 4 ↔ 466 / 1024 ↔</p>
<p>9</p> <p>472 / 215 ↔ 89 / 97 ↔ Saratoga Way</p> <p>Main Project Dwy</p> <p>389 / 949 ↔ 4 / 13 ↔</p> <p>80 / 79 ↔ 8 / 13 ↔</p>	<p>10</p> <p>4 / 13 ↔ 407 / 158 ↔ Saratoga Way</p> <p>Arrowhead Dr</p> <p>94 / 107 ↔ 0 / 1 ↔</p> <p>242 / 805 ↔</p>		



Roadway Segment

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

Table 16 – Cumulative (2035) plus Proposed Project Roadway Segment Levels of Service

Scenario	Location	Peak-Hour	Analysis Direction	LOS	D (pc/mi/ln)
Cumulative (2035) plus Project	Saratoga Way, west of El Dorado Hills Blvd	AM	NB	A	5.8
			SB	A	7.9
		PM	NB	B	13.1
			SB	A	4.8

Notes:

D = Density (passenger cars, per mile, per lane)

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 D.

Table 17 – 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	15.2	B	15.4	B
			PM	19.3	C	19.5	C
	Latrobe Rd Southbound Off-Ramp	Diverge	AM	22.0	C	22.1	C
			PM	32.4	D	28.4	D
	El Dorado Hills Blvd Northbound Off-Ramp	Diverge	AM	16.3	B	16.6	B
			PM	30.2	D	34.2	D
El Dorado Hills Blvd Northbound Off-Ramp to Latrobe Rd On-Ramp	Basic	AM	8.5	A	8.5	A	
		PM	12.1	B	15.3	B	
Latrobe Rd On-Ramp to Silva Valley Pkwy Off-Ramp	Weave ^c	AM	-	A	-	A	
		PM	-	B	-	C	
Westbound	Silva Valley On-Ramp to El Dorado Hills Blvd Off-Ramp	Weave ^c	AM	-	B	-	B
			PM	-	B	-	B
	El Dorado Hills Blvd Off-Ramp to El Dorado Hills Blvd On-Ramp	Basic	AM	18.9	C	18.9	C
			PM	20.9	C	20.8	C
	El Dorado Hills Blvd On-Ramp to Scott Rd Off Ramp	Weave ^c	AM	-	D	-	D
			PM	-	D	-	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

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 standards¹² 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-Xd¹³) 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-Xd¹³), 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-Xd¹³) 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-Xe¹³ 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.

Measure E was passed by El Dorado County voters on June 7, 2016, and became effective on July 29, 2016. Measure E amended General Plan Policies TX-Xa, TC-Xf, and TC-Xg and included several "implementation" statements. At the time of this report, the Board of Supervisors (Board) had moved forward with the implementation of the voter approved Measure E Initiative "as written and as it was before the voters." Measure E specifically states (amended General Plan Policy TX-Xf) that "For all other discretionary projects that worsen...traffic on the County road system, the County shall condition the project to construct all road improvements necessary to maintain or attain Level of Service standards...", and that "All necessary road capacity improvements shall be fully completed to prevent cumulative traffic impacts from new development from reaching Level of Service F during peak hours..." (General Plan Policy TC-Xa 3). As such, the Saratoga Retail Phase 2 project is directly affected by Measure E. Accordingly, although the Board continues to work through the implementation of the measure, this project will be required to, at a minimum, demonstrate consistency with the Measure's requirements. Moreover, consistent with Measure E, the Proposed Project will likely be conditioned to construct all mitigations identified under Existing (2017) Conditions, and to pay its fair share of Cumulative (2035) Conditions mitigations.

¹² *Transportation Impact Study Guidelines*, El Dorado County Community Development Agency, November 2014.

¹³ *El Dorado County General Plan, Transportation and Circulation Element*, July 2004.

Impacts and Mitigation

Existing (2017) plus Proposed Project Conditions

As reflected in **Table 9**, **Table 10**, and **Table 11**, the addition of the proposed project does not result in any significant impacts. As a result, no mitigations are required.

Cumulative (2035) plus Proposed Project Conditions

As reflected in **Table 15**, **Table 16**, and **Table 17**, the addition of the proposed project results in three (3) significant impact. The following is a discussion of the impact and its associated mitigation. Analysis worksheets are provided in **Appendix H**.

Impacts:

Intersections

11. *Intersection #1, El Dorado Hills Boulevard @ Saratoga Way/Park Drive*
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 trips during the peak-hour. ***This is a significant impact.***
12. *Intersection #2, El Dorado Hills Boulevard @ US-50 WB Ramps/Park Drive*
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 trips during the peak-hour. ***This is a significant impact.***
13. *Intersection #7, White Rock Road @ Post Street*
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 trips during the peak-hour. ***This is a significant impact.***

Roadway Segment

None.

Freeway Facilities

None.

Mitigations:

Intersections

- M1. *Intersection #1, El Dorado Hills Blvd @ Saratoga Way/Park Drive*
The significant impact at this intersection during the PM peak-hour can be mitigated with the following improvements: the optimization of El Dorado Hills Boulevard/Latrobe Road signalized corridor; the restriping of the westbound approach at the intersection of Latrobe Road/Town Center Boulevard (Intersection #4) to include one shared through/left-turn lane and two right-turn lanes, and the addition of a right-turn overlap signal phase for the westbound and eastbound right-turns at the intersection of El Dorado Hills Boulevard/Saratoga Way/Park Drive (Intersection #1).

The Cumulative analysis includes planned roadway improvements, growth consistent with the *2004 General Plan*, and with approved and reasonably foreseeable projects within the study area. This is found to be an impact in the cumulative scenario without the project, which includes other foreseeable but unapproved projects. Therefore, the project is responsible for its proportional share of the proposed mitigation under cumulative conditions. Since the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. The County's traffic impact mitigation fee program provides a mechanism for collecting fair share contributions for improvements in the 2016 CIP.

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 CDA, 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 or fee credit 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 18**, this mitigation measure results in the intersection operating at LOS E during the PM peak-hour. Therefore, **this impact is less than significant**. Fair share calculations are 17-percent for the PM peak-hour.

M2. Intersection #2, El Dorado Hills Blvd @ US-50 WB Ramps/Park Drive

The significant impact at this intersection during the PM peak-hour can be mitigated with the following improvements: the optimization of El Dorado Hills Boulevard/Latrobe Road signalized corridor, and the restriping of the westbound approach at the intersection of Latrobe Road/Town Center Boulevard (Intersection #4) to include one shared through/left-turn lane, and two right-turn lanes.

The Cumulative analysis includes planned roadway improvements, growth consistent with the *2004 General Plan*, and with approved and reasonably foreseeable projects within the study area. This is found to be an impact in the cumulative scenario without the project, which includes other foreseeable but unapproved projects. Therefore, the project is responsible for its proportional share of the proposed mitigation under cumulative conditions. Since the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. The County's traffic impact mitigation fee program provides a mechanism for collecting fair share contributions for improvements in the 2016 CIP.

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 CDA, 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 or fee credit 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 18**, this mitigation measure results in the intersection operating at LOS E during the PM peak-hour. Therefore, **this impact is less than significant**. Fair share calculations are 18-percent for the PM peak-hour.

M3. Intersection #7, White Rock Road @ Post Street

The significant impact at this intersection during the PM peak-hour can be mitigated with the following improvements: the optimization of El Dorado Hills Boulevard/Latrobe Road signalized corridor, and the restriping of the westbound approach at the intersection of Latrobe Road/Town Center Boulevard (Intersection #4) to include one shared through/left-turn lane, and two right-turn lanes.

The Cumulative analysis includes planned roadway improvements, growth consistent with the 2004 *General Plan*, and with approved and reasonably foreseeable projects within the study area. This is found to be an impact in the cumulative scenario without the project, which includes other foreseeable but unapproved projects. Therefore, the project is responsible for its proportional share of the proposed mitigation under cumulative conditions. Since the impact is identified under the cumulative scenario, the timing of the improvement is a function of the rate of population and employment growth. The County’s traffic impact mitigation fee program provides a mechanism for collecting fair share contributions for improvements in the 2016 CIP.

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 CDA, 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 or fee credit 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 18**, this mitigation measure results in the intersection operating at LOS D during the PM peak-hour. Therefore, *this impact is less than significant*. The fair share calculation is 1-percent for the PM peak-hour.

Table 18 – Intersection Levels of Service –
Cumulative (2035) plus Proposed Project Mitigated Conditions

ID	Intersection	Control	Peak Hour	Cumulative (2035) plus Proposed Project		Control	Cumulative (2035) plus Proposed Project (Mitigated)	
				Delay (sec)	LOS		Delay (sec)	LOS
1	El Dorado Hills Blvd @ Saratoga Way/Park Dr	Signal	AM	45.0	D	Signal	39.4	D
			PM	101.8	F		79.6	E
2	El Dorado Hills Blvd @ US-50 WB Ramps/ Park Dr	Signal	AM	46.1	D	Signal	35.2	D
			PM	100.5	F		73.2	E
7	White Rock Rd @ Post St	Signal	AM	50.9	D	Signal	54.4	D
			PM	121.2	F		52.9	D

Notes:

Bold represents unacceptable operations. Shaded represents significant impact.

Roadway Segment

None.

Freeway Facilities

None.

OTHER CONSIDERATIONS

Intersection Queuing Evaluation

Vehicle queuing for critical movements at four (4) 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 19**. Analysis sheets that include the anticipated vehicle queues are presented in Appendices B-F. As presented in **Table 19**, the addition of the proposed project adds a minimal amount of additional queuing to these movements.

Table 19 – Intersection Queuing Evaluation Results for Select Locations

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
#1, El Dorado Hills Blvd @ Saratoga Way	NBL				
	Existing (2017)		82		161
	Existing (2017) plus Project		220		285
	Cumulative (2035)	235	210	235	177
	Cumulative (2035) plus Project		308		313
	Cumulative (2035) plus Project (Mitigated)		263		281
#2, El Dorado Hills Blvd @ US-50 WB Ramps	NBL				
	Existing (2017)		711		848
	Existing (2017) plus Project		617		838
	Cumulative (2035)	1500	309	1500	646
	Cumulative (2035) plus Project		480		681
	Cumulative (2035) plus Project (Mitigated)		293		782
	SBL				
	Existing (2017)	195	125	195	252
	Existing (2017) plus Project		121		251
	Cumulative (2035)		66		120
	Cumulative (2035) plus Project	390 ^a	107	390 ^a	112
	Cumulative (2035) plus Project (Mitigated)		167		99
	EBL				
	Existing (2017)		274		222
	Existing (2017) plus Project		314		244
	Cumulative (2035)	1850	91	1850	574
	Cumulative (2035) plus Project		392		560
	Cumulative (2035) plus Project (Mitigated)		104		229
#3, El Dorado Hills Blvd @ US-50 EB Ramps	EBR				
	Existing (2017)		610		475
	Existing (2017) plus Project		627		432
	Cumulative (2035)	415	281	415	103
	Cumulative (2035) plus Project		283		100

Source: *Highway Capacity Manual (HCM) 2010* methodology per Synchro® v9.
Notes: For approaches with dual left-turn lanes, the longest queue length is reported.
a - includes on right and one right-thru lane

On-Site Transportation Review

In accordance with the County’s *Guidelines*², 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 2015 *Annual Accident Location Study*¹⁴, several study area sites (i.e., intersections and roadway segments) experienced three (3) or more accidents during a three-year period between January 1, 2013, and December 31, 2015. According to the *Study*, these sites were selected for investigation and determination of corrective action(s). **Table 20** provides a summary of the study area sites and their selected actions.

Table 20 – Project Area Sites Selected for Accident Investigation

Site #	Location Description	Accident Rate*	Identified Action
16	El Dorado Hills Blvd, vicinity of US-50	0.76	None required
17	El Dorado Hills Blvd, vicinity of Saratoga Way (North)	0.52	None required
18	El Dorado Hills Blvd, vicinity of Serrano Pkwy	0.23	None required
37	Latrobe Rd, vicinity of Town Center Blvd	0.51	None required
38	Latrobe Rd, vicinity of US-50	0.48	None required

Source: *Annual Accident Location Study 2015*, County of El Dorado Transportation Division, March 24, 2016.
 * # Accidents per Million Vehicles (MV) for single sites (intersections/curves), # Accidents per Million Vehicle Miles (MVM) for roadway sections.

According to the *Study*, “no further action is required due to low accident rate or other conditions.” However, these sites will continue to be monitored and any subsequent increase in the frequency of accidents may necessitate further review and analysis.”

Considering the suburban nature of the study area, here are no “non-standard intersection or roadway” facilities in the general project area.

A planning level assessment of the need for traffic signalization was performed for the un-signalized study intersections. 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 December 2015 revisions)*. A summary of the peak-hour warrant results is presented in **Table 21**.

Table 21 – Traffic Signal Warrant Analysis Results

#	Intersection	Analysis Scenario			
		Existing (2017)	Existing (2017) plus PP	Cum (2035)	Cum (2035) plus PP
8	Saratoga Way @ Mammouth Way	No / No	No / No	No / No	No / No
9	Saratoga Way @ Main Project Dwy	No / No	No / No	No / No	No / No
10	Saratoga Way @ Arrowhead Dr	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 21**, no intersections warrant a traffic signal under Existing (2017) and Cumulative (2035) Conditions with and without the addition of the proposed project. Detailed results of this analysis are presented in **Appendix G**.

¹⁴ *Annual Accident Location Study 2015*, County of El Dorado Transportation Division, March 24, 2016.

2. Proximity of proposed site driveway(s) to other driveways or intersections

As previously noted, access to the site is provided at the existing main site driveway intersection with Saratoga Way (Intersection #9). With the addition of the project, two additional driveways will serve the site; one full access driveway south of the main site driveway, and one egress-only driveway at the south end of the project site. According to the project site plan (**Figure 2**), these two additional driveways are located approximately equidistance from each other and Intersection #9 (approximately 250-feet).

The spacing between consecutive site driveways appears to be adequate and, when combined with the presence of left-turn access from Saratoga Way, these access points will assist in dispersing trips entering and exiting the site. The proposed configuration is advantageous as it reduces the potential for a concentration of trips which should serve to minimize queuing and other operational inefficiencies.

The southern egress-only driveway is positioned just north of the existing Arrowhead Drive intersection (Intersection #10). Due to the anticipated on-site circulation and predominant traffic movements (to/from El Dorado Hills Boulevard), the potential conflicts between Arrowhead Drive and site traffic at this intersection are anticipated to be minimal. It should be noted that the site plan depicts this driveway's movements as right-turns only, thereby further reducing the potential conflicts with Arrowhead Drive.

3. Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements

According to the County's requirements¹⁵, the proposed project is required to provide 36 total parking spaces. As noted in **Figure 2**, 68 parking spaces are proposed to be provided.

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

Based on information provided by the project applicant, the worst-case scenario (overlapping between uses) includes up to 10 deliveries, up to three times per week. These deliveries are also understood to occur off-peak, when site traffic is at a minimum. As a result, the project site as depicted in **Figure 2** appears to be designed to satisfy the anticipated truck loading demand on-site.

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). The southernmost driveway is one-way only, and therefore a MRTD of 25-feet is acceptable. The secondary all-access driveway requires a 25-foot throat depth based on the approach volume, conflicting volume, and percent of right-turns (see data provided in **Appendix H**).

6. Adequacy of the project site design to convey all vehicle types

As shown in project site plan (**Figure 2**), the turn radius for a firetruck is depicted circulating through the proposed project. As such, the proposed project is considered to allow for adequate on-site circulation for all vehicle types.

7. Adequacy of sight distance on-site

An evaluation of sight distance was completed for the two proposed site access driveway intersections along Saratoga Way 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 Association of State Highway and

¹⁵ El Dorado County Ordinance Code, Section 130.35.030, November 17, 2004.

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.

8. *Queuing analysis of “drive-through” facilities*

Chick-fil-A Restaurant

The project site plan (**Figure 2**) depicts drive-through queuing space for 15 vehicles with the proposed Chick-fil-A fast-food restaurant. 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 I**). Considering the relatively consistent suburban locations and anticipated uses, the proposed project is expected to be able to accommodate the maximum drive-through queue without spillback into the adjacent drive aisle and avoid impeding on-site pedestrian movements.

Habit Burger (Building 2A)

The project site plan (**Figure 2**) depicts drive-through queuing space for approximately 9 vehicles with the proposed Habit Burger fast-food restaurant. As noted above, 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 I**). 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 impeding 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 site access driveway to reduce the likelihood of a standing vehicle queue along this driveway during peak periods of operation.

Other Transportation-Related Impacts and Mitigation Considerations

In accordance with the County’s *Guidelines*², the proposed project was evaluated against the following *General Plan* goals:

- ***Emergency Vehicle Access***

*Fire Safe Regulations*¹⁶ 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. As shown in project site plan (**Figure 2**), the turn radius for a firetruck is depicted circulating through the proposed project. As such, the proposed project is considered to allow for adequate access and on-site circulation for emergency vehicles.

- ***Deliveries of Goods and Services***

As shown in project site plan (**Figure 2**), the turn radius for a firetruck is depicted circulating through the proposed project. As such, the proposed project is considered to allow for adequate on-site circulation for all vehicle types, including delivery vehicles for goods and services.

- ***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.”***

¹⁶ *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.

El Dorado Transit currently operates a “Sacramento Commuter” bus route that operates Monday through Friday only. This route has multiple stops within the Town Center development located south of US-50 along Latrobe Road. No other public transit services are known to operate in the project area. Nevertheless, the proposed project promotes safe and efficient access to the existing transit system by providing pedestrian connectivity to and through the project site (see Figure 2).

- ***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 proximity of the proposed project to two of the County’s most heavily traveled corridors is anticipated to result the capture of a significant number of “pass by” trips that are already on the network. Although somewhat tempered for the purposes of the trip generation estimates depicted in Table 1, the proposed project’s “new trip” generation is greatly reduced because of its exposure to these corridors. As a result, the proposed project has the net effect of reducing travel demand on the County’s road system by minimizing the number of new trips.

- ***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 Chapter 5, Page 22 of the *El Dorado County Bicycle Transportation Plan*, Class II Bike Lanes are proposed for Saratoga Way 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 future adjacent Class II Bike Lanes along Saratoga Way. Through this connection to the proposed bike lane network, the project will provide continuity with adjacent projects, schools, parks, and other public facilities.

- ***On-Site Transportation Review***

See above “On-Site Transportation Review” section. Furthermore, the site plan for the proposed project (Figure 2) was qualitatively reviewed for general access and on-site circulation. According to the site plan, access to the site will be provided from Saratoga Way at the existing main site driveway intersection. Two additional driveways will serve the site; one full access driveway south of the main site driveway, and one egress-only driveway at the south end of the project site. Detailed LOS and delay data were previously reported for the Saratoga Way intersection with the main site driveway (Intersection #9). The combination of these access points, as well as the on-site circulation system appears to provide adequate access to/from Saratoga Way and the surrounding transportation network.

- ***Complete street implementation shall be considered wherever possible***

Because Saratoga Way is already constructed and the proposed project is the completion of a previously approved commercial development, there are minimal opportunities for the project to implement complete street components. Nevertheless, at some point in the future when the County implements the four-lane Saratoga Way adjacent to the project site, consideration should be given to allocating portions of the public right-of-way to non-vehicular traffic thereby enhancing the complete street characteristics of Saratoga Way.

CONCLUSIONS

Significant findings of this study include:

- The proposed project is estimated to generate approximately 3,529 new daily trips, with 286 new trips occurring during the AM peak-hour, and 241 new trips occurring during the PM peak-hour.
- The proposed project is understood to be consistent with the County's growth assumptions for Traffic Analysis Zone (TAZ) (#616) in which the project is located. However, in light of Measure E's requirements, although the County's Travel Demand Model (TDM) is considered to account for the project's proposed land use and the *General Plan's* cumulative traffic analysis should serve as the basis for the Cumulative (2035) traffic analysis of the project, a new evaluation of Cumulative (2035) conditions (with and without the proposed project) is included in this evaluation.
- As defined by the County, the addition of the proposed project to the Existing (2017) and Cumulative (2035) scenarios significantly worsens conditions at three study intersections. The impact can be mitigated to be *less than significant*.
- Measure E was passed by El Dorado County voters on June 7, 2016, and became effective on July 29, 2016. Measure E amended General Plan Policies TX-Xa, TC-Xf, and TC-Xg and included several "implementation" statements. At the time of this report, the Board of Supervisors (Board) had moved forward with the implementation of the voter approved Measure E Initiative "as written and as it was before the voters." Measure E specifically states (amended General Plan Policy TX-Xf) that "For all other discretionary projects that worsen...traffic on the County road system, the County shall condition the project to construct all road improvements necessary to maintain or attain Level of Service standards...", and that "All necessary road capacity improvements shall be fully completed to prevent cumulative traffic impacts from new development from reaching Level of Service F during peak hours..." (General Plan Policy TC-Xa 3). As such, the Saratoga Retail Phase 2 project is directly affected by Measure E. Accordingly, although the Board continues to work through the implementation of the measure, this project will be required to, at a minimum, demonstrate consistency with the Measure's requirements. Moreover, consistent with Measure E, the Proposed Project will likely be conditioned to construct all mitigations identified under Existing (2017) Conditions, and to pay its fair share of Cumulative (2035) Conditions mitigations.

Appendix A

Traffic Count Data Sheets

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-001 El Dorado Hills Blvd & Saratoga Way North
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	El Dorado Hills Blvd Southbound					Saratoga Way North Westbound					El Dorado Hills Blvd Northbound					Saratoga Way North Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	12	125	1	0	138	0	0	4	0	4	1	43	0	0	44	2	0	9	0	11	197	0
6:15	6	153	0	0	159	2	1	2	0	5	3	45	1	1	50	1	0	8	0	9	223	1
6:30	18	237	0	0	255	0	1	4	0	5	1	65	3	0	69	3	0	9	0	12	341	0
6:45	18	238	1	0	257	2	2	6	0	10	7	86	1	0	94	2	0	16	0	18	379	0
Total	54	753	2	0	809	4	4	16	0	24	12	239	5	1	257	8	0	42	0	50	1140	1
7:00	27	280	2	1	310	1	1	13	0	15	9	144	2	1	156	10	4	23	0	37	518	2
7:15	28	336	4	0	368	2	2	22	0	26	8	122	2	0	132	5	1	16	0	22	548	0
7:30	27	362	4	0	393	1	2	12	0	15	12	134	4	0	150	8	4	28	0	40	598	0
7:45	53	376	10	0	439	4	1	22	0	27	25	164	3	0	192	1	0	23	0	24	682	0
Total	135	1354	20	1	1510	8	6	69	0	83	54	564	11	1	630	24	9	90	0	123	2346	2
8:00	37	397	1	0	435	1	5	23	0	29	18	128	8	1	155	3	2	38	0	43	662	1
8:15	29	286	6	1	322	5	2	13	0	20	16	175	14	0	205	6	1	33	0	40	587	1
8:30	22	284	6	0	312	4	0	16	0	20	26	168	9	1	204	7	4	27	0	38	574	1
8:45	33	328	6	2	369	3	3	13	0	19	44	163	14	0	221	9	8	47	0	64	673	2
Total	121	1295	19	3	1438	13	10	65	0	88	104	634	45	2	785	25	15	145	0	185	2496	5
16:00	30	184	11	0	225	9	3	58	0	70	17	283	13	1	314	14	8	23	0	45	654	1
16:15	38	178	9	1	226	15	4	45	0	64	24	242	19	3	288	9	8	26	0	43	621	4
16:30	28	165	6	1	200	17	7	53	0	77	30	273	14	1	318	8	1	27	0	36	631	2
16:45	34	180	5	2	221	10	7	70	0	87	24	290	18	0	332	15	4	15	0	34	674	2
Total	130	707	31	4	872	51	21	226	0	298	95	1088	64	5	1252	46	21	91	0	158	2580	9
17:00	32	180	8	1	221	16	1	59	0	76	30	284	15	1	330	15	7	34	0	56	683	2
17:15	41	199	5	0	245	13	2	74	0	89	31	377	16	2	426	8	6	21	0	35	795	2
17:30	51	190	8	2	251	14	9	75	0	98	35	310	22	1	368	8	8	25	0	41	758	3
17:45	40	192	8	1	241	14	6	65	0	85	26	308	22	1	357	6	4	18	0	28	711	2
Total	164	761	29	4	958	57	18	273	0	348	122	1279	75	5	1481	37	25	98	0	160	2947	9
18:00	41	148	10	0	199	10	8	79	0	97	24	307	14	0	345	14	2	14	0	30	671	0
18:15	28	156	3	1	188	10	2	59	0	71	19	316	13	0	348	14	4	19	0	37	644	1
18:30	36	151	1	0	188	8	2	62	0	72	18	287	19	0	324	10	3	13	0	26	610	0
18:45	25	158	14	2	199	12	2	43	0	57	20	230	7	0	257	10	3	9	0	22	535	2
Total	130	613	28	3	774	40	14	243	0	297	81	1140	53	0	1274	48	12	55	0	115	2460	3
Grand Total	734	5483	129	15	6361	173	73	892	0	1138	468	4944	253	14	5679	188	82	521	0	791	13969	29
Approch %	11.5%	86.2%	2.0%	0.2%	45.5%	15.2%	6.4%	78.4%	0.0%	8.1%	8.2%	87.1%	4.5%	0.2%	40.7%	23.8%	10.4%	65.9%	0.0%	5.7%	100.0%	
Total %	5.3%	39.3%	0.9%	0.1%		1.2%	0.5%	6.4%	0.0%		3.4%	35.4%	1.8%	0.1%		1.3%	0.6%	3.7%	0.0%			

AM PEAK HOUR	El Dorado Hills Blvd Southbound					Saratoga Way North Westbound					El Dorado Hills Blvd Northbound					Saratoga Way North Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	27	362	4	0	393	1	2	12	0	15	12	134	4	0	150	8	4	28	0	40	598
7:45	53	376	10	0	439	4	1	22	0	27	25	164	3	0	192	1	0	23	0	24	682
8:00	37	397	1	0	435	1	5	23	0	29	18	128	8	1	155	3	2	38	0	43	662
8:15	29	286	6	1	322	5	2	13	0	20	16	175	14	0	205	6	1	33	0	40	587
Total Volume	146	1421	21	1	1589	11	10	70	0	91	71	601	29	1	702	18	7	122	0	147	2529
% App Total	9.2%	89.4%	1.3%	0.1%		12.1%	11.0%	76.9%	0.0%		10.1%	85.6%	4.1%	0.1%		12.2%	4.8%	83.0%	0.0%		
PHF	.689	.895	.525	.250	.905	.550	.500	.761	.000	.784	.710	.859	.518	.250	.856	.563	.438	.803	.000	.855	.927

PM PEAK HOUR	El Dorado Hills Blvd Southbound					Saratoga Way North Westbound					El Dorado Hills Blvd Northbound					Saratoga Way North Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	32	180	8	1	221	16	1	59	0	76	30	284	15	1	330	15	7	34	0	56	683
17:15	41	199	5	0	245	13	2	74	0	89	31	377	16	2	426	8	6	21	0	35	795
17:30	51	190	8	2	251	14	9	75	0	98	35	310	22	1	368	8	8	25	0	41	758
17:45	40	192	8	1	241	14	6	65	0	85	26	308	22	1	357	6	4	18	0	28	711
Total Volume	164	761	29	4	958	57	18	273	0	348	122	1279	75	5	1481	37	25	98	0	160	2947
% App Total	17.1%	79.4%	3.0%	0.4%		16.4%	5.2%	78.4%	0.0%		8.2%	86.4%	5.1%	0.3%		23.1%	15.6%	61.3%	0.0%		
PHF	.804	.956	.906	.500	.954	.891	.500	.910	.000	.888	.871	.848	.852	.625	.869	.617	.781	.721	.000	.714	.927

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-002 El Dorado Hills Blvd & US-50 WB Ramps/Saratoga W
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	El Dorado Hills Blvd Southbound					US-50 WB Ramps/Saratoga Way South Westbound					El Dorado Hills Blvd Northbound					US-50 WB Ramps/Saratoga Way South Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
	6:00	5	37	102	0	144	6	13	2	0	21	75	37	5	0	117	6	4	31	0		
6:15	5	44	109	0	158	9	16	3	0	28	86	33	11	0	130	14	5	35	0	54	370	0
6:30	10	90	156	0	256	11	21	5	0	37	81	59	24	0	164	14	22	37	0	73	530	0
6:45	9	83	155	0	247	14	20	8	0	42	96	61	22	0	179	17	10	58	1	86	554	1
Total	29	254	522	0	805	40	70	18	0	128	338	190	62	0	590	51	41	161	1	254	1777	1
7:00	5	120	171	0	296	15	18	6	0	39	79	136	26	0	241	18	19	39	0	76	652	0
7:15	7	152	189	0	348	20	29	8	0	57	85	100	27	0	212	24	13	67	0	104	721	0
7:30	8	165	206	0	379	19	14	7	0	40	104	107	25	0	236	38	17	65	0	120	775	0
7:45	16	236	177	0	429	27	14	16	0	57	104	135	47	1	287	51	18	118	0	187	960	1
Total	36	673	743	0	1452	81	75	37	0	193	372	478	125	1	976	131	67	289	0	487	3108	1
8:00	13	230	185	0	428	29	28	15	0	72	128	96	29	1	254	36	23	93	0	152	906	1
8:15	4	163	146	1	314	22	21	10	0	53	136	162	38	0	336	33	15	92	0	140	843	1
8:30	17	156	157	0	330	27	19	12	0	58	127	164	34	1	326	39	13	73	0	125	839	1
8:45	14	186	162	0	362	24	26	6	0	56	114	179	25	0	318	30	13	73	1	117	853	1
Total	48	735	650	1	1434	102	94	43	0	239	505	601	126	2	1234	138	64	331	1	534	3441	4
16:00	6	124	81	0	211	37	18	16	0	71	246	284	60	0	590	26	10	33	0	69	941	0
16:15	15	146	70	0	231	42	16	18	0	76	212	247	74	2	535	25	14	25	0	64	906	2
16:30	7	131	67	0	205	34	24	18	0	76	307	280	64	0	651	24	16	29	0	69	1001	0
16:45	6	126	74	1	207	41	19	20	0	80	263	295	57	0	615	23	17	43	0	83	985	1
Total	34	527	292	1	854	154	77	72	0	303	1028	1106	255	2	2391	98	57	130	0	285	3833	3
17:00	8	132	84	0	224	55	19	14	0	88	241	295	83	0	619	28	14	21	0	63	994	0
17:15	8	160	74	0	242	38	24	17	0	79	245	343	81	0	669	44	20	35	0	99	1089	0
17:30	8	132	87	0	227	35	20	17	0	72	236	343	79	0	658	27	19	37	0	83	1040	0
17:45	13	148	68	0	229	46	23	30	0	99	208	281	76	0	565	25	18	36	0	79	972	0
Total	37	572	313	0	922	174	86	78	0	338	930	1262	319	0	2511	124	71	129	0	324	4095	0
18:00	7	105	57	0	169	37	17	23	0	77	262	308	73	0	643	19	11	16	0	46	935	0
18:15	12	114	61	1	188	30	14	23	0	67	156	302	69	2	529	19	12	20	0	51	835	3
18:30	3	105	62	0	170	31	21	25	0	77	129	277	52	0	458	24	14	18	0	56	761	0
18:45	6	94	74	0	174	23	16	14	0	53	103	227	39	1	370	11	7	26	0	44	641	1
Total	28	418	254	1	701	121	68	85	0	274	650	1114	233	3	2000	73	44	80	0	197	3172	4
Grand Total	212	3179	2774	3	6168	672	470	333	0	1475	3823	4751	1120	8	9702	615	344	1120	2	2081	19426	13
Apprch %	3.4%	51.5%	45.0%	0.0%		45.6%	31.9%	22.6%	0.0%		39.4%	49.0%	11.5%	0.1%		29.6%	16.5%	53.8%	0.1%			
Total %	1.1%	16.4%	14.3%	0.0%	31.8%	3.5%	2.4%	1.7%	0.0%	7.6%	19.7%	24.5%	5.8%	0.0%	49.9%	3.2%	1.8%	5.8%	0.0%	10.7%	100.0%	

AM PEAK HOUR	El Dorado Hills Blvd Southbound					US-50 WB Ramps/Saratoga Way South Westbound					El Dorado Hills Blvd Northbound					US-50 WB Ramps/Saratoga Way South Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	16	236	177	0	429	27	14	16	0	57	104	135	47	1	287	51	18	118	0	187	960
8:00	13	230	185	0	428	29	28	15	0	72	128	96	29	1	254	36	23	93	0	152	906
8:15	4	163	146	1	314	22	21	10	0	53	136	162	38	0	336	33	15	92	0	140	843
8:30	17	156	157	0	330	27	19	12	0	58	127	164	34	1	326	39	13	73	0	125	839
Total Volume	50	785	665	1	1501	105	82	53	0	240	495	557	148	3	1203	159	69	376	0	604	3548
% App Total	3.3%	52.3%	44.3%	0.1%		43.8%	34.2%	22.1%	0.0%		41.1%	46.3%	12.3%	0.2%		26.3%	11.4%	62.3%	0.0%		
PHF	.735	.832	.899	.250	.875	.905	.732	.828	.000	.833	.910	.849	.787	.750	.895	.779	.750	.797	.000	.807	.924

PM PEAK HOUR	El Dorado Hills Blvd Southbound					US-50 WB Ramps/Saratoga Way South Westbound					El Dorado Hills Blvd Northbound					US-50 WB Ramps/Saratoga Way South Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	6	126	74	1	207	41	19	20	0	80	263	295	57	0	615	23	17	43	0	83	985
17:00	8	132	84	0	224	55	19	14	0	88	241	295	83	0	619	28	14	21	0	63	994
17:15	8	160	74	0	242	38	24	17	0	79	245	343	81	0	669	44	20	35	0	99	1089
17:30	8	132	87	0	227	35	20	17	0	72	236	343	79	0	658	27	19	37	0	83	1040
Total Volume	30	550	319	1	900	169	82	68	0	319	985	1276	300	0	2561	122	70	136	0	328	4108
% App Total	3.3%	61.1%	35.4%	0.1%		53.0%	25.7%	21.3%	0.0%		38.5%	49.8%	11.7%	0.0%		37.2%	21.3%	41.5%	0.0%		
PHF	.938	.859	.917	.250	.930	.768	.854	.850	.000	.906	.936	.930	.904	.000	.957	.693	.875	.791	.000	.828	.943

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-003 Latrobe Rd & US-50 EB Ramps
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	Latrobe Rd Southbound					US-50 EB Ramps Westbound					Latrobe Rd Northbound					US-50 EB Ramps Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	1	69	0	0	70	0	0	17	0	17	0	107	10	0	117	0	0	77	0	77	281	0
6:15	12	80	0	0	92	0	0	20	0	20	0	111	17	0	128	0	0	113	0	113	353	0
6:30	19	106	0	0	125	0	0	31	0	31	0	143	17	0	160	0	0	184	0	184	500	0
6:45	22	146	0	0	168	0	0	44	0	44	0	123	21	0	144	0	0	274	0	274	630	0
Total	54	401	0	0	455	0	0	112	0	112	0	484	65	0	549	0	0	648	0	648	1764	0
7:00	25	149	0	0	174	0	0	61	0	61	0	172	22	0	194	0	0	230	0	230	659	0
7:15	44	163	0	0	207	0	0	60	0	60	0	160	32	0	192	0	0	207	0	207	666	0
7:30	74	204	0	0	278	0	0	63	0	63	0	164	42	0	206	0	0	242	0	242	789	0
7:45	67	300	0	0	367	0	0	87	0	87	0	205	40	0	245	0	0	299	0	299	998	0
Total	210	816	0	0	1026	0	0	271	0	271	0	701	136	0	837	0	0	978	0	978	3112	0
8:00	53	290	0	0	343	0	0	57	0	57	0	203	35	0	238	0	0	267	0	267	905	0
8:15	44	249	0	0	293	0	0	98	0	98	0	230	52	0	282	0	0	278	0	278	951	0
8:30	48	201	0	0	249	0	0	66	0	66	0	265	39	0	304	0	0	239	0	239	858	0
8:45	36	260	0	0	296	0	0	72	0	72	0	250	36	0	286	0	0	265	0	265	919	0
Total	181	1000	0	0	1181	0	0	293	0	293	0	948	162	0	1110	0	0	1049	0	1049	3633	0
16:00	37	167	0	0	204	0	0	163	0	163	0	405	120	0	525	0	0	177	0	177	1069	0
16:15	49	176	0	1	226	0	0	151	0	151	0	404	99	0	503	0	0	203	0	203	1083	1
16:30	36	146	0	0	182	0	0	160	0	160	0	511	126	0	637	0	0	189	0	189	1168	0
16:45	45	177	0	0	222	0	0	166	0	166	0	392	120	0	512	0	0	213	0	213	1113	0
Total	167	666	0	1	834	0	0	640	0	640	0	1712	465	0	2177	0	0	782	0	782	4433	1
17:00	54	137	0	0	191	0	0	161	0	161	0	497	121	0	618	0	0	209	0	209	1179	0
17:15	46	199	0	0	245	0	0	217	0	217	0	457	124	0	581	0	0	187	0	187	1230	0
17:30	39	154	0	1	194	0	0	216	0	216	0	419	103	0	522	0	0	207	0	207	1139	1
17:45	57	163	0	0	220	0	0	200	0	200	0	389	85	0	474	0	0	211	0	211	1105	0
Total	196	653	0	1	850	0	0	794	0	794	0	1762	433	0	2195	0	0	814	0	814	4653	1
18:00	53	124	0	0	177	0	0	193	0	193	0	431	101	0	532	0	0	161	0	161	1063	0
18:15	26	132	0	0	158	0	0	207	0	207	0	325	67	0	392	0	0	153	0	153	910	0
18:30	30	119	0	0	149	0	0	197	0	197	0	274	62	0	336	0	0	160	0	160	842	0
18:45	27	124	0	0	151	0	0	135	0	135	0	222	54	0	276	0	0	125	0	125	687	0
Total	136	499	0	0	635	0	0	732	0	732	0	1252	284	0	1536	0	0	599	0	599	3502	0
Grand Total	944	4035	0	2	4981	0	0	2842	0	2842	0	6859	1545	0	8404	0	0	4870	0	4870	21097	2
Apprch %	19.0%	81.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	81.6%	18.4%	0.0%		0.0%	0.0%	100.0%	0.0%			
Total %	4.5%	19.1%	0.0%	0.0%	23.6%	0.0%	0.0%	13.5%	0.0%	13.5%	0.0%	32.5%	7.3%	0.0%	39.8%	0.0%	0.0%	23.1%	0.0%	23.1%	100.0%	

AM PEAK HOUR	Latrobe Rd Southbound					US-50 EB Ramps Westbound					Latrobe Rd Northbound					US-50 EB Ramps Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:45 to 08:45																						
Peak Hour For Entire Intersection Begins at 07:45																						
7:45	67	300	0	0	367	0	0	87	0	87	0	205	40	0	245	0	0	299	0	299	998	
8:00	53	290	0	0	343	0	0	57	0	57	0	203	35	0	238	0	0	267	0	267	905	
8:15	44	249	0	0	293	0	0	98	0	98	0	230	52	0	282	0	0	278	0	278	951	
8:30	48	201	0	0	249	0	0	66	0	66	0	265	39	0	304	0	0	239	0	239	858	
Total Volume	212	1040	0	0	1252	0	0	308	0	308	0	903	166	0	1069	0	0	1083	0	1083	3712	
% App Total	16.9%	83.1%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	84.5%	15.5%	0.0%		0.0%	0.0%	100.0%	0.0%			
PHF	.791	.867	.000	.000	.853	.000	.000	.786	.000	.786	.000	.852	.798	.000	.879	.000	.000	.906	.000	.906	.930	

PM PEAK HOUR	Latrobe Rd Southbound					US-50 EB Ramps Westbound					Latrobe Rd Northbound					US-50 EB Ramps Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 16:30 to 17:30																						
Peak Hour For Entire Intersection Begins at 16:30																						
16:30	36	146	0	0	182	0	0	160	0	160	0	511	126	0	637	0	0	189	0	189	1168	
16:45	45	177	0	0	222	0	0	166	0	166	0	392	120	0	512	0	0	213	0	213	1113	
17:00	54	137	0	0	191	0	0	161	0	161	0	497	121	0	618	0	0	209	0	209	1179	
17:15	46	199	0	0	245	0	0	217	0	217	0	457	124	0	581	0	0	187	0	187	1230	
Total Volume	181	659	0	0	840	0	0	704	0	704	0	1857	491	0	2348	0	0	798	0	798	4690	
% App Total	21.5%	78.5%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	79.1%	20.9%	0.0%		0.0%	0.0%	100.0%	0.0%			
PHF	.838	.828	.000	.000	.857	.000	.000	.811	.000	.811	.000	.909	.974	.000	.922	.000	.000	.937	.000	.937	.953	

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-004 Latrobe Rd & Town Center Blvd
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	Latrobe Rd Southbound					Town Center Blvd Westbound					Latrobe Rd Northbound					Town Center Blvd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	44	89	21	0	154	6	1	16	0	23	1	101	4	0	106	0	0	0	0	0	283	0
6:15	42	129	20	1	192	4	1	37	0	42	3	86	4	0	93	2	0	0	0	2	329	1
6:30	64	198	24	0	286	8	2	40	0	50	0	115	12	0	127	2	0	0	0	2	465	0
6:45	66	306	41	0	413	10	2	48	0	60	3	92	12	0	107	3	0	0	0	3	583	0
Total	216	722	106	1	1045	28	6	141	0	175	7	394	32	0	433	7	0	0	0	7	1660	1
7:00	65	284	40	0	389	9	2	41	0	52	4	147	10	0	161	1	1	1	0	3	605	0
7:15	86	252	42	0	380	15	4	45	0	64	13	156	12	0	181	0	2	0	0	2	627	0
7:30	80	302	58	2	442	17	1	49	0	67	8	144	15	0	167	4	0	0	0	4	680	2
7:45	112	388	71	1	572	10	9	45	0	64	12	193	11	0	216	3	1	2	0	6	858	1
Total	343	1226	211	3	1783	51	16	180	0	247	37	640	48	0	725	8	4	3	0	15	2770	3
8:00	113	408	57	0	578	15	8	50	0	73	15	188	20	0	223	2	0	1	0	3	877	0
8:15	96	332	76	2	506	22	5	73	1	101	13	203	26	0	242	4	4	2	0	10	859	3
8:30	106	265	78	1	450	15	5	68	0	88	16	243	21	0	280	1	2	1	0	4	822	1
8:45	125	308	86	1	520	18	12	80	0	110	17	198	25	1	241	4	2	2	0	8	879	2
Total	440	1313	297	4	2054	70	30	271	1	372	61	832	92	1	986	11	8	6	0	25	3437	6
16:00	121	239	6	1	367	14	2	143	0	159	0	354	39	1	394	44	6	19	0	69	989	2
16:15	115	236	5	0	356	16	0	145	1	162	1	322	33	0	356	48	5	11	0	64	938	1
16:30	120	212	4	2	338	8	1	160	0	169	0	384	33	1	418	77	8	20	0	105	1030	3
16:45	163	237	6	0	406	14	1	136	0	151	1	302	28	0	331	80	11	10	0	101	989	0
Total	519	924	21	3	1467	52	4	584	1	641	2	1362	133	2	1499	249	30	60	0	339	3946	6
17:00	129	213	4	0	346	21	3	159	1	184	0	399	44	0	443	79	9	15	0	103	1076	1
17:15	137	247	1	1	386	15	1	149	0	165	1	347	44	0	392	63	5	22	0	90	1033	1
17:30	111	231	1	3	346	21	0	149	1	171	0	306	27	0	333	60	5	12	0	77	927	4
17:45	123	252	0	5	380	16	0	137	0	153	0	310	39	0	349	27	3	5	0	35	917	5
Total	500	943	6	9	1458	73	4	594	2	673	1	1362	154	0	1517	229	22	54	0	305	3953	11
18:00	118	156	3	0	277	10	0	159	0	169	0	348	32	0	380	29	8	4	0	41	867	0
18:15	115	172	1	2	290	19	0	154	1	174	0	200	25	0	225	18	1	8	0	27	716	3
18:30	87	178	1	6	272	20	1	129	0	150	0	187	15	0	202	15	3	0	0	18	642	6
18:45	83	160	0	4	247	9	0	108	0	117	0	153	23	1	177	10	0	3	0	13	554	5
Total	403	666	5	12	1086	58	1	550	1	610	0	888	95	1	984	72	12	15	0	99	2779	14
Grand Total	2421	5794	646	32	8893	332	61	2320	5	2718	108	5478	554	4	6144	576	76	138	0	790	18545	41
Apprch %	27.2%	65.2%	7.3%	0.4%		12.2%	2.2%	85.4%	0.2%		1.8%	89.2%	9.0%	0.1%		72.9%	9.6%	17.5%	0.0%			
Total %	13.1%	31.2%	3.5%	0.2%	48.0%	1.8%	0.3%	12.5%	0.0%	14.7%	0.6%	29.5%	3.0%	0.0%	33.1%	3.1%	0.4%	0.7%	0.0%	4.3%	100.0%	

AM PEAK HOUR	Latrobe Rd Southbound					Town Center Blvd Westbound					Latrobe Rd Northbound					Town Center Blvd Eastbound					Total
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 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	113	408	57	0	578	15	8	50	0	73	15	188	20	0	223	2	0	1	0	3	877
8:15	96	332	76	2	506	22	5	73	1	101	13	203	26	0	242	4	4	2	0	10	859
8:30	106	265	78	1	450	15	5	68	0	88	16	243	21	0	280	1	2	1	0	4	822
8:45	125	308	86	1	520	18	12	80	0	110	17	198	25	1	241	4	2	2	0	8	879
Total Volume	440	1313	297	4	2054	70	30	271	1	372	61	832	92	1	986	11	8	6	0	25	3437
% App Total	21.4%	63.9%	14.5%	0.2%		18.8%	8.1%	72.8%	0.3%		6.2%	84.4%	9.3%	0.1%		44.0%	32.0%	24.0%	0.0%		
PHF	.880	.805	.863	.500	.888	.795	.625	.847	.250	.845	.897	.856	.885	.250	.880	.688	.500	.750	.000	.625	.978

PM PEAK HOUR	Latrobe Rd Southbound					Town Center Blvd Westbound					Latrobe Rd Northbound					Town Center Blvd Eastbound					Total
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	120	212	4	2	338	8	1	160	0	169	0	384	33	1	418	77	8	20	0	105	1030
16:45	163	237	6	0	406	14	1	136	0	151	1	302	28	0	331	80	11	10	0	101	989
17:00	129	213	4	0	346	21	3	159	1	184	0	399	44	0	443	79	9	15	0	103	1076
17:15	137	247	1	1	386	15	1	149	0	165	1	347	44	0	392	63	5	22	0	90	1033
Total Volume	549	909	15	3	1476	58	6	604	1	669	2	1432	149	1	1584	299	33	67	0	399	4128
% App Total	37.2%	61.6%	1.0%	0.2%		8.7%	0.9%	90.3%	0.1%		0.1%	90.4%	9.4%	0.1%		74.9%	8.3%	16.8%	0.0%		
PHF	.842	.920	.625	.375	.909	.690	.500	.944	.250	.909	.500	.897	.847	.250	.894	.934	.750	.761	.000	.950	.959

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-005 Latrobe Rd & White Rock Rd
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	Latrobe Rd Southbound					White Rock Rd Westbound					Latrobe Rd Northbound					White Rock Rd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	9	76	18	0	103	13	11	12	0	36	5	83	11	0	99	11	5	0	0	16	254	0
6:15	4	109	22	0	135	34	12	16	0	62	9	72	9	0	90	10	4	5	0	19	306	0
6:30	13	158	33	0	204	27	26	19	0	72	12	88	6	0	106	14	10	13	0	37	419	0
6:45	16	271	32	2	321	67	32	18	0	117	11	73	14	0	98	18	10	21	0	49	585	2
Total	42	614	105	2	763	141	81	65	0	287	37	316	40	0	393	53	29	39	0	121	1564	2
7:00	16	209	53	0	278	49	40	22	0	111	26	104	18	1	149	38	12	7	0	57	595	1
7:15	15	199	63	1	278	58	39	34	0	131	16	108	19	0	143	30	20	17	0	67	619	1
7:30	14	235	71	0	320	57	53	23	0	133	25	109	11	1	146	39	28	13	0	80	679	1
7:45	23	291	87	0	401	102	59	22	0	183	19	141	25	0	185	53	32	23	0	108	877	0
Total	68	934	274	1	1277	266	191	101	0	558	86	462	73	2	623	160	92	60	0	312	2770	3
8:00	31	298	83	0	412	82	58	29	0	169	25	135	29	1	190	58	21	13	0	92	863	1
8:15	19	266	83	1	369	58	50	28	0	136	14	160	42	1	217	53	25	10	1	89	811	3
8:30	19	176	73	0	268	56	60	41	0	157	26	165	35	0	226	71	22	14	1	108	759	1
8:45	28	224	73	0	325	62	49	33	0	144	6	140	17	0	163	62	19	16	0	97	729	0
Total	97	964	312	1	1374	258	217	131	0	606	71	600	123	2	796	244	87	53	2	386	3162	5
16:00	66	138	64	3	271	49	29	39	0	117	21	293	87	1	402	67	56	25	1	149	939	5
16:15	54	142	59	0	255	45	51	49	0	145	17	228	58	2	305	69	71	34	0	174	879	2
16:30	68	121	61	0	250	36	27	45	0	108	18	303	84	2	407	85	90	18	0	193	958	2
16:45	51	147	43	1	242	53	40	46	1	140	20	213	82	0	315	79	79	30	0	188	885	2
Total	239	548	227	4	1018	183	147	179	1	510	76	1037	311	5	1429	300	296	107	1	704	3661	11
17:00	65	133	58	1	257	47	41	54	0	142	17	307	104	4	432	92	94	16	1	203	1034	6
17:15	59	173	61	0	293	58	56	49	0	163	18	226	76	0	320	93	73	22	1	189	965	1
17:30	58	142	45	2	247	42	45	41	0	128	21	238	86	1	346	83	77	20	1	181	902	4
17:45	50	171	65	1	287	48	26	49	0	123	24	186	57	0	267	78	52	21	0	151	828	1
Total	232	619	229	4	1084	195	168	193	0	556	80	957	323	5	1365	346	296	79	3	724	3729	12
18:00	59	88	34	0	181	43	25	44	0	112	20	264	53	2	339	76	49	14	1	140	772	3
18:15	49	111	41	0	201	31	40	35	0	106	16	142	34	0	192	37	44	11	0	92	591	0
18:30	50	121	31	0	202	24	25	49	0	98	7	115	39	1	162	41	39	11	1	92	554	2
18:45	32	101	38	0	171	38	11	35	0	84	2	101	31	1	135	32	19	16	0	67	457	1
Total	190	421	144	0	755	136	101	163	0	400	45	622	157	4	828	186	151	52	2	391	2374	6
Grand Total	868	4100	1291	12	6271	1179	905	832	1	2917	395	3994	1027	18	5434	1289	951	390	8	2638	17260	39
Apprch %	13.8%	65.4%	20.6%	0.2%		40.4%	31.0%	28.5%	0.0%		7.3%	73.5%	18.9%	0.3%		48.9%	36.1%	14.8%	0.3%			
Total %	5.0%	23.8%	7.5%	0.1%	36.3%	6.8%	5.2%	4.8%	0.0%	16.9%	2.3%	23.1%	6.0%	0.1%	31.5%	7.5%	5.5%	2.3%	0.0%	15.3%	100.0%	

AM PEAK HOUR	Latrobe Rd Southbound					White Rock Rd Westbound					Latrobe Rd Northbound					White Rock Rd Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	23	291	87	0	401	102	59	22	0	183	19	141	25	0	185	53	32	23	0	108	877
8:00	31	298	83	0	412	82	58	29	0	169	25	135	29	1	190	58	21	13	0	92	863
8:15	19	266	83	1	369	58	50	28	0	136	14	160	42	1	217	53	25	10	1	89	811
8:30	19	176	73	0	268	56	60	41	0	157	26	165	35	0	226	71	22	14	1	108	759
Total Volume	92	1031	326	1	1450	298	227	120	0	645	84	601	131	2	818	235	100	60	2	397	3310
% App Total	6.3%	71.1%	22.5%	0.1%		46.2%	35.2%	18.6%	0.0%		10.3%	73.5%	16.0%	0.2%		59.2%	25.2%	15.1%	0.5%		
PHF	.742	.865	.937	.250	.880	.730	.946	.732	.000	.881	.808	.911	.780	.500	.905	.827	.781	.652	.500	.919	.944

PM PEAK HOUR	Latrobe Rd Southbound					White Rock Rd Westbound					Latrobe Rd Northbound					White Rock Rd Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	68	121	61	0	250	36	27	45	0	108	18	303	84	2	407	85	90	18	0	193	958
16:45	51	147	43	1	242	53	40	46	1	140	20	213	82	0	315	79	79	30	0	188	885
17:00	65	133	58	1	257	47	41	54	0	142	17	307	104	4	432	92	94	16	1	203	1034
17:15	59	173	61	0	293	58	56	49	0	163	18	226	76	0	320	93	73	22	1	189	965
Total Volume	243	574	223	2	1042	194	164	194	1	553	73	1049	346	6	1474	349	336	86	2	773	3842
% App Total	23.3%	55.1%	21.4%	0.2%		35.1%	29.7%	35.1%	0.2%		5.0%	71.2%	23.5%	0.4%		45.1%	43.5%	11.1%	0.3%		
PHF	.893	.829	.914	.500	.889	.836	.732	.898	.250	.848	.913	.854	.832	.375	.853	.938	.894	.717	.500	.952	.929

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-006 White Rock Rd & Windfield Way/Town Center Blvd
 Date : 3/14/2017

Unshifted Cnd = All Vehicles & Uturns

START TIME	White Rock Rd Southbound					Windfield Way/Town Center Blvd Westbound					White Rock Rd Northbound					Windfield Way/Town Center Blvd Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	0	0	0	0	0	16	19	0	0	35	4	0	5	0	9	0	13	3	0	16	60	0
6:15	0	0	0	0	0	7	35	0	0	42	1	0	2	0	3	0	21	8	0	29	74	0
6:30	0	0	0	0	0	15	54	0	0	69	1	0	6	0	7	0	31	11	0	42	118	0
6:45	0	0	0	0	0	21	54	0	0	75	2	0	7	0	9	0	43	26	0	69	153	0
Total	0	0	0	0	0	59	162	0	0	221	8	0	20	0	28	0	108	48	0	156	405	0
7:00	0	0	0	0	0	35	78	0	0	113	6	0	10	0	16	0	57	16	0	73	202	0
7:15	0	0	0	0	0	42	80	0	1	123	11	0	11	0	22	0	62	20	0	82	227	1
7:30	0	0	0	0	0	32	105	0	4	141	11	0	10	0	21	0	76	24	0	100	262	4
7:45	0	0	0	0	0	73	96	0	3	172	10	0	9	0	19	0	87	33	0	120	311	3
Total	0	0	0	0	0	182	359	0	8	549	38	0	40	0	78	0	282	93	0	375	1002	8
8:00	0	0	0	0	0	76	91	0	0	167	20	0	22	0	42	0	68	28	0	96	305	0
8:15	0	0	0	0	0	77	73	0	2	152	12	0	25	0	37	0	68	27	0	95	284	2
8:30	0	0	0	0	0	74	90	0	3	167	11	0	23	0	34	0	80	27	0	107	308	3
8:45	0	0	0	0	0	55	69	0	1	125	9	0	11	0	20	0	84	30	0	114	259	1
Total	0	0	0	0	0	282	323	0	6	611	52	0	81	0	133	0	300	112	0	412	1156	6
16:00	0	0	0	0	0	27	84	0	5	116	49	0	45	0	94	0	95	8	0	103	313	5
16:15	0	0	0	0	0	24	96	0	4	124	38	0	41	0	79	0	128	18	0	146	349	4
16:30	0	0	0	0	0	22	78	0	3	103	80	0	54	0	134	0	127	14	0	141	378	3
16:45	0	0	0	0	0	27	73	0	7	107	40	0	45	0	85	0	136	22	0	158	350	7
Total	0	0	0	0	0	100	331	0	19	450	207	0	185	0	392	0	486	62	0	548	1390	19
17:00	0	0	0	0	0	21	89	0	1	111	70	0	86	0	156	0	123	17	0	140	407	1
17:15	0	0	0	0	0	29	109	0	3	141	48	0	54	0	102	0	134	18	0	152	395	3
17:30	0	0	0	0	0	24	81	0	3	108	38	0	38	0	76	0	134	21	0	155	339	3
17:45	0	0	0	0	0	38	77	0	0	115	31	0	44	0	75	0	117	21	0	138	328	0
Total	0	0	0	0	0	112	356	0	7	475	187	0	222	0	409	0	508	77	0	585	1469	7
18:00	0	0	0	0	0	10	69	0	2	81	43	0	56	0	99	0	86	11	0	97	277	2
18:15	0	0	0	0	0	12	84	0	3	99	16	0	27	0	43	0	60	3	0	63	205	3
18:30	0	0	0	0	0	9	55	0	0	64	15	0	17	0	32	0	76	8	0	84	180	0
18:45	0	0	0	0	0	14	37	0	0	51	19	0	16	0	35	0	47	5	0	52	138	0
Total	0	0	0	0	0	45	245	0	5	295	93	0	116	0	209	0	269	27	0	296	800	5
Grand Total	0	0	0	0	0	780	1776	0	45	2601	585	0	664	0	1249	0	1953	419	0	2372	6222	45
Apprch %	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%	68.3%	0.0%	1.7%	41.8%	46.8%	0.0%	53.2%	0.0%	20.1%	0.0%	82.3%	17.7%	0.0%	38.1%	100.0%	
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	28.5%	0.0%	0.7%		9.4%	0.0%	10.7%	0.0%		0.0%	31.4%	6.7%	0.0%			

AM PEAK HOUR	White Rock Rd Southbound					Windfield Way/Town Center Blvd Westbound					White Rock Rd Northbound					Windfield Way/Town Center Blvd Eastbound					Total
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	0	0	0	0	73	96	0	3	172	10	0	9	0	19	0	87	33	0	120	311
8:00	0	0	0	0	0	76	91	0	0	167	20	0	22	0	42	0	68	28	0	96	305
8:15	0	0	0	0	0	77	73	0	2	152	12	0	25	0	37	0	68	27	0	95	284
8:30	0	0	0	0	0	74	90	0	3	167	11	0	23	0	34	0	80	27	0	107	308
Total Volume	0	0	0	0	0	300	350	0	8	658	53	0	79	0	132	0	303	115	0	418	1208
% App Total	0.0%	0.0%	0.0%	0.0%	0.0%	45.6%	53.2%	0.0%	1.2%		40.2%	0.0%	59.8%	0.0%		0.0%	72.5%	27.5%	0.0%		
PHF	.000	.000	.000	.000	.000	.974	.911	.000	.667	.956	.663	.000	.790	.000	.786	.000	.871	.871	.000	.871	.971

PM PEAK HOUR	White Rock Rd Southbound					Windfield Way/Town Center Blvd Westbound					White Rock Rd Northbound					Windfield Way/Town Center Blvd Eastbound					Total
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	0	0	0	0	0	22	78	0	3	103	80	0	54	0	134	0	127	14	0	141	378
16:45	0	0	0	0	0	27	73	0	7	107	40	0	45	0	85	0	136	22	0	158	350
17:00	0	0	0	0	0	21	89	0	1	111	70	0	86	0	156	0	123	17	0	140	407
17:15	0	0	0	0	0	29	109	0	3	141	48	0	54	0	102	0	134	18	0	152	395
Total Volume	0	0	0	0	0	99	349	0	14	462	238	0	239	0	477	0	520	71	0	591	1530
% App Total	0.0%	0.0%	0.0%	0.0%	0.0%	21.4%	75.5%	0.0%	3.0%		49.9%	0.0%	50.1%	0.0%		0.0%	88.0%	12.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.853	.800	.000	.500	.819	.744	.000	.695	.000	.764	.000	.956	.807	.000	.935	.940

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-007 White Rock Rd & Post St
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	White Rock Rd Southbound					Post St Westbound					White Rock Rd Northbound					Post St Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	2	1	7	0	10	2	22	29	0	53	6	1	0	0	7	6	14	0	0	20	90	0
6:15	10	0	11	0	21	1	47	23	0	71	2	1	1	0	4	5	7	0	0	12	108	0
6:30	14	0	16	0	30	5	58	41	0	104	1	2	2	0	5	7	17	1	0	25	164	0
6:45	7	1	30	0	38	4	82	34	0	120	4	1	1	0	6	7	27	1	0	35	199	0
Total	33	2	64	0	99	12	209	127	0	348	13	5	4	0	22	25	65	2	0	92	561	0
7:00	9	0	17	0	26	5	95	35	0	135	6	1	1	0	8	11	26	2	1	40	209	1
7:15	21	1	24	0	46	4	97	47	0	148	12	3	0	0	15	14	31	1	0	46	255	0
7:30	10	1	26	0	37	6	92	32	0	130	7	1	2	0	10	12	38	1	0	52	229	1
7:45	11	4	26	0	41	11	150	60	0	221	5	2	6	0	13	16	51	4	0	71	346	0
Total	51	6	93	0	150	26	434	174	0	634	30	7	9	0	46	53	146	8	2	209	1039	2
8:00	11	4	21	0	36	9	134	60	0	203	10	0	7	0	17	24	49	0	0	73	329	0
8:15	10	3	28	0	41	8	107	36	0	151	10	1	2	0	13	18	61	1	0	80	285	0
8:30	8	0	29	0	37	14	117	48	0	179	7	1	5	0	13	17	51	4	0	72	301	0
8:45	20	8	34	0	62	4	101	54	0	159	14	3	3	0	20	12	44	2	1	59	300	1
Total	49	15	112	0	176	35	459	198	0	692	41	5	17	0	63	71	205	7	1	284	1215	1
16:00	43	2	38	0	83	10	75	58	0	143	9	7	5	0	21	50	148	5	1	204	451	1
16:15	31	4	33	0	68	15	91	35	0	141	15	3	5	0	23	37	137	4	1	179	411	1
16:30	38	4	30	0	72	9	71	34	0	114	13	6	5	0	24	53	177	5	0	235	445	0
16:45	31	3	33	0	67	10	91	51	0	152	10	5	8	0	23	50	151	7	0	208	450	0
Total	143	13	134	0	290	44	328	178	0	550	47	21	23	0	91	190	613	21	2	826	1757	2
17:00	75	6	62	0	143	13	66	56	0	135	15	3	10	0	28	61	191	5	2	259	565	2
17:15	42	2	50	0	94	11	105	37	0	153	12	2	6	0	20	41	165	4	1	211	478	1
17:30	47	6	40	0	93	12	68	40	0	120	11	0	2	0	13	43	167	1	1	212	438	1
17:45	39	4	30	0	73	5	80	43	0	128	14	5	5	0	24	34	128	0	0	162	387	0
Total	203	18	182	0	403	41	319	176	0	536	52	10	23	0	85	179	651	10	4	844	1868	4
18:00	48	2	31	0	81	6	64	30	0	100	15	1	13	0	29	26	127	1	2	156	366	2
18:15	29	3	29	0	61	8	75	22	0	105	7	0	4	0	11	16	105	1	0	122	299	0
18:30	37	0	19	0	56	5	63	40	0	108	16	3	5	0	24	17	101	4	2	124	312	2
18:45	35	4	20	0	59	6	49	28	0	83	9	5	4	0	18	16	58	2	0	76	236	0
Total	149	9	99	0	257	25	251	120	0	396	47	9	26	0	82	75	391	8	4	478	1213	4
Grand Total	628	63	684	0	1375	183	2000	973	0	3156	230	57	102	0	389	593	2071	56	13	2733	7653	13
Approch %	45.7%	4.6%	49.7%	0.0%	18.0%	5.8%	63.4%	30.8%	0.0%	41.2%	59.1%	14.7%	26.2%	0.0%	5.1%	21.7%	75.8%	2.0%	0.5%	35.7%	100.0%	
Total %	8.2%	0.8%	8.9%	0.0%		2.4%	26.1%	12.7%	0.0%		3.0%	0.7%	1.3%	0.0%		7.7%	27.1%	0.7%	0.2%			

AM PEAK HOUR	White Rock Rd Southbound					Post St Westbound					White Rock Rd Northbound					Post St Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	11	4	26	0	41	11	150	60	0	221	5	2	6	0	13	16	51	4	0	71	346
8:00	11	4	21	0	36	9	134	60	0	203	10	0	7	0	17	24	49	0	0	73	329
8:15	10	3	28	0	41	8	107	36	0	151	10	1	2	0	13	18	61	1	0	80	285
8:30	8	0	29	0	37	14	117	48	0	179	7	1	5	0	13	17	51	4	0	72	301
Total Volume	40	11	104	0	155	42	508	204	0	754	32	4	20	0	56	75	212	9	0	296	1261
% App Total	25.8%	7.1%	67.1%	0.0%		5.6%	67.4%	27.1%	0.0%		57.1%	7.1%	35.7%	0.0%		25.3%	71.6%	3.0%	0.0%		
PHF	.909	.688	.897	.000	.945	.750	.847	.850	.000	.853	.800	.500	.714	.000	.824	.781	.869	.583	.000	.925	.911

PM PEAK HOUR	White Rock Rd Southbound					Post St Westbound					White Rock Rd Northbound					Post St Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	38	4	30	0	72	9	71	34	0	114	13	6	5	0	24	53	177	5	0	235	445
16:45	31	3	33	0	67	10	91	51	0	152	10	5	8	0	23	50	151	7	0	208	450
17:00	75	6	62	0	143	13	66	56	0	135	15	3	10	0	28	61	191	5	2	259	565
17:15	42	2	50	0	94	11	105	37	0	153	12	2	6	0	20	41	165	4	1	211	478
Total Volume	186	15	175	0	376	43	333	178	0	554	50	16	29	0	95	205	684	21	3	913	1938
% App Total	49.5%	4.0%	46.5%	0.0%		7.8%	60.1%	32.1%	0.0%		52.6%	16.8%	30.5%	0.0%		22.5%	74.9%	2.3%	0.3%		
PHF	.620	.625	.706	.000	.657	.827	.793	.795	.000	.905	.833	.667	.725	.000	.848	.840	.895	.750	.375	.881	.858

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-008 Saratoga Way & Mammoth Way
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	Saratoga Way Southbound					Mammoth Way Westbound					Saratoga Way Northbound					Mammoth Way Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	0	1	1	0	2	0	0	0	0	0	0	8	0	0	8	3	0	0	0	3	13	0
6:15	0	2	2	0	4	0	0	0	0	0	0	6	0	0	6	3	0	0	0	3	13	0
6:30	0	0	2	0	2	0	0	0	0	0	0	5	0	0	5	7	0	0	0	7	14	0
6:45	0	5	5	0	10	0	0	0	0	0	0	9	0	0	9	9	0	0	0	9	28	0
Total	0	8	10	0	18	0	0	0	0	0	0	28	0	0	28	22	0	0	0	22	68	0
7:00	0	3	8	0	11	0	0	0	0	0	0	26	0	0	26	12	0	0	0	12	49	0
7:15	1	5	8	0	14	0	1	0	0	1	0	8	0	0	8	13	0	0	0	13	36	0
7:30	2	4	11	0	17	0	0	0	0	0	0	22	0	0	22	17	0	0	0	17	56	0
7:45	0	7	28	0	35	0	0	0	0	0	0	10	0	0	10	14	0	1	0	15	60	0
Total	3	19	55	0	77	0	1	0	0	1	0	66	0	0	66	56	0	1	0	57	201	0
8:00	0	5	18	0	23	0	0	0	0	0	0	19	0	0	19	24	0	0	0	24	66	0
8:15	1	7	17	0	25	0	0	5	0	5	0	17	0	0	17	21	0	0	0	21	68	0
8:30	0	10	19	0	29	0	1	2	0	3	0	12	0	0	12	20	0	0	0	20	64	0
8:45	1	5	49	0	55	0	0	1	0	1	0	16	0	0	16	48	0	1	0	49	121	0
Total	2	27	103	0	132	0	1	8	0	9	0	64	0	0	64	113	0	1	0	114	319	0
16:00	2	11	19	0	32	0	1	8	0	9	0	12	0	0	12	27	0	1	0	28	81	0
16:15	5	11	22	0	38	0	0	9	0	9	2	11	0	0	13	19	0	1	0	20	80	0
16:30	4	18	17	2	41	0	0	9	0	9	0	9	0	0	9	16	0	0	0	16	75	2
16:45	4	24	13	0	41	0	1	8	0	9	1	7	0	0	8	18	1	1	0	20	78	0
Total	15	64	71	2	152	0	2	34	0	36	3	39	0	0	42	80	1	3	0	84	314	2
17:00	3	18	16	0	37	0	1	10	0	11	0	16	0	0	16	32	0	0	0	32	96	0
17:15	3	14	23	0	40	0	2	7	0	9	1	11	0	0	12	16	1	2	0	19	80	0
17:30	6	29	17	0	52	0	0	7	0	7	0	12	0	0	12	21	1	1	0	23	94	0
17:45	3	21	15	0	39	0	0	7	0	7	1	10	0	0	11	10	0	1	0	11	68	0
Total	15	82	71	0	168	0	3	31	0	34	2	49	0	0	51	79	2	4	0	85	338	0
18:00	3	21	16	0	40	0	0	10	0	10	0	9	0	0	9	14	1	0	0	15	74	0
18:15	0	11	12	0	23	0	0	9	0	9	0	9	0	0	9	15	1	0	0	16	57	0
18:30	3	15	6	0	24	0	0	4	0	4	0	14	0	0	14	9	1	0	0	10	52	0
18:45	5	17	11	0	33	0	1	4	0	5	0	9	0	0	9	8	0	1	0	9	56	0
Total	11	64	45	0	120	0	1	27	0	28	0	41	0	0	41	46	3	1	0	50	239	0
Grand Total	46	264	355	2	667	0	8	100	0	108	5	287	0	0	292	396	6	10	0	412	1479	2
Approch %	6.9%	39.6%	53.2%	0.3%		0.0%	7.4%	92.6%	0.0%		1.7%	98.3%	0.0%	0.0%		96.1%	1.5%	2.4%	0.0%			
Total %	3.1%	17.8%	24.0%	0.1%	45.1%	0.0%	0.5%	6.8%	0.0%	7.3%	0.3%	19.4%	0.0%	0.0%	19.7%	26.8%	0.4%	0.7%	0.0%	27.9%	100.0%	

AM PEAK HOUR	Saratoga Way Southbound					Mammoth Way Westbound					Saratoga Way Northbound					Mammoth Way Eastbound					Total
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	
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	5	18	0	23	0	0	0	0	0	0	19	0	0	19	24	0	0	0	24	66
8:15	1	7	17	0	25	0	0	5	0	5	0	17	0	0	17	21	0	0	0	21	68
8:30	0	10	19	0	29	0	1	2	0	3	0	12	0	0	12	20	0	0	0	20	64
8:45	1	5	49	0	55	0	0	1	0	1	0	16	0	0	16	48	0	1	0	49	121
Total Volume	2	27	103	0	132	0	1	8	0	9	0	64	0	0	64	113	0	1	0	114	319
% App Total	1.5%	20.5%	78.0%	0.0%		0.0%	11.1%	88.9%	0.0%		0.0%	100.0%	0.0%	0.0%		99.1%	0.0%	0.9%	0.0%		
PHF	.500	.675	.526	.000	.600	.000	.250	.400	.000	.450	.000	.842	.000	.000	.842	.589	.000	.250	.000	.582	.659

PM PEAK HOUR	Saratoga Way Southbound					Mammoth Way Westbound					Saratoga Way Northbound					Mammoth Way Eastbound					Total
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	
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	4	24	13	0	41	0	1	8	0	9	1	7	0	0	8	18	1	1	0	20	78
17:00	3	18	16	0	37	0	1	10	0	11	0	16	0	0	16	32	0	0	0	32	96
17:15	3	14	23	0	40	0	2	7	0	9	1	11	0	0	12	16	1	2	0	19	80
17:30	6	29	17	0	52	0	0	7	0	7	0	12	0	0	12	21	1	1	0	23	94
Total Volume	16	85	69	0	170	0	4	32	0	36	2	46	0	0	48	87	3	4	0	94	348
% App Total	9.4%	50.0%	40.6%	0.0%		0.0%	11.1%	88.9%	0.0%		4.2%	95.8%	0.0%	0.0%		92.6%	3.2%	4.3%	0.0%		
PHF	.667	.733	.750	.000	.817	.000	.500	.800	.000	.818	.500	.719	.000	.000	.750	.680	.750	.500	.000	.734	.906

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-009 Saratoga Way & Main Project Site Dwy
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	Saratoga Way Southbound					Main Project Site Dwy Westbound					Saratoga Way Northbound					Main Project Site Dwy Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	0	1	0	0	1	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	10	0
6:15	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	0
6:30	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	5	0
6:45	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	12	0
Total	0	6	0	0	6	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	34	0
7:00	0	1	0	0	1	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	23	0
7:15	1	4	0	0	5	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	14	0
7:30	1	3	0	0	4	0	0	1	0	1	0	20	0	0	20	0	0	0	0	0	25	0
7:45	3	5	0	0	8	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	18	0
Total	5	13	0	0	18	0	0	1	0	1	0	61	0	0	61	0	0	0	0	0	80	0
8:00	4	1	0	0	5	0	0	1	0	1	0	18	0	0	18	0	0	0	0	0	24	0
8:15	4	3	0	0	7	0	0	5	0	5	0	12	0	0	12	0	0	0	0	0	24	0
8:30	3	7	0	0	10	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	22	0
8:45	5	1	0	0	6	1	0	1	0	2	0	15	1	0	16	0	0	0	0	0	24	0
Total	16	12	0	0	28	1	0	7	0	8	0	57	1	0	58	0	0	0	0	0	94	0
16:00	3	8	0	0	11	0	0	4	0	4	0	9	0	0	9	0	0	0	0	0	24	0
16:15	7	2	0	1	10	0	0	2	0	2	0	7	0	0	7	0	0	0	0	0	19	1
16:30	7	9	0	0	16	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	26	0
16:45	9	15	0	0	24	0	0	3	0	3	0	5	0	0	5	0	0	0	0	0	32	0
Total	26	34	0	1	61	1	0	9	0	10	0	30	0	0	30	0	0	0	0	0	101	1
17:00	8	12	0	0	20	1	0	3	0	4	0	14	2	0	16	0	0	0	0	0	40	0
17:15	7	8	0	0	15	2	0	2	0	4	0	9	0	0	9	0	0	0	0	0	28	0
17:30	7	22	0	0	29	1	0	4	0	5	0	8	3	0	11	0	0	0	0	0	45	0
17:45	11	13	0	0	24	2	0	4	0	6	0	7	1	0	8	0	0	0	0	0	38	0
Total	33	55	0	0	88	6	0	13	0	19	0	38	6	0	44	0	0	0	0	0	151	0
18:00	4	17	0	0	21	1	0	3	0	4	0	6	1	0	7	0	0	0	0	0	32	0
18:15	5	7	0	0	12	1	0	2	0	3	0	7	0	0	7	0	0	0	0	0	22	0
18:30	2	11	0	0	13	0	0	4	0	4	0	10	0	0	10	0	0	0	0	0	27	0
18:45	8	10	0	0	18	0	0	2	0	2	0	7	1	0	8	0	0	0	0	0	28	0
Total	19	45	0	0	64	2	0	11	0	13	0	30	2	0	32	0	0	0	0	0	109	0
Grand Total	99	165	0	1	265	10	0	41	0	51	0	244	9	0	253	0	0	0	0	0	569	1
Apprch %	37.4%	62.3%	0.0%	0.4%		19.6%	0.0%	80.4%	0.0%		0.0%	96.4%	3.6%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
Total %	17.4%	29.0%	0.0%	0.2%	46.6%	1.8%	0.0%	7.2%	0.0%	9.0%	0.0%	42.9%	1.6%	0.0%	44.5%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Saratoga Way Southbound					Main Project Site Dwy Westbound					Saratoga Way Northbound					Main Project Site Dwy Eastbound					Total
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	
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	4	1	0	0	5	0	0	1	0	1	0	18	0	0	18	0	0	0	0	0	24
8:15	4	3	0	0	7	0	0	5	0	5	0	12	0	0	12	0	0	0	0	0	24
8:30	3	7	0	0	10	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	22
8:45	5	1	0	0	6	1	0	1	0	2	0	15	1	0	16	0	0	0	0	0	24
Total Volume	16	12	0	0	28	1	0	7	0	8	0	57	1	0	58	0	0	0	0	0	94
% App Total	57.1%	42.9%	0.0%	0.0%		12.5%	0.0%	87.5%	0.0%		0.0%	98.3%	1.7%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	
PHF	.800	.429	.000	.000	.700	.250	.000	.350	.000	.400	.000	.792	.250	.000	.806	.000	.000	.000	.000	.000	.979

PM PEAK HOUR	Saratoga Way Southbound					Main Project Site Dwy Westbound					Saratoga Way Northbound					Main Project Site Dwy Eastbound					Total
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	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	8	12	0	0	20	1	0	3	0	4	0	14	2	0	16	0	0	0	0	0	40
17:15	7	8	0	0	15	2	0	2	0	4	0	9	0	0	9	0	0	0	0	0	28
17:30	7	22	0	0	29	1	0	4	0	5	0	8	3	0	11	0	0	0	0	0	45
17:45	11	13	0	0	24	2	0	4	0	6	0	7	1	0	8	0	0	0	0	0	38
Total Volume	33	55	0	0	88	6	0	13	0	19	0	38	6	0	44	0	0	0	0	0	151
% App Total	37.5%	62.5%	0.0%	0.0%		31.6%	0.0%	68.4%	0.0%		0.0%	86.4%	13.6%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	
PHF	.750	.625	.000	.000	.759	.750	.000	.813	.000	.792	.000	.679	.500	.000	.688	.000	.000	.000	.000	.000	.839

National Data and Surveying Services

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

(323) 782-0090
info@ndsdata.com

File Name : 17-7192-010 Saratoga Way & Arrowhead Dr
 Date : 3/14/2017

Unshifted Count = All Vehicles & Uturns

START TIME	Saratoga Way Southbound					Arrowhead Dr Westbound					Saratoga Way Northbound					Arrowhead Dr Eastbound					Total	Uturns Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
6:00	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	4	0	0	0	4	10	0
6:15	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	2	0	0	0	2	6	0
6:30	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	6	0
6:45	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	2	0	0	0	2	12	0
Total	0	6	0	0	6	0	0	0	0	0	0	19	0	0	19	9	0	0	0	9	34	0
7:00	0	1	0	0	1	0	0	0	0	0	1	17	0	0	18	5	0	0	0	5	24	0
7:15	0	3	1	0	4	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	13	0
7:30	0	3	0	0	3	0	0	0	0	0	0	14	0	0	14	6	0	0	0	6	23	0
7:45	0	4	1	0	5	0	0	0	0	0	0	8	0	0	8	2	0	0	0	2	15	0
Total	0	11	2	0	13	0	0	0	0	0	1	47	0	0	48	14	0	0	0	14	75	0
8:00	0	1	0	0	1	0	0	0	0	0	0	13	0	0	13	5	0	0	0	5	19	0
8:15	0	3	0	0	3	0	0	0	0	0	0	11	0	0	11	2	0	0	0	2	16	0
8:30	0	6	1	0	7	0	0	0	0	0	0	7	0	0	7	5	0	0	0	5	19	0
8:45	0	1	1	0	2	0	0	0	0	0	0	14	0	0	14	2	0	0	0	2	18	0
Total	0	11	2	0	13	0	0	0	0	0	0	45	0	0	45	14	0	0	0	14	72	0
16:00	0	3	4	0	7	0	0	0	0	0	0	7	0	0	7	2	0	0	0	2	16	0
16:15	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	3	0	0	0	3	10	0
16:30	0	9	1	0	10	0	0	0	0	0	0	6	0	0	6	3	0	0	0	3	19	0
16:45	0	13	2	0	15	0	0	0	0	0	0	2	0	0	2	3	0	0	0	3	20	0
Total	0	27	7	0	34	0	0	0	0	0	1	19	0	0	20	11	0	0	0	11	65	0
17:00	0	11	1	0	12	0	0	0	0	0	0	9	0	0	9	7	0	1	0	8	29	0
17:15	0	7	2	0	9	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	18	0
17:30	0	17	3	0	20	0	0	0	0	0	0	7	0	0	7	4	0	0	0	4	31	0
17:45	0	13	5	0	18	0	0	0	0	0	0	5	0	0	5	3	0	0	0	3	26	0
Total	0	48	11	0	59	0	0	0	0	0	0	29	0	0	29	15	0	1	0	16	104	0
18:00	0	11	6	0	17	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	24	0
18:15	0	7	2	0	9	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	16	0
18:30	0	9	1	0	10	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	20	0
18:45	0	8	2	0	10	0	0	0	0	0	0	4	0	0	4	4	0	0	0	4	18	0
Total	0	35	11	0	46	0	0	0	0	0	0	24	0	0	24	8	0	0	0	8	78	0
Grand Total	0	138	33	0	171	0	0	0	0	0	2	183	0	0	185	71	0	1	0	72	428	0
Apprch %	0.0%	80.7%	19.3%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	98.9%	0.0%	0.0%		98.6%	0.0%	1.4%	0.0%			
Total %	0.0%	32.2%	7.7%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	42.8%	0.0%	0.0%	43.2%	16.6%	0.0%	0.2%	0.0%	16.8%	100.0%	

AM PEAK HOUR	Saratoga Way Southbound					Arrowhead Dr Westbound					Saratoga Way Northbound					Arrowhead Dr Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	1	0	0	1	0	0	0	0	0	1	17	0	0	18	5	0	0	0	5	24
7:15	0	3	1	0	4	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	13
7:30	0	3	0	0	3	0	0	0	0	0	0	14	0	0	14	6	0	0	0	6	23
7:45	0	4	1	0	5	0	0	0	0	0	0	8	0	0	8	2	0	0	0	2	15
Total Volume	0	11	2	0	13	0	0	0	0	0	1	47	0	0	48	14	0	0	0	14	75
% App Total	0.0%	84.6%	15.4%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	97.9%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		
PHF	.000	.688	.500	.000	.650	.000	.000	.000	.000	.000	.250	.691	.000	.000	.667	.583	.000	.000	.000	.583	.781

PM PEAK HOUR	Saratoga Way Southbound					Arrowhead Dr Westbound					Saratoga Way Northbound					Arrowhead Dr Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	11	1	0	12	0	0	0	0	0	0	9	0	0	9	7	0	1	0	8	29
17:15	0	7	2	0	9	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	18
17:30	0	17	3	0	20	0	0	0	0	0	0	7	0	0	7	4	0	0	0	4	31
17:45	0	13	5	0	18	0	0	0	0	0	0	5	0	0	5	3	0	0	0	3	26
Total Volume	0	48	11	0	59	0	0	0	0	0	0	29	0	0	29	15	0	1	0	16	104
% App Total	0.0%	81.4%	18.6%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%		93.8%	0.0%	6.3%	0.0%		
PHF	.000	.706	.550	.000	.738	.000	.000	.000	.000	.000	.000	.806	.000	.000	.806	.536	.000	.250	.000	.500	.839

VOLUME

Saratoga Way Bet. Mammouth Way & Project Site Dwy

Day: Thursday
Date: 3/16/2017

City: El Dorado Hills
Project #: CA17_7193_001

DAILY TOTALS						NB	SB	EB	WB	Total	
						675	821	0	0	1,496	
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	3	1			4	12:00	12	9			21
00:15	0	1			1	12:15	6	20			26
00:30	0	1			1	12:30	9	15			24
00:45	0	3	1	4	7	12:45	9	36	13	57	93
01:00	0	0			0	13:00	12	16			28
01:15	0	0			0	13:15	11	18			29
01:30	0	0			0	13:30	14	8			22
01:45	0	0			0	13:45	11	48	14	56	104
02:00	1	0			1	14:00	12	14			26
02:15	0	0			0	14:15	5	17			22
02:30	0	0			0	14:30	12	17			29
02:45	0	1	0		1	14:45	7	36	13	61	97
03:00	0	0			0	15:00	8	24			32
03:15	0	0			0	15:15	15	15			30
03:30	1	1			2	15:30	13	15			28
03:45	1	2	0	1	3	15:45	11	47	14	68	115
04:00	0	0			0	16:00	13	14			27
04:15	1	0			1	16:15	12	11			23
04:30	0	0			0	16:30	8	19			27
04:45	4	5	0		5	16:45	11	44	27	71	115
05:00	0	0			0	17:00	15	22			37
05:15	1	1			2	17:15	11	15			26
05:30	4	0			4	17:30	10	21			31
05:45	5	10	1	2	12	17:45	13	49	26	84	133
06:00	5	1			6	18:00	10	23			33
06:15	7	2			9	18:15	10	14			24
06:30	6	2			8	18:30	13	16			29
06:45	11	29	6	11	40	18:45	11	44	16	69	113
07:00	24	4			28	19:00	10	19			29
07:15	13	5			18	19:15	5	18			23
07:30	21	5			26	19:30	7	23			30
07:45	10	68	8	22	90	19:45	8	30	15	75	105
08:00	18	6			24	20:00	5	15			20
08:15	16	8			24	20:15	5	11			16
08:30	13	10			23	20:30	4	11			15
08:45	15	62	7	31	93	20:45	6	20	8	45	65
09:00	9	7			16	21:00	9	9			18
09:15	16	8			24	21:15	3	6			9
09:30	8	5			13	21:30	4	4			8
09:45	6	39	5	25	64	21:45	5	21	4	23	44
10:00	13	10			23	22:00	1	1			2
10:15	7	6			13	22:15	0	3			3
10:30	9	11			20	22:30	1	2			3
10:45	8	37	14	41	78	22:45	1	3	0	6	9
11:00	5	19			24	23:00	0	2			2
11:15	7	18			25	23:15	1	2			3
11:30	11	12			23	23:30	1	4			5
11:45	16	39	10	59	98	23:45	0	2	2	10	12
TOTALS	295	196			491	TOTALS	380	625			1005
SPLIT %	60.1%	39.9%			32.8%	SPLIT %	37.8%	62.2%			67.2%

DAILY TOTALS						NB	SB	EB	WB	Total
						675	821	0	0	1,496
AM Peak Hour	06:45	10:45			11:00	PM Peak Hour	15:15	16:45		17:00
AM Pk Volume	69	63			98	PM Pk Volume	52	85		133
Pk Hr Factor	0.719	0.829			0.942	Pk Hr Factor	0.867	0.787		0.853
7 - 9 Volume	130	53	0	0	183	4 - 6 Volume	93	155	0	248
7 - 9 Peak Hour	07:00	07:45			08:00	4 - 6 Peak Hour	17:00	16:45		17:00
7 - 9 Pk Volume	68	32	0	0	93	4 - 6 Pk Volume	49	85	0	133
Pk Hr Factor	0.708	0.800	0.000	0.000	0.969	Pk Hr Factor	0.817	0.787	0.000	0.853

Appendix B

*Analysis Worksheets for
Existing (2017) 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.	

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

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

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

7: 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

7: 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

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											
Queuing Penalty (veh)	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)	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: 7: Driveway/Post St & White Rock Road

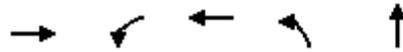
Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	102	127	143	33	145	333	243	78	37	70	109
Average Queue (ft)	55	39	64	5	44	180	95	26	12	26	40
95th Queue (ft)	97	97	118	24	111	294	182	63	30	59	83
Link Distance (ft)		315	315			1064	1064	216	216		408
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

Saratoga Retail Phase 2
 6: Windfield Way/Town Center Blvd & White Rock Rd

Existing Conditions
 AM Peak



Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	431	309	347	55	81
v/c Ratio	0.45	0.64	0.14	0.28	0.09
Control Delay	22.1	29.8	6.6	37.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	29.8	6.6	37.9	0.2
Queue Length 50th (ft)	46	76	14	15	0
Queue Length 95th (ft)	203	325	102	87	0
Internal Link Dist (ft)	327		554		213
Turn Bay Length (ft)		190		155	
Base Capacity (vph)	2630	1468	3350	430	1322
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.21	0.10	0.13	0.06
Intersection Summary					

Saratoga Retail Phase 2
6: Windfield Way/Town Center Blvd & White Rock Rd

Existing Conditions
AM Peak

												
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	312	119	309	347	0	55	0	81	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	802	300	375	2352	0	66	0	126	174	4	0
Arrive On Green	0.00	0.32	0.32	0.21	0.66	0.00	0.04	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	1030	2522	943	1774	3632	0	1774	0	1583	1312	1863	0
Grp Volume(v), veh/h	0	217	214	309	347	0	55	0	81	0	0	0
Grp Sat Flow(s),veh/h/ln	1030	1770	1696	1774	1770	0	1774	0	1583	1312	1863	0
Q Serve(g_s), s	0.0	4.0	4.1	6.9	1.5	0.0	1.3	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.0	4.1	6.9	1.5	0.0	1.3	0.0	2.1	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	174	563	539	375	2352	0	66	0	126	174	4	0
V/C Ratio(X)	0.00	0.39	0.40	0.82	0.15	0.00	0.83	0.00	0.64	0.00	0.00	0.00
Avail Cap(c_a), veh/h	840	1708	1637	1944	7772	0	488	0	665	815	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	11.0	11.0	15.6	2.6	0.0	19.8	0.0	18.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.6	1.8	0.0	0.0	9.7	0.0	2.0	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	2.0	2.0	3.5	0.7	0.0	0.8	0.0	1.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	11.5	11.6	17.4	2.6	0.0	29.5	0.0	20.5	0.0	0.0	0.0
LnGrp LOS		B	B	B	A		C		C			
Approach Vol, veh/h		431			656			136			0	
Approach Delay, s/veh		11.6			9.6			24.2			0.0	
Approach LOS		B			A			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	14.4	19.2		7.9		33.5	6.1	1.8				
Change Period (Y+Rc), s	5.6	6.0		4.6		6.0	4.6	4.6				
Max Green Setting (Gmax), s	45.4	40.0		17.4		91.0	11.4	17.4				
Max Q Clear Time (g_c+I1), s	8.9	6.1		4.1		3.5	3.3	0.0				
Green Ext Time (p_c), s	0.1	7.1		0.1		7.7	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				11.9								
HCM 2010 LOS				B								
Notes												

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

Saratoga Retail Phase 2
 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Existing Conditions
 AM Peak

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	76	0	1	0	0	5	0	68	0	3	25	74
Future Vol, veh/h	76	0	1	0	0	5	0	68	0	3	25	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	0	1	0	0	7	0	97	0	4	36	106

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	198	194	89	195	247	97	141	0	0	97	0	0
Stage 1	97	97	-	97	97	-	-	-	-	-	-	-
Stage 2	101	97	-	98	150	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	761	701	969	764	655	959	1442	-	-	1496	-	-
Stage 1	910	815	-	910	815	-	-	-	-	-	-	-
Stage 2	905	815	-	908	773	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	754	699	969	761	653	959	1442	-	-	1496	-	-
Mov Cap-2 Maneuver	754	699	-	761	653	-	-	-	-	-	-	-
Stage 1	910	813	-	910	815	-	-	-	-	-	-	-
Stage 2	898	815	-	904	771	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	8.8	0	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1442	-	-	756	959	1496	-
HCM Lane V/C Ratio	-	-	-	0.146	0.007	0.003	-
HCM Control Delay (s)	0	-	-	10.6	8.8	7.4	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0	-

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	61	0	12	14
Future Vol, veh/h	0	7	61	0	12	14
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	62	0	12	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	101	62	0	0	62	0
Stage 1	62	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	880	1003	-	-	1541	-
Stage 1	949	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	875	1003	-	-	1541	-
Mov Cap-2 Maneuver	875	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	8.6		0		3.4
HCM LOS	A				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1003	1541	-
HCM Lane V/C Ratio	-	-	-	0.007	0.008	-
HCM Control Delay (s)	-	-	0	8.6	7.4	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	0	0	46	13	1
Future Vol, veh/h	15	0	0	46	13	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	0	0	59	17	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	76	17	18	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	927	1062	1599	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	927	1062	1599	-	-	-
Mov Cap-2 Maneuver	927	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	964	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	927	-	-
HCM Lane V/C Ratio	-	-	0.021	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

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.	

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

7: 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

7: 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

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: 7: Driveway/Post St & White Rock Road

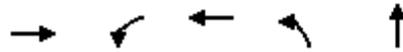
Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	104	336	336	123	126	250	246	92	61	75	441
Average Queue (ft)	98	207	188	14	42	110	115	38	19	72	342
95th Queue (ft)	118	335	309	66	94	195	209	79	46	81	538
Link Distance (ft)		315	315			585	585	216	216		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

Saratoga Retail Phase 2
 6: Windfield Way/Town Center Blvd & White Rock Rd

Existing Conditions
 PM Peak



Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	642	105	390	253	254
v/c Ratio	0.55	0.45	0.22	0.55	0.33
Control Delay	25.2	44.4	12.5	34.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	44.4	12.5	34.3	1.1
Queue Length 50th (ft)	94	35	31	77	0
Queue Length 95th (ft)	346	160	160	316	0
Internal Link Dist (ft)	327		554		213
Turn Bay Length (ft)		190		155	
Base Capacity (vph)	2421	632	3167	1076	1407
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.17	0.12	0.24	0.18

Intersection Summary

Saratoga Retail Phase 2
6: Windfield Way/Town Center Blvd & White Rock Rd

Existing Conditions
PM Peak

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	566	76	105	390	0	253	0	254	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	1210	162	134	2046	0	330	0	318	150	4	0
Arrive On Green	0.00	0.39	0.39	0.08	0.58	0.00	0.19	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	990	3138	420	1774	3632	0	1774	0	1583	1121	1863	0
Grp Volume(v), veh/h	0	319	323	105	390	0	253	0	254	0	0	0
Grp Sat Flow(s),veh/h/ln	990	1770	1789	1774	1770	0	1774	0	1583	1121	1863	0
Q Serve(g_s), s	0.0	6.5	6.5	2.8	2.5	0.0	6.5	0.0	7.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.5	6.5	2.8	2.5	0.0	6.5	0.0	7.3	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	150	682	690	134	2046	0	330	0	318	150	4	0
V/C Ratio(X)	0.00	0.47	0.47	0.78	0.19	0.00	0.77	0.00	0.80	0.00	0.00	0.00
Avail Cap(c_a), veh/h	655	1585	1602	754	5088	0	1308	0	508	600	598	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	11.0	11.1	21.8	4.8	0.0	18.6	0.0	18.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	3.7	0.1	0.0	3.8	0.0	1.7	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	3.2	3.3	1.5	1.2	0.0	3.5	0.0	3.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	11.7	11.7	25.5	4.9	0.0	22.3	0.0	20.0	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		C		B			
Approach Vol, veh/h		642			495			507			0	
Approach Delay, s/veh		11.7			9.2			21.1			0.0	
Approach LOS		B			A			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	9.2	24.5		14.3		33.7	13.5	0.7				
Change Period (Y+Rc), s	5.6	6.0		4.6		6.0	4.6	4.6				
Max Green Setting (Gmax), s	20.4	43.0		15.4		69.0	35.4	15.4				
Max Q Clear Time (g_c+I1), s	4.8	8.5		9.3		4.5	8.5	0.0				
Green Ext Time (p_c), s	0.0	10.0		0.3		11.1	0.7	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				13.9								
HCM 2010 LOS				B								
Notes												

Saratoga Retail Phase 2
 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Existing Conditions
 PM Peak

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	87	3	4	0	4	32	2	41	0	16	84	69
Future Vol, veh/h	87	3	4	0	4	32	2	41	0	16	84	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	96	3	4	0	4	35	2	45	0	18	92	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	234	214	130	218	252	45	168	0	0	45	0	0
Stage 1	165	165	-	49	49	-	-	-	-	-	-	-
Stage 2	69	49	-	169	203	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	721	684	920	738	651	1025	1410	-	-	1563	-	-
Stage 1	837	762	-	964	854	-	-	-	-	-	-	-
Stage 2	941	854	-	833	733	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	685	674	920	724	642	1025	1410	-	-	1563	-	-
Mov Cap-2 Maneuver	685	674	-	724	642	-	-	-	-	-	-	-
Stage 1	836	752	-	963	853	-	-	-	-	-	-	-
Stage 2	903	853	-	815	723	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	8.9	0.4	0.7
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1410	-	-	692	961	1563	-	-
HCM Lane V/C Ratio	0.002	-	-	0.149	0.041	0.011	-	-
HCM Control Delay (s)	7.6	-	-	11.1	8.9	7.3	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	30	6	33	55
Future Vol, veh/h	6	13	30	6	33	55
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	15	36	7	39	65

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	183	39	0	0	43	0
Stage 1	39	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	806	1033	-	-	1566	-
Stage 1	983	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	786	1033	-	-	1566	-
Mov Cap-2 Maneuver	786	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	786	1033	1566	-
HCM Lane V/C Ratio	-	-	0.009	0.015	0.025	-
HCM Control Delay (s)	-	-	9.6	8.5	7.4	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0.1	-

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1	0	21	50	11
Future Vol, veh/h	15	1	0	21	50	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	1	0	25	60	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	91	66	73	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	909	998	1527	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	909	998	1527	-	-	-
Mov Cap-2 Maneuver	909	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	998	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1527	-	914	-	-
HCM Lane V/C Ratio	-	-	0.021	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	AM NB	Analysis Year	Existing (2017)

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.97

No-passing zone 100%

% Trucks and Buses, P_T 2%

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	62veh/h
Opposing direction vol., V_o	31veh/h
Shoulder width ft	6.0
Lane Width ft	12.0
Segment Length mi	0.6

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.7	2.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.967	0.967
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.67	0.67
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	99	49
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) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.4 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 41.1 mi/h	
	Percent free flow speed, PFFS 92.0 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.9	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.982	0.982
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.73	0.73
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	89	45
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	10.5	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	50.5	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	44.0	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	A
Volume to capacity ratio, v/c	0.06

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1101
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1219
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	92.0
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	63.9
Effective width, Wv (Eq. 15-29) ft	36.42
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)	A
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	AM SB	Analysis Year	Existing (2017)

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.97

No-passing zone 100%

% Trucks and Buses, P_T 2%

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	31veh/h
Opposing direction vol., V_o	62veh/h
Shoulder width ft	6.0
Lane Width ft	12.0
Segment Length mi	0.6

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.7	2.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.967	0.967
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.67	0.67
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	49	99
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) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.4 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 41.1 mi/h	
	Percent free flow speed, PFFS 92.0 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.9	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.982	0.982
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.73	0.73
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	45	89
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	5.5	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	50.5	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	22.5	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	A
Volume to capacity ratio, v/c	0.03

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1101
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1219
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	92.0
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	32.0
Effective width, Wv (Eq. 15-29) ft	39.21
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	-3.80
Bicycle level of service (Exhibit 15-4)	A
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	PM NB	Analysis Year	Existing (2017)

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.85

No-passing zone 100%

% Trucks and Buses, P_T 2%

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	49veh/h
Opposing direction vol., V_o	84veh/h
Shoulder width ft	6.0
Lane Width ft	12.0
Segment Length mi	0.6

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.7	2.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.967	0.967
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.67	0.67
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	89	153
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) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.2 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 39.5 mi/h	
	Percent free flow speed, PFFS 88.5 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.9	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.982	0.982
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.73	0.73
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	80	138
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	9.5	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	52.2	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	28.7	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	B
Volume to capacity ratio, v/c	0.05

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1155
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1272
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	88.5
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	57.6
Effective width, Wv (Eq. 15-29) ft	37.59
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	-2.88
Bicycle level of service (Exhibit 15-4)	A
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	PM SB	Analysis Year	Existing (2017)

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.85

No-passing zone 100%

% Trucks and Buses, P_T 2%

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	84veh/h
Opposing direction vol., V_o	49veh/h
Shoulder width ft	6.0
Lane Width ft	12.0
Segment Length mi	0.6

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.7	2.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.967	0.967
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.67	0.67
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	153	89

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)	0.4 mi/h
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 2.4 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$)	44.6 mi/h
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$	40.3 mi/h
	Percent free flow speed, PFFS	90.4 %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.9	1.9
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.982	0.982
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.73	0.73
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	138	80
Base percent time-spent-following ⁴ , $BPTSF_d(%) = 100(1 - e^{-av_d^b})$	15.6	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	52.2	
Percent time-spent-following, $PTSF_d(%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	48.6	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	B
Volume to capacity ratio, v/c	0.09

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1101
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1219
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	90.4
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	98.8
Effective width, Wv (Eq. 15-29) ft	34.44
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	-1.47
Bicycle level of service (Exhibit 15-4)	A
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

Segment Inputs				Existing Conditions														
				Flow Inputs		AM LOS Performance Measures					PM LOS Performance Measures							
	Length	Number of Lanes	Interchange Density	PM		V _p	FFS	S	D	LOS	V _p	FFS	S	D	LOS			
				AM Peak	Peak											(pc/h/ln)	(mi/h)	(mi/h)
	(ft)	(N)	(l/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)				
West Eastb	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
	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
	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
	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
Universal Inputs:																		
PHF 0.92																		
(P _c) 6%																		
f _{HV} 0.970873786																		

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 _{FR}	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 _{FR}	V ₁₂	Capacity	v ₃	V _{12a}	v/c	D	LOS			
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	
General Inputs:			(ft)																																	
Length			(ft)																																	
V _D			(mi/h)																																	
V _F			(mi/h)																																	
V _R			(mi/h)																																	
P _{FR}																																				
P _D																																				
V ₁₂																																				

Segment Inputs				Existing Conditions																														
				AM Flow Inputs										PM Flow Inputs			PM LOS Performance Measures																	
	Number of Lanes	Number of Ramp Lanes	Length of Deceleration Lane (L _d)	Downstream	Upstream	Ramp	V ₀	V ₁	V ₂	P ₁₀	V ₂₁	Capacity	V ₁	V _{21a}	v/c	D	LOS	Downstream	Upstream	Ramp	V ₀	V ₁	V ₂	P ₁₀	V ₂₁	Capacity	V ₁	V _{21a}	v/c	D	LOS			
				Volume	Volume	Volume	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(veh/h)	(veh/h)	(veh/h)
Latrobe SB Off Ramp	3	1	1298	140	1582	2665	1083	344.826	2983.6	1212.5	0.6047	2283.6	7200	350	1713	2284	0.4144	22.631	C	2222	3020	798	788.174	3381.1	893.41	0.6625	2541.4	7200	420	1906	2541	0.4696	24.848	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	1518	2222	704	-	2487.7	788.17	0.6616	1912.5	7200	575	1434	1912	0.3455	19.439	B

(ft)
 (mi/h)
 (mi/h)
 (mi/h)
 (mi/h)
 (mi/h)
 (mi/h)

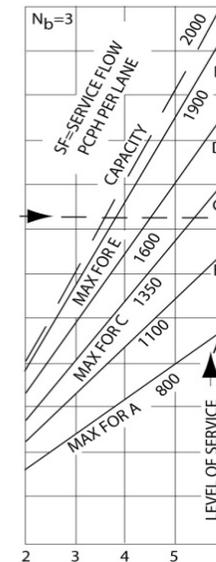
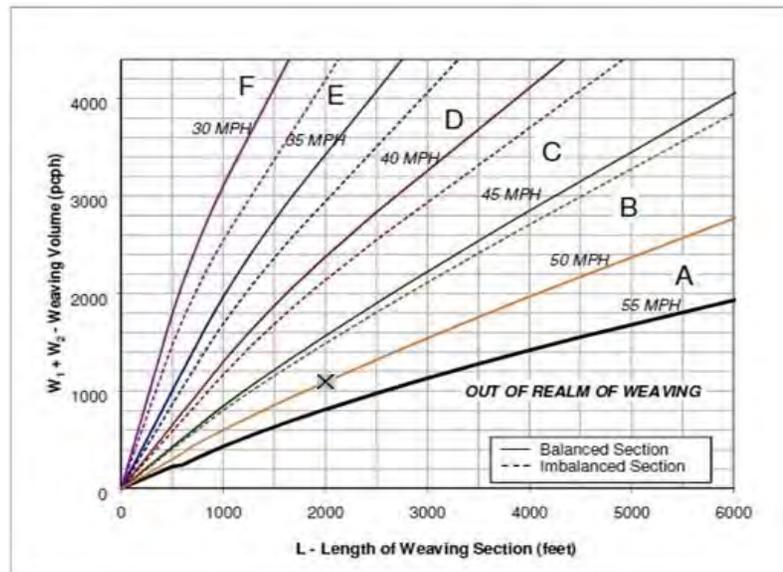
EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) Conditons (AM)

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

N_b=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)	1,652	Volume (vph)	378	Volume (vph)	253
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)	1,685	Volume (pcph)	382	Volume (pcph)	256

W1 + W2	637
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (S _w , mph)	50.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	421
Level of Service (LOS)	A



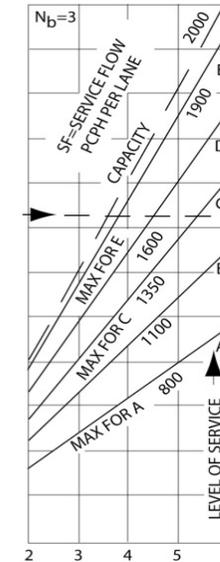
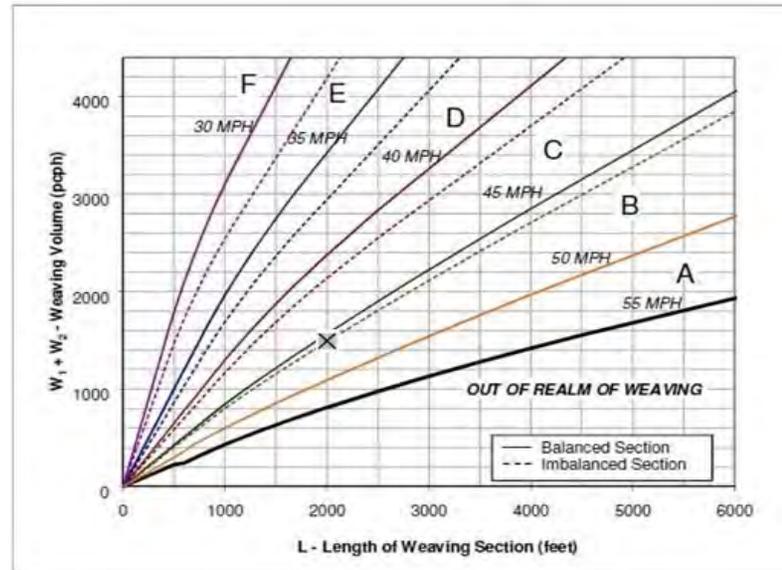
EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) Conditons (PM)

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

N_b=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)	741
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)	3,627	Volume (pcph)	679	Volume (pcph)	748

W1 + W2	1,427
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	45.4
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	1,009
Level of Service (LOS)	B



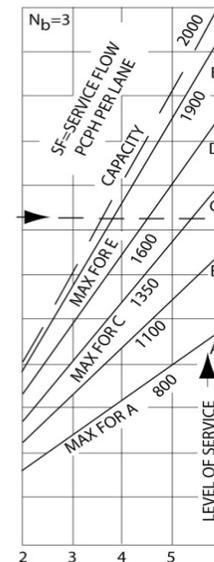
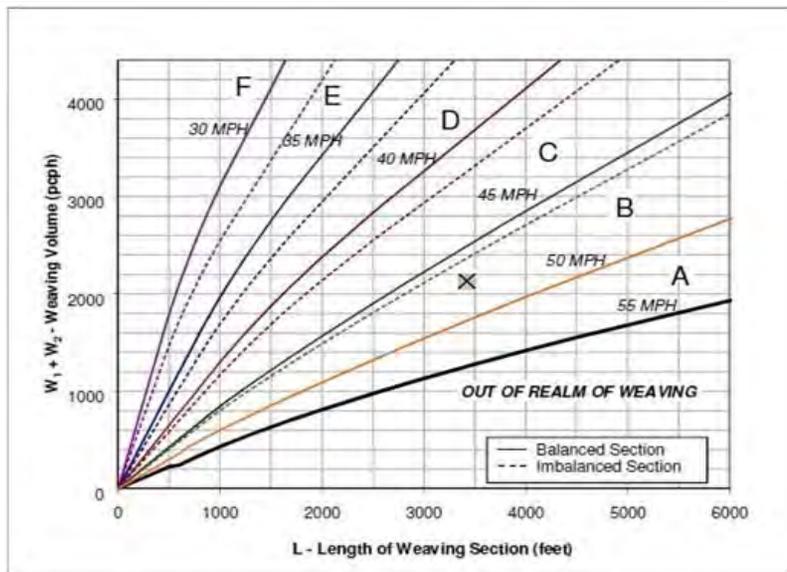
WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) Conditons (AM)

Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

N_b=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)	3,135	Volume (vph)	928	Volume (vph)	604
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)	3,166	Volume (pcph)	937	Volume (pcph)	610

W1 + W2	1,547
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	46.8
Weaving Intensity Factor (k)	1.40
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	853
Level of Service (LOS)	B



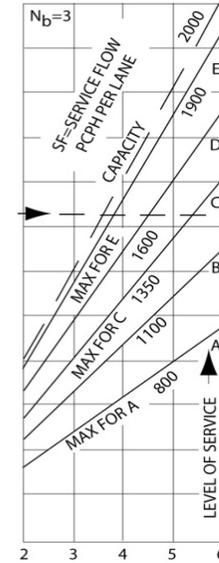
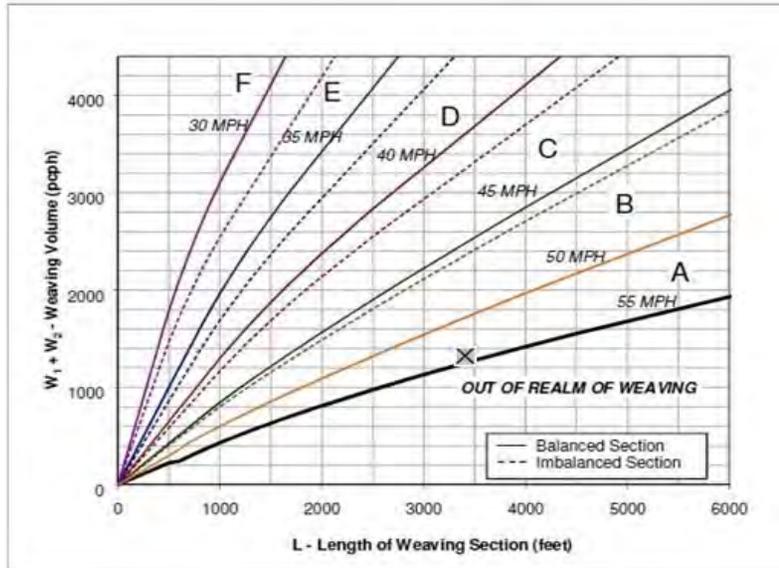
WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) Conditons (PM)

Number of Entering Mainline Lanes Nb 3
 Number of Lanes in Weaving Section N 4
 Length of Weaving Section (feet) L 3425

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)	1,962	Volume (vph)	284	Volume (vph)	328
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)	1,982	Volume (pcph)	287	Volume (pcph)	331

W1 + W2 618
 In between
 Speed 1 50
 Speed 2 55
 Interpolated Weaving Speed (Sw, mph) 54.8
 Weaving Intensity Factor (k) 1.00
 Service Volume ((SV, pcph)
 $SV = (1/N) * [V + (k-1) * \min(W1, W2)]$ 495
 Level of Service (LOS) A



Appendix C

*Analysis Worksheets for
Existing (2017) plus Proposed Project 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	7270	7356	7433	7281	7404	7368	7388
Vehs Exited	7369	7335	7422	7299	7355	7355	7423
Starting Vehs	322	278	262	267	244	260	323
Ending Vehs	223	299	273	249	293	273	288
Travel Distance (mi)	4286	4335	4367	4309	4344	4334	4344
Travel Time (hr)	275.4	277.0	336.1	276.2	296.1	293.6	291.2
Total Delay (hr)	139.7	140.0	197.1	139.7	159.0	156.2	153.6
Total Stops	11552	11615	12246	11583	12105	11983	12030
Fuel Used (gal)	203.1	205.3	219.9	204.5	209.9	208.6	208.7

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	7277	7298	7383	7348
Vehs Exited	7227	7269	7366	7342
Starting Vehs	235	244	267	266
Ending Vehs	285	273	284	270
Travel Distance (mi)	4274	4271	4340	4320
Travel Time (hr)	277.2	284.7	321.1	292.9
Total Delay (hr)	141.9	148.9	183.3	155.9
Total Stops	11666	12054	12146	11897
Fuel Used (gal)	203.1	205.3	215.8	208.4

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	1793	1809	1816	1830	1777	1730	1792
Vehs Exited	1851	1796	1776	1811	1764	1726	1841
Starting Vehs	322	278	262	267	244	260	323
Ending Vehs	264	291	302	286	257	264	274
Travel Distance (mi)	1068	1073	1081	1097	1073	1035	1080
Travel Time (hr)	71.9	68.4	74.2	71.2	66.9	67.3	71.1
Total Delay (hr)	37.9	34.5	39.6	36.4	33.2	34.4	36.9
Total Stops	2999	2807	3089	2973	2832	2822	2974
Fuel Used (gal)	51.0	50.7	52.1	52.4	50.4	48.9	51.5

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	1763	1765	1799	1789
Vehs Exited	1727	1711	1823	1778
Starting Vehs	235	244	267	266
Ending Vehs	271	298	243	265
Travel Distance (mi)	1046	1038	1089	1068
Travel Time (hr)	66.8	71.3	71.6	70.1
Total Delay (hr)	33.5	38.2	37.1	36.2
Total Stops	2860	2941	2926	2923
Fuel Used (gal)	49.3	50.4	51.8	50.9

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	1994	2003	2073	1950	2009	1992	1969
Vehs Exited	1952	1985	2024	1978	1983	1934	1955
Starting Vehs	264	291	302	286	257	264	274
Ending Vehs	306	309	351	258	283	322	288
Travel Distance (mi)	1105	1133	1141	1110	1127	1125	1107
Travel Time (hr)	71.3	73.5	89.0	72.7	80.7	81.1	76.2
Total Delay (hr)	36.2	37.9	52.6	37.5	45.0	45.6	41.1
Total Stops	3014	3152	3183	3021	3282	3145	3107
Fuel Used (gal)	52.6	54.0	57.5	53.2	55.1	55.4	53.6

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	2045	1980	2015	2001
Vehs Exited	2000	1981	1959	1978
Starting Vehs	271	298	243	265
Ending Vehs	316	297	299	302
Travel Distance (mi)	1130	1123	1125	1123
Travel Time (hr)	76.5	76.0	82.4	77.9
Total Delay (hr)	40.9	40.3	46.9	42.4
Total Stops	3222	3172	3283	3153
Fuel Used (gal)	54.6	54.1	55.9	54.6

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	1799	1745	1750	1735	1783	1847	1829
Vehs Exited	1814	1797	1858	1755	1795	1849	1837
Starting Vehs	306	309	351	258	283	322	288
Ending Vehs	291	257	243	238	271	320	280
Travel Distance (mi)	1082	1063	1080	1055	1060	1090	1103
Travel Time (hr)	70.8	68.9	88.0	66.0	76.2	74.9	72.5
Total Delay (hr)	36.6	35.3	53.7	32.6	42.5	40.3	37.6
Total Stops	2906	2855	3054	2759	3015	3077	2977
Fuel Used (gal)	51.5	50.6	55.9	49.3	52.3	53.0	52.7

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	1704	1780	1800	1782
Vehs Exited	1789	1805	1813	1809
Starting Vehs	316	297	299	302
Ending Vehs	231	272	286	265
Travel Distance (mi)	1068	1051	1070	1072
Travel Time (hr)	68.0	68.3	83.6	73.7
Total Delay (hr)	34.3	34.8	49.6	39.7
Total Stops	2793	2913	3087	2942
Fuel Used (gal)	50.3	50.2	54.6	52.0

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	1684	1799	1794	1766	1835	1799	1798
Vehs Exited	1752	1757	1764	1755	1813	1846	1790
Starting Vehs	291	257	243	238	271	320	280
Ending Vehs	223	299	273	249	293	273	288
Travel Distance (mi)	1031	1066	1065	1047	1083	1084	1053
Travel Time (hr)	61.4	66.1	84.9	66.3	72.4	70.3	71.5
Total Delay (hr)	28.9	32.3	51.2	33.2	38.3	35.9	38.0
Total Stops	2633	2801	2920	2830	2976	2939	2972
Fuel Used (gal)	47.9	50.0	54.4	49.7	52.0	51.3	50.9

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	1765	1773	1769	1777
Vehs Exited	1711	1772	1771	1770
Starting Vehs	231	272	286	265
Ending Vehs	285	273	284	270
Travel Distance (mi)	1029	1060	1057	1057
Travel Time (hr)	65.9	69.2	83.4	71.1
Total Delay (hr)	33.3	35.6	49.7	37.6
Total Stops	2791	3028	2850	2871
Fuel Used (gal)	48.9	50.7	53.5	50.9

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	1.0	10.2	0.5
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	25.6	25.7	27.2
Total Delay (hr)	0.6	0.1	1.9	0.2	0.2	0.2	3.0	2.6	0.1	2.2	10.7	0.5
Total Del/Veh (s)	39.5	9.4	27.5	51.5	49.5	10.5	55.8	13.0	8.2	54.1	27.0	24.5
Stop Delay (hr)	0.6	0.1	1.8	0.2	0.1	0.2	2.7	1.6	0.0	2.0	7.0	0.4
Stop Del/Veh (s)	37.6	8.3	26.3	49.7	45.6	9.7	49.7	7.8	5.6	49.1	17.6	19.4

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

Movement	All
Denied Delay (hr)	11.8
Denied Del/Veh (s)	14.1
Total Delay (hr)	22.2
Total Del/Veh (s)	26.4
Stop Delay (hr)	16.6
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	0.1	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)	2.4	0.9	0.4	3.1	2.6	1.4	8.3	2.0	0.3	1.0	6.2	4.0
Total Del/Veh (s)	44.2	44.1	4.2	97.4	106.8	90.0	57.2	10.4	7.8	66.4	24.7	19.7
Stop Delay (hr)	2.2	0.8	0.0	2.9	2.5	1.4	7.2	1.0	0.2	0.9	3.9	1.7
Stop Del/Veh (s)	40.9	39.7	0.0	92.2	100.3	86.0	49.9	5.3	4.2	60.3	15.5	8.5

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)	32.7
Total Del/Veh (s)	29.7
Stop Delay (hr)	24.7
Stop Del/Veh (s)	22.4

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)	2.3	0.3	0.0	0.1	0.0	0.0	0.6
Total Delay (hr)	7.7	0.1	2.2	0.4	3.0	3.3	16.8
Total Del/Veh (s)	24.7	1.1	8.2	8.6	44.1	10.4	14.9
Stop Delay (hr)	5.7	0.0	0.7	0.2	2.5	0.8	9.8
Stop Del/Veh (s)	18.4	0.0	2.5	3.1	35.8	2.5	8.7

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)	4.4	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)	0.1	0.1	0.0	0.6	0.3	0.9	0.7	6.5	0.1	3.2	5.3	0.4
Total Del/Veh (s)	41.6	43.2	9.5	33.6	33.7	11.7	42.0	27.0	5.7	26.3	12.6	4.2
Stop Delay (hr)	0.1	0.1	0.0	0.6	0.3	0.8	0.6	4.4	0.1	2.6	2.8	0.2
Stop Del/Veh (s)	39.8	40.3	9.5	30.7	29.3	10.3	37.6	18.2	4.6	21.4	6.7	2.2

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)	18.3
Total Del/Veh (s)	17.9
Stop Delay (hr)	12.6
Stop Del/Veh (s)	12.4

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	0.1
Total Delay (hr)	4.0	1.0	0.3	4.7	3.0	0.3	1.7	4.0	0.1	1.6	11.6	1.5
Total Del/Veh (s)	57.6	38.6	16.4	55.5	42.9	8.6	68.3	22.2	3.3	58.8	36.6	15.6
Stop Delay (hr)	3.8	0.9	0.3	4.2	2.5	0.2	1.7	3.4	0.1	1.4	7.1	1.0
Stop Del/Veh (s)	54.4	34.0	15.3	49.5	35.3	6.5	66.0	19.3	3.4	50.6	22.4	11.1

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)	33.8
Total Del/Veh (s)	34.4
Stop Delay (hr)	26.6
Stop Del/Veh (s)	27.1

7: 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	2.8	0.4	0.3	0.1	0.1	0.1	4.0	0.3	0.3
Total Delay (hr)	1.0	1.2	0.0	0.7	4.0	0.7	0.4	0.0	0.0	0.4	0.1	0.3
Total Del/Veh (s)	46.3	18.1	4.4	57.4	26.6	12.5	48.9	51.4	3.9	35.8	20.6	9.8
Stop Delay (hr)	1.0	0.9	0.0	0.6	2.6	0.5	0.4	0.0	0.0	0.4	0.0	0.3
Stop Del/Veh (s)	42.8	13.8	2.5	51.0	17.6	8.8	46.8	47.3	4.0	33.4	17.5	8.9

7: 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)	8.9
Total Del/Veh (s)	23.9
Stop Delay (hr)	6.8
Stop Del/Veh (s)	18.3

Total Zone Performance

Denied Delay (hr)	12.9
Denied Del/Veh (s)	8.4
Total Delay (hr)	132.9
Total Del/Veh (s)	266.9
Stop Delay (hr)	97.1
Stop Del/Veh (s)	194.9

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)	54	206	214	39	114	247	157	152	144	124	336	353
Average Queue (ft)	7	43	120	6	39	125	49	65	52	92	237	290
95th Queue (ft)	32	111	196	24	82	220	124	133	118	151	387	409
Link Distance (ft)		299		482	482		774	774	774		309	309
Upstream Blk Time (%)		0									7	24
Queuing Penalty (veh)		0									0	0
Storage Bay Dist (ft)	150		200			250				100		
Storage Blk Time (%)		0	1			1				10	20	
Queuing Penalty (veh)		0	1			3				69	30	

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)	180	177	174	288	173	334	341	142	157	187	180	308
Average Queue (ft)	100	83	74	158	111	201	202	58	66	88	50	158
95th Queue (ft)	162	152	176	256	200	305	312	118	135	157	121	270
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	4							5
Queuing Penalty (veh)			0	22	5							2

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

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	261	418	225
Average Queue (ft)	102	151	159
95th Queue (ft)	200	338	263
Link Distance (ft)	774	774	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)		0	7
Queuing Penalty (veh)		0	23

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)	371	369	138	158	216	116	305	249	134	215	104
Average Queue (ft)	225	196	28	47	64	30	174	50	27	30	19
95th Queue (ft)	325	302	92	119	159	88	275	164	93	126	76
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)	13	46	34	31	104	155	126	52	87	216	251	280
Average Queue (ft)	1	9	6	5	44	66	47	15	29	97	120	149
95th Queue (ft)	10	33	25	22	89	125	93	42	66	187	221	257
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 (%)					1	3					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	199	206	227	255	257	154
Average Queue (ft)	22	94	115	116	145	113	44
95th Queue (ft)	52	171	183	199	232	203	83
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)	179	198	134	143	175	183	189	229	123	153	169	151
Average Queue (ft)	81	115	31	60	100	114	73	100	45	65	92	72
95th Queue (ft)	152	176	83	114	169	175	159	177	89	131	156	137
Link Distance (ft)			346	346				315	315		278	278
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)	325	325			175	175	175			270		
Storage Blk Time (%)					0	1	1	0				
Queuing Penalty (veh)					0	2	1	2				

Intersection: 5: Latrobe Road & White Rock Road

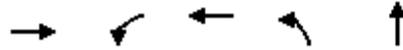
Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	132	71	48	73	249	476	476	385	262
Average Queue (ft)	52	11	22	19	50	235	250	62	65
95th Queue (ft)	112	44	50	53	180	401	416	253	179
Link Distance (ft)	278	278				839	839	839	
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)			25	225	225				250
Storage Blk Time (%)		2	1		0	9		0	0
Queuing Penalty (veh)		2	1		0	9		1	2

Intersection: 7: 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)	103	152	151	31	145	341	214	76	38	67	126
Average Queue (ft)	59	42	66	4	50	178	107	26	9	27	43
95th Queue (ft)	103	109	117	21	118	296	192	60	29	58	89
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 (%)	6	1	1		0	20				8	8
Queuing Penalty (veh)	7	1	0		0	9				9	3

Zone Summary

Zone wide Queuing Penalty: 207



Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	444	309	359	55	81
v/c Ratio	0.46	0.64	0.14	0.28	0.10
Control Delay	22.4	30.1	6.6	38.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	30.1	6.6	38.2	0.2
Queue Length 50th (ft)	48	77	14	15	0
Queue Length 95th (ft)	211	327	105	87	0
Internal Link Dist (ft)	327		554		213
Turn Bay Length (ft)		190		155	
Base Capacity (vph)	2616	1460	3346	427	1316
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.21	0.11	0.13	0.06
Intersection Summary					

Saratoga Retail Phase 2
6: Windfield Way/Town Center Blvd & White Rock Rd

Existing plus Project Conditions

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	315	115	300	348	0	53	0	79	0	0	0
Future Volume (veh/h)	0	315	115	300	348	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	325	119	309	359	0	55	0	81	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	826	297	375	2365	0	66	0	126	171	4	0
Arrive On Green	0.00	0.32	0.32	0.21	0.67	0.00	0.04	0.00	0.08	0.00	0.00	0.00
Sat Flow, veh/h	1018	2552	918	1774	3632	0	1774	0	1583	1312	1863	0
Grp Volume(v), veh/h	0	224	220	309	359	0	55	0	81	0	0	0
Grp Sat Flow(s),veh/h/ln	1018	1770	1701	1774	1770	0	1774	0	1583	1312	1863	0
Q Serve(g_s), s	0.0	4.1	4.2	7.0	1.6	0.0	1.3	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.1	4.2	7.0	1.6	0.0	1.3	0.0	2.1	0.0	0.0	0.0
Prop In Lane	1.00		0.54	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	171	573	550	375	2365	0	66	0	126	171	4	0
V/C Ratio(X)	0.00	0.39	0.40	0.82	0.15	0.00	0.83	0.00	0.64	0.00	0.00	0.00
Avail Cap(c_a), veh/h	812	1685	1620	1917	7667	0	481	0	656	803	772	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	11.0	11.0	15.8	2.6	0.0	20.1	0.0	18.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.6	1.8	0.0	0.0	9.6	0.0	2.0	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	2.1	2.0	3.5	0.8	0.0	0.8	0.0	1.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	11.5	11.6	17.6	2.6	0.0	29.7	0.0	20.8	0.0	0.0	0.0
LnGrp LOS		B	B	B	A		C		C			
Approach Vol, veh/h		444			668			136			0	
Approach Delay, s/veh		11.6			9.5			24.4			0.0	
Approach LOS		B			A			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	14.5	19.6		7.9		34.1	6.2	1.8				
Change Period (Y+Rc), s	5.6	6.0		4.6		6.0	4.6	4.6				
Max Green Setting (Gmax), s	45.4	40.0		17.4		91.0	11.4	17.4				
Max Q Clear Time (g_c+I1), s	9.0	6.2		4.1		3.6	3.3	0.0				
Green Ext Time (p_c), s	0.1	7.4		0.1		8.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				11.9								
HCM 2010 LOS				B								
Notes												

Saratoga Retail Phase 2
 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Existing plus Project Conditions
 AM Peak

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	76	0	4	0	0	5	3	224	0	3	192	74
Future Vol, veh/h	76	0	4	0	0	5	3	224	0	3	192	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	0	6	0	0	7	4	320	0	4	274	106

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	668	665	327	668	718	320	380	0	0	320	0	0
Stage 1	336	336	-	329	329	-	-	-	-	-	-	-
Stage 2	332	329	-	339	389	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	372	381	714	372	355	721	1178	-	-	1240	-	-
Stage 1	678	642	-	684	646	-	-	-	-	-	-	-
Stage 2	681	646	-	676	608	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	366	378	714	367	352	721	1178	-	-	1240	-	-
Mov Cap-2 Maneuver	366	378	-	367	352	-	-	-	-	-	-	-
Stage 1	676	639	-	682	644	-	-	-	-	-	-	-
Stage 2	672	644	-	668	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.8	10	0.1	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	375	721	1240	-
HCM Lane V/C Ratio	0.004	-	-	0.305	0.01	0.003	-
HCM Control Delay (s)	8.1	-	-	18.8	10	7.9	-
HCM Lane LOS	A	-	-	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0	-

Intersection

Int Delay, s/veh 3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↔		↘	↗
Traffic Vol, veh/h	1	86	141	1	97	99
Future Vol, veh/h	1	86	141	1	97	99
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	88	144	1	99	101

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	443	144	0	0	145	0
Stage 1	144	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	572	903	-	-	1437	-
Stage 1	883	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	533	903	-	-	1437	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	533	903	1437	-
HCM Lane V/C Ratio	-	-	0.002	0.097	0.069	-
HCM Control Delay (s)	-	-	11.8	9.4	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.3	0.2	-

Intersection

Int Delay, s/veh 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	0	0	47	14	4
Future Vol, veh/h	18	0	0	47	14	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	0	60	18	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	81	21	23	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	921	1056	1592	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	921	1056	1592	-	-	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1592	-	921	-	-
HCM Lane V/C Ratio	-	-	0.025	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

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	8679	8582	8681	8634	8719	8738	8637
Vehs Exited	8612	8531	8603	8620	8581	8623	8573
Starting Vehs	363	358	329	391	357	319	336
Ending Vehs	430	409	407	405	495	434	400
Travel Distance (mi)	4760	4729	4761	4797	4788	4798	4766
Travel Time (hr)	495.4	416.8	413.1	449.1	413.5	466.7	413.4
Total Delay (hr)	341.8	264.5	259.6	295.0	259.3	312.3	260.1
Total Stops	17048	16481	16330	16966	16774	17360	16583
Fuel Used (gal)	272.7	254.9	255.7	264.6	256.9	268.6	256.6

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	8749	8687	8654	8674
Vehs Exited	8660	8610	8587	8598
Starting Vehs	318	346	363	345
Ending Vehs	407	423	430	419
Travel Distance (mi)	4844	4823	4774	4784
Travel Time (hr)	433.6	409.7	424.8	433.6
Total Delay (hr)	278.1	255.1	271.5	279.7
Total Stops	16887	16719	16525	16773
Fuel Used (gal)	263.1	257.0	259.8	261.0

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	2251	2131	2169	2133	2196	2164	2076
Vehs Exited	2157	2080	2112	2129	2171	2099	2078
Starting Vehs	363	358	329	391	357	319	336
Ending Vehs	457	409	386	395	382	384	334
Travel Distance (mi)	1240	1162	1195	1183	1180	1186	1172
Travel Time (hr)	106.0	89.7	95.2	93.2	88.7	90.6	86.8
Total Delay (hr)	65.9	52.3	56.4	55.0	50.6	52.6	49.2
Total Stops	4501	3959	4188	4070	3913	4036	3903
Fuel Used (gal)	65.8	60.0	61.7	61.7	60.5	60.5	60.4

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	2220	2085	2137	2156
Vehs Exited	2114	2076	2116	2111
Starting Vehs	318	346	363	345
Ending Vehs	424	355	384	387
Travel Distance (mi)	1216	1181	1188	1190
Travel Time (hr)	95.5	89.7	91.9	92.7
Total Delay (hr)	56.5	51.9	53.8	54.4
Total Stops	4222	3956	3995	4071
Fuel Used (gal)	62.8	60.8	61.9	61.6

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	2219	2298	2313	2255	2289	2311	2322
Vehs Exited	2245	2229	2306	2192	2244	2256	2221
Starting Vehs	457	409	386	395	382	384	334
Ending Vehs	431	478	393	458	427	439	435
Travel Distance (mi)	1188	1210	1245	1222	1246	1232	1226
Travel Time (hr)	128.1	109.7	105.9	110.2	103.8	110.5	100.0
Total Delay (hr)	89.7	70.6	65.9	71.1	63.7	71.0	60.5
Total Stops	4344	4448	4272	4280	4466	4553	4344
Fuel Used (gal)	68.9	66.0	66.3	66.0	65.8	67.3	64.0

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	2326	2270	2359	2294
Vehs Exited	2291	2158	2302	2244
Starting Vehs	424	355	384	387
Ending Vehs	459	467	441	434
Travel Distance (mi)	1237	1199	1249	1225
Travel Time (hr)	114.4	101.4	109.4	109.3
Total Delay (hr)	74.5	63.1	69.2	69.9
Total Stops	4376	4137	4536	4370
Fuel Used (gal)	67.5	63.8	67.0	66.3

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	2144	2046	2127	2083	2113	2152	2098
Vehs Exited	2137	2176	2122	2211	2157	2132	2137
Starting Vehs	431	478	393	458	427	439	435
Ending Vehs	438	348	398	330	383	459	396
Travel Distance (mi)	1183	1201	1167	1199	1205	1178	1180
Travel Time (hr)	128.9	108.4	101.7	117.9	106.4	119.8	108.6
Total Delay (hr)	90.9	70.0	64.3	79.3	67.7	81.5	70.7
Total Stops	4168	4029	3988	4181	4180	4350	4065
Fuel Used (gal)	68.9	65.1	63.0	67.9	65.0	67.2	64.9

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	2149	2145	2056	2114
Vehs Exited	2188	2219	2116	2157
Starting Vehs	459	467	441	434
Ending Vehs	420	393	381	388
Travel Distance (mi)	1208	1220	1176	1192
Travel Time (hr)	112.2	109.2	110.1	112.3
Total Delay (hr)	73.5	69.9	72.4	74.0
Total Stops	4229	4284	3981	4150
Fuel Used (gal)	66.9	66.0	65.5	66.0

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	2065	2107	2072	2163	2121	2111	2141
Vehs Exited	2073	2046	2063	2088	2009	2136	2137
Starting Vehs	438	348	398	330	383	459	396
Ending Vehs	430	409	407	405	495	434	400
Travel Distance (mi)	1149	1156	1154	1193	1157	1203	1187
Travel Time (hr)	132.4	109.0	110.3	127.8	114.5	145.8	118.0
Total Delay (hr)	95.3	71.7	73.0	89.6	77.2	107.2	79.7
Total Stops	4035	4045	3882	4435	4215	4421	4271
Fuel Used (gal)	69.0	63.7	64.6	69.1	65.5	73.6	67.4

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	2054	2187	2102	2110
Vehs Exited	2067	2157	2053	2080
Starting Vehs	420	393	381	388
Ending Vehs	407	423	430	419
Travel Distance (mi)	1183	1223	1161	1177
Travel Time (hr)	111.5	109.4	113.4	119.2
Total Delay (hr)	73.6	70.3	76.1	81.4
Total Stops	4060	4342	4013	4169
Fuel Used (gal)	65.9	66.3	65.4	67.1

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	3.4	15.1	1.5
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	73.0	69.9	72.1
Total Delay (hr)	1.0	0.3	1.4	1.2	0.2	1.6	5.4	8.4	0.4	4.2	9.9	0.4
Total Del/Veh (s)	49.1	48.3	23.4	78.7	47.4	20.8	86.1	23.4	19.2	94.6	48.8	18.7
Stop Delay (hr)	1.0	0.3	1.3	1.2	0.2	1.4	4.8	4.6	0.3	4.0	8.3	0.3
Stop Del/Veh (s)	46.6	43.2	22.4	76.1	42.5	18.4	76.5	12.9	11.8	89.7	40.7	15.5

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

Movement	All
Denied Delay (hr)	20.0
Denied Del/Veh (s)	22.1
Total Delay (hr)	34.5
Total Del/Veh (s)	38.5
Stop Delay (hr)	27.6
Stop Del/Veh (s)	30.9

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	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	3.6	0.6	0.7	0.0	0.0	0.0	0.0	0.7	0.0
Total Delay (hr)	1.5	0.7	0.1	2.2	1.4	1.2	12.1	7.6	1.6	2.3	30.7	2.1
Total Del/Veh (s)	32.5	33.9	3.2	48.0	56.7	67.0	43.2	20.1	18.5	297.7	180.6	22.1
Stop Delay (hr)	1.4	0.6	0.0	2.0	1.2	1.2	9.4	4.0	0.9	2.3	28.5	1.4
Stop Del/Veh (s)	29.7	29.9	0.0	43.6	50.9	63.8	33.8	10.5	10.7	289.4	167.5	14.7

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

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	63.5
Total Del/Veh (s)	52.5
Stop Delay (hr)	52.8
Stop Del/Veh (s)	43.7

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)	3.7	0.4	6.5	1.7	3.2	3.5	19.0
Total Del/Veh (s)	16.1	2.0	12.3	12.8	58.3	17.9	14.1
Stop Delay (hr)	2.6	0.0	1.8	0.5	2.7	1.3	8.8
Stop Del/Veh (s)	11.2	0.0	3.4	3.7	49.2	6.5	6.5

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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.6	0.2	0.2	3.2	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	5.7	0.5	0.3	1.1	0.1	7.4	0.0	28.6	0.4	9.6	4.7	0.0
Total Del/Veh (s)	66.1	57.5	14.7	62.5	63.6	43.9	132.8	67.9	8.6	64.5	17.6	3.3
Stop Delay (hr)	5.2	0.5	0.3	1.0	0.1	7.1	0.0	20.8	0.3	8.4	3.1	0.0
Stop Del/Veh (s)	61.2	54.4	13.7	57.7	59.1	41.9	116.7	49.5	6.8	56.1	11.5	2.1

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)	58.5
Total Del/Veh (s)	49.2
Stop Delay (hr)	46.9
Stop Del/Veh (s)	39.4

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	0.0	0.0	0.0
Total Delay (hr)	4.9	3.7	0.6	2.7	2.2	0.7	1.2	9.7	1.3	3.7	5.5	0.7
Total Del/Veh (s)	48.1	37.6	26.4	50.4	42.7	12.9	56.0	32.5	13.8	54.6	31.8	10.1
Stop Delay (hr)	4.5	3.1	0.6	2.5	1.9	0.6	1.1	8.4	1.3	3.3	3.7	0.5
Stop Del/Veh (s)	44.2	31.4	23.7	45.9	36.7	10.8	53.4	27.9	13.0	47.8	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)	33.3
Stop Delay (hr)	31.4
Stop Del/Veh (s)	28.2

7: 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	3.6	0.2	3.6
Denied Del/Veh (s)	0.3	0.1	0.3	3.3	0.3	0.3	0.1	0.1	0.1	66.1	53.6	69.8
Total Delay (hr)	3.9	4.4	0.1	0.7	2.8	0.9	0.7	0.1	0.1	7.0	0.3	4.1
Total Del/Veh (s)	64.8	22.0	8.6	57.3	29.1	17.8	48.1	31.7	10.1	129.8	85.1	82.1
Stop Delay (hr)	3.5	3.1	0.0	0.6	2.1	0.7	0.7	0.1	0.1	6.6	0.3	3.8
Stop Del/Veh (s)	59.1	15.3	4.7	52.9	21.3	13.6	45.7	29.0	9.9	122.7	76.3	75.8

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

Movement	All
Denied Delay (hr)	7.5
Denied Del/Veh (s)	13.3
Total Delay (hr)	25.3
Total Del/Veh (s)	44.6
Stop Delay (hr)	21.7
Stop Del/Veh (s)	38.4

Total Zone Performance

Denied Delay (hr)	28.6
Denied Del/Veh (s)	17.8
Total Delay (hr)	237.7
Total Del/Veh (s)	673.4
Stop Delay (hr)	189.2
Stop Del/Veh (s)	535.9

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)	94	218	198	138	280	272	387	380	362	125	345	333
Average Queue (ft)	20	67	86	43	117	176	173	175	163	109	256	226
95th Queue (ft)	63	149	165	107	216	285	382	343	309	161	414	384
Link Distance (ft)		324		482	482		778	778	778		309	309
Upstream Blk Time (%)		0									39	7
Queuing Penalty (veh)		0									0	0
Storage Bay Dist (ft)	150		200			250				100		
Storage Blk Time (%)		0	2			10	1			24	45	
Queuing Penalty (veh)		1	2			44	1			91	74	

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)	138	142	135	172	246	446	450	314	361	390	225	817
Average Queue (ft)	74	66	62	83	115	284	294	163	185	205	86	673
95th Queue (ft)	122	122	114	159	205	414	424	272	295	329	251	997
Link Distance (ft)	1293	1293			621	641	641	641	641	641		778
Upstream Blk Time (%)												32
Queuing Penalty (veh)												108
Storage Bay Dist (ft)			150	150							200	
Storage Blk Time (%)			0	0	5						0	82
Queuing Penalty (veh)			0	0	10						0	25

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

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	797	757	224
Average Queue (ft)	580	278	115
95th Queue (ft)	985	678	223
Link Distance (ft)	778	778	
Upstream Blk Time (%)	3	0	
Queuing Penalty (veh)	12	1	
Storage Bay Dist (ft)			200
Storage Blk Time (%)		0	2
Queuing Penalty (veh)		2	5

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)	288	241	392	468	541	299	213	323	166	140	80
Average Queue (ft)	150	83	87	121	158	98	102	127	54	39	20
95th Queue (ft)	242	190	243	315	376	248	178	255	125	86	57
Link Distance (ft)	1211		572	572	572			641	641	641	641
Upstream Blk Time (%)			0	0	0			0			
Queuing Penalty (veh)			0	0	1			0			
Storage Bay Dist (ft)		450				275	575				
Storage Blk Time (%)					1	0					
Queuing Penalty (veh)					7	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)	302	323	63	125	125	342	345	65	626	677	694	112
Average Queue (ft)	142	201	19	44	82	198	198	3	356	425	479	37
95th Queue (ft)	263	283	52	95	158	302	297	38	559	627	672	83
Link Distance (ft)			778	778		526	526		839	839	839	839
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225				
Storage Blk Time (%)	0	0			2	41			23			
Queuing Penalty (veh)	0	0			5	24			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)	323	338	389	230	205	50
Average Queue (ft)	213	226	162	129	106	6
95th Queue (ft)	313	318	300	215	188	32
Link Distance (ft)			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	L	T	T
Maximum Queue (ft)	220	240	208	231	142	149	126	143	152	166	278	274
Average Queue (ft)	112	149	116	138	61	79	43	74	69	48	165	158
95th Queue (ft)	198	224	182	208	123	130	96	124	124	114	240	233
Link Distance (ft)			346	346					315	315		278
Upstream Blk Time (%)											0	0
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	325	325			175	175	175			270		
Storage Blk Time (%)					0	0	0	0		0	0	
Queuing Penalty (veh)					0	0	0	0		0	0	

Intersection: 5: Latrobe Road & White Rock Road

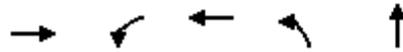
Movement	NB	NB	NB	B80	SB	SB	SB	SB	SB	SB
Directions Served	T	T	R	T	L	L	T	T	T	R
Maximum Queue (ft)	252	260	66	30	148	185	275	289	96	146
Average Queue (ft)	139	95	46	1	69	71	109	131	8	28
95th Queue (ft)	208	206	60	15	129	143	228	256	53	95
Link Distance (ft)	278	278		247			839	839	839	
Upstream Blk Time (%)	0	0								
Queuing Penalty (veh)	0	0								
Storage Bay Dist (ft)			25		225	225				250
Storage Blk Time (%)		10	21				0			0
Queuing Penalty (veh)		35	57				1			0

Intersection: 7: 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)	105	340	343	135	139	227	273	102	57	75	453
Average Queue (ft)	99	209	185	20	42	107	130	41	21	73	348
95th Queue (ft)	120	336	310	89	97	188	233	84	49	80	533
Link Distance (ft)		315	315			585	585	216	216		408
Upstream Blk Time (%)		2	1								43
Queuing Penalty (veh)		7	3								0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	46	11	17	0	0	7				78	6
Queuing Penalty (veh)	169	24	4	0	0	3				154	11

Zone Summary

Zone wide Queuing Penalty: 885



Lane Group	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	653	105	400	253	254
v/c Ratio	0.55	0.46	0.22	0.55	0.33
Control Delay	25.3	44.8	12.5	34.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	44.8	12.5	34.5	1.1
Queue Length 50th (ft)	96	35	32	78	0
Queue Length 95th (ft)	354	161	164	318	0
Internal Link Dist (ft)	327		554		213
Turn Bay Length (ft)		190		155	
Base Capacity (vph)	2413	628	3165	1071	1404
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.17	0.13	0.24	0.18

Intersection Summary

Saratoga Retail Phase 2
6: Windfield Way/Town Center Blvd & White Rock Rd

Existing plus Project Conditions

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	542	71	99	376	0	238	0	239	0	0	0
Future Volume (veh/h)	0	542	71	99	376	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	577	76	105	400	0	253	0	254	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1226	161	134	2056	0	329	0	318	148	4	0
Arrive On Green	0.00	0.39	0.39	0.08	0.58	0.00	0.19	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	981	3146	413	1774	3632	0	1774	0	1583	1121	1863	0
Grp Volume(v), veh/h	0	324	329	105	400	0	253	0	254	0	0	0
Grp Sat Flow(s),veh/h/ln	981	1770	1790	1774	1770	0	1774	0	1583	1121	1863	0
Q Serve(g_s), s	0.0	6.6	6.7	2.8	2.6	0.0	6.6	0.0	7.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.6	6.7	2.8	2.6	0.0	6.6	0.0	7.4	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	148	690	698	134	2056	0	329	0	318	148	4	0
V/C Ratio(X)	0.00	0.47	0.47	0.78	0.19	0.00	0.77	0.00	0.80	0.00	0.00	0.00
Avail Cap(c_a), veh/h	635	1568	1586	746	5032	0	1294	0	502	593	591	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	11.1	11.1	22.0	4.8	0.0	18.8	0.0	18.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	3.7	0.1	0.0	3.8	0.0	2.0	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	3.4	3.4	1.5	1.2	0.0	3.6	0.0	3.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	11.7	11.7	25.7	4.9	0.0	22.6	0.0	20.5	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		C		C			
Approach Vol, veh/h		653			505			507			0	
Approach Delay, s/veh		11.7			9.2			21.5			0.0	
Approach LOS		B			A			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	9.3	24.9		14.3		34.2	13.6	0.7				
Change Period (Y+Rc), s	5.6	6.0		4.6		6.0	4.6	4.6				
Max Green Setting (Gmax), s	20.4	43.0		15.4		69.0	35.4	15.4				
Max Q Clear Time (g_c+I1), s	4.8	8.7		9.4		4.6	8.6	0.0				
Green Ext Time (p_c), s	0.0	10.2		0.3		11.4	0.7	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			13.9									
HCM 2010 LOS			B									
Notes												

Saratoga Retail Phase 2
 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Existing plus Project Conditions

PM Peak

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	87	3	6	0	4	32	4	174	0	16	223	69
Future Vol, veh/h	87	3	6	0	4	32	4	174	0	16	223	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	96	3	7	0	4	35	4	191	0	18	245	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	538	518	283	523	556	191	321	0	0	191	0	0
Stage 1	318	318	-	200	200	-	-	-	-	-	-	-
Stage 2	220	200	-	323	356	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	454	462	756	465	439	851	1239	-	-	1383	-	-
Stage 1	693	654	-	802	736	-	-	-	-	-	-	-
Stage 2	782	736	-	689	629	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	426	453	756	452	431	851	1239	-	-	1383	-	-
Mov Cap-2 Maneuver	426	453	-	452	431	-	-	-	-	-	-	-
Stage 1	691	644	-	799	734	-	-	-	-	-	-	-
Stage 2	743	734	-	669	619	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.8	9.9	0.2	0.4
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1239	-	-	439	768	1383	-
HCM Lane V/C Ratio	0.004	-	-	0.24	0.052	0.013	-
HCM Control Delay (s)	7.9	-	-	15.8	9.9	7.6	0
HCM Lane LOS	A	-	-	C	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.9	0.2	0	-

Intersection

Int Delay, s/veh 3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔		↔	↔
Traffic Vol, veh/h	7	80	98	7	103	126
Future Vol, veh/h	7	80	98	7	103	126
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	95	117	8	123	150

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	516	121	0	0	125	0
Stage 1	121	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	519	930	-	-	1462	-
Stage 1	904	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	475	930	-	-	1462	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	9.6		0		3.5
HCM LOS	A				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	475	930	1462	-
HCM Lane V/C Ratio	-	-	0.018	0.102	0.084	-
HCM Control Delay (s)	-	-	12.7	9.3	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.3	0.3	-

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	1	0	23	51	13
Future Vol, veh/h	17	1	0	23	51	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	0	27	61	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	95	68	76	0	-	0
Stage 1	68	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	905	995	1523	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	905	995	1523	-	-	-
Mov Cap-2 Maneuver	905	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1523	-	910	-	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	AM NB	Analysis Year	Existing (2017) plus Project

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.97

No-passing zone 100%

% Trucks and Buses, P_T 2 %

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	221veh/h	
Oposing direction vol., V_o	200veh/h	
Shoulder width ft	6.0	
Lane Width ft	12.0	
Segment Length mi	0.6	

Average Travel Speed

	Analysis Direction (d)	Oposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.2	2.3
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.977	0.975
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.77	0.75
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	303	282
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) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.5 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 36.6 mi/h	
	Percent free flow speed, PFFS 82.0 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Oposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.7	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.986	0.986
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.81	0.80
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	285	261
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	30.2	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	58.2	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	60.6	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	C
Volume to capacity ratio, v/c	0.18

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1329
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1392
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	82.0
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	227.8
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)	2.00
Bicycle level of service (Exhibit 15-4)	B
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	AM SB	Analysis Year	Existing (2017) plus Project

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.97

No-passing zone 100%

% Trucks and Buses, P_T 2 %

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	200veh/h
Opposing direction vol., V_o	221veh/h
Shoulder width ft	6.0
Lane Width ft	12.0
Segment Length mi	0.6

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.3	2.2
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.975	0.977
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.75	0.77
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	282	303
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) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.3 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 36.7 mi/h	
	Percent free flow speed, PFFS 82.4 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.7	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.986	0.986
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.80	0.81
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	261	285
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	28.8	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	58.2	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	56.6	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	C
Volume to capacity ratio, v/c	0.17

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1363
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1408
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	82.4
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	206.2
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)	1.95
Bicycle level of service (Exhibit 15-4)	B
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	PM NB	Analysis Year	Existing (2017) plus Project

Project Description: Saratoga Estates

Input Data

Segment length, L_1 _____ mi

Class I highway Class II highway
 Class III highway

Terrain Level Rolling

Grade Length _____ mi Up/down

Peak-hour factor, PHF 0.85

No-passing zone 100%

% Trucks and Buses, P_T 2 %

% Recreational vehicles, P_R 0%

Access points *mi* 1/mi

Analysis direction vol., V_d	184veh/h
Opposing direction vol., V_o	224veh/h
Shoulder width ft	6.0
Lane Width ft	12.0
Segment Length mi	0.6

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.3	2.2
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.975	0.977
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.76	0.80
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	292	337
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, $FFS = S_{FM} + 0.00776(\sqrt{v_{HV,ATS}})$	Adj. for access points ⁴ , f_A (Exhibit 15-8) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.1 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 36.6 mi/h	
	Percent free flow speed, PFFS 82.1 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.7	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.986	0.986
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.81	0.83
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	271	322
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	31.1	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	55.9	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	56.6	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	C
Volume to capacity ratio, v/c	0.17

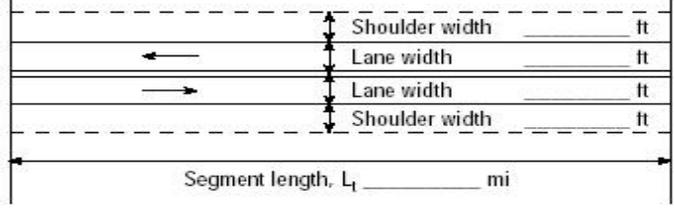
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1413
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1445
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	82.1
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	216.5
Effective width, Wv (Eq. 15-29) ft	24.00
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	1.97
Bicycle level of service (Exhibit 15-4)	B
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/17	Jurisdiction	EDC
Analysis Time Period	PM SB	Analysis Year	Existing (2017) plus Project

Project Description: Saratoga Estates

Input Data

 <p>Shoulder width _____ ft</p> <p>Lane width _____ ft</p> <p>Lane width _____ ft</p> <p>Shoulder width _____ ft</p> <p>Segment length, L_1 _____ mi</p>	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <input type="checkbox"/> Class I highway <input checked="" type="checkbox"/> Class III highway <input type="checkbox"/> Class II highway </div> <div style="text-align: center;"> <input type="checkbox"/> Level <input checked="" type="checkbox"/> Rolling </div> </div> <p>Terrain</p> <p>Grade Length _____ mi Up/down</p> <p>Peak-hour factor, PHF 0.85</p> <p>No-passing zone 100%</p> <p>% Trucks and Buses, P_T 2%</p> <p>% Recreational vehicles, P_R 0%</p> <p>Access points mi 1/mi</p>
Analysis direction vol., V_d 224veh/h	
Opposing direction vol., V_o 184veh/h	
Shoulder width ft 6.0	
Lane Width ft 12.0	
Segment Length mi 0.6	

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	2.2	2.3
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.1	1.1
Heavy-vehicle adjustment factor, $f_{HV,ATS} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.977	0.975
Grade adjustment factor ¹ , $f_{g,ATS}$ (Exhibit 15-9)	0.80	0.76
Demand flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{g,ATS} * f_{HV,ATS})$	337	292
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) 0.4 mi/h	
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15) 3.4 mi/h	Free-flow speed, FFS ($FFS = BFFS - f_{LS} - f_A$) 44.6 mi/h	
	Average travel speed, $ATS_d = FFS - 0.00776(v_{d,ATS} + V_{o,ATS}) - f_{np,ATS}$ 36.3 mi/h	
	Percent free flow speed, PFFS 81.4 %	

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-18 or 15-19)	1.7	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV} = 1 / (1 + P_T(E_T - 1) + P_R(E_R - 1))$	0.986	0.986
Grade adjustment factor ¹ , $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	0.83	0.81
Directional flow rate ² , v_i (pc/h) $v_i = V_i / (PHF * f_{HV,PTSF} * f_{g,PTSF})$	322	271
Base percent time-spent-following ⁴ , $BPTSF_d(\%) = 100(1 - e^{-av_d^b})$	34.4	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	55.9	
Percent time-spent-following, $PTSF_d(\%) = BPTSF_d + f_{np,PTSF} * (v_{d,PTSF} / v_{d,PTSF} + V_{o,PTSF})$	64.8	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	C
Volume to capacity ratio, v/c	0.20

Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	1345
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	1408
Percent Free-Flow Speed $PFFS_d$ (Equation 15-11 - Class III only)	81.4
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	263.5
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)	2.08
Bicycle level of service (Exhibit 15-4)	B
Notes	
<p>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.</p> <p>2. If $v_i(v_d \text{ or } v_o) \geq 1,700$ pc/h, terminate analysis--the LOS is F.</p> <p>3. For the analysis direction only and for $v > 200$ veh/h.</p> <p>4. For the analysis direction only</p> <p>5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.</p> <p>6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.</p>	

Segment Inputs				Existing plus Project Conditions														
				Flow Inputs		AM LOS Performance Measures					PM LOS Performance Measures							
	Length (ft)	Number of Lanes (N)	Interchange Density (I/mi)	PM		V _p (pc/h/ln)	FFS (mi/h)	S (mi/h)	D (pc/mi/ln)	LOS	V _p (pc/h/ln)	FFS (mi/h)	S (mi/h)	D (pc/mi/ln)	LOS			
				AM Peak (veh/h)	PM Peak (veh/h)													
West Eastb	West of Latrobe Rd SB Off Ramp	6690	3	0.33	2,712	4,425	1012.09	74.12	75	74.9984	13.495	B	1651.359	74.12	75	70.3034	23.5	C
	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,265	2,876	472.083	73.6	75	71.9148	6.5645	A	1073.29	73.6	75	74.9405	14.322	B
	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	2	0.50	2,522	1,626	1411.77	73.6	75	73.123	19.307	C	910.2065	73.6	75	74.9107	12.151	B
	West of El Dorado Hills Blvd On Ramp	5890	2	0.33	3,817	3,057	2136.69	74.12	75	60.6968	35.203	E	1711.255	74.12	75	69.3999	24.658	C
Universal Inputs:																		
PHF 0.92																		
(P _c) 6%																		
f _{HV} 0.970873786																		

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 _{FR}	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 _{FR}	V ₁₂	Capacity	v ₃	V _{12a}	v/c	D	LOS		
Σ El Dorado Hills Blvd On Ramp	2	1	795	3817	2522	1295	4273	2824	1450	81	1	2823.5	4800	0	2118	2824	0.8903	33.156	D	3057	1626	1431	3423	1820	1602	52	1	1820.4	4800	0	1365	1820	0.713	26.449	C
General Inputs:			(ft)																																
Length			70																																
V _D			35																																
V _F			0.92																																
P _{FR}			0%																																
V ₁₂			0.92872786																																

Segment Inputs				Existing plus Project Conditions																														
				AM Flow Inputs										PM Flow Inputs					PM LOS Performance Measures															
	Number of Lanes	Number of Ramp Lanes	Length of Deceleration Lane (L _d)	Downstream	Upstream	Ramp	V ₀	V ₅	V ₆	P ₁₀	V ₂₂	Capacity	V ₁	V _{22a}	v/c	D	LOS	Downstream	Upstream	Ramp	V ₀	V ₅	V ₆	P ₁₀	V ₂₂	Capacity	V ₁	V _{22a}	v/c	D	LOS			
				Volume	Volume	Volume	(veh/h)	(veh/h)	(veh/h)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)		(veh/h)	(veh/h)	(veh/h)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	(pc/h/mi)	
Latrobe SB Off Ramp	3	1	1389	140	1629	2712	1083	407.522	3036.3	1212.5	0.613	2330.4	7200	353	1748	2330	0.4217	23.034	C	2259	3057	798	840.793	3422.5	893.41	0.6694	2586.5	7200	418	1940	2586	0.4753	25.236	C
Latrobe NB Off Ramp	3	1	-	140	1265	1629	364	-	1823.8	407.52	0.6957	1392.7	7200	431	1045	1393	0.2533	14.97	B	1508	2259	751	-	2529.1	840.79	0.6581	1951.9	7200	577	1464	1952	0.3513	19.778	B

(ft)
 (mi/h)
 (mi/h)
 (mi/h)
 (mi/h)
 (mi/h)
 (mi/h)

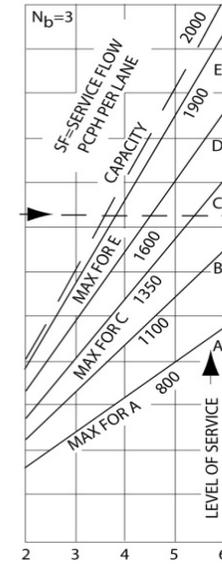
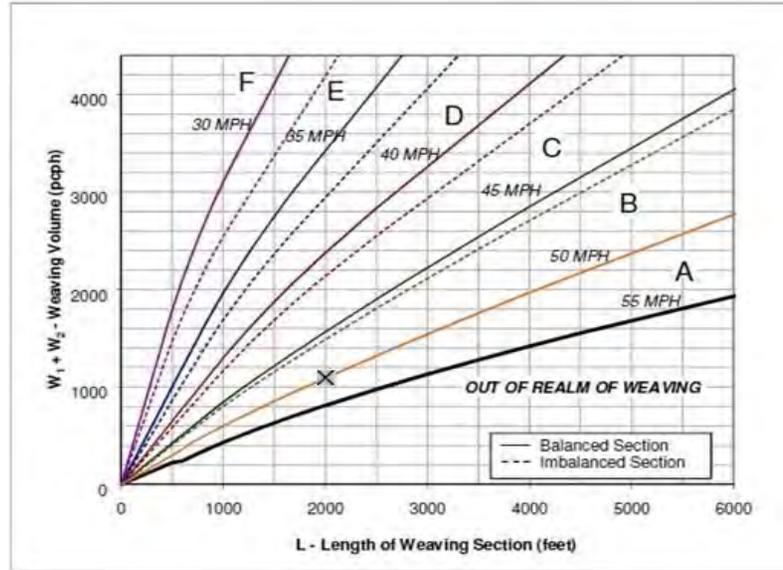
EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) plus Project Conditons (AM)

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

N_b=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)	1,676	Volume (vph)	411	Volume (vph)	253
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)	1,710	Volume (pcph)	415	Volume (pcph)	256

W1 + W2	671
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (S _w , mph)	50.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	427
Level of Service (LOS)	A



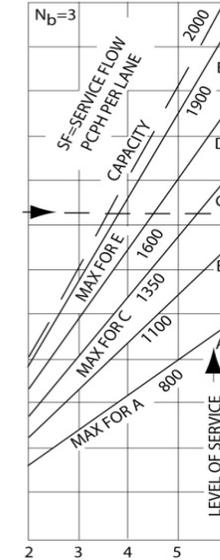
WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) plus Project Conditons (AM)

Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

N_b=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)	3,162	Volume (vph)	928	Volume (vph)	640
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)	3,194	Volume (pcph)	937	Volume (pcph)	646

W1 + W2	1,584
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	46.8
Weaving Intensity Factor (k)	1.40
Service Volume ((SV, pcph)	
SV = (1/N)*[V+(k-1)*min(W1,W2)]	863
Level of Service (LOS)	B



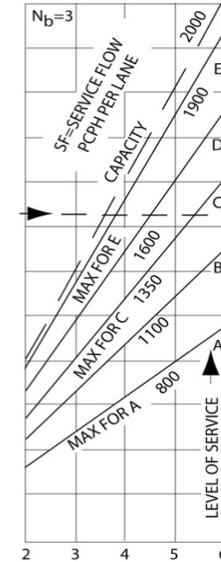
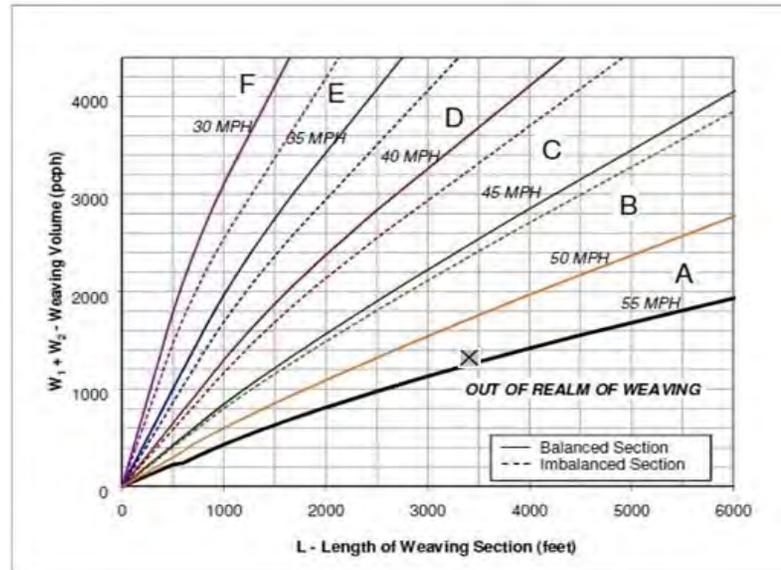
WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) plus Project Conditons (PM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

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)	1,984	Volume (vph)	284	Volume (vph)	358
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)	2,004	Volume (pcph)	287	Volume (pcph)	362

W1 + W2	648
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	54.8
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	501
Level of Service (LOS)	A



Appendix D

*Analysis Worksheets for
Cumulative (2035) 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	9168	9183	9204	9096	9152	9051	9327
Vehs Exited	9131	9119	9114	9089	9082	8966	9276
Starting Vehs	405	391	361	405	382	395	410
Ending Vehs	442	455	451	412	452	480	461
Travel Distance (mi)	6675	6688	6648	6665	6631	6514	6812
Travel Time (hr)	464.8	449.7	451.7	420.7	449.0	474.7	474.8
Total Delay (hr)	259.3	243.6	247.0	215.8	245.1	273.8	265.9
Total Stops	17304	17813	18013	17046	18006	17933	19011
Fuel Used (gal)	306.2	303.7	304.0	296.2	302.6	304.0	312.2

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	9088	9159	9108	9151
Vehs Exited	9040	9129	9106	9104
Starting Vehs	369	371	425	384
Ending Vehs	417	401	427	441
Travel Distance (mi)	6621	6686	6621	6656
Travel Time (hr)	425.8	425.4	425.1	446.2
Total Delay (hr)	222.2	218.9	221.8	241.4
Total Stops	17175	17198	17346	17688
Fuel Used (gal)	297.6	296.8	296.3	302.0

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	2239	2252	2240	2233	2253	2186	2271
Vehs Exited	2267	2250	2195	2221	2235	2151	2269
Starting Vehs	405	391	361	405	382	395	410
Ending Vehs	377	393	406	417	400	430	412
Travel Distance (mi)	1666	1643	1597	1627	1630	1580	1669
Travel Time (hr)	98.6	100.8	100.4	102.0	98.3	98.8	106.7
Total Delay (hr)	47.5	50.3	51.0	51.9	48.3	50.1	55.5
Total Stops	4027	4078	4025	4188	4026	4065	4427
Fuel Used (gal)	72.4	72.8	71.3	72.7	71.7	69.9	74.1

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	2240	2211	2235	2233
Vehs Exited	2212	2193	2274	2225
Starting Vehs	369	371	425	384
Ending Vehs	397	389	386	398
Travel Distance (mi)	1616	1609	1641	1628
Travel Time (hr)	97.6	96.0	95.4	99.5
Total Delay (hr)	48.0	46.3	44.8	49.4
Total Stops	3983	3842	3956	4058
Fuel Used (gal)	71.3	70.1	71.9	71.8

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	2498	2468	2419	2400	2447	2424	2417
Vehs Exited	2328	2323	2317	2378	2339	2318	2324
Starting Vehs	377	393	406	417	400	430	412
Ending Vehs	547	538	508	439	508	536	505
Travel Distance (mi)	1764	1754	1693	1717	1718	1684	1714
Travel Time (hr)	120.6	118.4	115.5	105.7	119.7	118.9	114.9
Total Delay (hr)	66.4	64.3	63.5	52.8	66.9	66.9	62.2
Total Stops	4859	4738	4696	4286	4848	4736	4618
Fuel Used (gal)	80.0	79.6	77.1	75.4	79.1	77.9	77.6

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	2451	2426	2406	2432
Vehs Exited	2378	2284	2367	2333
Starting Vehs	397	389	386	398
Ending Vehs	470	531	425	490
Travel Distance (mi)	1755	1717	1724	1724
Travel Time (hr)	114.6	109.7	111.7	115.0
Total Delay (hr)	60.8	56.7	58.9	61.9
Total Stops	4704	4457	4633	4659
Fuel Used (gal)	79.2	75.9	76.8	77.9

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	2286	2245	2231	2273	2217	2219	2320
Vehs Exited	2377	2358	2307	2281	2265	2274	2328
Starting Vehs	547	538	508	439	508	536	505
Ending Vehs	456	425	432	431	460	481	497
Travel Distance (mi)	1690	1680	1672	1689	1636	1648	1709
Travel Time (hr)	121.2	115.0	118.7	109.4	115.0	131.1	127.0
Total Delay (hr)	69.2	63.3	67.1	57.8	64.6	80.3	74.5
Total Stops	4586	4498	4712	4377	4479	4743	5048
Fuel Used (gal)	78.7	76.6	78.1	75.7	75.9	79.4	80.4

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	2197	2246	2270	2249
Vehs Exited	2241	2358	2258	2302
Starting Vehs	470	531	425	490
Ending Vehs	426	419	437	443
Travel Distance (mi)	1614	1685	1653	1668
Travel Time (hr)	106.0	117.8	108.4	116.9
Total Delay (hr)	56.2	65.7	57.7	65.6
Total Stops	4213	4767	4481	4590
Fuel Used (gal)	73.1	77.3	74.4	77.0

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	2145	2218	2314	2190	2235	2222	2319
Vehs Exited	2159	2188	2295	2209	2243	2223	2355
Starting Vehs	456	425	432	431	460	481	497
Ending Vehs	442	455	451	412	452	480	461
Travel Distance (mi)	1556	1611	1685	1632	1647	1601	1718
Travel Time (hr)	124.4	115.5	117.2	103.6	116.1	125.8	126.2
Total Delay (hr)	76.2	65.7	65.4	53.3	65.4	76.4	73.7
Total Stops	3832	4499	4580	4195	4653	4389	4918
Fuel Used (gal)	75.1	74.8	77.4	72.3	75.9	76.9	80.2

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	2200	2276	2197	2229
Vehs Exited	2209	2294	2207	2234
Starting Vehs	426	419	437	443
Ending Vehs	417	401	427	441
Travel Distance (mi)	1637	1676	1603	1637
Travel Time (hr)	107.5	101.8	109.7	114.8
Total Delay (hr)	57.2	50.3	60.4	64.4
Total Stops	4275	4132	4276	4374
Fuel Used (gal)	74.0	73.5	73.2	75.3

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)	0.0	0.0	0.0	1.4	0.6	1.3	0.0	0.0	0.0	1.4	0.4	1.2
Total Delay (hr)	0.7	1.3	0.5	1.5	1.6	0.4	2.6	3.4	0.0	4.2	12.6	0.3
Total Del/Veh (s)	35.2	39.2	11.4	32.4	28.0	8.6	55.2	17.4	3.0	76.2	30.2	7.8
Stop Delay (hr)	0.7	1.1	0.4	1.3	1.3	0.3	2.4	2.3	0.0	3.6	7.6	0.1
Stop Del/Veh (s)	32.6	33.9	10.9	28.3	22.8	6.5	50.9	11.8	1.8	64.7	18.2	3.2

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)	29.1
Total Del/Veh (s)	29.1
Stop Delay (hr)	21.1
Stop Del/Veh (s)	21.1

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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.8	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.0	2.1	0.2	1.1	2.7	0.4	9.2	2.1	0.2	0.1	10.5	0.4
Total Del/Veh (s)	35.3	55.4	3.7	35.6	47.2	36.2	61.2	10.3	4.8	42.1	27.1	3.4
Stop Delay (hr)	0.9	1.9	0.0	1.0	2.4	0.4	8.0	0.8	0.1	0.1	7.5	0.2
Stop Del/Veh (s)	32.8	50.6	0.0	31.1	41.3	33.2	53.6	3.7	1.1	39.2	19.4	1.6

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)	30.1
Total Del/Veh (s)	26.8
Stop Delay (hr)	23.3
Stop Del/Veh (s)	20.7

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	0.9
Denied Del/Veh (s)	2.6	0.2	0.0	0.0	0.0	0.0	0.7
Total Delay (hr)	7.4	0.0	3.1	0.6	1.2	3.9	16.3
Total Del/Veh (s)	22.0	0.5	9.2	5.6	15.8	9.9	12.3
Stop Delay (hr)	4.4	0.0	1.1	0.0	0.7	0.8	6.9
Stop Del/Veh (s)	13.1	0.0	3.2	0.3	9.1	1.9	5.3

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)	3.3	0.1	0.1	3.2	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.4	0.1	0.0	2.0	0.5	2.3	0.5	9.3	0.2	4.7	7.8	0.9
Total Del/Veh (s)	29.4	31.4	10.7	50.3	47.8	20.4	40.7	29.1	6.3	29.2	17.3	7.0
Stop Delay (hr)	0.4	0.1	0.0	1.8	0.5	2.0	0.4	5.9	0.1	3.8	4.4	0.4
Stop Del/Veh (s)	27.6	28.6	10.7	45.6	42.5	17.5	33.9	18.4	4.7	23.6	9.7	3.5

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	28.6
Total Del/Veh (s)	22.5
Stop Delay (hr)	19.7
Stop Del/Veh (s)	15.5

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	0.0	0.0	0.0
Total Delay (hr)	6.0	2.1	0.7	8.4	7.7	0.4	12.2	6.0	0.2	2.3	11.5	12.3
Total Del/Veh (s)	65.4	49.3	25.8	57.3	49.2	10.0	214.4	26.9	4.9	67.5	41.6	66.6
Stop Delay (hr)	5.6	1.9	0.7	7.3	6.3	0.3	11.9	5.3	0.2	2.0	7.9	9.9
Stop Del/Veh (s)	61.4	43.6	23.8	50.2	40.1	7.7	209.7	23.6	4.7	59.8	28.6	53.6

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)	69.7
Total Del/Veh (s)	52.7
Stop Delay (hr)	59.2
Stop Del/Veh (s)	44.8

7: 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	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.5	0.3	0.1	0.1	0.1	3.8	0.3	0.3
Total Delay (hr)	1.7	0.7	0.0	1.2	17.3	1.6	0.5	0.0	0.0	0.4	0.1	0.8
Total Del/Veh (s)	44.1	9.2	3.2	105.1	58.4	27.4	46.4	22.3	4.0	43.7	32.2	19.7
Stop Delay (hr)	1.6	0.4	0.0	1.0	12.3	1.0	0.5	0.0	0.0	0.4	0.1	0.7
Stop Del/Veh (s)	39.9	5.2	1.5	89.0	41.6	16.9	44.3	19.8	4.1	40.3	27.9	18.2

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

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	24.3
Total Del/Veh (s)	44.2
Stop Delay (hr)	18.0
Stop Del/Veh (s)	32.6

Total Zone Performance

Denied Delay (hr)	1.8
Denied Del/Veh (s)	1.0
Total Delay (hr)	198.7
Total Del/Veh (s)	323.3
Stop Delay (hr)	148.4
Stop Del/Veh (s)	241.3

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)	58	89	165	117	177	233	118	238	191	196	205	12
Average Queue (ft)	15	39	73	53	88	96	40	116	73	91	99	0
95th Queue (ft)	44	72	133	94	146	176	83	210	151	161	172	6
Link Distance (ft)			309	309		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		1				0
Queuing Penalty (veh)			1		0	1		2				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	613	560	468	207
Average Queue (ft)	117	306	229	189	42
95th Queue (ft)	145	561	458	363	111
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	31	30		3	0
Queuing Penalty (veh)	154	58		4	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	220	77	174	294	175	320	317	276	143	153	69
Average Queue (ft)	49	102	28	66	134	38	195	199	81	53	66	26
95th Queue (ft)	91	182	64	146	239	109	307	309	211	114	122	54
Link Distance (ft)	1070	1070			1644			626	626	626	626	626
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)				0	9	0						
Queuing Penalty (veh)				0	13	0						

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)	100	300	244	272	210	76	30	42	9
Average Queue (ft)	8	196	132	154	49	7	1	2	0
95th Queue (ft)	66	322	253	261	152	42	16	19	4
Link Distance (ft)		229	229	229	229	469	469	469	469
Upstream Blk Time (%)	0	9	1	2	0				
Queuing Penalty (veh)	0	42	4	9	0				
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		14							
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)	311	317	167	179	151	159	38	109	99	234	164	223
Average Queue (ft)	168	181	61	49	37	54	0	42	41	31	17	36
95th Queue (ft)	262	281	142	135	112	125	14	87	79	129	83	119
Link Distance (ft)	1203				569	569	569			626	626	626
Upstream Blk Time (%)											0	
Queuing Penalty (veh)											0	
Storage Bay Dist (ft)	450		175					575	575			
Storage Blk Time (%)	0	0	0	0								
Queuing Penalty (veh)	0	0	1	1								

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	145
Average Queue (ft)	26
95th Queue (ft)	85
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	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	50	60	36	29	125	317	298	53	209	300	296	319
Average Queue (ft)	14	23	9	6	92	142	84	15	29	157	145	170
95th Queue (ft)	42	54	30	23	146	277	221	42	104	264	254	279
Link Distance (ft)			778	778		520	520			837	837	837
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					12	20				2		
Queuing Penalty (veh)					29	27				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)	78	214	218	266	341	419	349
Average Queue (ft)	23	117	133	105	142	209	106
95th Queue (ft)	55	186	198	205	298	393	309
Link Distance (ft)	837			569	569	569	569
Upstream Blk Time (%)					0	0	0
Queuing Penalty (veh)					0	1	1
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Saratoga Retail Phase 2
 Queuing and Blocking Report

Cumulative (2035) Conditions
 AM Peak

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)	229	243	160	197	187	200	336	321	106	278	364	270
Average Queue (ft)	118	140	68	93	151	188	280	169	53	245	279	101
95th Queue (ft)	198	220	129	163	218	230	392	284	92	332	460	209
Link Distance (ft)			355	355			312	312	312		278	278
Upstream Blk Time (%)							12	0		29	50	0
Queuing Penalty (veh)							50	2		0	0	0
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	0	0			3	14	19			44	47	
Queuing Penalty (veh)	0	0			9	39	98			91	97	

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)	172	141	54	308	256	209	282	256	177	92	242	354
Average Queue (ft)	83	47	32	157	94	29	87	74	27	31	49	180
95th Queue (ft)	143	116	60	391	272	143	348	332	205	76	153	287
Link Distance (ft)	278	278		242	242	242	496	496	496			837
Upstream Blk Time (%)				28	1	0	8	3	1			
Queuing Penalty (veh)				0	0	0	0	0	0			
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		10	1								0	3
Queuing Penalty (veh)		14	3								0	3

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	425	714	275
Average Queue (ft)	191	399	237
95th Queue (ft)	326	818	346
Link Distance (ft)	837	837	
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		5	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		1	34
Queuing Penalty (veh)		5	109

Intersection: 7: 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	196	108	35	145	884	705	77	34	75	185
Average Queue (ft)	77	43	43	5	56	478	316	29	10	31	76
95th Queue (ft)	116	141	92	23	145	910	619	65	28	67	147
Link Distance (ft)		312	312			1505	1505	221	221		409
Upstream Blk Time (%)		0									
Queuing Penalty (veh)		0									
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	16	0	0		0	50				9	22
Queuing Penalty (veh)	20	1	0		1	20				14	8

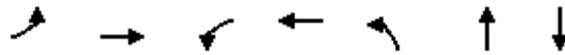
Zone Summary

Zone wide Queuing Penalty: 941

Saratoga Retail Phase 2
 6: Windfield Way/Town Center Blvd & White Rock Rd

Cumulative (2035) Conditions

AM Peak



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	48	613	757	751	92	158	44
v/c Ratio	0.52	0.85	0.85	0.31	0.77	0.42	0.30
Control Delay	80.2	58.4	39.7	11.1	97.2	13.4	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	58.4	39.7	11.1	97.2	13.4	30.9
Queue Length 50th (ft)	37	234	489	115	72	16	12
Queue Length 95th (ft)	93	#448	#1040	274	#208	72	47
Internal Link Dist (ft)		327		554		213	278
Turn Bay Length (ft)	195		190		155		
Base Capacity (vph)	137	723	889	2400	119	608	468
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.85	0.85	0.31	0.77	0.26	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Saratoga Retail Phase 2
6: Windfield Way/Town Center Blvd & White Rock Rd

Cumulative (2035) Conditions

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	419	145	696	691	0	85	21	124	0	15	26
Future Volume (veh/h)	44	419	145	696	691	0	85	21	124	0	15	26
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	48	455	158	757	751	0	92	23	135	0	16	28
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	61	612	211	781	2309	0	116	38	222	2	31	54
Arrive On Green	0.03	0.24	0.24	0.44	0.65	0.00	0.07	0.16	0.16	0.00	0.05	0.05
Sat Flow, veh/h	1774	2585	890	1774	3632	0	1774	236	1383	1774	609	1066
Grp Volume(v), veh/h	48	310	303	757	751	0	92	0	158	0	0	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1706	1774	1770	0	1774	0	1619	1774	0	1675
Q Serve(g_s), s	2.7	16.1	16.4	41.4	9.3	0.0	5.1	0.0	9.0	0.0	0.0	2.5
Cycle Q Clear(g_c), s	2.7	16.1	16.4	41.4	9.3	0.0	5.1	0.0	9.0	0.0	0.0	2.5
Prop In Lane	1.00		0.52	1.00		0.00	1.00		0.85	1.00		0.64
Lane Grp Cap(c), veh/h	61	419	404	781	2309	0	116	0	259	2	0	84
V/C Ratio(X)	0.78	0.74	0.75	0.97	0.33	0.00	0.79	0.00	0.61	0.00	0.00	0.52
Avail Cap(c_a), veh/h	171	456	439	1114	2827	0	150	0	622	54	0	556
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	47.6	35.1	35.2	27.2	7.6	0.0	45.8	0.0	38.8	0.0	0.0	46.0
Incr Delay (d2), s/veh	7.9	6.2	6.9	14.6	0.1	0.0	14.6	0.0	0.9	0.0	0.0	1.9
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	1.4	8.6	8.5	23.3	4.5	0.0	3.0	0.0	4.1	0.0	0.0	1.2
LnGrp Delay(d),s/veh	55.5	41.4	42.1	41.7	7.7	0.0	60.3	0.0	39.7	0.0	0.0	47.9
LnGrp LOS	E	D	D	D	A		E		D			D
Approach Vol, veh/h		661			1508			250				44
Approach Delay, s/veh		42.7			24.8			47.3				47.9
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	49.4	29.5	10.9	9.6	8.0	70.9	0.0	20.5				
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	25.6	8.4	33.0	9.6	79.4	3.0	38.2				
Max Q Clear Time (g_c+I1), s	43.4	18.4	7.1	4.5	4.7	11.3	0.0	11.0				
Green Ext Time (p_c), s	0.3	5.2	0.0	0.5	0.0	17.7	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			32.3									
HCM 2010 LOS			C									

Saratoga Retail Phase 2
 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Cumulative (2035) Conditions
 AM Peak

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↗↗		↗	↗↗	
Traffic Vol, veh/h	0	0	1	0	0	5	0	325	0	3	406	74
Future Vol, veh/h	0	0	1	0	0	5	0	325	0	3	406	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	0	5	0	353	0	3	441	80

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	-	-	261	-	-	177	522	0	-	353	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	738	0	0	835	1041	-	0	1202	-	-
Stage 1	0	0	-	0	0	-	-	-	0	-	-	-
Stage 2	0	0	-	0	0	-	-	-	0	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	-	-	738	-	-	835	1041	-	-	1202	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9.9		9.3			0			0		
HCM LOS	A		A								

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1041	-	738	835	1202	-	-
HCM Lane V/C Ratio	-	-	0.001	0.007	0.003	-	-
HCM Control Delay (s)	0	-	9.9	9.3	8	-	-
HCM Lane LOS	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	0	-	-

Saratoga Retail Phase 2
 9: Saratoga Way & Project Main Dwy

Cumulative (2035) Conditions
 AM Peak

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑		↘	↑↑
Traffic Vol, veh/h	0	7	318	0	12	395
Future Vol, veh/h	0	7	318	0	12	395
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	346	0	13	429

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	587	173	0	0	346	0
Stage 1	346	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	441	840	-	-	1210	-
Stage 1	688	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	436	840	-	-	1210	-
Mov Cap-2 Maneuver	436	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	768	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	9.3		0		0.2
HCM LOS	A				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	840	1210	-
HCM Lane V/C Ratio	-	-	-	0.009	0.011	-
HCM Control Delay (s)	-	-	0	9.3	8	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Saratoga Retail Phase 2
 10: Saratoga Way & Arrowhead Dr

Cumulative (2035) Conditions
 AM Peak

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	W	W	
Traffic Vol, veh/h	91	0	0	227	394	1
Future Vol, veh/h	91	0	0	227	394	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	0	0	247	428	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	552	215	429	0	-	0
Stage 1	429	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	464	790	1127	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	464	790	1127	-	-	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1127	-	464	-	-
HCM Lane V/C Ratio	-	-	0.213	-	-
HCM Control Delay (s)	0	-	14.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Summary of All Intervals

Run Number	10	12	16	17	18	20	7
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	9926	9918	10041	10041	10086	10059	10086
Vehs Exited	9450	9437	9343	9423	9481	9575	9481
Starting Vehs	570	664	541	538	522	602	522
Ending Vehs	1046	1145	1239	1156	1127	1086	1127
Travel Distance (mi)	6903	6959	6885	6910	6976	7044	6976
Travel Time (hr)	1318.7	1403.9	1412.8	1387.5	1292.9	1296.2	1292.9
Total Delay (hr)	1105.5	1189.2	1200.6	1174.9	1077.8	1078.8	1077.8
Total Stops	27506	26969	28232	27266	25922	27331	25922
Fuel Used (gal)	512.6	535.3	533.3	530.8	511.3	513.1	511.3

Summary of All Intervals

Run Number	097909004\03 Analysis Files\Synchro Files\Cumulative_PM	Avg
Start Time	6:50	6:50
End Time	8:00	8:00
Total Time (min)	70	70
Time Recorded (min)	60	60
# of Intervals	5	5
# of Recorded Intervals	4	4
Vehs Entered	10059	10088
Vehs Exited	9575	9650
Starting Vehs	602	619
Ending Vehs	1086	1057
Travel Distance (mi)	7044	7022
Travel Time (hr)	1296.2	1299.8
Total Delay (hr)	1078.8	1083.6
Total Stops	27331	28592
Fuel Used (gal)	513.1	514.3

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.	

Interval #1 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	10	12	16	17	18	20	7
Vehs Entered	2620	2595	2596	2712	2668	2656	2668
Vehs Exited	2382	2516	2446	2428	2422	2518	2422
Starting Vehs	570	664	541	538	522	602	522
Ending Vehs	808	743	691	822	768	740	768
Travel Distance (mi)	1796	1833	1823	1842	1819	1869	1819
Travel Time (hr)	181.2	192.0	171.7	167.1	164.7	182.1	164.7
Total Delay (hr)	125.9	135.3	115.5	110.7	108.5	124.6	108.5
Total Stops	6262	6242	5787	5924	5716	5945	5716
Fuel Used (gal)	96.3	100.1	95.2	94.7	93.4	98.8	93.4

Interval #1 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	097909004\03 Analysis Files\Synchro Files\Cumulative_PM	Avg
Vehs Entered	2656	2649
Vehs Exited	2518	2448
Starting Vehs	602	570
Ending Vehs	740	777
Travel Distance (mi)	1869	1830
Travel Time (hr)	182.1	179.9
Total Delay (hr)	124.6	123.5
Total Stops	5945	6024
Fuel Used (gal)	98.8	97.2

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	10	12	16	17	18	20	7
Vehs Entered	2563	2529	2680	2652	2662	2657	2662
Vehs Exited	2424	2296	2355	2442	2379	2376	2379
Starting Vehs	808	743	691	822	768	740	768
Ending Vehs	947	976	1016	1032	1051	1021	1051
Travel Distance (mi)	1772	1753	1790	1785	1786	1773	1786
Travel Time (hr)	291.9	304.5	286.1	283.3	283.2	279.8	283.2
Total Delay (hr)	237.0	250.6	230.7	228.0	228.3	224.9	228.3
Total Stops	6967	6705	7182	7099	6712	6713	6712
Fuel Used (gal)	120.5	123.5	119.8	119.6	119.4	118.2	119.4

Interval #2 Information

Start Time	7:15
End Time	7:30
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	097909004\03 Analysis Files\Synchro Files\Cumulative_PM	Avg
Vehs Entered	2657	2628
Vehs Exited	2376	2377
Starting Vehs	740	777
Ending Vehs	1021	1023
Travel Distance (mi)	1773	1777
Travel Time (hr)	279.8	289.7
Total Delay (hr)	224.9	234.9
Total Stops	6713	6967
Fuel Used (gal)	118.2	120.6

Interval #3 Information

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

Volumes adjusted by Growth Factors.

Run Number	10	12	16	17	18	20	7
Vehs Entered	2318	2397	2412	2465	2354	2428	2354
Vehs Exited	2326	2348	2248	2352	2392	2389	2392
Starting Vehs	947	976	1016	1032	1051	1021	1051
Ending Vehs	939	1025	1180	1145	1013	1060	1013
Travel Distance (mi)	1653	1698	1610	1699	1699	1752	1699
Travel Time (hr)	387.7	416.9	413.3	415.3	375.5	381.2	375.5
Total Delay (hr)	336.8	364.3	363.9	363.2	323.1	327.2	323.1
Total Stops	6780	6717	7356	7622	6820	7229	6820
Fuel Used (gal)	139.8	147.4	143.5	147.4	138.5	141.5	138.5

Interval #3 Information

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

Volumes adjusted by Growth Factors.

Run Number	097909004\03 Analysis Files\Synchro Files\Cumulative_PM	Avg
Vehs Entered	2428	2383
Vehs Exited	2389	2351
Starting Vehs	1021	1023
Ending Vehs	1060	1052
Travel Distance (mi)	1752	1689
Travel Time (hr)	381.2	394.9
Total Delay (hr)	327.2	342.8
Total Stops	7229	7099
Fuel Used (gal)	141.5	142.3

Interval #4 Information

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

Volumes adjusted by Growth Factors.

Run Number	10	12	16	17	18	20	7
Vehs Entered	2425	2397	2353	2212	2402	2318	2402
Vehs Exited	2318	2277	2294	2201	2288	2292	2288
Starting Vehs	939	1025	1180	1145	1013	1060	1013
Ending Vehs	1046	1145	1239	1156	1127	1086	1127
Travel Distance (mi)	1683	1676	1662	1583	1672	1650	1672
Travel Time (hr)	457.9	490.5	541.7	521.8	469.5	453.2	469.5
Total Delay (hr)	405.8	438.9	490.6	473.1	417.8	402.2	417.8
Total Stops	7497	7305	7907	6621	6674	7444	6674
Fuel Used (gal)	156.1	164.2	174.8	169.0	159.9	154.7	159.9

Interval #4 Information

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

Volumes adjusted by Growth Factors.

Run Number	097909004\03 Analysis Files\Synchro Files\Cumulative_PM	Avg
Vehs Entered	2318	2347
Vehs Exited	2292	2282
Starting Vehs	1060	1052
Ending Vehs	1086	1110
Travel Distance (mi)	1650	1652
Travel Time (hr)	453.2	483.7
Total Delay (hr)	402.2	432.8
Total Stops	7444	7191
Fuel Used (gal)	154.7	162.0

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	2.1	0.7	2.6	0.0	0.0	0.0	27.1	109.8	4.8
Denied Del/Veh (s)	0.0	0.0	0.0	28.7	27.3	28.2	0.0	0.0	0.0	419.9	423.2	382.6
Total Delay (hr)	4.3	7.7	3.2	13.2	3.2	9.7	1.9	9.6	0.1	17.0	27.4	0.1
Total Del/Veh (s)	59.5	83.5	36.8	182.8	125.2	107.2	57.8	32.2	10.1	347.6	142.8	9.7
Stop Delay (hr)	3.7	6.7	3.1	12.1	2.8	8.5	1.8	7.1	0.0	16.6	25.1	0.1
Stop Del/Veh (s)	51.8	73.5	35.5	167.8	110.2	94.0	52.8	23.9	7.4	340.5	130.5	5.3

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

Movement	All
Denied Delay (hr)	147.0
Denied Del/Veh (s)	132.8
Total Delay (hr)	97.3
Total Del/Veh (s)	94.7
Stop Delay (hr)	87.7
Stop Del/Veh (s)	85.3

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	0.7	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	14.8	14.9	12.7	0.1	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	3.5	17.1	0.0	11.8	19.1	1.7	46.0	5.0	0.5	0.2	17.9	0.0
Total Del/Veh (s)	135.3	438.4	5.2	231.9	274.3	258.3	161.8	16.2	6.6	108.3	57.9	1.3
Stop Delay (hr)	3.4	17.0	0.0	11.4	18.5	1.6	41.3	2.8	0.1	0.1	15.4	0.0
Stop Del/Veh (s)	130.5	437.6	1.2	223.6	265.6	251.5	145.2	9.0	1.5	104.2	49.7	0.6

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

Movement	All
Denied Delay (hr)	1.9
Denied Del/Veh (s)	1.6
Total Delay (hr)	122.8
Total Del/Veh (s)	101.8
Stop Delay (hr)	111.6
Stop Del/Veh (s)	92.5

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)	1.0	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.2	0.1	15.4	1.1	1.6	2.4	21.8
Total Del/Veh (s)	11.2	0.7	26.9	6.4	31.4	7.6	16.5
Stop Delay (hr)	0.8	0.0	9.3	0.1	1.3	0.4	11.9
Stop Del/Veh (s)	7.2	0.0	16.3	0.3	24.9	1.3	9.0

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	10.1	1.6	99.2	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.9	0.2	0.2	437.6	481.4	432.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	6.8	0.5	0.2	4.1	0.6	27.0	0.0	46.6	0.9	10.7	3.8	0.0
Total Del/Veh (s)	56.2	50.4	14.3	232.4	221.4	150.2	154.5	97.8	22.3	68.0	15.6	1.9
Stop Delay (hr)	6.3	0.5	0.2	4.1	0.6	26.3	0.0	37.1	0.7	9.3	2.5	0.0
Stop Del/Veh (s)	51.7	47.2	13.3	232.8	223.5	146.4	133.7	77.9	17.6	59.6	10.3	1.2

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	111.2
Denied Del/Veh (s)	83.9
Total Delay (hr)	101.3
Total Del/Veh (s)	78.9
Stop Delay (hr)	87.7
Stop Del/Veh (s)	68.3

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)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	28.4	7.1	0.8	15.6	3.6	0.9	10.6	14.8	3.8	11.1	4.7	0.5
Total Del/Veh (s)	247.9	45.7	35.8	130.7	38.3	17.4	372.0	41.6	31.3	171.4	29.7	9.2
Stop Delay (hr)	27.6	5.7	0.7	14.7	2.9	0.8	10.7	12.7	3.5	10.6	3.3	0.4
Stop Del/Veh (s)	241.1	36.9	31.4	123.2	30.8	15.0	372.6	35.7	29.1	163.9	20.8	6.5

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	102.0
Total Del/Veh (s)	76.0
Stop Delay (hr)	93.6
Stop Del/Veh (s)	69.7

7: 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	0.9	20.5	4.7	0.1	0.0	0.0	8.5	0.4	11.8
Denied Del/Veh (s)	0.0	0.0	0.0	91.7	94.4	94.4	6.3	3.4	3.3	173.8	139.1	173.0
Total Delay (hr)	4.6	6.0	0.1	3.6	59.4	7.6	2.8	0.1	0.1	6.6	0.4	7.3
Total Del/Veh (s)	68.5	22.7	10.3	375.3	293.1	165.2	172.5	29.0	12.2	141.9	119.7	113.6
Stop Delay (hr)	4.2	3.9	0.0	3.6	55.7	6.7	2.8	0.1	0.1	6.4	0.4	7.1
Stop Del/Veh (s)	62.0	14.8	5.6	368.2	275.3	144.6	170.5	26.4	11.9	137.0	114.3	110.4

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

Movement	All
Denied Delay (hr)	47.0
Denied Del/Veh (s)	61.9
Total Delay (hr)	98.6
Total Del/Veh (s)	133.7
Stop Delay (hr)	91.0
Stop Del/Veh (s)	123.3

Total Zone Performance

Denied Delay (hr)	307.4
Denied Del/Veh (s)	176.0
Total Delay (hr)	545.1
Total Del/Veh (s)	671.6
Stop Delay (hr)	483.4
Stop Del/Veh (s)	595.6

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	306	294	225	1466	225	215	305	314	318	158
Average Queue (ft)	83	159	281	162	191	715	101	92	163	181	185	17
95th Queue (ft)	150	218	340	283	272	1710	214	177	259	273	280	79
Link Distance (ft)			288	288		1429			468	468	468	
Upstream Blk Time (%)			41	3		20						
Queuing Penalty (veh)			194	16		0						
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)	0	2	62		45	0	2	0	1		2	
Queuing Penalty (veh)	1	8	180		193	0	8	0	1		1	

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	1070	1036	991	107
Average Queue (ft)	118	927	764	439	19
95th Queue (ft)	153	1305	1309	1023	66
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)		75	7	1	
Queuing Penalty (veh)		0	0	0	
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	41	59		1	0
Queuing Penalty (veh)	128	141		1	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)	587	664	69	141	175	1242	175	575	704	712	654	631
Average Queue (ft)	248	412	5	72	154	818	50	545	613	600	260	193
95th Queue (ft)	574	716	69	125	230	1577	163	646	780	822	675	542
Link Distance (ft)	1240	1240	1240			1644			628	628	628	628
Upstream Blk Time (%)						10			31	35	1	0
Queuing Penalty (veh)						0			168	188	8	1
Storage Bay Dist (ft)				150	150		150	550				
Storage Blk Time (%)				1	0	73	0	23	46			
Queuing Penalty (veh)				2	1	144	0	137	271			

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)	208	164	333	305	290	154	497	491	375	190
Average Queue (ft)	48	19	302	209	142	10	452	354	63	8
95th Queue (ft)	134	120	331	330	280	80	569	597	250	91
Link Distance (ft)	628		229	229	229	229	468	468	468	468
Upstream Blk Time (%)		0	81	17	3	0	19	2	0	
Queuing Penalty (veh)		0	309	65	13	1	75	7	0	
Storage Bay Dist (ft)		200								
Storage Blk Time (%)				79						
Queuing Penalty (veh)				5						

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)	125	72	200	594	598	574	168	91	85	210	56	67
Average Queue (ft)	58	26	161	322	224	159	13	33	24	79	7	10
95th Queue (ft)	103	54	250	684	569	432	114	72	61	158	30	39
Link Distance (ft)	1203			569	569	569	569			628	628	628
Upstream Blk Time (%)				6	2	0						
Queuing Penalty (veh)				45	15	1						
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)			27	18								
Queuing Penalty (veh)			159	106								

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	55
Average Queue (ft)	6
95th Queue (ft)	27
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	L	TR	R	L	T	T	T	R
Maximum Queue (ft)	244	280	77	92	125	569	553	87	790	780	789	773
Average Queue (ft)	158	179	18	38	93	536	504	5	542	540	549	311
95th Queue (ft)	232	254	53	75	173	593	614	54	899	901	896	819
Link Distance (ft)			778	778		520	520		837	837	837	837
Upstream Blk Time (%)						92	20		5	4	5	1
Queuing Penalty (veh)						0	0		24	19	27	8
Storage Bay Dist (ft)	350	350			100			225				
Storage Blk Time (%)					2	90			52			
Queuing Penalty (veh)					9	71			1			

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)	317	327	434	198	236	48
Average Queue (ft)	220	230	169	88	95	13
95th Queue (ft)	311	321	372	164	186	34
Link Distance (ft)			569	569	569	569
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			2			
Storage Bay Dist (ft)	325	325				
Storage Blk Time (%)	0	1	2			
Queuing Penalty (veh)	1	3	11			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	B40	B40	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	TR	T	T	L	L	T	T	R	L
Maximum Queue (ft)	337	350	435	342	582	571	187	200	334	287	158	278
Average Queue (ft)	329	346	412	203	534	61	183	198	310	103	73	216
95th Queue (ft)	360	367	440	315	724	345	198	214	382	207	139	348
Link Distance (ft)			355	355	548	548			312	312	312	
Upstream Blk Time (%)	0	29	70	0	43	1			32	0		18
Queuing Penalty (veh)	0	0	473	1	295	4			116	2		0
Storage Bay Dist (ft)	325	325					175	175				270
Storage Blk Time (%)	18	74	5				14	56	0			44
Queuing Penalty (veh)	61	254	32				26	106	2			139

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB
Directions Served	T	T	T	T	R	T	T	T	T	T	T	L
Maximum Queue (ft)	368	330	332	352	63	278	266	276	150	135	154	216
Average Queue (ft)	287	215	203	219	50	95	83	67	32	31	21	137
95th Queue (ft)	421	333	314	352	56	298	280	263	164	169	147	257
Link Distance (ft)	278	278	278	278		242	242	242	496	496	496	
Upstream Blk Time (%)	43	3	2	8		15	7	4				0
Queuing Penalty (veh)	0	0	0	0		0	0	0				0
Storage Bay Dist (ft)					25							225
Storage Blk Time (%)	40			20	43							8
Queuing Penalty (veh)	39			89	135							17

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	224	339	253	187	96
Average Queue (ft)	144	121	81	53	18
95th Queue (ft)	271	320	175	134	67
Link Distance (ft)		837	837	837	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	225				250
Storage Blk Time (%)	13	0			
Queuing Penalty (veh)	27	1			

Intersection: 7: 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	365	135	145	1545	1539	160	80	75	456
Average Queue (ft)	100	250	236	17	56	1163	1106	86	24	72	390
95th Queue (ft)	118	379	378	77	154	1945	1947	183	78	88	533
Link Distance (ft)		312	312			1505	1505	221	221		409
Upstream Blk Time (%)		5	3			46	25	6	1		65
Queuing Penalty (veh)		33	24			0	0	0	0		0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	52	13	21	0	0	80				62	42
Queuing Penalty (veh)	278	39	6	0	1	34				161	74

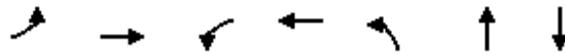
Zone Summary

Zone wide Queuing Penalty: 5237

Saratoga Retail Phase 2
 6: Windfield Way/Town Center Blvd & White Rock Rd

Cumulative (2035) Conditions

PM Peak



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	1101	175	583	337	502	85
v/c Ratio	0.41	0.82	0.80	0.33	0.82	0.69	0.45
Control Delay	72.1	39.2	76.9	20.5	61.1	19.7	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	39.2	76.9	20.5	61.1	19.7	26.6
Queue Length 50th (ft)	24	358	124	131	229	156	19
Queue Length 95th (ft)	67	#674	#311	259	#511	268	65
Internal Link Dist (ft)		327		554		213	278
Turn Bay Length (ft)	195		190		155		
Base Capacity (vph)	106	1364	225	1775	416	935	522
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.81	0.78	0.33	0.81	0.54	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Saratoga Retail Phase 2
6: Windfield Way/Town Center Blvd & White Rock Rd

Cumulative (2035) Conditions

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	886	127	161	536	0	310	21	441	0	25	53
Future Volume (veh/h)	30	886	127	161	536	0	310	21	441	0	25	53
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	963	138	175	583	0	337	23	479	0	27	58
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	1217	174	205	1745	0	366	25	515	2	48	102
Arrive On Green	0.02	0.39	0.39	0.12	0.49	0.00	0.21	0.34	0.34	0.00	0.09	0.09
Sat Flow, veh/h	1774	3109	445	1774	3632	0	1774	73	1521	1774	528	1134
Grp Volume(v), veh/h	33	548	553	175	583	0	337	0	502	0	0	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1784	1774	1770	0	1774	0	1594	1774	0	1663
Q Serve(g_s), s	1.9	28.6	28.6	10.1	10.5	0.0	19.5	0.0	31.8	0.0	0.0	5.1
Cycle Q Clear(g_c), s	1.9	28.6	28.6	10.1	10.5	0.0	19.5	0.0	31.8	0.0	0.0	5.1
Prop In Lane	1.00		0.25	1.00		0.00	1.00		0.95	1.00		0.68
Lane Grp Cap(c), veh/h	41	693	698	205	1745	0	366	0	540	2	0	150
V/C Ratio(X)	0.80	0.79	0.79	0.85	0.33	0.00	0.92	0.00	0.93	0.00	0.00	0.57
Avail Cap(c_a), veh/h	117	757	764	247	1809	0	458	0	865	51	0	524
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	50.9	28.1	28.1	45.4	16.1	0.0	40.7	0.0	33.4	0.0	0.0	45.6
Incr Delay (d2), s/veh	12.4	5.5	5.5	18.6	0.1	0.0	19.2	0.0	8.1	0.0	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	1.1	14.9	15.2	6.0	5.1	0.0	11.5	0.0	15.2	0.0	0.0	2.4
LnGrp Delay(d),s/veh	63.3	33.6	33.6	64.0	16.2	0.0	59.9	0.0	41.5	0.0	0.0	46.9
LnGrp LOS	E	C	C	E	B		E		D			D
Approach Vol, veh/h		1134			758			839				85
Approach Delay, s/veh		34.5			27.3			48.9				46.9
Approach LOS		C			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	17.7	47.0	26.0	14.0	7.0	57.6	0.0	40.0				
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	14.6	44.8	27.0	33.0	6.9	53.5	3.0	56.8				
Max Q Clear Time (g_c+I1), s	12.1	30.6	21.5	7.1	3.9	12.5	0.0	33.8				
Green Ext Time (p_c), s	0.0	10.4	0.1	1.6	0.0	20.9	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			37.2									
HCM 2010 LOS			D									

Saratoga Retail Phase 2
 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Cumulative (2035) Conditions

PM Peak

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕		↗	↕	
Traffic Vol, veh/h	0	0	4	0	0	32	2	904	0	16	181	69
Future Vol, veh/h	0	0	4	0	0	32	2	904	0	16	181	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	0	0	35	2	983	0	17	197	75

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	-	-	136	-	-	491	272	0	0	983	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	888	0	0	523	1288	-	-	698	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	888	-	-	523	1288	-	-	698	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	12.4	0	0.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1288	-	-	888	523	698	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.067	0.025	-	-
HCM Control Delay (s)	7.8	-	-	9.1	12.4	10.3	-	-
HCM Lane LOS	A	-	-	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Saratoga Retail Phase 2
 9: Saratoga Way & Project Main Dwy

Cumulative (2035) Conditions

PM Peak

Intersection

Int Delay, s/veh 0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑		↘	↑↑
Traffic Vol, veh/h	6	17	889	9	33	152
Future Vol, veh/h	6	17	889	9	33	152
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	18	966	10	36	165

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1125	488	0	0	976	0
Stage 1	971	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	199	526	-	-	703	-
Stage 1	328	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	189	526	-	-	703	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	15.4		0		1.9
HCM LOS	C				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	189	526	703	-
HCM Lane V/C Ratio	-	-	0.035	0.035	0.051	-
HCM Control Delay (s)	-	-	24.7	12.1	10.4	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	0.2	-

Saratoga Retail Phase 2
 10: Saratoga Way & Arrowhead Dr

Cumulative (2035) Conditions

PM Peak

Intersection

Int Delay, s/veh 1.6

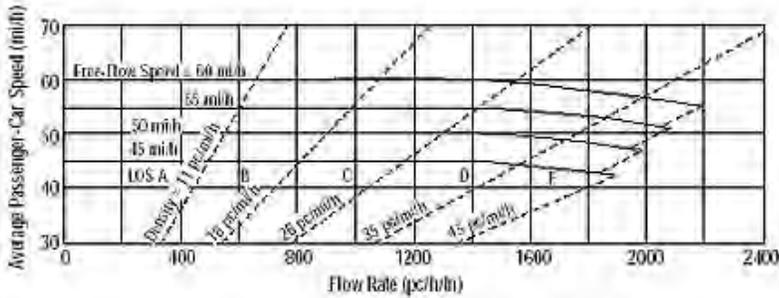
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	105	1	0	793	147	11
Future Vol, veh/h	105	1	0	793	147	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	1	0	862	160	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	597	86	172	0	-	0
Stage 1	166	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	434	956	1402	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	434	956	1402	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1402	-	436	-	-
HCM Lane V/C Ratio	-	-	0.264	-	-
HCM Control Delay (s)	0	-	16.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

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		Highway/Direction to Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/2017	Jurisdiction	EDC
Analysis Time Period	AM NB	Analysis Year	Cumulative (2035)

Project Description Saratoga Retail Phase 2

Oper. (LOS)
 Des. (N)
 Plan. (vp)

Flow Inputs			
Volume, V (veh/h)	330	Peak-Hour Factor, PHF	0.92
AAADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AAADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Rolling
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	2.0
E_T	2.5	f_{HV}	0.971

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	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	44.8
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	184	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	4.1	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

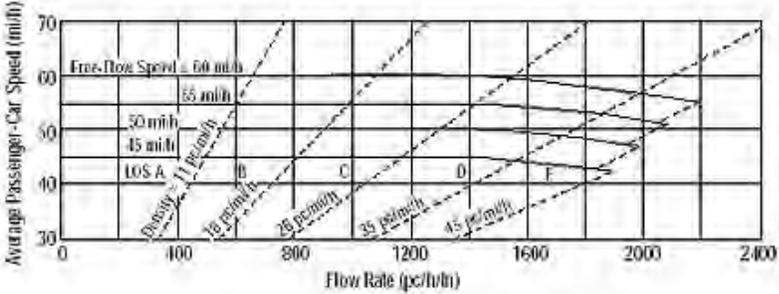
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	179.3

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)	1.88
Bicycle level of service (Exhibit 15-4)	B

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)																						
 <p style="font-size: small;">Free-Flow Speed = 60 mi/h Density curves: 11 pc/mi/h, 18 pc/mi/h, 25 pc/mi/h, 35 pc/mi/h, 45 pc/mi/h LOS regions: A, B, C, D, E, F</p>	<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Application</th> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>Operational (LOS)</td> <td>FFS, N, v_p</td> <td>LOS, S, D</td> </tr> <tr> <td>Design (N)</td> <td>FFS, LOS, v_p</td> <td>N, S, D</td> </tr> <tr> <td>Design (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> <tr> <td>Planning (LOS)</td> <td>FFS, N, AADT</td> <td>LOS, S, D</td> </tr> <tr> <td>Planning (N)</td> <td>FFS, LOS, AADT</td> <td>N, S, D</td> </tr> <tr> <td>Planning (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> </tbody> </table>	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
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	Highway/Direction to Travel	Saratoga Way																				
Agency or Company	From/To	W of El Dorado Hills Blvd																				
Date Performed	Jurisdiction	EDC																				
Analysis Time Period	Analysis Year	Cumulative (2035)																				
Project Description Saratoga Retail Phase 2																						
<input type="checkbox"/> Oper. (LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp)																						
Flow Inputs																						
Volume, V (veh/h)	483	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:	Rolling																			
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	2.0																			
E_T	2.5	f_{HV}	0.971																			
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	Divided	f_M (mi/h)	0.0																			
FFS (measured)		FFS (mi/h)	44.8																			
Base Free-Flow Speed, BFFS	45.0																					
Operations		Design																				
Operational (LOS)		Design (N)																				
Flow Rate, v_p (pc/h/ln)	270	Required Number of Lanes, N																				
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)																				
D (pc/mi/ln)	6.0	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		262.5																				

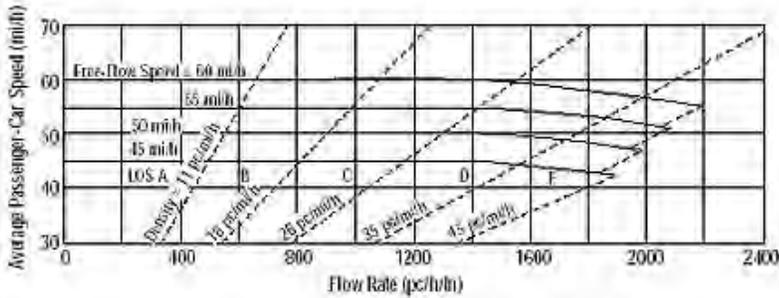
Effective width, W_v (Eq. 15-29) ft	24.00
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	2.07
Bicycle level of service (Exhibit 15-4)	B

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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		Highway/Direction to Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/2017	Jurisdiction	EDC
Analysis Time Period	PM NB	Analysis Year	Cumulative (2035)

Project Description Saratoga Retail Phase 2

Oper.(LOS)
 Des. (N)
 Plan. (vp)

Flow Inputs			
Volume, V (veh/h)	936	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:	Rolling
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	2.0
E_T	2.5	f_{HV}	0.971

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	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	44.8
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	523	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	11.6	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	508.7

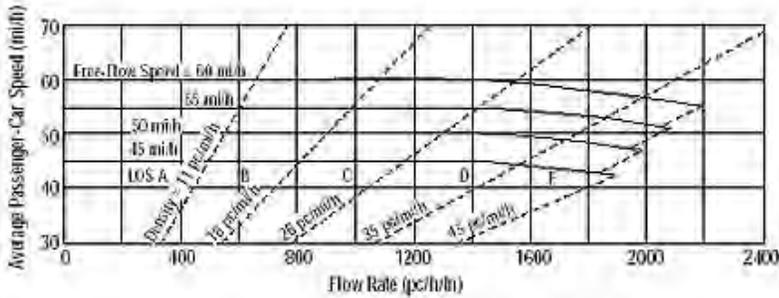
Effective width, W_v (Eq. 15-29) ft	24.00
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	2.41
Bicycle level of service (Exhibit 15-4)	B

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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		Highway/Direction to Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/2017	Jurisdiction	EDC
Analysis Time Period	PM SB	Analysis Year	Cumulative (2035)

Project Description Saratoga Retail Phase 2

Oper. (LOS)
 Des. (N)
 Plan. (vp)

Flow Inputs			
Volume, V (veh/h)	266	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:	Rolling
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	2.0
E_T	2.5	f_{HV}	0.971

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	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	44.8
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	148	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	3.3	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	144.6

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)	1.77
Bicycle level of service (Exhibit 15-4)	B

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HCS 2010™ Version 6.65

Generated: 5/24/2017 1:40 PM

Segment Inputs				Cumulative Conditions														
				Flow Inputs		AM LOS Performance Measures					PM LOS Performance Measures							
	Length	Number of Lanes	Interchange Density	PM		V _p	FFS	S	D	LOS	V _p	FFS	S	D	LOS			
				AM Peak	Peak													
	(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)				
West/East	West of Latrobe Rd SB Off Ramp	6690	3	0.33	3,041	3,785	1134.87	74.12	75	74.7986	15.172	B	1412.518	74.12	75	73.1162	19.3	C
	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,677	2,421	625.837	73.6	75	73.4502	8.5206	A	903.4891	73.6	75	74.8969	12.063	B
	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	3	0.50	3,718	4,033	1387.51	73.6	75	73.3376	18.92	C	1505.069	73.6	75	72.1761	20.853	C
	West of El Dorado Hills Blvd On Ramp	5890	3	0.33	4,816	5,533	1797.28	74.12	75	67.9634	26.445	D	2064.851	74.12	75	62.4476	33.065	D
Universal Inputs:																		
PHF 0.92																		
(P _s) 6%																		
F _{HV} 0.970873786																		

Segment Inputs			Cumulative 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 Lanes (L _a)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	V ₀	V _c	V _g	V _c /S ₂₀₀	P _{FM}	V ₁₂	Capacity	V ₃	V _{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	V ₀	V _c	V _g	V _c /S ₂₀₀	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)	(pc/h/mi)	(pc/h/mi)		(pc/h/mi)			(pc/mi/mi)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)	(pc/h)	(pc/h/mi)	(pc/h/mi)				(pc/mi/mi)							
3	1	795	4816	3718	1098	5392	4163	1229	119	0.5998	2496.5	7200	833	1872	2497	0.7489	28.986	D	5533	4033	1500	6195	4515	1679	129	0.5998	2708	7200	904	2031	2708	0.8604	33.939	D			
General inputs:																																					
Length		(ft)																																			
V ₀		(mi/h)																																			
V _c		(mi/h)																																			
V _g		(mi/h)																																			
P _{FM}																																					
P ₀																																					
V ₀																																					

Segment Inputs				Cumulative Conditions																													
				AM Flow Inputs										PM Flow Inputs			PM LOS Performance Measures																
	Number of Lanes	Number of Ramp Lanes	Length of Deceleration Lane (L _D)	Downstream Volume	Upstream Volume	Ramp Volume	V ₀	V ₁	V ₂	P _D	V ₁₂	Capacity	V ₂	V _{12a}	w/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	V ₀	V ₁	V ₂	P _D	V ₁₂	Capacity	V ₂	V _{12a}	w/c	D	LOS		
				(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)
Latrobe SB Off Ramp	3	1	430	1895	3041	1146	244.065	3404.6	1283	0.436	2208	7200	598	1656	2208	0.4729	21.981	C	4387	5533	1146	244.065	6194.6	1283	0.436	3424.4	7200	1385	2568	3424	0.8604	32.442	D
Latrobe NB Off Ramp	3	1	-	1677	1895	218	-	2121.6	244.07	0.6957	1550.3	7200	571	1163	1550	0.2947	16.325	B	4169	4387	218	-	4911.5	244.07	0.626	3165.8	7200	1746	2374	3166	0.6822	30.218	D

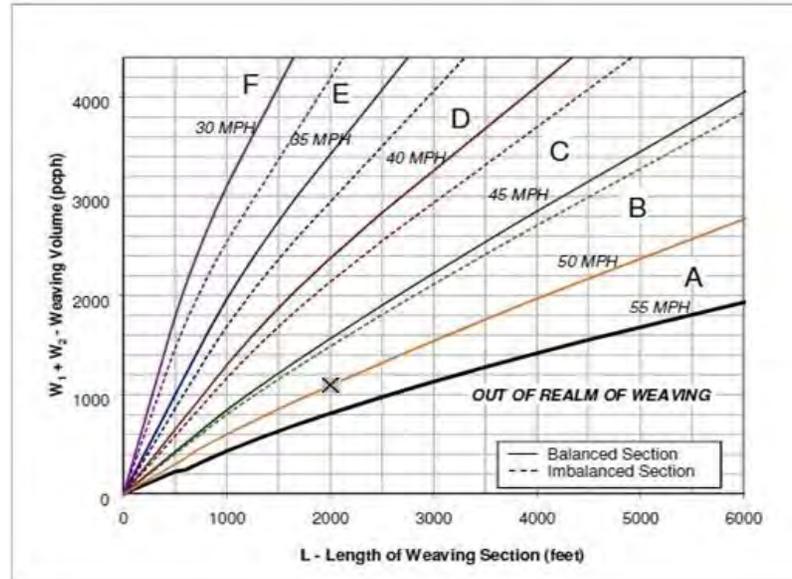
Segment Inputs:
 L_D 150 (ft)
 S_D 70 (mi/h)
 S₀ 35 (mi/h)
 P_D 0.92 (mi/h)
 P_R 6%
 S_R 0.9708/33786

EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) Conditons (AM)

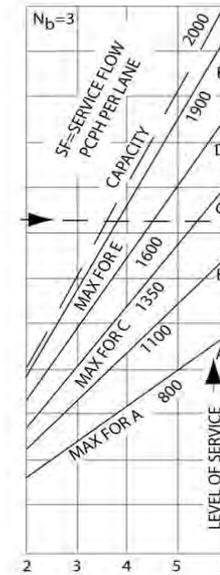
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	2,333	Volume (vph)	656	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)	2,380	Volume (pcph)	663	Volume (pcph)	293

W1 + W2	955
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	50.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	595
Level of Service (LOS)	A



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

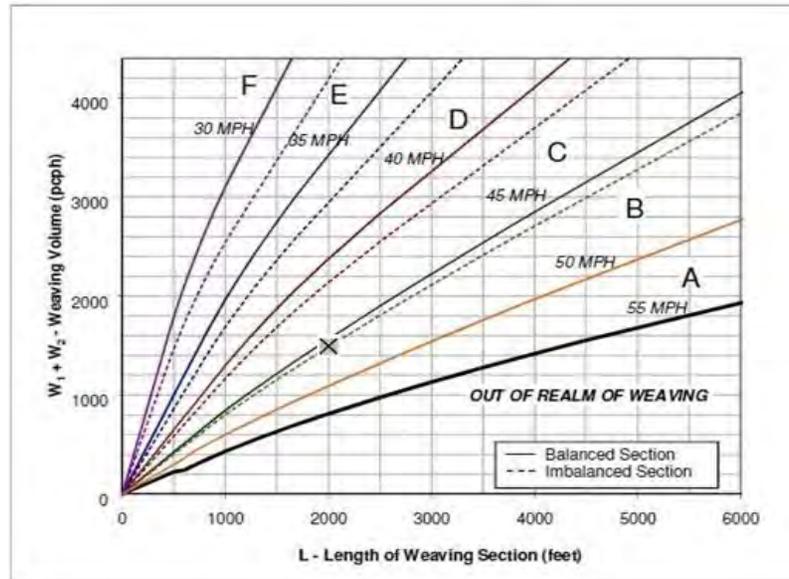


EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) Conditons (PM)

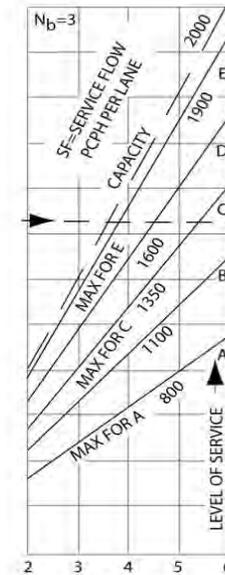
Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	3,077	Volume (vph)	656	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)	3,139	Volume (pcph)	663	Volume (pcph)	677

W1 + W2	1,339
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	45.4
Weaving Intensity Factor (k)	1.60
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	884
Level of Service (LOS)	B



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

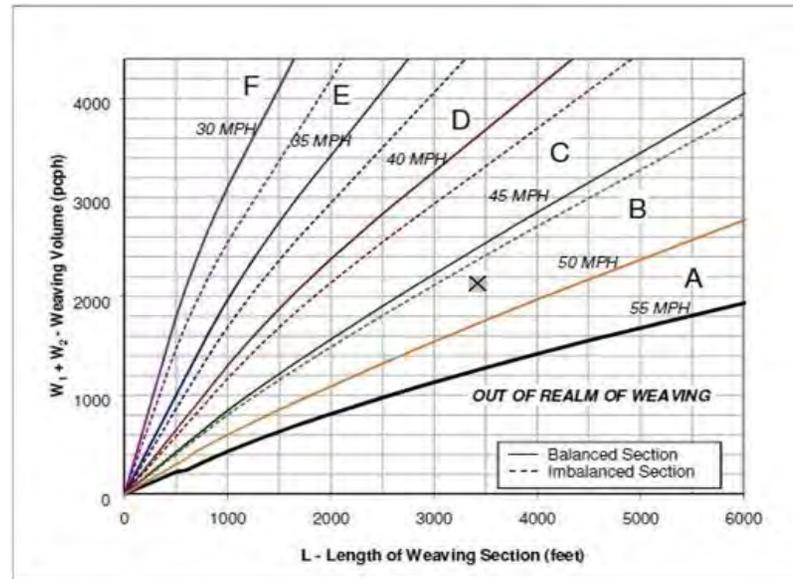


WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) Conditons (AM)

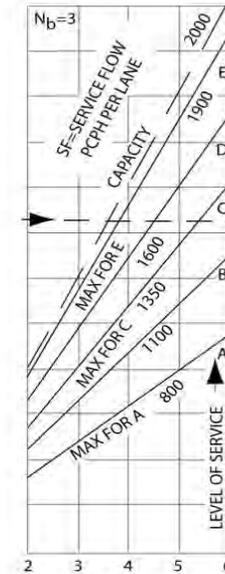
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,140	Volume (vph)	1,180	Volume (vph)	422
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)	4,181	Volume (pcph)	1,192	Volume (pcph)	426

W1 + W2	1,618
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	46.8
Weaving Intensity Factor (k)	1.40
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,088
Level of Service (LOS)	B



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



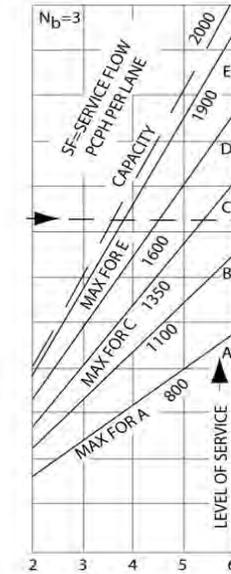
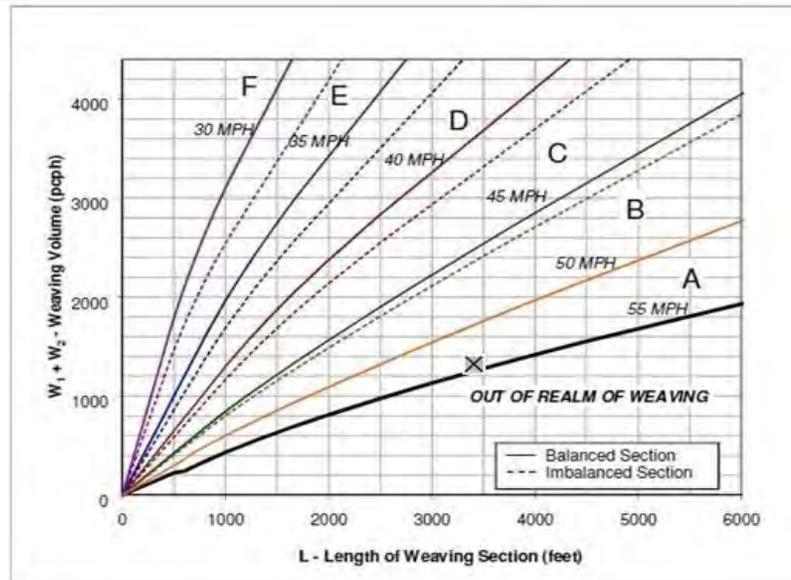
WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) Conditons (PM)

Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

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)	4,276	Volume (vph)	500	Volume (vph)	243
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)	4,319	Volume (pcph)	505	Volume (pcph)	245

W1 + W2	750
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	54.8
Weaving Intensity Factor (k)	1.00
Service Volume (SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,080
Level of Service (LOS)	B

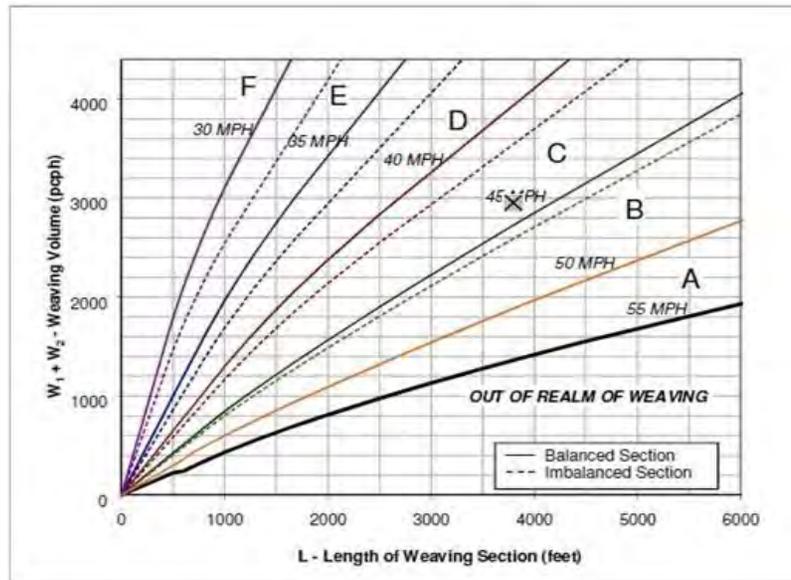


WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) Conditons (AM)

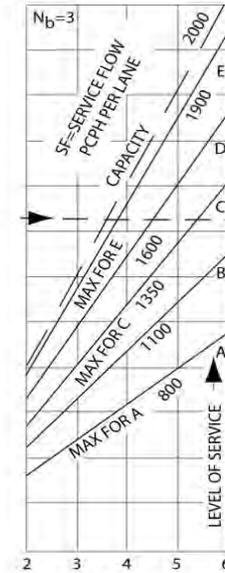
Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,816	Volume (vph)	1,098	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)	4,864	Volume (pcph)	1,109	Volume (pcph)	1,353

W1 + W2	2,462
In between	
Speed 1	40
Speed 2	45
Interpolated Weaving Speed (S _w , mph)	43.8
Weaving Intensity Factor (k)	1.65
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,396
Level of Service (LOS)	D



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



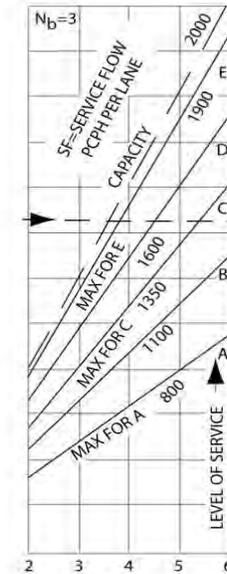
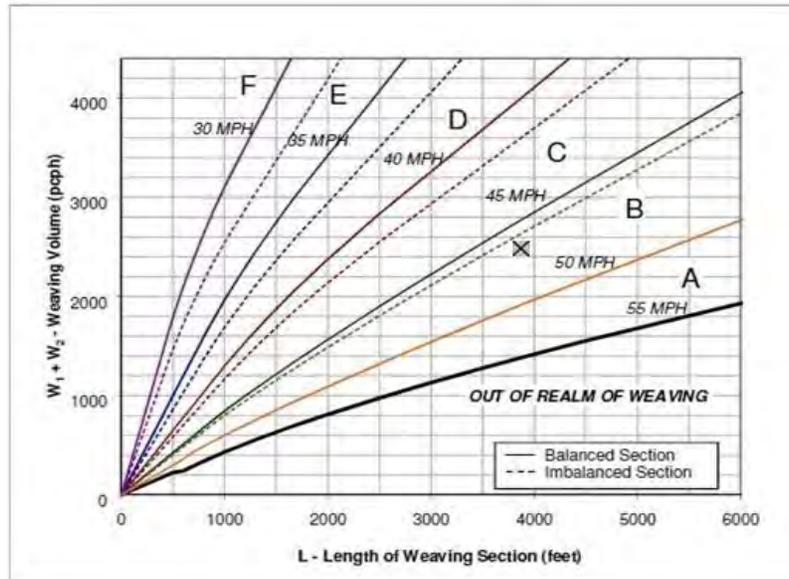
WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) Conditons (PM)

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)	5,533	Volume (vph)	1,500	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)	5,588	Volume (pcph)	1,515	Volume (pcph)	1,111

W1 + W2	2,626
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (Sw, mph)	46.0
Weaving Intensity Factor (k)	1.20
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,453
Level of Service (LOS)	D



Appendix E

*Analysis Worksheets for
Cumulative (2035) plus Proposed Project 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	9541	9503	9394	9545	9509	9566	9328
Vehs Exited	9435	9434	9230	9463	9380	9366	9211
Starting Vehs	410	443	442	447	417	413	374
Ending Vehs	516	512	606	529	546	613	491
Travel Distance (mi)	6851	6923	6810	6904	6860	6860	6750
Travel Time (hr)	522.4	516.6	510.7	514.0	547.0	517.6	456.4
Total Delay (hr)	310.3	303.1	300.6	301.2	335.7	306.1	248.3
Total Stops	19387	20009	18806	19369	20455	19018	18476
Fuel Used (gal)	324.1	326.1	322.9	324.6	331.7	323.3	307.7

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	9465	9340	9427	9459
Vehs Exited	9336	9236	9388	9347
Starting Vehs	416	393	407	415
Ending Vehs	545	497	446	524
Travel Distance (mi)	6826	6728	6848	6836
Travel Time (hr)	514.9	502.2	497.4	509.9
Total Delay (hr)	303.8	294.1	285.5	298.9
Total Stops	19390	19249	19638	19376
Fuel Used (gal)	323.5	316.7	321.0	322.2

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	2326	2304	2289	2408	2305	2276	2344
Vehs Exited	2269	2284	2305	2398	2265	2243	2283
Starting Vehs	410	443	442	447	417	413	374
Ending Vehs	467	463	426	457	457	446	435
Travel Distance (mi)	1654	1679	1694	1730	1671	1652	1666
Travel Time (hr)	102.6	109.6	107.7	113.2	107.8	106.5	104.2
Total Delay (hr)	51.2	57.6	55.4	59.6	56.4	55.4	52.8
Total Stops	4100	4498	4340	4572	4256	4236	4261
Fuel Used (gal)	72.6	75.5	75.6	77.7	75.1	73.9	74.5

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	2330	2293	2331	2316
Vehs Exited	2279	2202	2283	2279
Starting Vehs	416	393	407	415
Ending Vehs	467	484	455	451
Travel Distance (mi)	1677	1622	1680	1673
Travel Time (hr)	110.7	107.9	118.5	108.9
Total Delay (hr)	58.7	57.7	66.4	57.1
Total Stops	4609	4476	4786	4412
Fuel Used (gal)	76.6	72.6	78.4	75.2

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	2504	2507	2454	2576	2588	2575	2407
Vehs Exited	2408	2406	2328	2446	2382	2463	2359
Starting Vehs	467	463	426	457	457	446	435
Ending Vehs	563	564	552	587	663	558	483
Travel Distance (mi)	1799	1782	1750	1818	1775	1810	1748
Travel Time (hr)	132.1	127.9	129.5	132.8	137.4	124.8	117.1
Total Delay (hr)	76.7	73.0	75.6	76.8	82.8	69.1	63.3
Total Stops	5154	5163	4965	5177	5332	4988	4866
Fuel Used (gal)	84.0	82.4	82.7	84.5	84.5	82.4	79.7

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	2514	2502	2473	2511
Vehs Exited	2433	2400	2378	2399
Starting Vehs	467	484	455	451
Ending Vehs	548	586	550	564
Travel Distance (mi)	1784	1766	1748	1778
Travel Time (hr)	127.4	135.9	127.1	129.2
Total Delay (hr)	72.4	81.4	73.1	74.4
Total Stops	4966	5273	5093	5098
Fuel Used (gal)	82.5	83.9	81.8	82.8

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	2360	2354	2270	2272	2361	2330	2311
Vehs Exited	2334	2371	2316	2314	2437	2338	2276
Starting Vehs	563	564	552	587	663	558	483
Ending Vehs	589	547	506	545	587	550	518
Travel Distance (mi)	1689	1743	1669	1681	1743	1693	1662
Travel Time (hr)	146.5	143.7	130.2	135.2	158.8	136.8	112.7
Total Delay (hr)	94.2	90.0	78.7	83.6	105.1	84.5	61.4
Total Stops	5233	5327	4628	4865	5687	5017	4505
Fuel Used (gal)	83.8	85.3	80.1	81.7	89.3	81.9	75.5

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	2321	2257	2367	2321
Vehs Exited	2313	2372	2406	2345
Starting Vehs	548	586	550	564
Ending Vehs	556	471	511	535
Travel Distance (mi)	1686	1685	1746	1700
Travel Time (hr)	132.6	132.4	132.9	136.2
Total Delay (hr)	80.4	80.1	78.8	83.7
Total Stops	4837	4844	5234	5016
Fuel Used (gal)	80.8	81.8	83.3	82.4

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	2351	2338	2381	2289	2255	2385	2266
Vehs Exited	2424	2373	2281	2305	2296	2322	2293
Starting Vehs	589	547	506	545	587	550	518
Ending Vehs	516	512	606	529	546	613	491
Travel Distance (mi)	1710	1719	1698	1676	1671	1706	1674
Travel Time (hr)	141.2	135.4	143.3	132.8	143.0	149.5	122.4
Total Delay (hr)	88.3	82.5	90.9	81.2	91.4	97.1	70.8
Total Stops	4900	5021	4873	4755	5180	4777	4844
Fuel Used (gal)	83.6	82.9	84.5	80.7	82.8	85.1	78.0

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	2300	2288	2256	2309
Vehs Exited	2311	2262	2321	2315
Starting Vehs	556	471	511	535
Ending Vehs	545	497	446	524
Travel Distance (mi)	1679	1655	1673	1686
Travel Time (hr)	144.3	126.1	118.9	135.7
Total Delay (hr)	92.2	75.0	67.2	83.7
Total Stops	4978	4656	4525	4851
Fuel Used (gal)	83.5	78.4	77.6	81.7

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)	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	1.3	0.5	1.4	0.0	0.0	0.0	1.4	0.4	1.2
Total Delay (hr)	1.1	1.2	1.3	1.6	1.6	0.4	18.8	3.5	0.0	4.4	14.0	0.5
Total Del/Veh (s)	36.9	37.4	17.1	33.7	29.0	8.6	276.8	17.4	7.5	79.8	33.4	9.8
Stop Delay (hr)	1.1	1.0	1.2	1.4	1.3	0.3	18.8	2.4	0.0	3.8	8.5	0.2
Stop Del/Veh (s)	34.0	32.2	15.8	29.4	23.9	6.7	276.7	12.1	6.0	67.9	20.4	4.3

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

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.4
Total Delay (hr)	48.4
Total Del/Veh (s)	45.0
Stop Delay (hr)	40.0
Stop Del/Veh (s)	37.1

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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	2.2	1.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	7.2	4.6	0.2	2.1	4.8	1.4	12.7	6.9	0.3	0.2	14.3	0.5
Total Del/Veh (s)	199.1	119.0	3.9	67.7	81.9	117.9	83.0	30.0	5.4	52.8	34.6	4.3
Stop Delay (hr)	7.1	4.4	0.0	2.0	4.4	1.4	11.4	5.2	0.1	0.2	10.9	0.3
Stop Del/Veh (s)	196.2	114.1	0.0	62.3	75.3	113.6	74.6	22.9	1.4	49.2	26.5	2.3

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)	55.2
Total Del/Veh (s)	46.1
Stop Delay (hr)	47.3
Stop Del/Veh (s)	39.6

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	0.9
Denied Del/Veh (s)	2.6	0.3	0.0	0.0	0.0	0.0	0.7
Total Delay (hr)	7.4	0.0	3.8	0.6	1.5	4.1	17.3
Total Del/Veh (s)	22.1	0.6	10.7	5.6	16.9	10.0	12.7
Stop Delay (hr)	4.4	0.0	1.5	0.0	0.9	0.8	7.6
Stop Del/Veh (s)	13.2	0.0	4.2	0.3	9.9	2.0	5.6

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)	0.0	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)	3.3	0.1	0.1	3.3	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.4	0.1	0.0	1.9	0.5	2.7	0.6	10.4	0.2	4.7	9.3	1.1
Total Del/Veh (s)	30.0	33.2	10.8	53.9	49.9	23.1	41.1	31.6	6.8	29.4	20.1	9.1
Stop Delay (hr)	0.4	0.1	0.0	1.7	0.5	2.4	0.5	6.6	0.1	3.8	5.6	0.6
Stop Del/Veh (s)	28.1	30.2	10.9	49.1	44.6	20.2	33.3	20.2	5.4	23.7	12.1	5.1

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.2
Total Delay (hr)	31.9
Total Del/Veh (s)	24.7
Stop Delay (hr)	22.3
Stop Del/Veh (s)	17.3

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	0.0	0.0	0.1
Total Delay (hr)	6.2	2.1	0.7	8.0	8.2	0.5	11.5	6.3	0.2	2.4	11.4	16.6
Total Del/Veh (s)	67.1	51.3	27.0	56.7	50.8	11.5	203.4	27.5	4.2	68.4	41.5	88.2
Stop Delay (hr)	5.8	1.9	0.7	7.0	6.7	0.4	11.2	5.5	0.2	2.1	7.8	13.8
Stop Del/Veh (s)	63.0	45.6	25.0	49.7	41.7	9.2	198.6	24.0	4.1	60.5	28.5	73.1

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)	74.2
Total Del/Veh (s)	55.5
Stop Delay (hr)	63.2
Stop Del/Veh (s)	47.3

7: 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	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.5	0.3	0.1	0.1	0.1	3.8	0.4	0.3
Total Delay (hr)	1.7	0.7	0.0	1.4	20.6	1.9	0.6	0.0	0.0	0.4	0.1	0.8
Total Del/Veh (s)	43.6	9.4	3.1	117.4	69.2	33.7	54.0	32.0	4.5	38.6	29.6	18.9
Stop Delay (hr)	1.5	0.4	0.0	1.2	15.1	1.2	0.5	0.0	0.0	0.4	0.1	0.7
Stop Del/Veh (s)	39.4	5.5	1.4	100.5	50.9	22.0	51.8	29.5	4.6	35.2	25.3	17.4

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

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	28.1
Total Del/Veh (s)	50.9
Stop Delay (hr)	21.2
Stop Del/Veh (s)	38.5

Total Zone Performance

Denied Delay (hr)	2.0
Denied Del/Veh (s)	1.1
Total Delay (hr)	255.6
Total Del/Veh (s)	405.4
Stop Delay (hr)	201.6
Stop Del/Veh (s)	319.8

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)	89	102	163	196	182	186	122	275	566	314	187	18
Average Queue (ft)	30	51	71	95	93	91	42	268	450	99	96	1
95th Queue (ft)	70	90	132	163	151	159	84	308	732	225	163	13
Link Distance (ft)			309	309		1449			469	469	469	
Upstream Blk Time (%)			0						69	0		
Queuing Penalty (veh)			0						225	0		
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)			1		0	0	0	85	1			
Queuing Penalty (veh)			1		1	1	0	203	3			

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)	313	233	90	125	560	513	440	211
Average Queue (ft)	151	36	5	118	324	245	208	65
95th Queue (ft)	352	173	59	145	549	456	382	166
Link Distance (ft)	229	229	229		1017	1017	1017	
Upstream Blk Time (%)	30	0	0		0	0		
Queuing Penalty (veh)	73	1	0		0	0		
Storage Bay Dist (ft)				100				200
Storage Blk Time (%)				35	33		4	0
Queuing Penalty (veh)				173	64		7	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)	370	391	100	86	174	603	175	391	436	440	331	295
Average Queue (ft)	155	190	4	29	81	227	59	233	247	206	100	94
95th Queue (ft)	392	404	80	66	180	650	157	436	480	516	303	272
Link Distance (ft)	1070	1070	1070			1644			626	626	626	626
Upstream Blk Time (%)						1			3	3	0	
Queuing Penalty (veh)						0			8	10	0	
Storage Bay Dist (ft)				150	150		150	550				
Storage Blk Time (%)				0	0	21	5	1	3			
Queuing Penalty (veh)				0	0	32	15	4	7			

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)	210	202	321	290	301	235	229	177	144	29
Average Queue (ft)	39	17	234	172	186	74	53	23	14	2
95th Queue (ft)	159	107	355	299	303	196	222	139	88	27
Link Distance (ft)	626		229	229	229	229	469	469	469	469
Upstream Blk Time (%)		0	26	4	5	0	0			
Queuing Penalty (veh)		0	122	19	25	2	0			
Storage Bay Dist (ft)		200								
Storage Blk Time (%)			31							
Queuing Penalty (veh)			4							

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)	274	313	184	265	205	183	48	120	110	133	92	239
Average Queue (ft)	168	185	67	69	41	58	3	46	44	29	15	39
95th Queue (ft)	245	283	151	198	141	134	38	95	86	88	55	139
Link Distance (ft)	1203			569	569	569	569			626	626	626
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				1	0							
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)			2	2								
Queuing Penalty (veh)			6	5								

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	153
Average Queue (ft)	26
95th Queue (ft)	90
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	L	TR	R	L	L	T	T	T
Maximum Queue (ft)	59	66	34	27	125	396	346	56	228	341	312	327
Average Queue (ft)	16	23	8	3	89	155	94	15	36	180	163	186
95th Queue (ft)	46	55	28	17	146	315	255	42	131	303	278	299
Link Distance (ft)			778	778		520	520			837	837	837
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					11	25				5		
Queuing Penalty (veh)					26	34				2		

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)	104	211	219	248	397	475	434
Average Queue (ft)	25	117	135	105	155	239	142
95th Queue (ft)	70	184	196	196	324	455	411
Link Distance (ft)	837			569	569	569	569
Upstream Blk Time (%)					0	0	1
Queuing Penalty (veh)					0	3	4
Storage Bay Dist (ft)		325	325				
Storage Blk Time (%)					0		
Queuing Penalty (veh)					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	L	T	T
Maximum Queue (ft)	244	262	162	181	187	200	334	321	130	278	357	274
Average Queue (ft)	123	147	72	94	146	190	281	177	57	246	277	130
95th Queue (ft)	209	233	133	163	218	230	390	295	105	325	443	261
Link Distance (ft)			355	355			312	312	312		278	278
Upstream Blk Time (%)							12	1		23	39	0
Queuing Penalty (veh)							50	2		0	0	0
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	0	0			2	12	23			36	37	
Queuing Penalty (veh)	0	0			5	33	119			74	76	

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)	152	143	54	267	225	162	179	153	65	102	208	317
Average Queue (ft)	85	46	32	101	59	20	40	34	5	32	44	173
95th Queue (ft)	140	116	59	300	213	115	232	213	74	79	136	267
Link Distance (ft)	278	278		242	242	242	496	496	496			837
Upstream Blk Time (%)				13	1	0	2	0	0			
Queuing Penalty (veh)				0	0	0	0	0	0			
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		7	1								0	2
Queuing Penalty (veh)		11	3								0	3

Intersection: 5: Latrobe Road & White Rock Road

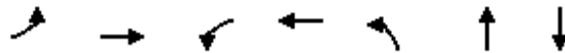
Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	373	775	275
Average Queue (ft)	184	520	260
95th Queue (ft)	298	958	324
Link Distance (ft)	837	837	
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		8	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		1	49
Queuing Penalty (veh)		6	161

Intersection: 7: 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	182	117	30	145	946	760	92	38	74	167
Average Queue (ft)	77	43	46	4	58	544	384	32	11	30	72
95th Queue (ft)	114	132	95	21	147	1102	891	72	30	67	134
Link Distance (ft)		312	312			1505	1505	221	221		409
Upstream Blk Time (%)						0	0				
Queuing Penalty (veh)						0	0				
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	15	0	0		0	51				6	22
Queuing Penalty (veh)	20	0	0		1	20				10	8

Zone Summary

Zone wide Queuing Penalty: 1690



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	48	631	757	767	92	158	44
v/c Ratio	0.52	0.87	0.85	0.32	0.77	0.42	0.30
Control Delay	80.2	60.8	39.7	11.2	97.2	13.4	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	60.8	39.7	11.2	97.2	13.4	30.9
Queue Length 50th (ft)	37	243	489	119	72	16	12
Queue Length 95th (ft)	93	#469	#1040	281	#208	72	47
Internal Link Dist (ft)		327		554		213	278
Turn Bay Length (ft)	195		190		155		
Base Capacity (vph)	137	722	889	2400	119	608	468
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.87	0.85	0.32	0.77	0.26	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	435	145	696	706	0	85	21	124	0	15	26
Future Volume (veh/h)	44	435	145	696	706	0	85	21	124	0	15	26
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	48	473	158	757	767	0	92	23	135	0	16	28
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	61	623	207	781	2314	0	116	38	221	2	31	53
Arrive On Green	0.03	0.24	0.24	0.44	0.65	0.00	0.07	0.16	0.16	0.00	0.05	0.05
Sat Flow, veh/h	1774	2613	867	1774	3632	0	1774	236	1383	1774	609	1066
Grp Volume(v), veh/h	48	319	312	757	767	0	92	0	158	0	0	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1710	1774	1770	0	1774	0	1619	1774	0	1675
Q Serve(g_s), s	2.7	16.8	17.0	41.7	9.6	0.0	5.1	0.0	9.1	0.0	0.0	2.6
Cycle Q Clear(g_c), s	2.7	16.8	17.0	41.7	9.6	0.0	5.1	0.0	9.1	0.0	0.0	2.6
Prop In Lane	1.00		0.51	1.00		0.00	1.00		0.85	1.00		0.64
Lane Grp Cap(c), veh/h	61	422	407	781	2314	0	116	0	259	2	0	84
V/C Ratio(X)	0.78	0.76	0.77	0.97	0.33	0.00	0.79	0.00	0.61	0.00	0.00	0.52
Avail Cap(c_a), veh/h	170	453	437	1106	2808	0	149	0	618	53	0	552
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	47.9	35.4	35.5	27.4	7.7	0.0	46.1	0.0	39.1	0.0	0.0	46.4
Incr Delay (d2), s/veh	7.9	7.1	7.8	14.8	0.1	0.0	14.9	0.0	0.9	0.0	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.0	8.9	23.6	4.7	0.0	3.0	0.0	4.1	0.0	0.0	1.2
LnGrp Delay(d),s/veh	55.8	42.5	43.3	42.1	7.8	0.0	61.0	0.0	40.0	0.0	0.0	48.2
LnGrp LOS	E	D	D	D	A		E		D			D
Approach Vol, veh/h		679			1524			250				44
Approach Delay, s/veh		43.8			24.8			47.7				48.2
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	49.6	29.8	11.0	9.6	8.1	71.4	0.0	20.6				
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	25.6	8.4	33.0	9.6	79.4	3.0	38.2				
Max Q Clear Time (g_c+I1), s	43.7	19.0	7.1	4.6	4.7	11.6	0.0	11.1				
Green Ext Time (p_c), s	0.3	4.9	0.0	0.5	0.0	18.4	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				32.7								
HCM 2010 LOS				C								

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↗↗		↗	↗↗	
Traffic Vol, veh/h	0	0	4	0	0	5	3	466	0	3	557	74
Future Vol, veh/h	0	0	4	0	0	5	3	466	0	3	557	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	0	0	5	3	507	0	3	605	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	343	-	-	253	686	0	-	507	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	653	0	0	746	904	-	0	1054	-	-
Stage 1	0	0	-	0	0	-	-	-	0	-	-	-
Stage 2	0	0	-	0	0	-	-	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	653	-	-	746	904	-	-	1054	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	9.9	0.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	904	-	653	746	1054	-	-
HCM Lane V/C Ratio	0.004	-	0.007	0.007	0.003	-	-
HCM Control Delay (s)	9	-	10.6	9.9	8.4	-	-
HCM Lane LOS	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	0	-	-

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	8	80	389	4	89	472
Future Vol, veh/h	8	80	389	4	89	472
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	87	423	4	97	513

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	875	214	0	0	427	0
Stage 1	425	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	289	791	-	-	1129	-
Stage 1	627	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	264	791	-	-	1129	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	264	791	1129	-
HCM Lane V/C Ratio	-	-	0.033	0.11	0.086	-
HCM Control Delay (s)	-	-	19.1	10.1	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	0.3	-

Saratoga Retail Phase 2
 10: Saratoga Way & Arrowhead Dr

Cumulative (2035) plus Project Conditions

AM Peak

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	0	0	242	407	4
Future Vol, veh/h	94	0	0	242	407	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	0	0	263	442	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	577	223	447	0	-	0
Stage 1	445	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	447	780	1110	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	447	780	1110	-	-	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1110	-	447	-	-
HCM Lane V/C Ratio	-	-	0.229	-	-
HCM Control Delay (s)	0	-	15.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Summary of All Intervals

Run Number	1	11	12	14	15	19	3
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	10175	10093	9995	10148	10260	10176	10015
Vehs Exited	9555	9415	9382	9551	9670	9688	9398
Starting Vehs	553	540	534	580	587	564	548
Ending Vehs	1173	1218	1147	1177	1177	1052	1165
Travel Distance (mi)	7001	6949	6906	6889	7097	7083	6859
Travel Time (hr)	1362.0	1351.1	1354.4	1358.2	1336.4	1285.1	1375.2
Total Delay (hr)	1144.7	1136.0	1140.1	1145.0	1116.7	1065.8	1162.8
Total Stops	26568	27280	27471	26841	27585	26335	27831
Fuel Used (gal)	528.0	522.1	522.2	522.7	525.3	512.3	525.4

Summary of All Intervals

Run Number	5	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	10060	10233	10329	10146
Vehs Exited	9602	9693	9788	9573
Starting Vehs	601	597	599	563
Ending Vehs	1059	1137	1140	1138
Travel Distance (mi)	6995	7058	7106	6994
Travel Time (hr)	1332.5	1372.5	1343.4	1347.1
Total Delay (hr)	1116.4	1154.0	1123.3	1130.5
Total Stops	27908	27553	29007	27445
Fuel Used (gal)	521.8	532.7	525.7	523.8

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	11	12	14	15	19	3
Vehs Entered	2663	2695	2636	2688	2680	2695	2697
Vehs Exited	2458	2431	2416	2484	2473	2428	2444
Starting Vehs	553	540	534	580	587	564	548
Ending Vehs	758	804	754	784	794	831	801
Travel Distance (mi)	1824	1821	1820	1832	1844	1826	1806
Travel Time (hr)	175.2	166.0	157.7	180.6	181.9	176.6	178.7
Total Delay (hr)	118.5	109.6	101.3	123.9	124.9	120.0	122.9
Total Stops	5760	5987	5879	6090	6327	6229	6298
Fuel Used (gal)	96.1	94.5	92.1	97.5	98.8	96.8	96.4

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	5	8	9	Avg
Vehs Entered	2691	2710	2763	2695
Vehs Exited	2497	2553	2556	2475
Starting Vehs	601	597	599	563
Ending Vehs	795	754	806	786
Travel Distance (mi)	1846	1877	1873	1837
Travel Time (hr)	181.3	179.2	192.2	176.9
Total Delay (hr)	124.6	121.2	133.8	120.1
Total Stops	5991	6107	6535	6115
Fuel Used (gal)	98.1	98.7	101.4	97.1

Interval #2 Information

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

Volumes adjusted by PHF, Growth Factors.

Run Number	1	11	12	14	15	19	3
Vehs Entered	2680	2638	2625	2596	2739	2716	2669
Vehs Exited	2425	2366	2357	2442	2507	2497	2442
Starting Vehs	758	804	754	784	794	831	801
Ending Vehs	1013	1076	1022	938	1026	1050	1028
Travel Distance (mi)	1806	1753	1777	1788	1842	1858	1818
Travel Time (hr)	283.8	273.4	264.2	274.0	271.2	280.5	293.8
Total Delay (hr)	227.9	218.9	209.1	218.6	214.0	223.2	237.5
Total Stops	6854	6945	6977	6767	7005	7391	7085
Fuel Used (gal)	120.8	116.0	114.7	117.3	118.3	121.5	122.3

Interval #2 Information

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

Volumes adjusted by PHF, Growth Factors.

Run Number	5	8	9	Avg
Vehs Entered	2618	2673	2775	2670
Vehs Exited	2368	2388	2422	2422
Starting Vehs	795	754	806	786
Ending Vehs	1045	1039	1159	1037
Travel Distance (mi)	1760	1757	1841	1800
Travel Time (hr)	294.1	281.0	289.9	280.6
Total Delay (hr)	239.6	226.5	232.8	224.8
Total Stops	7162	6744	7781	7075
Fuel Used (gal)	121.3	118.4	122.5	119.3

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	1	11	12	14	15	19	3
Vehs Entered	2493	2414	2411	2457	2378	2378	2409
Vehs Exited	2408	2342	2347	2249	2352	2415	2316
Starting Vehs	1013	1076	1022	938	1026	1050	1028
Ending Vehs	1098	1148	1086	1146	1052	1013	1121
Travel Distance (mi)	1726	1697	1676	1618	1712	1710	1653
Travel Time (hr)	397.2	412.1	405.9	398.4	394.3	362.6	392.9
Total Delay (hr)	343.8	359.7	353.8	348.5	341.3	309.5	341.4
Total Stops	7129	7219	7168	7037	7127	6487	7375
Fuel Used (gal)	144.7	146.0	144.6	141.2	143.9	135.5	140.7

Interval #3 Information

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	5	8	9	Avg
Vehs Entered	2343	2371	2408	2404
Vehs Exited	2336	2364	2476	2360
Starting Vehs	1045	1039	1159	1037
Ending Vehs	1052	1046	1091	1081
Travel Distance (mi)	1674	1717	1740	1692
Travel Time (hr)	391.2	403.3	376.7	393.4
Total Delay (hr)	339.4	350.3	323.0	341.1
Total Stops	7322	7318	7541	7174
Fuel Used (gal)	141.7	145.2	139.8	142.3

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	1	11	12	14	15	19	3
Vehs Entered	2339	2346	2323	2407	2463	2387	2240
Vehs Exited	2264	2276	2262	2376	2338	2348	2196
Starting Vehs	1098	1148	1086	1146	1052	1013	1121
Ending Vehs	1173	1218	1147	1177	1177	1052	1165
Travel Distance (mi)	1646	1678	1634	1651	1699	1689	1582
Travel Time (hr)	505.7	499.6	526.6	505.1	489.1	465.5	509.8
Total Delay (hr)	454.5	447.8	475.9	454.1	436.5	413.1	460.9
Total Stops	6825	7129	7447	6947	7126	6228	7073
Fuel Used (gal)	166.3	165.5	170.8	166.6	164.2	158.6	165.9

Interval #4 Information

Start Time	7:45
End Time	8:00
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	5	8	9	Avg
Vehs Entered	2408	2479	2383	2377
Vehs Exited	2401	2388	2334	2315
Starting Vehs	1052	1046	1091	1081
Ending Vehs	1059	1137	1140	1138
Travel Distance (mi)	1715	1707	1652	1665
Travel Time (hr)	466.0	509.0	484.6	496.1
Total Delay (hr)	412.8	456.0	433.7	444.5
Total Stops	7433	7384	7150	7073
Fuel Used (gal)	160.8	170.4	162.1	165.1

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	4.1	1.4	5.7	0.0	0.0	0.0	30.2	117.8	12.2
Denied Del/Veh (s)	0.0	0.0	0.0	58.2	58.6	60.9	0.0	0.0	0.0	455.0	455.2	467.5
Total Delay (hr)	4.9	7.4	4.8	14.8	3.3	11.6	6.8	9.1	0.1	16.9	28.1	0.2
Total Del/Veh (s)	59.8	82.6	44.9	215.6	143.3	127.7	124.5	31.4	10.1	354.1	151.4	10.2
Stop Delay (hr)	4.3	6.5	4.6	13.9	2.9	10.4	6.5	6.7	0.0	16.6	25.8	0.1
Stop Del/Veh (s)	52.0	72.4	43.3	201.3	128.6	114.9	118.2	23.2	7.7	347.0	139.0	5.5

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

Movement	All
Denied Delay (hr)	171.4
Denied Del/Veh (s)	148.3
Total Delay (hr)	108.0
Total Del/Veh (s)	101.8
Stop Delay (hr)	98.3
Stop Del/Veh (s)	92.8

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	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	9.9	6.7	6.4	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	4.6	14.9	0.0	12.7	19.7	1.7	44.6	6.0	0.6	0.1	17.8	0.1
Total Del/Veh (s)	151.3	393.4	3.9	256.2	292.3	270.5	157.6	19.4	7.2	87.3	57.5	1.9
Stop Delay (hr)	4.5	14.8	0.0	12.4	19.3	1.6	39.9	3.6	0.1	0.1	15.3	0.0
Stop Del/Veh (s)	147.0	392.1	0.0	249.8	285.2	265.7	141.2	11.6	1.6	82.8	49.3	1.0

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

Movement	All
Denied Delay (hr)	1.0
Denied Del/Veh (s)	0.8
Total Delay (hr)	122.8
Total Del/Veh (s)	100.5
Stop Delay (hr)	111.6
Stop Del/Veh (s)	91.4

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)	1.1	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.2	0.1	16.5	1.1	1.7	2.2	22.7
Total Del/Veh (s)	11.0	0.8	28.9	6.2	30.0	7.3	17.3
Stop Delay (hr)	0.8	0.0	10.1	0.1	1.3	0.4	12.6
Stop Del/Veh (s)	7.1	0.0	17.8	0.4	23.5	1.2	9.6

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)	0.3	0.0	0.0	8.7	1.6	94.7	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.8	0.3	0.3	414.5	418.7	419.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	6.9	0.6	0.3	3.9	0.7	26.6	0.1	44.3	0.7	9.1	3.7	0.0
Total Del/Veh (s)	58.9	48.8	15.9	227.5	250.1	153.9	195.3	92.8	16.4	60.4	15.1	2.3
Stop Delay (hr)	6.4	0.5	0.2	3.9	0.7	25.9	0.0	34.9	0.5	7.9	2.4	0.0
Stop Del/Veh (s)	54.4	45.4	14.9	227.5	250.3	149.9	169.0	73.1	12.2	52.8	10.0	1.6

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	105.4
Denied Del/Veh (s)	80.4
Total Delay (hr)	96.7
Total Del/Veh (s)	76.1
Stop Delay (hr)	83.4
Stop Del/Veh (s)	65.7

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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	28.1	6.9	0.9	15.5	3.9	0.8	9.3	13.8	3.3	8.6	4.5	0.6
Total Del/Veh (s)	236.9	45.8	34.6	131.4	40.1	15.2	337.6	39.4	27.0	136.0	28.8	9.8
Stop Delay (hr)	27.3	5.6	0.8	14.7	3.1	0.7	9.3	11.8	3.1	8.2	3.1	0.4
Stop Del/Veh (s)	230.3	37.0	30.2	123.8	32.5	12.7	337.7	33.8	24.8	129.0	20.1	7.0

5: Latrobe Road & White Rock Road Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	96.2
Total Del/Veh (s)	71.7
Stop Delay (hr)	88.0
Stop Del/Veh (s)	65.6

7: 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	0.7	13.6	3.0	0.2	0.0	0.1	5.3	0.4	7.5
Denied Del/Veh (s)	0.0	0.0	0.0	62.2	61.8	63.0	14.6	12.5	13.5	106.9	110.2	107.8
Total Delay (hr)	4.6	5.6	0.1	4.3	54.1	5.8	2.6	0.1	0.1	6.1	0.4	6.2
Total Del/Veh (s)	66.7	21.7	9.3	375.6	262.0	130.2	161.8	27.1	8.8	128.6	107.3	95.3
Stop Delay (hr)	4.1	3.6	0.0	4.2	50.1	4.8	2.5	0.1	0.1	5.8	0.3	6.0
Stop Del/Veh (s)	60.1	13.9	4.8	365.8	242.5	109.5	159.9	24.2	8.7	123.1	100.7	91.3

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

Movement	All
Denied Delay (hr)	30.9
Denied Del/Veh (s)	40.5
Total Delay (hr)	89.8
Total Del/Veh (s)	121.2
Stop Delay (hr)	81.7
Stop Del/Veh (s)	110.2

Total Zone Performance

Denied Delay (hr)	308.9
Denied Del/Veh (s)	175.0
Total Delay (hr)	537.4
Total Del/Veh (s)	658.5
Stop Delay (hr)	475.6
Stop Del/Veh (s)	582.8

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)	162	175	304	299	225	1440	224	275	442	363	319	63
Average Queue (ft)	99	167	282	207	196	783	101	203	211	180	174	11
95th Queue (ft)	166	206	341	335	269	1800	221	313	390	288	266	46
Link Distance (ft)			288	288		1441			468	468	468	
Upstream Blk Time (%)			40	10		27			0	0	0	
Queuing Penalty (veh)			218	53		0			2	0	0	
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)	1	4	59		51	0	3	23	1		1	
Queuing Penalty (veh)	4	13	193		219	2	11	89	2		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	1064	1035	1015	176
Average Queue (ft)	119	933	778	452	33
95th Queue (ft)	151	1299	1340	1060	101
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)		77	9	1	
Queuing Penalty (veh)		0	0	0	
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	39	64		2	0
Queuing Penalty (veh)	121	152		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)	494	565	24	142	175	1445	175	575	708	708	661	646
Average Queue (ft)	238	363	1	70	153	850	56	535	602	585	281	223
95th Queue (ft)	560	682	24	122	236	1682	176	681	806	868	661	569
Link Distance (ft)	1240	1240	1240			1644			628	628	628	628
Upstream Blk Time (%)						10			29	35	2	0
Queuing Penalty (veh)						0			162	194	9	1
Storage Bay Dist (ft)				150	150		150	550				
Storage Blk Time (%)				0	1	75	0	22	44			
Queuing Penalty (veh)				1	2	148	0	131	259			

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)	369	180	331	301	306	137	501	489	410	160
Average Queue (ft)	57	17	304	214	151	14	458	367	79	5
95th Queue (ft)	191	112	319	339	291	77	551	602	292	73
Link Distance (ft)	628		229	229	229	229	468	468	468	468
Upstream Blk Time (%)		0	80	18	4	0	22	3	0	0
Queuing Penalty (veh)		0	325	72	15	0	89	11	0	0
Storage Bay Dist (ft)		200								
Storage Blk Time (%)		0	79							
Queuing Penalty (veh)		0	5							

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)	129	72	200	600	585	550	267	92	81	217	52	61
Average Queue (ft)	58	27	166	353	244	154	15	34	25	73	6	10
95th Queue (ft)	100	55	251	712	595	411	136	73	61	166	29	38
Link Distance (ft)	1203			569	569	569	569			628	628	628
Upstream Blk Time (%)				6	1	0	0					
Queuing Penalty (veh)				49	11	2	0					
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)			27	20								
Queuing Penalty (veh)			164	122								

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	44
Average Queue (ft)	4
95th Queue (ft)	23
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	L	TR	R	L	T	T	T	R
Maximum Queue (ft)	282	290	77	108	125	566	549	69	783	782	802	651
Average Queue (ft)	159	178	18	40	92	528	496	3	534	533	539	239
95th Queue (ft)	245	261	55	82	173	612	626	39	855	849	843	707
Link Distance (ft)			778	778		520	520		837	837	837	837
Upstream Blk Time (%)						88	24		4	2	3	1
Queuing Penalty (veh)						0	0		18	13	15	3
Storage Bay Dist (ft)	350	350			100			225				
Storage Blk Time (%)		0			4	89			55			
Queuing Penalty (veh)		0			17	70			1			

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)	308	314	319	186	203	48
Average Queue (ft)	201	212	126	87	100	15
95th Queue (ft)	281	291	256	159	180	38
Link Distance (ft)			569	569	569	569
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)	325	325				
Storage Blk Time (%)	0	0	0			
Queuing Penalty (veh)	0	0	2			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	B40	B40	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	TR	T	T	L	L	T	T	R	L
Maximum Queue (ft)	337	350	441	387	581	508	187	200	337	299	180	269
Average Queue (ft)	329	345	409	203	509	57	182	198	312	113	71	201
95th Queue (ft)	364	375	474	335	758	318	200	206	371	219	140	335
Link Distance (ft)			355	355	548	548			312	312	312	
Upstream Blk Time (%)	0	25	67	1	38	1			30	0		12
Queuing Penalty (veh)	0	0	456	8	259	4			111	1		0
Storage Bay Dist (ft)	325	325					175	175				270
Storage Blk Time (%)	17	74	3				15	55	0			29
Queuing Penalty (veh)	58	255	19				29	104	2			93

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB
Directions Served	T	T	T	T	R	T	T	T	T	T	T	L
Maximum Queue (ft)	351	324	312	352	70	240	217	237	90	110	120	207
Average Queue (ft)	260	200	184	208	50	66	59	47	11	10	9	116
95th Queue (ft)	398	315	288	340	60	244	230	210	82	84	83	216
Link Distance (ft)	278	278	278	278		242	242	242	496	496	496	
Upstream Blk Time (%)	30	3	3	5		6	4	3				
Queuing Penalty (veh)	0	0	0	0		0	0	0				
Storage Bay Dist (ft)					25							225
Storage Blk Time (%)	27			17	40							3
Queuing Penalty (veh)	27			76	129							7

Intersection: 5: Latrobe Road & White Rock Road

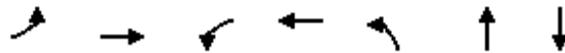
Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	216	342	284	162	115
Average Queue (ft)	119	91	79	48	19
95th Queue (ft)	223	235	170	124	70
Link Distance (ft)		837	837	837	
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)	225			250	
Storage Blk Time (%)	5	0			
Queuing Penalty (veh)	10	1			

Intersection: 7: 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	368	134	145	1541	1538	185	76	75	456
Average Queue (ft)	101	247	227	18	64	1114	1004	78	22	73	362
95th Queue (ft)	116	372	367	81	162	1871	1893	179	78	79	541
Link Distance (ft)		312	312			1505	1505	221	221		409
Upstream Blk Time (%)		4	3			37	19	4	2		55
Queuing Penalty (veh)		30	19			0	0	0	0		0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	51	11	20	0	0	79				62	36
Queuing Penalty (veh)	275	32	6	0	2	33				161	64

Zone Summary

Zone wide Queuing Penalty: 5265



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	1116	175	597	337	502	85
v/c Ratio	0.41	0.83	0.81	0.33	0.83	0.69	0.45
Control Delay	72.2	39.2	78.0	20.5	62.1	20.0	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.2	39.2	78.0	20.5	62.1	20.0	26.6
Queue Length 50th (ft)	24	365	124	134	229	157	19
Queue Length 95th (ft)	67	#690	#311	266	#511	269	65
Internal Link Dist (ft)		327		554		213	278
Turn Bay Length (ft)	195		190		155		
Base Capacity (vph)	105	1352	223	1786	413	929	518
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.83	0.78	0.33	0.82	0.54	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	900	127	161	549	0	310	21	441	0	25	53
Future Volume (veh/h)	30	900	127	161	549	0	310	21	441	0	25	53
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	978	138	175	597	0	337	23	479	0	27	58
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	1223	173	205	1749	0	366	25	515	2	48	103
Arrive On Green	0.02	0.39	0.39	0.12	0.49	0.00	0.21	0.34	0.34	0.00	0.09	0.09
Sat Flow, veh/h	1774	3115	439	1774	3632	0	1774	73	1521	1774	528	1134
Grp Volume(v), veh/h	33	555	561	175	597	0	337	0	502	0	0	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1785	1774	1770	0	1774	0	1594	1774	0	1663
Q Serve(g_s), s	2.0	29.3	29.3	10.2	10.8	0.0	19.6	0.0	32.0	0.0	0.0	5.2
Cycle Q Clear(g_c), s	2.0	29.3	29.3	10.2	10.8	0.0	19.6	0.0	32.0	0.0	0.0	5.2
Prop In Lane	1.00		0.25	1.00		0.00	1.00		0.95	1.00		0.68
Lane Grp Cap(c), veh/h	41	695	701	205	1749	0	366	0	539	2	0	150
V/C Ratio(X)	0.80	0.80	0.80	0.86	0.34	0.00	0.92	0.00	0.93	0.00	0.00	0.57
Avail Cap(c_a), veh/h	116	752	759	246	1797	0	455	0	859	51	0	521
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	51.2	28.3	28.3	45.7	16.2	0.0	41.0	0.0	33.7	0.0	0.0	45.9
Incr Delay (d2), s/veh	12.3	6.0	6.0	19.0	0.1	0.0	19.6	0.0	8.3	0.0	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	1.1	15.3	15.5	6.1	5.3	0.0	11.6	0.0	15.3	0.0	0.0	2.4
LnGrp Delay(d),s/veh	63.6	34.3	34.3	64.7	16.4	0.0	60.6	0.0	42.0	0.0	0.0	47.2
LnGrp LOS	E	C	C	E	B		E		D			D
Approach Vol, veh/h		1149			772			839				85
Approach Delay, s/veh		35.1			27.3			49.4				47.2
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	17.7	47.4	26.1	14.1	7.0	58.1	0.0	40.2				
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	12.2	31.3	21.6	7.2	4.0	12.8	0.0	34.0				
Green Ext Time (p_c), s	0.0	10.1	0.1	1.6	0.0	21.3	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			37.6									
HCM 2010 LOS			D									

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↗↘		↗	↗↘	
Traffic Vol, veh/h	0	0	6	0	0	32	4	1024	0	16	306	69
Future Vol, veh/h	0	0	6	0	0	32	4	1024	0	16	306	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	0	0	35	4	1113	0	17	333	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	204	-	-	557	408	0	0	1113	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	803	0	0	474	1147	-	-	623	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	803	-	-	474	1147	-	-	623	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	13.2	0	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	803	474	623	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.073	0.028	-	-
HCM Control Delay (s)	8.2	-	-	9.5	13.2	10.9	-	-
HCM Lane LOS	A	-	-	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Saratoga Retail Phase 2
 9: Saratoga Way & Project Main Dwy

Cumulative (2035) plus Project Conditions

PM Peak

Intersection

Int Delay, s/veh 2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	13	79	949	13	97	215
Future Vol, veh/h	13	79	949	13	97	215
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	86	1032	14	105	234

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1367	523	0	0	1046	0
Stage 1	1039	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	138	499	-	-	661	-
Stage 1	302	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	499	-	-	661	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	302	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	17.5		0		3.6
HCM LOS	C				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	116	499	661	-
HCM Lane V/C Ratio	-	-	0.122	0.172	0.16	-
HCM Control Delay (s)	-	-	40.3	13.7	11.5	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0.6	0.6	-

Intersection

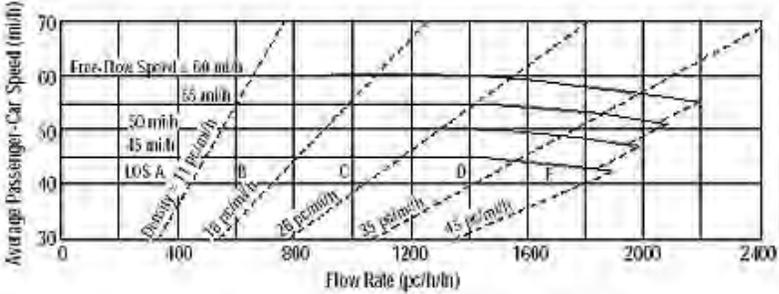
Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	107	1	0	805	158	13
Future Vol, veh/h	107	1	0	805	158	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	1	0	875	172	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	617	93	186	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	422	946	1386	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	422	946	1386	-	-	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1386	-	424	-	-
HCM Lane V/C Ratio	-	-	0.277	-	-
HCM Control Delay (s)	0	-	16.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

MULTILANE HIGHWAYS WORKSHEET(Direction 1)																						
 <p style="font-size: small;">Free-Flow Speed = 60 mi/h Density curves: 11 pc/mi/h, 18 pc/mi/h, 25 pc/mi/h, 35 pc/mi/h, 45 pc/mi/h LOS regions: A, B, C, D, E, F</p>	<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Application</th> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>Operational (LOS)</td> <td>FFS, N, v_p</td> <td>LOS, S, D</td> </tr> <tr> <td>Design (N)</td> <td>FFS, LOS, v_p</td> <td>N, S, D</td> </tr> <tr> <td>Design (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> <tr> <td>Planning (LOS)</td> <td>FFS, N, AADT</td> <td>LOS, S, D</td> </tr> <tr> <td>Planning (N)</td> <td>FFS, LOS, AADT</td> <td>N, S, D</td> </tr> <tr> <td>Planning (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> </tbody> </table>	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
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	Highway/Direction to Travel	Saratoga Way																				
Agency or Company	From/To	W of El Dorado Hills Blvd																				
Date Performed	Jurisdiction	EDC																				
Analysis Time Period	Analysis Year	Cumulative (2035) plus Project																				
Project Description Saratoga Retail Phase 2																						
<input type="checkbox"/> Oper. (LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp)																						
Flow Inputs																						
Volume, V (veh/h)	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:	Rolling																				
DDHV (veh/h)	Grade Length (mi)	0.00																				
Driver Type Adjustment	Up/Down %	0.00																				
1.00	Number of Lanes	2																				
Calculate Flow Adjustments																						
f_p	E_R	1.00	2.0																			
E_T	f_{HV}	2.5	0.971																			
Speed Inputs		Calc Speed Adj and FFS																				
Lane Width, LW (ft)	f_{LW} (mi/h)	12.0	0.0																			
Total Lateral Clearance, LC (ft)	f_{LC} (mi/h)	12.0	0.0																			
Access Points, A (A/mi)	f_A (mi/h)	1	0.3																			
Median Type, M	f_M (mi/h)	Divided	0.0																			
FFS (measured)	FFS (mi/h)	FFS (measured)	44.8																			
Base Free-Flow Speed, BFFS	45.0																					
Operations		Design																				
Operational (LOS)		Design (N)																				
Flow Rate, v_p (pc/h/ln)	263	Required Number of Lanes, N																				
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)																				
D (pc/mi/ln)	5.8	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		256.0																				

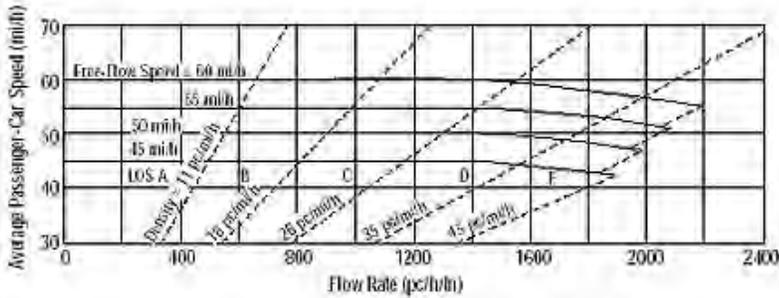
Effective width, W_v (Eq. 15-29) ft	24.00
Effective speed factor, S_t (Eq. 15-30)	4.42
Bicycle level of service score, BLOS (Eq. 15-31)	2.06
Bicycle level of service (Exhibit 15-4)	B

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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		Highway/Direction to Travel	Saratoga Way
Agency or Company	Kimley-Horn	From/To	W of El Dorado Hills Blvd
Date Performed	3/14/2017	Jurisdiction	EDC
Analysis Time Period	AM SB	Analysis Year	Cumulative (2035) plus Project

Project Description Saratoga Retail Phase 2

Oper.(LOS)
 Des. (N)
 Plan. (vp)

Flow Inputs			
Volume, V (veh/h)	634	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:	Rolling
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	2.0
E_T	2.5	f_{HV}	0.971

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	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	44.8
Base Free-Flow Speed, BFFS	45.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	354	Required Number of Lanes, N	
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	7.9	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

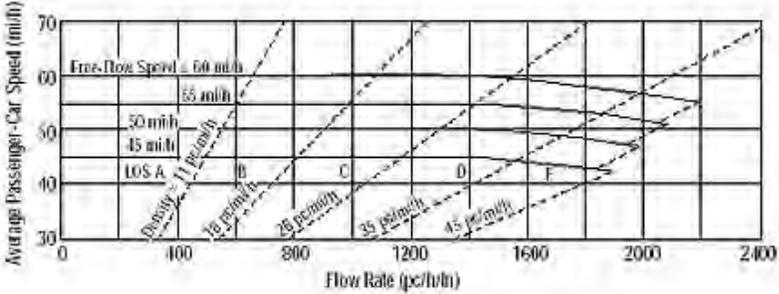
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	344.6

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)	2.21
Bicycle level of service (Exhibit 15-4)	B

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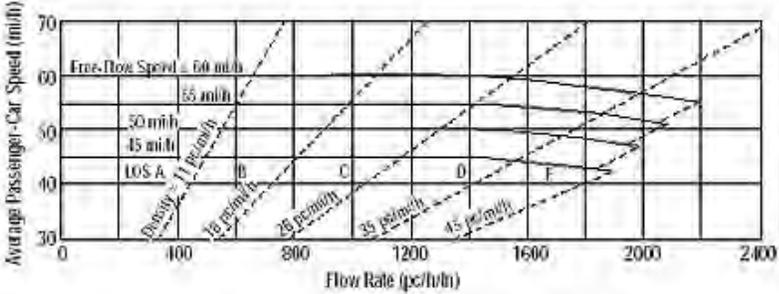
MULTILANE HIGHWAYS WORKSHEET(Direction 1)																						
 <p style="font-size: small;">Free-Flow Speed = 60 mi/h Density curves: 15, 20, 25, 30, 35, 40, 45 pc/mi/h LOS regions: A, B, C, D, E, F</p>	<table border="1" style="width:100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Application</th> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>Operational (LOS)</td> <td>FFS, N, v_p</td> <td>LOS, S, D</td> </tr> <tr> <td>Design (N)</td> <td>FFS, LOS, v_p</td> <td>N, S, D</td> </tr> <tr> <td>Design (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> <tr> <td>Planning (LOS)</td> <td>FFS, N, AADT</td> <td>LOS, S, D</td> </tr> <tr> <td>Planning (N)</td> <td>FFS, LOS, AADT</td> <td>N, S, D</td> </tr> <tr> <td>Planning (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> </tbody> </table>	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
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	Highway/Direction to Travel	Saratoga Way	From/To																			
Agency or Company	Kimley-Horn	W of El Dorado Hills Blvd	Jurisdiction																			
Date Performed	3/14/2017	EDC	Analysis Year																			
Analysis Time Period	PM NB	Cumulative (2035) plus Project																				
Project Description Saratoga Retail Phase 2																						
<input type="checkbox"/> Oper. (LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp)																						
Flow Inputs																						
Volume, V (veh/h)	1056	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:	Rolling																			
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	2.0																			
E_T	2.5	f_{HV}	0.971																			
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	Divided	f_M (mi/h)	0.0																			
FFS (measured)		FFS (mi/h)	44.8																			
Base Free-Flow Speed, BFFS	45.0																					
Operations		Design																				
Operational (LOS)		Design (N)																				
Flow Rate, v_p (pc/h/ln)	591	Required Number of Lanes, N																				
Speed, S (mi/h)	45.0	Flow Rate, v_p (pc/h)																				
D (pc/mi/ln)	13.1	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		573.9																				

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)	2.47
Bicycle level of service (Exhibit 15-4)	B

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)																						
 <p style="font-size: small;">Free-Flow Speed = 60 mi/h Density curves: 11 pc/mi/h, 18 pc/mi/h, 25 pc/mi/h, 35 pc/mi/h, 45 pc/mi/h LOS regions: A, B, C, D, E, F</p>	<table border="1" style="width:100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Application</th> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>Operational (LOS)</td> <td>FFS, N, v_p</td> <td>LOS, S, D</td> </tr> <tr> <td>Design (N)</td> <td>FFS, LOS, v_p</td> <td>N, S, D</td> </tr> <tr> <td>Design (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> <tr> <td>Planning (LOS)</td> <td>FFS, N, AADT</td> <td>LOS, S, D</td> </tr> <tr> <td>Planning (N)</td> <td>FFS, LOS, AADT</td> <td>N, S, D</td> </tr> <tr> <td>Planning (v_p)</td> <td>FFS, LOS, N</td> <td>v_p, S, D</td> </tr> </tbody> </table>	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
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	Highway/Direction to Travel	Saratoga Way																				
Agency or Company	From/To	W of El Dorado Hills Blvd																				
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Analysis Time Period	Analysis Year	Cumulative (2035) plus Project																				
Project Description Saratoga Retail Phase 2																						
<input type="checkbox"/> Oper. (LOS) <input type="checkbox"/> Des. (N) <input type="checkbox"/> Plan. (vp)																						
Flow Inputs																						
Volume, V (veh/h)	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:	Rolling																				
DDHV (veh/h)	Grade Length (mi)	0.00																				
Driver Type Adjustment	Up/Down %	0.00																				
1.00	Number of Lanes	2																				
Calculate Flow Adjustments																						
f_p	E_R	1.00	2.0																			
E_T	f_{HV}	2.5	0.971																			
Speed Inputs		Calc Speed Adj and FFS																				
Lane Width, LW (ft)	f_{LW} (mi/h)	12.0	0.0																			
Total Lateral Clearance, LC (ft)	f_{LC} (mi/h)	12.0	0.0																			
Access Points, A (A/mi)	f_A (mi/h)	1	0.3																			
Median Type, M	f_M (mi/h)	Divided	0.0																			
FFS (measured)	FFS (mi/h)	FFS (measured)	44.8																			
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		212.5																				

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)	1.97
Bicycle level of service (Exhibit 15-4)	B

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Segment Inputs				Cumulative plus Project Conditions														
				Flow Inputs		AM LOS Performance Measures					PM LOS Performance Measures							
	Length	Number of Lanes	Interchange Density	PM		V _p	FFS	S	D	LOS	V _p	FFS	S	D	LOS			
				AM Peak	Peak											(veh/h)	(veh/h)	(pc/h/ln)
	(ft)	(N)	(l/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)				
West/East	West of Latrobe Rd SB Off Ramp	6690	3	0.33	3,076	3,814	1147.93	74.12	75	74.7578	15.355	B	1423.341	74.12	75	73.0161	19.5	C
	Latrobe Rd NB Off Ramp to Latrobe Rd On Ramp	1990	3	0.50	1,669	3,066	622.851	73.6	75	73.4254	8.4828	A	1144.196	73.6	75	74.7698	15.303	B
	El Dorado Hills Blvd Off Ramp to El Dorado Hills Blvd On Ramp	3565	3	0.50	3,710	4,027	1384.53	73.6	75	73.3632	18.872	C	1502.83	73.6	75	72.2011	20.815	C
	West of El Dorado Hills Blvd On Ramp	5890	3	0.33	4,849	5,562	1809.59	74.12	75	67.7443	26.712	D	2075.674	74.12	75	62.1912	33.376	D
Universal Inputs:																		
PHF 0.92																		
(P _s) 6%																		
F _{HV} 0.970873786																		

Segment Inputs			Cumulative 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 Lanes (L _a)	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	V ₀	V _c	V _g	V _c /S ₂₀₀	P _{FM}	V ₁₂	Capacity	V ₃	V _{12a}	v/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	V ₀	V _c	V _g	V _c /S ₂₀₀	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)	(pc/h/m)	(pc/h/m)			(veh/h)		(pc/m/m)		(veh/h)	(veh/h)	(veh/h)	(pc/h)	(pc/h)	(pc/h)	(pc/h)	(pc/h/m)	(pc/h/m)			(veh/h)		(pc/m/m)					
3	1	795	4849	3710	1139	5429	4154	1275	119	0.5998	2491.2	7200	831	1868	2491	0.754	29.281	D	5562	4027	1535	6227	4508	1719	129	0.5998	2704	7200	902	2028	2704	0.8649	34.196	D		
General inputs:																																				
Length		(ft)																																		
V ₀		(ft)																																		
V _c		(mi/h)																																		
V _g		(mi/h)																																		
P _{FM}																																				
P ₀																																				
V ₀																																				

Segment Inputs				Cumulative plus Project Conditions																														
				AM Flow Inputs													PM Flow Inputs			PM LOS Performance Measures														
	Number of Lanes	Number of Ramp Lanes	Length of Deceleration Lane (L _D)	Downstream Volume	Upstream Volume	Ramp Volume	V ₀	V ₁	V ₂	P _D	V ₁₂	Capacity	V ₂	V _{12a}	w/c	D	LOS	Downstream Volume (D)	Upstream Volume (F)	Ramp Volume (R)	V ₀	V ₁	V ₂	P _D	V ₁₂	Capacity	V ₂	V _{12a}	w/c	D	LOS			
				(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)	(veh/h)	(veh/h)	(veh/h)	(pc/h/ln)	(pc/h/ln)	(pc/h/ln)
Latrobe SB Off Ramp	3	1	739	140	1930	3076	1146	292.207	3443.8	1283	0.436	2225.1	7200	609	1669	2225	0.4783	22.128	C	5188	5562	374	418.717	6227	418.72	0.436	2951.1	7200	1638	2213	2951	0.8649	28.372	D
Latrobe NB Off Ramp	3	1	-	140	1669	1930	261	-	2160.8	292.21	0.6925	1586.3	7200	575	1190	1586	0.3001	16.634	B	4814	5188	374	-	5808.3	418.72	0.5955	3628.4	7200	2180	2721	3628	0.8067	34.196	D

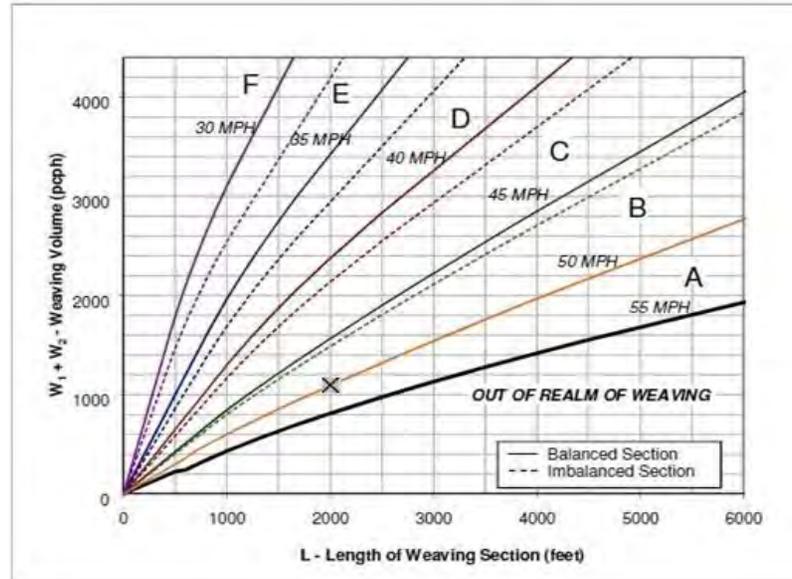
Segment Inputs:
 L_D 750 (ft)
 S_D 70 (mi/h)
 S₀ 35 (mi/h)
 P_D 0.92 (mi/h)
 P₀ 6%
 S₀ 0.9708/3378

EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) plus Project Conditons (AM)

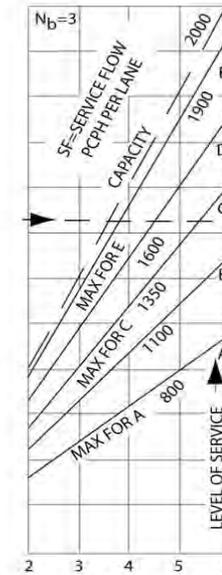
Number of Entering Mainline Lanes	Nb	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	2,350	Volume (vph)	681	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)	2,397	Volume (pcph)	688	Volume (pcph)	293

W1 + W2	981
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (Sw, mph)	50.0
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	599
Level of Service (LOS)	A



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

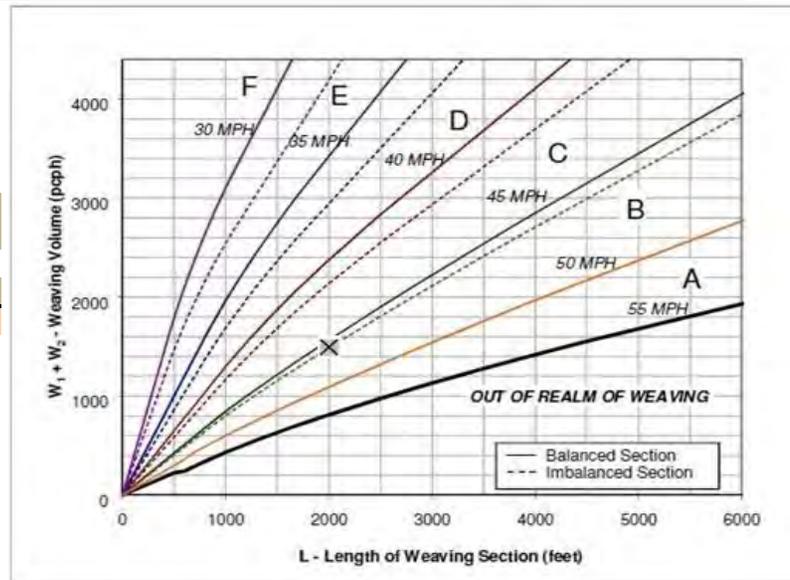


EB US-50, East of Latrobe Rd On Ramp, Cumulative (2035) plus Project Conditons (PM)

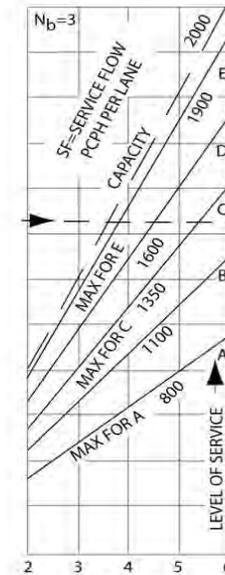
Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	2000

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,036	Volume (vph)	970	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)	4,117	Volume (pcph)	980	Volume (pcph)	677

W1 + W2	1,656
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	45.4
Weaving Intensity Factor (k)	1.60
Service Volume (SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,131
Level of Service (LOS)	C



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

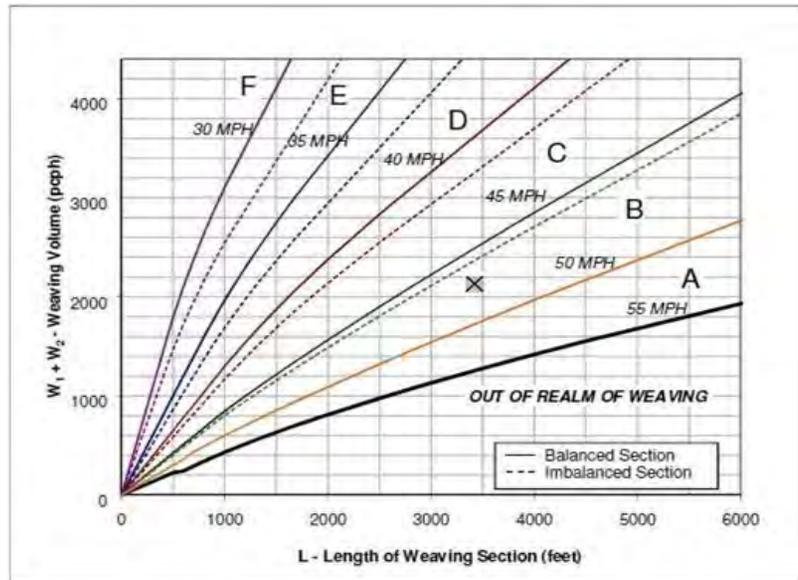


WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) plus Project Conditions (AM)

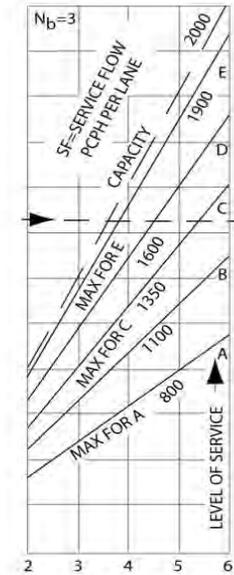
Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,159	Volume (vph)	1,180	Volume (vph)	449
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)	4,201	Volume (pcph)	1,192	Volume (pcph)	453

W1 + W2	1,645
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	46.8
Weaving Intensity Factor (k)	1.40
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,095
Level of Service (LOS)	B



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



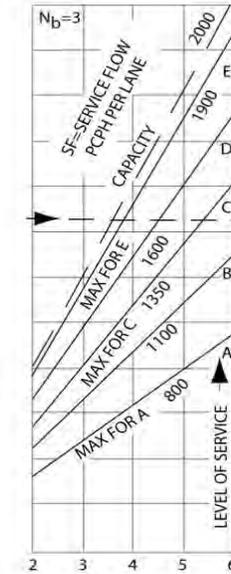
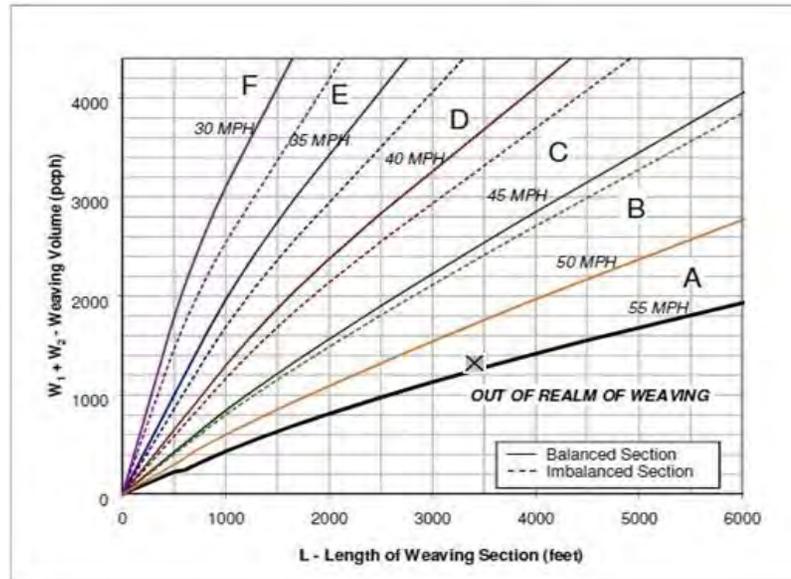
WB US-50, East of El Dorado Hills Blvd Off Ramp, Cumulative (2035) plus Project Conditions (PM)

Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3425

N_b=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)	4,292	Volume (vph)	500	Volume (vph)	265
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)	4,335	Volume (pcph)	505	Volume (pcph)	268

W1 + W2	773
In between	
Speed 1	50
Speed 2	55
Interpolated Weaving Speed (S _w , mph)	54.8
Weaving Intensity Factor (k)	1.00
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,084
Level of Service (LOS)	B

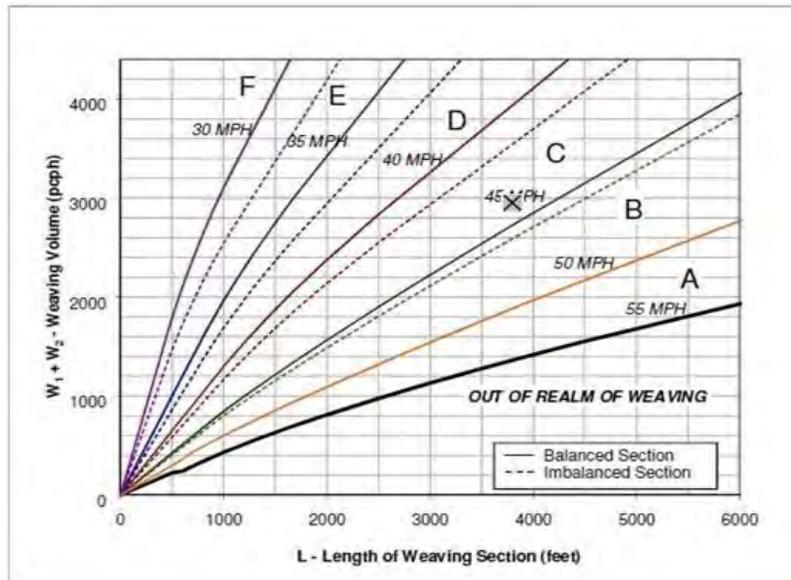


WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) plus Project Conditions (AM)

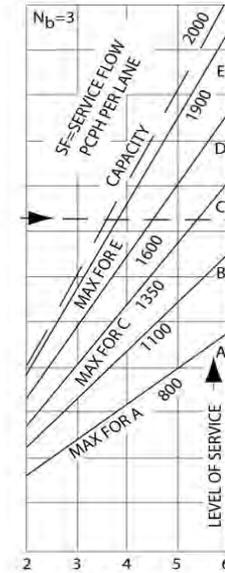
Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

Total Weaving Section (V)		On ramp to Mainline (W1)		Mainline to Off ramp (W2)	
Volume (vph)	4,849	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)	4,897	Volume (pcph)	1,150	Volume (pcph)	1,353

W1 + W2	2,504
In between	
Speed 1	40
Speed 2	45
Interpolated Weaving Speed (S _w , mph)	43.8
Weaving Intensity Factor (k)	1.65
Service Volume (SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,411
Level of Service (LOS)	D



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



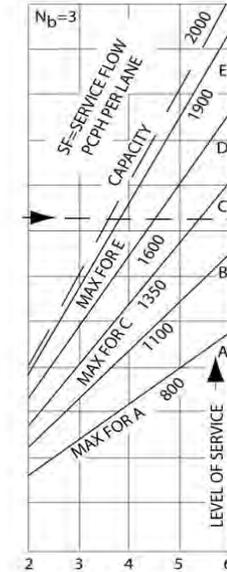
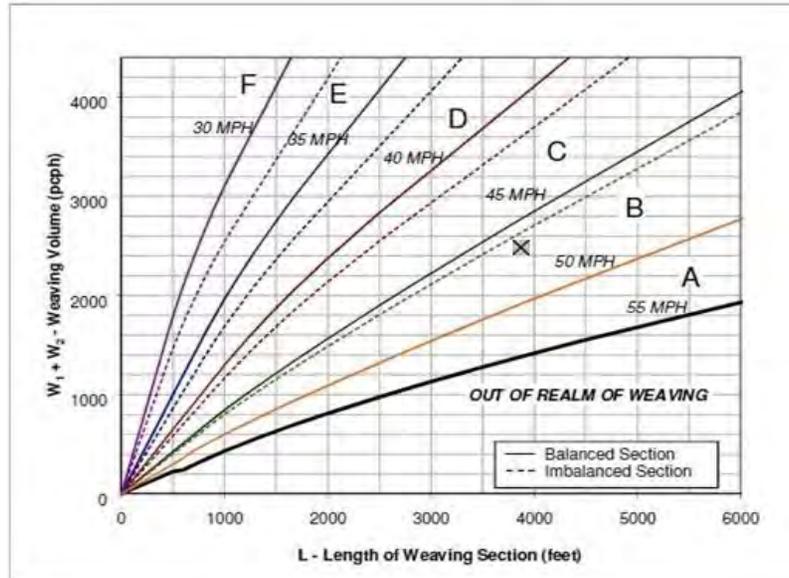
WB US-50, West of El Dorado Hills On Ramp, Cumulative (2035) plus Project Conditions (PM)

Number of Entering Mainline Lanes	N _b	3
Number of Lanes in Weaving Section	N	4
Length of Weaving Section (feet)	L	3775

N_b=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)	5,562	Volume (vph)	1,535	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)	5,618	Volume (pcph)	1,550	Volume (pcph)	1,111

W1 + W2	2,661
In between	
Speed 1	45
Speed 2	50
Interpolated Weaving Speed (S _w , mph)	46.0
Weaving Intensity Factor (k)	1.20
Service Volume ((SV, pcph)	
$SV = (1/N) * [V + (k-1) * \min(W1, W2)]$	1,460
Level of Service (LOS)	D



Appendix F

*Analysis Worksheets for
Mitigated 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	9527	9372	9202	9375	9563	9419	9449
Vehs Exited	9434	9343	9192	9342	9388	9366	9364
Starting Vehs	429	434	402	424	379	364	432
Ending Vehs	522	463	412	457	554	417	517
Travel Distance (mi)	6890	6780	6676	6738	6888	6771	6757
Travel Time (hr)	565.3	462.9	447.0	508.9	518.7	485.1	536.2
Total Delay (hr)	352.2	253.2	240.2	300.0	306.1	275.6	326.4
Total Stops	20397	19051	18387	20047	21164	20089	20225
Fuel Used (gal)	338.2	310.8	303.5	321.3	326.2	314.1	329.8

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	9555	9194	9381	9398
Vehs Exited	9463	9132	9300	9330
Starting Vehs	381	384	438	403
Ending Vehs	473	446	519	473
Travel Distance (mi)	6886	6684	6763	6783
Travel Time (hr)	501.7	453.6	488.0	496.7
Total Delay (hr)	289.6	247.6	278.7	287.0
Total Stops	20518	18910	20000	19877
Fuel Used (gal)	324.0	307.1	316.7	319.2

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	2334	2287	2302	2303	2320	2325	2365
Vehs Exited	2282	2288	2253	2272	2211	2208	2351
Starting Vehs	429	434	402	424	379	364	432
Ending Vehs	481	433	451	455	488	481	446
Travel Distance (mi)	1679	1653	1650	1663	1635	1630	1703
Travel Time (hr)	117.3	103.5	109.8	110.9	108.4	104.9	112.7
Total Delay (hr)	65.4	52.4	58.9	59.3	57.9	54.4	59.8
Total Stops	4702	4367	4546	4623	4741	4479	4708
Fuel Used (gal)	77.5	73.3	75.8	75.7	74.2	72.3	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	7	8	9	Avg
Vehs Entered	2390	2246	2354	2318
Vehs Exited	2299	2190	2331	2265
Starting Vehs	381	384	438	403
Ending Vehs	472	440	461	450
Travel Distance (mi)	1693	1620	1694	1662
Travel Time (hr)	110.7	100.6	114.2	109.3
Total Delay (hr)	58.2	50.7	61.5	57.8
Total Stops	4647	4237	4750	4577
Fuel Used (gal)	76.4	72.2	77.4	75.2

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	2437	2508	2413	2562	2604	2496	2498
Vehs Exited	2399	2410	2346	2435	2471	2437	2385
Starting Vehs	481	433	451	455	488	481	446
Ending Vehs	519	531	518	582	621	540	559
Travel Distance (mi)	1768	1785	1733	1784	1826	1779	1745
Travel Time (hr)	145.5	117.3	116.2	131.4	134.3	135.1	128.5
Total Delay (hr)	90.9	62.2	62.3	76.4	78.3	80.3	74.4
Total Stops	5383	4923	4668	5411	5494	5553	5219
Fuel Used (gal)	86.1	80.9	78.0	83.9	85.4	84.4	81.8

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	2489	2461	2390	2486
Vehs Exited	2421	2408	2327	2403
Starting Vehs	472	440	461	450
Ending Vehs	540	493	524	538
Travel Distance (mi)	1780	1772	1715	1769
Travel Time (hr)	127.6	121.5	121.3	127.9
Total Delay (hr)	73.0	67.1	68.2	73.3
Total Stops	5398	5226	5063	5236
Fuel Used (gal)	83.0	81.5	79.5	82.4

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	2374	2319	2239	2355	2326	2353	2290
Vehs Exited	2362	2373	2333	2397	2444	2352	2303
Starting Vehs	519	531	518	582	621	540	559
Ending Vehs	531	477	424	540	503	541	546
Travel Distance (mi)	1702	1698	1663	1688	1729	1699	1661
Travel Time (hr)	155.2	121.8	115.7	134.2	131.8	130.0	148.5
Total Delay (hr)	102.6	69.1	64.3	81.7	78.4	77.5	97.0
Total Stops	5195	4893	4715	5263	5344	5397	5180
Fuel Used (gal)	87.5	78.9	76.6	82.0	82.4	80.9	85.4

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	2311	2295	2323	2319
Vehs Exited	2313	2304	2376	2351
Starting Vehs	540	493	524	538
Ending Vehs	538	484	471	502
Travel Distance (mi)	1684	1682	1679	1688
Travel Time (hr)	134.0	120.4	124.3	131.6
Total Delay (hr)	82.1	68.5	72.3	79.3
Total Stops	5197	4942	5040	5117
Fuel Used (gal)	82.0	79.2	79.6	81.5

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	2382	2258	2248	2155	2313	2245	2296
Vehs Exited	2391	2272	2260	2238	2262	2369	2325
Starting Vehs	531	477	424	540	503	541	546
Ending Vehs	522	463	412	457	554	417	517
Travel Distance (mi)	1740	1644	1630	1603	1698	1663	1648
Travel Time (hr)	147.2	120.3	105.3	132.4	144.1	115.1	146.5
Total Delay (hr)	93.3	69.5	54.7	82.6	91.6	63.4	95.2
Total Stops	5117	4868	4458	4750	5585	4660	5118
Fuel Used (gal)	87.0	77.8	73.1	79.6	84.2	76.5	85.1

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	2365	2192	2314	2276
Vehs Exited	2430	2230	2266	2304
Starting Vehs	538	484	471	502
Ending Vehs	473	446	519	473
Travel Distance (mi)	1730	1610	1675	1664
Travel Time (hr)	129.5	111.1	128.2	128.0
Total Delay (hr)	76.3	61.3	76.7	76.5
Total Stops	5276	4505	5147	4948
Fuel Used (gal)	82.7	74.1	80.2	80.0

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	0.8	4.7	0.7
Denied Del/Veh (s)	0.0	0.0	0.0	1.4	0.6	1.4	0.0	0.0	0.0	14.1	11.5	13.1
Total Delay (hr)	1.2	1.2	1.1	1.6	1.6	0.4	3.6	3.6	0.0	5.7	21.7	0.8
Total Del/Veh (s)	36.0	36.2	15.2	34.8	29.0	8.8	49.9	17.8	4.6	104.8	52.2	15.0
Stop Delay (hr)	1.1	1.0	1.0	1.4	1.3	0.3	3.2	2.5	0.0	5.0	15.2	0.4
Stop Del/Veh (s)	33.2	31.2	14.2	30.6	23.8	6.8	44.3	12.1	2.9	92.0	36.8	6.8

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

Movement	All
Denied Delay (hr)	6.4
Denied Del/Veh (s)	6.0
Total Delay (hr)	42.4
Total Del/Veh (s)	39.4
Stop Delay (hr)	32.4
Stop Del/Veh (s)	30.1

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	0.0	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	1.8	0.2	1.7	5.1	0.7	8.3	2.3	0.2	0.2	19.1	0.6
Total Del/Veh (s)	30.0	47.2	3.7	53.5	90.2	54.0	55.7	10.0	5.3	62.9	47.6	4.8
Stop Delay (hr)	1.0	1.6	0.0	1.5	4.8	0.6	7.3	0.7	0.1	0.1	15.7	0.3
Stop Del/Veh (s)	27.3	42.4	0.0	47.8	84.1	49.5	48.7	3.2	1.3	59.2	39.1	2.5

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)	41.2
Total Del/Veh (s)	35.2
Stop Delay (hr)	33.7
Stop Del/Veh (s)	28.8

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

Movement	EBR	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.8	0.0	0.0	0.0	0.0	0.0	0.8
Denied Del/Veh (s)	2.6	0.2	0.0	0.0	0.0	0.0	0.6
Total Delay (hr)	5.7	0.0	3.4	0.6	2.0	5.2	17.0
Total Del/Veh (s)	17.7	0.6	9.9	5.8	23.7	12.8	12.7
Stop Delay (hr)	3.2	0.0	1.1	0.0	1.4	1.7	7.5
Stop Del/Veh (s)	9.8	0.0	3.3	0.3	16.9	4.3	5.6

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)	0.0	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)	3.4	0.1	0.1	3.2	3.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.5	0.1	0.0	1.5	0.4	1.5	0.6	11.1	0.2	5.0	8.5	0.8
Total Del/Veh (s)	34.4	35.3	12.3	40.3	40.0	13.3	46.6	33.6	7.5	31.2	18.7	6.9
Stop Delay (hr)	0.4	0.1	0.0	1.3	0.4	1.2	0.5	7.2	0.2	4.1	4.9	0.4
Stop Del/Veh (s)	32.6	32.3	12.2	35.9	34.3	11.0	38.4	22.0	5.8	25.4	10.8	3.6

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.2
Total Delay (hr)	30.1
Total Del/Veh (s)	23.7
Stop Delay (hr)	20.8
Stop Del/Veh (s)	16.3

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	0.0	0.0	0.0
Total Delay (hr)	6.5	2.1	0.9	8.0	8.1	0.5	11.7	6.7	0.2	2.4	11.8	13.2
Total Del/Veh (s)	71.6	51.3	30.9	56.5	50.1	10.2	207.1	28.7	5.0	68.4	43.0	72.4
Stop Delay (hr)	6.2	1.9	0.8	7.0	6.6	0.4	11.5	5.9	0.2	2.1	8.1	10.7
Stop Del/Veh (s)	67.4	45.6	28.7	49.5	41.0	8.1	202.2	25.1	4.9	60.3	29.6	58.6

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)	72.1
Total Del/Veh (s)	54.2
Stop Delay (hr)	61.3
Stop Del/Veh (s)	46.1

6: Windfield Way/Town Center Blvd & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	3.8	0.5	0.4	0.1	0.1	0.2
Total Delay (hr)	0.6	4.2	1.0	5.8	1.3	1.0	0.2	0.4	0.2	0.1	14.8
Total Del/Veh (s)	45.2	33.8	23.3	29.0	6.9	43.1	36.9	11.1	52.8	13.0	22.8
Stop Delay (hr)	0.5	3.6	0.9	4.2	0.8	1.0	0.2	0.4	0.2	0.1	11.9
Stop Del/Veh (s)	41.8	28.7	21.0	21.3	4.3	40.4	33.2	10.4	49.2	12.8	18.3

7: 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	2.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	13.6	9.2	9.1	0.1	0.1	0.1	3.8	0.4	0.3
Total Delay (hr)	1.7	0.7	0.0	1.4	22.1	1.8	0.5	0.0	0.0	0.5	0.1	1.0
Total Del/Veh (s)	44.1	9.4	3.6	122.8	75.7	33.4	50.3	30.7	3.8	44.0	32.0	21.6
Stop Delay (hr)	1.6	0.4	0.0	1.2	16.8	1.2	0.5	0.0	0.0	0.4	0.1	0.9
Stop Del/Veh (s)	39.9	5.4	1.9	107.1	57.4	21.1	48.2	27.9	3.9	40.6	27.9	20.0

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

Movement	All
Denied Delay (hr)	3.4
Denied Del/Veh (s)	6.2
Total Delay (hr)	29.8
Total Del/Veh (s)	54.4
Stop Delay (hr)	23.0
Stop Del/Veh (s)	42.0

8: Saratoga Way & Mammouth Way/Walgreens Dwy Performance by movement

Movement	EBR	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.3
Total Del/Veh (s)	3.5	3.5	4.3	0.5	5.3	1.3	1.1	1.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	3.4	3.8	3.1	0.1	2.9	0.2	0.2	0.2

9: Saratoga Way & Project Main Dwy 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)	0.0	0.1	0.0	0.0	0.1	0.0	0.3
Total Del/Veh (s)	9.4	3.4	0.3	0.1	3.6	0.3	0.9
Stop Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	9.2	3.6	0.1	0.1	1.5	0.0	0.5

10: Saratoga Way & Arrowhead Dr Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1
Total Delay (hr)	0.3	0.0	0.0	0.0	0.3
Total Del/Veh (s)	11.0	0.3	0.1	0.0	1.5
Stop Delay (hr)	0.2	0.0	0.0	0.0	0.2
Stop Del/Veh (s)	9.3	0.0	0.0	0.0	1.1

11: Saratoga Way & Project 2nd Dwy 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)	0.0	0.1	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	7.1	3.2	0.3	0.1	3.2	0.2	0.7
Stop Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	6.9	3.5	0.0	0.0	1.3	0.0	0.4

12: Saratoga Way & Project R Out Dwy Performance by movement

Movement	WBR	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1
Total Del/Veh (s)	3.0	0.3	0.1	0.2
Stop Delay (hr)	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	3.3	0.1	0.0	0.1

Total Network Performance

Denied Delay (hr)	11.2
Denied Del/Veh (s)	4.3
Total Delay (hr)	275.8
Total Del/Veh (s)	101.3
Stop Delay (hr)	203.8
Stop Del/Veh (s)	74.9

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)	79	93	136	184	183	196	100	265	268	176	190	18
Average Queue (ft)	29	51	68	86	88	93	40	161	88	91	98	1
95th Queue (ft)	64	79	120	149	149	157	78	263	215	160	166	9
Link Distance (ft)			309	309		1449			469	469	469	
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)			0		0	0		4	0		0	
Queuing Penalty (veh)			0		0	0		10	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)	4	125	774	727	669	225
Average Queue (ft)	0	117	453	379	324	107
95th Queue (ft)	4	149	864	811	685	247
Link Distance (ft)	229		1017	1017	1017	
Upstream Blk Time (%)			9	1	0	
Queuing Penalty (veh)			0	0	0	
Storage Bay Dist (ft)		100				200
Storage Blk Time (%)		25	50		12	0
Queuing Penalty (veh)		125	96		23	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)	134	180	4	78	166	474	175	300	304	274	168	119
Average Queue (ft)	52	96	0	29	85	209	62	178	179	84	32	49
95th Queue (ft)	104	167	3	64	194	510	168	293	299	251	110	93
Link Distance (ft)	1070	1070	1070			1644			626	626	626	626
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				150	150		150	550				
Storage Blk Time (%)					0	27	0					
Queuing Penalty (veh)					0	42	0					

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)	77	224	333	301	303	266	484	442	299	178
Average Queue (ft)	28	35	284	206	202	96	237	154	60	13
95th Queue (ft)	62	167	365	319	313	242	538	428	228	108
Link Distance (ft)	626		229	229	229	229	469	469	469	469
Upstream Blk Time (%)		0	65	9	7	1	2	0		
Queuing Penalty (veh)		0	309	41	35	5	9	1		
Storage Bay Dist (ft)		200								
Storage Blk Time (%)			67							
Queuing Penalty (veh)			9							

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)	220	259	179	192	145	160	14	93	96	292	224	295
Average Queue (ft)	132	143	64	67	42	62	1	37	36	58	35	66
95th Queue (ft)	197	227	143	149	112	130	15	75	75	180	127	176
Link Distance (ft)	1203			558	558	558	558			626	626	626
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)			0	0								
Queuing Penalty (veh)			1	1								

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	217
Average Queue (ft)	54
95th Queue (ft)	138
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)	48	61	30	29	124	248	191	56	248	402	348	361
Average Queue (ft)	15	24	8	5	94	109	57	15	41	190	173	195
95th Queue (ft)	41	55	27	22	139	210	141	42	143	322	296	310
Link Distance (ft)			778	778		521	521			837	837	837
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	350	350			100			225	225			
Storage Blk Time (%)					13	6			0	5		
Queuing Penalty (veh)					26	10			0	2		

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)	146	210	218	232	319	428	386
Average Queue (ft)	28	121	136	105	137	209	92
95th Queue (ft)	81	186	196	189	259	387	290
Link Distance (ft)	837			558	558	558	558
Upstream Blk Time (%)						0	0
Queuing Penalty (veh)						2	1
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)	247	261	160	184	187	200	338	324	116	278	361	278
Average Queue (ft)	127	146	70	95	146	191	287	176	52	246	280	130
95th Queue (ft)	222	233	135	165	215	229	387	297	93	327	447	264
Link Distance (ft)			355	355			312	312	312		278	278
Upstream Blk Time (%)							13	1		29	43	0
Queuing Penalty (veh)							53	5		0	0	0
Storage Bay Dist (ft)	325	325			175	175				270		
Storage Blk Time (%)	0	0			2	12	25			41	41	
Queuing Penalty (veh)	0	0			6	34	127			86	85	

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)	191	162	56	269	209	159	171	127	54	120	241	339
Average Queue (ft)	91	59	33	118	67	13	35	23	3	32	49	183
95th Queue (ft)	155	133	59	329	230	89	189	162	56	80	150	290
Link Distance (ft)	278	278		242	242	242	496	496	496			837
Upstream Blk Time (%)				15	1	0	1	0				
Queuing Penalty (veh)				0	0	0	0	0				
Storage Bay Dist (ft)			25							225	225	
Storage Blk Time (%)		10	1							0	0	3
Queuing Penalty (veh)		14	3							0	0	3

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	424	706	275
Average Queue (ft)	195	429	251
95th Queue (ft)	328	834	340
Link Distance (ft)	837	837	
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		3	
Storage Bay Dist (ft)			250
Storage Blk Time (%)		1	39
Queuing Penalty (veh)		6	129

Intersection: 6: Windfield Way/Town Center Blvd & White Rock Rd

Movement	EB	EB	EB	WB	WB	WB	B40	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	T	L	TR	TR
Maximum Queue (ft)	219	317	258	215	530	232	12	128	160	62
Average Queue (ft)	46	171	135	207	287	84	1	57	51	20
95th Queue (ft)	139	283	229	238	526	167	16	108	113	49
Link Distance (ft)		329	329		548	548	355		234	299
Upstream Blk Time (%)		0			0				0	
Queuing Penalty (veh)		0			3				0	
Storage Bay Dist (ft)	195			190				155		
Storage Blk Time (%)	0	7		24	0			0	0	
Queuing Penalty (veh)	0	3		87	1			0	0	

Intersection: 7: 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	170	112	37	145	1101	895	80	31	74	186
Average Queue (ft)	77	42	42	6	54	584	417	29	10	33	84
95th Queue (ft)	117	135	90	26	140	1208	1023	65	28	70	155
Link Distance (ft)		312	312			1505	1505	221	221		409
Upstream Blk Time (%)						5	3				
Queuing Penalty (veh)						0	0				
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	17	1	0		0	53				8	26
Queuing Penalty (veh)	22	1	0		0	21				12	10

Intersection: 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Movement	EB	WB	NB	SB	SB	SB
Directions Served	R	R	L	L	T	TR
Maximum Queue (ft)	28	35	24	19	4	3
Average Queue (ft)	3	4	1	2	0	0
95th Queue (ft)	17	21	11	11	4	2
Link Distance (ft)	171	125			309	309
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100	100		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Saratoga Way & Project Main Dwy

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	31	73	3	59
Average Queue (ft)	6	35	0	23
95th Queue (ft)	26	58	3	52
Link Distance (ft)	133	133	145	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Saratoga Way & Arrowhead Dr

Movement	EB	SB
Directions Served	LR	T
Maximum Queue (ft)	81	5
Average Queue (ft)	40	0
95th Queue (ft)	69	5
Link Distance (ft)	270	110
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Saratoga Way & Project 2nd Dwy

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	69	2	60
Average Queue (ft)	34	0	19
95th Queue (ft)	58	2	50
Link Distance (ft)	107	145	
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			50
Storage Blk Time (%)			0
Queuing Penalty (veh)			1

Intersection: 12: Saratoga Way & Project R Out Dwy

Movement	WB
Directions Served	R
Maximum Queue (ft)	34
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	102
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 25: Bend

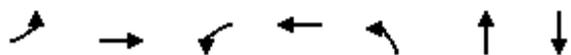
Movement	SB	SB	B80	B80	B80
Directions Served	T		T	T	T
Maximum Queue (ft)	18	10	114	87	57
Average Queue (ft)	1	0	4	4	2
95th Queue (ft)	12	10	52	56	38
Link Distance (ft)	242	242	278	278	278
Upstream Blk Time (%)			0	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 80: Bend

Movement	SB	SB	SB
Directions Served	T	T	T
Maximum Queue (ft)	114	87	57
Average Queue (ft)	4	4	2
95th Queue (ft)	52	56	38
Link Distance (ft)	278	278	278
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1467



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	48	631	757	767	92	158	44
v/c Ratio	0.52	0.87	0.85	0.32	0.77	0.42	0.30
Control Delay	80.2	60.8	39.7	11.2	97.2	13.4	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	60.8	39.7	11.2	97.2	13.4	30.9
Queue Length 50th (ft)	37	243	489	119	72	16	12
Queue Length 95th (ft)	93	#469	#1040	281	#208	72	47
Internal Link Dist (ft)		327		554		213	278
Turn Bay Length (ft)	195		190		155		
Base Capacity (vph)	137	722	889	2400	119	608	468
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.87	0.85	0.32	0.77	0.26	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	435	145	696	706	0	85	21	124	0	15	26
Future Volume (veh/h)	44	435	145	696	706	0	85	21	124	0	15	26
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	48	473	158	757	767	0	92	23	135	0	16	28
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	61	623	207	781	2314	0	116	38	221	2	31	53
Arrive On Green	0.03	0.24	0.24	0.44	0.65	0.00	0.07	0.16	0.16	0.00	0.05	0.05
Sat Flow, veh/h	1774	2613	867	1774	3632	0	1774	236	1383	1774	609	1066
Grp Volume(v), veh/h	48	319	312	757	767	0	92	0	158	0	0	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1710	1774	1770	0	1774	0	1619	1774	0	1675
Q Serve(g_s), s	2.7	16.8	17.0	41.7	9.6	0.0	5.1	0.0	9.1	0.0	0.0	2.6
Cycle Q Clear(g_c), s	2.7	16.8	17.0	41.7	9.6	0.0	5.1	0.0	9.1	0.0	0.0	2.6
Prop In Lane	1.00		0.51	1.00		0.00	1.00		0.85	1.00		0.64
Lane Grp Cap(c), veh/h	61	422	407	781	2314	0	116	0	259	2	0	84
V/C Ratio(X)	0.78	0.76	0.77	0.97	0.33	0.00	0.79	0.00	0.61	0.00	0.00	0.52
Avail Cap(c_a), veh/h	170	453	437	1106	2808	0	149	0	618	53	0	552
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	47.9	35.4	35.5	27.4	7.7	0.0	46.1	0.0	39.1	0.0	0.0	46.4
Incr Delay (d2), s/veh	7.9	7.1	7.8	14.8	0.1	0.0	14.9	0.0	0.9	0.0	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.0	8.9	23.6	4.7	0.0	3.0	0.0	4.1	0.0	0.0	1.2
LnGrp Delay(d),s/veh	55.8	42.5	43.3	42.1	7.8	0.0	61.0	0.0	40.0	0.0	0.0	48.2
LnGrp LOS	E	D	D	D	A		E		D			D
Approach Vol, veh/h		679			1524			250				44
Approach Delay, s/veh		43.8			24.8			47.7				48.2
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	49.6	29.8	11.0	9.6	8.1	71.4	0.0	20.6				
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	25.6	8.4	33.0	9.6	79.4	3.0	38.2				
Max Q Clear Time (g_c+I1), s	43.7	19.0	7.1	4.6	4.7	11.6	0.0	11.1				
Green Ext Time (p_c), s	0.3	4.9	0.0	0.5	0.0	18.4	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			32.7									
HCM 2010 LOS			C									

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↗↗		↗	↗↗	
Traffic Vol, veh/h	0	0	4	0	0	5	3	466	0	3	557	74
Future Vol, veh/h	0	0	4	0	0	5	3	466	0	3	557	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	0	0	5	3	507	0	3	605	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	343	-	-	253	686	0	-	507	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	653	0	0	746	904	-	0	1054	-	-
Stage 1	0	0	-	0	0	-	-	-	0	-	-	-
Stage 2	0	0	-	0	0	-	-	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	653	-	-	746	904	-	-	1054	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.6			9.9			0.1			0		
HCM LOS	B			A								

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	904	-	653	746	1054	-	-
HCM Lane V/C Ratio	0.004	-	0.007	0.007	0.003	-	-
HCM Control Delay (s)	9	-	10.6	9.9	8.4	-	-
HCM Lane LOS	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	0	-	-

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↕↔		↖	↗
Traffic Vol, veh/h	8	80	389	4	89	472
Future Vol, veh/h	8	80	389	4	89	472
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	87	423	4	97	513

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	875	214	0	0	427	0
Stage 1	425	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	7.54	6.94	-	-	4.14	-
Critical Hdwy Stg 1	6.54	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	243	791	-	-	1129	-
Stage 1	578	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	227	791	-	-	1129	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	11.1		0		1.3
HCM LOS	B				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	227	791	1129	-
HCM Lane V/C Ratio	-	-	0.038	0.11	0.086	-
HCM Control Delay (s)	-	-	21.5	10.1	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	0.3	-

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	0	0	242	407	4
Future Vol, veh/h	94	0	0	242	407	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	0	0	263	442	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	577	223	447	0	-	0
Stage 1	445	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	447	780	1110	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	447	780	1110	-	-	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1110	-	447	-	-
HCM Lane V/C Ratio	-	-	0.229	-	-
HCM Control Delay (s)	0	-	15.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

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	10721	10806	10954	10560	10812	10564	10822
Vehs Exited	10219	10415	10598	10187	10464	10241	10538
Starting Vehs	519	604	605	634	647	690	618
Ending Vehs	1021	995	961	1007	995	1013	902
Travel Distance (mi)	7447	7639	7743	7404	7643	7411	7766
Travel Time (hr)	992.7	1108.3	954.5	1223.4	1065.3	1168.6	988.8
Total Delay (hr)	762.0	871.6	714.1	994.9	828.9	939.3	748.7
Total Stops	27272	28059	29029	28023	27127	27618	25913
Fuel Used (gal)	453.8	487.6	456.0	507.2	478.0	495.5	463.6

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	10746	10793	10704	10748
Vehs Exited	10430	10359	10348	10379
Starting Vehs	597	530	645	603
Ending Vehs	913	964	1001	968
Travel Distance (mi)	7578	7668	7516	7581
Travel Time (hr)	1006.6	939.2	1135.8	1058.3
Total Delay (hr)	772.5	701.6	903.3	823.7
Total Stops	26554	27173	28126	27489
Fuel Used (gal)	463.6	447.9	490.0	474.3

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.	

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	2707	2820	2797	2856	2718	2686	2717
Vehs Exited	2533	2602	2673	2707	2606	2645	2637
Starting Vehs	519	604	605	634	647	690	618
Ending Vehs	693	822	729	783	759	731	698
Travel Distance (mi)	1883	1947	1931	2008	1901	1934	1928
Travel Time (hr)	153.3	177.4	165.6	172.3	174.0	186.2	165.2
Total Delay (hr)	94.8	117.1	105.6	110.1	115.1	126.2	105.6
Total Stops	5761	6278	5901	6667	5875	5999	5595
Fuel Used (gal)	92.1	101.0	97.8	101.2	99.1	102.2	96.6

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	2774	2691	2832	2761
Vehs Exited	2706	2588	2695	2638
Starting Vehs	597	530	645	603
Ending Vehs	665	633	782	725
Travel Distance (mi)	1950	1893	1980	1936
Travel Time (hr)	170.1	159.8	183.8	170.8
Total Delay (hr)	109.8	101.0	122.8	110.8
Total Stops	5856	5787	6703	6038
Fuel Used (gal)	98.9	94.2	102.9	98.6

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	2870	2882	2947	2832	2815	2881	2885
Vehs Exited	2691	2767	2656	2520	2690	2630	2719
Starting Vehs	693	822	729	783	759	731	698
Ending Vehs	872	937	1020	1095	884	982	864
Travel Distance (mi)	1977	2029	2015	1886	1969	1966	2031
Travel Time (hr)	207.3	253.1	228.9	257.1	249.8	255.0	217.0
Total Delay (hr)	146.2	190.0	166.3	199.0	188.7	194.3	154.2
Total Stops	6916	7569	7922	7550	6822	7346	6571
Fuel Used (gal)	107.9	120.1	113.4	115.6	116.7	118.6	111.8

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	2941	2890	2838	2879
Vehs Exited	2706	2584	2618	2654
Starting Vehs	665	633	782	725
Ending Vehs	900	939	1002	944
Travel Distance (mi)	2028	1983	1922	1981
Travel Time (hr)	227.9	219.8	237.5	235.3
Total Delay (hr)	165.2	158.5	177.9	174.0
Total Stops	7203	6950	7194	7200
Fuel Used (gal)	114.5	110.8	112.8	114.2

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	2623	2594	2548	2383	2614	2581	2724
Vehs Exited	2542	2597	2668	2461	2656	2555	2695
Starting Vehs	872	937	1020	1095	884	982	864
Ending Vehs	953	934	900	1017	842	1008	893
Travel Distance (mi)	1816	1867	1897	1706	1925	1848	1965
Travel Time (hr)	275.7	313.8	277.8	358.5	306.0	323.2	273.8
Total Delay (hr)	219.4	256.2	219.3	306.2	247.0	266.2	212.9
Total Stops	7062	7316	7540	6860	7183	7417	7155
Fuel Used (gal)	118.1	128.2	122.3	135.3	129.3	130.7	122.6

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	2458	2676	2461	2566
Vehs Exited	2508	2691	2468	2582
Starting Vehs	900	939	1002	944
Ending Vehs	850	924	995	924
Travel Distance (mi)	1783	1945	1741	1849
Travel Time (hr)	279.5	263.8	318.8	299.1
Total Delay (hr)	224.7	203.6	265.1	242.1
Total Stops	6588	7379	6948	7138
Fuel Used (gal)	118.6	119.7	126.6	125.1

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	2521	2510	2662	2489	2665	2416	2496
Vehs Exited	2453	2449	2601	2499	2512	2411	2487
Starting Vehs	953	934	900	1017	842	1008	893
Ending Vehs	1021	995	961	1007	995	1013	902
Travel Distance (mi)	1770	1795	1900	1803	1848	1663	1843
Travel Time (hr)	356.5	364.1	282.2	435.5	335.5	404.2	333.0
Total Delay (hr)	301.6	308.4	222.8	379.6	278.2	352.6	276.0
Total Stops	7533	6896	7666	6946	7247	6856	6592
Fuel Used (gal)	135.7	138.2	122.5	155.0	132.8	144.0	132.6

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	2573	2536	2573	2543
Vehs Exited	2510	2496	2567	2498
Starting Vehs	850	924	995	924
Ending Vehs	913	964	1001	968
Travel Distance (mi)	1817	1847	1873	1816
Travel Time (hr)	329.1	295.7	395.7	353.1
Total Delay (hr)	272.7	238.6	337.6	296.8
Total Stops	6907	7057	7281	7095
Fuel Used (gal)	131.6	123.2	147.7	136.3

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	13.3	51.2	5.1
Denied Del/Veh (s)	0.0	0.0	0.0	1.5	0.9	1.5	0.0	0.0	0.0	195.6	195.1	197.0
Total Delay (hr)	7.6	7.6	2.4	5.5	1.3	2.4	4.8	9.7	0.1	22.3	27.9	0.3
Total Del/Veh (s)	94.3	84.5	23.4	73.9	54.0	25.3	84.6	31.2	9.5	359.1	121.7	15.2
Stop Delay (hr)	7.0	6.7	2.2	5.0	1.2	1.9	4.4	7.3	0.0	21.7	23.7	0.1
Stop Del/Veh (s)	86.6	74.7	21.3	66.0	46.9	20.2	78.0	23.5	6.3	348.9	103.3	6.6

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

Movement	All
Denied Delay (hr)	69.9
Denied Del/Veh (s)	59.1
Total Delay (hr)	92.0
Total Del/Veh (s)	79.6
Stop Delay (hr)	81.2
Stop Del/Veh (s)	70.3

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	0.1	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	1.1	0.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.4	7.4	0.0	9.1	13.8	1.0	38.3	4.4	0.5	0.2	20.1	0.0
Total Del/Veh (s)	75.5	189.3	3.2	180.2	194.7	167.9	127.6	13.0	6.2	114.6	55.5	1.3
Stop Delay (hr)	2.3	7.1	0.0	8.5	12.8	1.0	32.4	2.2	0.1	0.2	17.1	0.0
Stop Del/Veh (s)	71.7	182.5	0.0	167.2	180.5	156.8	108.1	6.6	1.4	109.8	47.1	0.5

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)	97.2
Total Del/Veh (s)	73.2
Stop Delay (hr)	83.6
Stop Del/Veh (s)	62.9

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)	1.0	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.8	0.1	14.0	1.1	2.7	3.9	23.7
Total Del/Veh (s)	17.1	0.8	22.9	6.2	41.3	11.2	16.7
Stop Delay (hr)	1.4	0.0	8.0	0.1	2.1	1.1	12.6
Stop Del/Veh (s)	12.8	0.0	13.0	0.6	32.8	3.0	8.9

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)	0.3	0.0	0.0	3.0	0.5	33.5	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.8	0.2	0.3	137.1	156.8	148.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	7.2	0.6	0.2	4.2	0.7	23.3	0.0	50.3	0.8	12.7	4.1	0.0
Total Del/Veh (s)	62.1	48.2	16.4	198.1	210.5	112.2	164.4	100.5	19.3	72.7	15.5	1.7
Stop Delay (hr)	6.7	0.5	0.2	4.0	0.7	21.4	0.0	40.0	0.6	10.9	2.8	0.0
Stop Del/Veh (s)	57.5	44.9	15.5	190.8	202.8	103.0	152.2	79.9	13.7	62.8	10.7	1.0

4: Latrobe Road & Town Center Blvd Performance by movement

Movement	All
Denied Delay (hr)	37.3
Denied Del/Veh (s)	27.0
Total Delay (hr)	104.2
Total Del/Veh (s)	75.5
Stop Delay (hr)	87.9
Stop Del/Veh (s)	63.7

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)	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	22.0	13.5	1.8	9.8	5.0	1.4	3.0	19.4	4.7	20.3	7.3	0.6
Total Del/Veh (s)	171.3	80.1	69.8	70.0	47.8	23.1	107.0	54.1	38.4	288.9	42.6	9.1
Stop Delay (hr)	21.1	11.7	1.6	8.8	4.2	1.2	2.9	17.0	4.3	19.6	5.5	0.4
Stop Del/Veh (s)	164.5	69.3	63.6	62.9	39.8	20.3	103.1	47.5	35.3	279.0	32.0	6.7

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)	108.8
Total Del/Veh (s)	75.5
Stop Delay (hr)	98.4
Stop Del/Veh (s)	68.3

6: Windfield Way/Town Center Blvd & White Rock Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	15.7	0.9	21.5	0.0	0.0	38.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	177.3	150.4	171.0	0.2	0.2	54.6
Total Delay (hr)	0.6	14.4	1.2	2.7	2.7	4.2	0.2	4.9	0.3	0.3	31.7
Total Del/Veh (s)	82.5	64.5	37.4	60.6	18.3	55.5	51.6	47.0	46.6	16.5	47.5
Stop Delay (hr)	0.6	12.8	1.1	2.5	2.2	3.8	0.2	4.7	0.3	0.2	28.5
Stop Del/Veh (s)	77.5	57.5	32.2	56.4	14.7	51.1	45.8	44.7	42.7	15.9	42.8

7: 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	1.3	0.1	1.6
Denied Del/Veh (s)	0.0	0.0	0.0	0.5	0.4	0.2	0.1	0.1	0.1	26.3	26.0	24.0
Total Delay (hr)	4.8	6.0	0.1	1.1	15.6	2.6	1.3	0.1	0.1	5.2	0.2	4.4
Total Del/Veh (s)	67.0	22.2	10.8	94.1	70.8	52.3	70.9	28.2	10.4	102.9	73.7	63.8
Stop Delay (hr)	4.3	3.7	0.0	1.0	12.1	2.1	1.2	0.1	0.1	4.8	0.2	4.1
Stop Del/Veh (s)	60.2	13.8	5.5	81.5	55.2	41.5	68.4	25.2	10.4	96.2	65.4	58.4

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

Movement	All
Denied Delay (hr)	3.1
Denied Del/Veh (s)	4.0
Total Delay (hr)	41.6
Total Del/Veh (s)	52.9
Stop Delay (hr)	33.8
Stop Del/Veh (s)	43.1

8: Saratoga Way & Mammouth Way/Walgreens Dwy Performance by movement

Movement	EBR	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	6.4	0.0	0.0	0.0	0.0	0.0	6.4
Denied Del/Veh (s)	0.1	725.0	0.0	0.0	0.0	0.0	0.0	17.0
Total Delay (hr)	0.0	4.3	0.0	11.8	0.1	0.1	0.0	16.4
Total Del/Veh (s)	3.9	917.5	26.2	44.3	17.8	1.2	1.0	43.5
Stop Delay (hr)	0.0	4.3	0.0	9.7	0.1	0.0	0.0	14.1
Stop Del/Veh (s)	3.8	920.4	18.5	36.2	15.6	0.2	0.2	37.5

9: Saratoga Way & Project Main Dwy Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	3.6	24.5	0.0	0.0	0.0	0.0	28.1
Denied Del/Veh (s)	991.2	1051.2	0.0	0.0	0.0	0.0	76.0
Total Delay (hr)	0.2	6.2	5.7	0.0	0.9	0.0	13.0
Total Del/Veh (s)	114.9	679.8	21.8	10.2	35.0	0.8	36.6
Stop Delay (hr)	0.2	6.3	4.6	0.0	0.8	0.0	11.9
Stop Del/Veh (s)	115.0	683.0	17.8	9.1	33.5	0.3	33.6

10: Saratoga Way & Arrowhead Dr Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Delay (hr)	3.1	0.1	1.0	0.0	0.0	4.1
Denied Del/Veh (s)	103.1	147.7	4.3	0.0	0.0	13.8
Total Delay (hr)	3.7	0.1	2.7	0.0	0.0	6.5
Total Del/Veh (s)	123.4	158.3	11.8	0.2	0.1	21.5
Stop Delay (hr)	3.7	0.1	2.1	0.0	0.0	5.9
Stop Del/Veh (s)	124.1	160.8	9.0	0.0	0.0	19.5

11: Saratoga Way & Project 2nd Dwy Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.9	9.8	0.0	0.0	0.0	0.0	10.7
Denied Del/Veh (s)	458.1	560.2	0.0	0.0	0.0	0.0	32.1
Total Delay (hr)	0.4	4.0	3.7	0.0	0.3	0.0	8.4
Total Del/Veh (s)	277.9	332.2	14.8	4.7	17.1	0.2	25.7
Stop Delay (hr)	0.4	4.0	3.0	0.0	0.3	0.0	7.7
Stop Del/Veh (s)	281.0	335.6	11.9	4.2	15.6	0.0	23.5

12: Saratoga Way & Project R Out Dwy Performance by movement

Movement	WBR	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	11.5	0.0	0.0	0.1
Total Delay (hr)	0.3	3.8	0.0	4.1
Total Del/Veh (s)	205.3	14.8	0.1	13.8
Stop Delay (hr)	0.3	2.9	0.0	3.2
Stop Del/Veh (s)	206.1	11.3	0.0	10.8

Total Network Performance

Denied Delay (hr)	206.6
Denied Del/Veh (s)	65.8
Total Delay (hr)	617.1
Total Del/Veh (s)	195.8
Stop Delay (hr)	520.1
Stop Del/Veh (s)	165.0

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)	162	175	306	288	224	719	225	274	336	312	308	181
Average Queue (ft)	122	165	293	157	189	224	110	176	188	204	219	19
95th Queue (ft)	190	207	304	283	256	608	214	281	289	288	303	106
Link Distance (ft)			288	288		1441			468	468	468	
Upstream Blk Time (%)			51	1								
Queuing Penalty (veh)			277	5								
Storage Bay Dist (ft)	150	150			200		200	250				250
Storage Blk Time (%)	4	15	62		22	0	1	6	1		3	0
Queuing Penalty (veh)	15	53	201		95	0	5	24	1		1	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	1059	1050	1033	208
Average Queue (ft)	123	961	930	737	39
95th Queue (ft)	136	1250	1286	1293	123
Link Distance (ft)		1017	1017	1017	
Upstream Blk Time (%)		71	29	3	
Queuing Penalty (veh)		0	0	0	
Storage Bay Dist (ft)	100				200
Storage Blk Time (%)	67	22		3	0
Queuing Penalty (veh)	212	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)	284	370	154	175	1062	175	575	703	703	487	469	233
Average Queue (ft)	104	233	72	146	630	42	541	607	541	129	125	48
95th Queue (ft)	229	422	129	231	1197	141	651	782	882	339	289	149
Link Distance (ft)	1240	1240			1644			628	628	628	628	628
Upstream Blk Time (%)					0			27	18	0		
Queuing Penalty (veh)					0			150	103	0		
Storage Bay Dist (ft)			150	150		150	550					
Storage Blk Time (%)			1	1	67	0	15	36				
Queuing Penalty (veh)			2	4	133	0	90	215				

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)	203	326	311	297	94	468	446	377	219
Average Queue (ft)	13	283	227	193	5	230	188	83	12
95th Queue (ft)	99	355	334	314	43	527	488	301	99
Link Distance (ft)		229	229	229	229	468	468	468	468
Upstream Blk Time (%)	0	57	17	9	0	2	0	0	
Queuing Penalty (veh)	0	230	70	36	0	7	1	0	
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		62							
Queuing Penalty (veh)		4							

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)	202	127	200	584	550	515	258	125	191	430	215	144
Average Queue (ft)	71	40	185	354	167	130	29	56	42	137	28	23
95th Queue (ft)	170	123	236	681	467	344	153	107	130	316	139	95
Link Distance (ft)	1203			558	558	558	558			628	628	628
Upstream Blk Time (%)				5	0	0	0			0	0	0
Queuing Penalty (veh)				37	3	1	1			0	0	0
Storage Bay Dist (ft)		450	175					575	575			
Storage Blk Time (%)	1	0	31	7						0		
Queuing Penalty (veh)	2	0	189	40						0		

Intersection: 3: Latrobe Road & US 50 EB Ramps

Movement	SB
Directions Served	T
Maximum Queue (ft)	76
Average Queue (ft)	8
95th Queue (ft)	39
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)	289	302	219	141	125	570	551	82	864	866	856	776
Average Queue (ft)	164	175	30	42	106	515	489	4	637	629	624	325
95th Queue (ft)	260	271	123	102	158	624	617	46	1023	1019	1001	826
Link Distance (ft)			778	778		521	521		837	837	837	837
Upstream Blk Time (%)						67	18		9	6	5	1
Queuing Penalty (veh)						0	0		44	30	27	3
Storage Bay Dist (ft)	350	350			100			225				
Storage Blk Time (%)	0	1	0		21	69		62				
Queuing Penalty (veh)	0	0	0		83	63		1				

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)	318	334	502	203	184	36
Average Queue (ft)	218	235	197	79	72	6
95th Queue (ft)	325	342	456	196	149	21
Link Distance (ft)			558	558	558	558
Upstream Blk Time (%)			2	0		
Queuing Penalty (veh)			10	0		
Storage Bay Dist (ft)	325	325				
Storage Blk Time (%)	0	3	4			
Queuing Penalty (veh)	2	10	24			

Intersection: 5: Latrobe Road & White Rock Road

Movement	EB	EB	EB	EB	B40	B40	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	TR	T	T	L	L	T	T	R	L
Maximum Queue (ft)	337	350	436	422	584	558	187	200	333	316	214	278
Average Queue (ft)	293	330	387	295	361	113	173	189	240	139	96	128
95th Queue (ft)	398	407	488	478	769	431	213	220	394	247	181	269
Link Distance (ft)			355	355	548	548			312	312	312	
Upstream Blk Time (%)	0	14	49	17	27	1			7	0	0	0
Queuing Penalty (veh)	0	0	332	119	183	10			27	1	0	0
Storage Bay Dist (ft)	325	325					175	175				270
Storage Blk Time (%)	18	45	16				6	25	2			0
Queuing Penalty (veh)	60	155	91				10	47	10			0

Intersection: 5: Latrobe Road & White Rock Road

Movement	NB	NB	NB	NB	NB	B80	B80	B80	B25	B25	B25	SB
Directions Served	T	T	T	T	R	T	T	T	T	T	T	L
Maximum Queue (ft)	357	343	340	359	62	158	220	274	65	100	130	237
Average Queue (ft)	251	245	238	265	50	22	29	52	6	14	18	180
95th Queue (ft)	358	353	343	384	58	128	158	213	74	138	158	282
Link Distance (ft)	278	278	278	278		242	242	242	496	496	496	
Upstream Blk Time (%)	10	8	7	14		2	1	4	0	0	1	
Queuing Penalty (veh)	0	0	0	0		0	0	0	0	0	0	
Storage Bay Dist (ft)					25							225
Storage Blk Time (%)	11			26	45							16
Queuing Penalty (veh)	11			113	144							34

Intersection: 5: Latrobe Road & White Rock Road

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (ft)	249	635	408	268	90
Average Queue (ft)	192	338	154	93	17
95th Queue (ft)	303	778	293	188	59
Link Distance (ft)		837	837	837	
Upstream Blk Time (%)		5	0		
Queuing Penalty (veh)		20	0		
Storage Bay Dist (ft)	225				250
Storage Blk Time (%)	35	1		0	
Queuing Penalty (veh)	76	4		0	

Intersection: 6: Windfield Way/Town Center Blvd & White Rock Rd

Movement	EB	EB	EB	B28	B28	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	TR
Maximum Queue (ft)	220	420	421	1577	1575	207	243	254	180	270	103
Average Queue (ft)	44	325	269	506	470	118	105	115	164	238	39
95th Queue (ft)	162	480	461	1723	1701	203	217	218	231	300	84
Link Distance (ft)		329	329	2088	2088		548	548		234	299
Upstream Blk Time (%)		43	18	10	9					47	
Queuing Penalty (veh)		0	0	0	0					0	
Storage Bay Dist (ft)	195					190			155		
Storage Blk Time (%)	0	52				3	1		25	39	0
Queuing Penalty (veh)	0	16				9	2		118	122	0

Intersection: 7: 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	362	126	145	730	652	130	60	75	449
Average Queue (ft)	101	260	253	19	58	372	317	56	20	72	312
95th Queue (ft)	116	394	392	80	145	727	600	111	47	82	530
Link Distance (ft)		312	312			1505	1505	221	221		409
Upstream Blk Time (%)		6	4								31
Queuing Penalty (veh)		46	27								0
Storage Bay Dist (ft)	80			110	120					50	
Storage Blk Time (%)	51	11	21	0	0	52				66	21
Queuing Penalty (veh)	276	31	6	0	2	22				171	37

Intersection: 8: Saratoga Way & Mammouth Way/Walgreens Dwy

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	R	R	L	T	TR	L	T
Maximum Queue (ft)	30	140	68	303	323	44	10
Average Queue (ft)	5	102	4	279	237	11	0
95th Queue (ft)	24	158	34	308	381	37	8
Link Distance (ft)	134	119		271	271		288
Upstream Blk Time (%)		74		53	22		
Queuing Penalty (veh)		0		276	114		
Storage Bay Dist (ft)			100			100	
Storage Blk Time (%)				69			
Queuing Penalty (veh)				3			

Intersection: 9: Saratoga Way & Project Main Dwy

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	132	167	159	184	119	150	27
Average Queue (ft)	34	135	131	110	58	11	1
95th Queue (ft)	130	193	174	205	114	84	28
Link Distance (ft)	147	147	124	124		271	271
Upstream Blk Time (%)	17	80	50	22		0	0
Queuing Penalty (veh)	0	0	245	106		0	0
Storage Bay Dist (ft)					100		
Storage Blk Time (%)					6		
Queuing Penalty (veh)					7		

Intersection: 10: Saratoga Way & Arrowhead Dr

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	205	237	218
Average Queue (ft)	115	101	70
95th Queue (ft)	251	272	228
Link Distance (ft)	218	227	227
Upstream Blk Time (%)	28	10	3
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)		21	
Queuing Penalty (veh)		0	

Intersection: 11: Saratoga Way & Project 2nd Dwy

Movement	WB	NB	NB	SB	SB	SB
Directions Served	LR	T	TR	L	T	T
Maximum Queue (ft)	150	131	137	72	76	22
Average Queue (ft)	110	106	66	34	6	0
95th Queue (ft)	180	162	151	69	47	10
Link Distance (ft)	133	105	105		124	124
Upstream Blk Time (%)	65	42	10		0	0
Queuing Penalty (veh)	0	197	48		0	0
Storage Bay Dist (ft)				50		
Storage Blk Time (%)				7		
Queuing Penalty (veh)				6		

Intersection: 12: Saratoga Way & Project R Out Dwy

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	48	182	188
Average Queue (ft)	12	117	71
95th Queue (ft)	50	228	193
Link Distance (ft)	91	159	159
Upstream Blk Time (%)	4	22	4
Queuing Penalty (veh)	0	104	17
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Bend

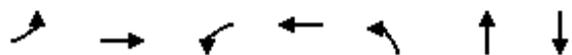
Movement	SB	SB	B80	B80
Directions Served	T	T	T	T
Maximum Queue (ft)	10	7	9	22
Average Queue (ft)	0	0	0	0
95th Queue (ft)	8	5	7	3
Link Distance (ft)	242	242	278	278
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 80: Bend

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	9	22
Average Queue (ft)	0	0
95th Queue (ft)	7	3
Link Distance (ft)	278	278
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 6015



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	33	1116	175	597	337	502	85
v/c Ratio	0.41	0.83	0.81	0.33	0.83	0.69	0.45
Control Delay	72.2	39.2	78.0	20.5	62.1	20.0	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.2	39.2	78.0	20.5	62.1	20.0	26.6
Queue Length 50th (ft)	24	365	124	134	229	157	19
Queue Length 95th (ft)	67	#690	#311	266	#511	269	65
Internal Link Dist (ft)		327		554		213	278
Turn Bay Length (ft)	195		190		155		
Base Capacity (vph)	105	1352	223	1786	413	929	518
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.83	0.78	0.33	0.82	0.54	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	900	127	161	549	0	310	21	441	0	25	53
Future Volume (veh/h)	30	900	127	161	549	0	310	21	441	0	25	53
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	978	138	175	597	0	337	23	479	0	27	58
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	1223	173	205	1749	0	366	25	515	2	48	103
Arrive On Green	0.02	0.39	0.39	0.12	0.49	0.00	0.21	0.34	0.34	0.00	0.09	0.09
Sat Flow, veh/h	1774	3115	439	1774	3632	0	1774	73	1521	1774	528	1134
Grp Volume(v), veh/h	33	555	561	175	597	0	337	0	502	0	0	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1785	1774	1770	0	1774	0	1594	1774	0	1663
Q Serve(g_s), s	2.0	29.3	29.3	10.2	10.8	0.0	19.6	0.0	32.0	0.0	0.0	5.2
Cycle Q Clear(g_c), s	2.0	29.3	29.3	10.2	10.8	0.0	19.6	0.0	32.0	0.0	0.0	5.2
Prop In Lane	1.00		0.25	1.00		0.00	1.00		0.95	1.00		0.68
Lane Grp Cap(c), veh/h	41	695	701	205	1749	0	366	0	539	2	0	150
V/C Ratio(X)	0.80	0.80	0.80	0.86	0.34	0.00	0.92	0.00	0.93	0.00	0.00	0.57
Avail Cap(c_a), veh/h	116	752	759	246	1797	0	455	0	859	51	0	521
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	51.2	28.3	28.3	45.7	16.2	0.0	41.0	0.0	33.7	0.0	0.0	45.9
Incr Delay (d2), s/veh	12.3	6.0	6.0	19.0	0.1	0.0	19.6	0.0	8.3	0.0	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	1.1	15.3	15.5	6.1	5.3	0.0	11.6	0.0	15.3	0.0	0.0	2.4
LnGrp Delay(d),s/veh	63.6	34.3	34.3	64.7	16.4	0.0	60.6	0.0	42.0	0.0	0.0	47.2
LnGrp LOS	E	C	C	E	B		E		D			D
Approach Vol, veh/h		1149			772			839			85	
Approach Delay, s/veh		35.1			27.3			49.4			47.2	
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	17.7	47.4	26.1	14.1	7.0	58.1	0.0	40.2				
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	12.2	31.3	21.6	7.2	4.0	12.8	0.0	34.0				
Green Ext Time (p_c), s	0.0	10.1	0.1	1.6	0.0	21.3	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			37.6									
HCM 2010 LOS			D									

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↗↘		↗	↗↘	
Traffic Vol, veh/h	0	0	6	0	0	32	4	1024	0	16	306	69
Future Vol, veh/h	0	0	6	0	0	32	4	1024	0	16	306	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	0	0	35	4	1113	0	17	333	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	204	-	-	557	408	0	0	1113	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	803	0	0	474	1147	-	-	623	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	803	-	-	474	1147	-	-	623	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.5			13.2			0			0.4		
HCM LOS	A			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	803	474	623	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.073	0.028	-	-
HCM Control Delay (s)	8.2	-	-	9.5	13.2	10.9	-	-
HCM Lane LOS	A	-	-	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Intersection

Int Delay, s/veh 2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	13	79	949	13	97	215
Future Vol, veh/h	13	79	949	13	97	215
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	86	1032	14	105	234

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1367	523	0	0	1046	0
Stage 1	1039	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	138	499	-	-	661	-
Stage 1	302	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	499	-	-	661	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	302	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	17.5		0		3.6
HCM LOS	C				

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	116	499	661	-
HCM Lane V/C Ratio	-	-	0.122	0.172	0.16	-
HCM Control Delay (s)	-	-	40.3	13.7	11.5	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0.6	0.6	-

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	107	1	0	805	158	13
Future Vol, veh/h	107	1	0	805	158	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	1	0	875	172	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	617	93	186	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	422	946	1386	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	422	946	1386	-	-	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1386	-	424	-	-
HCM Lane V/C Ratio	-	-	0.277	-	-
HCM Control Delay (s)	0	-	16.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Appendix G

Traffic Signal Warrant Worksheets

Saratoga Retail Phase 2

Scenario Report

Scenario: EX AM
Command: Default Command
Volume: EX AM
Geometry: EX
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Initial Vol, and ApproachDel.

Approach[eastbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=77]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=252]
FAIL - Total volume less than 650 for intersection with less than four approaches.

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=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=252]
FAIL - Total volume less than 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.

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.

Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

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:	1	0	0	1	0	0	0	0	1	0	0	0
Initial Vol:	0	68	0	3	25	74	76	0	1	0	0	5
Major Street Volume:							170					
Minor Approach Volume:							77					
Minor Approach Volume Threshold:	895											

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	61	0	0	12	14	0	0	0	0	0	0	0	0	0	0	0	0	7	0
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.6										

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.0]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=7]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=94]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	61	0		12	14	0		0	0	0		0	0	0		0	0	7	
Major Street Volume:					87															
Minor Approach Volume:					7															
Minor Approach Volume Threshold:	1424																			

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	
Initial Vol:	0	46	0		0	13	1		15	0	0		0	0	0		0	0	0	
ApproachDel:	xxxxxx				xxxxxx				8.9				xxxxxx							

Approach[eastbound][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=15]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=75]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	0	46	0	0	13	1	15	0	0	0	0	0
Major Street Volume:	60											
Minor Approach Volume:	15											
Minor Approach Volume Threshold:	1254											

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.

Saratoga Retail Phase 2

Scenario Report

Scenario: EX PM
Command: Default Command
Volume: EX PM
Geometry: EX
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

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:	1	0	0	1	0	0	0	0	1	0	0	1
Initial Vol:	2	41	0	16	84	69	87	3	4	0	4	32
ApproachDel:	xxxxxx			xxxxxx			11.1			8.9		

Approach[eastbound][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=94]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=342]

FAIL - Total volume less than 650 for intersection with less than four approaches.

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=36]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=342]

FAIL - Total volume less than 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.

Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

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:	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0
Initial Vol:	2	41		0		16	84		69		87	3		4		0	4		32	
Major Street Volume:					212															
Minor Approach Volume:					94															
Minor Approach Volume Threshold:					819															

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	30	6	33	55	0	0	0	0	0	0	0	6	0	13			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.9								

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.0]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=19]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=143]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	30	6			33	55	0			0	0	0			6	0			13
Major Street Volume:													124							
Minor Approach Volume:													19							
Minor Approach Volume Threshold:													1272							

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	0	0	0	1	0	0	1	0	0	0
Initial Vol:	0	21	0	0	50	11	15	0	1	0	0	0
ApproachDel:	xxxxxx			xxxxxx			9.0			xxxxxx		

Approach[eastbound][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=16]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=98]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	1	0	0	0	0	0	1	0	0	0
Initial Vol:	0	21	0	0	50	11	15	0	1	0	0	0
Major Street Volume:	82											
Minor Approach Volume:	16											
Minor Approach Volume Threshold:	1146											

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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Saratoga Retail Phase 2

Scenario Report

Scenario: EXPP AM
Command: Default Command
Volume: EXPP AM
Geometry: EX
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Initial Vol, and ApproachDel.

Approach[eastbound][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=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=581]
FAIL - Total volume less than 650 for intersection with less than four approaches.

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=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=581]
FAIL - Total volume less than 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.

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.

Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

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:	1	0	0	1	0	0	0	0	1	0	0	0
Initial Vol:	3	224	0	3	192	74	76	0	4	0	0	5
Major Street Volume:	496											
Minor Approach Volume:	80											
Minor Approach Volume Threshold:	526											

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	141	1		97	99	0		0	0	0		1	0		86		
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.4								

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.2]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=87]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=425]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	141		1		97	99		0		0	0		0		1	0		86	
Major Street Volume:													338							
Minor Approach Volume:													87							
Minor Approach Volume Threshold:	841																			

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	0	0	0	1	1	0	0	0	0	0
Initial Vol:	0	47	0	0	14	4	18	0	0	0	0	0
ApproachDel:	xxxxxx			xxxxxx			9.0			xxxxxx		

Approach[eastbound][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=18]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=83]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	1	0	0	0	1	0	0	0	0	0
Initial Vol:	0	47	0	0	14	4	18	0	0	0	0	0
Major Street Volume:							65					
Minor Approach Volume:							18					
Minor Approach Volume Threshold:	1227											

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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Saratoga Retail Phase 2

Scenario Report

Scenario: EXPP PM
Command: Default Command
Volume: EXPP PM
Geometry: EX
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Initial Vol, and ApproachDel.

Approach[eastbound][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=96]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=618]
FAIL - Total volume less than 650 for intersection with less than four approaches.

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=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=618]
FAIL - Total volume less than 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.

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

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:	1	0	0	1	0	0	0	0	1	0	0	0
Initial Vol:	4	174	0	16	223	69	87	3	6	0	4	32
Major Street Volume:							486					
Minor Approach Volume:							96					
Minor Approach Volume Threshold:	533											

SIGNAL WARRANT DISCLAIMER

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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	1	0	1	0	0	0	0	0	0	1	0	0	0	1
Initial Vol:	0	98	7		103	126	0		0	0	0		7	0	80			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.5								

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.2]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=87]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=421]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound									
Movement:	L	T	R	L	R	L	T	R	L	R	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	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1
Initial Vol:	0	98	7			103	126	0			0	0	0	0		7	0			80					
Major Street Volume:											334														
Minor Approach Volume:											87														
Minor Approach Volume Threshold:	846																								

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	0	0	0	1	0	0	1	0	0	0
Initial Vol:	0	23	0	0	51	13	17	0	1	0	0	0
ApproachDel:	xxxxxx			xxxxxx			9.0			xxxxxx		

Approach[eastbound][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=18]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=105]

FAIL - Total volume less than 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
Initial Vol:	0	23	0	0	51	13	17	0	1	0	0	0						
Major Street Volume:	87																	
Minor Approach Volume:	18																	
Minor Approach Volume Threshold:	1126																	

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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Saratoga Retail Phase 2

Scenario Report

Scenario: CUM AM
Command: Default Command
Volume: CUM AM
Geometry: CUM
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

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:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1
Initial Vol:	0	325	0			3	406	74			0	0	1			0	0			5
ApproachDel:	xxxxxx				xxxxxx				9.8				9.3							

Approach[eastbound][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=1]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=814]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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=5]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=814]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound									
Movement:	L	T	R	L	R	L	T	R	L	R	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign									
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
Initial Vol:	0	325	0			3	406	74			0	0	1			0	0				0	0			5
Major Street Volume:											808														
Minor Approach Volume:											5														
Minor Approach Volume Threshold:											358														

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	2	0	0	0	1	0	0
Initial Vol:	0	318	0	12	395	0	0	0	0	0	0	7
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.3		

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.0]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=7]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=732]

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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound									
Movement:	L	T	R	L	R	L	T	R	L	R	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	1	0	0	0	1	0	0	0	0	0
Initial Vol:	0	318	0			12	395	0			0	0	0	0		0	0	0	0		0	0	0	0	7
Major Street Volume:											725														
Minor Approach Volume:											7														
Minor Approach Volume Threshold:	512																								

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	2	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0
Initial Vol:	0	227	0	0	0	394	1	91	0	0	0	0	0	0	0	0	0	0	
ApproachDel:	xxxxxx				xxxxxx				14.7				xxxxxx						

Approach[eastbound][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=91]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=713]

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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	2	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0
Initial Vol:	0	227	0	0	394	1	91	0	0	0	0	0	0	0	0	0	0	0	0	
Major Street Volume:							622													
Minor Approach Volume:							91													
Minor Approach Volume Threshold:							448													

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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Saratoga Retail Phase 2

Scenario Report

Scenario: CUM PM
Command: Default Command
Volume: CUM PM
Geometry: CUM
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

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:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1
Initial Vol:	2	904	0			16	181	69			0	0	4			0	0	32		
ApproachDel:	xxxxxx				xxxxxx				9.0				12.3							

Approach[eastbound][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=4]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1208]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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=32]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1208]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more 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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound									
Movement:	L	T	R	L	R	L	T	R	L	R	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign									
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
Initial Vol:	2	904			0	16	181			69	0	0			4	0	0			32	0	0			32
Major Street Volume:											1172														
Minor Approach Volume:											32														
Minor Approach Volume Threshold:	230																								

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	1	0	0	0	1
Initial Vol:	0	889	9	33	152	0	0	0	0	0	6	0	17							
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.2										

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.1]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=23]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=1106]

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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

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	2	0	0	0	1	0	0
Initial Vol:	0	889	9	33	152	0	0	0	0	6	0	17
Major Street Volume:	1083											
Minor Approach Volume:	23											
Minor Approach Volume Threshold:	340											

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	2	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0
Initial Vol:	0	793	0		0	147	11		105	0	1		0	0	0				
ApproachDel:	xxxxxx				xxxxxx				16.0				xxxxxx						

Approach[eastbound][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=106]

SUCCEED - Approach volume greater than or equal to 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=1057]

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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	2	0	0	1	0	0	1	0	0	0
Initial Vol:	0	793	0	0	147	11	105	0	1	0	0	0
Major Street Volume:							951					
Minor Approach Volume:							106					
Minor Approach Volume Threshold:							302					

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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Saratoga Retail Phase 2

Scenario Report

Scenario: CUMPP AM
Command: Default Command
Volume: CUMPP AM
Geometry: CUM
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

Base Volume Alternative: Peak Hour Warrant NOT Met

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Lanes, Initial Vol, and ApproachDel.

Approach[eastbound][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=4]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1112]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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=5]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1112]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

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:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1
Initial Vol:	3	466		0	3	557		74	0	0		4	0	0		5				
Major Street Volume:													1103							
Minor Approach Volume:													5							
Minor Approach Volume Threshold:													251							

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	2	0	0	0	1	0	0
Initial Vol:	0	389	4	89	472	0	0	0	0	8	0	80
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.8		

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.3]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=88]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=1042]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

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	2	0	0	0	1	0	0
Initial Vol:	0	389	4	89	472	0	0	0	0	8	0	80
Major Street Volume:	954											
Minor Approach Volume:	88											
Minor Approach Volume Threshold:	394											

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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Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	2	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0
Initial Vol:	0	242	0		0	407	4		94	0	0		0	0	0				
ApproachDel:	xxxxxx				xxxxxx				15.3				xxxxxx						

Approach[eastbound][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=94]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=747]

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).

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Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	2	0	0	1	1	0	0	0	0	0
Initial Vol:	0	242	0	0	407	4	94	0	0	0	0	0
Major Street Volume:	653											
Minor Approach Volume:	94											
Minor Approach Volume Threshold:	432											

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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Saratoga Retail Phase 2

Scenario Report

Scenario: CUMPP PM
Command: Default Command
Volume: CUMPP PM
Geometry: CUM
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Saratoga Retail Phase 2

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 8 INT 8	No / No	??? / ???
# 9 INT 9	No / No	??? / ???
# 10 INT 10	No / No	??? / ???

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #8 INT 8

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:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1
Initial Vol:	4 1024 0				16 306 69				0 0 6				0 0 32							
ApproachDel:	xxxxxx				xxxxxx				9.5				13.1							

Approach[eastbound][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=6]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1457]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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=32]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4][total volume=1457]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more 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.

Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 INT 8

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:	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1
Initial Vol:	4 1024				0				16 306 69				0 0 6 0 0 32							
Major Street Volume:	1419																			
Minor Approach Volume:	32																			
Minor Approach Volume Threshold:	164																			

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.

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #9 INT 9

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	2	0	0	0	1	0	0
Initial Vol:	0	949	13	97	215	0	0	0	0	13	0	79
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			17.0		

Approach[westbound][lanes=2][control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.4]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=92]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=1366]

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.

Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 INT 9

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	2	0	0	0	1	0	0
Initial Vol:	0	949	13	97	215	0	0	0	0	13	0	79
Major Street Volume:							1274					
Minor Approach Volume:							92					
Minor Approach Volume Threshold:							270					

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.

Saratoga Retail Phase 2

Peak Hour Delay Signal Warrant Report

Intersection #10 INT 10

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:	1	0	2	0	0	1	0	0	1	0	0	0
Initial Vol:	0	805	0	0	158	13	107	0	1	0	0	0
ApproachDel:	xxxxxxx			xxxxxxx			16.5			xxxxxxx		

Approach[eastbound][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=108]

SUCCEED - Approach volume greater than or equal to 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=1084]

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.

Saratoga Retail Phase 2

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 INT 10

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:	1	0	2	0	0	1	0	0	1	0	0	0
Initial Vol:	0	805	0	0	158	13	107	0	1	0	0	0
Major Street Volume:							976					
Minor Approach Volume:							108					
Minor Approach Volume Threshold:	293											

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.

Appendix H

MRTD Calculations

MRTD Calculations for Cumulative (2035) plus Project Conditions

INT	Control	Movement	Peak Hour	Approach Volume	RT %	Major Street				Max Queue Calculations (ft)	Required Storage (ft)	Minimum Required Throat Depth (veh)
						Posted Speed (mph)	Lanes	Conflicting Volume for left-turns	Conflicting Volume for Right Turns			
All Access Secondary	SSSC	Minor-street shared Left/through/right (1)	AM	80	89%	45	2	2061	978	7.75	25	1
			PM	70	89%			2140	1247	7.69	25	1

Appendix I

Fast Food Restaurant Drive-Through 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

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com



August 31, 2017

Peter Navarra
3220 Northrop Avenue
Sacramento, CA 95864

Subject: The Habit Burger Restaurant Project Noise Assessment

Dear Mr. Navarra:

HELIX Environmental Planning, Inc. (HELIX) has performed a noise assessment for the operational impacts of the proposed The Habit Burger Restaurant Project (project). This letter summarizes modeling to assess the noise impacts associated with traffic generation; heating, cooling, and air conditioning (HVAC); and operation of the drive-through speaker system planned for the exterior of the project's The Habit Burger Grill component.

PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

The project is located on a 0.75-acre site in the community of El Dorado Hills in unincorporated El Dorado County (County). The site is bounded by El Dorado Hills Boulevard to the east and Saratoga Way to the west. The project involves the expansion of an existing retail center to include two restaurants and a retail building totaling 10,400 square feet (SF). The northern building would support a 2,800 SF The Habit Burger Grill restaurant with two outdoor patio areas. The Habit Burger Grill restaurant would have an associated drive-through lane with an exterior speaker setup for the taking of customer orders. The southern building would support a 4,900 SF Chick-fil-A restaurant with associated drive-through lanes and exterior speaker setup. A 2,700 SF retail building would be located between the two restaurants, along the project's western edge with an exterior covered patio. The project also proposes 66 additional parking spaces to serve the project. The site is currently vacant with no above-ground structures. The site is in a designated Community region, and is zoned Commercial Limited with a General Plan land use designation of C (Commercial).

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, including residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Noise receptors are individual locations that may be affected by noise. NSLUs in the project vicinity include multi-family residences to the west across Saratoga Way, with the nearest residences approximately 100 feet west of the project boundary.

TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are

expressed by the symbol L_{EQ} , with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours have an added 5 dBA weighting, and noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting.

NOISE MODELING SOFTWARE

Modeling of the exterior noise environment for this report was accomplished using Computer Aided Noise Abatement (CadnaA) version 2017 and Traffic Noise Model (TNM) version 2.5. CadnaA is a model-based computer program developed by *DataKustik* for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project-related information, such as noise source data, barriers, structures, and topography to create a detailed model for the prediction of outdoor noise impacts.

The TNM was released in February 2004 by the U.S. Department of Transportation (USDOT), and calculates the daytime average hourly L_{EQ} from three-dimensional model inputs and traffic data (Caltrans 2004).

For traffic noise, the one-hour L_{EQ} noise level is calculated utilizing peak-hour traffic; peak-hour traffic volumes can be estimated based on the assumption that 10 percent of the average daily traffic would occur during a peak hour. The model-calculated one-hour L_{EQ} noise output is the equivalent to the CNEL (Caltrans Technical Noise Supplement, November 2009).

NOISE STANDARDS

Table 6-1 of the County General Plan regulates the maximum allowable noise exposure from transportation noise sources to existing land uses. These noise standards include a maximum of 45 dBA L_{EQ} worst-case hour for residential interior spaces and 60 dBA CNEL for residential outdoor activity areas.

Table 6-2 of the General Plan regulates standards for operational noise exposure limits for NSLUs, not including transportation noise sources. These standards are depicted in Table 1, *Noise Level Performance Protection Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources*.

Because The Habit Burger Grill's speaker system would emit noise consisting primarily of speech, each of these standards would be lowered by 5 dBA. The drive-through order window would likely be in operation during nighttime hours (past 10 p.m.). Therefore, the drive-through speaker noise must be below the County's lowest limit of 40 dBA L_{EQ} during nighttime hours.

Table 1
NOISE LEVEL PERFORMANCE PROTECTION STANDARDS FOR NOISE SENSITIVE LAND USES AFFECTED BY NON-TRANSPORTATION SOURCES¹

Noise Level Descriptor	Daytime (7 a.m. to 7 p.m.)		Evening (7 p.m. to 10 p.m.)		Night (10 p.m. to 7 a.m.)	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{EQ} , dBA	55	50	50	45	45	40
Maximum level, dBA	70	60	60	55	55	50

Source: El Dorado County General Plan, Noise Element, Table 6-2

Each of the noise levels specified above shall be lowered by 5 dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards which are up to 5 dBA less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas, the exterior noise level standard shall be applied to the property line of the receiving property. In Rural areas the exterior noise level standard shall be applied at a point 100 feet away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1 of the Noise Element. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.

¹ For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission (CPUC) regulations. All other noise sources are subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, schools, hospitals, commercial land uses, other outdoor land uses, etc.

NOISE ANALYSIS AND IMPACTS

Drive-through Speaker

Existing and proposed features at the project site were included in the CadnaA noise model. These features would affect the emission, obstruction, and reflection of noise from the speaker. Because it is assumed that an idling automobile would be present when the speaker is operating, a single vehicle was included in the model directly opposite the speaker to account for any obstruction and reflection of sound that may occur. An existing 6-foot tall masonry wall is located along the eastern property boundary of the residential development and noise attenuation from this wall was taken into account in the noise modeling. To isolate noise generation from speaker noise, the model did not include traffic noise generated from vehicles along Saratoga Way. See Table 2, *Summary of Site Features Included in the Noise Model*.

Table 2
SUMMARY OF SITE FEATURES INCLUDED
IN THE NOISE MODEL

Description	Height ¹
Proposed The Habit Burger Grill Restaurant Building	20 feet
Residential Development Masonry Wall ²	6 feet
Drive-Through Menu Sign	5 feet
Automobile	4 feet

¹ Heights are estimated from visual inspection of the project area and from typical heights of objects/buildings.

² The masonry wall is located at the residential property line.

Specific planning for the proposed speaker system is not available at this point in the planning process. A speaker at a similar style restaurant was measured for this analysis (HELIX 2016). A sound level meter at approximately five feet from a typical speaker measured 86.4 dBA L_{EQ} averaged over one hour. The summed measurement time period data (20-second average) are shown in octave format in Table 3, *Octave Data of Measured Drive-through Speaker*.

Table 3
OCTAVE DATA OF MEASURED DRIVE-THROUGH SPEAKER¹

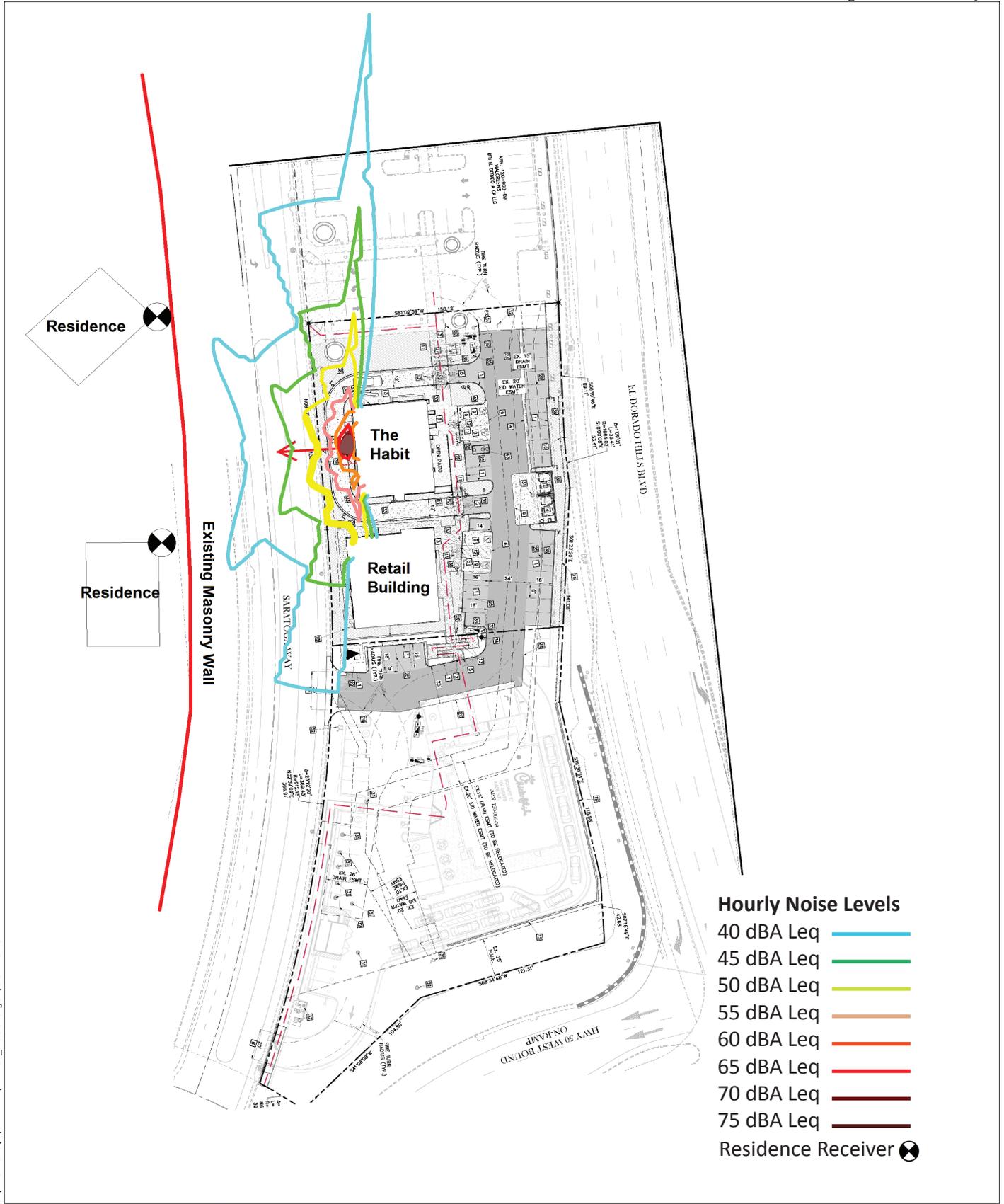
Octave Band Center Frequency (Hz)	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	dBA L _{EQ} *
Measured Sound Pressure	79.9	75.8	72.8	75.4	85.4	80.6	61.7	52.5	86.4

¹ Drive-through speaker measured at a distance of five feet from the source.

The measurement data in Table 3 depicts the dBA L_{EQ} during the continuous use of a speaker for one hour. For the purposes of this analysis, it is assumed that a speaker would be in use for approximately 30 minutes in each hour. The project’s Traffic Impact Study (Kimley Horn 2017) measured drive-through traffic at three nearby restaurants. The study counted a maximum of 37 drive-through customers in a lunchtime hour at a nearby McDonald’s restaurant. Assuming a one-minute customer order, the analysis for the proposed The Habit Burger Grill assumes a conservative 60 customers per hour, with the speaker in use for half of a single order.

Noise levels were modeled in CadnaA using the sample measurement described in the assumptions above, with the speaker located approximately 135 feet from the southern residence depicted on Figure 1, *Drive-through Speaker Noise Contours*. With these parameters, the drive-through speaker would emit noise levels of approximately 29 dBA L_{EQ} at the nearest residence west of The Habit Burger Grill. Noise levels would not exceed the County’s 40 dBA L_{EQ} nighttime limit for non-transportation noise sources consisting of human speech. This represents a conservative assumption due to the assumed operational use of the speaker (30 minutes of a given hour) during the peak hour, which is not likely to occur during nighttime hours.

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Hourly Noise Levels

- 40 dBA Leq —
- 45 dBA Leq —
- 50 dBA Leq —
- 55 dBA Leq —
- 60 dBA Leq —
- 65 dBA Leq —
- 70 dBA Leq —
- 75 dBA Leq —
- Residence Receiver

Source: HELIX 2017

Because the drive-through speakers at the project's Chick-fil-A restaurant are directed south toward the onramp to U.S. Route 50 at a greater distance from nearby NSLUs, noise levels were determined to not be significant, and specific measurements of its speaker system were not analyzed.

HVAC

Specific planning for future HVAC systems is not available at this point in project design. Analysis using a typical rooftop commercial HVAC unit was analyzed for the project buildings. The unit used in this analysis is a Carrier Centurion Model 50 PG03-12 with a sound rating of 80 dBA sound power. This unit produces noise levels of 45 dBA L_{EQ} at 50 feet, which would be reduced by at least 5 dBA by standard parapet walls installed on a building's roofline. A single 10-ton HVAC unit is commonly required for every 350 square feet of habitable space (ASHRAE Handbook 2012). Using this calculation, two units for the Chick-fil-A restaurant, one unit for The Habit Burger Grill restaurant building, and one unit for the third retail building would be required. Based on the site plan, the closest NSLU to the project is the southern residence depicted on Figure 1. This residence is approximately 120 feet from the retail building's single HVAC unit. A single unit mounted on a rooftop with a standard parapet would emit a noise level of 40 dBA L_{EQ} at 50 feet. Noise levels at the nearest NSLU would therefore be less than the County's 45 dBA L_{EQ} nighttime limit for non-transportation noise sources.

Project Traffic

Using trip generation and distribution from the Transportation Impact Study, project traffic was calculated using Transportation Noise Model (TNM) version 2.5 software. Noise levels generated by existing traffic on Saratoga Way, the nearest roadway to the affected NSLUs, are approximately 45 dBA CNEL at the nearest residence. Additional traffic to this roadway would increase noise levels to approximately 52 dBA CNEL. Although traffic noise for nearby NSLUs would increase perceptibly, noise levels would remain below the General Plan Noise Element standards of 60 dBA CNEL for residential exterior use areas. Assuming an approximately 15 dBA CNEL reduction from standard construction materials, interior spaces at the existing residences would remain below General Plan residential standards of 45 dBA CNEL.

Conclusions

Operation of the project including HVAC units, the use of a drive-through speaker at The Habit Burger Grill, and project traffic to nearby Saratoga Way would not generate noise levels above County standards.



Jason Runyan
Noise Analyst



Charles Terry
Principal Acoustician

Attachments:

Figure 1: Drive-through Speaker Noise Contours

REFERENCES

ASHRAE. 2012. ASHRAE Handbook – HVAC Systems and Equipment.

HELIX Environmental Planning, Inc. 2016 February 18. Noise Impact Analysis Tacos El Gavilan Drive-
Through Restaurant.

Kimley-Horn. 2017, May 3. Saratoga Retail Phase 2 El Dorado Hills, California.