APPENDIX N
TRAFFIC TECHNICAL REPORT

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LAW &
GREENSPAN
engineers

TRAFFIC IMPACT ANALYSIS

SDSU 2007 CAMPUS MASTER PLAN REVISION

San Diego, California
June 1, 2007

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TRAFFIC IMPACT ANALYSIS

SDSU 2007 CAMPUS MASTER PLAN REVISION

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1.0 INTRODUCTION

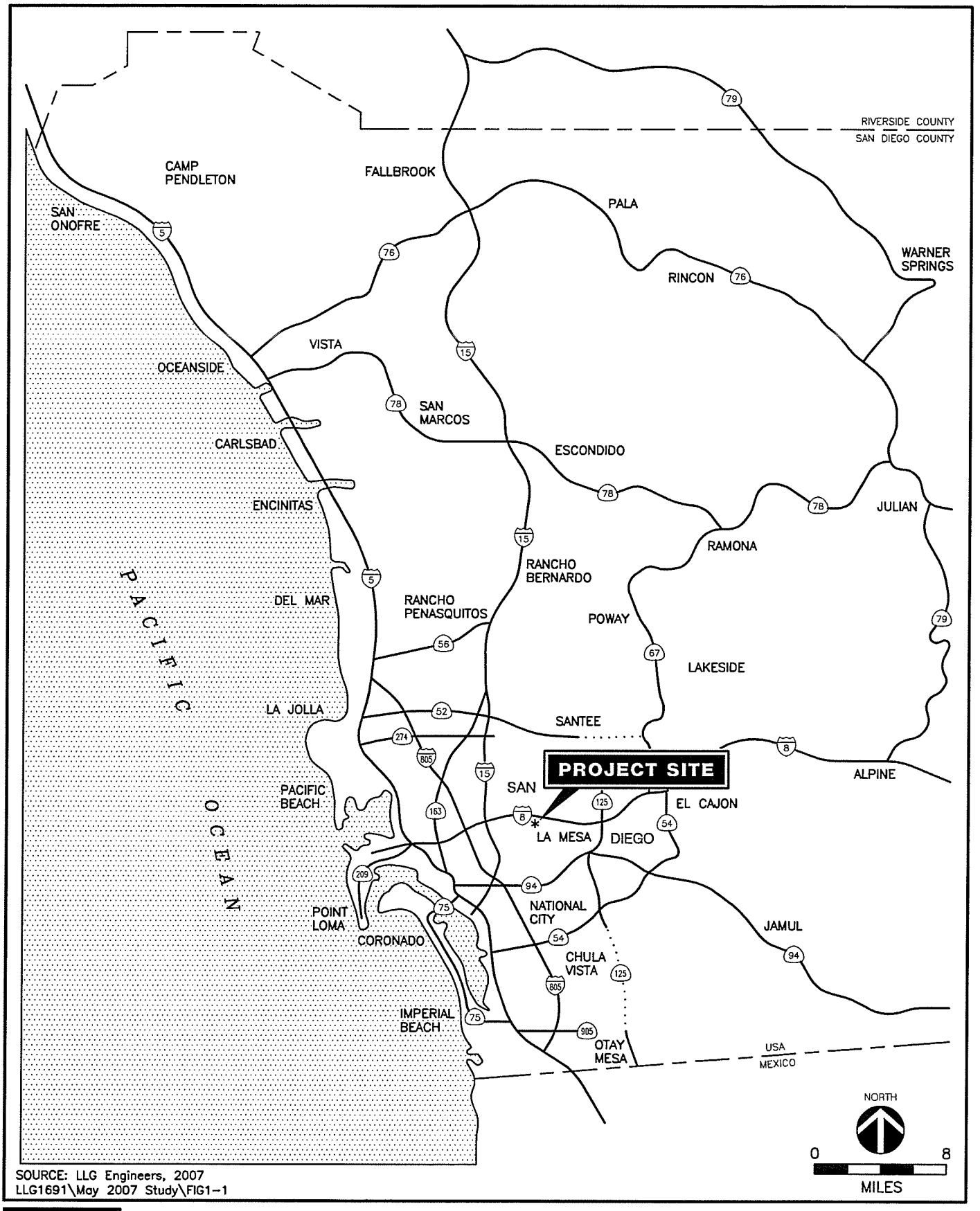
Linscott, Law & Greenspan, Engineers (LLG) has been retained to prepare a traffic study for the San Diego State University 2007 Campus Master Plan Revision (Campus Master Plan). The purpose of this study is to assess the traffic impacts to the local circulation system as a result of the proposed projects in both the near- and long-term scenarios.

The San Diego State University (SDSU) Campus is located south and north of Interstate 8, both east and west of College Avenue in the City of San Diego. ***Figure 1–1*** shows the project vicinity and ***Figure 1–2*** illustrates, in more detail, the site location.

The SDSU 2007 Campus Master Plan Revision Traffic Study considered three traffic generators, (1) 11,385 Student Headcount increase and related faculty/staff increase (2) Adobe Falls Faculty Staff Housing, and (3) Alvarado Hotel. In order to assess the impacts, intersection, street segment, ramp meter, and freeway mainline analyses were conducted for the near-term and long-term (horizon year) scenarios. The significant impacts were determined based on these analyses and the appropriate mitigation measures were recommended to reduce the impacts to below a level of significance.

The traffic analysis presented in this report includes the following:

- Project Description
- Analysis Approach and Methodology
- Existing Conditions Description
- Analysis of Existing Conditions
- Significance Criteria
- Cumulative Projects Traffic
- Project Traffic Generation, Distribution & Assignment
- Analysis of Near-Term Scenarios
- Analysis of Long-Term Scenarios
- Intersection Lane Vehicles (ILV) Analysis
- Congestion Management Program Compliance (CMP)
- Parking Analysis
- Adobe Falls Access & Other Issues
- College Community Redevelopment Project
- Significant Impacts and Mitigation Measures
- Post Mitigation Operations



SOURCE: LLG Engineers, 2007
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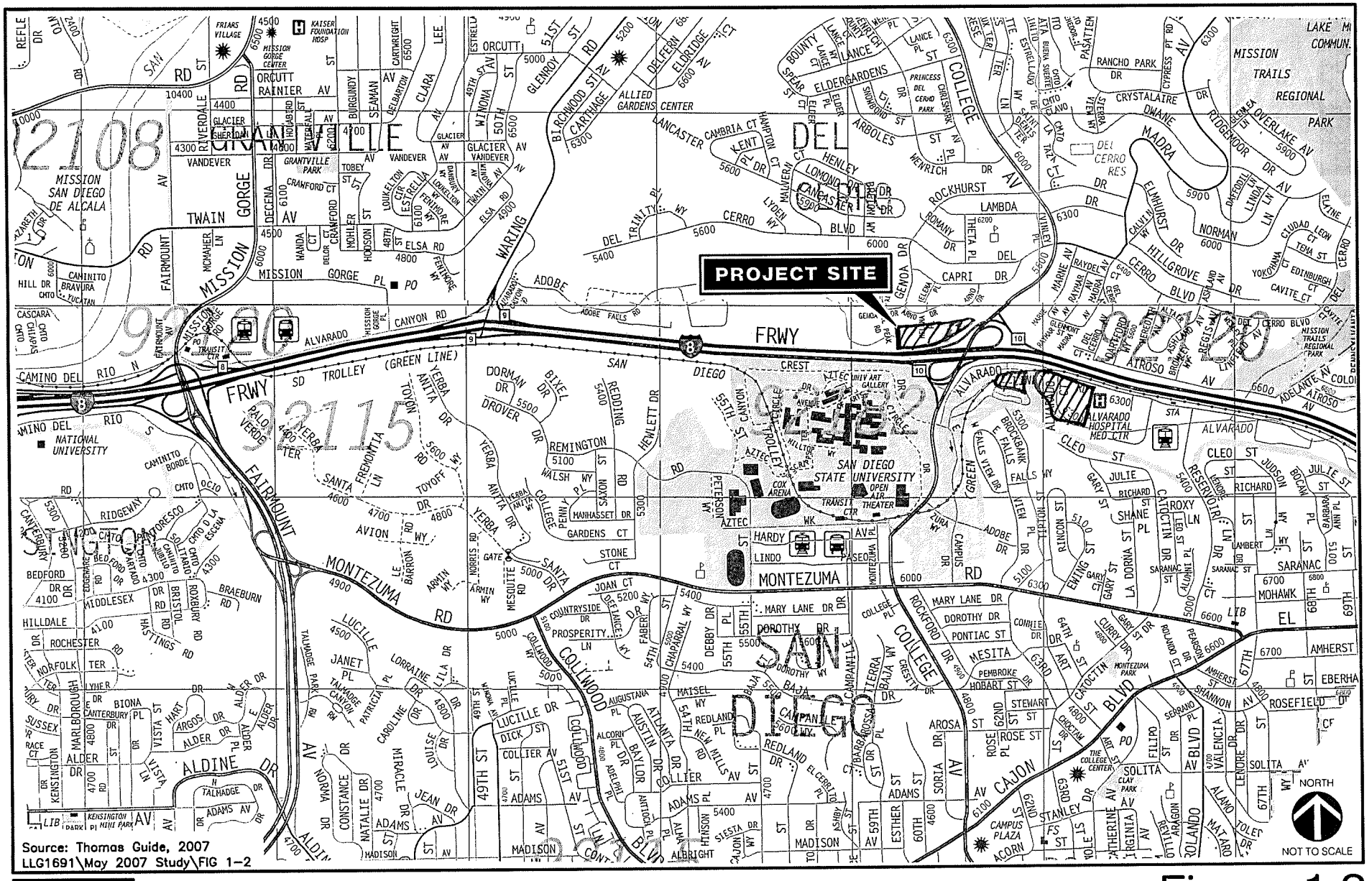
Figure 1-1

Vicinity Map



Source: Thomas Guide, 2007
LLG1691\May 2007 Study\FIG 1-2

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Figure 1-2

Project Area Map

2.0 PROJECT DESCRIPTION

2.1 Project Location

The San Diego State University Campus is located south and north of the Interstate 8 freeway, between the Waring Road and Lake Murray interchanges. The Campus is bisected on its north-south axis by College Avenue, and generally bound by the Del Cerro residential community to the north and Montezuma Road to the south.

2.2 Project Description

The proposed project is the adoption and implementation of the SDSU 2007 Campus Master Plan Revision. Under the proposed project, the current SDSU student headcount will be increased from 33,441 to 44,826 (25,000 Full Time Equivalent Students (FTE) to 35,000 FTE). SDSU anticipates reaching a student headcount of 44,826 in the 2024 / 2025 academic year.

The proposed project includes physical improvements to the SDSU Campus, which will occur at five distinct Campus locations, Adobe Falls Faculty/Staff Housing, Alvarado Campus (Lot D and the Alvarado Medical Center site), Student Union (Lot L), East Campus Residence Hall expansion (Lot G, U & C), and the Alvarado Hotel (Lot C). Three of these five sites are expected to impact the traffic volumes and circulation around the Campus, and are thus the focus of this study. A brief description of these three sites follows.

The proposed **Alvarado Campus** site is located in the northeast corner of the SDSU Campus **(Lot D)** and incorporates adjacent land and buildings owned by the SDSU Research Foundation. It is assumed that the student headcount increase from 33,441 to 44,826 in the 2024 / 2025 academic year would be partially accommodated in classroom facilities to be constructed on this site. The balance of the student increase would utilize classrooms on the existing campus. This project component consists of constructing new instruction and administrative buildings along with a 2,000 space parking structure. Much of the new construction would replace the existing research medical center and adjacent surface parking lots. Access to the Alvarado Campus site from the west would be via College Avenue to Alvarado Road or from the east via 70th Street to Alvarado Road.

The **Adobe Falls Faculty/Staff Housing** project component is located north of I-8 on undeveloped SDSU land. The site is bounded by Adobe Falls Drive to the north and the I-8 to the south. The proposed project is a new residential community intended to provide a minimum of 172 town homes and up to 348 town homes. Unit counts may vary, but the total traffic generation would remain within the amount analyzed in this study. The site would be divided into an upper and a lower portion each with its own access to and from Adobe Falls Road.

The **Alvarado Hotel** project component is located south and east of Alvarado Road on an existing parking lot (Lot C) east of the SDSU Main Campus. The proposed hotel would consist of approximately 120 rooms and studio suites, and facilities suitable for accommodating small conferences and business meetings.

3.0 STUDY AREA, ANALYSIS APPROACH AND METHODOLOGY

3.1 Study Area

In general, the specific study area for this project includes intersections and street segments to which more than 50 peak hour trips were added and in the case of freeway interchanges, to which more than 20 trips were added as set forth in the San Diego Traffic Engineering Council (SANTEC) Regional Guidelines (***Appendix A***). The following study area intersections and street segments are analyzed within this report:

Signalized Intersections

- Fairmount Avenue / I-8 WB Off Ramp / Camino del Rio N
- Fairmount Avenue / I-8 EB Off Ramp
- 55th Street / Remington Road
- 55th Street / Montezuma Road
- Campanile Drive / Montezuma Road
- College Avenue / Del Cerro Boulevard
- College Avenue / I-8 Westbound Ramps
- College Avenue / I-8 Eastbound Ramps
- College Avenue / Canyon Crest Drive
- College Avenue / Montezuma Road
- Reservoir Drive / Alvarado Road
- Lake Murray Boulevard / Parkway Drive
- 70th Street / Alvarado Road
- I-8 Eastbound Ramps / Alvarado Road

Unsignalized Intersections

- College Avenue / Zura Way
- Alvarado Court / Alvarado Road
- I-8 Westbound Ramps / Parkway Drive

Street Segments

- Alvarado Road: E. Campus Drive to Reservoir Drive
- Alvarado Road: Reservoir Road to 70th Street
- College Avenue: Del Cerro Boulevard to I-8 Eastbound Ramps
- College Avenue: I-8 Eastbound Ramps to Zura Way
- College Avenue: Zura Way to Montezuma Road
- College Avenue: South of Montezuma Road
- Montezuma Road: Fairmount Avenue to Collwood Boulevard
- Montezuma Road: Collwood Boulevard to 55th Street
- Montezuma Road: 55th Street to College Avenue

- Montezuma Road: College Avenue to E. Campus Drive
- Fairmount Avenue: Montezuma Road to I-8
- Adobe Falls Road: North of Genoa Drive
- Arno Drive: Helena Place to Capri Drive
- Capri Drive: East of Arno Drive
- Del Cerro Boulevard: Genoa Drive to Capri Drive
- Del Cerro Boulevard: Capri Drive to College Avenue
- Genoa Drive: Capri Drive to Arno Drive
- Lambda Drive: Rockhurst Drive to College Avenue
- Rockhurst Drive: Lambda Drive to College Avenue

Freeway Segments

- Interstate 8: Fairmount Avenue to Waring Road
- Interstate 8: Waring Road to College Avenue
- Interstate 8: College Avenue to Lake Murray Boulevard / 70th Street
- Interstate 8: Lake Murray Boulevard / 70th Street to Fletcher Parkway

3.2 Analysis Approach

This traffic analysis assesses the key intersections, street segments, ramp meters, and freeway segments in the project area. The study area intersections, street segments, ramp meters, and freeway segments are analyzed in the following scenarios to determine the potential impacts to the road network:

- Existing conditions
- Existing + total project
- Near-Term without project (Approx. Year 2012 conditions)
- Near-Term without project + near-term project
- Horizon year without project
- Horizon year with total project

3.2.1 *Near-Term Analysis*

Throughout this report, the Year 2012 is considered to be near-term. The volumes for the near-term without the project scenario are based on existing traffic volumes with an applied growth factor of one and a half percent per year and the addition of several near-term cumulative projects. The near-term project traffic volumes consist of only a portion of the buildout project (i.e. 2,094 student increase, 48 Adobe Falls Faculty/Staff housing units, and a 120-room hotel). The near-term project traffic volumes were then added to the near-term without project traffic volumes to determine the volumes for the near-term with project scenario.

3.2.2 *Horizon Year Analysis*

Throughout this report, the Year 2025 is considered to be long-term (horizon year). The volumes for the horizon year without project scenario were based upon the SANDAG Series 10 model. The

entire project traffic volumes were then added to the horizon year without project traffic volumes to determine the volumes for the horizon year with the project scenario.

3.3 Methodology

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

3.3.1 *Signalized intersections*

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 16 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro (*version 6) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). The delay values (represented in seconds) were qualified with a corresponding intersection level of service, and as shown in ***Table 3–1***.

TABLE 3–1
LEVEL OF SERVICE THRESHOLDS FOR SIGNALIZED INTERSECTIONS

Average Control Delay Per Vehicle (Seconds/Vehicle)	Level Of Service
0.0 ≤ 10.0	A
10.1 to 20.0	B
21.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.0	F

3.3.2 *Unsignalized intersections*

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 17 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro (*version 6) computer software. The delay values (represented in seconds), determined from the minor street left-turn delay were qualified with a corresponding intersection level of service, and as shown in ***Table 3–2***.

TABLE 3–2
LEVEL OF SERVICE THRESHOLDS FOR UNSIGNALIZED INTERSECTIONS

Average Control Delay Per Vehicle (Seconds/Vehicle)	Level Of Service
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
> 50.1	F

3.3.3 *Intersecting Lane Vehicles (ILV)*

Caltrans requires that State-owned intersections be analyzed using **Intersecting Lane Vehicles (ILV)** methodology as described in Chapter 400, Topic 406 of the Department Highway Design Manual. The ILV methodology is based on the concept that the capacity of intersecting lanes of traffic is 1,500 vehicles per hour. For the typical local street interchange there is usually a critical intersection of a ramp and the crossroads that establishes the capacity of the interchange. An intersection impact is considered significant using the ILV methodology if the project traffic causes the intersection to operate "over capacity". ***Table 3–3*** summarizes the ILV capacities.

TABLE 3–3
ILV CAPACITIES

UNDER (ILV/hr<1200)	NEAR (ILV/hr 1200 – 1500)	OVER (ILV/hr >1500)
Denotes stable flow with slight but acceptable delay. Occasional signal loading may develop. Free mid-block operations.	Denotes unstable flow with considerable delay. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs at some approaches.	Denotes stop and go operation with severe delay and heavy congestion[a]. Traffic volume is limited by maximum discharge rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Footnotes:

a. The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500 ILV/hr and the excess will be delayed in a queue.

3.4 Street Segments

Street segment analysis for non-residential roads are based upon the comparison of daily traffic volumes (ADTs) to the City of City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of City of San Diego's *Roadway Classification, Level of Service, and ADT Table* is attached in ***Appendix C***.

3.5 Residential Roadway Capacity

The significance of neighborhood intrusion impacts related to excess vehicle traffic or vehicle delay is usually determined on a case-by-case basis because each residential street has unique characteristics. The City of San Diego has a goal to maintain a level of service C or better on local residential streets. The ability to determine level of service (LOS) on a local street is very difficult for several reasons. Most importantly, each residential street is unique in character. Local streets vary considerably in terms of street width, multi-family versus single family, density, presence of schools, day care, senior housing, proximity to major streets and other factors. A level of traffic that may be perceived as too much on one residential street may be acceptable on another. Furthermore, a lane of traffic, carrying the traditional LOS C volume on an arterial street might be perceived by the residences to be too much traffic for most residential streets.

The proposed Adobe Falls Faculty/Staff housing portion of the proposed project will add traffic to several residential roadways within the surrounding community. In order to ascertain whether the roadways can accommodate the additional traffic, the design ADT of the residential roadways was estimated.

The following is a discussion of the rationale for utilizing the appropriate capacity for Del Cerro Boulevard and the balance of the residential streets.

A. Del Cerro Boulevard

A "Collector" designation was assigned to Del Cerro Boulevard. This classification was used for multiple reasons, including that the fronting uses on the roadway are both single-family residential and non-residential (e.g. schools and churches), which is indicative of a "Collector" roadway. (City of San Diego Street Design Manual, p 33). Furthermore, Del Cerro Boulevard has a raised median through a portion of the roadway; a raised median serves to increase the capacity of a roadway, by physically separating the two directions of travel, thereby reducing traffic conflicts.

The Navajo Community Plan, which contains the City's circulation element for the Navajo community, classifies Del Cerro Boulevard as a "2-Lane Collector Street". (Navajo Community Plan, Circulation Element, Page 93). The Community Plan defines a collector as distributing traffic from arterial thoroughfares, providing access to abutting property, and providing street crossings at grade, all characteristics of Del Cerro Boulevard. (Community Plan, p. 126). Although the Community Plan provides that collectors are rarely divided, the fact that Del Cerro Boulevard includes a raised median through a portion of the roadway is a characteristic of roadways with higher, rather than lower, capacities. The Community Plan also provides that the maximum desirable ADT for a two-lane collector street is 5,000 vehicles per day. (Circulation Element p. 89).

For these reasons, this traffic impact analysis utilized the lowest Collector capacity available in Table 2 of the City of San Diego Traffic Impact Study Manual for Del Cerro Boulevard -5,000 ADT, Level of Service C. (City of San Diego Traffic Impact Study Manual, p. 8.)

B. Balance of Residential Streets

All of the roadways are unclassified on the Navajo Community Plan other than Del Cerro Boulevard. For these unclassified roadways, several potential options were considered for a design capacity using the 2002 City of San Diego Street Design Manual. These include Low Volume Residential Street (700 ADT), Residential Local Street (1,500 ADT) and a two-lane Sub-Collector (2,200 ADT).

Based on an extensive field review and based on the discussion below, a Residential Local Street classification was utilized for Rockhurst Drive, Lambda Drive, Genoa Drive, Capri Drive, Arno Drive and Adobe Falls Road. These roadways do not have a specific classification assigned to them by the City; there is no document that states the functional classification of these roadways. Therefore, a custom analysis of these streets was conducted based on a field review of the roadways and the associated driving conditions on each to determine the appropriate classification.

Both the City of San Diego Street Design Manual and City Traffic Impact Study Manual provide various criteria that may be considered in determining the classification of a roadway. According to the City Street Design Manual, factors to be considered include the curb-to-curb width of the roadway and corresponding right of way, the design speed, the maximum grade, the minimum curve radii and the fronting land uses. According to the City Traffic Impact Study Manual, the classification assigned to a particular roadway considers the number of lanes, the curb-to-curb width and corresponding right-of-way width, and the fronting uses.

As explained below, based on an analysis of Del Cerro community roadways utilizing the criteria provided in the City Street Design Manual and Traffic Impact Manual, it was determined that the Del Cerro community roadways (other than Del Cerro Boulevard) closely fit the characteristics of both a Residential Local Street and a Sub-Collector.

The City of San Diego Street Design Manual does not classify roadways, i.e., it does not list specific roadways and assign to them a classification such as "Collector," "Sub-collector," etc. Instead, the Manual provides multiple design characteristics typically associated with each classification. Pages 19 & 31 of the Manual provide characteristics for Low Volume Residential Streets, Residential Local Streets and "Two-Lane Sub-Collectors" classifications. Guidance is given in terms of curb-to-curb width, right of way width, curve radii, and other factors.

Based on a field review of these roadways and a review of the Street Design Manual Criteria, it was determined that the roads have the characteristics of both a Residential Local Street and a two-lane Sub-Collector. To be conservative, a design ADT of 1,500 ADT was used for the unclassified roadways.

It should be noted that level of service is not applied to residential streets since the primary purpose is to serve abutting lots. However, in order to quantitatively assess the residential roads, a LOS C capacity was estimated. Appendix C-1 contains more detail concerning the analysis that was conducted to determine the most accurate capacity to utilize.

3.6 Ramp Meters

There are two methods currently accepted by Caltrans to calculate ramp delays and queues, a *fixed rate* approach and a uniform 15-*minute maximum delay* approach. The fixed rate approach is based solely on the specific time intervals at which the ramp meter is programmed to release traffic. The maximum delay approach is based on the assumption that any demand exceeding 15-minute will seek an alternative route or will choose to use the ramp during a less busy time period. Effectively, this approach considers a ramp demand to spread out spatially and temporally if the calculated meter delay is greater than 15-minutes.

The fixed rate approach generally tends to produce unrealistic queue lengths and delays since the approach does not take into account driver behavior such as "ramp shopping" or trip diversion. The results are theoretical and based on Caltrans' most restrictive meter rate. Because ramp meter rates are not constant, even within the peak hours, the analysis was conducted using the most restrictive meter rates. The meter rates were obtained from Caltrans. Field observations further validate variable ramp meter rates.

The following on-ramps currently exist in the study area:

- I-8 Eastbound On-Ramp / Southbound Fairmount Avenue - Metered during the PM peak hour
- I-8 Westbound On-Ramp / Northbound College Avenue – Metered during the AM peak hour
- I-8 Westbound On-Ramp / Southbound College Avenue – Metered during the AM peak hour
- I-8 Eastbound On-Ramp / Northbound College Avenue – Metered during the PM peak hour
- I-8 Eastbound On-Ramp / Eastbound Alvarado Road – Not metered
- I-8 Westbound On-Ramp / Northbound Lake Murray Boulevard/70th Street – Metered during the AM peak hour

The following on-ramps were analyzed since the project added greater than 20 peak hour trips:

- I-8 Eastbound On-Ramp / Southbound Fairmount Avenue - PM peak hour
- I-8 Westbound On-Ramp / Northbound College Avenue – AM peak hour
- I-8 Westbound On-Ramp / Southbound College Avenue – AM peak hour
- I-8 Eastbound On-Ramp / Northbound College Avenue – PM peak hour

Other on-ramps in the nearby area were not analyzed since the project adds less than 20 peak hour trips to these locations.

Appendix D contains a copy of the existing ramp meter rates obtained from Caltrans.

3.7 Freeway Mainline

Freeway segments were analyzed during the AM and PM peak hours based on the methodologies developed by CALTRANS District 11. The assessment of key freeway segments is necessary to satisfy the requirement of the CMP, as outlined later in the report. Freeway segment LOS is based on the volume to capacity ratio on the freeway.

The analysis of freeway segment LOS is based on the procedure developed by Caltrans District 11 based on methods described in the Highway Capacity Manual. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). The procedure for calculating freeway LOS involves the estimation of volume to capacity (V/C) ratio using the following equation:

$$V/C = \frac{((AADT \times Peak\ Hour\ Percent \times Directional\ Factor)/(Truck\ Terrain\ Factor))}{Lane\ Capacity}$$

AADT = Average Annual Daily Traffic
Peak Hour Percent = Percentage of ADT occurring during the peak hour.
Directional Factor = Percentage of peak hour traffic occurring in peak direction.
Truck Factor = Truck/terrain factor to represent influence of heavy vehicles & grades.
Capacity = 2,000 vehicles/lane/hour/lane for mainline, and 1,200 for auxiliary lanes.

The resulting V/C is then compared to accepted ranges of V/C values corresponding to the various Levels of Service for each facility classification, as shown in ***Table 3–4***. The corresponding Level of Service represents an approximation of existing or anticipated future freeway operating condition in the peak direction of travel during the peak hour.

Appendix D contains the relevant "K" and "D" factors listed in the Caltrans *Peak Hour Volume Data* and the truck factors from the *2005 Annual Average Daily Truck Traffic on the California State Highway System* utilized in the analysis.

The "D" factor is the percentage of traffic in the peak direction during the peak hour. Values are derived by dividing the measured peak hour volume (PHV) by the sum of both directions of travel during the peak hour.

The "K" factor is the percentage of the Annual Average Daily Traffic (ADDT) in both directions during the peak hour. Values are derived by dividing the measured 2-way peak hour volume (PHV) in the peak direction by the AADT.

TABLE 3–4
CALTRANS DISTRICT 11
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
USED FOR FREEWAYS, EXPRESSWAYS AND CONVENTIONAL HIGHWAYS			
A	<0.41	None	Free flow
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
USED FOR FREEWAYS AND EXPRESSWAYS			
F(0)	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(l)	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
F(2)	1.36-1.45	Very Severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	>1.46	Extremely Severe 3+ hours of delay	Gridlock

Source: Caltrans District 11
Notes:
LOS = Level of Service
V/C = Volume/Capacity

4.0 EXISTING CONDITIONS

4.1 Existing Street Network

The principal roadways in the project study area are described briefly below. Roadway classifications were determined from a review of the College Area and Navajo Community Plans (an excerpt of which can be found in ***Appendix E***), field observations, and information obtained from Caltrans. ***Figure 4–1*** illustrates the existing transportation conditions.

Interstate 8 (I-8) is an interstate freeway operated by CALTRANS. I-8 is an east-west facility spanning San Diego and Imperial Counties. This facility provides access to the Fairmount Avenue, Waring Road, College Avenue and Lake Murray / 70th Street interchanges within the project vicinity.

Alvarado Road is classified as a Collector road on the College Area Community Plan, Existing Street Classifications figure. Alvarado Road is an east-west, two-lane, undivided roadway running parallel with Interstate 8. Parking is generally prohibited between East Campus Drive and Reservoir Drive. The posted speed limit is 35mph and a bike lane is provided within the project vicinity.

Alvarado Court is an unclassified road. Alvarado Court is a two-lane undivided roadway south of Alvarado Road.

Campanile Drive is classified as a Collector road according to the College Area Community Plan. Campanile Drive is currently constructed as a two-lane, divided roadway with a northerly termination at the SDSU trolley station. The speed limit is not posted and parking is intermittently limited.

Canyon Crest Drive / East Campus Way is an unclassified roadway. Canyon Crest Drive / East Campus Way is a two or three-lane, undivided roadway west of College Avenue and a two-lane, one-way (southbound) roadway east of College Avenue and north of Zura Way. East Campus Drive continues south of Zura Way as a two-lane undivided bidirectional roadway. Parking is prohibited and the speed limit is 25mph.

College Avenue is classified as a Major Arterial according to the College Area Community Plan, Existing Street Classifications and Traffic Volumes. College Avenue is currently constructed as a four-lane, intermittently divided roadway within the project vicinity. The speed limit is generally 35 mph, parking is prohibited and infrequent bus stops are provided.

Montezuma Road is classified as a Major Arterial within the project vicinity according to the College Area Community Plan, Existing Street Classifications and Traffic Volumes. Montezuma Road is a four-lane, divided roadway south of the SDSU Campus. The posted speed limit is 35mph, bus stops are provided, and curbside parking is permitted along the roadway.

Reservoir Drive is classified as a Collector in the College Area Community Plan, Existing Street Classifications and Traffic Volumes. Reservoir Drive is a two-lane, undivided north-south road

terminating at Alvarado Road east of the SDSU Campus. This roadway provides access from Montezuma Road to Alvarado Road.

Zura Way is an unclassified roadway. Zura Way currently provides one lane of undivided travel in a generally east-west direction. This roadway connects College Avenue with East Campus Drive via a series of parking lots. The Zura Way / College Avenue intersection is an unsignalized two-way stop controlled intersection; Left turns onto College Avenue are prohibited.

55th Street is classified as a Collector according to the College Area Community Plan, Existing Street Classifications and Traffic Volumes. 55th Street is currently constructed as a north-south, four-lane undivided roadway to the west of the SDSU Campus. Parking is not permitted north of Montezuma Road in the vicinity of the Campus and the posted speed limit is 25mph.

Adobe Falls Road is a two-lane unclassified roadway with residences abutting the street within the Del Cerro Community. Curbside parking is available, however, no bike lanes or bus stops are provided. Outside the Del Cerro community, Adobe Falls Road also extends from Waring Road to a termination point at an existing apartment complex. This road serves restaurants and hotels and is generally 48 feet wide. The speed limit is 25mph and curbside parking is generally allowed.

Arno Road is a two-lane unclassified roadway with residences abutting the street. Curbside parking is available, however, no bike lanes or bus stops are provided.

Capri Drive is a two-lane unclassified roadway with residences abutting the street. Curbside parking is available, however, no bike lanes or bus stops are provided.

Del Cerro Boulevard is a classified as a Collector on the Navajo Community Plan and provides one lane of travel in each direction divided by a median. Residential units, a church, and a school front Del Cerro Boulevard. Curbside parking is limited, bus stops are demarcated and bike lanes are not provided.

Genoa Drive is a two-lane unclassified roadway with residences abutting the street. Curbside parking is available, however, no bike lanes or bus stops are provided.

Lambda Drive is a two-lane unclassified roadway with residences abutting the street. Curbside parking is available, however, no bike lanes or bus stops are provided.

Remington Road is classified as a Collector in the College Area Community Plan, Existing Street Classifications and Traffic Volumes. Remington Road currently provides one travel lane in each direction. Curbside parking is prohibited within the project vicinity.

Rockhurst Drive is a two-lane unclassified roadway with residences abutting the street. Curbside parking is available, however, no bike lanes or bus stops are provided.

4.2 Existing Traffic Volumes

The existing AM and PM peak hour traffic volumes were conducted at the study area intersections in September 2006 while all local schools were in session. The existing average daily traffic volumes (ADTs) were conducted at the study area roadway segments in September 2006 and February 2007 with the exception of Fairmount Avenue. ADT volumes along Fairmount Avenue were obtained from available traffic counts at the City of San Diego.

Tables 4–1 and ***4–2*** summarize the most recent available ADTs. ***Appendix F*** contains the manual existing traffic volume count sheets.

TABLE 4–1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT[a]	Date	Source
Alvarado Road			
E. Campus Dr to Reservoir Dr	8,300	Sep. 2006	LLG[b]
Reservoir Dr to 70th St	9,890	Sep. 2006	LLG
College Avenue			
Del Cerro Blvd to I-8 EB Ramps	29,530	Sep. 2006	LLG
I-8 EB Ramps to Zura Way	39,400	Sep. 2006	LLG
Zura Way to Montezuma Rd	33,950	Sep. 2006	LLG
South of Montezuma Rd	30,220	Sep. 2006	LLG
Montezuma Road			
Fairmount Ave to Collwood Blvd	49,820	Sep. 2006	LLG
Collwood Blvd to 55th St	29,610	Sep. 2006	LLG
55th St to College Ave	24,460	Sep. 2006	LLG
College Ave to E. Campus Dr	21,550	Feb. 2007	LLG
Fairmount Avenue			
Montezuma Rd to I-8	80,800	2006[c]	City of San Diego

Footnotes:

a. Average Daily Traffic Volumes (Rounded to nearest 10th)

b. Linscott, Law & Greenspan Engineers

c. Year 2005 count with 2% growth factor per year.

TABLE 4–2
EXISTING RESIDENTIAL STREET TRAFFIC VOLUMES

Street Segment	ADT[a]	Date	Source
Adobe Falls Rd/Mill Peak Road			
North of Genoa Dr	410	Sep. 2006	LLG[b]
Arno Drive			
Helena Pl to Capri Dr	370	Sep. 2006	LLG
Capri Drive			
East of Arno Dr	720	Sep. 2006	LLG
Del Cerro Boulevard			
Genoa Dr to Capri Dr	3,640	Sep. 2006	LLG
Capri Dr to College Ave	5,170	Sep. 2006	LLG
Genoa Drive			
Capri Dr to Arno Pl	400	Sep. 2006	LLG
Lambda Drive			
Rockhurst Dr to College Ave	600	Sep. 2006	LLG
Rockhurst Drive			
Lambda Dr to College Ave	500	Sep. 2006	LLG

Footnotes:

a. Average Daily Traffic Volumes (Rounded to nearest 10th)

b. Linscott, Law & Greenspan Engineers

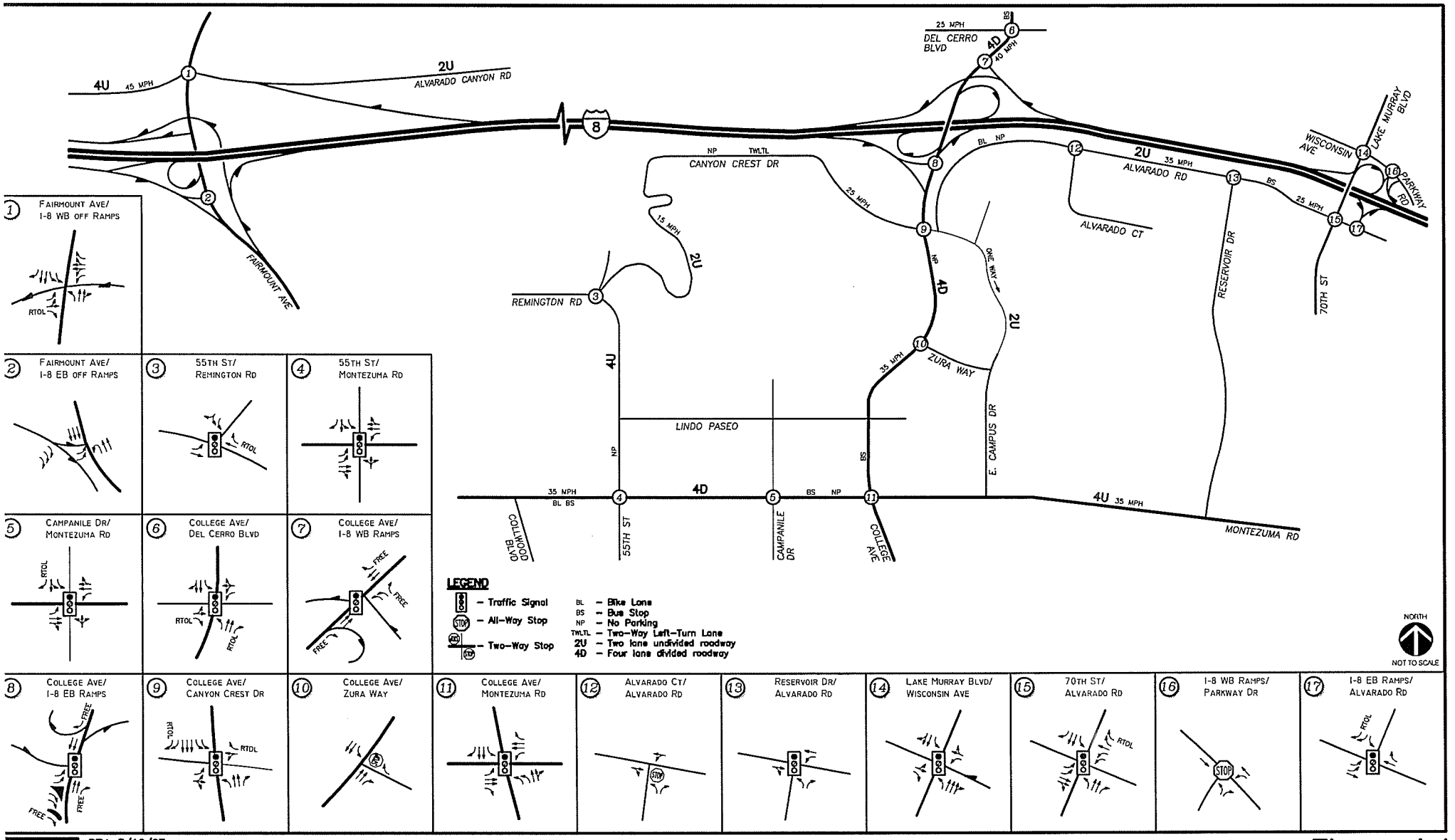

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Figure 4-1

Existing Conditions Diagram

SDSU 2007 CAMPUS MASTER PLAN REVISION

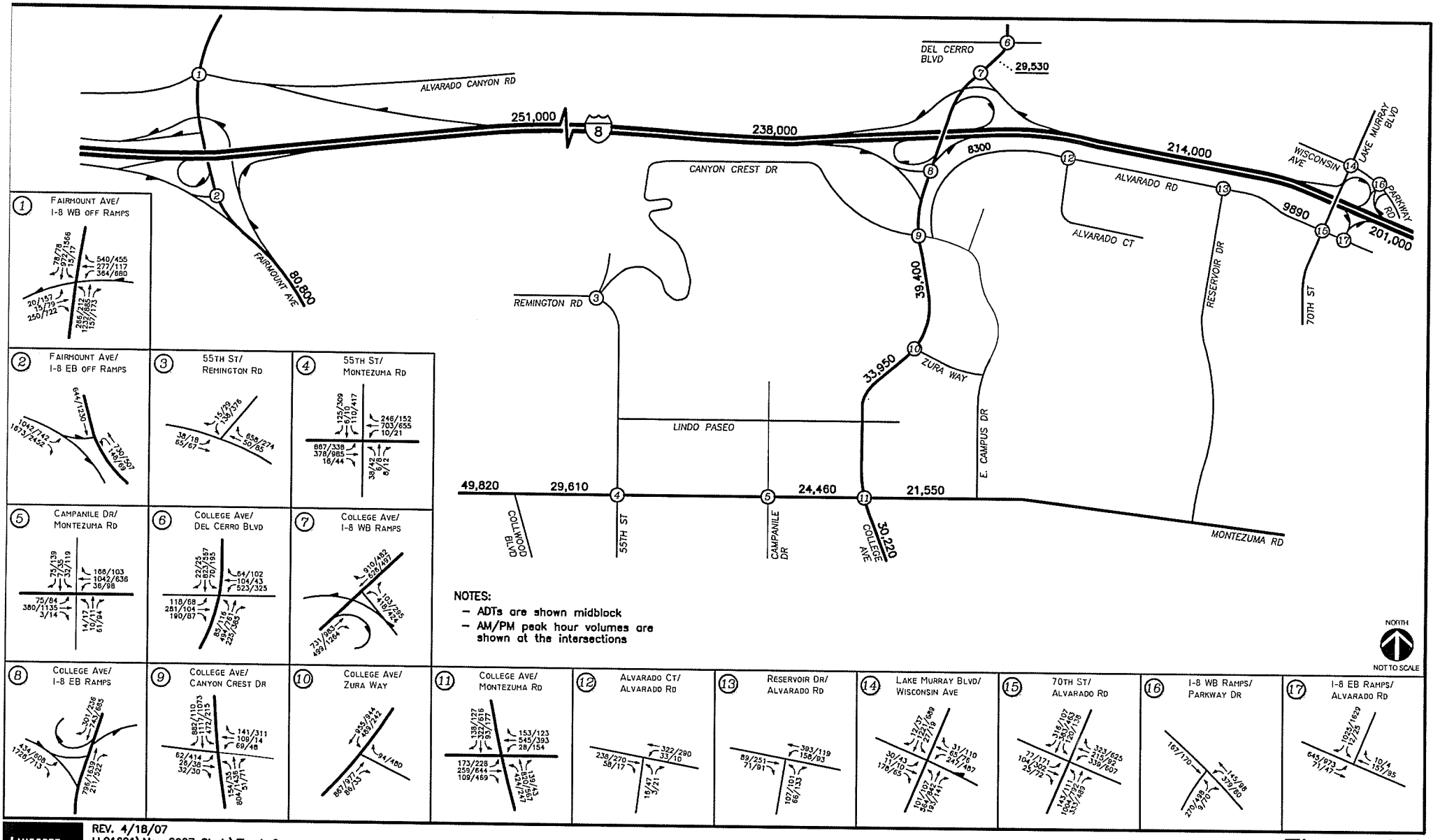

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Figure 4-2

Existing Traffic Volumes AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

5.0 ANALYSIS OF EXISTING CONDITIONS

The analysis of existing conditions includes the assessment of the study area intersections, street segments, ramp meters, and freeways using the methodologies described in Section 3.0. ***Appendix G*** contains the existing conditions analysis worksheets.

5.1 Peak Hour Intersection Levels of Service

Table 5–1 summarizes the peak hour intersection operations for existing conditions. As seen in *Table 5–1*, all key signalized intersections are calculated to currently operate at LOS D or better except the following:

- Fairmount Avenue / I-8 WB Off-Ramp / Camino del Rio North (LOS F during the PM peak hour)
- Fairmount Avenue / I-8 EB Off-Ramp (LOS F during the PM peak hour)
- 55th Street / Montezuma Avenue (LOS E during the AM peak hour)
- College Avenue / Del Cerro Boulevard (LOS E during the AM peak hour)
- College Avenue / Canyon Crest Drive (LOS E during the AM and PM peak hours)

The unsignalized intersections in the project vicinity are calculated to operate at LOS D or better except for the following:

- Zura Way / College Avenue (LOS F for left-turn onto Zura Way during the PM peak hour)

TABLE 5–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
1. Fairmount Ave / I-8 WB Off Ramp / Camino del Rio N	Signal	AM PM	47.8 154.8	D F
2. Fairmount Ave / I-8 EB Off Ramp	Signal	AM PM	37.9 99.8	D F
3. 55th Street / Remington Rd	Signal	AM PM	8.9 8.3	A A
4. 55th Street / Montezuma Rd	Signal	AM PM	73.4 33.7	E C
5. Campanile Dr / Montezuma Rd	Signal	AM PM	31.8 32.2	C C

TABLE 5–1 (CONTINUED)
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
6. College Ave / Del Cerro Blvd	Signal	AM PM	68.1 40.6	E D
7. College Ave / I-8 WB Ramps	Signal	AM PM	8.9 9.0	A A
8. College Ave / I-8 EB Ramps	Signal	AM PM	40.1 15.3	D B
9. College Ave / Canyon Crest Dr	Signal	AM PM	64.1 62.3	E E
10. College Ave / Zura Way	TWSC[c]	AM PM	14.3 124.2	B F
11. College Ave / Montezuma Rd	Signal	AM PM	38.9 36.5	D D
12. Alvarado Ct / Alvarado Rd	TWSC[c]	AM PM	14.4 13.4	B B
13. Resevoir Dr / Alvarado Rd	Signal	AM PM	17.1 20.8	B C
14. Lake Murray Blvd / Parkway Dr	Signal	AM PM	30.8 32.5	C C
15. 70th Street / Alvarado Rd	Signal	AM PM	30.1 39.3	C D
16. I-8 WB Ramps /Parkway Dr	AWSC[d]	AM PM	18.3 31.1	C D
17. I-8 EB Ramps / Alvarado Rd	Signal	AM PM	19.4 16.9	B B

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street approach delay is reported.

d. AWSC – All-Way Stop Controlled intersection.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

5.2 Daily Street Segment Levels of Service

Tables 5–2 and ***5–3*** summarizes the existing segment operations. As seen in *Tables 5–2* and *5–3*, all segments in the study area are calculated to operate at LOS D or better except the following:

- Alvarado Road between Reservoir Drive to 70th Street (LOS E)
- College Avenue between I-8 Eastbound Ramps and Zura Way (LOS E)
- College Avenue south of Montezuma Road (LOS F)
- Montezuma Road between Fairmount Avenue to Collwood Boulevard (LOS F)
- Fairmount Avenue between Montezuma Road and I-8 (LOS F)

TABLE 5–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	ADT [b]	LOS	V/C
Alvarado Road				
E. Campus Dr to Reservoir Dr	10,000	8,300	D	0.83
Reservoir Dr to 70th St	10,000	9,890	E	0.99
College Avenue				
Del Cerro Blvd to I-8 EB Ramps	40,000	29,530	C	0.74
I-8 EB Ramps to Zura Way	40,000	39,400	E	0.99
Zura Way to Montezuma Rd	40,000	33,950	D	0.85
South of Montezuma Rd	30,000	30,220	F	1.01
Montezuma Road				
Fairmount Ave to Collwood Blvd	40,000	49,820	F	1.25
Collwood Blvd to 55th St	40,000	29,610	C	0.74
55th St to College Ave	30,000	24,460	D	0.82
College Ave to E. Campus Dr	30,000	21,550	D	0.72
Fairmount Avenue				
Montezuma Rd to I-8	60,000	80,800	F	1.347

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table.

b. Average Daily Traffic Volumes.

TABLE 5–3
EXISTING RESIDENTIAL STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS C) [a]	ADT [b]	LOS
Adobe Falls Rd/Mill Peak Road			
North of Genoa Dr	1,500	410	C+
Arno Drive			
Helena Pl to Capri Dr	1,500	370	C+
Capri Drive			
East of Arno Dr	1,500	720	C+
Del Cerro Boulevard			
Genoa Dr to Capri Dr	5,000	3,640	C
Capri Dr to College Ave	5,000	5,170	D
Genoa Drive			
Capri Dr to Arno Pl	1,500	400	C+
Lambda Drive			
Rockhurst Dr to College Ave	1,500	600	C+
Rockhurst Drive			
Lambda Dr to College Ave	1,500	500	C+

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table. Section 3.5 contains a discussion of the capacity of the residential roadways.

b. Average Daily Traffic Volumes.

General Notes:

1. C+ equals better than LOS C.

5.3 Ramp Meter Operations

Table 5–4 summarizes the existing ramp meter operations for the I-8/College Avenue and the I-8/Fairmount Avenue interchanges. Using the *fixed rate method*, southbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 26-minute delay. The northbound College Avenue on-ramp to the eastbound I-8 is calculated to operate with a 38-minute delay. A ramp meter delay longer than 15 minutes is considered to be unacceptable as shown in Section 6.0: Significance Criteria.

The *maximum delay method* indicates that with the 15-minute maximum delay, queues of 3,425 feet per lane would be predicted at the southbound College Avenue on-ramp to the westbound I-8. A queue of 5,100 feet per lane would be predicted at the northbound College Avenue on-ramp to the eastbound I-8.

TABLE 5–4
EXISTING RAMP METER OPERATIONS

Location/Scenario	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Fixed Rate Method						
SB Fairmount Ave to EB I-8	PM	430	492	0	0	0
NB College Avenue to WB I-8	AM	250	318	0	0	0
SB College Avenue to WB I-8	AM	455	318	137	26	3,425
NB College Avenue to EB I-8	PM	522	318	204	38	5,100
Maximum Delay Method						
SB Fairmount Ave to EB I-8	PM	430	492	0	0	0
NB College Avenue to WB I-8	PM	250	318	0	0	0
SB College Avenue to WB I-8	PM	455	318	137	15	3,425
NB College Avenue to EB I-8	PM	522	318	204	15	5,100

Footnotes:

a. Meter Rates obtained from Caltrans (see Appendix B).

b. Delay expressed in minutes per lane.

c. Queue expressed in feet per lane.

5.4 Freeway Mainline Operations

Table 5–5 summarizes the existing freeway mainline operations on I-8. As seen in *Table 5–5*, the segment of I-8 between Fairmount Avenue and Waring Road is calculated to currently operate at LOS E during the AM peak hour in the westbound direction. The segments of I-8 between Waring Road and Lake Murray Boulevard are calculated to currently operate at LOS F(0) during the AM peak hour in the westbound direction. The segment of I-8 between Lake Murray Boulevard and Fletcher Parkway is calculated to currently operate at LOS F(1) during the AM peak hour in the

westbound direction. The segments of I-8 between Fairmount Avenue and Fletcher Parkway are calculated to currently operate at LOS F(0) in the PM peak hour in the eastbound direction.

TABLE 5–5
FREEWAY MAINLINE OPERATIONS
EXISTING CONDITIONS

Freeway Segment	Dir.	# of Lanes	Hourly Capacity[a]	ADT [b]	% K [c]		% D[c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 8															
Fairmount Ave to Waring Rd	EB	5	10,000	251,000	0.061	0.077	0.250	0.604	0.965	3,946	12,103	0.395	1.210	A	F(0)
	WB	6	12,000		0.061	0.077	0.751	0.396		11,869	7,925	0.989	0.660	E	C
Waring Rd to College Ave	EB	5	10,000	238,000	0.075	0.074	0.374	0.604	0.965	6,868	10,969	0.687	1.097	C	F(0)
	WB	5	10,000		0.075	0.074	0.626	0.396		11,506	7,183	1.151	0.718	F(0)	C
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	214,000	0.073	0.078	0.330	0.600	0.963	5,313	10,392	0.578	1.130	B	F(0)
	WB	5	10,000		0.073	0.078	0.670	0.400		10,842	6,919	1.084	0.692	F(0)	C
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	201,000	0.073	0.078	0.330	0.600	0.963	4,991	9,761	0.542	1.061	B	F(0)
	WB	4	8,000		0.073	0.078	0.670	0.400		10,184	6,499	1.273	0.812	F(1)	D

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per auxiliary lane.

b. Existing ADT Volumes from CALTRANS Year 2005 Count Records.

c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "2005 Traffic Volumes", June 2006

d. Truck Factor from "2005 Annual Average Daily Truck Traffic on the California State Highway System", November 2006.

e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)

f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

6.0 SIGNIFICANCE CRITERIA

According to the City of San Diego's *Significance Determination Thresholds* report dated January 2007, a project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a City defined threshold. For projects deemed complete on or after January 1, 2007, the City defined threshold by roadway type or intersection is shown in ***Table 6–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds* report,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."
>
> For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 6–1*, then the project may be considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 6–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

It should be noted that for ramp meter significance if either of the two (2) methodologies results in a significant impact, a significant impact is determined.

Ramp meter observations reveal a large discrepancy between the calculated operations and actual observed conditions. Therefore, calculated ramp meter operations may not be an effective tool in determining project impacts or form a solid basis for identifying mitigation. However, it should be noted that all ramp meter analysis was done using Caltrans accepted methodologies.

TABLE 6–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project[b]	Allowable Increase Due to Project Impacts[a]					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	2.0[c]
F	0.005	0.5	0.01	0.5	1.0	1.0[c]

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The impact is only considered significant if the total delay exceeds 15 minutes.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
2. LOS = Level of Service
3. V/C = Volume to Capacity Ratio (capacity at LOS E should be used)
4. Speed = Arterial speed measured in miles per hour for Congestion Management Program (CMP) analyses

7.0 CUMULATIVE PROJECTS

There are other planned projects in the areas adjacent to the project site, which will add traffic to the roadways surrounding the project location. Based on correspondence with the City of San Diego, City of La Mesa, and a review of other traffic studies in the area, the following list of cumulative projects were included in the near-term and horizon year analyses. ***Appendix H*** contains more detailed cumulative projects information.

7.1 Description of Projects

7.1.1 *Near-Term Cumulative Projects*

El Cerrito Gateway is a proposed mixed-use project that would include 220 multi-family dwelling units and 10,000 square feet of retail space. The project is located on El Cajon Boulevard south of the SDSU Campus and is expected to generate approximately 1,720 average daily trips.

Mesa Commons I is proposed mixed-use project that would include 52 multi-family dwelling units and approximately 2,800 square feet of retail space. The project is located at El Cajon Boulevard and Cacoctin Drive south of the SDSU Campus..

Mesa Commons II is located at 4883, 4905 & 4915 Catoctin Drive and includes 33 row homes and 7 single family homes.

Centrepoint College Avenue is a proposed mixed-use project that would include 312 multi-family dwelling units and 40,000 square feet of commercial space. The project is located south of El Cajon Boulevard at 63rd Street.

Sorority Row is a proposed housing project for 215 student-sorority members that will include apartments and sorority chapter houses.

Park at 54th Street is 90 units at the corner of 54th Street and Collwood Boulevard.

The Religious Center Project is a 25,453 sf structure for campus-based religious organizations located on the southwest corner of Campanile and Lindo Paseo.

Centerpointe at Grantville mixed-use development consists of approximately 588 condominiums, 20,428 square feet of retail uses, a 5,000 square foot high turnover restaurant, and 109,800 square feet of office. This will replace the existing 179,190 square feet of office and 56,240 square feet of industrial land uses on the site. The project site is bordered by Vandever Avenue to the north, Twain Avenue to the south, Mission Gorge Road to the east, and Fairmount Avenue to the west in the City of San Diego. The project is expected to generate a net daily traffic of 3,190 ADT.

Jessie Avenue is a proposed development that consisted of 47 town homes, 1,232 SF of commercial space that will replace 25 existing mobile homes and an abandoned 8,057 square foot restaurant. The project is located on Jessie Avenue in the City of La Mesa.

Commanche Apartments is a proposed development that consists of 19 town homes with a small commercial component that will replace the existing16 small apartments. The project is located near the intersection of Comanche Drive and El Cajon Boulevard in the City of La Mesa.

Parks Avenue Townhomes is a proposed development that consists of 10 town homes with a small commercial component that will replace an existing used car lot with a 2,000 square foot modular office. The project is located near the intersection of Parks Avenue and El Cajon Boulevard in the City of La Mesa.

Temple Emanuel proposes to demolish the existing sanctuary and construct a new sanctuary. The typical weekday trip generation is not expected to increase. Friday evening and Saturday traffic may increase during services that attract more attendees than the current sanctuary can accommodate. The existing temple is located at 6299 Capri Drive.

Coleman College Redevelopment is a proposed redevelopment that will consist of approximately 150 senior housing units on the 9.2-acre site. The project is located at 7380 Parkway Drive in the City of La Mesa.

Alvarado Mixed-Use Development is a proposed mixed-use development that is assumed to consist of 925 residential dwelling units, a 225-room hotel, 237,000 square feet of office, and 25,000 square feet of retail uses. The development will replace the existing Sunland RV Resort. The project is located at 7407 Alvarado Road in the City of La Mesa. For the purposes of this traffic study, only fifty percent of the project was considered in the *near-term analysis* while the entire project is included in the *horizon year analysis*.

7.1.2 *Horizon Year Cumulative Projects*

The Paseo is a previously proposed mixed-use project that would include 470 apartments, 111,000 square feet of campus-serving office space, a multiplex movie theater (16 screens), 153,500 square feet of retail space, 60,000 square feet of restaurant space, and 4,500 square feet of space earmarked for religious organizations on Campus. The project is generally bounded by College Avenue to the east, Campanile Drive to the west, and Montezuma Road to the south. It is estimated that the project will generate 11,301 ADT. As of the date of this traffic study, The Paseo project is currently on hold but this project was included in the traffic study.

Crossroads Redevelopment Project is a long-term redevelopment project consisting of a variety of programmatic residential, commercial, and public facilities within approximately 2,421 dwelling units over a 1,032-acre redevelopment area. The project is located on three non-contiguous subarea lying within the following boundaries: (i) El Cajon Boulevard and University Avenue from 54th Street to the City of La Mesa; (ii) the east side of 54th Street and north of College Grove Drive; and (iii) Redwood and Thorn Street, SR 94, and 54th Street.

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

There are three project components for which trip generation calculations were performed: (1) Student headcount and faculty/staff increase, (2) Adobe Falls Faculty housing, and (3) Alvarado Hotel. The following is a description of each.

8.1.1 *(Student Headcount and Faculty/Staff Increase)*

Student headcount projections were obtained from the University for academic years 2006/2007, 2012/2013 and 2024/2025 (see *Appendix B*). The headcount increase between 2006/2007 and 2012/2013 is 2,094 and between 2006/2007 and 2024/2025 is 11,385 students.

Resident vs. Non-Resident Students

Since the trip making _patterns of students who live on campus (termed resident students) is much different than students who do not live on campus (termed non-resident students), the important first step was to divide the student headcount increase into two categories.

The forecasted split between resident students/non-resident students is 30:70 in the near-term and 35:65 in the long term scenarios. Based on this split, the following ***Table 8–1*** shows the forecasted headcount increases

TABLE 8–1
STUDENT HEADCOUNT INCREASE

Variable	Academic Years	
	2006/2007 – 2012/2013	2006-2007 – 2024/2025
Resident Students	628	3,984
Non-Resident Students	1,466	7,401

A. **Non-Resident Students/Faculty/Staff**

The trip rate for **non-resident students** was based on actual counts at the campus. Road tubes were placed at all entrances/exits to the campus parking areas and the total ADT (66,807) was determined. A five-day count was conducted the week of November 13, 2006 and an average of the five weekdays was utilized. The trip rate per student was determined by dividing the total campus generated ADT of 66,807 by the 2006/2007 non-resident headcount. A rate of 2.47 ADT per student was calculated. It should be noted that since this rate is based on actual counts of all campus parking areas **(including visitors, vendors, faculty and staff)**, the 2.47 rate accounts for all potential campus-related trips; including faculty/staff.

B. Resident Students

The resident student trip count was estimated using two different methods. The first was based on data contained in the approved College Community Redevelopment Plan EIR. *Table 5-14* from this document indicates a trip rate ranging from 3.1 to 4.4 per dwelling unit depending on the type of resident housing. However, this rate does not take into account the trip reductions, which will occur due to the relocation of students to the campus. This reduction rate is outlined in Table 5-16 of the EIR and is calculated to be 2.8 ADT per unit.

Therefore the net new trips per unit would range from 0.3 (3.1-2.8) to 1.6 (4.4-2.8) ADT per unit. The next step is to translate this "per unit" rate to a "per student" rate.

The average number of students per unit is 2.50 based on SDSU data. Therefore, the ADT per resident student would range from 0.12 to 0.64. (0.3/25=0.12 & 1.6/2.5=0.64)

Another potential source of the resident student trip rate is the University of California San Diego Master Plan EIR. This EIR documented a rate of 0.41 ADT per resident student.

Of these three potential rates (0.12, 0.41 & 0.64), **a rate of 0.64 per resident** student was utilized to be conservative.

8.1.2 *Adobe Falls Faculty/Staff Housing Component*

City of San Diego trip generation rates were utilized for the proposed faculty/staff housing at the Adobe Falls site assuming they would function similar to townhome/apartment units. A rate of 8 ADT per unit was used for the portion with densities under 20 dwelling units/acre and a rate of 6 ADT per unit was used if the density exceeded this amount.

However, it is likely that faculty housing would generate less than these amounts since many of the units will have faculty reside in them that only generate 2 ADT (to and from campus).

A 5-day count was conducted at the Cal State Fullerton faculty housing development on Lake Knoll Drive in the City of Buena Park; a development similar to what is proposed at Adobe Falls. This development is located about five miles from the campus. The trip rate was found to be 3.75 ADT per unit.

A shuttle system is proposed as part of the project that would take multiple residents to and from the development to the main campus. This shuttle is expected to reduce the overall traffic generation of the development by approximately 10 percent. It is planned to implement the shuttle system once traffic volumes on the residential roadways warrant.

8.1.3 *Alvarado Hotel*

The City of San Diego trip rate for hotels was utilized.

8.1.4 *Transit Ridership*

In order to determine the extent to which transit ridership, particularly ridership on the San Diego Trolley, would affect future vehicle trips generated by SDSU, LLG worked extensively with the San Diego Association of Governments ("SANDAG") to obtain existing and projected daily passenger trolley boardings at the SDSU station. The existing number of passenger boardings is 5,982.(see Appendix H1) SANDAG forecasts there will be 7,909 daily passenger boardings at the SDSU trolley station in the year 2010, 9,242 boardings in the year 2015, and 17,450 boardings in the year 2030. (Cite.) Through interpolation, the forecasted 2012/2013 & 2024/2025 passenger boardings are 8,442 and 14,714, respectively.

According to SANDAG, 21% of the boardings at SDSU are transfers and, therefore, passengers not originating travel at SDSU. Therefore, based on SANDAG projections, 79% of the passenger boardings at the SDSU trolley station are trips originating at SDSU. SANDAG estimates, based on these numbers, that 4,726 SDSU students, faculty and staff members presently ride the trolley to and from campus.

As shown on **Table 8-2A, Year 2012 (Near-Term) Project Trip Generation**, and **Table 8-3A, Horizon Year Project Trip Generation**, if the number of SDSU trolley riders were to remain stagnant over the next 20 years, the proposed project would generate an additional 5,607 ADT over existing vehicle trips by interim year 2012, and an additional 23,404 ADT by horizon year 2024-25. However, SANDAG does not project the number of trolley riders to remain stagnant. SANDAG projects that by the year 2012, the number of SDSU trolley riders will increase to 6,669, an increase of 1,943 additional trolley riders. (See Table 8-2B) By the year 2024-25, SANDAG projects that the number of SDSU trolley riders will increase over existing by 6,898 trolley riders to 11,624. Therefore, between now and 2024-25, during the same period when the SDSU student headcount will increase from 33,441 to 44,826, SANDAG estimates that trolley ridership will increase by 6,898 SDSU students, faculty and staff over existing numbers. (See Table 8-3B)

In order to account for this intermediate- and long-term increase in SDSU related trolley ridership, and the corresponding future shift from vehicle trips to trolley trips that will result in fewer vehicles on the roadways, the 2012 and 2024-25 trip generation projections for the proposed project have been adjusted to account for the reduced vehicle trips due to the increased trolley ridership.

To translate transit usage into vehicle trips, a vehicle occupancy rate of 1.2 people per car was utilized, based on an LLG survey conducted in May 2000. Therefore, by project buildout year 2024/25, the one-way traffic that would shift to the trolley is 5,748 trips (6,898 students ÷ 1.2 people/car). (See Table 8-3B) A five (5) % factor is applied to this amount to account for the fact that some of the shift to the trolley would be from other transit opportunities and not from personal vehicles. (See Table 8-3B) Therefore, the one-way traffic that would shift to the trolley by the year 2024/25 is 5,460 trips. (See Table 8-3B.) This number is multiplied by 2 to convert it to an ADT, which equates to a 10,920 ADT shift by the year 2024/25. (See Table 8-3C) A similar calculation was completed for 2012/2013 and the shift to the trolley was calculated to be 3,076 ADT. (See Table 8-2C)

As shown on Tables 8-2C and 8-3C, taking into account the forecasted increase in trolley ridership, the net increase in ADT that would result from the proposed project is 2,531 ADT by the year 2012, and 12,484 ADT by the year 2024-25.

8.1.5 *Trip Generation Summary*

Table 8-2A shows that the near term total trip generation ADT without assuming a future shift to the trolley is 5,607 ADT. ***Table 8-2B*** shows that the forecasted shift to the trolley is 3,076 ADT based on SANDAG boarding projections as described previously. ***Table 8-2C*** shows the net increase in traffic for the campus is 2,531 ADT.

Table 8-3A, B & C shows the total trip generation, trolley shift and net increase in campus traffic respectively, for the horizon year.

8.2 Trip Distribution & Assignment

The trip distribution and assignment for each component of the project is described below. The Student Headcount increase, Adobe Falls Faculty/Staff Housing, and the Alvarado Hotel require separate distribution and assignments given the different nature of the uses that are proposed at each site.

8.2.1 *Student Headcount and Faculty/Staff Increase*

As previously discussed in Section 2.2, it is expected that the student headcount increase from 33,441 to 44,826 would be partially accommodated in classroom facilities to be constructed on Alvarado Campus site. The remaining would be accommodated in the existing SDSU facilities on the main campus. The traffic distribution for the student headcount increase component is based on its proximity to Interstate 8 and the surrounding street network. A Select Zone Assignment for the SDSU Traffic Analysis Zone (TAZ) was obtained from SANDAG and utilized in determining the project distribution. The majority of the traffic destined for SDSU travel to and from Interstate 8. ***Figure 8–1*** illustrates this distribution.

All of the near-term project traffic was assigned to the main campus. The horizon-year project traffic was assigned with 50 percent to the main campus and 50 percent to the Alvarado Campus. The near-term assignment of traffic for the Alvarado Campus site is shown on ***Figure 8–2***. Assignment of traffic to the surrounding street system is based on the location of parking structures and lots, specific street characteristics (e.g. one-way streets), and the existing traffic conditions within the study area. The horizon year project assignment for Alvarado Campus is shown on ***Figure 8–3***.

8.2.2 *Adobe Falls Faculty/Staff Housing*

The distribution for the Adobe Falls Faculty/Staff residential component of the project is based on its proximity to the SDSU Campus and the surrounding amenities. Given that this residential project is expected to house faculty and staff affiliated with SDSU, much of the traffic is distributed to and from the SDSU campus as shown on ***Figure 8–4***. This detailed distribution, specific to the project site, also provides the project ADT volumes on the analyzed street segments. The Adobe Falls distribution to the surrounding local streets is shown in ***Figure 8–5***. The project assignment takes

into account access to and from major roadways along with the location of parking lots and structures on campus. ***Figure 8–6*** shows the Adobe Falls assignment for the near-term project traffic, and ***Figure 8–7*** shows the Adobe Falls assignment for the horizon year project traffic.

8.2.3 *Alvarado Hotel*

The distribution for the Alvarado Hotel project component is based on its proximity to the SDSU Campus and the surrounding amenities. Given that this project component is expected to be used primarily by visitors to the Campus, the majority of the traffic is distributed based on the location of the San Diego International Airport and related tourist facilities. The distribution also considers the possibility of local businesses using the hotel for meetings and conferences. ***Figure 8–8*** illustrates this distribution. The project assignment takes into account access to and from major roadways. ***Figure 8–9*** shows the hotel assignment for both the near-term and the horizon year.

Figure 8–10, total near-term project traffic volumes, is the result of the addition of the three near-term project traffic assignments. Similarly, ***Figure 8–11***, total horizon year project traffic volumes, is the result of the addition of the three horizon year project traffic assignments.

TABLE 8–2A
YEAR 2012 (NEAR-TERM) PROJECT TRIP GENERATION

Trip Generation Project Components	Size	Daily Trip Ends (ADT[a])		AM Peak Hour				PM Peak Hour			
		Rate	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
SDSU Student Headcount Increase											
Non-Resident Student Headcount Increase [b]	1,466 Students	2.47 /Student [c]	3,621	5%	90:10	163	18	7%	30:70	76	177
Resident Student Headcount Increase	628 Students	0.64 /Student [d]	402	5%	90:10	18	2	7%	30:70	8	20
Subtotal	*2,094 Students*	–	*4,023*			*181*	*20*			*84*	*197*
Adobe Falls Faculty/Staff Housing											
Upper Village Town homes	48 DU	8 /DU [e]	384	8%	20:80	6	25	10%	70:30	27	11
Alvarado Hotel	120 Room	10 /Room [e]	1,200	6%	60:40	43	29	8%	60:40	58	38
Total		—	**5,607**	—	—	**230**	**74**	—	—	**169**	**246**

Footnotes:

a. Average Daily Traffic
b. Year 2012 student headcount equals 35,535 compared to the Year 2006 student headcount of 33,441. It should be noted that 70% of the student headcount increase are assumed to consist of non-resident students, and 30% of the student headcount increase will consist of resident students.
c. SDSU rates are based on actual counts taken in November 2006. This rate includes SDSU faculty, staff, vendors, visitors, and students.
d. The resident student rate is based on the Community College Redevelopment EIR that assumed 4.4 trips per student dwelling unit (with a reduction of 2.8 trips per DU based on students with new commute but would instead relocate and occupy the on-campus housing).
e. Rates were taken from the City of San Diego Trip Generation Manual, May 2003.

General Notes:
DU = Dwelling Units

TABLE 8–2B
SHIFT FROM DRIVING TO TROLLEY (YEAR 2012)

SDSU boardings Increase (2006-2025)	2,460 students [a]
79% boardings are not transfers	1,943 students [b]
Vehicle Occupancy Rate	1,620 students [c]
95 % of shift to trolley is from private vehicle	1,538 students [d]
Total ADT diverted from private vehicle to trolley	3,076 (5 % during AM peak = 154 trips and 7 % during PM peak = 215 trips)

Footnotes:

a. Source: SANDAG Trolley Boarding Data
b. Source: SANDAG
c. Accounts for fact that not all drivers that shift from trolley were driving along, some carpool.
a. Accounts for fact that some future users of trolley would shift from other transit opportunities, and not from personal vehicles

TABLE 8–2C
NET INCREASE IN TRAFFIC (YEAR 2012)

1. Proposed project trips (without any increased trolley usage) = 5,607
2. Future Shift from driving to trolley = 3,076
3. Net increase in traffic = 2,531 (150 AM peak hour trips and 200 PM peak hour trips)

TABLE 8–3A
HORIZON YEAR PROJECT TRIP GENERATION

Trip Generation Project Components	Size	Daily Trip Ends (ADT[a])		AM Peak Hour				PM Peak Hour			
		Rate	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
SDSU Student Headcount Increase											
Non-Resident Student Headcount Increase [b]	7,401 Students	2.47 /Student [c]	18,280	5%	90:10	823	91	7%	30:70	384	896
Resident Student Headcount Increase	3,984 Students	0.64 /Student [d]	2,550	5%	90:10	115	13	7%	30:70	54	125
Subtotal	*11,385 Students*	–	*20,830*			*938*	*104*			*438*	*1,021*
Adobe Falls Faculty/Staff Housing											
Upper Village Town homes	48 DU	8 /DU [e]	384	8%	20:80	6	25	10%	70:30	27	11
Lower Village Townhomes	124 DU	8 /DU [e]	992	8%	20:80	16	63	10%	70:30	66	28
Alvarado Hotel	120 Rooms	10 /Room [e]	1,200	6%	60:40	43	29	8%	60:40	58	38
Total		—	**23,406**	—	—	**1,003**	**221**	—	—	**589**	**1,098**

Footnotes:

a. Average Daily Traffic

b. Year 2025 student headcount equals 44,826 compared to the Year 2006 student headcount of 33,441. It should be noted that 65% of the student headcount increase are assumed to consist of non-resident students, and 35% of the student headcount increase will consist of resident students.

c. SDSU rates are based on actual counts taken in November 2006. This rate includes SDSU faculty, staff, vendors, visitors, and students.

d. The resident student rate is based on the Community College Redevelopment EIR that assumed 4.4 trips per student dwelling unit (with a reduction of 2.8 trips per DU based on students with new commute but would instead relocate and occupy the on-campus housing).

e. Rates were taken from the City of San Diego Trip Generation Manual, May 2003.

General Notes:

DU = Dwelling Units

TABLE 8–3B
SHIFT FROM DRIVING TO TROLLEY (YEAR 2025)

SDSU boardings Increase (2006-2025)	8,732 students [a]
79% boardings are not transfers	6,898 students [b]
Vehicle Occupancy Rate	5,748 students [c]
95 % of shift to trolley is from private vehicle	5,460 students [d]
Total ADT diverted from private vehicle to trolley	10,920 (5 % during AM peak = 546 trips and 7 % during PM peak = 764 trips)

Footnotes:

a. Source: SANDAG Trolley Boarding Data

b. Source: SANDAG

c. Accounts for fact that not all drivers that shift from trolley were driving along, some carpool.

d. Accounts for fact that some future users of trolley would shift from other transit opportunities, and not from personal vehicles

TABLE 8–3C
NET INCREASE IN TRAFFIC (YEAR 2025)

1. Proposed project trips (without any increased trolley usage) = 23,404
2. Future Shift from driving to trolley = 10,920
3. Net increase in traffic = 12,484 (678 AM peak hour trips and 923 PM peak hour trips)

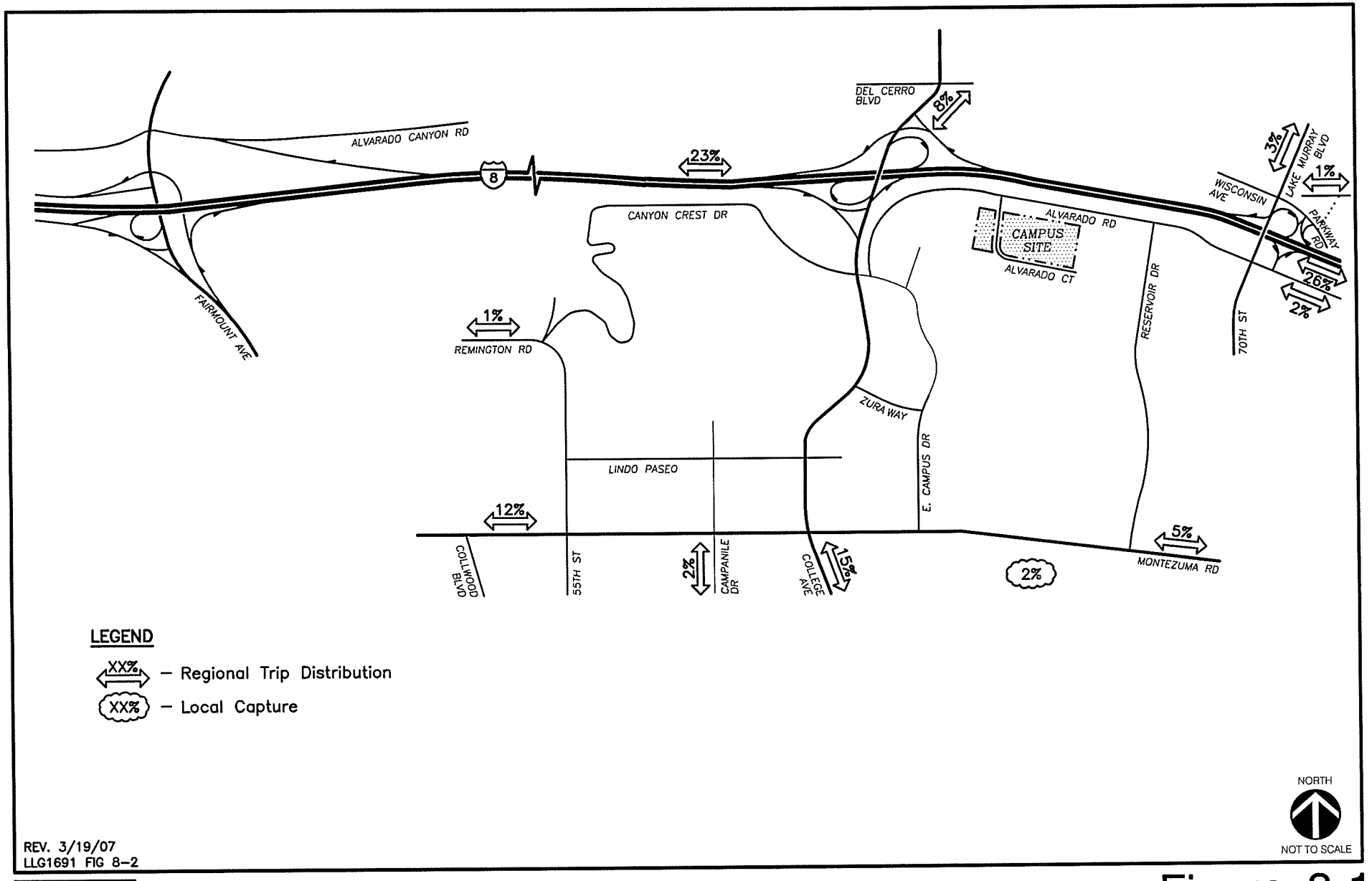

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Figure 8-1

Alvarado Campus Project Traffic Distribution (Near-Term & Horizon Year)

SDSU 2007 CAMPUS MASTER PLAN REVISION

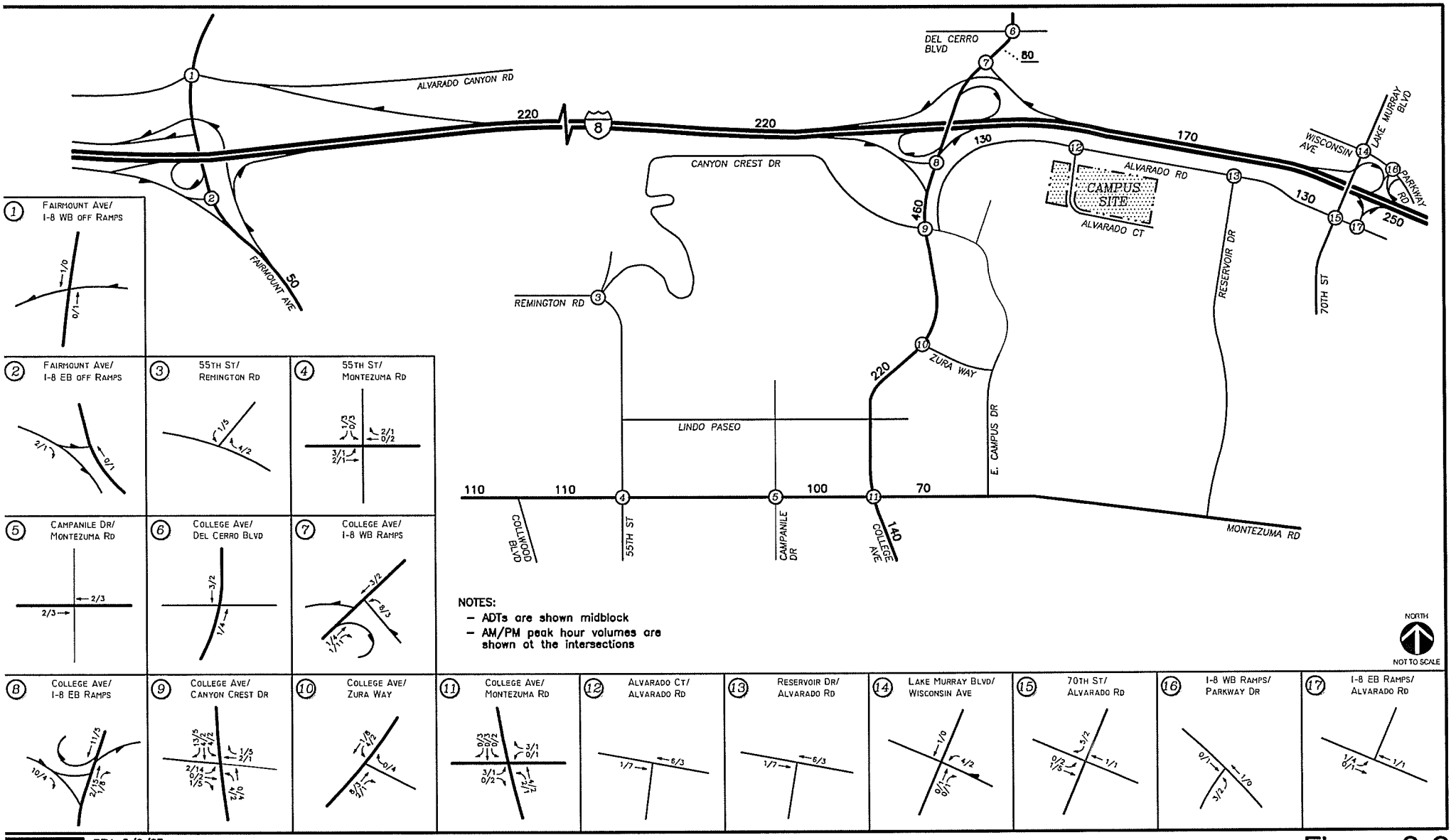

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Figure 8-2

Alvarado Campus Project Traffic Assignment (Near-Term) AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

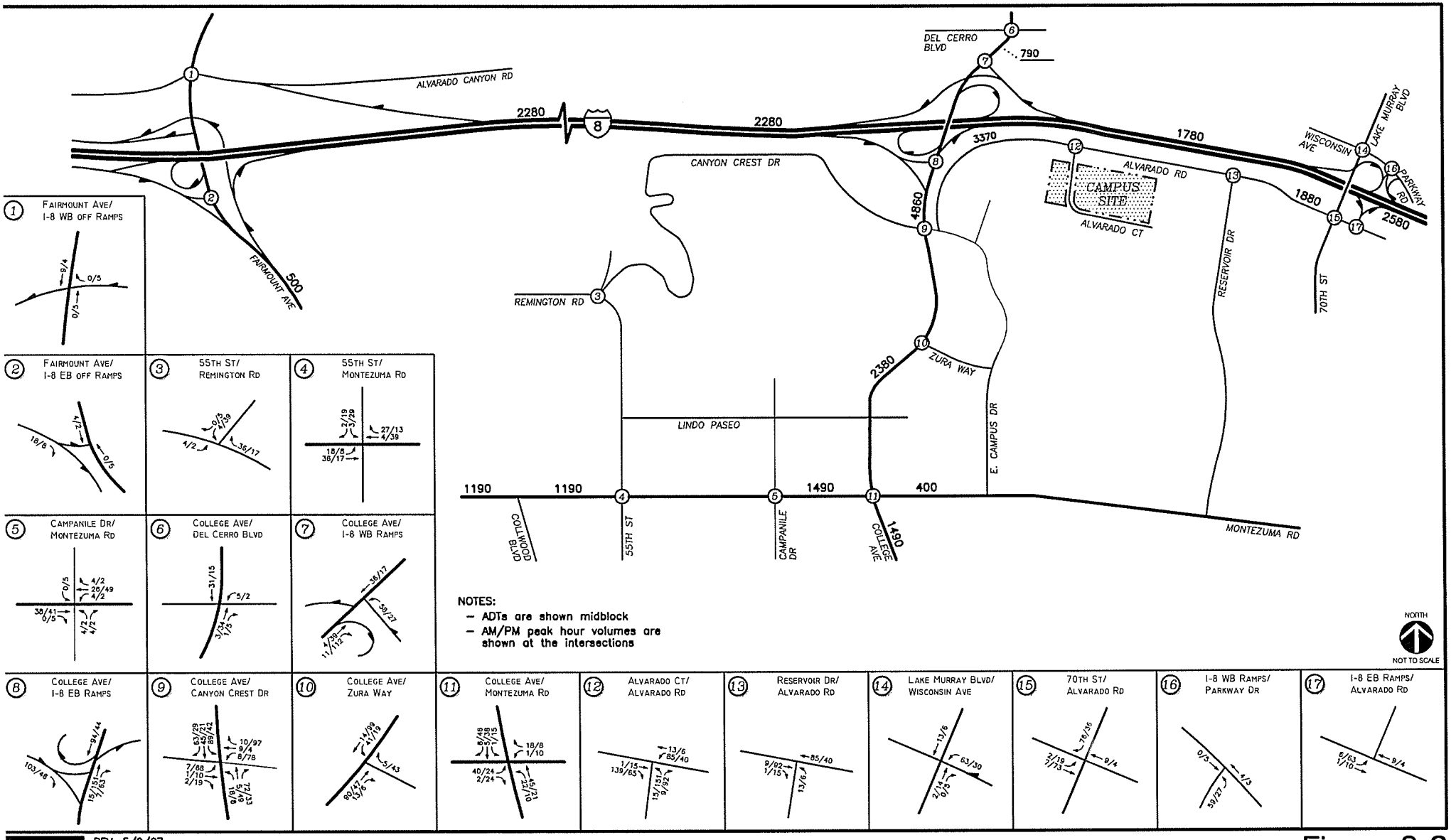

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Figure 8-3

Alvarado Campus Project Traffic Assignment (Horizon Year) AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

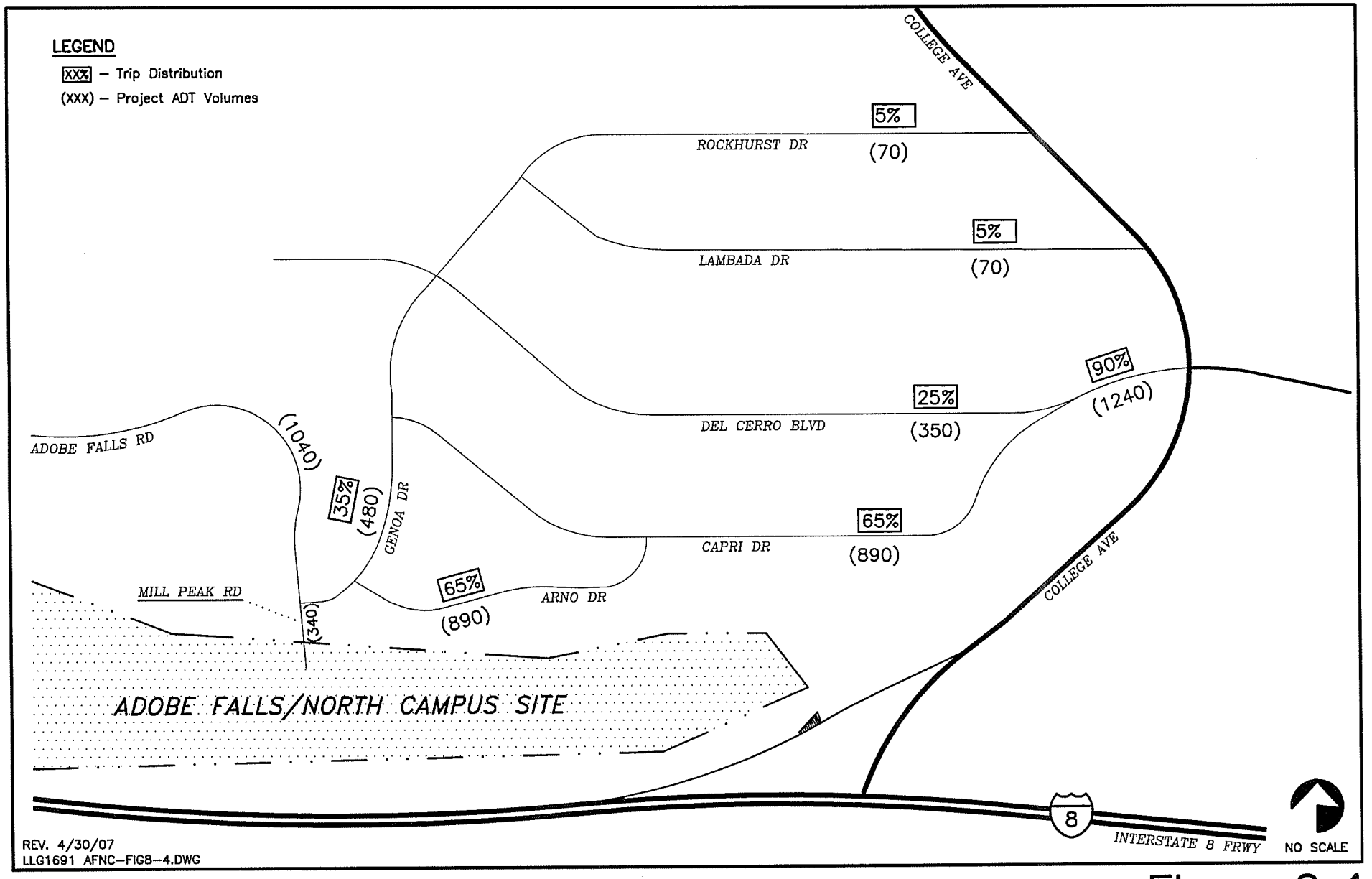

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Figure 8-4

Detailed Adobe Falls Faculty/Staff Housing Project Traffic ADT Volumes & Distribution

SDSU 2007 CAMPUS MASTER PLAN REVISION

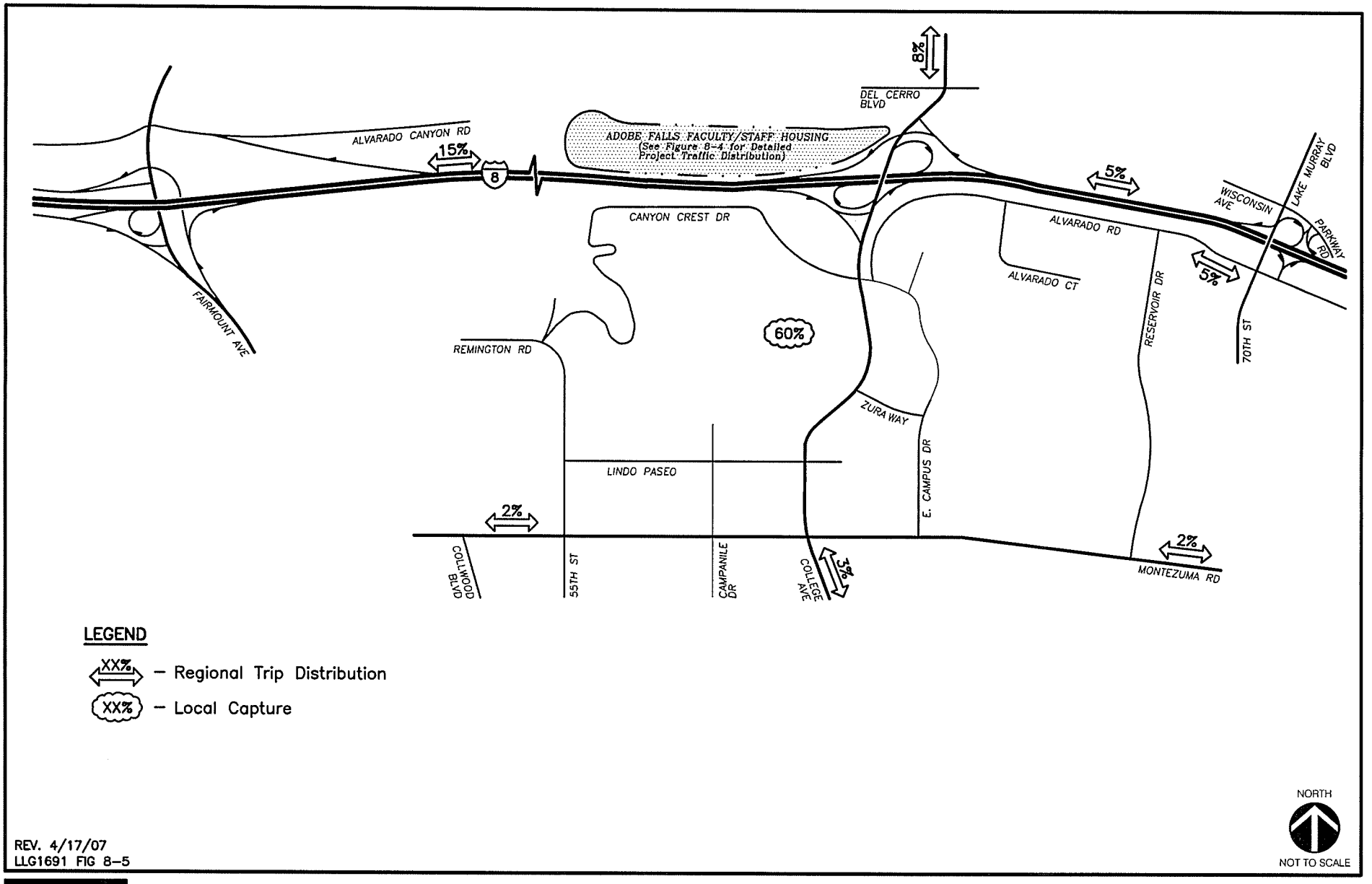

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Figure 8-5

Adobe Falls Faculty/Staff Housing Traffic Distribution (Near-Term & Horizon Year)

SDSU 2007 CAMPUS MASTER PLAN REVISION

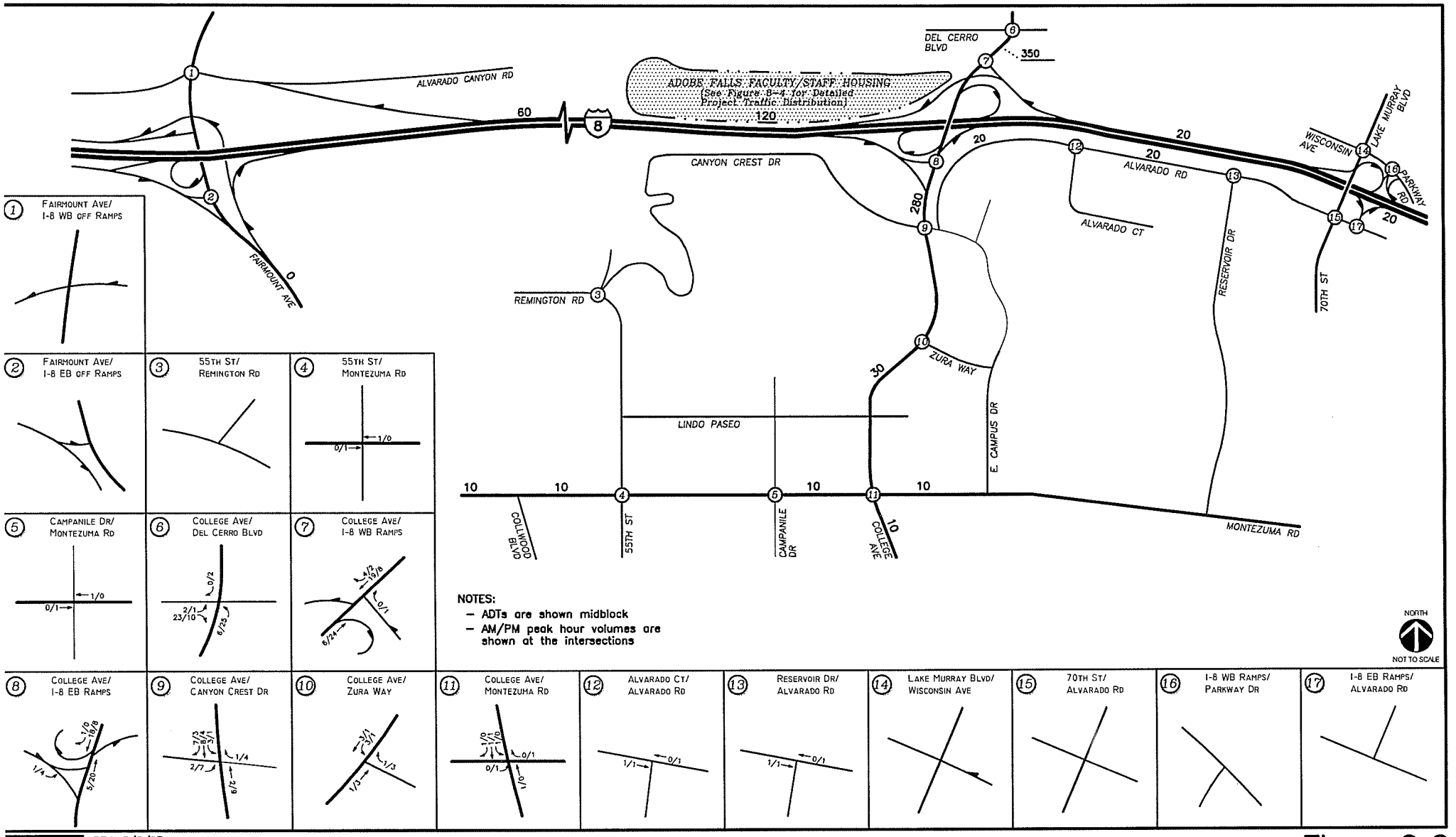

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Figure 8-6

Adobe Falls Faculty/Staff Housing Traffic Assignment (Near-Term) AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

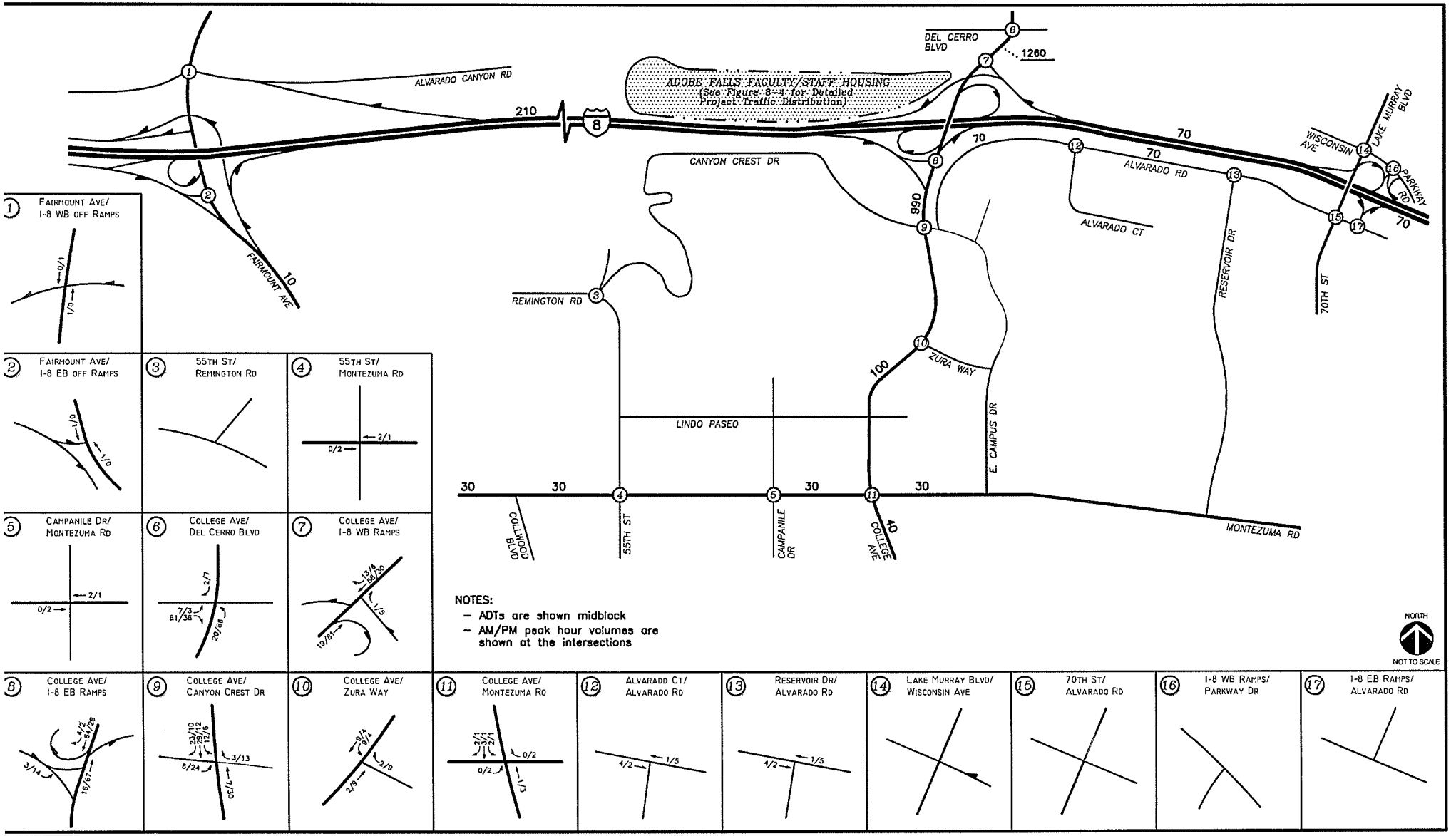

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Figure 8-7

Adobe Falls Faculty/Staff Housing Traffic Assignment (Horizon-Year) AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

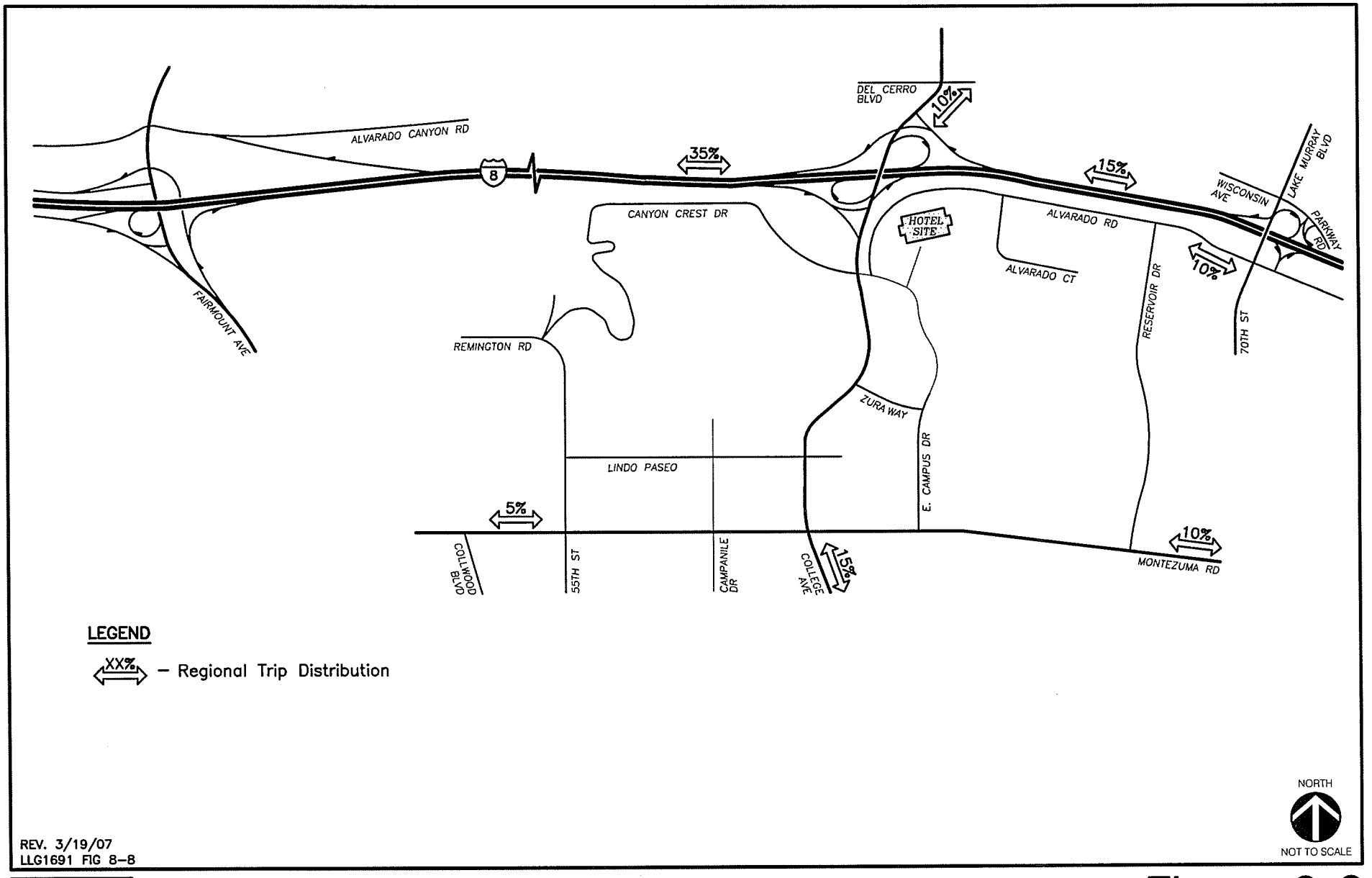

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Figure 8-8

Alvarado Hotel Project Traffic Distribution

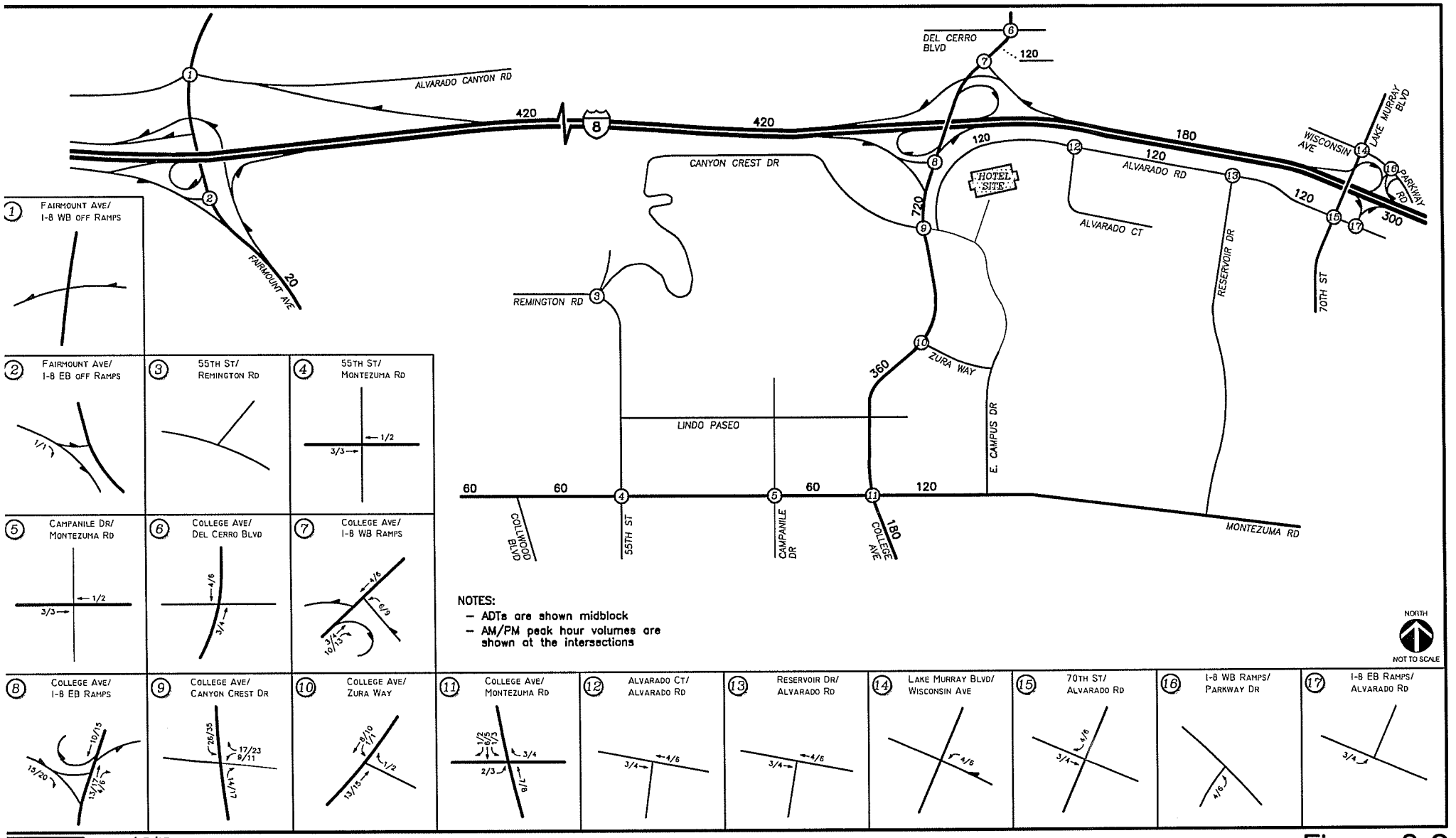

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Figure 8-9

Alvarado Hotel Project Traffic Assignment AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

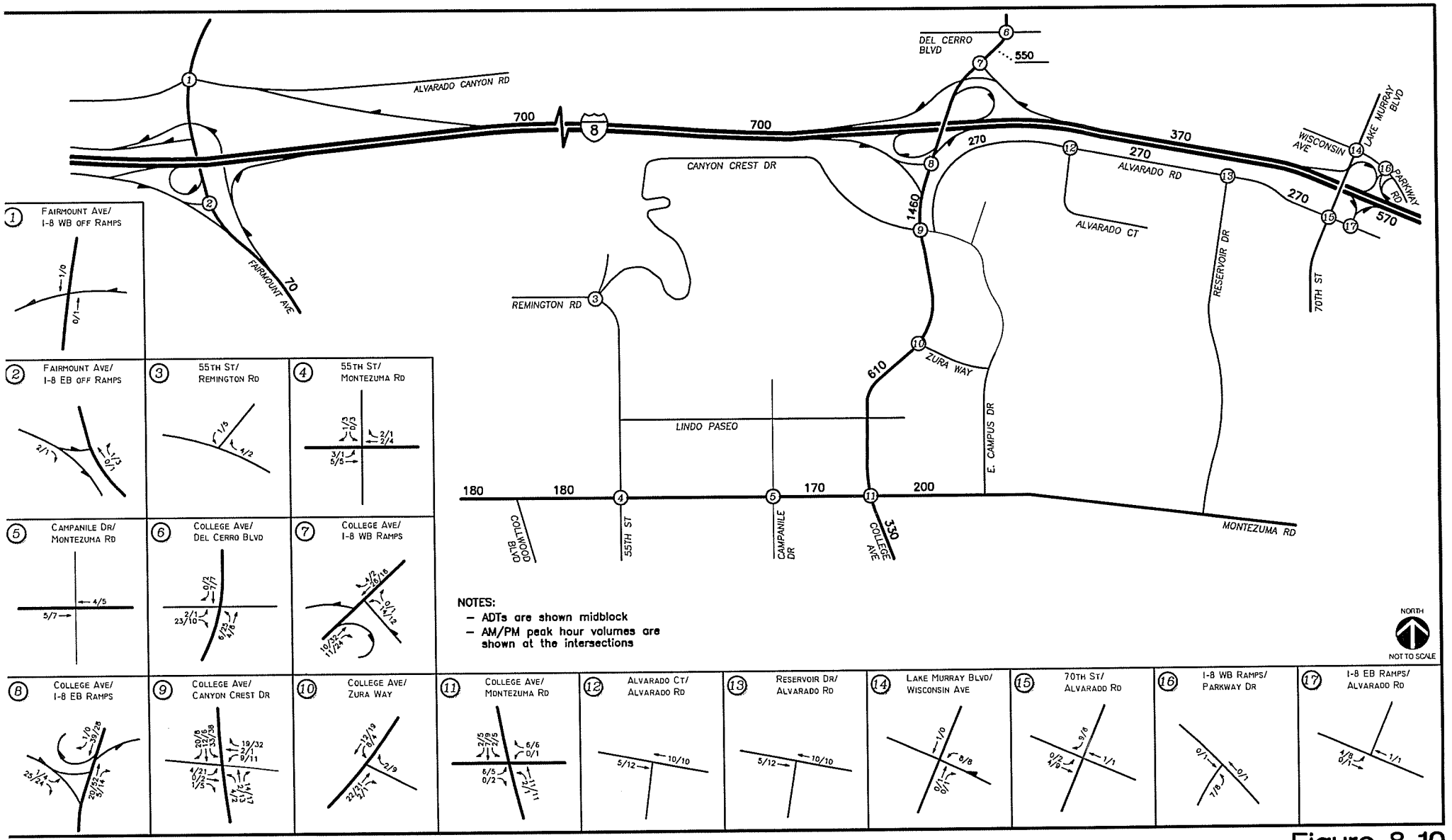

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Figure 8-10

Near-Term Total Project Traffic Volumes AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

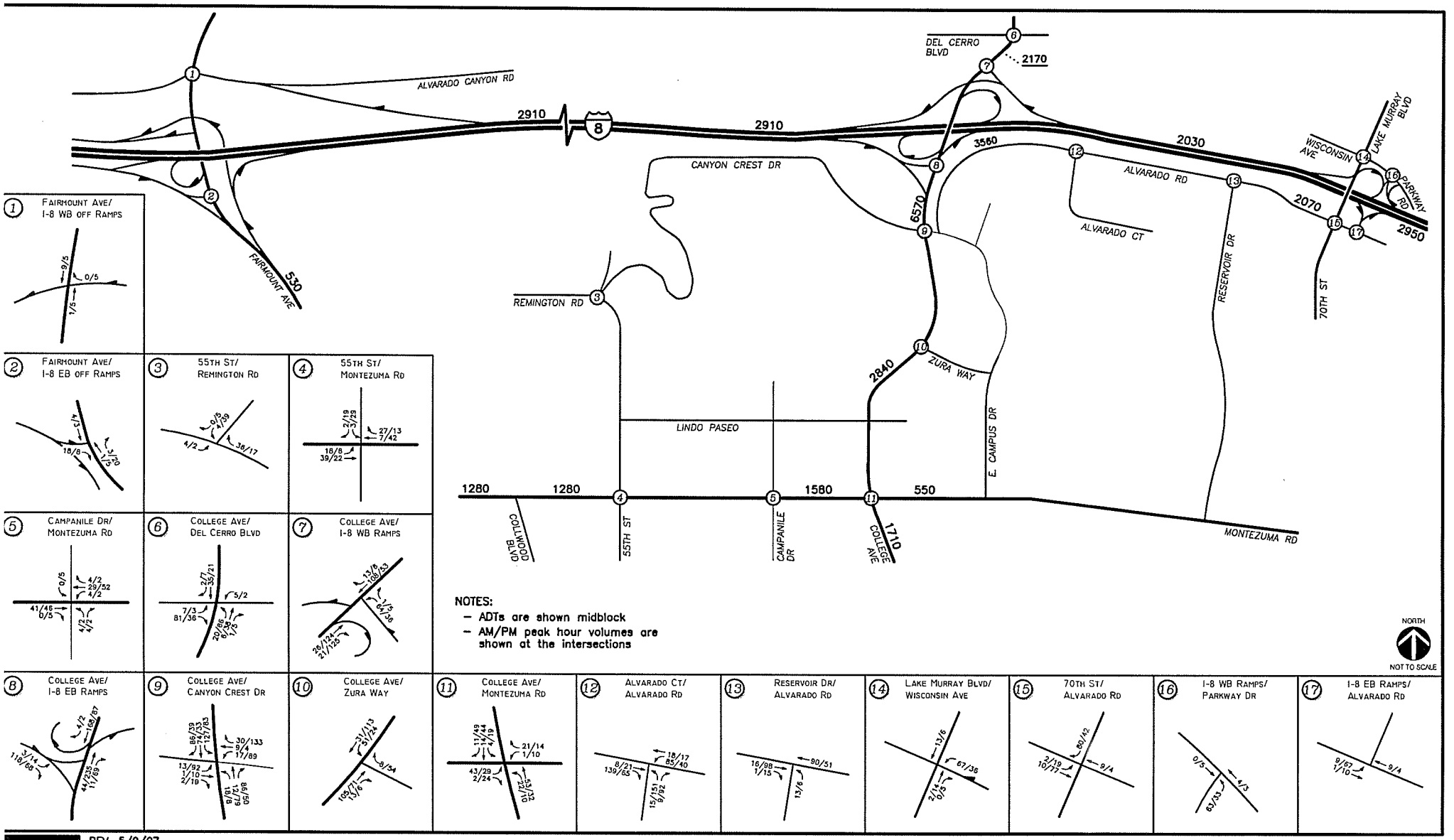

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Figure 8-11

Horizon Year Total Project Traffic Volumes AM/PM Peak Hours & ADT

SDSU 2007 Campus Master Plan Revision

9.0 ANALYSIS OF NEAR-TERM SCENARIOS

The scenarios analyzed below are an assessment of the impact of the project traffic volumes in relation to the existing and near-term without project conditions. This section includes the analysis results and discussions of the intersection, street segment, ramp meter, and freeway mainline operations. The significance of impacts is discussed in Section 16.0.

9.1 Existing + Project

The existing + total project traffic analysis is an assessment of the impact of the total project (i.e. the project at buildout) in relation to the existing conditions. It should be noted that since the project will be developed over many years, an "existing + project" analysis is not an accurate scenario for which to determine significant impacts. Therefore, the existing + project analysis was prepared for informational purposes only and near term (2012) and long term scenarios were developed to determine potential significant impacts. ***Figure 9–1*** depicts the existing + total projects traffic volumes. ***Appendix I*** contains the peak hour intersection, ramp meter, and freeway analysis worksheets for the existing + total project scenario.

9.1.1 *Intersection Analysis*

Table 9–1 summarizes the peak hour intersection operations for the existing + project conditions. As seen in *Table 9–1*, with the addition of project traffic, all key signalized intersections are calculated to operate at LOS D or better conditions except the following:

- Fairmount Avenue / I-8 Westbound Off-ramps/Camino del Rio North (LOS F during the PM peak hour)
- Fairmount Avenue / I-8 Eastbound Off-Ramps (LOS F during the PM peak hour)
- 55th Street / Montezuma Road (LOS F during the AM peak hour)
- College Avenue / Del Cerro Boulevard (LOS F during the AM peak hour)
- College Avenue / I-8 Eastbound Ramps (LOS E during the AM peak hour)
- College Avenue / Canyon Crest Drive (LOS E during the AM peak hour and LOS F during the PM peak hour)

The unsignalized intersections in the project vicinity are calculated to operate at LOS D or better with the project except for the following:

- College Avenue / Zura Way (LOS F during the PM peak hour)
- I-8 WB Ramps/ Parkway Drive (LOS E during the PM peak hour)

TABLE 9–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project	
			Delay[a]	LOS[b]	Delay	LOS
1. Fairmount Ave / I-8 WB Off Ramps / Camino del Rio N	Signal	AM	47.8	D	49.2	D
		PM	154.8	F	155.6	F
2. Fairmount Ave / I-8 EB Off Ramps	Signal	AM	37.9	D	38.5	D
		PM	99.8	F	100.8	F
3. 55th Street / Remington Rd	Signal	AM	8.9	A	9.0	A
		PM	8.3	A	8.5	A
4. 55th Street / Montezuma Rd	Signal	AM	73.4	E	80.3	F
		PM	33.7	C	35.8	D
5. Campanile Dr / Montezuma Rd	Signal	AM	31.8	C	32.7	C
		PM	32.2	C	33.2	C
6. College Ave / Del Cerro Blvd	Signal	AM	68.1	E	86.8	F
		PM	40.6	D	42.5	D
7. College Ave / I-8 WB Ramps	Signal	AM	8.9	A	10.0	A
		PM	9.0	A	11.6	B
8. College Ave / I-8 EB Ramps	Signal	AM	40.1	D	58.9	E
		PM	15.3	B	19.7	B
9. College Ave / Canyon Crest Dr	Signal	AM	64.1	E	68.6	E
		PM	62.3	E	>120	F
10. College Ave / Zura Way	TWSC[c]	AM	14.3	B	15.6	C
		PM	>120	F	>120	F
11. College Ave / Montezuma Rd	Signal	AM	38.9	D	47.4	D
		PM	36.5	D	38.3	D
12. Alvarado Ct / Alvarado Rd	TWSC[c]	AM	14.4	B	20.0	C
		PM	13.4	B	27.3	D

TABLE 9–1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project	
			Delay[a]	LOS[b]	Delay	LOS
13. Resevoir Dr / Alvarado Rd	Signal	AM	17.1	B	17.9	B
		PM	20.8	C	22.2	C
14. Lake Murray Blvd / Parkway Dr	Signal	AM	30.8	C	40.7	D
		PM	32.5	C	36.9	D
15. 70th Street / Alvarado Rd	Signal	AM	30.1	C	30.2	C
		PM	39.3	D	40.5	D
16. I-8 WB Ramps /Parkway Dr	AWSC[d]	AM	18.3	C	22.3	C
		PM	31.1	D	40.6	E
17. I-8 EB Ramps / Alvarado Rd	Signal	AM	19.4	B	19.7	B
		PM	16.9	B	17.0	B

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street approach delay is reported.

d. AWSC – All-Way Stop Controlled intersection.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

9.1.2 *Segment Operations*

Table 9–2 summarizes the key segment operations in the study area with the addition of the project traffic. As seen in *Table 9–2*, with the addition of project traffic, the following study area segments are calculated to operate at LOS E or worse conditions:

- Alvarado Road between East Campus Drive and Reservoir Drive (LOS F)
- Alvarado Road between Reservoir Drive and 70th Street (LOS F)
- College Avenue between I-8 Eastbound Ramps and Zura Way (LOS F)
- College Avenue between Zura Way and Montezuma Road (LOS E)
- College Avenue South of Montezuma Road (LOS F)
- Montezuma Road between Fairmount Avenue and Collwood Boulevard (LOS F)
- Montezuma Road between 55th Street and College Avenue (LOS E)
- Fairmount Avenue between Montezuma Road and I-8 (LOS F)

Table 9–3 shows the street segment operations on the residential roadways within the Del Cerro community.

TABLE 9-2
EXISTING + PROJECT SEGMENT OPERATIONS

Segment	LOS E Capacity [a]	Existing			Existing + Total Project		
		Volume	LOS [b]	V/C [c]	Volume	LOS	V/C
Alvarado Road							
E. Campus Dr to Reservoir Dr	10,000	8,300	D	0.83	11,860	F	1.19
Reservoir Dr to 70th St	10,000	9,890	E	0.99	11,960	F	1.20
College Avenue							
Del Cerro Blvd to I-8 EB Ramps	40,000	29,530	C	0.74	31,700	D	0.79
I-8 EB Ramps to Zura Way	40,000	39,400	E	0.99	45,970	F	1.15
Zura Way to Montezuma Rd	40,000	33,950	D	0.85	36,790	E	0.92
South of Montezuma Rd	30,000	30,220	F	1.01	31,930	F	1.06
Montezuma Road							
Fairmount Ave to Collwood Blvd	40,000	49,820	F	1.25	51,100	F	1.28
Collwood Blvd to 55th St	40,000	29,610	C	0.74	30,890	D	0.77
55th St to College Ave	30,000	24,460	D	0.82	26,040	E	0.87
College Ave to E. Campus Dr	30,000	21,550	D	0.72	22,100	D	0.74
Fairmount Avenue							
Montezuma Rd to I-8	60,000	80,800	F	1.347	81,330	F	1.356

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*).

b. Average Daily Traffic

c. Volume to Capacity ratio

TABLE 9–3
EXISTING + PROJECT
RESIDENTIAL STREET SEGMENT OPERATIONS

Segment	LOS C Capacity [a]	Existing		Existing + Total Project	
		Volume	LOS [b]	Volume	LOS
Adobe Falls Rd/Mill Peak Road					
North of Genoa Dr	1,500	410	C+	840	C+
Arno Drive					
Helena Pl to Capri Dr	1,500	370	C+	1,170	C+
Capri Drive					
East of Arno Dr	1,500	720	C+	1,520	C
Del Cerro Boulevard					
Genoa Dr to Capri Dr	5,000	3,640	C	3,950	C
Capri Dr to College Ave	5,000	5,170	D	6,290	D
Genoa Drive					
Capri Dr to Arno Pl	1,500	400	C+	830	C+
Lambda Drive					
Rockhurst Dr to College Ave	1,500	600	C+	660	C+
Rockhurst Drive					
Lambda Dr to College Ave	1,500	500	C+	560	C+

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).

b. Average Daily Traffic

General Notes:

1. C+ equals better than LOS C.
2. Project volume projections include a 10% decrease in overall Adobe Falls trip generation due to the planned shuttle system from the development to the campus. It is planned that the shuttle system would be implemented once the traffic volumes on the residential roadways reach a point that warrant such a system.

9.1.3 *Ramp Meter Operations*

Table 9–4 summarizes the existing + project ramp meter operations for the I-8/College Avenue and the I-8/Fairmount Avenue interchanges. Using the *fixed rate method*, southbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 27-minute delay, a project increase of 1 minute. The northbound College Avenue on-ramp to the eastbound I-8 is calculated to operate with a 52-minute delay, a project increase of 14 minutes.

The *maximum delay method* indicates that with the 15-minute maximum delay, queues of 3,600 feet per lane would be predicted at the southbound College Avenue on-ramp to the westbound I-8, a project increase of 175 feet. A queue of 6,825 feet per lane would be predicted at the northbound College Avenue on-ramp to the eastbound I-8, a project increase of 1,725 feet. These queue lengths exceed the available storage on the ramp. It should be noted that actual delays and queues would be much shorter; the ramp meter analysis and methodology results are very conservative.

TABLE 9–4
EXISTING + PROJECT RAMP METER OPERATIONS

Location/Scenario	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Fixed Rate Method						
SB Fairmount Ave to EB I-8						
Existing	PM	430	492	0	0	0
Existing + Project	PM	434	492	0	0	0
Project Increase	PM	2	492	0	0	0
NB College Avenue to WB I-8						
Existing	AM	250	318	0	0	0
Existing + Project	AM	260	318	0	0	0
Project Increase	AM	10	318	0	0	0
SB College Avenue to WB I-8						
Existing	AM	455	318	137	26	3425
Existing + Project	AM	462	318	144	27	3600
Project Increase	AM	7	318	7	1	175
NB College Avenue to EB I-8						
Existing	PM	522	318	204	38	5100
Existing + Project	PM	591	318	273	52	6825
Project Increase	PM	69	318	69	14	1725

TABLE 9–4 (CONTINUED)
EXISTING + PROJECT RAMP METER OPERATIONS

Location/Condition	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Maximum Delay Method						
SB Fairmount Ave to EB I-8						
Existing	PM	430	492	0	0	0
Existing + Project	PM	432	492	0	0	0
Project Increase	PM	2	NA	0	0	0
NB College Avenue to WB I-8						
Existing	PM	250	318	0	0	0
Existing + Project	PM	260	318	0	0	0
Project Increase	PM	10	NA	0	0	0
SB College Avenue to WB I-8						
Existing	PM	455	318	137	15	3425
Existing + Project	PM	462	318	144	15	3600
Project Increase	PM	7	NA	7	0	175
NB College Avenue to EB I-8						
Existing	PM	522	318	204	15	5100
Existing + Project	PM	591	318	273	15	6825
Project Increase	PM	69	NA	69	0	1725

Footnotes:

a. Meter Rates obtained from Caltrans.

b. Delay expressed in minutes per lane.

c. Queue expressed in feet per lane.

General Notes:

Bold & Shading represents a potential significant impact.

NA = Not Applicable.

9.1.4 *Freeway Operations*

Table 9–5 summarizes the freeway mainline operations on I-8 during the existing + project scenario. As seen in *Table 9–5*, with the addition of project traffic, the segment of I-8 between Fairmount Avenue and Waring Road is calculated to continue to operate at LOS E during the AM peak hour in the westbound direction and LOS F(0) during the PM peak hour in the eastbound direction. The segments of I-8 between Waring Road and Lake Murray Boulevard are calculated to continue to operate at LOS F(0) during the AM peak hour in the westbound direction and LOS F(0) during the PM peak hour in the eastbound direction. The segment of I-8 between Lake Murray Boulevard and Fletcher Parkway is calculated to continue to operate at LOS F(1) during the AM peak hour in the westbound direction and LOS F(0) during the PM peak hour in the eastbound direction.

TABLE 9–5
FREEWAY MAINLINE OPERATIONS
EXISTING + PROJECT

Freeway Segment	Dir.	# of Lanes	Hourly Capacity[a]	ADT	Existing Peak Hour Volume [b]		Project Volume		Existing + Project Peak Hour Volume		V/C [c]		LOS [d]	
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 8														
Fairmount Ave to Waring Rd	EB	5	10,000	253,910	3946	12103	121	82	4067	12185	0.407	1.218	A	**F(0)**
	WB	6	12,000		11869	7925	34	131	11903	8056	0.992	0.671	**E**	C
Waring Rd to College Ave	EB	5	10,000	240,910	6868	10969	121	82	6989	11051	0.699	1.105	C	**F(0)**
	WB	5	10,000		11506	7183	34	131	11540	7314	1.154	0.731	**F(0)**	C
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	216,030	5313	10392	15	71	5328	10463	0.579	1.137	B	**F(0)**
	WB	5	10,000		10842	6919	65	41	10907	6960	1.091	0.696	**F(0)**	C
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	203,950	4991	9761	24	138	5015	9899	0.545	1.076	B	**F(0)**
	WB	4	8,000		10184	6499	128	74	10312	6573	1.289	0.822	**F(1)**	D

Footnotes:

a. Capacities calculated at 2,000 vph per lane and 1,200 vph per auxiliary lane

b. Values calculated in the Existing Conditions table

c. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

d. Level of Service

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

9.2 Near-Term without Project

The near-term without Project traffic volumes were calculated using the existing traffic volumes with an added growth factor and the addition of near-term cumulative projects traffic as described in Section 7.0. ***Figure 9–2*** depicts the near-term without project traffic volumes. ***Appendix J*** contains the peak hour intersection, ramp meter, and freeway analysis worksheets for the near-term without project scenario.

9.2.1 *Intersection Analysis*

Table 9–6 summarizes the peak hour intersection operations for the near-term without project scenario. As seen in *Table 9–6*, the key signalized intersections are calculated to operate at LOS D or better except the following:

- Fairmount Avenue / I-8 Westbound Off-ramps/Camino del Rio North (LOS F during the PM peak hour)
- Fairmount Avenue / I-8 Eastbound Off-Ramps (LOS F during the PM peak hour)
- 55th Street / Montezuma Road (LOS F during the AM peak hour)
- Campanile Drive / Montezuma Road (LOS E during the PM peak hour)
- College Avenue / Del Cerro Boulevard (LOS E during the AM peak hour)
- College Avenue / I-8 Eastbound Ramps (LOS E during the AM peak hour)
- College Avenue / Canyon Crest Drive (LOS F during the AM and the PM peak hours)
- College Avenue / Montezuma Road (LOS F during the AM and PM peak hours)

The unsignalized intersections in the project vicinity are calculated to operate at LOS D or better except for the following:

- College Avenue / Zura Way (LOS F during the PM peak hour)
- I-8 WB Ramps/ Parkway Drive (LOS E during the PM peak hour)

TABLE 9–6
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term without Project		Near-Term with Project		
			Delay [a]	LOS [b]	Delay	LOS	Δ[c]
1. Fairmount Ave / I-8 WB Off Ramps / Camino del Rio N	Signal	AM	51.1	D	51.1	D	0.0
		PM	169.4	F	169.4	F	0.0
2. Fairmount Ave / I-8 EB Off Ramps	Signal	AM	39.3	D	39.3	D	0.0
		PM	115.7	F	116.3	F	0.6
3. 55th Street / Remington Rd	Signal	AM	9.2	A	9.2	A	0.0
		PM	8.4	A	8.5	A	0.1
4. 55th Street / Montezuma Rd	Signal	AM	110.6	F	111.3	F	0.7
		PM	39.7	D	40.0	D	0.3
5. Campanile Dr / Montezuma Rd	Signal	AM	46.3	D	46.5	D	0.2
		PM	67.3	E	67.8	E	0.5
6. College Ave / Del Cerro Blvd	Signal	AM	75.4	E	**79.2**	**E**	**3.8**
		PM	40.8	D	41.3	D	0.5
7. College Ave / I-8 WB Ramps	Signal	AM	9.9	A	9.9	A	0.0
		PM	11.3	B	12.0	B	0.7
8. College Ave / I-8 EB Ramps	Signal	AM	68.9	E	**72.8**	**E**	**3.9**
		PM	20.1	C	27.6	C	7.5
9. College Ave / Canyon Crest Dr	Signal	AM	80.8	F	**83.7**	**F**	**2.9**
		PM	>120.0	F	**>120**	**F**	**>2.0**
10. College Ave / Zura Way	TWSC[c]	AM	16.5	C	16.9	C	0.4
		PM	>120.0	F	**>120**	**F**	**>2.0**
11. College Ave / Montezuma Rd	Signal	AM	104.8	F	**108.0**	**F**	**3.2**
		PM	98.4	F	**100.2**	**F**	**1.8**
12. Alvarado Ct / Alvarado Rd	TWSC[c]	AM	15.8	C	16.1	C	0.3
		PM	15.1	C	15.5	C	0.4

TABLE 9–6 (CONTINUED)
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term without Project		Near-Term with Project		
			Delay [a]	LOS [b]	Delay	LOS	Δ[e]
13. Resevoir Dr / Alvarado Rd	Signal	AM	17.7	B	17.8	B	0.1
		PM	21.5	C	21.5	C	0.0
14. Lake Murray Blvd / Parkway Dr	Signal	AM	33.6	C	34.0	C	0.4
		PM	35.3	D	35.7	D	0.4
15. 70th Street / Alvarado Rd	Signal	AM	32.3	C	32.4	C	0.1
		PM	42.6	D	42.6	D	0.0
16. I-8 WB Ramps /Parkway Dr	AWSC[d]	AM	23.1	C	23.7	C	0.6
		PM	46.1	E	**49.7**	**E**	**3.6**
17. I-8 EB Ramps / Alvarado Rd	Signal	AM	19.8	B	20.3	C	0.5
		PM	18.7	B	19.3	B	0.6

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street approach delay is reported.

d. AWSC – All-Way Stop Controlled intersection.

e. Δ denotes project induced delay increase.

General Notes:

Bold and shading represents a potential significant impact

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

9.2.2 *Segment Operations*

Table 9–7 summarizes the key segment operations in the study area in the near-term without project scenario. As seen in *Table 9–7* the following study area segments are calculated to operate at LOS E or worse conditions:

- Alvarado Road between East Campus Drive and Reservoir Drive (LOS E)
- Alvarado Road between Reservoir Drive and 70th Street (LOS F)
- College Avenue between I-8 Eastbound Ramps and Zura Way (LOS F)
- College Avenue between Zura Way and Montezuma Road (LOS E)
- College Avenue South of Montezuma Road (LOS F)
- Montezuma Road between Fairmount Avenue and Collwood Boulevard (LOS F)
- Montezuma Road between 55th Street and College Avenue (LOS F)
- Fairmount Avenue between Montezuma Road and I-8 (LOS F)

Table 9-7A shows the near term street segment operations on the residential streets.

TABLE 9–7
NEAR-TERM SEGMENT OPERATIONS

Segment	LOS E Capacity [a]	Near-Term without Project			Near-Term with Project			V/C Δ
		Volume	LOS [b]	V/C [c]	Volume	LOS	V/C	
Alvarado Road								
E. Campus Dr to Reservoir Dr	10,000	9,220	E	0.92	**9,490**	**E**	**0.95**	**0.03**
Reservoir Dr to 70th St	10,000	11,040	F	1.10	**11,310**	**F**	**1.13**	**0.03**
College Avenue								
Del Cerro Blvd to I-8 EB Ramps	40,000	32,360	D	0.81	32,910	D	0.82	0.01
I-8 EB Ramps to Zura Way	40,000	45,800	F	1.15	**47,260**	**F**	**1.18**	**0.03**
Zura Way to Montezuma Rd	40,000	37,480	E	0.94	38,090	E	0.95	0.01
South of Montezuma Rd	30,000	34,990	F	1.17	35,320	F	1.18	0.01
Montezuma Road								
Fairmount Ave to Collwood Blvd	40,000	56,030	F	1.40	56,210	F	1.41	0.01
Collwood Blvd to 55th St	40,000	31,990	D	0.80	32,170	D	0.80	0.00
55th St to College Ave	30,000	30,990	F	1.03	31,160	F	1.04	0.01
College Ave to E. Campus Dr	30,000	23,870	D	0.80	24,070	D	0.80	0.00
Fairmount Avenue								
Montezuma Rd to I-8	60,000	88,350	F	1.473	88,420	F	1.474	0.001

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).

b. Average Daily Traffic

c. Volume to Capacity ratio

TABLE 9–7A
NEAR TERM
RESIDENTIAL STREET SEGMENT OPERATIONS

Segment	LOS C Capacity [a]	Near Term Without Project		Near Term With Entire Project	
		Volume	LOS [b]	Volume	LOS
Adobe Falls Rd/Mill Peak Road					
North of Genoa Dr	1,500	410	C+	840	C+
Arno Drive					
Helena Pl to Capri Dr	1,500	370	C+	1,170	C+
Capri Drive					
East of Arno Dr	1,500	720	C+	1,520	C
Del Cerro Boulevard					
Genoa Dr to Capri Dr	5,000	3,640	C	3,950	C
Capri Dr to College Ave	5,000	5,170	D	6,290	D
Genoa Drive					
Capri Dr to Arno Pl	1,500	400	C+	830	C+
Lambda Drive					
Rockhurst Dr to College Ave	1,500	600	C+	660	C+
Rockhurst Drive					
Lambda Dr to College Ave	1,500	500	C+	560	C+

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).

b. Level of Service

General Notes:

1. C+ equals better than LOS C.

2. Project volume projections include a 10% decrease in overall Adobe Falls trip generation due to the planned shuttle system from the development to the campus. It is planned that the shuttle system would be implemented once the traffic volumes on the residential roadways reach a point that warrant such a system.

9.2.3 *Ramp Meter Operations*

Table 9–8 summarizes the near-term without project ramp meter operations for the I-8/College Avenue and the I-8/Fairmount Avenue interchanges. Using the *fixed rate method*, southbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 34-minute delay. The northbound College Avenue on-ramp to the eastbound I-8 is calculated to operate with a 48-minute delay. A ramp meter delay longer than 15 minutes is considered to be unacceptable as shown in Section 6.0: Significance Criteria.

The *maximum delay method* indicates that with the 15-minute maximum delay, queues of 4,500 feet per lane would be predicted at the southbound College Avenue on-ramp to the westbound I-8. A queue of 6,325 feet per lane would be predicted at the northbound College Avenue on-ramp to the eastbound I-8. These queue lengths exceed the available storage on the ramp.

The project adds less than 20 peak hour trips to the Fairmount Avenue and Waring Road on-ramps and therefore a ramp meter analysis is not required at these locations.

TABLE 9–8
NEAR-TERM RAMP METER OPERATIONS

Location/Scenario	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Fixed Rate Method						
SB Fairmount Ave to EB I-8						
Near-Term	PM	447	492	0	0	0
Near-Term + Project	PM	448	492	0	0	0
Project Increase	PM	1	492	0	0	0
NB College Avenue to WB I-8						
Near-Term	AM	273	318	0	0	0
Near-Term + Project	AM	279	318	0	0	0
Project Increase	AM	6	318	0	0	0
SB College Avenue to WB I-8						
Near-Term	AM	498	318	180	34	4500
Near-Term + Project	AM	500	318	182	34	4550
Project Increase	AM	2	318	2	0	50
NB College Avenue to EB I-8						
Near-Term	PM	571	318	253	48	6325
Near-Term + Project	PM	585	318	267	50	6675
Project Increase	PM	14	318	14	2	350

TABLE 9–8 (CONTINUED)
NEAR-TERM RAMP METER OPERATIONS

Location/Condition	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Maximum Delay Method						
SB Fairmount Ave to EB I-8						
Near-Term	PM	447	492	0	0	0
Near-Term + Project	PM	448	492	0	0	0
Project Increase	PM	1	NA	0	0	0
NB College Avenue to WB I-8						
Near-Term	PM	273	318	0	0	0
Near-Term + Project	PM	279	318	0	0	0
Project Increase	PM	6	NA	0	0	0
SB College Avenue to WB I-8						
Near-Term	PM	498	318	180	15	4500
Near-Term + Project	PM	500	318	182	15	4550
Project Increase	PM	2	NA	2	0	50
NB College Avenue to EB I-8						
Near-Term	PM	571	318	253	15	6325
Near-Term + Project	PM	585	318	267	15	6675
Project Increase	PM	14	NA	14	0	350

Footnotes:

a. Meter Rates obtained from Caltrans.

b. Delay expressed in minutes per lane.

c. Queue expressed in feet per lane.

General Notes:

Bold & Shading represents a potential significant impact.

NA = Not Applicable.

9.2.4 *Freeway Operations*

Table 9–9 summarizes the freeway mainline operations on I-8 during the near-term without project scenario. As seen in *Table 9–9*, the segments of I-8 between Fairmount Avenue and Lake Murray Boulevard are calculated to operate at LOS F(0) during the AM peak hour in the westbound direction. The segment of I-8 between Lake Murray Boulevard and Fletcher Parkway is calculated to operate at LOS F(1) during the AM peak hour in the westbound direction. The segments of I-8 between Fairmount Avenue and Fletcher Parkway are calculated to operate at LOS F(0) the PM peak hour in the eastbound direction.

TABLE 9–9
NEAR-TERM FREEWAY MAINLINE OPERATIONS
INTERSTATE 8

Scenario	Direction	Number of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D[c]		Truck Factor [d]	Peak Hour Volume [e]		V/C[f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Near-Term Without Project															
Fairmount Avenue to Waring Road	EB	5M	10,000	254,360	0.075	0.074	0.374	0.604	0.965	7,340	11,723	0.734	1.172	C	F(0)
	WB	5M	10,000		0.075	0.074	0.626	0.396		12,297	7,677	1.230	0.768	F(0)	C
Waring Road to College Avenue	EB	5M	10,000	239,960	0.075	0.074	0.374	0.604	0.965	6,925	11,060	0.692	1.106	C	F(0)
	WB	5M	10,000		0.075	0.074	0.626	0.396		11,601	7,242	1.160	0.724	F(0)	C
College Avenue to Lake Murray Boulevard	EB	4M + 1A	9,200	219,040	0.073	0.078	0.330	0.600	0.963	5,439	10,637	0.591	1.156	B	F(0)
	WB	5M	10,000		0.073	0.078	0.670	0.400		11,098	7,082	1.110	0.708	F(0)	C
Lake Murray Boulevard to Fletcher Parkway	EB	4M + 1A	9,200	202,120	0.073	0.078	0.330	0.600	0.963	5,018	9,815	0.545	1.067	B	F(0)
	WB	4M	8,000		0.073	0.078	0.670	0.400		10,240	6,535	1.280	0.817	F(1)	D
Near-Term With Project															
Fairmount Avenue to Waring Road	EB	5M	10,000	255,060	0.075	0.074	0.374	0.604	0.965	7366	11751	0.737	1.175	C	F(0)
	WB	5M	10,000		0.075	0.074	0.626	0.396		12312	7703	1.231	0.770	F(0)	C
Waring Road to College Avenue	EB	5M	10,000	240,660	0.075	0.074	0.374	0.604	0.965	6951	11088	0.695	1.109	C	F(0)
	WB	5M	10,000		0.075	0.074	0.626	0.396		11616	7268	1.162	0.727	F(0)	C
College Avenue to Lake Murray Boulevard	EB	4M + 1A	9,200	219,410	0.073	0.078	0.330	0.600	0.963	5445	10651	0.592	1.158	B	F(0)
	WB	5M	10,000		0.073	0.078	0.670	0.400		11112	7095	1.111	0.710	F(0)	C
Lake Murray Boulevard to Fletcher Parkway	EB	4M + 1A	9,200	202,690	0.073	0.078	0.330	0.600	0.963	5028	9837	0.547	1.069	B	F(0)
	WB	4M	8,000		0.073	0.078	0.670	0.400		10261	6556	1.283	0.820	F(1)	D

General Notes:

Bold and Shading—represents a potential significant impact.

Footnotes:

a. Capacity calculated at 2,000 vehicles per hour per lane and 1,200 vehicles per hour per auxiliary lane (M: Mainline, A: Auxiliary)

b. Existing Average Daily Traffic Volumes from CALTRANS

c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "2005 Traffic Volumes", June 2006 (*Appendix D*)

d. Truck Factor from "2005 Annual Average Daily Truck Traffic on the California State Highway System", November 2006 (*Appendix D*)

e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)

f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

FREEWAY V/C / LOS THRESHOLDS		FREEWAY V/C / LOS THRESHOLDS	
V / C	LOS	V / C	LOS
< 0.41	A	1.25	F(0)
0.62	B	1.35	F(1)
0.80	C	1.45	F(2)
0.92	D	> 1.46	F(3)
1.00	E		

9.3 Near-Term with Project

The near-term with project traffic analysis is an assessment of the impact of the near-term project (i.e. the project at Year 2012) in relation to the near-term without project conditions. ***Figure 9–3*** depicts the near-term with project traffic volumes. ***Appendix K*** contains the peak hour intersection, ramp meter, and freeway analysis worksheets for the near-term with project scenario.

9.3.1 *Intersection Analysis*

Table 9–6 summarizes the peak hour intersection operations for the near-term with project scenario. As seen in *Table 9–6*, with the addition of near-term project traffic, the key signalized intersections are calculated to operate at LOS D or better except the following:

- Fairmount Avenue / I-8 Westbound Off-ramps/Camino del Rio North (LOS F during the PM peak hour)
- Fairmount Avenue / I-8 Eastbound Off-Ramps (LOS F during the PM peak hour)
- 55th Street / Montezuma Road (LOS F during the AM peak hour)
- Campanile Drive / Montezuma Road (LOS E during the PM peak hour)
- College Avenue / Del Cerro Boulevard (LOS E during the AM peak hour)
- College Avenue / I-8 Eastbound Ramps (LOS E during the AM peak hour)
- College Avenue / Canyon Crest Drive (LOS F during the AM and the PM peak hours)
- College Avenue / Montezuma Road (LOS F during the AM and PM peak hours)

It should be noted that the project does not degrade the LOS at any of these intersections.

The unsignalized intersections in the project vicinity are calculated to operate at LOS D or better except for the following:

- College Avenue / Zura Way (LOS F during the PM peak hour)
- I-8 WB Ramps/ Parkway Drive (LOS E during the PM peak hour)

9.3.2 *Segment Operations*

Table 9–7 summarizes the key segment operations in the study area with the addition of the near-term project traffic. As seen in *Table 9–7*, with the addition of project traffic, the following study area segments are calculated to operate at LOS E or worse conditions:

- Alvarado Road between East Campus Drive and Reservoir Drive (LOS E)
- Alvarado Road between Reservoir Drive and 70th Street (LOS F)
- College Avenue between I-8 Eastbound Ramps and Zura Way (LOS F)
- College Avenue between Zura Way and Montezuma Road (LOS E)
- College Avenue South of Montezuma Road (LOS F)
- Montezuma Road between Fairmount Avenue and Collwood Boulevard (LOS F)

- Montezuma Road between 55th Street and College Avenue (LOS F)
- Fairmount Avenue between Montezuma Road and I-8 (LOS F)

It should be noted that the project does not degrade the LOS on any of these segments.

9.3.3 *Ramp Meter Operations*

Table 9–8 summarizes the near-term with project ramp meter operations for the I-8/College Avenue and the I-8/Fairmount Avenue interchanges. The significance of the ramp meter impacts is discussed in Section 16.0 of the report.

Using the *fixed rate method*, southbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 34-minute delay, no increase in delay caused by the project. The northbound College Avenue on-ramp to the eastbound I-8 is calculated to operate with a 50-minute delay, a project increase of 2 minutes.

The *maximum delay method* indicates that with the 15-minute maximum delay, queues of 4,550 feet per lane would be predicted at the southbound College Avenue on-ramp to the westbound I-8, a project increase of 50 feet. A queue of 6,675 feet per lane would be predicted at the northbound College Avenue on-ramp to the eastbound I-8, a project increase of 350 feet. These queue lengths exceed the available storage on the ramp.

9.3.4 *Freeway Operations*

Table 9–9 summarizes the freeway mainline operations on I-8 during the near-term with project scenario. As seen in *Table 9–9*, with the addition of project traffic, the segments of I-8 between Fairmount Avenue and Lake Murray Boulevard are calculated to continue to operate at LOS F(0) during the AM peak hour in the westbound direction. The segment of I-8 between Lake Murray Boulevard and Fletcher Parkway is calculated to continue to operate at LOS F(1) during the AM peak hour in the westbound direction. The segments of I-8 between Fairmount Avenue and Fletcher Parkway are calculated to continue to operate at LOS F(0) the PM peak hour in the eastbound direction.

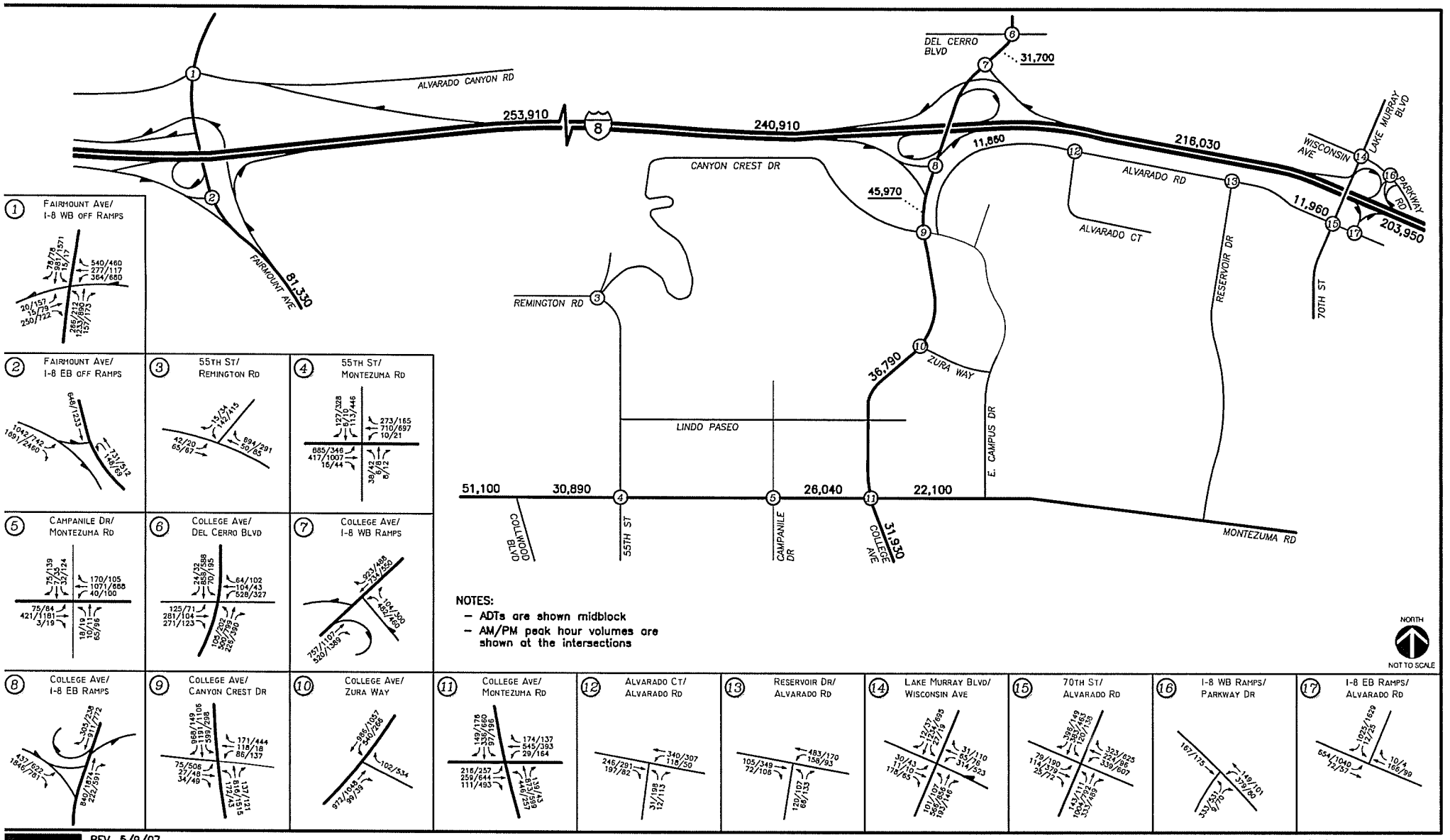

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Figure 9-1

Existing + Project Traffic Volumes AM/PM Peak Hours & ADT

SDSU 2007 CAMPUS MASTER PLAN REVISION

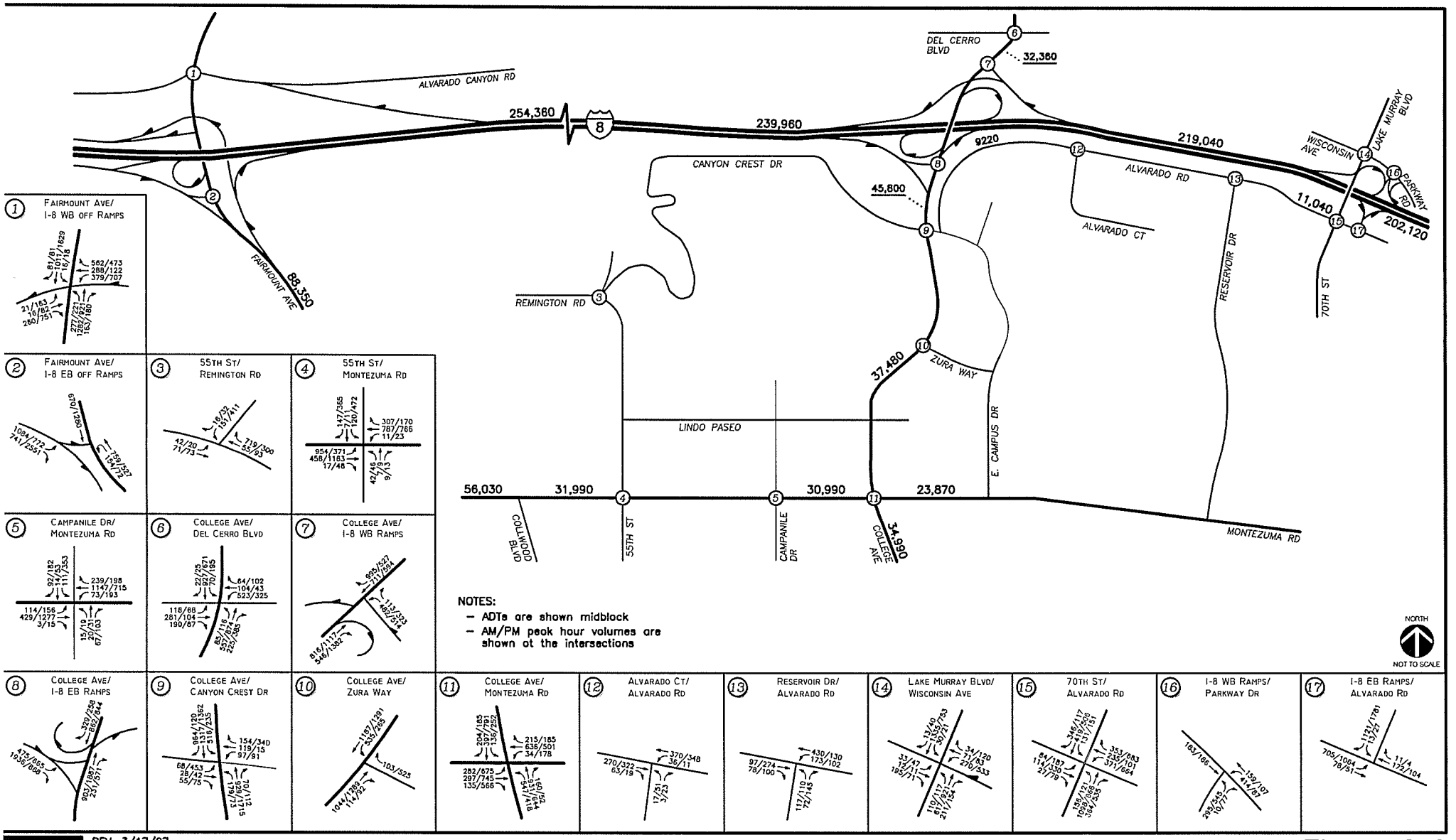

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Figure 9-2

Near-Term without Project Traffic Volumes AM/PM Peak Hours & ADT

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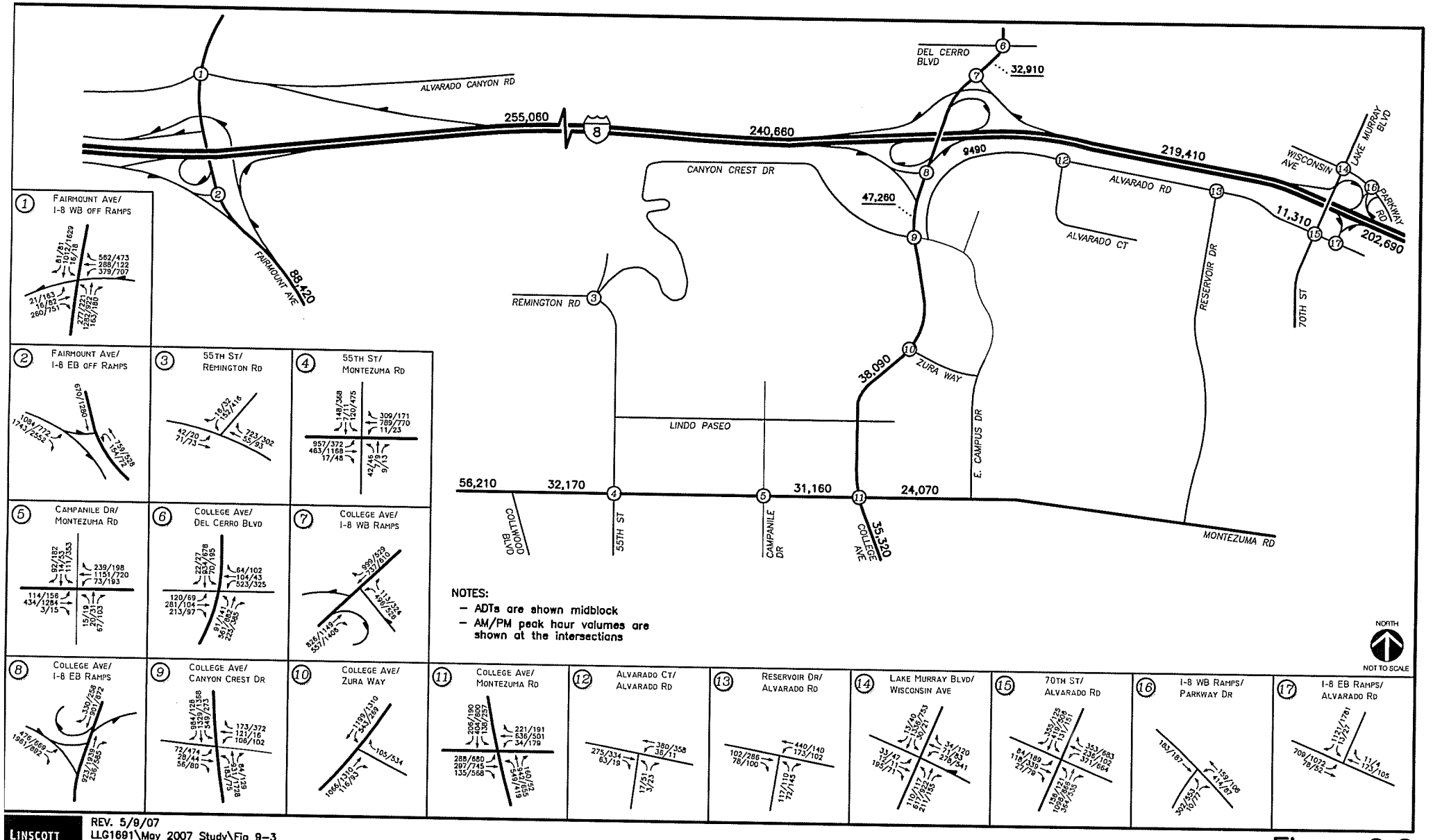

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Figure 9-3

Near-Term With Project Traffic Volumes AM/PM Peak Hours & ADT

SDSU 2007 Campus Master Plan Revision

10.0 ANALYSIS OF LONG-TERM SCENARIOS

The scenarios analyzed below are an assessment of the impact of the total project traffic volumes in relation to the long-term conditions. This section includes the analysis results and discussions of the intersection, street segment, ramp meter, and freeway mainline operations.

10.1 Horizon Year without Project

The Horizon Year without project traffic volumes were forecast using the SANDAG Series 10 model volumes for the Year 2030. In addition, traffic generated by cumulative projects that were assumed not already in the model were added to the Year 2030 forecast volumes. ***Figure 10–1*** depicts the horizon year without project traffic volumes. ***Appendix L*** contains the peak hour intersection, ramp meter, and freeway analysis worksheets for the horizon year without project scenario.

10.1.1 *Intersection Analysis*

Table 10–1 summarizes the peak hour intersection operations for the Horizon Year without project scenario. As seen in *Table 10–1*, the key signalized intersections are calculated to operate at LOS D or better except the following:

- Fairmount Avenue / I-8 Westbound Off-ramp/Camino del Rio North (LOS F during the AM and PM peak hours)
- Fairmount Avenue / I-8 Eastbound Off-Ramp (LOS F during the PM peak hour)
- 55th Street / Montezuma Road (LOS F during the AM peak hour and LOS E during the PM peak hour)
- Campanile Drive / Montezuma Road (LOS F during the AM and PM peak hours)
- College Avenue / Del Cerro Boulevard (LOS F during the AM peak hour and LOS E during the PM peak hour)
- College Avenue / I-8 Eastbound Ramps (LOS F during the AM and PM peak hours)
- College Avenue / Canyon Crest Drive (LOS F during the AM and PM peak hours)
- College Avenue / Montezuma Road (LOS F during the AM and PM peak hours)
- Lake Murray Boulevard / Parkway Drive (LOS E during the AM and PM peak hours)
- 70th Street / Alvarado Road (LOS F during the AM and PM peak hours)
- I-8 Eastbound Ramps / Alvarado Road (LOS F during the PM peak hour)

The unsignalized intersections in the project vicinity are calculated to operate at LOS D or better except for the following:

- College Avenue / Zura Way (LOS F during the PM peak hour)
- Alvarado Court / Alvarado Road (LOS F during the AM peak hour)
- I-8 Westbound Ramps / Parkway Drive (LOS F during the AM and PM peak hours)

TABLE 10–1
HORIZON YEAR INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Horizon Year without Project		Horizon Year with Project		
			Delay	LOS	Delay	LOS	Δ[e]
1. Fairmount Ave / I-8 WB Off Ramp / Camino del Rio N	Signal	AM	92.6	F	**96.1**	**F**	**3.5**
		PM	286.7	F	287.5	F	0.8
2. Fairmount Ave / I-8 EB Off Ramp	Signal	AM	43.0	D	43.8	D	0.8
		PM	140.5	F	140.9	F	0.4
3. 55th Street / Remington Rd	Signal	AM	10.2	B	10.4	B	0.2
		PM	9.1	A	9.1	A	0.0
4. 55th Street / Montezuma Rd	Signal	AM	>120	F	**>120**	**F**	**>2.0**
		PM	56.9	E	**66.7**	**E**	**9.8**
5. Campanile Dr / Montezuma Rd	Signal	AM	84.0	F	**90.0**	**F**	**6.0**
		PM	101.3	F	**105.8**	**F**	**4.5**
6. College Ave / Del Cerro Blvd	Signal	AM	>120	F	**>120**	**F**	**>2.0**
		PM	63.1	E	**69.6**	**E**	**6.5**
7. College Ave / I-8 WB Ramps	Signal	AM	10.5	B	11.1	B	0.6
		PM	51.8	D	**65.0**	**E**	**13.2**
8. College Ave / I-8 EB Ramps	Signal	AM	>120	F	**>120**	**F**	**>2.0**
		PM	109.9	F	**>120**	**F**	**>2.0**
9. College Ave / Canyon Crest Dr	Signal	AM	>120	F	**>120**	**F**	**>2.0**
		PM	>120	F	**>120**	**F**	**>2.0**
10. College Ave / Zura Way	TWSC[c]	AM	21.1	C	24.3	C	3.2
		PM	>120	F	**>120**	**F**	**>2.0**
11. College Ave / Montezuma Rd	Signal	AM	>120	F	**>120**	**F**	**>2.0**
		PM	>120	F	**>120**	**F**	**>2.0**
12. Alvarado Ct / Alvarado Rd	TWSC[c]	AM	54.1	F	**>120**	**F**	**>2.0**
		PM	35.4	D	**>120**	**F**	**>2.0**

TABLE 10–1 (CONTINUED)
HORIZON YEAR INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Horizon Year without Project		Horizon Year with Project		
			Delay	LOS	Delay	LOS	Δ[e]
13. Resevoir Dr / Alvarado Rd	Signal	AM	21.6	C	23.4	C	1.8
		PM	36.5	D	**67.9**	**E**	**31.4**
14. Lake Murray Blvd / Parkway Dr	Signal	AM	72.7	E	**90.5**	**F**	**17.8**
		PM	65.4	E	**71.6**	**E**	**5.8**
15. 70th Street / Alvarado Rd	Signal	AM	81.1	F	**92.7**	**F**	**11.6**
		PM	119.3	F	**>120**	**F**	**>2.0**
16. I-8 WB Ramps /Parkway Dr	AWSC[d]	AM	61.3	F	**80.5**	**F**	**19.2**
		PM	>120	F	**>120**	**F**	**>2.0**
17. I-8 EB Ramps / Alvarado Rd	Signal	AM	24.3	C	24.8	C	0.5
		PM	101.4	F	**105.1**	**F**	**3.7**

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street approach delay is reported.

d. AWSC – All-Way Stop Controlled intersection.

e. Δ denotes project induced delay increase.

General Notes:

Bold and shading represents a potential significant impact

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

10.1.2 *Segment Operations*

Table 10–2 summarizes the key segment operations in the study area in the Horizon Year without project scenario. As seen in *Table10–2* the following study area segments are calculated to operate at LOS E or worse conditions.

- Alvarado Road between East Campus Drive and Reservoir Drive (LOS F)
- Alvarado Road between Reservoir Drive and 70th Street (LOS F)
- College Avenue between Del Cerro Boulevard and I-8 Eastbound Ramps (LOS F)
- College Avenue between I-8 Eastbound Ramps and Zura Way (LOS F)
- College Avenue between Zura Way and Montezuma Road (LOS F)
- College Avenue South of Montezuma Road (LOS F)
- Montezuma Road between Fairmount Avenue and Collwood Boulevard (LOS F)
- Montezuma Road between 55th Street and College Avenue (LOS F)

- Montezuma Road between College Avenue and East Campus Drive (LOS E)
- Fairmount Avenue between Montezuma Road and I-8 (LOS F)

Tables 10-2A shows the street segment operations on the residential streets in the Del Cerro community.

TABLE 10–2
HORIZON YEAR SEGMENT OPERATIONS

Segment	LOS E Capacity [a]	Horizon Year without Project			Horizon Year with Project			V/C Δ
		Volume	LOS [b]	V/C [c]	Volume	LOS	V/C	
Alvarado Road								
E. Campus Dr to Reservoir Dr	10,000	13,950	F	1.40	**17,510**	**F**	**1.75**	**0.35**
Reservoir Dr to 70th St	10,000	16,450	F	1.65	**18,520**	**F**	**1.85**	**0.20**
College Avenue								
Del Cerro Blvd to I-8 EB Ramps	40,000	52,800	F	1.32	**54,970**	**F**	**1.37**	**0.05**
I-8 EB Ramps to Zura Way	40,000	69,570	F	1.74	**76,140**	**F**	**1.90**	**0.16**
Zura Way to Montezuma Rd	40,000	53,200	F	1.33	**56,040**	**F**	**1.40**	**0.07**
South of Montezuma Rd	30,000	38,490	F	1.28	**40,200**	**F**	**1.34**	**0.06**
Montezuma Road								
Fairmount Ave to Collwood Blvd	40,000	57,000	F	1.43	**58,280**	**F**	**1.46**	**0.03**
Collwood Blvd to 55th St	40,000	32,570	D	0.81	33,850	D	0.85	0.04
55th St to College Ave	30,000	33,430	F	1.11	**35,010**	**F**	**1.17**	**0.06**
College Ave to E. Campus Dr	30,000	28,250	E	0.94	28,800	E	0.96	0.02
Fairmount Avenue								
Montezuma Rd to I-8	60,000	89,000	F	1.483	89,530	F	1.492	0.009

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).

b. Average Daily Traffic

c. Volume to Capacity ratio

TABLE 10-2A
HORIZON YEAR
RESIDENTIAL STREET SEGMENT OPERATIONS

Segment	LOS C Capacity [a]	Horizon Year Without Project		Horizon Year With Project	
		Volume	LOS [b]	Volume	LOS
Adobe Falls Rd/Mill Peak Road					
North of Genoa Dr	1,500	410	C+	840	C+
Arno Drive					
Helena Pl to Capri Dr	1,500	370	C+	1,170	C+
Capri Drive					
East of Arno Dr	1,500	720	C+	1,520	C
Del Cerro Boulevard					
Genoa Dr to Capri Dr	5,000	3,640	C	3,950	C
Capri Dr to College Ave	5,000	5,170	D	6,290	D
Genoa Drive					
Capri Dr to Arno Pl	1,500	400	C+	830	C+
Lambda Drive					
Rockhurst Dr to College Ave	1,500	600	C+	660	C+
Rockhurst Drive					
Lambda Dr to College Ave	1,500	500	C+	560	C+

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).

b. Level of Service

General Notes:

1. C+ equals better than LOS C.

2. Project volume projections include a 10% decrease in overall Adobe Falls trip generation due to the planned shuttle system from the development to the campus. It is planned that the shuttle system would be implemented once the traffic volumes on the residential roadways reach a point that warrant such a system.

10.1.3 *Ramp Meter Operations*

Table 10–3 summarizes the horizon year without project ramp meter operations for the I-8/College Avenue and the I-8/Fairmount Avenue interchanges. The significance of the ramp meter impacts is discussed in Section 16.0 of the report.

Using the *fixed rate method*, northbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 3-minute delay. The southbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 43-minute delay. The northbound College Avenue on-ramp to the eastbound I-8 is calculated to operate with a 131-minute delay. A ramp meter delay longer than 15 minutes is considered to be unacceptable as shown in Section 6.0: Significance Criteria.

The *maximum delay method* indicates that with the 15-minute maximum delay, queues of 425 feet per lane would be predicted at the northbound College Avenue on-ramp to westbound I-8. A queue of 5,675 feet per lane would be predicted at the southbound College Avenue on-ramp to westbound I-8. A queue of 17,300 feet per lane would be predicted at the northbound College Avenue on-ramp to eastbound I-8. These queue lengths exceed the available storage on the ramp.

TABLE 10–3
HORIZON YEAR RAMP METER OPERATIONS

Location/Scenario	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Fixed Rate Method						
SB Fairmount Ave to EB I-8						
Horizon Year	PM	450	492	0	0	0
Horizon Year + Project	PM	452	492	0	0	0
Project Increase	PM	2	492	0	0	0
NB College Avenue to WB I-8						
Horizon Year	AM	335	318	17	3	425
Horizon Year + Project	AM	346	318	28	5	700
Project Increase	AM	11	318	11	2	275
SB College Avenue to WB I-8						
Horizon Year	AM	545	318	227	43	5675
Horizon Year + Project	AM	552	318	234	44	5850
Project Increase	AM	7	318	7	1	175
NB College Avenue to EB I-8						
Horizon Year	PM	1010	318	692	131	17300
Horizon Year + Project	PM	1079	318	761	144	19025
Project Increase	PM	69	318	69	13	1725

TABLE 10–3 (CONTINUED)
HORIZON YEAR RAMP METER OPERATIONS

Location/Condition	Peak Hour	Peak Hour Demand	Ramp Meter Rate (Flow)[a]	Excess Demand	Delay per Lane[b]	Queue per Lane[c]
Maximum Delay Method						
SB Fairmount Ave to EB I-8						
Horizon Year	PM	450	492	0	0	0
Horizon Year + Project	PM	454	492	0	0	0
Project Increase	PM	2	NA	0	0	0
NB College Avenue to WB I-8						
Horizon Year	PM	335	318	17	0	425
Horizon Year + Project	PM	346	318	28	0	700
Project Increase	PM	11	NA	11	0	275
SB College Avenue to WB I-8						
Horizon Year	PM	545	318	227	15	5675
Horizon Year + Project	PM	552	318	234	15	5850
Project Increase	PM	7	NA	7	1	175
NB College Avenue to EB I-8						
Horizon Year	PM	1010	318	692	15	17300
Horizon Year + Project	PM	1079	318	761	15	19025
Project Increase	PM	69	NA	69	13	1725

Footnotes:

a. Meter Rates obtained from Caltrans.

b. Delay expressed in minutes per lane.

c. Queue expressed in feet per lane.

General Notes:

Bold & Shading represents a potential significant impact.

NA = Not Applicable.

10.1.4 *Freeway Operations*

Table 10–4 summarizes the freeway mainline operations on I-8 during the horizon year without project scenario. As seen in *Table 10–4*, the segment of I-8 between Fairmount Avenue and Waring Road is calculated to operate at LOS F(1) during the AM peak hour in the westbound direction. The segments of I-8 between Waring Road and Lake Murray Boulevard are calculated to operate at LOS F(0) during the AM peak hour in the westbound direction. The segment of I-8 between Lake Murray Boulevard and Fletcher Parkway is calculated to operate at LOS F(1) during the AM peak hour in the westbound direction. The segments of I-8 between Fairmount Avenue and Fletcher Parkway are calculated to operate at LOS F(0) the PM peak hour in the eastbound direction.

TABLE 10–4
HORIZON YEAR FREEWAY MAINLINE OPERATIONS
INTERSTATE 8

Scenario	Direction	Number of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Horizon Year Without Project															
Fairmount Avenue to Waring Road	EB	5M	10,000	263,000	0.075	0.074	0.374	0.604	0.965	7,590	12,122	0.759	1.212	C	F(0)
	WB	5M	10,000		0.075	0.074	0.626	0.396		12,714	7,937	1.271	0.794	F(1)	C
Waring Road to College Avenue	EB	5M	10,000	245,000	0.075	0.074	0.374	0.604	0.965	7,070	11,292	0.707	1.129	C	F(0)
	WB	5M	10,000		0.075	0.074	0.626	0.396		11,844	7,394	1.184	0.739	F(0)	C
College Avenue to Lake Murray Boulevard	EB	4M + 1A	9,200	232,000	0.073	0.078	0.330	0.600	0.963	5,760	11,266	0.626	1.225	C	F(0)
	WB	5M	10,000		0.073	0.078	0.670	0.400		11,754	7,501	1.175	0.750	F(0)	C
Lake Murray Boulevard to Fletcher Parkway	EB	4M + 1A	9,200	205,000	0.073	0.078	0.330	0.600	0.963	5,090	9,955	0.553	1.082	B	F(0)
	WB	4M	8,000		0.073	0.078	0.670	0.400		10,386	6,628	1.298	0.829	F(1)	D
Horizon Year With Project															
Fairmount Avenue to Waring Road	EB	5M	10,000	265,910	0.075	0.074	0.374	0.604	0.965	7711	12204	0.771	**1.220**	C	**F(0)**
	WB	5M	10,000		0.075	0.074	0.626	0.396		12748	8068	1.275	0.807	F(1)	D
Waring Road to College Avenue	EB	5M	10,000	247,910	0.075	0.074	0.374	0.604	0.965	7191	11374	0.719	**1.137**	C	**F(0)**
	WB	5M	10,000		0.075	0.074	0.626	0.396		11878	7525	1.188	0.753	F(0)	C
College Avenue to Lake Murray Boulevard	EB	4M + 1A	9,200	234,030	0.073	0.078	0.330	0.600	0.963	5775	11337	0.628	**1.232**	C	**F(0)**
	WB	5M	10,000		0.073	0.078	0.670	0.400		11819	7542	**1.182**	0.754	**F(0)**	C
Lake Murray Boulevard to Fletcher Parkway	EB	4M + 1A	9,200	207,950	0.073	0.078	0.330	0.600	0.963	5114	10093	0.556	**1.097**	B	**F(0)**
	WB	4M	8,000		0.073	0.078	0.670	0.400		10514	6702	**1.314**	0.838	**F(1)**	D

General Notes:

Bold and Shading—represents a potential significant impact.

Footnotes:

a. Capacity calculated at 2,000 vehicles per hour per lane and 1,200 vehicles per hour per auxiliary lane (M: Mainline, A: Auxiliary)

b. Existing Average Daily Traffic Volumes from CALTRANS

c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "2005 Traffic Volumes", June 2006 (*Appendix D*)

d. Truck Factor from "2005 Annual Average Daily Truck Traffic on the California State Highway System", November 2006 (*Appendix D*)

e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)

f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

FREEWAY V/C / LOS THRESHOLDS		FREEWAY V/C / LOS THRESHOLDS	
V / C	LOS	V / C	LOS
< 0.41	A	1.25	F(0)
0.62	B	1.35	F(1)
0.80	C	1.45	F(2)
0.92	D	> 1.46	F(3)
1.00	E		

10.2 Horizon Year with Project

The Horizon Year with total project traffic analysis is an assessment of the impact of the total project (i.e. the project at buildout) in relation to the Horizon Year without project conditions. ***Figure 10–2*** depicts the horizon year with project traffic volumes. ***Appendix M*** contains the peak hour intersection, ramp meter, and freeway analysis worksheets for the horizon year with project scenario.

10.2.1 *Intersection Analysis*

Table 10–1 summarizes the peak hour intersection operations for the Horizon Year with project scenario. As seen in *Table 10–1*, with the addition of project traffic, the key signalized intersections are calculated to continue to operate at LOS D or better conditions except the following. It should be noted that the project degrades the LOS from acceptable to unacceptable levels at only 3 of the intersections listed below.

- Fairmount Avenue / I-8 Westbound Off-ramp/Camino del Rio North (LOS F during the AM and PM peak hours)
- Fairmount Avenue / I-8 Eastbound Off-Ramp (LOS F during the PM peak hour)
- 55th Street / Montezuma Road (LOS F during the AM peak hour and LOS E during the PM peak hour)
- Campanile Drive / Montezuma Road (LOS F during the AM and PM peak hours)
- College Avenue / Del Cerro Boulevard (LOS F during the AM peak hour and LOS E during the PM peak hour)
- College Avenue / I-8 Westbound Ramps (LOS E during the PM peak hour)
- College Avenue / I-8 Eastbound Ramps (LOS F during the AM and PM peak hours)
- College Avenue / Canyon Crest Drive (LOS F during the AM and PM peak hours)
- College Avenue / Montezuma Road (LOS F during the AM and PM peak hours)
- Reservoir Drive / Alvarado Road (LOS E during the PM peak hour)
- Lake Murray Boulevard / Parkway Drive (LOS F during the AM peak hour and LOS E during the PM peak hour)
- 70th Street / Alvarado Road (LOS F during the AM and PM peak hours)
- I-8 Eastbound Ramps / Alvarado Road (LOS F during the PM peak hour)

The unsignalized intersections in the project vicinity are calculated to operate at LOS D or better except for the following:

- College Avenue / Zura Way (LOS F during the PM peak hour)
- Alvarado Court / Alvarado Road (LOS F during the AM and PM peak hours)
- I-8 Westbound Ramps / Parkway Drive (LOS F during the AM and PM peak hours)

10.2.2 *Segment Operations*

Table 10–2 summarizes the key segment operations in the study area in the Horizon Year with project scenario. As seen in *Table10–2* the following study area segments are calculated to operate at LOS E or worse conditions:

- Alvarado Road between East Campus Drive and Reservoir Drive (LOS F)
- Alvarado Road between Reservoir Drive and 70th Street (LOS F)
- College Avenue between Del Cerro Boulevard and I-8 Eastbound Ramps (LOS F)
- College Avenue between I-8 Eastbound Ramps and Zura Way (LOS F)
- College Avenue between Zura Way and Montezuma Road (LOS F)
- College Avenue South of Montezuma Road (LOS F)
- Montezuma Road between Fairmount Avenue and Collwood Boulevard (LOS F)
- Montezuma Road between 55th Street and College Avenue (LOS F)
- Montezuma Road between College Avenue and East Campus Drive (LOS E)
- Fairmount Avenue between Montezuma Road and I-8 (LOS F)

10.2.3 *Ramp Meter Operations*

Table 10–3 summarizes the horizon year with project ramp meter operations for the I-8/College Avenue and the I-8/Fairmount Avenue interchanges. The significance of the ramp meter impacts is discussed in Section 16.0 of the report.

Using the *fixed rate method*, northbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 5-minute delay, a project increase of 2 minutes. The southbound College Avenue on-ramp to westbound I-8 is calculated to operate with a 44-minute delay, a project increase of 1 minute. The northbound College Avenue on-ramp to the eastbound I-8 is calculated to operate with a 144-minute delay, a project increase of 13 minutes. A ramp meter delay longer than 15 minutes is considered to be unacceptable as shown in Section 6.0: Significance Criteria.

The *maximum delay method* indicates that with the 15-minute maximum delay, queues of 700 feet per lane would be predicted at the northbound College Avenue on-ramp to westbound I-8, a project increase of 275 feet. A queue of 5,850 feet per lane would be predicted at the southbound College Avenue on-ramp to westbound I-8, a project increase of 175 feet. A queue of 19,025 feet per lane would be predicted at the northbound College Avenue on-ramp to eastbound I-8, a project increase of 1,725 feet. These queue lengths exceed the available storage on the ramp.

10.2.4 *Freeway Operations*

Table 10–4 summarizes the freeway mainline operations on I-8 during the horizon year with project scenario. As seen in *Table 10–4*, with the addition of project traffic, the segment of I-8 between Fairmount Avenue and Waring Road is calculated to continue to operate at LOS F(1) during the AM peak hour in the westbound direction. The segments of I-8 between Waring Road and Lake Murray Boulevard are calculated to continue to operate at LOS F(0) during the AM peak hour in the westbound direction. The segment of I-8 between Lake Murray Boulevard and Fletcher Parkway is calculated to continue to operate at LOS F(1) during the AM peak hour in the westbound direction. The segments of I-8 between Fairmount Avenue and Fletcher Parkway are calculated to continue to operate at LOS F(0) the PM peak hour in the eastbound direction.

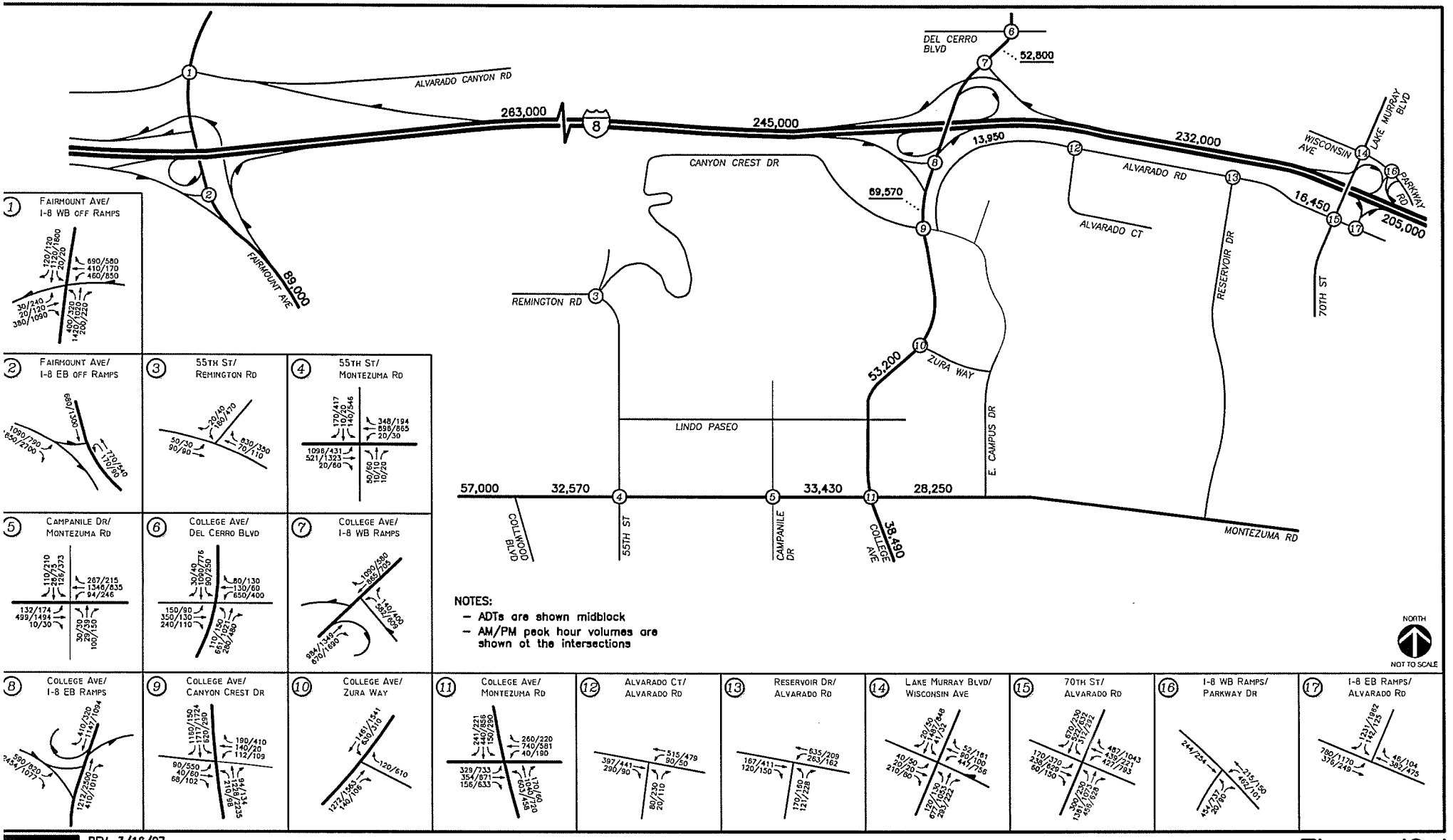

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Figure 10-1

Horizon Year without Project Traffic Volumes AM/PM Peak Hours & ADT

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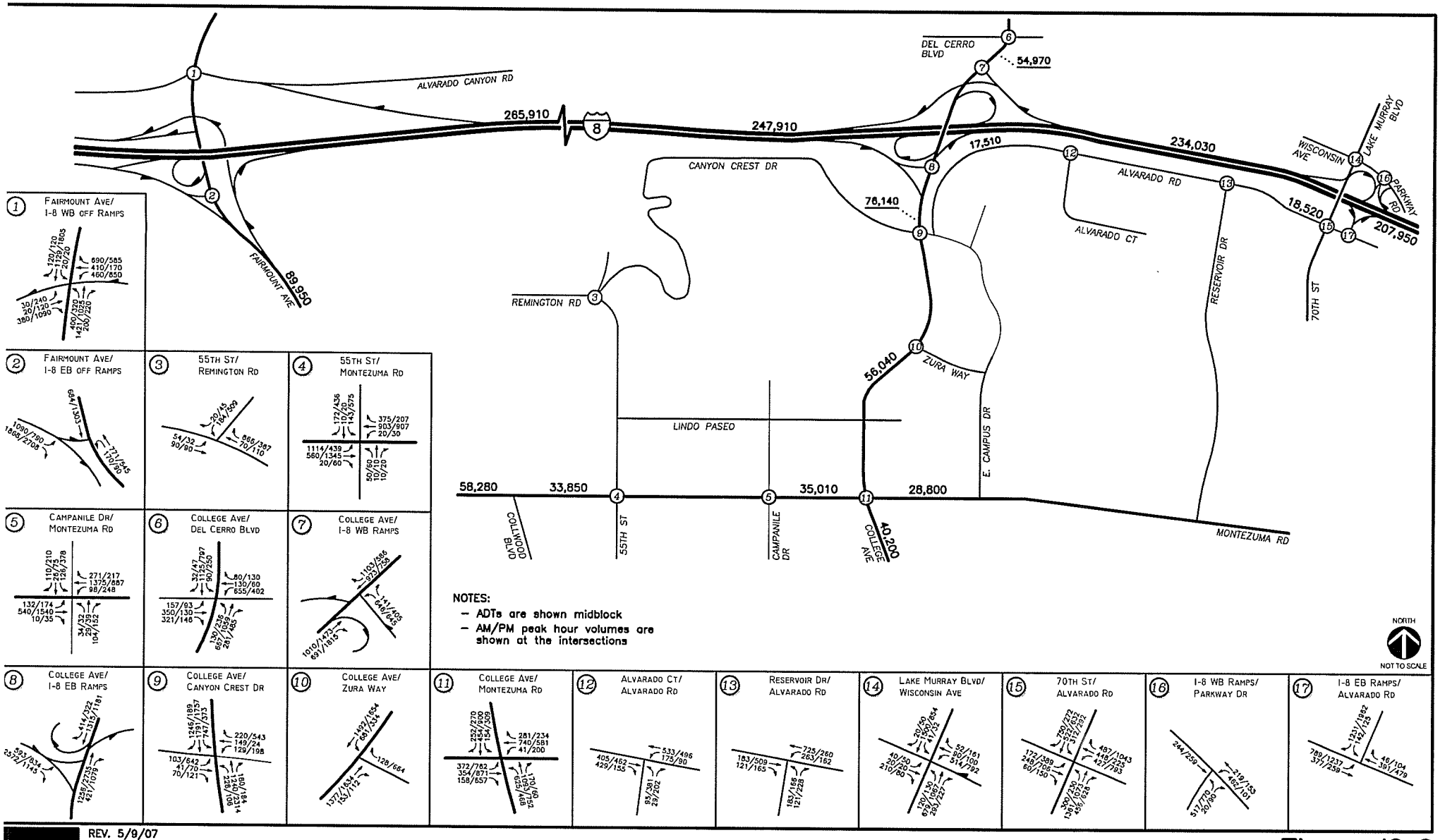

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Figure 10-2

Horizon Year With Project Traffic Volumes AM/PM Peak Hours & ADT

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11.0 INTERSECTION LANE VEHICLES OPERATIONS

The freeway interchanges were analyzed using the Caltrans ILV analysis methodology, in addition to the HCM based methodology. ***Appendix N*** contains the ILV analysis worksheets.

11.1 Existing

Table 11–1 summarizes the results of the existing ILV analysis. As seen in *Table 11–1*, the Fairmount Avenue / I-8 EB Off Ramp is calculated to operate under capacity in the AM peak hour and near capacity in the PM peak hour. The College Avenue / I-8 interchange is calculated to operate under capacity in the AM and PM peak hours. The I-8 EB Ramps / Alvarado Road intersection is calculated to operate under capacity in the AM and PM peak hours.

11.2 Existing + Project

Table 11–1 summarizes the results of the existing + project ILV analysis. As seen in *Table 11–1*, with the addition of project traffic, the Fairmount Avenue / I-8 EB Off Ramp is calculated to continue to operate under capacity in the AM peak hour and near capacity in the PM peak hour. The College Avenue / I-8 interchange is calculated to operate under capacity in the AM and PM peak hours except the College Avenue / I-8 EB Ramp, which is calculated to operate near capacity in the PM peak hour. The I-8 EB Ramps / Alvarado Road intersection is calculated to continue to operate under capacity in the AM and PM peak hours.

TABLE 11–1
EXISTING + PROJECT ILV OPERATIONS

Intersection	Peak Hour	Existing		Existing + Project	
		Total Operating Level (ILV / Hour)	Capacity	Total Operating Level (ILV / Hour)	Capacity
Fairmount Ave / I-8 EB Off Ramp	AM	866	Under	930	Under
	PM	1297	Near	1301	Near
College Ave / I-8 WB Ramps	AM	575	Under	620	Under
	PM	704	Under	784	Under
College Ave / I-8 EB Ramps	AM	615	Under	674	Under
	PM	1124	Under	1248	Near
I-8 EB Ramps / Alvarado Rd	AM	670	Under	679	Under
	PM	910	Under	914	Under

General Notes:

1. See *Appendix L* for ILV calculation sheets.

11.3 Near-Term without Project

Table 11–2 summarizes the results of the near-term without project ILV analysis. As seen in *Table 11–2*, the Fairmount Avenue / I-8 EB Off Ramp is calculated to operate under capacity in the AM

peak hour and near capacity in the PM peak hour. The College Avenue / I-8 interchange is calculated to operate under capacity in the AM and PM peak hours except the College Avenue / I-8 EB Ramp, which is calculated to operate near capacity in the PM peak hour. The I-8 EB Ramps / Alvarado Road intersection is calculated to operate under capacity in the AM and PM peak hours.

11.4 Near-Term with Project

Table 11–2 summarizes the results of the near-term with project ILV analysis. As seen in *Table 11–2*, with the addition of near-term project traffic, the Fairmount Avenue / I-8 EB Off Ramp is calculated to continue to operate under capacity in the AM peak hour and near capacity in the PM peak hour. The College Avenue / I-8 interchange is calculated to continue to operate under capacity in the AM and PM peak hours except the College Avenue / I-8 EB Ramp, which is calculated to continue operate near capacity in the PM peak hour. The I-8 EB Ramps / Alvarado Road intersection is calculated to operate under capacity in the AM and PM peak hours.

TABLE 11–2
NEAR-TERM ILV OPERATIONS

Intersection	Peak Hour	Near-Term without Project		Near-Term with Project	
		Total Operating Level (ILV / Hour)	Capacity	Total Operating Level (ILV / Hour)	Capacity
Fairmount Ave / I-8 EB Off Ramp	AM	922	Under	961	Under
	PM	1350	Near	1350	Near
College Ave / I-8 WB Ramps	AM	649	Under	661	Under
	PM	816	Under	838	Under
College Ave / I-8 EB Ramps	AM	690	Under	700	Under
	PM	1277	Near	1305	Near
I-8 EB Ramps / Alvarado Rd	AM	733	Under	734	Under
	PM	995	Under	996	Under

General Notes:
1. See *Appendix L* for ILV calculation sheets.

11.5 Horizon Year without Project

Table 11–3 summarizes the results of the Horizon Year without project ILV analysis. As seen in *Table 11–3*, the Fairmount Avenue / I-8 EB Off Ramp is calculated to operate under capacity in the AM peak hour and near capacity in the PM peak hour. The College Avenue / I-8 WB Ramp is calculated to operate under capacity in the AM and PM peak hours. The College Avenue / I-8 EB Ramp is calculated to operate under capacity in the AM peak hour and over capacity in the PM peak hour. The I-8 EB Ramps / Alvarado Road intersection is calculated to operate under capacity in the AM peak hour and near capacity in the PM peak hour.

11.6 Horizon Year with Project

Table 11–3 summarizes the results of the Horizon Year with project ILV analysis. As seen in *Table 11–3*, with the additional of total project traffic, the Fairmount Avenue / I-8 EB Off Ramp is calculated to continue operate under capacity in the AM peak hour and near capacity in the PM peak hour. The College Avenue / I-8 WB Ramp is calculated to continue to operate under capacity in the AM and PM peak hours. The College Avenue / I-8 EB Ramp is calculated to operate under capacity in the AM peak hour and over capacity in the PM peak hour. The I-8 EB Ramps / Alvarado Road intersection is calculated to continue to operate under capacity in the AM peak hour and near capacity in the PM peak hour.

TABLE 11–3
HORIZON YEAR ILV OPERATIONS

Intersection	Peak Hour	Horizon Year without Project		Horizon Year with Project	
		Total Operating Level (ILV / Hour)	Capacity	Total Operating Level (ILV / Hour)	Capacity
Fairmount Ave / I-8 EB Off Ramp	AM	1014	Under	1021	Under
	PM	1424	Near	1427	Near
College Ave / I-8 WB Ramps	AM	783	Under	828	Under
	PM	980	Under	1080	Under
College Ave / I-8 EB Ramps	AM	901	Under	955	Under
	PM	1660	Over	1785	Over
I-8 EB Ramps / Alvarado Rd	AM	998	Under	1007	Under
	PM	1456	Near	1460	Near

General Notes:

1. See *Appendix L* for ILV calculation sheets.

12.0 CONGESTION MANAGEMENT PROGRAM COMPLIANCE

The Congestion Management Program (CMP), adopted on November 22, 1991, is intended to link land use, transportation and air quality through level of service performance. The CMP requires an Enhanced CEQA Review for projects that are expected to generate more than 2,400 ADT or more than 200 peak hour trips. As the project trip generation exceeds the CMP thresholds a CMP analysis is triggered.

The *SANDAG Congestion Management Program Update, July 2006* report contains a list of "CMP Arterials" that are to be analyzed if the project exceeds the above mentioned trip generation thresholds. No CMP arterials listed in the report are within the project study area; however, Interstate 8 is a CMP Freeway. Therefore, the following freeway segments were analyzed to satisfy the CMP (see Sections 9.0 and 10.0 for the analysis results):

- I-8 between Fairmount Avenue to Waring Road
- I-8 between Waring Road and College Avenue
- I-8 between College Avenue and Lake Murray Blvd / 70th Street
- I-8 east of Lake Murray Boulevard / 70th Street

Significant impacts were calculated on several segments of Interstate 8. The significance of the freeway impacts are discussed in Section 16.0 of the report.

13.0 PARKING ANALYSIS

13.1 Parking Supply and Demand

LLG commissioned parking counts in October 2006, while school was in session, in order to determine the parking supply and demand on campus. The supply of parking when the counts were undertaken in October was 13,924 spaces campus-wide.

Table 13–1 lists by hour and category (students, faculty / staff, and special permit) the supply and demand for each parking lot and structure on the SDSU Campus counted. From this table it is possible to determine the peak parking time and the peak parking occupancy for each parking lot and structure. In general, parking lots and structures closer to Main Campus buildings have a higher occupancy level for greater portions of the day than those lots and structures that are more distant.

Table 13–2 provides a summary of the data parking supply and demand contained in *Table 13–1*. The average peak hour demand for parking based on the summary presented is between 10:00am and 11:00am when 65% (9,030 out of 13,924 spaces) of the parking lots and structures are full.

13.2 Future Parking Requirements

Using the above parking count data and the current student headcount enrollment of 33,441 students, the existing average peak parking demand is 0.27 parking spaces per student.

(9,030 existing parking demand ÷ 33,441 students) = 0.27 parking spaces per student

Using this parking rate, the future demand for student, faculty and staff, and visitor parking can be determined. Assuming 44,826 students will be enrolled in the future, the parking demand is 12,103 parking spaces.

(44,826 students * 0.27 parking spaces per student) = 12,103 parking spaces

There are 15,591 parking spaces planned for the horizon year, which is 3,488 parking spaces more than the calculated demand of 12,103 parking spaces. The table detailing the parking spaces to be provided over the next ten years, and a map of the existing parking lots/structures can be found in ***Appendix O***.

Based on the above calculations, no significant parking impact is identified.

TABLE 13–1
PARKING SUPPLY AND DEMAND

Parking Lot A										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	447	201 [a]	310	366	363	Break	363	351	306	281
Special Permit [b]	19	9	10	10	13	Break	9	11	9	8
Total	466	210	320	376	376	Break	371	362	315	289
Percentage Occupied		45%	69%	81%	81%	Break	80%	78%	68%	62%
Parking Lot B										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	8	4	5	6	6	Break	4	5	4	5
Percentage Occupied		50%	63%	75%	75%	Break	50%	63%	50%	63%
Parking Lot C										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	507	212	272	304	335	Break	332	297	279	241
Special Permit	8	4	6	4	3	Break	4	4	3	2
Total	515	216	278	308	338	Break	336	301	282	243
Percentage Occupied		42%	54%	60%	66%	Break	65%	58%	55%	47%

Footnotes:

a. Number in cell represents the parking demand at the listed time.

b. Special Permit parking spaces counted included disabled parking spaces, vendor spaces, visitor spaces, etc.

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Lot D										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	432	0	0	0	0	Break	0	0	0	0
Percentage Occupied		0%	0%	0%	0%	Break	0%	0%	0%	0%
Parking Lot E										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	229	126	159	163	160	Break	163	161	157	171
Special Permit	16	0	1	1	0	Break	0	0	0	0
Total	245	126	160	164	160	Break	163	161	157	171
Percentage Occupied		51%	65%	67%	65%	Break	67%	66%	64%	70%
Parking Lot F										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	253	180	253	253	253	Break	253	253	253	213
Special Permit	9	9	9	9	9	Break	9	9	9	25
Total	262	189	262	262	262	Break	262	262	262	238
Percentage Occupied		72%	100%	100%	100%	Break	100%	100%	100%	91%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Lot G										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	49	32	49	49	49	Break	49	49	49	49
Special Permit	25	5	25	25	25	Break	25	25	25	25
Total	74	37	74	74	74	Break	74	74	74	74
Percentage Occupied		50%	100%	100%	100%	Break	100%	100%	100%	100%
Parking Lot H										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	22	6	6	6	7	Break	7	11	6	8
Percentage Occupied		27%	27%	27%	32%	Break	32%	50%	27%	36%
Parking Lot K										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	14	3	4	6	7	Break	5	4	5	5
Percentage Occupied		21%	29%	43%	50%	Break	36%	29%	36%	36%
Parking Lot L										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	97	20	25	26	25	Break	22	22	22	21
Percentage Occupied		21%	26%	27%	26%	Break	23%	23%	23%	22%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Lot M										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	51	18	20	24	25	Break	25	27	23	32
Percentage Occupied		35%	39%	47%	49%	Break	49%	53%	45%	63%
Parking Lot N										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	32	0	3	4	8	Break	2	0	0	0
Percentage Occupied		0%	9%	13%	25%	Break	6%	0%	0%	0%
Parking Lot P										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	39	0	0	0	1	Break	2	1	2	1
Percentage Occupied		0%	0%	0%	3%	Break	5%	3%	5%	3%
Parking Lot Q										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	44	3	7	8	10	Break	16	9	6	5
Percentage Occupied		7%	16%	18%	23%	Break	36%	20%	14%	11%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Lot R										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	28	8	9	10	12	Break	7	10	5	4
Special Permit	16	2	1	3	3	Break	2	2	1	2
Total	44	10	10	13	15	Break	9	12	6	6
Percentage Occupied		23%	23%	30%	34%	Break	20%	27%	14%	14%
Parking Lot U										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	145	141	141	140	137	Break	137	137	140	140
Special Permit	11	6	6	6	4	Break	5	6	6	3
Total	156	147	147	146	141	Break	142	143	146	143
Percentage Occupied		94%	94%	94%	90%	Break	91%	92%	94%	92%
Parking Lot V										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	65	66	66	68	67	Break	66	64	64	63
Special Permit	17	8	9	9	7	Break	8	9	7	7
Total	82	74	75	77	74	Break	74	73	71	70
Percentage Occupied		90%	91%	94%	90%	Break	90%	89%	87%	85%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Lot W										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	381	264	364	349	346	Break	321	334	340	352
Special Permit	16	0	1	2	4	Break	5	4	5	3
Total	397	264	365	351	350	Break	326	338	345	355
Percentage Occupied		66%	92%	88%	88%	Break	82%	85%	87%	89%
Parking Lot X										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	97	31	47	59	57	Break	65	63	56	47
Student	397	117	268	313	335	Break	301	258	232	205
Special Permit	6	2	1	1	0	Break	0	1	2	2
Total	500	150	316	373	392	Break	366	322	290	254
Percentage Occupied		30%	63%	75%	78%	Break	73%	64%	58%	51%
Underground Parking (Student Services)										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Special Permit	83	25	37	44	45	Break	52	52	52	56
Percentage Occupied		30%	45%	53%	54%	Break	63%	63%	63%	67%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Structure 1										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	1112	283	410	585	648	Break	709	671	692	704
Student	656	494	761	762	761	Break	739	719	700	651
Special Permit	160	16	24	40	42	Break	56	59	58	55
Total	1928	793	1195	1387	1451	Break	1504	1449	1450	1410
Percentage Occupied		41%	62%	72%	75%	Break	78%	75%	75%	73%
Parking Structure 2										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	495	184	444	494	492	Break	465	478	457	413
Special Permit	17	4	6	11	11	Break	9	10	8	7
Total	512	188	450	505	503	Break	474	488	465	420
Percentage Occupied		37%	88%	99%	98%	Break	93%	95%	91%	82%
Parking Structure 3										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	22	0	0	1	3	Break	1	3	3	12
Student	1849	1043	959	737	536	Break	569	672	783	1001
Special Permit	8	4	3	3	4	Break	4	3	3	5
Total	1879	1047	962	741	543	Break	574	678	789	1018
Percentage Occupied		56%	51%	39%	29%	Break	31%	36%	42%	54%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Structure 4										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	463	203	375	459	512	Break	483	496	444	429
Student	1416	1173	1366	1354	1365	Break	1305	1251	1243	1293
Special Permit	91	13	31	38	40	Break	43	32	29	27
Total	1970	1389	1772	1851	1917	Break	1831	1779	1716	1749
Percentage Occupied		71%	90%	94%	97%	Break	93%	90%	87%	89%
Parking Structure 5										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	27	17	17	17	17	Break	17	15	15	13
Student	1315	632	632	1259	1278	Break	1228	1179	1111	987
Special Permit	33	8	19	27	30	Break	29	31	31	29
Total	1375	657	668	1303	1325	Break	1274	1225	1157	1029
Percentage Occupied		48%	49%	95%	96%	Break	93%	89%	84%	75%
Parking Structure 6										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Student	2441	1474	1136	780	632	Break	673	850	861	1025
Special Permit	37	1	2	3	2	Break	8	2	2	1
Total	2478	1475	1138	783	634	Break	681	852	863	1026
Percentage Occupied		60%	46%	32%	26%	Break	27%	34%	35%	41%

TABLE 13–1 (CONTINUED)
PARKING SUPPLY AND DEMAND

Parking Structure 8										
Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	143	114	135	133	134	Break	127	125	115	115
Special Permit	76	15	26	33	32	Break	39	41	32	32
Total	219	129	161	166	166	Break	166	166	147	147
Percentage Occupied		59%	74%	76%	76%	Break	76%	76%	67%	67%

TABLE 13–2
PARKING SUPPLY AND DEMAND SUMMARY

Parking Type	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	2,661	1,044	1,742	2,082	2,206	Break	2,211	2,190	2,115	2,029
Students	10,308	5,951	6,443	6,605	6,327	Break	6,204	6,283	6,221	6,414
Special Permit	955	185	285	343	360	Break	394	386	354	349
Grand Total	**13,924**	**7,180**	**8,470**	**9,030**	**8,893**	**Break**	**8,809**	**8,859**	**8,690**	**8,792**
Percentage Occupied		**52%**	**61%**	**65%**	**64%**	**Break**	**63%**	**64%**	**62%**	**63%**

Footnotes:

a. Number in cell represents the parking demand at the listed time.

b. Special Permit parking spaces counted included disabled parking spaces, vendor spaces, visitor spaces, etc.

14.0 ALTERNATIVE ACCESS AND OTHER ISSUES

14.1 Alternate Access Analysis

The proposed access road from the Adobe Falls development is via an existing roadway to College Avenue. Three alternative access scenarios are contemplated involving providing access from the Lower Village to Adobe Falls Road and ultimately to Waring Road, as outlined below:

14.1.1 *Via SmokeTree Condominium Development*

Under this alternate access route, a bridge over the existing drainage channel adjacent to the Lower Village development would be constructed with direct connection to the adjacent SmokeTree condominium development. Access to Adobe Falls Road and, ultimately, out to Waring Road would be provided via the private driveways/roadways through the SmokeTree development. If multiple access roads to the Adobe Falls Faculty/Staff Housing site were provided, private entry gates would be installed to prevent "cut through" traffic.

14.1.2 *Via Existing Flood Channel*

Alternatively, rather than access Adobe Falls Road via the SmokeTree development, a collector street would be constructed from the development, and would continue in an westerly direction adjacent to the I-8 freeway, or atop the existing flood control channel (reconstructed to accommodate vehicle traffic), to a point at which connection to the public street system (Adobe Falls Road) is possible.

14.1.3 *Upper/Lower Village Connector*

Related to this alternate access route would be the construction of a collector street designed to connect the Upper and Lower Adobe Falls Faculty/Staff Housing villages. The necessary street would need to connect an elevation of +190 feet to an elevation of 350 feet. Additionally, a bridge would be required as the street would cross-existing wetlands and riparian habitat.

An existing traffic count was conducted on Adobe Falls Road, which showed an ADT of 3,690 (see *Appendix E*). The LOS D capacity of Adobe Falls Road is 6,500 using the City 2-lane collector capacity. Therefore, there is capacity for an additional 2,800 ADT. Assuming condominiums were built at a trip rate of 8 ADT per unit, there is capacity on Adobe Falls Road for approximately 350 dwelling units. This would apply to both the existing flood channel alternative and the upper/lower village connector alternative.

For the "Via Smoketree" alternative, traffic would need to utilize the private driveway/roadway through the SmokeTree development to reach Adobe Falls Road. Based on a field review of this roadway, there is capacity for about 1,500 additional ADT, which means that the maximum units that could be built using the private driveway would be about 185 units (again assuming 8 ADT per unit).

14.2 Impacts During Construction

The project will generate construction truck and employee trips during construction. The construction impacts due to the project are considered significant, especially in relation to construction affecting Alvarado Road and the Alvarado Hospital.

It is recommended that one lane of travel be maintained on Alvarado Road during construction. Traffic Control Plans (TCP) should be prepared to the satisfaction of the City of San Diego. Elements of the TCP could include flagmen to assist in direction of traffic and restrictions for construction to occur during off-peak periods.

14.3 Emergency Service Response Time

The existing Alvarado Hospital is located on the south side of Alvarado Road just east of Alvarado Court. The hospital contains a twenty-four hour emergency service department. The proposed project will add traffic to Alvarado Road and the intersections along Alvarado Road causing an increase in vehicular delay, which could have a negative effect on emergency response times. However, the above discussion assumes that emergency vehicles must wait at intersections, as do non-emergency vehicles when the light is red. This is, of course, not the case since emergency vehicles have the right-of-way and can always bypass traffic on a roadway or at an intersection. With project traffic, the emergency vehicles will negotiate traffic on Alvarado Road just as they do today, with non-emergency traffic yielding the right of way as required by law. Also, there is sufficient width along all points of Alvarado Road to allow emergency vehicles to pass. The worst case location is where parking is allowed on both sides of the street in a 40-foot wide section. Parked cars are 6 feet wide which leaves 28 feet. That is sufficient width for 2 cars to pull over next to the parked cars and for the emergency vehicles to pass.

Therefore, the project would not cause a significant impact in terms of emergency response times. Emergency vehicles will continue to bypass traffic and not wait in traffic with non-emergency vehicles.

15.0 COLLEGE COMMUNITY REDEVELOPMENT PROJECT

The site of the proposed Alvarado Campus is included within the Final College Community Redevelopment Plan, adopted November 30, 1993 by the Redevelopment Agency of the City of San Diego, and referred to as the "Alvarado Road Sub-Area." (Redevelopment Plan, Attachment No. 4, Land Use Map.) Under the Redevelopment Plan, the Alvarado Road Sub-Area, one of five sub-areas within the Plan, is designated for "university-serving commercial / office uses," including office space, research and development facilities, and ancillary retail space. (Redevelopment Plan, p. 16.)

Under the College Community Redevelopment Project, the Alvarado Road Sub-Area would include 600,000 square feet of university serving office uses, and 110,000 square feet of office / research and development uses. An environmental impact report, prepared in connection with the Redevelopment Project, determined that the Alvarado Road Sub-Area portion of the Redevelopment Project would generate 8,253 ADT. Of the total ADT volume, 1,094 trips would be generated during the A.M. peak, and 1,155 trips would be generated during the P.M. peak. (College Community Redevelopment Project Final Program Environmental Impact Report (SCH #92091036), July 1993, *Table 5–14*, Trip Generation (Future Land Uses).) ***Appendix P*** contains a summary of the traffic mitigation measures included within the Redevelopment EIR.

16.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Based on the City of San Diego significance criteria, significant impacts were determined at several study area intersections, street segments, ramp meters, and freeways in the Near-Term and Horizon Year scenarios.

16.1 Significance of Impacts

The following is a list of the significant impacts as a result of the project, based on the established significance criteria.

16.1.1 *Near Term*

A. Near-Term Intersections

A–1. College Avenue / Del Cerro Boulevard

A–2. College Avenue / I-8 Eastbound Ramps

A–3. College Avenue / Canyon Crest Drive

A–4. College Avenue / Zura Way

A–5. College Avenue / Montezuma Road

A–6. I-8 WB Ramps/ Parkway Drive

B. Near-Term Street Segments

B–1. Alvarado Road: E. Campus Drive to Reservoir Drive

B–2. Alvarado Road: Reservoir Drive to 70th Street

B–3. College Avenue: I-8 Eastbound Ramps to Zura Way

C. Near-Term Ramp Meter

C–1. Northbound College Avenue to eastbound I-8

16.1.2 *Horizon Year*

E. Horizon Year Intersections

E–1. Fairmount Ave / I-8 WB Off Ramp / Camino del Rio North

E–2. 55th Street / Montezuma Road

E–3. Campanile Drive / Montezuma Road

E–4. College Avenue / Del Cerro Boulevard

E–5. College Avenue / I-8 WB Ramps

E–6. College Avenue / I-8 EB Ramps

E–7. College Avenue / Canyon Crest Drive

E–8. College Avenue / Zura Way

E–9. College Avenue / Montezuma Road

E–10. Alvarado Court / Alvarado Road

E–11. Reservoir Drive / Alvarado Road

E–12. Lake Murray Boulevard / Wisconsin Drive / Parkway Drive

E–13. 70th Street / Alvarado Road

E–14. I-8 WB Ramps / Parkway Drive

E–15. I-8 EB Ramps / Alvarado Road

F. Horizon Year Street Segments

F–1. Alvarado Road: E. Campus Drive to Reservoir Drive

F–2. Alvarado Road: Reservoir Drive to 70th Street

F–3. College Avenue: Del Cerro Boulevard to I-8 Eastbound Ramps

F–4. College Avenue: I-8 Eastbound Ramps to Zura Way

F–5. College Avenue: Zura Way to Montezuma Road

F–6. College Avenue: South of Montezuma Road

F–7. Montezuma Road: Fairmount Avenue to Collwood Boulevard

F–8. Montezuma Road: 55th Street to College Avenue

G. Horizon Year Ramp Meter

G–1. Northbound College Avenue to eastbound I-8

H. Horizon Year Freeway Mainline

H–1. Interstate 8: Fairmount Avenue to Waring Road (eastbound)

H–2. Interstate 8: Waring Road to College Avenue (eastbound)

H–3. Interstate 8: College Avenue to Lake Murray Boulevard (eastbound and westbound)

H–4. Interstate 8: Lake Murray Boulevard to Fletcher Parkway (eastbound and westbound)

I. Adobe Falls Faculty/Staff Housing Area Residential Streets

I–1. Potential residential street speed issues.

While the roadway segment analysis indicates that the residential streets within the vicinity of the Adobe Falls development can accommodate the additional traffic from a traffic capacity standpoint, it is often the case that speeds on residential streets are more of an issue. This could be viewed as a significant impact.

J. Impacts during construction

The construction impacts due to the project are considered significant, especially in relation to construction affecting Alvarado Road and the Alvarado Hospital.

16.2 Mitigation Measures

The improvements listed below are intended to mitigate the direct and cumulative impacts associated with the SDSU 2007 Campus Master Plan Revision. A review of Table 9-6 and 9-7 show that the project does not cause the LOS to degrade to unacceptable levels at any of the area intersection or segments. Where possible, the suggested mitigation measures are consistent with the College Community Redevelopment Project Final Program Environmental Impact Report (Redevelopment EIR).

16.2.1 *Near Term*

A–1. College Avenue / Del Cerro Boulevard

Contribute a fair share towards the provision of two left-turn lanes and one shared through/right-turn lane on the westbound approach.

A–2. College Avenue / I-8 Eastbound Ramps

Contribute a fair share towards the provision of an additional (third) northbound through lane on College Avenue. (Redevelopment EIR, p. 5.10-33, Mitigation Measure No. 2)

A–3. College Avenue / Canyon Crest Drive

Contribute a fair share towards the provision of an additional (third) northbound through lane on College Avenue. (Redevelopment EIR, p. 5.10-35, Mitigation Measure No. 23)

A–4. College Avenue / Zura Way

Contribute a fair share towards the provision of a traffic signal at the intersection. No widening of College Avenue is necessary to mitigate this impact. (Redevelopment EIR, p. 5.10-33, Mitigation Measure No. 3)

An Alternate mitigation would be to prohibit southbound left-turns at the intersection. As a result of this mitigation option, an additional southbound left-turn lane would be necessary at the College Avenue / Montezuma Road intersection.

A–5. College Avenue / Montezuma Road

Contribute a fair share towards the provision of an additional (third) northbound through lane and an exclusive northbound right-turn lane on College Avenue. (Redevelopment EIR, p. 5.10-35, Mitigation Measure No. 23).

A–6. I-8 WB Ramps/ Parkway Drive

Contribute a fair share towards the provision of a traffic signal at the intersection.

B–1. Alvarado Road: E. Campus Drive to Reservoir Drive

Contribute a fair share towards widening Alvarado Road (on the south side) to two through lanes plus a two-way-left-turn lane between College Avenue and 70th Street. Realign Alvarado Road to remove existing substandard curves. (Redevelopment EIR, p. 5.10-34, Mitigation Measure No. 6.)

B–2. Alvarado Road: Reservoir Drive to 70th Street

Contribute a fair share towards widening Alvarado Road (on the south side) to two through lanes plus a two-way-left-turn lane between College Avenue and 70th Street. Realign Alvarado Road to remove existing substandard curves. (Redevelopment EIR, p. 5.10-34, Mitigation Measure No. 6.)

B–3. College Avenue: I-8 Eastbound Ramps to Zura Way

Contribute a fair share towards the provision of an additional (third) northbound through lane on College Avenue between I-8 and Zura Way. (Redevelopment EIR, p. 5.10-33, Mitigation Measure No. 2)

C–1. Northbound College Avenue to I-8 Eastbound

Contribute a fair share towards the provision of an additional single occupancy vehicle (SOV) storage lane on the I-8 Eastbound On-Ramp from College Avenue (northbound).

16.2.2 *Horizon Year*

E–1. Fairmount Ave / I-8 WB Off Ramp / Camino del Rio North

Contribute a fair share towards widening Fairmount Avenue between Mission Gorge Road and I-8 to a six-lane facility.

E–2. 55th Street / Montezuma Road

Contribute a fair share towards the provision of a dedicated westbound right-turn lane at the 55th Street / Montezuma Road intersection..

E–3. Campanile Drive / Montezuma Road

Contribute a fair share towards the provision of a second southbound left-turn lane, and a dedicated right-turn lane on the northbound approach.

E–4. College Avenue / Del Cerro Boulevard

The provision of additional lanes at the College Avenue / Del Cerro Boulevard intersection (A–1) would mitigate this cumulative impact.

E–5. College Avenue / I-8 WB Ramps

Contribute a fair share towards the provision of 3 northbound lanes and 2 southbound lanes on the College Avenue bridge over I-8 It should be noted that the contribution of a fair share would not fully mitigate this cumulative impact.

E–6. College Avenue / I-8 EB Ramps

The provision of an additional northbound through lane on College Avenue (A-2)will mitigate this cumulative impact. It should be noted that the contribution of a fair share would not fully mitigate this cumulative impact.

E–7. College Avenue / Canyon Crest Drive

Contribute a fair share towards the provision of an additional dedicated left-turn lane on both the eastbound and westbound approaches. This fair share contribution along with the provision of the additional northbound through lane on College Avenue (B-3) would mitigate this cumulative impact.

E–8. College Avenue / Zura Way

The fair share contribution towards installing a traffic signal at the College Avenue / Zura Way intersection (A-4)will mitigate this cumulative impact.

E–9. College Avenue / Montezuma Road

Contribute a fair share towards the provision of a dedicated right-turn lane on the northbound approach. This fair share contribution along with the provision of the additional lanes at the College Avenue / Montezuma Road intersection (A-5)would mitigate this cumulative impact.

E–10. Alvarado Court / Alvarado Road

Contribute a fair share towards installing a traffic signal at the Alvarado Court / Alvarado Road intersection. Contribute a fair share towards the provision of a dedicated right-turn lane on the eastbound approach and a dedicated left-turn lane on the westbound approach.

E–11. Reservoir Drive / Alvarado Road

Contribute a fair share towards the provision of a dedicated right-turn lane on the eastbound approach.

E–12. Lake Murray Boulevard / Wisconsin Drive / Parkway Drive

Contribute a fair share towards the provision of an additional left-turn lane on the westbound approach.

E–13. 70th Street / Alvarado Road

Contribute a fair share to the widening of 70th Street to six lanes through the Alvarado Road intersection and over the I-8 bridge. 70th Street will transition to four through lanes north of I-8 and south of Alvarado Road. (Redevelopment EIR, p. 5.10-34, Mitigation Measure No. 5.) Contribute a fair share towards an additional right-turn lane on the southbound approach.

E–14. I-8 WB Ramps / Parkway Drive

The provision to install a traffic signal at the I-8 WB Ramps / Parkway Drive intersection (A-6) will mitigate this cumulative impact.

E–15. I-8 EB Ramps / Alvarado Road

Contribute a fair share towards the provision of an additional through lane on the westbound approach.

F–1. Alvarado Road: E. Campus Drive to Reservoir Drive

The Community Plan classification for Alvarado Road is a three-lane Collector. In order to fully mitigate the horizon year impact to Alvarado Road, it would need to be widened to four-lane Collector standards. Since this is beyond the Community Plan designation of the roadway, improvements to four-lanes is not considered feasible, and the impact is considered only partially mitigated.

F–2. Alvarado Road: Reservoir Drive to 70th Street

The Community Plan classification for Alvarado Road is a three-lane Collector. In order to fully mitigate the horizon year impact to Alvarado Road, it would need to be widened to four-lane Collector standards. Since this is beyond the Community Plan designation of the roadway, improvements to four-lanes is not considered feasible, and the impact is considered only partially unmitigated.

F–3. College Avenue: Del Cerro Boulevard to I-8 Eastbound Ramps

The provision of additional lanes at the College Avenue / Del Cerro Boulevard intersection an additional northbound through lane on College Avenue and the fair share contribution towards mitigation (E-5) would mitigate this cumulative impact.

F–4. College Avenue: I-8 Eastbound Ramps to Zura Way

The provision of an additional (third) northbound through lane on College Avenue between I-8 EB Ramps and Zura Way (B-3) will mitigate this cumulative impact.

F–5. College Avenue: Zura Way to Montezuma Road

The provision of an additional (third) northbound through lane on College Avenue between Zura Way and Montezuma Road would mitigate this cumulative impact.

F–6. College Avenue: South of Montezuma Road

The provision of additional lanes at the College Avenue / Montezuma Road intersection (A-5) would mitigate this cumulative segment impact.

F–7. Montezuma Road: Fairmount Avenue to Collwood Boulevard

Since this portion of Montezuma Road is classified as a 4 lane major and it is not feasible to widen this portion of Montezuma Road to six lanes, this cumulative impact is considered significant and not mitigated.

F–8. Montezuma Road: 55th Street to College Avenue

Contribute a fair share towards improving Montezuma Road between 55th Street and College Avenue to four-lane Major Arterial standards.

G–1. Northbound College Avenue to I-8 Eastbound

The provision of an additional SOV storage lane on the I-8 Eastbound On-Ramp from College Avenue (northbound) would mitigate this cumulative impact.(C-1)

H–1. Interstate 8: Fairmount Avenue to Waring Road (eastbound)

Contribute a fair share towards the preparation of a Project Study Report (PSR) for the future widening of I-8. The impact is not considered fully mitigated.

H–2. Interstate 8: Waring Road to College Avenue (eastbound)

Contribute a fair share towards the preparation of a Project Study Report (PSR) for the future widening of I-8. The impact is not considered fully mitigated.

H–3. Interstate 8: College Avenue to Lake Murray Boulevard (eastbound and westbound)

Contribute a fair share towards the preparation of a Project Study Report (PSR) for the future widening of I-8. The impact is not considered fully mitigated.

H–4. Interstate 8: Lake Murray Boulevard to Fletcher Parkway (eastbound and westbound)

Contribute a fair share towards the preparation of a Project Study Report (PSR) for the future widening of I-8. The impact is not considered fully mitigated.

I–1. Adobe Falls Site

It is recommended a Traffic Calming Study be prepared for the community roadways. This study would include an analysis of, and recommendations for, potential traffic calming measures to reduce speeds. The applicant should contribute a fair share towards implementing the recommendations that result from the study.

In addition, appropriate safety improvements should be made to the Hearst Elementary School passenger loading zone area, including but not limited to an In-Pavement Flashing Lights Crosswalk Warning System, speed bumps, and crosswalk re-striping. Improve and maintain, as necessary, the landscaping within the road median located on Del Cerro Boulevard in order to increase traffic sight lines on the street.

J-1. Construction impacts

Maintain a minimum of one lane of travel on Alvarado Road during construction. Prepare Traffic Control Plans (TCP) to the satisfaction of the City of San Diego. Elements of the TCP could include flagmen to assist in direction of traffic and restrictions for construction to occur during off-peak periods.

16.3 Mitigation Measure Fair Share Contributions

Table 16–1 shows fair share percentages for each of the mitigation measures listed above. These percentages are calculated according to the commonly used City of San Diego formula:

Near Term Impact Fair Share =

(Near-Term Project Traffic Volumes) / (Horizon Year With Project – Existing Traffic Volumes)

Horizon Year Impact Fair Share =

(Horizon Year Project Traffic Volumes) / (Horizon Year With Project – Existing Traffic Volumes)

TABLE 16–1
MITIGATION FAIR SHARE CONTRIBUTIONS
NEAR TERM IMPACTS

Mitigation Measure Number	Impacted Locations	Near Term Impacts Fair Share Percentage
A–1	College Avenue / Del Cerro Boulevard intersection	5%
A–2	College Avenue / I-8 EB Ramps intersection	4%
A–3	College Avenue / Canyon Crest Drive intersection	6%
A–4	College Avenue / Zura Way intersection	3%
A–5	College Avenue / Montezuma Road intersection	2%
A–6	I-8 WB Ramps/ Parkway Drive intersection	2%
B–1	Alvarado Road: E. Campus Drive to Reservoir Drive	3%
B–2	Alvarado Road: Reservoir Drive to 70th Street	3%
B–3	College Avenue: I-8 EB Ramps to Zura Way	4%
C–1	Northbound College Avenue to Eastbound I-8	3%

TABLE 16–2
MITIGATION FAIR SHARE CONTRIBUTIONS
HORIZON YEAR IMPACTS

Mitigation Measure Number	Impacted Locations	Horizon Year Impacts Fair Share Percentage
E–1	I-8 WB Off Ramp/ Fairmount Avenue intersection	1%
E–2	55th Street / Montezuma Road intersection	12%
E–3	Campanile Drive / Montezuma Road intersection	8%
E–4	College Avenue / Del Cerro Boulevard intersection	17%
E–5	College Avenue / I-8 WB Ramps intersection	19%
E–6	College Avenue / I-8 EB Ramps intersection	16%
E–7	College Avenue / Canyon Crest Drive intersection	23%
E–8	College Avenue / Zura Way intersection	16%
E–9	College Avenue / Montezuma Road intersection	11%
E–10	Alvarado Court / Alvarado Road intersection	31%
E–11	Reservoir Drive / Alvarado Road intersection	21%
E–12	Lake Murray Boulevard / Parkway Drive intersection	8%
E–13	70th Street / Alvarado Road intersection	5%
E–14	I-8 WB Ramps / Parkway Drive intersection	11%
E–15	I-8 EB Ramps / Alvarado Road intersection	4%
F–1	Alvarado Road: E. Campus Drive to Reservoir Drive	39%
F–2	Alvarado Road: Reservoir Drive to 70th Street	24%
F–3	College Avenue: Del Cerro Boulevard to I-8 Eastbound Ramps	9%
F–4	College Avenue: I-8 Eastbound Ramps to Zura Way	18%
F–5	College Avenue: Zura Way to Montezuma Road	13%
F–6	College Avenue: South of Montezuma Road	17%
F–7	Montezuma Road: Fairmount Avenue to Collwood Boulevard	15%
F–8	Montezuma Road: 55th Street to College Avenue	15%
G–1	Northbound College Avenue to eastbound I-8	12%

The fair share contribution calculations for each impacted location listed below can be found in ***Appendix Q***.

17.0 POST MITIGATION OPERATIONS

With the implementation of the mitigation measures recommended in Section 16.2, all impacts are mitigated to below a level of significance except for the following which are considered to be significant and not fully mitigated. ***Appendix R*** contains the mitigated analysis worksheets.

- I-8/College Avenue interchange
- Alvarado Road (E. Campus Drive to 70th Street)
- Montezuma Road (Fairmount Avenue to Collwood Blvd)
- I-8 (Fairmount Avenue to Fletcher Parkway)

TABLE 17–1
MITIGATED NEAR-TERM INTERSECTION CALCULATIONS

Intersection	Control Type	Peak Hour	Near-Term without Project		Near-Term with Project			With Mitigation	
			Delay [a]	LOS [b]	Delay	LOS	Δ[d]	Delay	LOS
College Ave / Del Cerro Blvd	Signal	AM	75.4	E	**79.2**	**E**	**3.8**	64.4	E
College Ave / I-8 EB Ramps	Signal	AM	68.9	E	**72.7**	**E**	**3.8**	27.1	C
College Ave / Canyon Crest Dr	Signal	AM	80.8	F	**83.7**	**F**	**2.9**	39.1	D
		PM	>120	F	**>120**	**F**	**>2.0**	70.5	E
College Ave / Zura Way	TWSC[c]	PM	>120	F	**>120**	**F**	**>2.0**	22.6	C
College Ave / Montezuma Rd	Signal	AM	104.8	F	**108.0**	**F**	**3.2**	61.7	E
		PM	98.4	F	**100.2**	**F**	**1.2**	94.1	F
I-8 WB Ramps / Parkway Dr	Signal	PM	46.1	E	**49.7**	**E**	**3.0**	20.9	C

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street approach delay is reported.

d. Δ denotes project induced delay increase.

General Notes:

Bold and shading represents a significant impact

SIGNALIZED DELAY/LOS THRESHOLDS		UNSIGNALIZED DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

TABLE 17–2
MITIGATED NEAR-TERM SEGMENT OPERATIONS

Segment	LOS E Capacity [a]	Near-Term without Project			Near-Term with Project			V/C Δ	Mitigated LOS E Capacity [a]	With Mitigation		
		Volume	LOS [b]	V/C [c]	Volume	LOS [b]	V/C [c]			Volume	LOS	V/C
Alvarado Road												
E. Campus Dr to Reservoir Dr	10,000	9,220	E	0.92	**9,490**	**E**	**0.95**	**0.03**	15,000	9,900	C	0.63
Reservoir Dr to 70th St	10,000	11,040	F	1.10	**11,310**	**F**	**1.13**	**0.03**	15,000	11,720	D	0.75
College Avenue												
I-8 EB Ramps to Zura Way	40,000	45,800	F	1.15	**47,260**	**F**	**1.18**	**0.03**	50,000	47,260	E	0.94

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table.

b. Average Daily Traffic

c. Volume to Capacity ratio

TABLE 17–3
MITIGATED HORIZON YEAR INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Horizon Year without Project		Horizon Year with Project			With Mitigation	
			Delay	LOS	Delay	LOS	Δ[e]	Delay	LOS
Fairmount Ave / I-8 WB Off Ramp / Camino del Rio N	Signal	AM	92.6	F	96.1	F	3.5	70.0	E
		PM	286.7	F	287.5	F	0.8	218.8	F
55th Street / Montezuma Rd	Signal	AM	>120	F	>120	F	>2.0	106.9	F
		PM	56.9	E	66.7	E	9.8	50.4	D
Campanile Dr / Montezuma Rd	Signal	AM	84.0	F	90.0	F	6.0	65.7	E
		PM	101.3	F	105.8	F	4.5	74.5	E
College Ave / Del Cerro Blvd	Signal	AM	137.3	F	>120	F	>2.0	131.2	F
		PM	63.1	E	69.6	E	6.5	61.3	E
College Ave / I-8 WB Ramps	Signal	PM	51.8	D	65.0	E	13.2	64.3	E
College Ave / I-8 EB Ramps	Signal	AM	>120	F	>120	F	>2.0	149.2	F
		PM	109.9	F	>120	F	>2.0	44.3	D
College Ave / Canyon Crest Dr	Signal	AM	>120	F	>120	F	>2.0	110.8	F
		PM	>120	F	>120	F	>2.0	>120	F
College Ave / Zura Way	TWSC[c]	AM	57.6	E	117.2	F	59.6	38.3	D
		PM	>120	F	>120	F	>2.0	65.2	E

TABLE 17–3 (CONTINUED)
MITIGATED HORIZON YEAR INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Horizon Year without Project		Horizon Year with Project			With Mitigation	
			Delay	LOS	Delay	LOS	Δ[e]	Delay	LOS
College Ave / Montezuma Rd	Signal	AM	>120	F	**>120**	**F**	**>2.0**	102.9	F
		PM	>120	F	**>120**	**F**	**>2.0**	86.5	F
Alvarado Ct / Alvarado Rd	TWSC[c]	AM	54.1	F	**>120**	**F**	**>2.0**	16.2	B
		PM	35.4	D	**>120**	**F**	**>2.0**	26.8	C
Reservoir Dr / Alvarado Rd	Signal	PM	36.5	D	**96.1**	**F**	**3.5**	24.7	C
Lake Murray Blvd / Wisconsin Ave	Signal	AM	>120	F	**90.5**	**F**	**17.8**	30.9	C
		PM	86.0	F	**71.6**	**E**	**5.8**	29.2	C
70th Street / Alvarado Rd	Signal	AM	81.1	F	**92.7**	**F**	**11.6**	63.7	E
		PM	119.3	F	**>120**	**F**	**>2.0**	96.1	F
I-8 WB Ramps /Parkway Dr	AWSC[d]	AM	61.3	F	**80.5**	**F**	**19.2**	49.8	D
		PM	>120	F	**>120**	**F**	**>2.0**	32.5	C
I-8 EB Ramps / Alvarado Rd	Signal	PM	101.4	F	**105.1**	**F**	**3.7**	81.1	F

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC – Two-Way Stop Controlled intersection. Minor street approach delay is reported.

d. AWSC – All-Way Stop Controlled intersection.

e. Δ denotes project induced delay increase.

General Notes:

Bold and shading represents a potential significant impact

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

TABLE 17–4
MITIGATED HORIZON YEAR SEGMENT OPERATIONS

Segment	LOS E Capacity [a]	Horizon Year without Project			Horizon Year with Project			V/C Δ	Mitigated LOS E Capacity [a]	With Mitigation		
		Volume	LOS [b]	V/C [c]	Volume	LOS [b]	V/C [c]			Volume	LOS	V/C
Alvarado Road												
E. Campus Dr to Reservoir Dr	10,000	13,950	F	1.40	17,510	F	1.75	0.35	15,000 [d]	17,510	F	1.16
Reservoir Dr to 70th St	10,000	16,450	F	1.65	18,520	F	1.85	0.20	15,000 [d]	18,520	F	1.23
College Avenue												
Del Cerro Blvd to I-8 EB Ramps	40,000	52,800	F	1.32	54,970	F	1.37	0.05	[e]	54,970	NA	NA
I-8 EB Ramps to Zura Way	40,000	69,570	F	1.74	76,140	F	1.90	0.16	50,000	76,140	F	1.52
Zura Way to Montezuma Rd	40,000	53,200	F	1.33	56,040	F	1.40	0.07	50,000	56,040	F	1.12
South of Montezuma Rd	30,000	38,490	F	1.28	40,200	F	1.34	0.06	50,000	40,200	D	0.80
Montezuma Road												
Fairmount Ave to Collwood Blvd	40,000	57,000	F	1.43	58,280	F	1.46	0.03	40,000 [d]	58,280	F	1.45
55th St to College Ave	30,000	33,430	F	1.11	35,010	F	1.17	0.06	40,000	35,010	E	0.87

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table.

b. Average Daily Traffic

c. Volume to Capacity ratio

d. It is not feasible to fully mitigate this impact; therefore, this segment is considered unmitigated.

e. The additional capacity at the College Ave/Del Cerro Blvd intersection and the additional northbound through lane on College Avenue mitigates this segment impact.

NA = Not Applicable.

LINSCOTT
LAW &
GREENSPAN
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TECHNICAL APPENDICES

SDSU 2007 CAMPUS MASTER PLAN REVISION

San Diego, California
June 1, 2007

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APPENDIX A

SAN DIEGO TRAFFIC ENGINEERING COUNCIL (SANTEC) REGIONAL GUIDELINES

SANTEC / ITE GUIDELINES FOR TRAFFIC IMPACT STUDIES [TIS] IN THE SAN DIEGO REGION

MARCH 2, 2000 FINAL DRAFT

PREFACE

These guidelines are subject to continual update, as future technology and documentation become available. Always check with local jurisdictions for their preferred or applicable procedures.

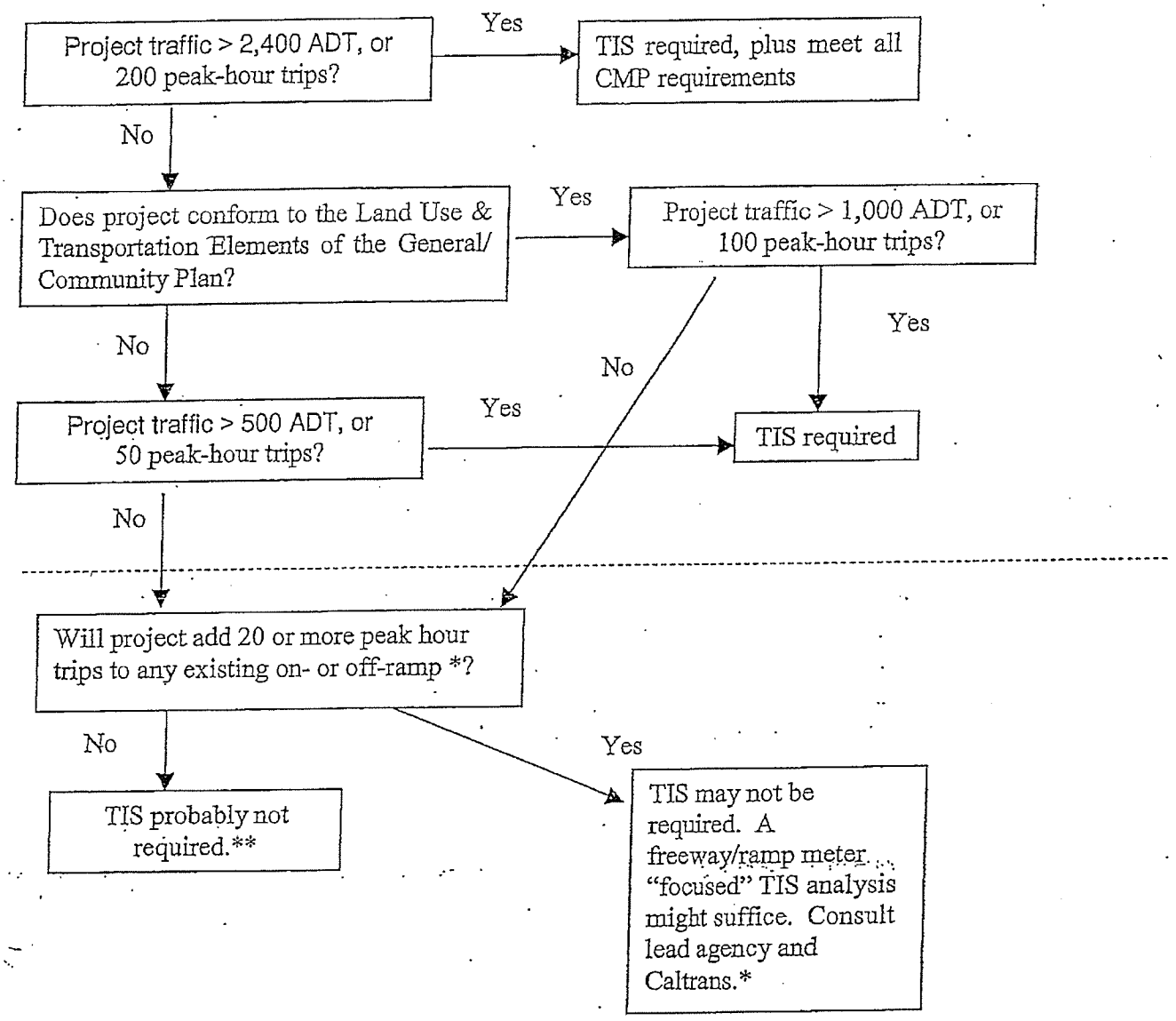
Committee Compilation by Kent A. Whitson

Reviewed by committee members: Hank Morris (co-chair), Tom Parry (co-chair), Arnold Torma (co-chair), Susan O'Rourke, Bill Darnell, Labib Qasem, John Boarman, Ralph Leyva, and Erik Ruehr

Additional review by: Ann French Gonsalves, Bill Figge, Bob Goralka, and Gary Halbert

Figure 1

FLOW CHART FOR TRAFFIC IMPACT STUDY REQUIREMENTS



* Check with Caltrans for current ramp metering rates and ramp storage capacities. (See Attachment B – Ramp Metering Analysis)

** However, for health and safety reasons, and/or local and residential street issues, an "abbreviated" or "focused" TIS may still be requested by a local agency. (For example, this may include traffic backed up beyond an off-ramp's storage capacity, or may include diverted traffic through an existing neighborhood.)

Revised 2/28/00

APPENDIX C

CITY OF SAN DIEGO ROADWAY CLASSIFICATION TABLE

TABLE 2
ROADWAY CLASSIFICATIONS, LEVELS OF SERVICE (LOS) AND AVERAGE DAILY TRAFFIC (ADT)

			LEVEL OF SERVICE				
STREET CLASSIFICATION	LANES	CROSS SECTIONS	A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Prime Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no Center lane) (continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

LEGEND

XXX/XXX = Curb to curb width (feet)/right of way (feet): based on the City of San Diego Street Design Manual.

XX,XXX = Approximate recommended ADT based on City of San Diego Street Design Manual

Notes:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.

2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

APPENDIX C1

RESIDENTIAL ROADWAY CLASSIFICATION

The roadway classifications utilized in the EIR traffic impacts analysis were determined based on multiple factors, including actual roadway conditions, the classifications provided in the Navajo Community Plan, and the information and guidance provided in the City of San Diego Street Design Manual and City Traffic Impact Study Manual.

POTENTIAL ROADWAY CLASSIFICATIONS

A significant amount of time was spent by Linscott, Law & Greenspan, Engineers ("LLG"), driving through the Del Cerro community and conducting an overall assessment of the subject roadways. The purpose of these activities was to determine the appropriate classification (and hence carrying capacity) for use in the Del Cerro community roadway impacts analysis.

Del Cerro Boulevard

Based in part on these observations, a "Collector" designation was assigned to Del Cerro Boulevard. This classification was used for multiple reasons, including that the fronting uses on the roadway are both single-family residential and non-residential (*e.g.* schools and churches), which is indicative of a "Collector" roadway. (City of San Diego Street Design Manual, p. 33.) Furthermore, Del Cerro Boulevard is signalized at College Avenue and the road serves to "collect" traffic from several local roadways. In addition, Del Cerro Boulevard has a raised median through a portion of the roadway; a raised median serves to increase the capacity of a roadway, by physically separating the two directions of travel, thereby reducing traffic conflicts.

The Navajo Community Plan, which contains the City's circulation element for the Navajo community, classifies Del Cerro Boulevard as a "2-Lane Collector Street." (Navajo Community Plan, Circulation Element, page 93.) The Community Plan defines a collector as distributing traffic from arterial thoroughfares, providing access to abutting property, and providing street crossings at grade, all characteristics of Del Cerro Boulevard. (Community Plan, page 126.) Although the Community Plan provides that collectors are rarely divided, the fact that Del Cerro Boulevard includes a raised median through a portion of the roadway is a characteristic of roadways with higher, rather than lower, capacities. The Community Plan also provides that the maximum desirable ADT for a two-lane collector street is 5,000 vehicles per day.

(Circulation Element p. 89). This is the ADT capacity utilized in the EIR traffic impacts analysis.

For these reasons, the EIR traffic impacts analysis utilized the lowest Collector capacity available in *Table 2* of the City of San Diego Traffic Impact Study Manual for the Del Cerro Boulevard capacity analysis – 5,000 ADT, Level of Service C (City of San Diego Traffic Impact Study Manual, p. 8.)

Balance Of Community Roadways

The balance of the roadways in the community are unclassified on the Navajo Community Plan. For these unclassified roadways, several potential options were considered for the design capacity using the 2002 City of San Diego Street Design Manual. These include Low Volume Residential Street (700 ADT), Residential Local Street (1,500 ADT) and a two-lane Sub-Collector (2,200 ADT).

Based on an extensive field review and based on the discussion below, a Residential Local Street classification was utilized for Rockhurst Drive, Lambda Drive, Genoa Drive, Capri Drive, Arno Drive and Adobe Falls Road. These roadways do not have a specific classification assigned to them by the City; there is no document that states the functional classification of these roadways. Therefore, a custom analysis of these streets was conducted based on a field review of the roadways and the associated driving conditions on each to determine the appropriate classification.

Both the City of San Diego Street Design Manual and City Traffic Impact Study Manual provide various criteria that may be considered in determining the classification of a roadway. According to the City Street Design Manual, factors to be considered include the curb-to-curb width of the roadway and corresponding right of way, the design speed, the maximum grade, the minimum curve radii and the fronting land uses. According to the City Traffic Impact Study Manual, the classification assigned to a particular roadway considers the number of lanes, the curb-to-curb width and corresponding right-of-way width, and the fronting uses.

As explained below, based on an analysis of Del Cerro community roadways utilizing the criteria provided in the City Street Design Manual and Traffic Impact Manual, it was determined that the Del Cerro community roadways (other than Del Cerro Boulevard) closely fit the characteristics of both a Residential Local Street and a Sub-Collector.

The City of San Diego Street Design Manual does not classify roadways, i.e., it does not list specific roadways and assign to them a classification such as "Collector," "Sub-collector," etc. Instead, the Manual provides multiple design characteristics typically associated with each classification. Pages 19 & 31 of the Manual provide characteristics for Low Volume Residential Streets, Residential Local Streets and "Two-Lane Sub-Collectors" classifications. Guidance is given in terms of curb-to-curb width, right of way width, curve radii, and other factors.

Page 31 of the City of San Diego Street Design Manual provides the following characteristics for the "Two-Lane Sub-Collector" classification. The following discussion shows why a sub-collector classification could have been utilized even though, to be conservative a Residential Local Street classification was utilized.

Width, Curb-to-Curb	34 ft.
Width, Right of Way:	54-74 ft.
Design ADT:	2,200
Design Speed:	30 mph
Maximum Grade:	10%
Minimum Curve Radius:	500 ft. above 6% grade; 450 ft. at or below 6%
Land Use:	Large Lot Single Dwelling Residential, Singe Dwelling Residential, Low Density Multiple Dwelling Residential, Open Space Park, Medium to Very High Density, Multiple Dwelling Residential, Neighborhood Commercial, Community Commercial, School, Church or Public Building

The curb-to-curb width of the Del Cerro roadways varies from 36-40 feet; none of the roads are narrower than 36 feet. Typical roadway rights-of-way are 20 feet; therefore, the rights-of-way through the community are expected to fall within the 54-74 feet design range.

The "design speed" is "the maximum safe speed that can be maintained over a specified section of roadway when conditions are so favorable that the design features of the road govern." (Street Design Manual, p. 148.) The "design speed" of a roadway generally is equivalent to the actual speed at which the 85th percentile of vehicles travel on the subject roadway (in fact, the design speed is actually higher than that number). Traffic

data collected by LLG indicate that 85% of the vehicles traveling on Genoa Drive, between Capri Drive and Arno Drive, traveled at speeds averaging 30.4 mph (northbound) and 30.9 mph (southbound). The data also indicates that 85% of the vehicles traveling on Capri Drive, between Genoa Drive and Helena Place, traveled at speeds averaging 25.1 mph (eastbound) and 27.3 mph (westbound). The fact that the average travel speed on Genoa Drive for 85% of the vehicles exceeded 30 mph (the design speed for a "Two Lane Sub-Collector"), combined with the fact that the average travel speed for 85% of the vehicles on Capri Drive exceeded 25 mph, supports a classification of the subject roadways as Sub-Collectors. Additional support lies in the fact that the "design speed" is typically 5-10 mph greater than the posted speed limit, and all posted speed limits in the vicinity of Adobe Falls are 25 mph, with the exception of one segment of Genoa Drive, which is posted 20 mph on a downgrade. However, even though the data supports the classification of sub-collector, a residential local street classification was used to be conservative.

Based on field observations, all of the subject roadways have a grade less than 10% with the exception of Adobe Falls Road/Mill Peak Road. Notwithstanding, the steep grade of Adobe Falls Road/Mill Peak Road was factored into the EIR traffic impacts analysis, which determined that vehicle speeds on the Adobe Falls streets could constitute a potentially significant impact. For this reason, the traffic study recommends the preparation of a Traffic Calming Study during the project design phase for the Adobe Falls/North Campus development to determine the methods available to control and/or reduce vehicle speeds on the Del Cerro community roadways, and that all appropriate measures be implemented prior to occupancy.

As to the minimum curve radius, some of the curve radii on the subject roads range, generally, between 190 and 290 feet. This is below 450-500 feet and not consistent with the "Sub-Collector" classification. Lastly, the land uses abutting the residential roadways are primarily Single Dwelling Residential, with a School, Church or Public Building also fronting the roadway, consistent with the Street Design Manual's Sub-Collector classification.

Based on consideration and analysis of all of the factors outlined in the Street Design Manual, LLG determined that the subject roadways exhibit those characteristics generally of the Sub-Collector classification. However, to be conservative, a Residential Local Street classification was utilized.

With respect to the City Traffic Impact Study Manual, the characteristics attributable to a Sub-Collector are two (2) lanes, a curb-to-curb width of 36 feet with corresponding 56 foot right-of-way, and fronting single-family uses. Each of the roadways through the Del Cerro community is two-way, with one lane in either direction. As discussed above, the curb-to-curb and right-of-way widths are a minimum of 36 feet with corresponding approximate 56-foot rights-of-way. With respect to fronting land uses, the Del Cerro roadways front primarily on single-family uses, with the only exception being the Hearst Elementary School and Temple Emanu-El, which are both located near the intersection of Del Cerro Boulevard and College Avenue. Therefore, assigning the "Sub-Collector" classification to these roadways is consistent with the City's Traffic Impact Study Manual.

The Navajo Community Plan Circulation Element Map depicts the community's "primary arterials," "major streets" and "collector streets"; the Community Plan does not reference "sub-collectors" or "Residential Local Streets." (Navajo Community Plan, Circulation Element, page 93.) The Circulation Element Map classifies the western portion of Adobe Falls Road as a "2-Lane Collector Street." However, the map does not depict the eastern portion of Adobe Falls Road, nor does it depict any of the other streets in the subject community. Accordingly, the Navajo Community Plan does not assign a specific classification to these roads.

CITY OF SAN DIEGO STREET DESIGN MANUAL

The purpose of the Street Design Manual is to provide "information and guidance" for the design of the public right-of-way. (Street Design Manual, p. 2.) Significantly, the Manual "establishes guidelines to carry out the City's street design functions. It does not establish a legal standard for such functions nor is it intended that it should do so." (Street Design Manual, p. 3.)

The guidelines contained in the Manual are applicable "primarily to newly developing areas and to older areas that are undergoing major revitalization and redevelopment." (Street Design Manual, p. 3.) In historic and older, developed neighborhoods, like the Del Cerro neighborhood, the Manual recommends the maintenance and enhancement of the existing character of the streets, and provides that in these older neighborhoods, where nonstandard street widths are frequently in place in many locations, "[e]xisting street designs and configurations not illustrated in this manual may be considered

appropriate for continued use in such neighborhoods." (Street Design Manual, p. 3.) Furthermore, as discussed above, the Street Design Manual does not classify roadways, i.e., it does not list specific roadways and assign to them a classification such as "Collector," "Sub-collector," "Residential Local Streets."

NAVAJO EXISTING CONDITIONS MAP

The Circulation Element of the currently adopted Navajo Community Plan classifies Del Cerro Boulevard as a "2-Lane Collector Street." (Navajo Community Plan Circulation Element, page 93.) The Community Plan also provides that the maximum desirable ADT for a two-lane collector street is 5,000 vehicles per day (Circulation Element p. 89), which is the capacity utilized in the EIR traffic analysis in assessing impacts. Therefore, the traffic study correctly classified Del Cerro Boulevard as a "Collector."

VEHICLE SPEED CONCERNS

It is important to evaluate two distinct aspects of a residential roadway when evaluating potential impacts. The first is the physical carrying capacity of the roadway, and the second are "quality of life" aspects such as roadway speeds and safety. As previously discussed, while the EIR roadway segment analysis determined that the Del Cerro roadways could accommodate the projected increase in project traffic from a capacity perspective, vehicle speeds on residential streets, rather than traffic volumes, could constitute a potentially significant impact. In response, a Mitigation Measure is recommended that requires the preparation of a Traffic Calming Study to determine the methods available to control and/or reduce vehicle speeds on the Del Cerro community roadways.

APPENDIX D

EXISTING RAMP METER & FREEWAY DATA

LOCATION: College Ave SB to 8 W

(Loc #1)

Discharge (veh/hr/lane)	
Least Restrictive	570
Most Restrictive	318
CPM (cycles/min)	
Least Restrictive	9.5
Most Restrictive	5.3
Schedule Hours	0530-0930
Veh/Cyc	1
SOV	2
HOV	0

LOCATION: College Ave NB to 8 W

(Loc #2)

Discharge (veh/hr/lane)	
Least Restrictive	570
Most Restrictive	318
CPM (cycles/min)	
Least Restrictive	9.5
Most Restrictive	5.3
Schedule Hours	0530-0930
Veh/Cyc	1
SOV	1
HOV	0

LOCATION: College Ave SB to 8 E

(Loc #3)

Discharge (veh/hr/lane)	
Least Restrictive	570
Most Restrictive	318
CPM (cycles/min)	
Least Restrictive	9.5
Most Restrictive	5.3
Schedule Hours	1500-1900
Veh/Cyc	1
SOV	1
HOV	0

LOCATION: College Ave NB to 8 El
(Loc #4)

Discharge (veh/hr/lane)	
Least Restrictive	570
Most Restrictive	318
CPM (cycles/min)	
Least Restrictive	9.5
Most Restrictive	5.3
Schedule Hours	1500-1900
Veh/Cyc	1
SOV	1
HOV	0

LOCATION: Lake Murray to 8 WB
(Loc #5)

Discharge (veh/hr/lane)	
Least Restrictive	996
Most Restrictive	828
CPM (cycles/min)	
Least Restrictive	8.3
Most Restrictive	6.9
Schedule Hours	0530-0930
Veh/Cyc	2
SOV	2
HOV	1

LOCATION: 70th Street to 8 WB
(Loc #6)

Discharge (veh/hr/lane)	
Least Restrictive	996
Most Restrictive	979
CPM (cycles/min)	
Least Restrictive	8.3
Most Restrictive	8.2
Schedule Hours	0530-0930
Veh/Cyc	2
SOV	1
HOV	0

LOCATION: Alvarado to 8 EB
(Loc #7)

NO METER

Narasimha Prasad

From: Tuere Farley
Sent: Tuesday, April 12, 2005 2:11 PM
To: Narasimha Prasad
Subject: Grantville Ramp Meter Data

-----Original Message-----
From: William Yeung [mailto:william_yeung@dot.ca.gov]
Sent: Tuesday, April 12, 2005 1:50 PM
To: Tuere Farley
Subject: Data Enclosed

Tuere,

Below is the information you requested.
Please note the discharge is same for both SOV/HOV

Friars Rd to NB15:

Discharge (veh/hr)	516		386
CPM (cycles/min)	4.3	3.22	
Veh/Cyc	2	2	
Schedule Hours	530-930		1500-1900
Ramp Volumes	1548		1159
SOV	2	2	
HOV	1	1	

Friars Rd to SB15:

Discharge (veh/hr)	636
CPM (cycles/min)	5.3
Veh/Cyc	2
Schedule Hours	1500-1900
Ramp Volumes	636
SOV	1

Fairmount Ave NB/SB to 8EB:

Discharge (veh/hr)	492
CPM (cycles/min)	4.1
Veh/Cyc	2
Schedule Hours	1500-1900
Ramp Volumes	984
SOV	2

For our records, please send us a copy of the report generated from the data in any format you desire, ie hardcopy or softcopy.
Due to possible transmission errors, please send me a confirmation of receipt.
I trust this satisfies your inquiry.

"Tuere Farley" <farley@llgengineers.com>

To: "William Yeung" <william_yeung@dot.ca.gov>

cc:

PEAK HOUR VOLUME DATA

Peak hour volume data consists of hourly volume relationships and data location. The hourly volumes are expressed as a percentage of the Annual Average Daily Traffic (AADT). The percentages are shown for both the AM and the PM peak periods. These peak periods are consistent with the criteria described in the preface of this book.

The principle data described here are the K factor, the D factor and their product (KD). The K factor is the percentage of AADT during the peak hour for both directions of travel. The D factor is the percentage of the peak hour travel in the peak direction. KD multiplied with the AADT gives the one way peak period directional flow rate or the design hourly volume (DHV). The design hourly volume is used for either Operational Analysis or Design Analysis. Refer to the 2000 Highway Capacity Manual for more details.

Following is a glossary of terms used in this listing of peak hour volume data:

Dir	Indicates direction of travel for peak volume
AADT	Annual Average Daily Traffic in vehicles per day (vpd).
AM Peak	Represents the morning peak period for traffic analysis
CS	Control Station Number, Caltrans identification number for monitoring site.
CO	County abbreviation used by Caltrans
D	D factor. The percentage of traffic in the peak direction during the peak hour. Values in this book are derived by dividing the measured PHV by the sum of both directions of travel during the peak hour.
DAY	Day of week for the peak volume.
DDHV	The directional design hour volume, in vehicles per hour (vph) DDHV=AADTxKxD. See equation (8-1) on page 8-11 of the 2000 Highway Capacity Manual.
DI	Caltrans has twelve transportation districts statewide. This abbreviation identifies the district in which the count station is located.
HR	The ending time for the peak hour volume listed. The volume observed from 1 to 2 would be recorded as 2.

K	The percentage of the AADT in both directions during the peak hour. Values in this table are derived by dividing the measured 2-way PHV by the AADT.
KD	The product of K and D. The percentage of AADT in the peak direction during the peak hour. Values in this table are derived by dividing the measured 1-way PHV by the AADT.
LEG	For traffic counting purposes, a highway intersection or interchange is assigned two legs according to increasing postmiles (route direction) and with a postmile reference at the center of the intersection or interchange. The volume of traffic on each leg is denoted by an A, B or O. A = ahead leg, B = back leg, and O – traffic volume being same for both back and ahead legs.
MNTH	The month that the peak volume occurred.
PHV	Peak Hour Volume in the peak direction. A one way volume in vehicles per hour (vph) as used here. The PHV is analogous to the DDHV as used for design purposes.
PM	The Post Mile is the mileage measured from the county line, or from the beginning of a route. Each postmile along a route in a county is a unique location on the state highway system.
PM Peak	Represents the afternoon peak period for traffic analysis.
PRE	The postmile may have a prefix like R, T, L, M, etc. When a length of highway is changed due to construction or realigment, new postmile values are assigned. To distinguish the new values from the old, an alpha code is prefixed to the new postmile.
RTE	The state highway route number
YR	The year when the count was made. Traffic counting is on a 3-year cycle.

CALTRANS TRAFFIC VOLUMES
LATEST TRAFFIC YEAR SELECTED
PEAK HOUR VOLUME DATA

									AM PEAK								PM PEAK						
DI	RTE	CO	PRE	PM	CS	LEG	YR	Dir	1 WAY PHV	% K	% D	% KD	HR	DAY	MNTH	Dir	1 WAY PHV	% K	% D	% KD	HR	DAY	MNTH
03	005	SAC		29.02	44	B	05	S	6027	7.52	63.06	4.74	7	THU	MAY	N	6260	8.17	60.33	4.93	16	FRI	OCT
03	005	SAC		29.91	50	A	05	N	2925	6.47	57.13	3.7	7	MON	MAY	S	3240	8.13	50.37	4.09	15	FRI	JUL
03	005	SAC		32.73	543	A	05	S	1876	6.94	51.74	3.59	12	SAT	DEC	S	2367	8.22	55.14	4.53	15	WED	DEC
03	005	YOL		5.53	65	B	05	N	1897	7.45	51.09	3.81	7	TUE	AUG	N	2423	9.5	51.18	4.86	16	FRI	JUL
03	005	YOL	R	6.5	70	A	05	N	1142	7.73	53.84	4.16	10	FRI	JUL	N	1251	8.34	54.63	4.56	16	FRI	JUL
03	005	YOL	R	7.086	75	A	05	N	1444	6.92	59.45	4.12	7	FRI	JUL	N	1688	8.56	56.21	4.81	15	FRI	SEP
03	005	COL	R	6.793	82	B	05	N	1507	8.53	57.81	4.93	11	FRI	JUL	S	1852	10.09	60.07	6.06	15	SUN	OCT
03	005	COL	R	17.98	85	B	05	N	1740	9.37	60.8	5.7	11	FRI	MAY	S	2049	11.35	59.12	6.71	14	SAT	NOV
03	005	GLE	R	9.872	345	B	05	N	1381	9.38	57.86	5.43	10	SAT	JUL	S	1618	10.71	59.35	6.36	13	SUN	JUL
03	005	GLE	R	10.88	202	B	05	N	1378	9.74	53.1	5.17	12	FRI	AUG	S	1641	10.49	58.71	6.16	16	SUN	AUG
03	005	GLE	R	24.82	92	B	05	N	1329	9.78	53.74	5.25	12	SAT	JUL	S	1560	9.84	62.65	6.17	16	SUN	OCT
03	005	GLE	R	27.81	95	A	05	S	1483	10.41	54.44	5.67	12	SUN	AUG	S	1716	10.17	64.49	6.56	16	MON	DEC
02	005	TEH	R	9.972	271	O	05	S	1563	8.12	64.11	5.21	11	MON	JUL	N	1847	10.07	61.1	6.15	16	FRI	MAY
02	005	TEH		31.04	202	B	05	N	1916	8.33	56.27	4.69	12	FRI	SEP	N	2250	9.58	57.46	5.51	17	FRI	MAY
02	005	SHA	R	3.83	272	B	03	N	2299	8.52	53.88	4.59	12	SAT	AUG	S	2453	8.47	57.84	4.9	15	SUN	AUG
02	005	SHA	R	7.8	239	B	05	N	2438	7.6	61.63	4.69	7	TUE	APR	S	2613	8.97	55.99	5.02	16	WED	JUN
02	005	SHA	R	13.95	298	O	05	N	2780	7.36	64.22	4.73	7	WED	MAR	S	2783	8.13	58.17	4.73	14	MON	MAY
02	005	SHA	R	14.46	304	A	05	N	2869	8.17	52.24	4.27	12	FRI	JUN	S	3175	8.78	53.75	4.72	17	WED	FEB
02	005	SHA	R	24.08	309	A	05	S	1121	9.85	51.99	5.12	11	THU	DEC	N	1273	10.01	58.13	5.82	14	FRI	JUN
02	005	SHA	R	26.04	273	B	05	N	1261	9.98	57.98	5.78	12	THU	JUN	S	1451	11.73	56.75	6.66	13	SAT	NOV
02	005	SHA		57.41	179	B	05	S	1153	11.17	56.63	6.32	12	SUN	AUG	N	1247	12.78	53.52	6.84	14	WED	NOV
02	005	SIS	R	11.17	310	O	05	S	1144	10.84	52.17	5.66	11	SUN	AUG	N	1228	10.7	56.72	6.07	14	THU	JUL
02	005	SIS	R	23.00	294	O	05	N	925	9.82	59.33	5.82	9	SAT	JUL	S	997	11.7	53.66	6.28	13	SUN	AUG
09	006	INY		0	944	A	05	S	213	8.36	66.77	5.58	7	WED	APR	N	216	9.14	61.89	5.66	17	WED	MAR
09	006	INY	R	3.952	945	A	05	S	128	7.31	85.33	6.24	7	THU	NOV	N	124	8.83	68.51	6.05	17	TUE	MAY
09	006	MNO		32.29	997	B	05	N	52	8.23	67.53	5.56	9	SUN	NOV	S	64	9.72	70.33	6.84	15	TUE	JUN
11	007	IMP		1.188	607	B	05	N	894	8.62	67.47	5.82	10	SUN	MAY	S	888	9.27	62.36	5.78	17	FRI	AUG
11	008	SD	L	1.213	951	B	05	E	2313	8.23	60.8	5	7	THU	FEB	E	1925	7.27	57.29	4.16	15	WED	AUG
11	008	SD	L	1.213	958	A	05	E	4692	7.36	61.64	4.54	7	TUE	APR	W	4701	8.38	54.28	4.55	17	WED	AUG
11	008	SD	R	.023	859	A	05	E	7384	7.01	51.89	3.64	12	FRI	JUL	E	8433	7.19	57.78	4.16	15	THU	OCT
11	008	SD		.946	804	A	05	W	8082	6.56	55.2	3.62	7	WED	MAY	E	8988	7.23	55.73	4.03	15	THU	MAY
11	008	SD		5.638	953	B	05	W	11954	6.08	75.05	4.56	6	FRI	OCT	E	11957	7.7	59.31	4.57	15	FRI	JUL
11	008	SD		8.336	807	B	05	W	11115	7.45	62.62	4.67	7	WED	DEC	E	10600	7.36	60.43	4.45	17	THU	AUG

CALTRANS TRAFFIC VOLUMES
LATEST TRAFFIC YEAR SELECTED
PEAK HOUR VOLUME DATA

									AM PEAK							PM PEAK						
DI	RTE	CO	PRE	PM	CS	LEG	YR	Dir	1 WAY PHV	% K	% D	% KD	HR	DAY	MNTH	Dir	1 WAY PHV	% K	% D	% KD	HR	DAY	MNTH
11	008	SD		8.336	808	A	05	W	10425	7.28	67.02	4.88	7	WED	DEC	E	9992	7.79	60.03	4.67	16	FRI	DEC
11	008	SD		12.65	834	A	05	W	9577	6.05	68.12	4.12	6	WED	JUL	E	11162	8.3	57.89	4.8	16	THU	JAN
11	008	SD		14.59	806	B	05	W	8538	6.39	64.54	4.13	6	THU	MAY	E	10918	7.66	68.94	5.28	19	FRI	JUN
11	008	SD	R	18.73	824	B	05	W	4538	6.83	66.92	4.57	7	WED	MAY	E	4334	7.52	57.98	4.36	16	WED	NOV
11	008	SD	R	20.04	888	B	05	W	4129	6.72	70.16	4.72	7	FRI	SEP	E	4017	7.73	59.41	4.59	17	FRI	DEC
11	008	SD	R	23.64	979	O	05	W	2538	6.39	63.93	4.08	7	WED	JUN	E	3019	8	60.67	4.86	17	FRI	FEB
11	008	SD	R	37.83	811	A	05	W	1117	9.11	57.14	5.21	11	SAT	JUL	W	1376	10.17	63.06	6.41	14	SUN	MAR
11	008	SD	R	51.98	621	B	05	W	954	9.99	57.02	5.7	12	SAT	AUG	W	1151	10.44	65.85	6.88	19	SUN	MAR
11	008	SD	R	65.90	981	A	05	W	886	9.13	63.11	5.76	12	FRI	SEP	W	1123	11.65	62.67	7.3	16	SUN	MAR
11	008	IMP	R	10.29	993	B	05	W	944	10.18	62.89	6.4	10	SAT	JUL	W	1161	12.08	65.19	7.87	13	SUN	MAR
11	008	IMP	R	10.29	994	A	05	E	857	11.97	55.33	6.62	12	MON	JUL	W	1047	12.2	66.31	8.09	15	SUN	APR
11	008	IMP	R	23.48	624	A	05	W	848	11.17	57.1	6.38	12	SAT	JUL	W	948	10.7	66.62	7.13	17	SUN	JAN
11	008	IMP	R	36.97	982	B	05	E	945	8.61	56.83	4.89	12	FRI	FEB	W	1135	9.11	64.56	5.88	15	SUN	FEB
11	008	IMP	R	40.94	638	B	05	E	1380	7.05	57.36	4.04	11	SAT	FEB	E	1807	8.58	61.69	5.29	16	FRI	APR
11	008	IMP	R	53.50	964	A	05	E	903	12.82	55.43	7.11	12	MON	SEP	E	1009	13.35	59.49	7.94	16	MON	SEP
11	008	IMP	R	96.54	688	X	05	E	872	10.73	55.72	5.98	12	FRI	MAR	E	969	9.89	67.15	6.64	13	WED	MAR
11	008	IMP	R	96.55	995	B	05	E	1272	11	54.52	5.99	11	FRI	MAR	E	1323	10.96	56.9	6.24	13	FRI	MAR
11	008	IMP	R	96.99	988	B	05	E	1056	10.87	53.77	5.84	11	FRI	MAR	E	1134	10.97	57.22	6.27	13	FRI	MAR
05	009	SCR		.046	48	A	05	S	1383	12.07	59.64	7.2	12	MON	NOV	S	1299	10.67	63.34	6.76	15	WED	NOV
05	009	SCR		.63	681	A	05	S	263	6.57	84.57	5.56	7	MON	FEB	N	337	10.88	65.44	7.12	17	WED	SEP
05	009	SCR		8.11	430	B	05	S	1202	7.63	74.71	5.7	7	WED	MAY	N	1285	9.11	66.93	6.1	17	FRI	AUG
05	009	SCR		13.04	169	B	05	S	658	7.99	63.09	5.04	7	TUE	AUG	N	736	9.57	58.88	5.63	15	FRI	MAY
05	009	SCR		27.09	49	B	05	N	314	12.91	92.35	11.93	7	MON	NOV	S	256	12.19	79.75	9.72	17	FRI	MAY
04	009	SCL		0	50	A	04	S	317	15.57	61.79	9.62	11	SUN	JUL	S	289	11.08	79.18	8.77	17	FRI	OCT
04	009	SCL		7.09	170	A	04	S	425	9.81	63.34	6.21	11	SAT	JUL	N	492	9.25	77.73	7.19	21	SAT	JUL
07	010	LA		18.41	456	B	04	W	761	12.17	94.89	11.55	9	WED	NOV	E	574	11.71	74.35	8.71	17	FRI	NOV
07	010	LA		24.31	785	A	05	W	1529	8.53	67.78	5.78	11	SAT	MAY	E	1570	10.01	59.27	5.94	15	SAT	NOV
07	010	LA	R	3.89	402	B	05	W	7490	7.63	51.88	3.96	7	TUE	FEB	E	6838	6.84	52.84	3.61	14	TUE	MAY
07	010	LA	R	13.54	460	A	05	E	10803	5.96	55.73	3.32	7	FRI	FEB	W	11607	6.18	57.74	3.57	17	THU	JUL
07	010	LA		34.28	48	O	05	E	7431	6.29	53.25	3.35	12	FRI	MAY	E	7773	6.44	54.36	3.5	14	FRI	OCT
07	010	LA		40.84	173	A	05	W	7290	6.37	53.17	3.39	7	FRI	JAN	E	7911	6.86	53.54	3.67	16	THU	JUN
07	010	LA		47.11	54	B	05	W	9216	6.3	57.56	3.63	7	THU	JUN	E	8814	6.63	52.31	3.47	17	THU	FEB
08	010	SBD		3.468	842	B	05	W	8690	6.43	53.01	3.41	8	THU	FEB	W	9072	6.62	53.74	3.56	18	FRI	NOV

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT TOTAL By Axle 2	3	4	5+	% TRUCK AADT By Axle 2	3	4	5+	EAL 1-WAY (1000)	YEAR VER/ EST
008	11	SD	T.407	A	SAN DIEGO, SUNSET CLIFFS BOULEVARD	23100	231	1	190	17	7	17	82.3	7.4	2.9	7.4	15	78E
008	11	SD	L2.384	B	JCT. RTES. 5/209	103000	1236	1.2	1048	88	9	91	84.8	7.1	.7	7.4	77	78V
008	11	SD	R.02	A	JCT. RTES. 5/209	203000	5684	2.8	3803	818	244	818	66.9	14.4	4.3	14.4	526	83V
008	11	SD	2.41	B	SAN DIEGO, JCT. RTE. 163	235000	6345	2.7	4911	685	159	590	77.4	10.8	2.5	9.3	462	83E
008	11	SD	2.41	A	SAN DIEGO, JCT. RTE. 163	234000	6552	2.8	5117	655	157	622	78.1	10	2.4	9.5	477	83E
008	11	SD	4.378	B	SAN DIEGO, JCT. RTE. 805	224000	7168	3.2	5383	710	244	831	75.1	9.9	3.4	11.6	576	83E
008	11	SD	5.638	B	JCT. RTE. 15	262000	7860	3	4598	998	330	1934	58.5	12.7	4.2	24.6	968	83V
008	11	SD	5.638	A	JCT. RTE. 15	229000	8015	3.5	5130	922	361	1603	64	11.5	4.5	20	870	84E
008	11	SD	10.57	B	FLETCHER PARKWAY	201000	7437	3.7	4447	944	260	1785	59.8	12.7	3.5	24	897	84V
008	11	SD	10.57	A	FLETCHER PARKWAY	185000	8140	4.4	4599	1254	415	1872	56.5	15.4	5.1	23	983	78V
008	11	SD	15.8	B	EL CAJON, JCT. RTE. 67 NORTH	180000	8460	4.7	4560	1108	389	2403	53.9	13.1	4.6	28.4	1148	78V
008	11	SD	15.8	A	EL CAJON, JCT. RTE. 67 NORTH	139000	4031	2.9	2233	456	141	1201	55.4	11.3	3.5	29.8	555	78V
008	11	SD	R18.727	A	GREENFIELD DRIVE	88000	6072	6.9	3200	474	146	2253	52.7	7.8	2.4	37.1	954	86V
008	11	SD	R37.831	B	JCT. RTE. 79 NORTH, JAPATUL VALLEY ROAD	27000	3240	12	1273	191	97	1678	39.3	5.9	3	51.8	655	86E
008	11	SD	R37.831	A	JCT. RTE. 79 NORTH, JAPATUL VALLEY ROAD	27000	3672	13.6	1193	286	106	2086	32.5	7.8	2.9	56.8	803	00E
008	11	SD	R65.904	B	JCT. RTE. 94 SOUTH	15700	2181	13.89	780	100	50	1251	35.78	4.59	2.29	57.34	475	05V
008	11	SD	R65.904	A	JCT. RTE. 94 SOUTH	15400	2181	14.16	780	100	50	1251	35.78	4.59	2.29	57.34	475	05V
008	11	IMP	R10.01	B	JCT. RTE. 98	14700	2043	13.9	731	94	47	1171	35.8	4.6	2.3	57.3	445	05E
008	11	IMP	R10.01	A	JCT. RTE. 98	12900	1793	13.9	642	82	41	1027	35.8	4.6	2.3	57.3	390	05E
008	11	IMP	R29.933	B	DREW ROAD	13300	2160	16.24	640	100	40	1380	29.63	4.63	1.85	63.89	514	05E
008	11	IMP	R37.972	B	JCT. RTE. 86	32000	3424	10.7	1103	188	75	2058	32.2	5.5	2.2	60.1	777	05E

APPENDIX E

COLLEGE AREA & NAVAJO COMMUNITY PLANS EXCERPT

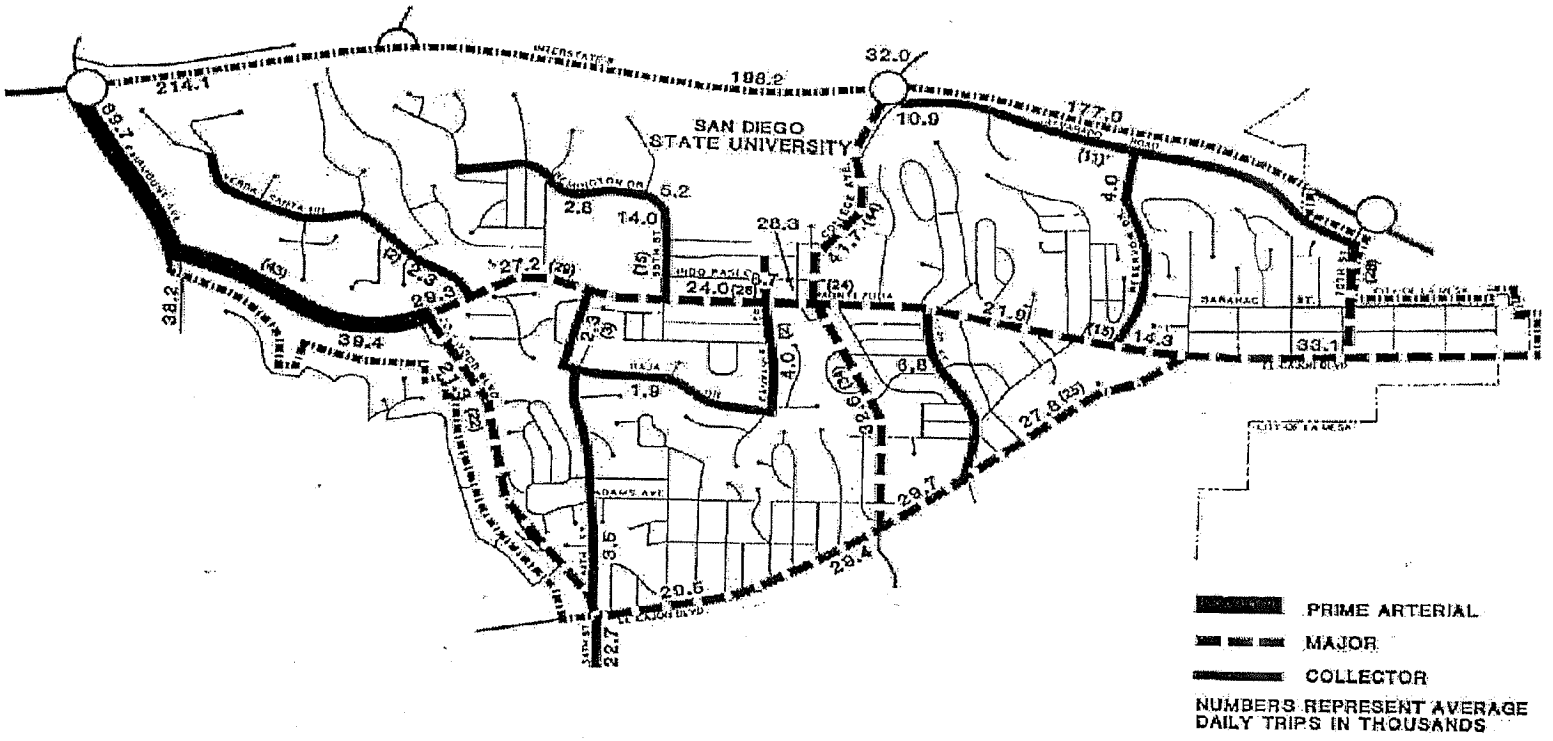
COLLEGE AREA COMMUNITY PLAN

1989

Printed on recycled paper.
This information, or this document (or portions thereof), will be made available in alternative formats upon request.

The following information has been incorporated into this October 2003 posting of the College Area Community Plan:

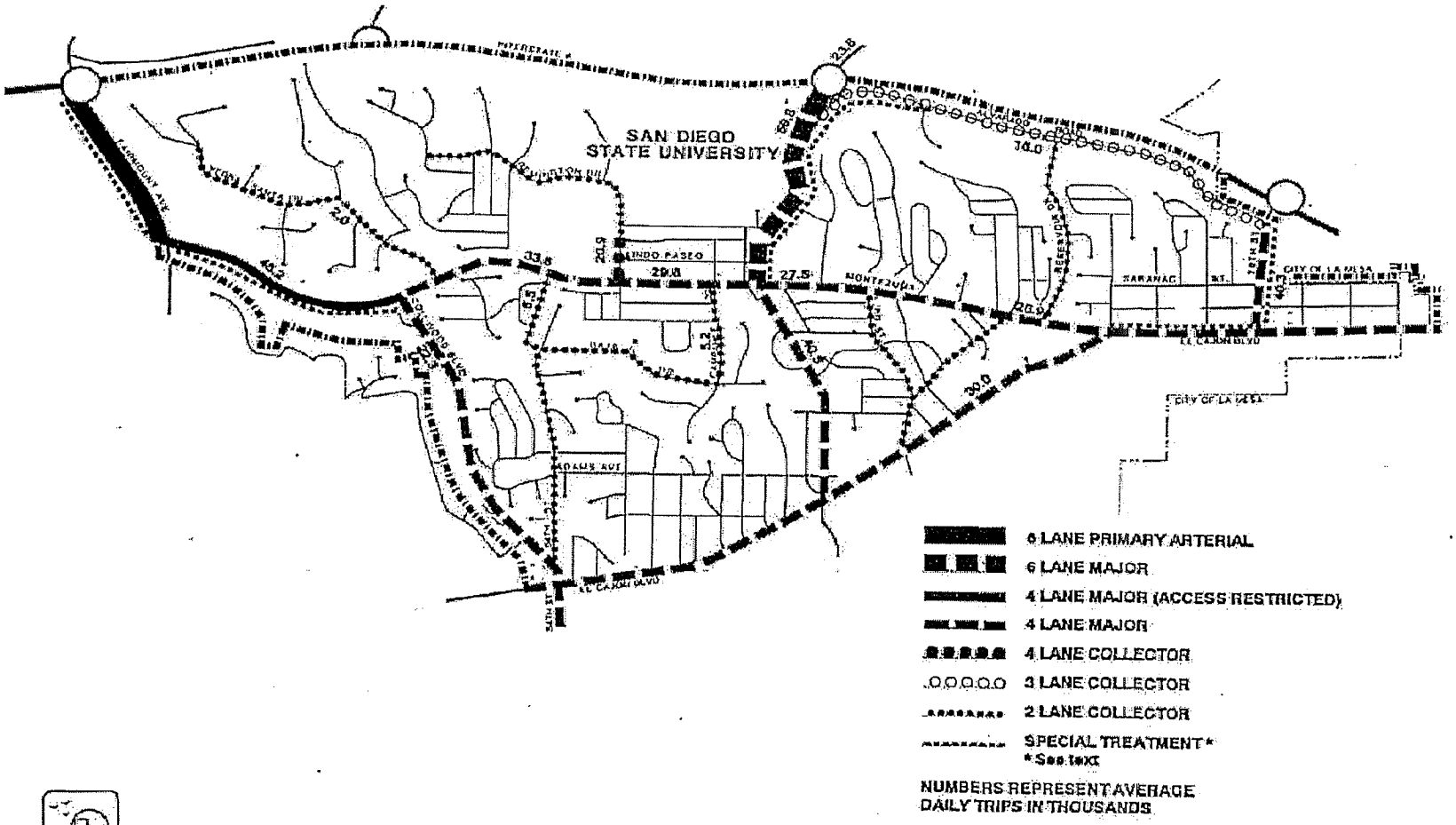
Amendment	Date Approved by Planning Commission	Resolution Number	Date Adopted by City Council	Resolution Number
Adoption of the College Area Community Plan	January 12, 1989	0354-PC	May 2, 1989	R-273373
College Community Redevelopment Plan (SDSU Element)	September 16, 1993	- -	October 12, 1993	R-282801
Mission Valley East Trolley Extension	March 2, 2000	2931-PC	August 5, 2002	R-296980



EXISTING STREET CLASSIFICATIONS AND TRAFFIC VOLUMES – 1986 (1992)

COLLEGE AREA COMMUNITY PLAN
CITY OF SAN DIEGO • PLANNING DEPARTMENT

FIGURE 10



6 LANE PRIMARY ARTERIAL
6 LANE MAJOR
4 LANE MAJOR (ACCESS RESTRICTED)
4 LANE MAJOR
4 LANE COLLECTOR
3 LANE COLLECTOR
2 LANE COLLECTOR
SPECIAL TREATMENT *
*See text

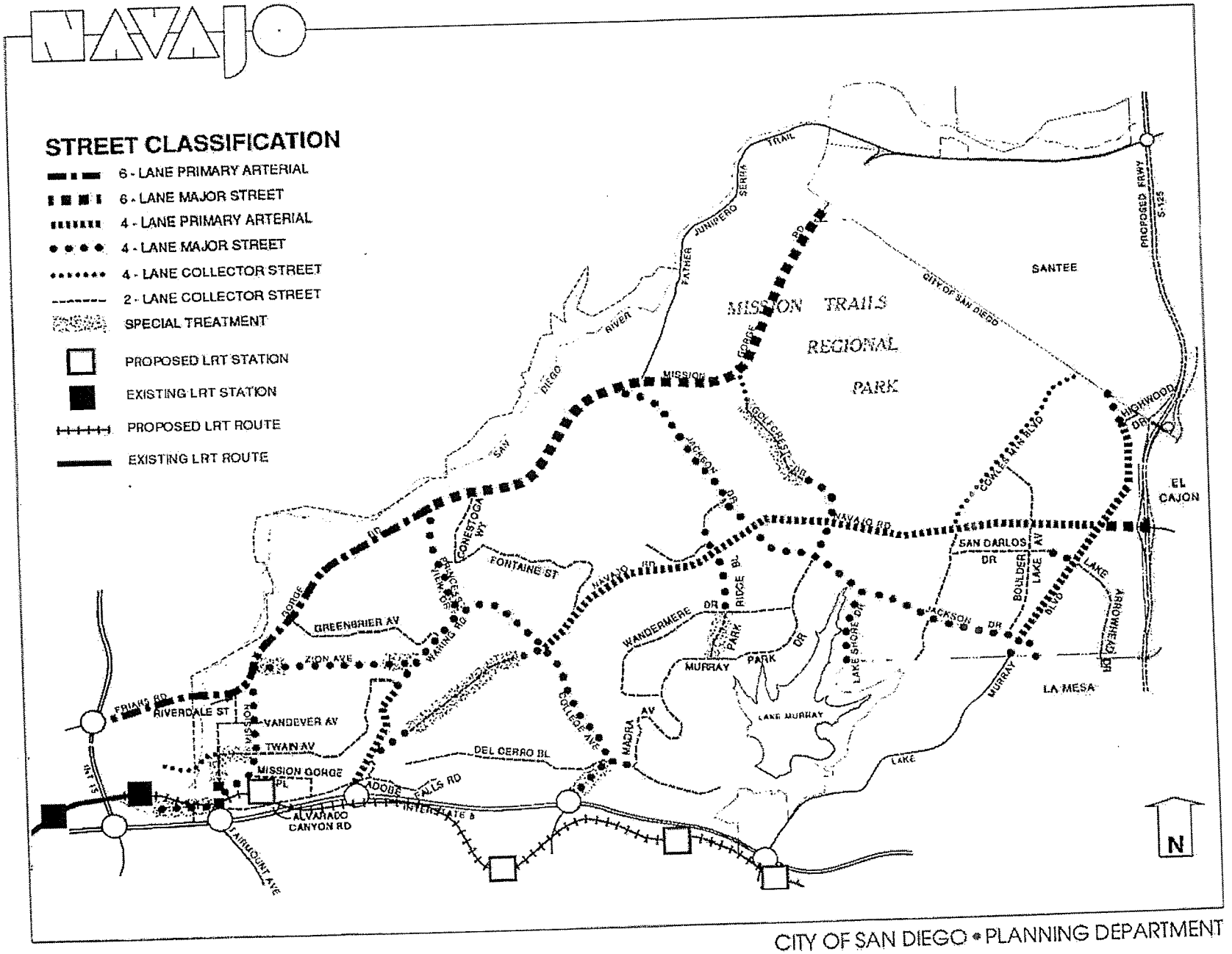
NUMBERS REPRESENT AVERAGE DAILY TRIPS IN THOUSANDS

FUTURE STREET CLASSIFICATIONS & TRAFFIC VOLUMES

COLLEGE AREA COMMUNITY PLAN
CITY OF SAN DIEGO • PLANNING DEPARTMENT

N

FIGURE 11



CITY OF SAN DIEGO • PLANNING DEPARTMENT

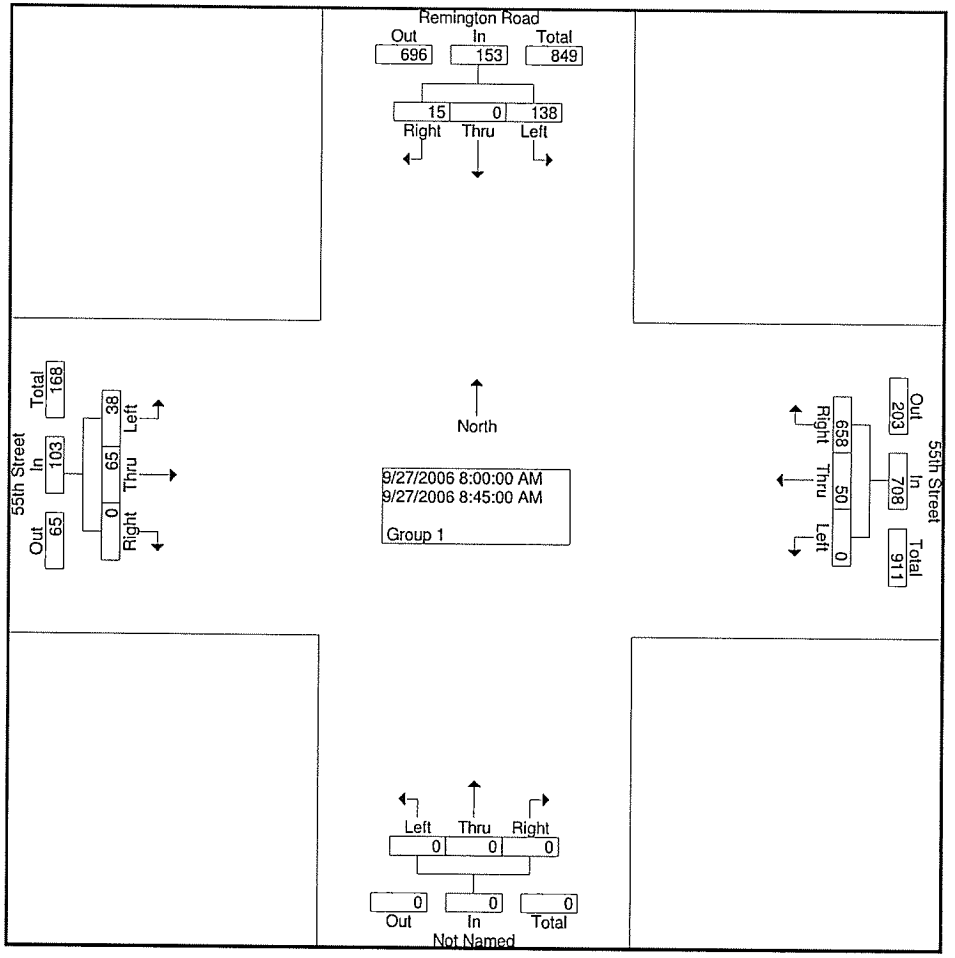
APPENDIX F

INTERSECTION & SEGMENT MANUAL COUNT SHEETS

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:B. Villanueva
Board #: D1-1424
Loc:Remmington Road & 55th Street

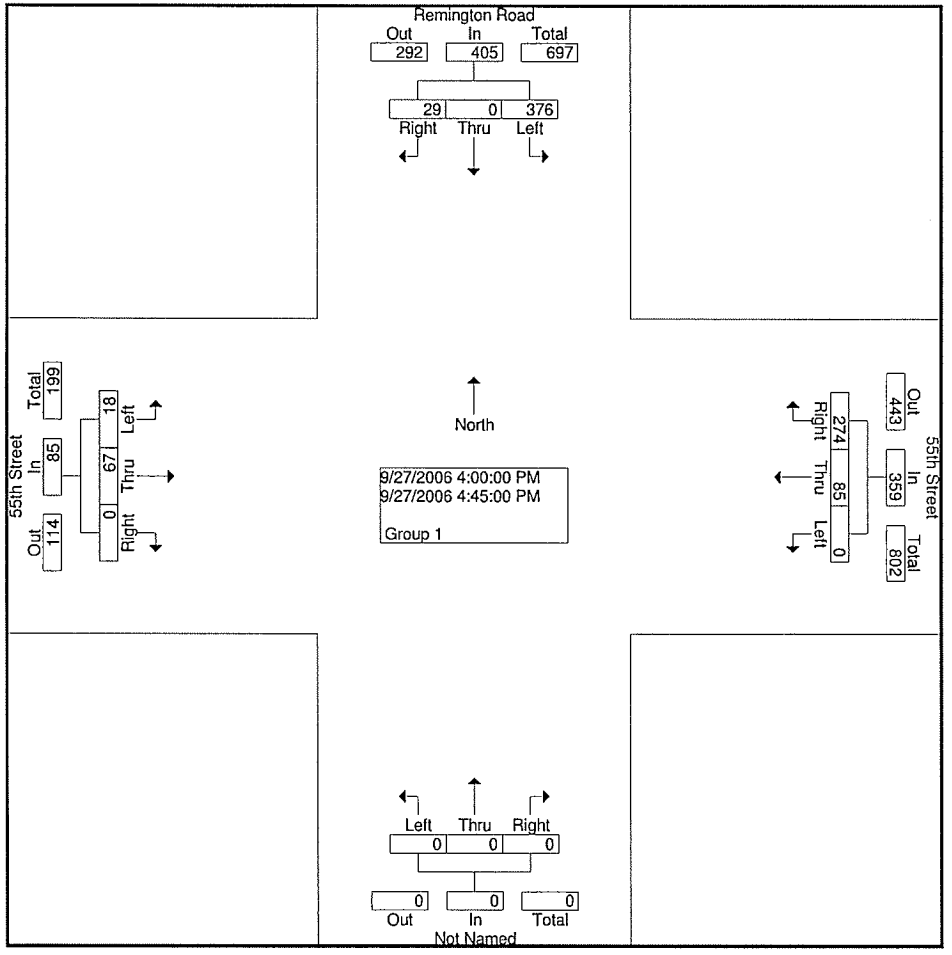
File Name : 06283090
Site Code : 00283090
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:B. Villanueva
Board #: D1-1424
Loc:55th Street & Remington Road

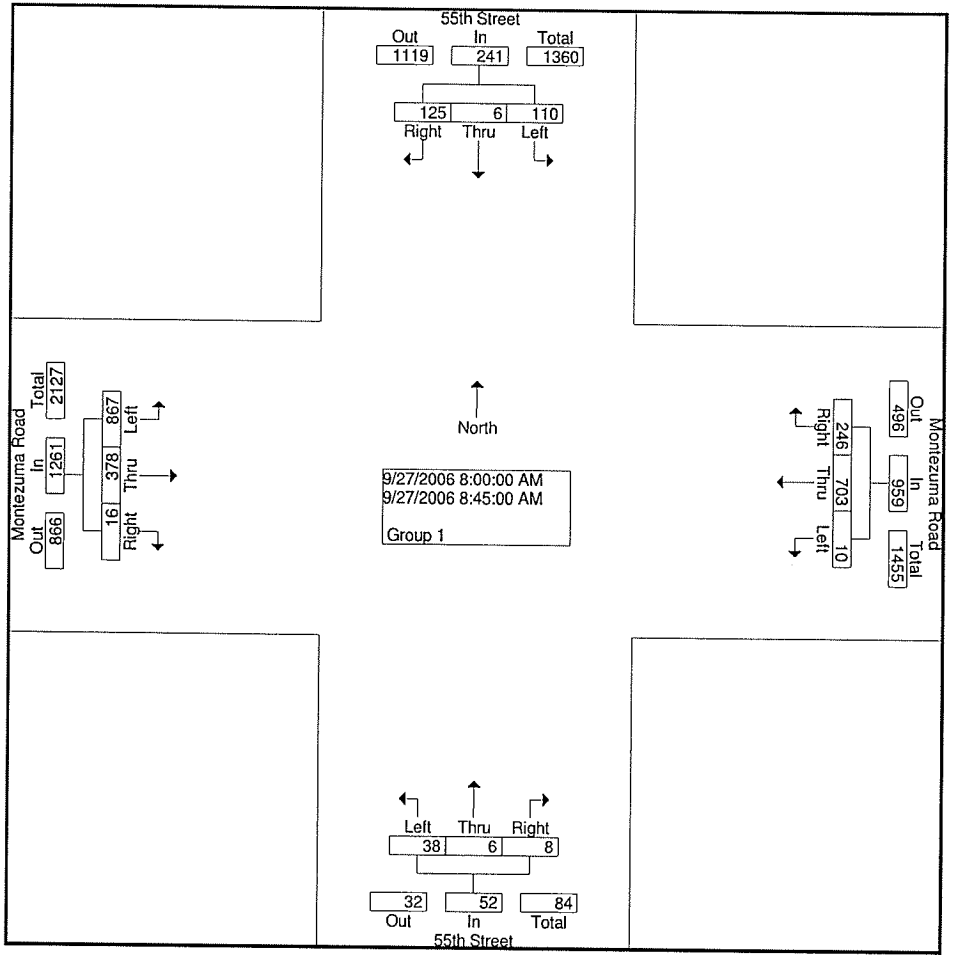
File Name : 06283091
Site Code : 00283091
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:D. Wellman
Board #: D1-1429
Loc:55th St & Montezuma Road

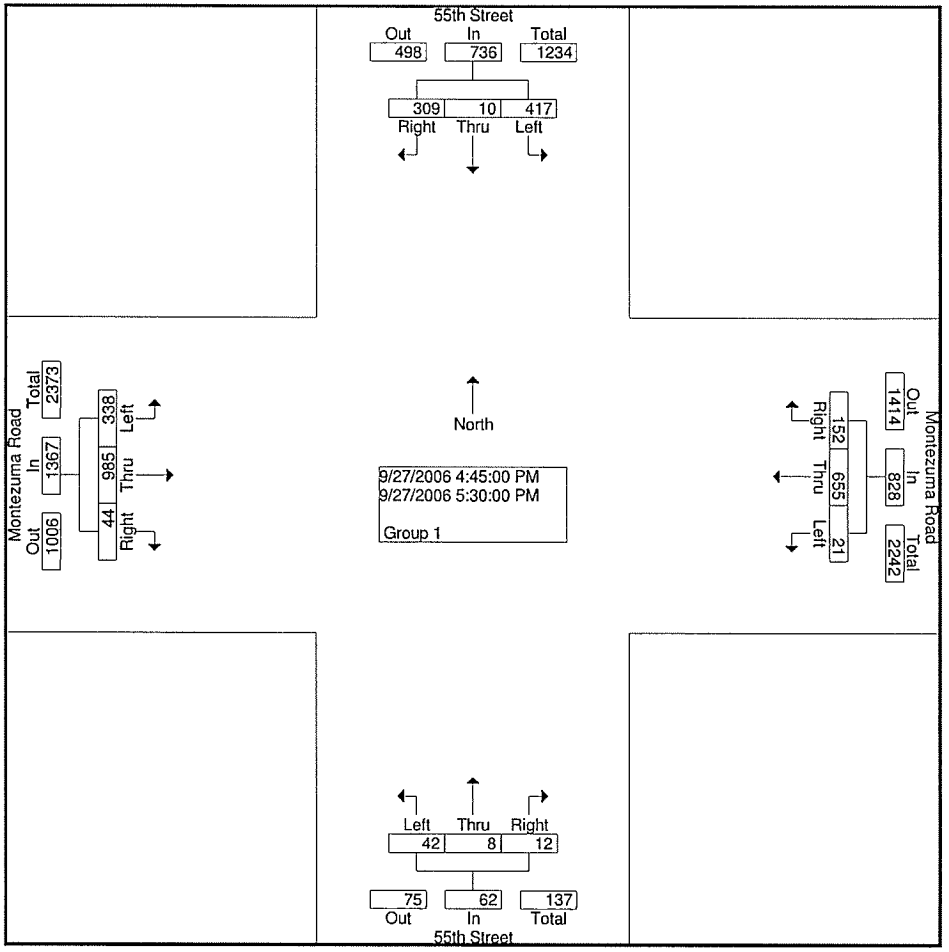
File Name : 06283080
Site Code : 00283080
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:D. Wellman
Board #: D1-1429
Loc:55th Street & Montezuma Road

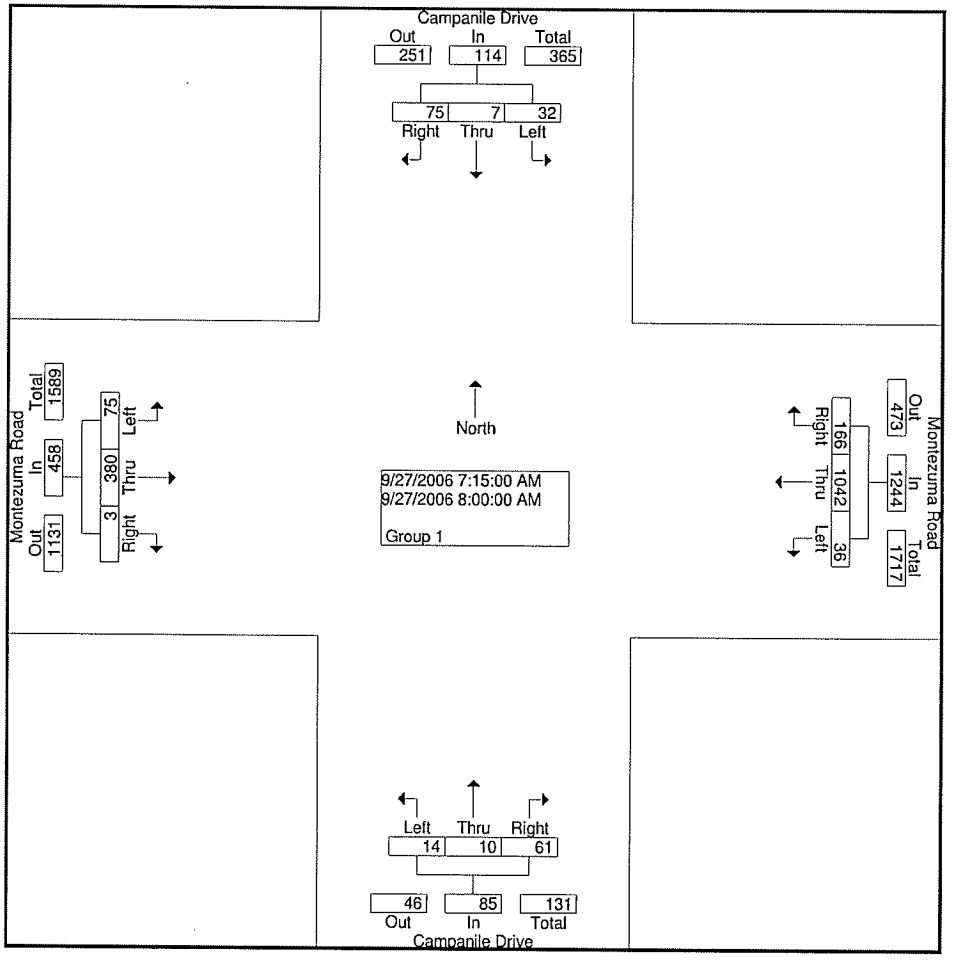
File Name : 06283081
Site Code : 00283081
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:K. Thind
Board #: D1-1432
Loc:Campanile Drive & Montezuma Road

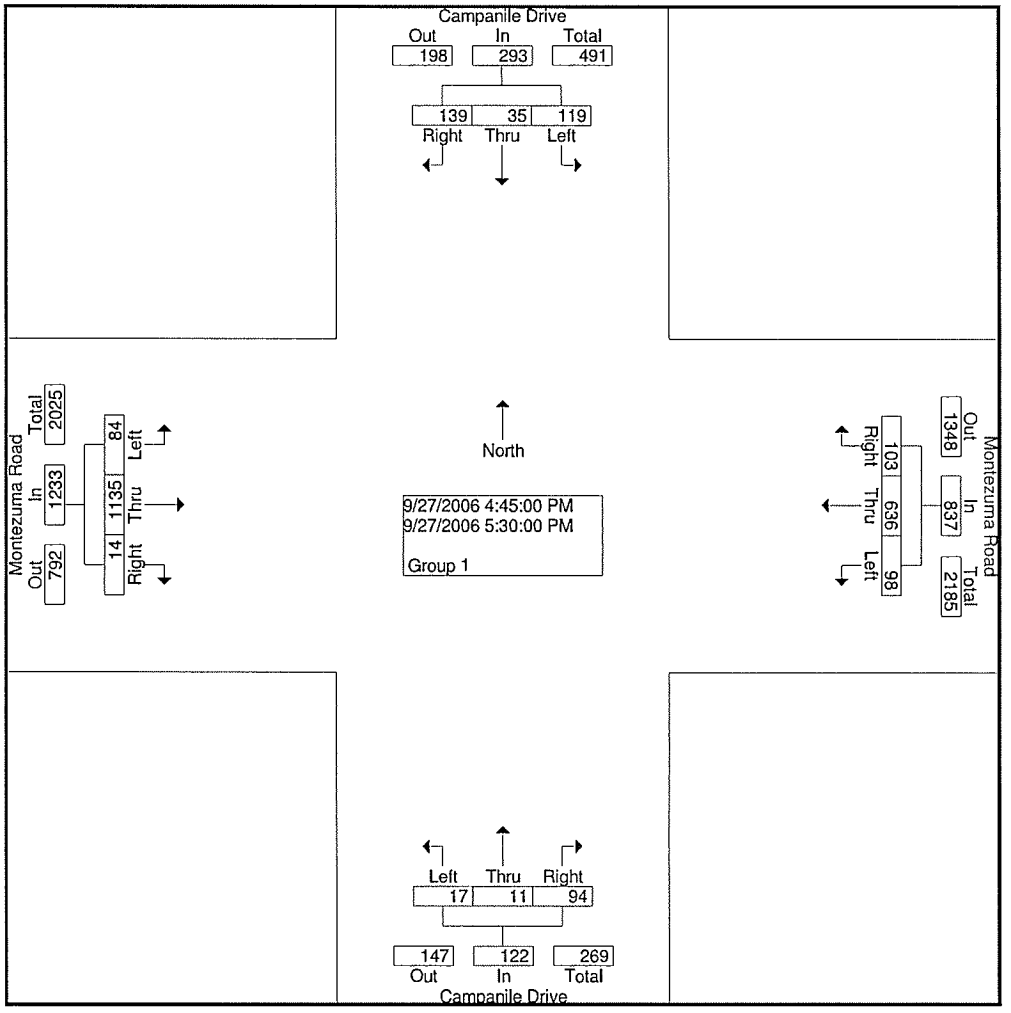
File Name : 06283070
Site Code : 00283070
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:K. Thind
Board #: D1-1432
Loc:Campanile Drive & Montezuma Road

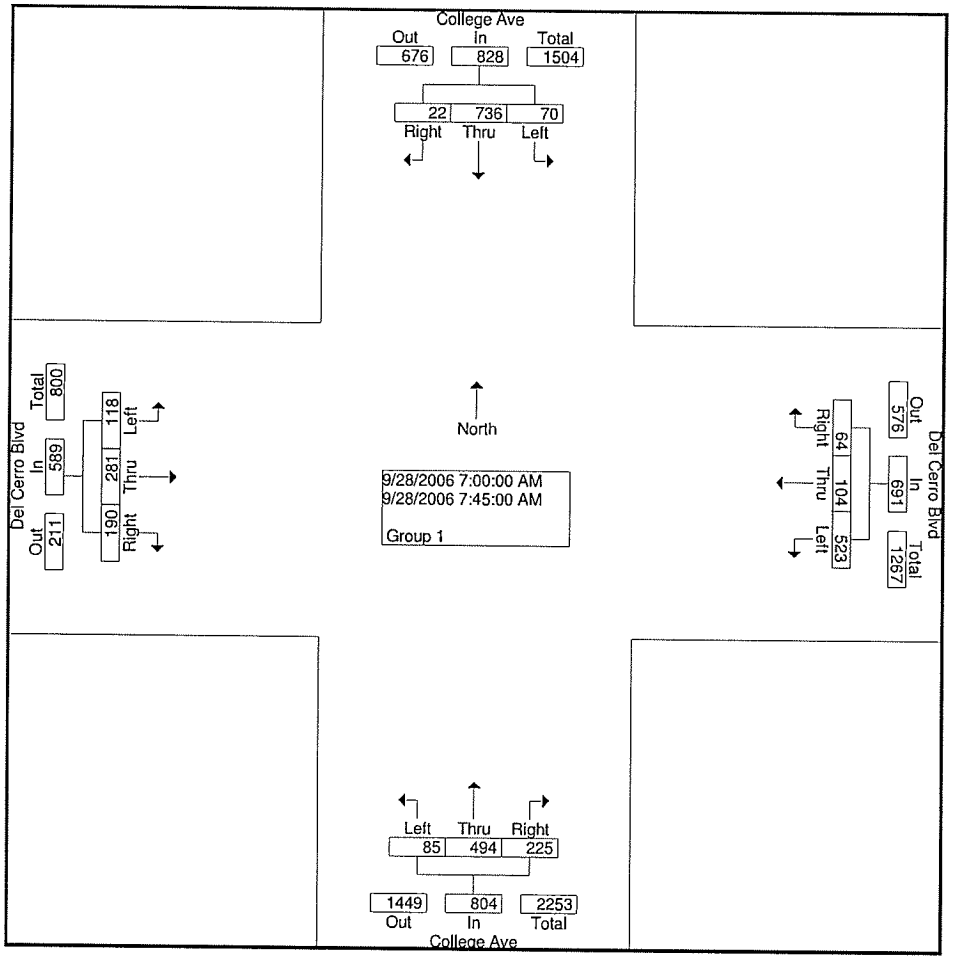
File Name : 06283071
Site Code : 00283071
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:C. Niggel & M. Parish
Board #: D1-1424 & 1430
Loc:College Ave & Del Cerro Blvd

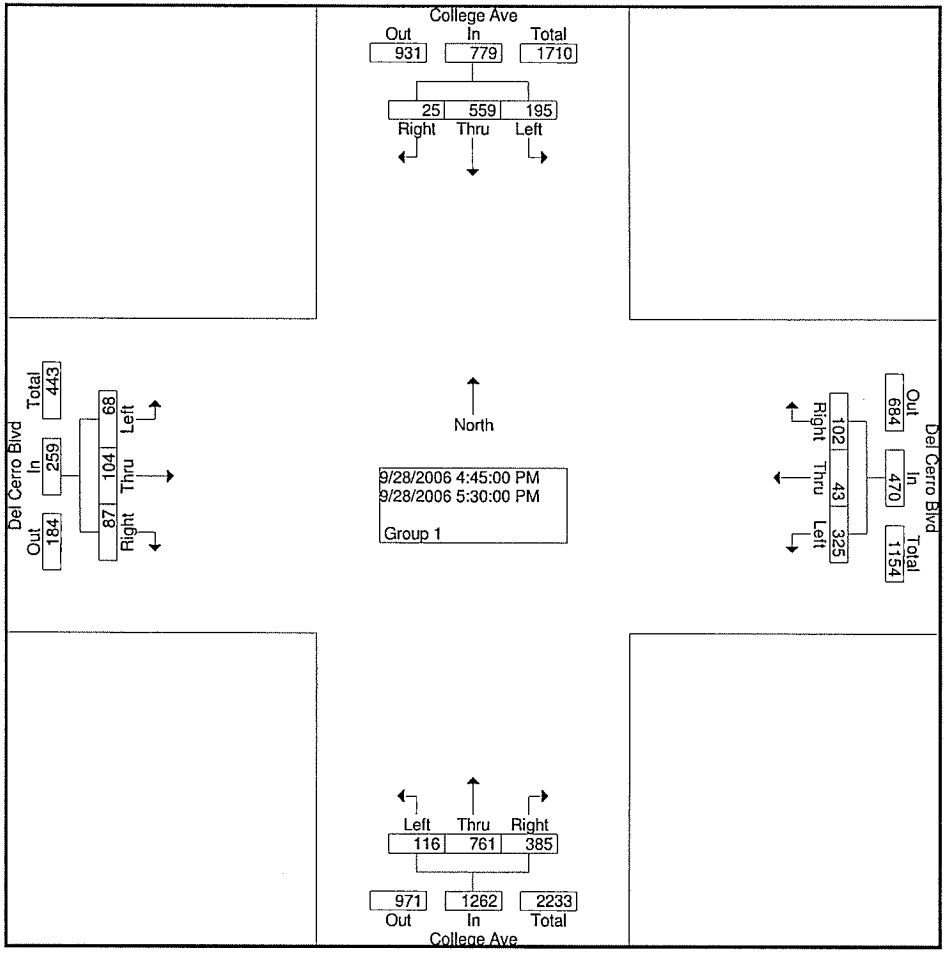
File Name : 06283010
Site Code : 00283010
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:C. Niggel & M. Parish
Board #: D1-1424 & 1430
Loc:College Ave & Del Cerro Blvd

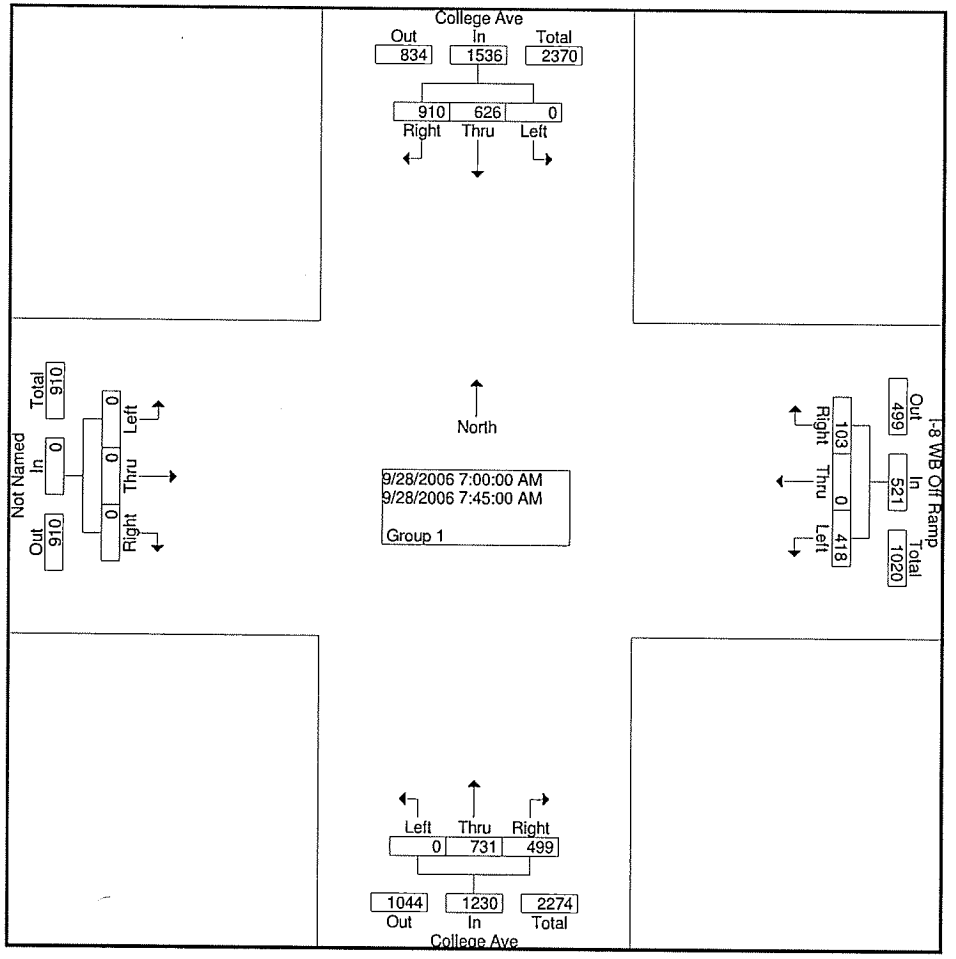
File Name : 06283011
Site Code : 00283011
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:J. Green & M. Archibald
Board #: D1-1427 & 2278
Loc:College Ave & I-8 WB Ramps

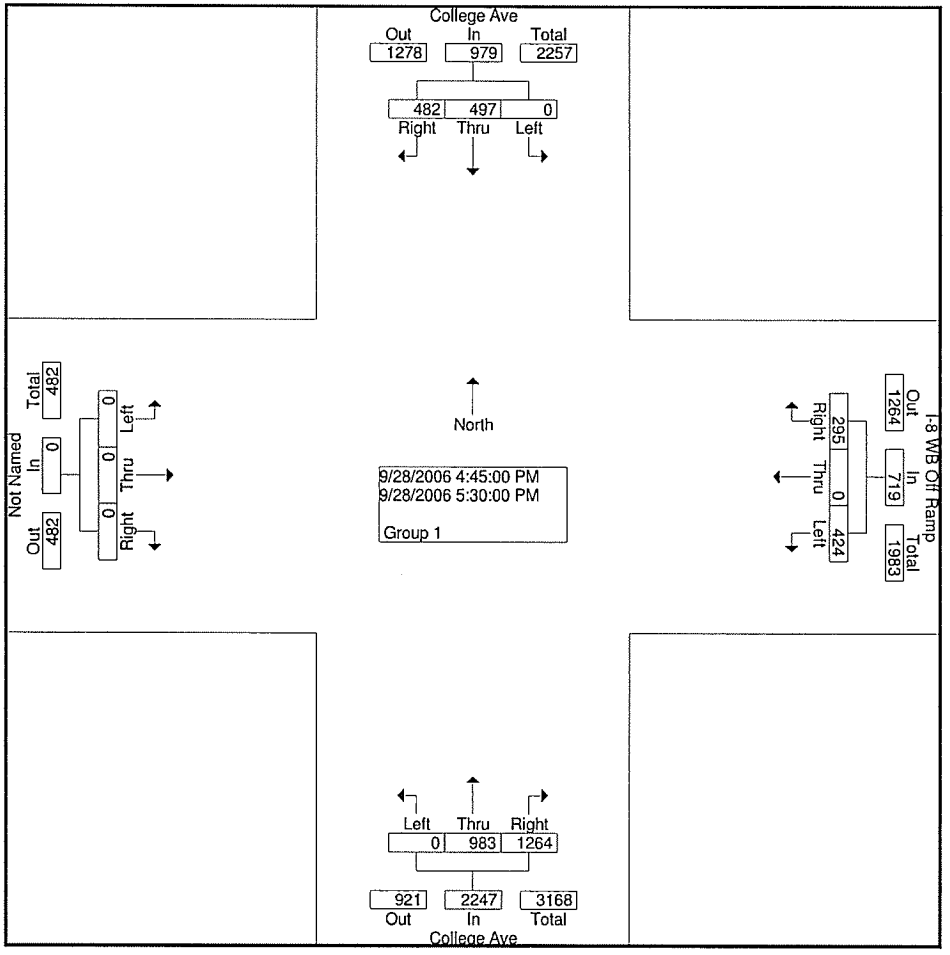
File Name : 06283020
Site Code : 00283020
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:J. Green & M. Archibald
Board #: D1-1427 & 2278
Loc:College Ave & I-8 WB Ramps

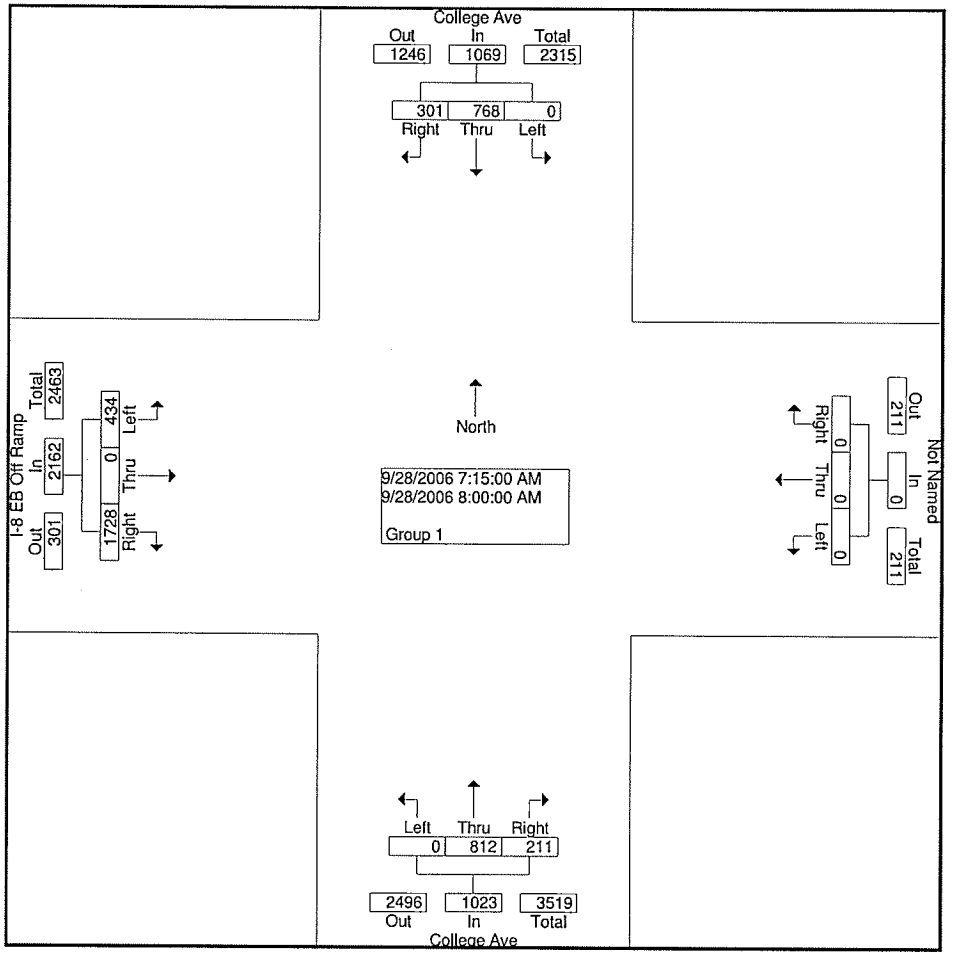
File Name : 06283021
Site Code : 00283021
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:J. Linden & B. Villanueva
Board #: D1-1429 & 1432
Loc:College Ave & I-8 EB Ramps

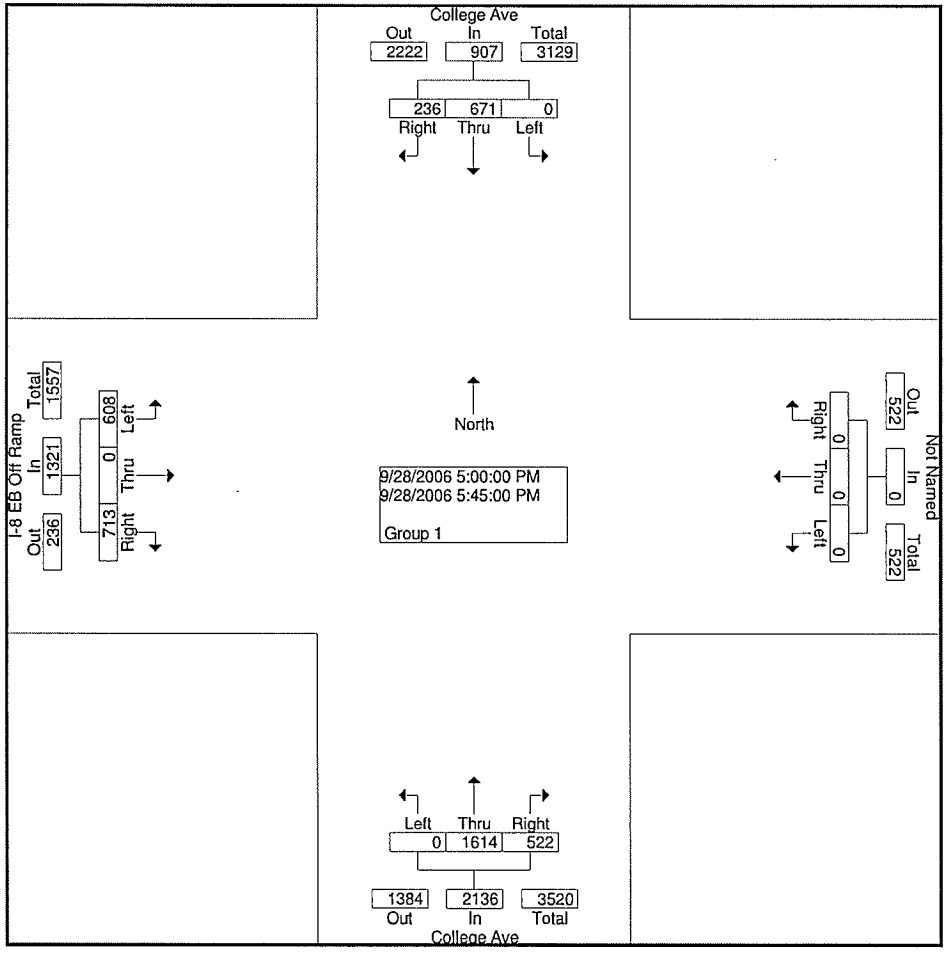
File Name : 06283030
Site Code : 00283030
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:J. Linden & B. Villanueva
Board #: D1-1429 &1432
Loc:College Ave & I-8 EB Ramps

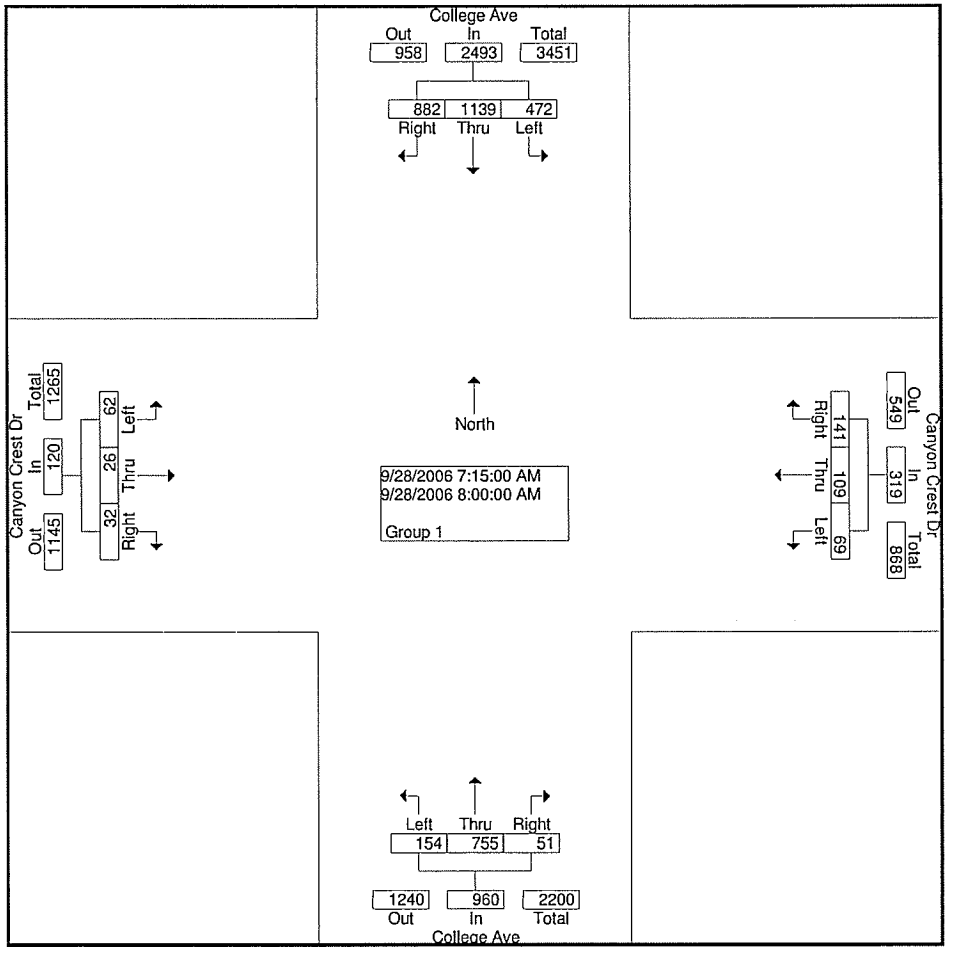
File Name : 06283031
Site Code : 00283031
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Mockler & R. Glenn
Board #: D1-1431 & 2279
Loc:College Ave & Canyon Crest Dr

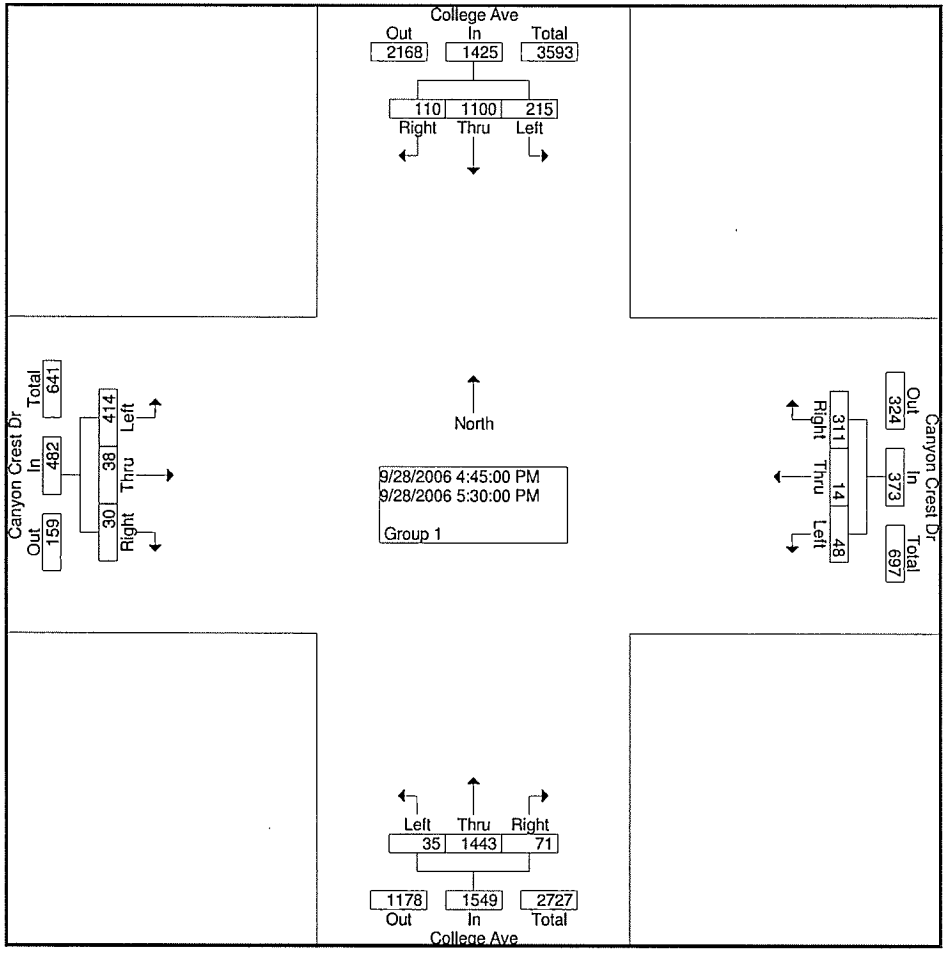
File Name : 06283040
Site Code : 00283040
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Mockler & R. Glenn
Board #: D1-1431 & 2279
Loc:College Ave & Canyon Crest Dr

File Name : 06283041
Site Code : 00283041
Start Date : 9/28/2006
Page No : 2

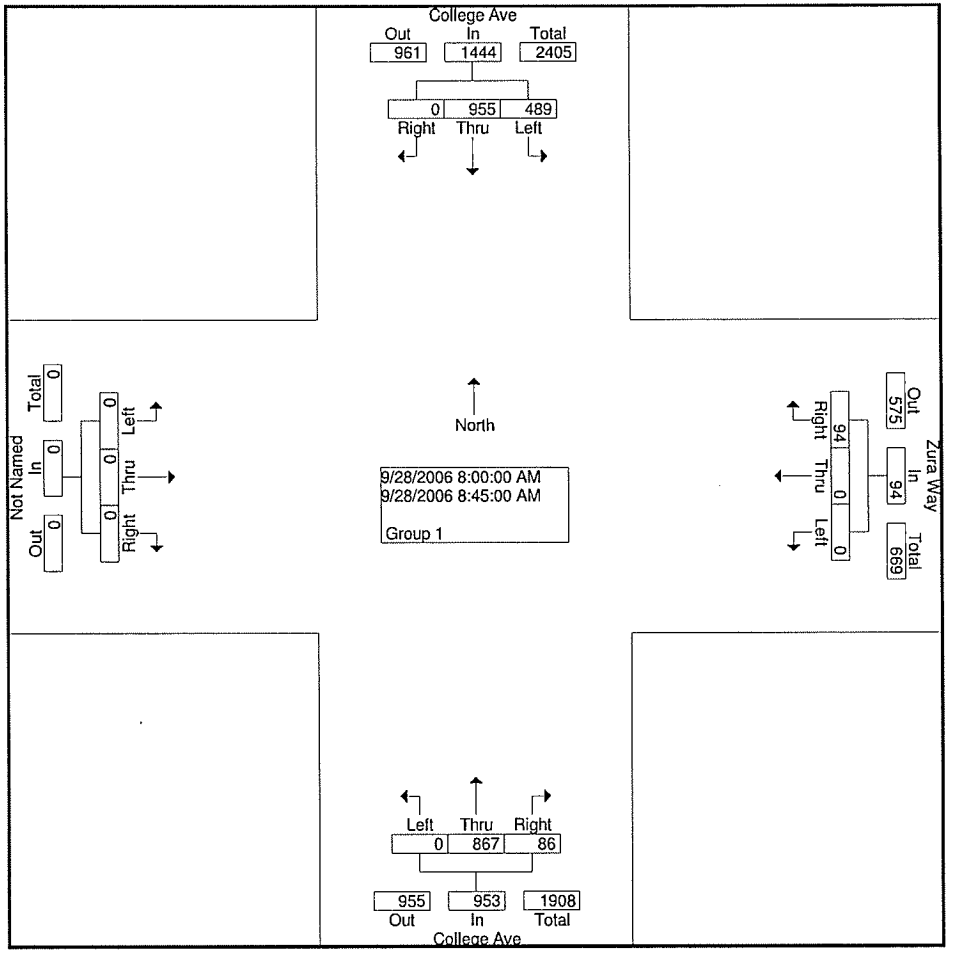


8

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:D. Wellman
Board #: D1-1307
Loc:College Ave & Zura Way

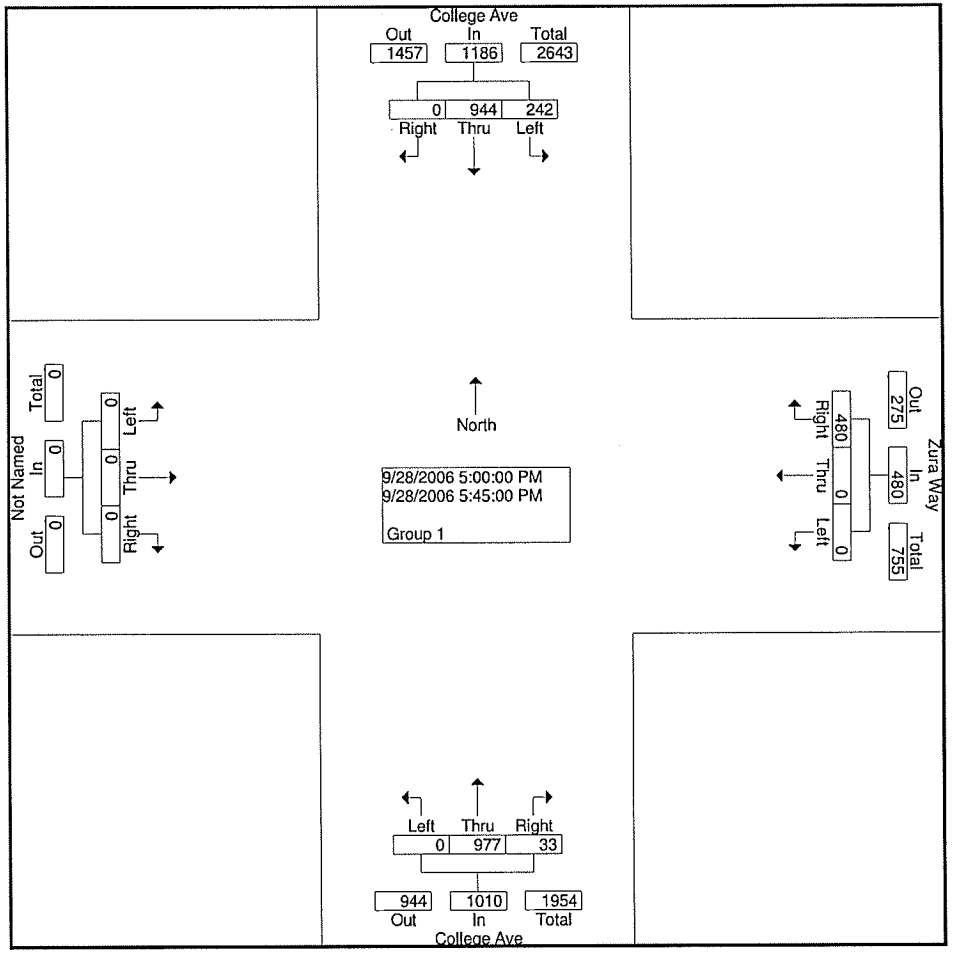
File Name : 06283050
Site Code : 00283050
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:D. Wellman
Board #: D1-1307
Loc:College Ave & Zura Way

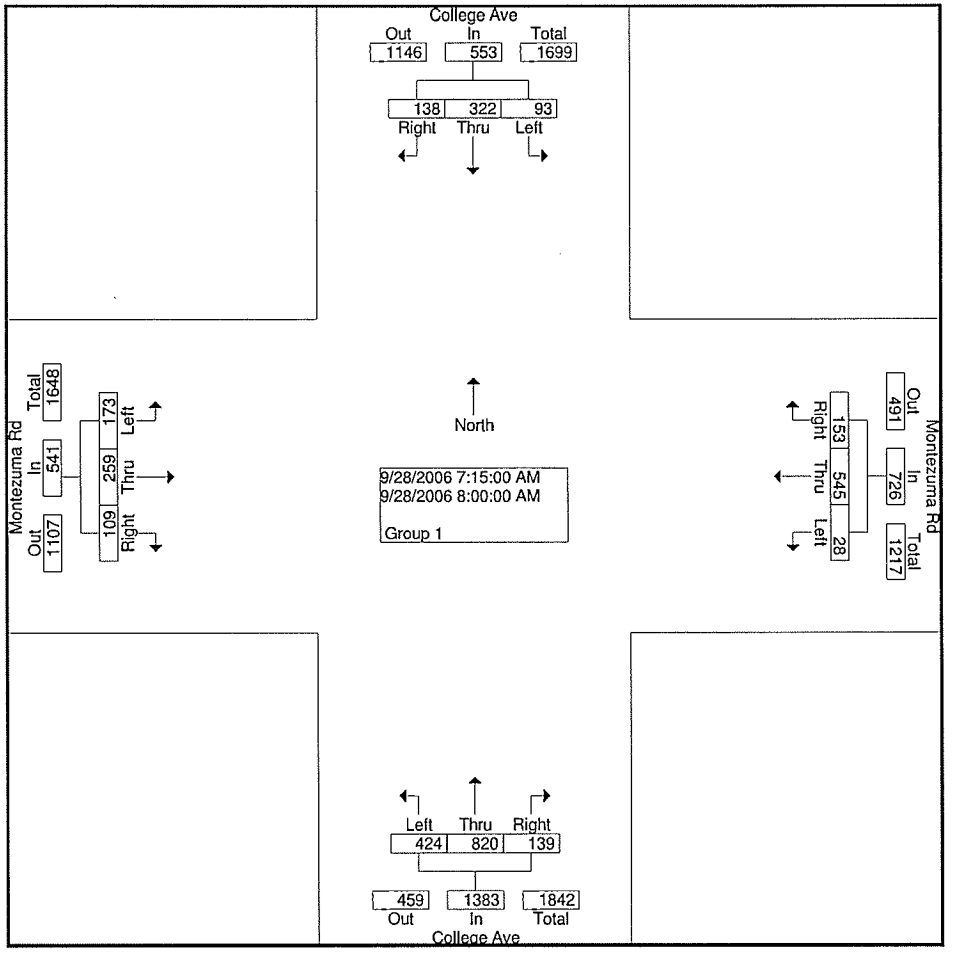
File Name : 06283051
Site Code : 00283051
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Tillman & C. Parish
Board #: D1-2172 &2173
Loc:College Ave & Montezuma Rd

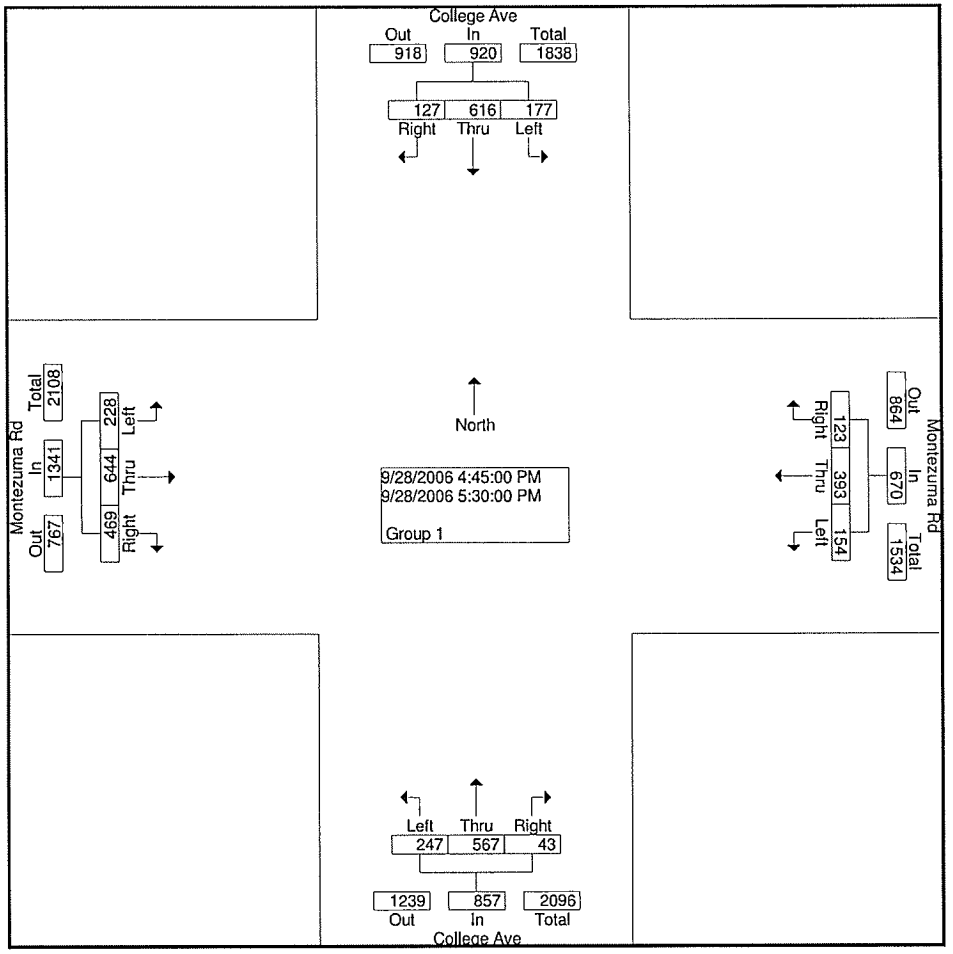
File Name : 06283060
Site Code : 00283060
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S.Tillman & C.Parish
Board #: D1-2172 & 2173
Loc:College Ave & Montezuma Rd

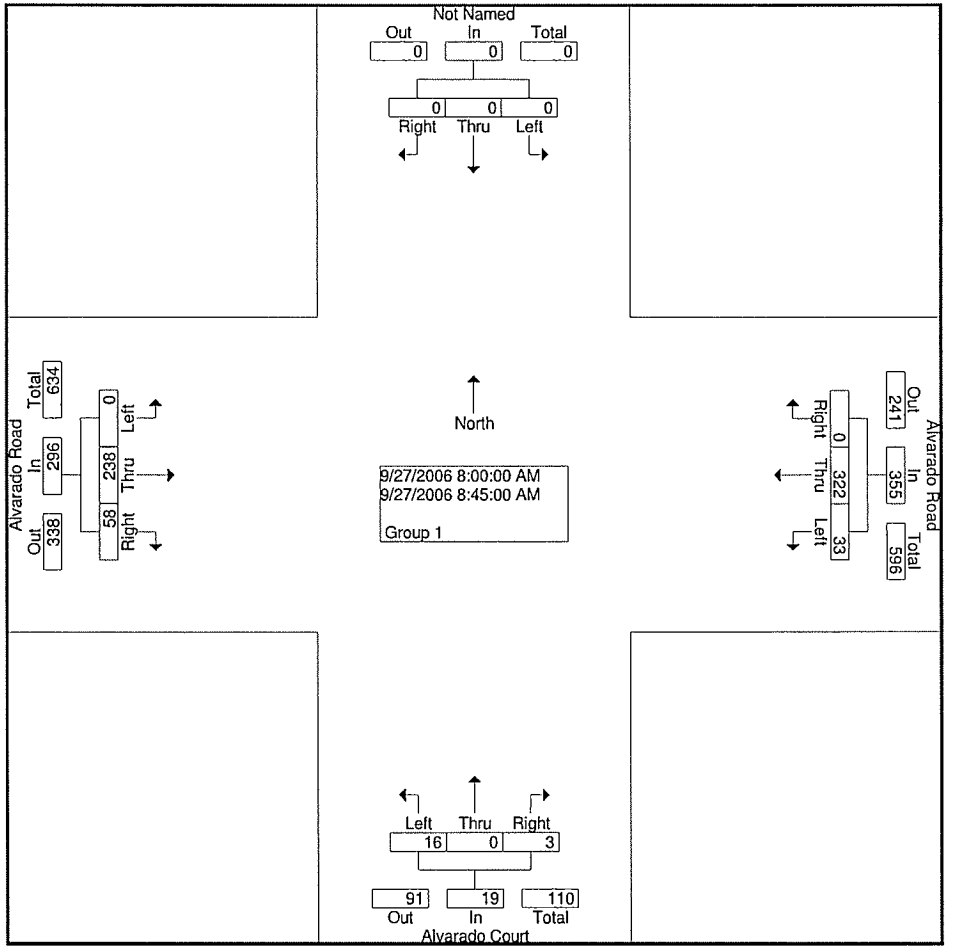
File Name : 06283061
Site Code : 00283061
Start Date : 9/28/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:M. Hatcher
Board #: D1-2278
Loc:Alvarado Court & Alvarado Road

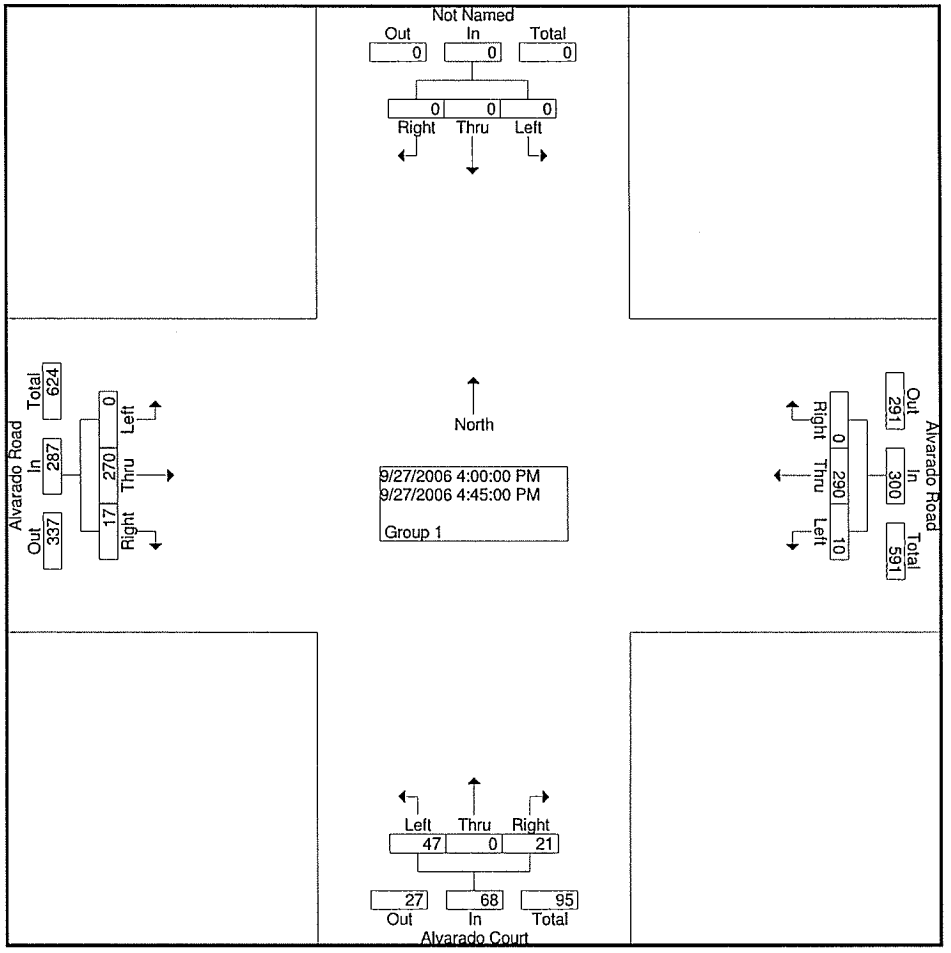
File Name : 06283100
Site Code : 00283100
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry
Counted by:M. Hatcher
Board # :2278
Location :Alvarado Court & Alvarado Road

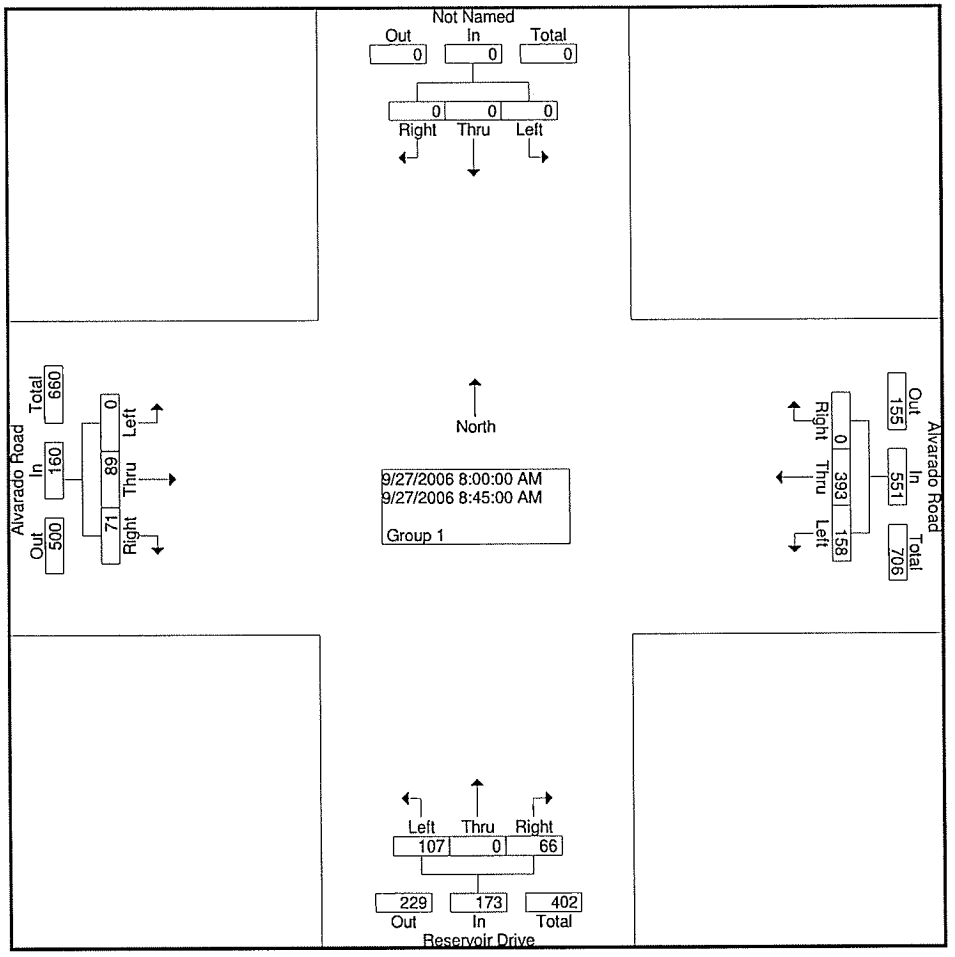
File Name : 06283101
Site Code : 00283101
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:M. Archibald
Board #: D1-1427
Loc:Reservoir Drive & Alvarado Road

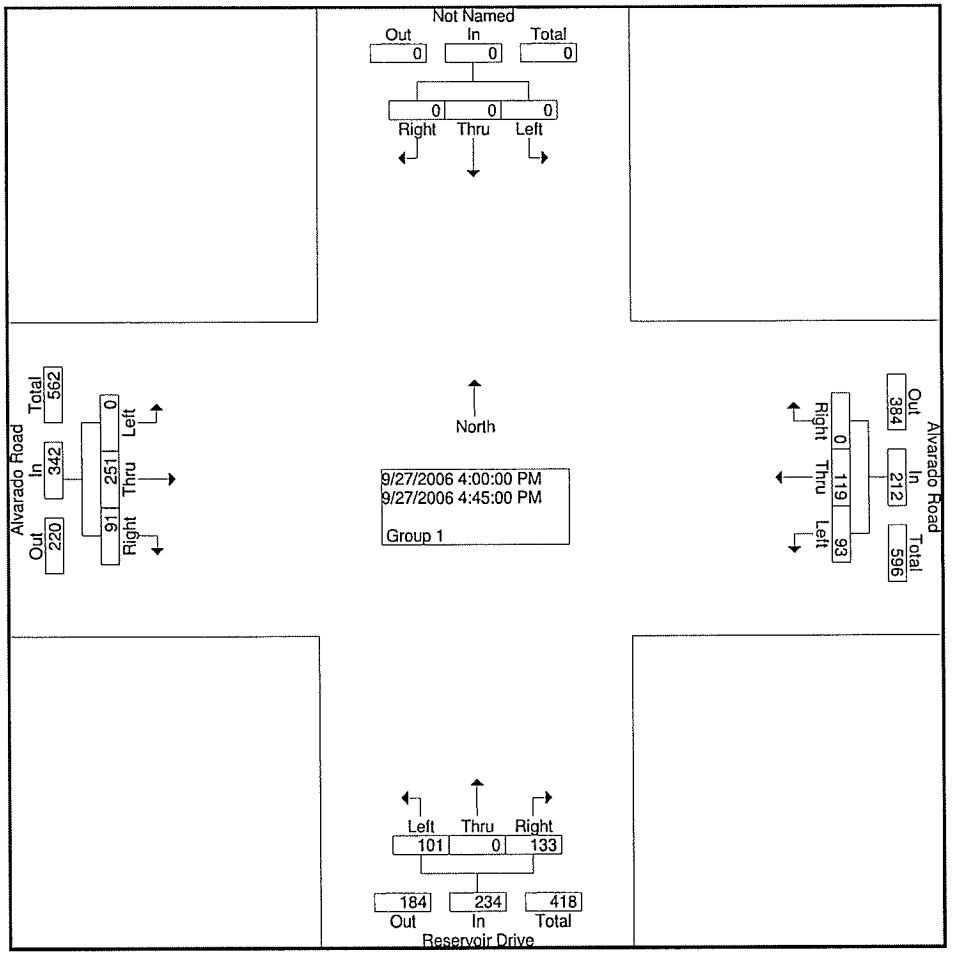
File Name : 06283110
Site Code : 00283110
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:M. Archibald
Board #: D1-1427
Loc:Reservoir Drive & Alvarado Road

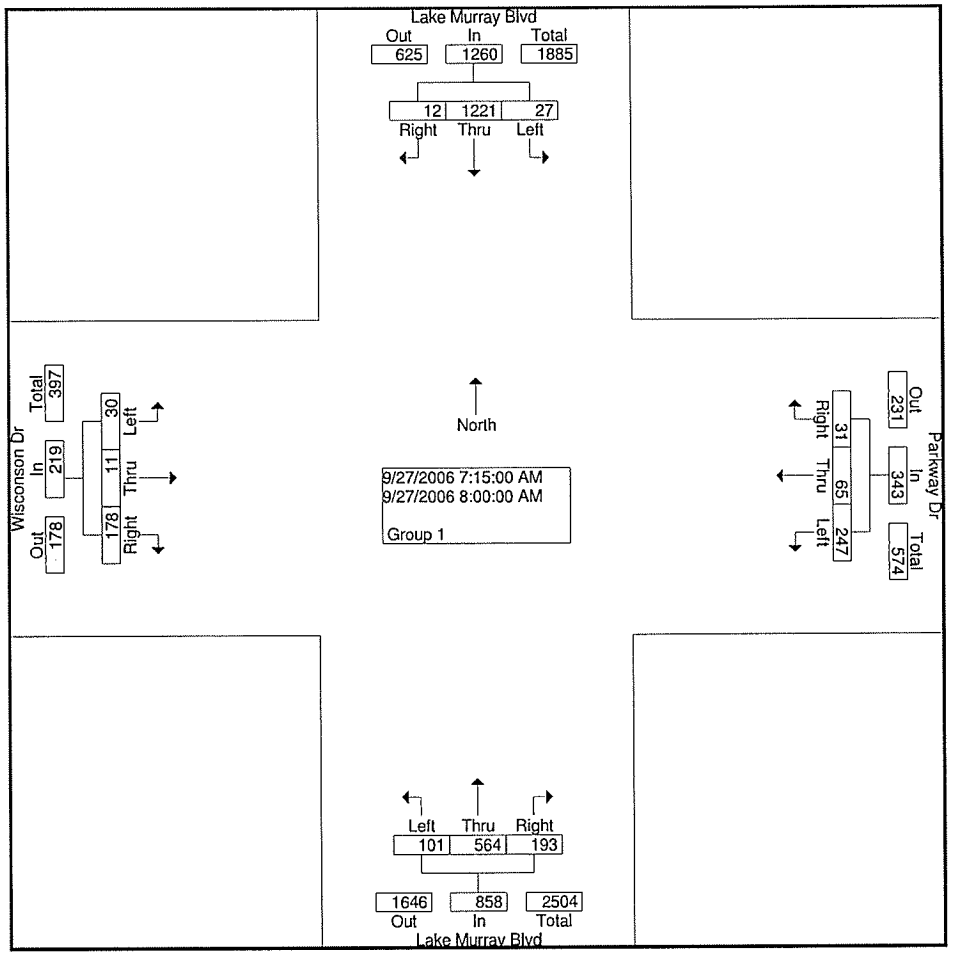
File Name : 06283111
Site Code : 00283111
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S.Mockler
Board #: D1-2279
Loc:Lake Murray & Wisconson Dr/ Parkway

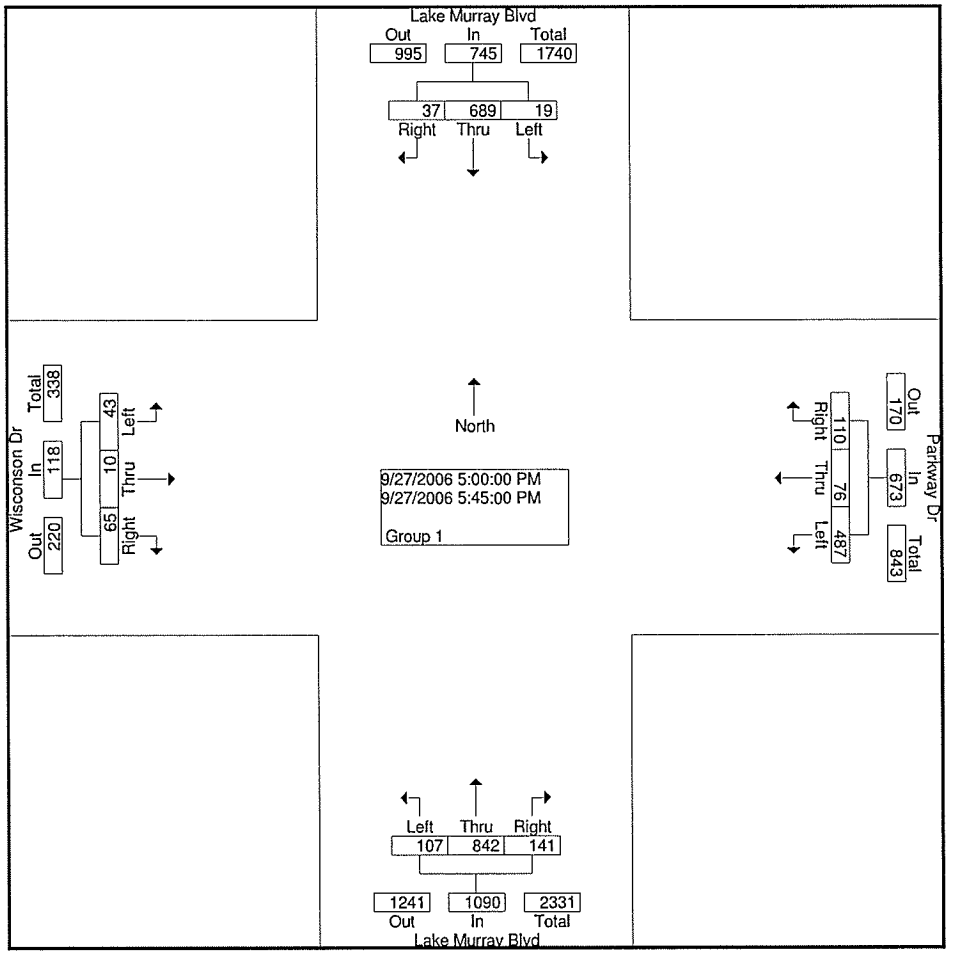
File Name : 06283120
Site Code : 00283120
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Mockler
Board #: D1-2279
Loc:Lake Murray & Wisconson Dr/ Parkway

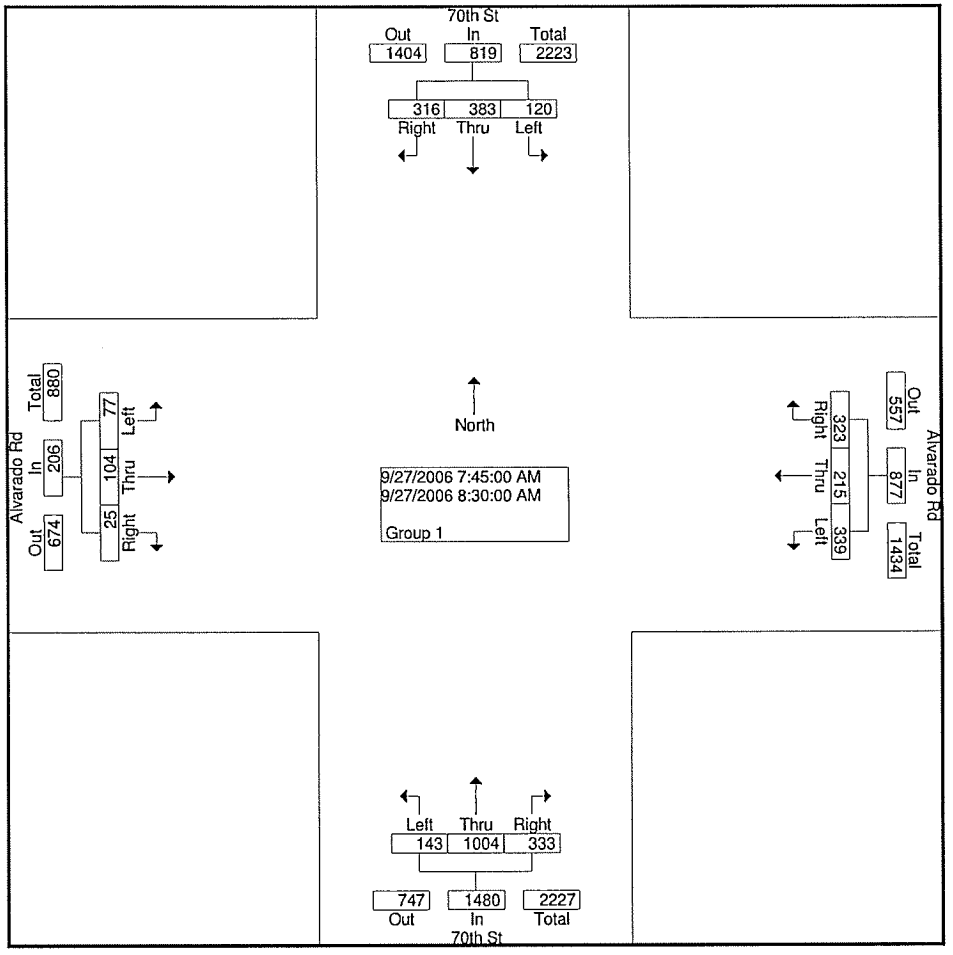
File Name : 06283121
Site Code : 00283121
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Tillman & C. Parish
Board #: D1-2172 & 2173
Loc:70th St & Alvarado Rd

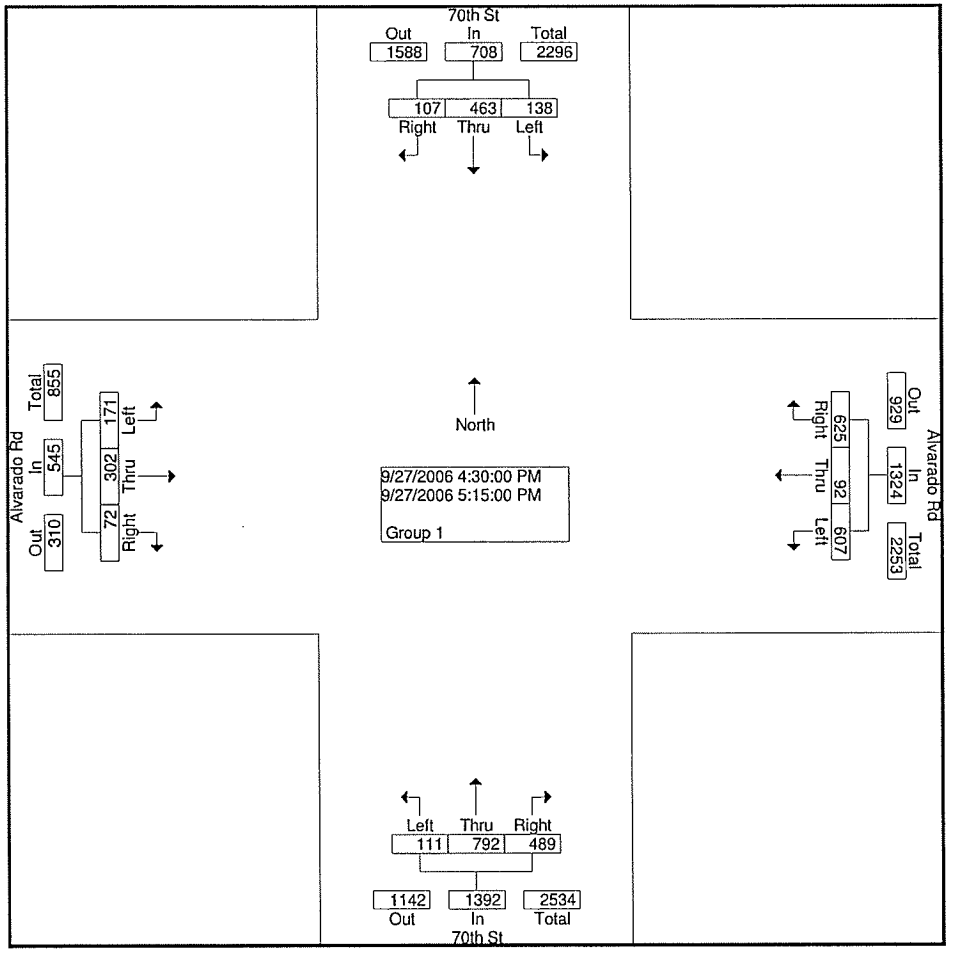
File Name : 06283130
Site Code : 00283130
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Tillman & C. Parish
Board #: D1-2172 & 2173
Loc:70th St & Alvarado Rd

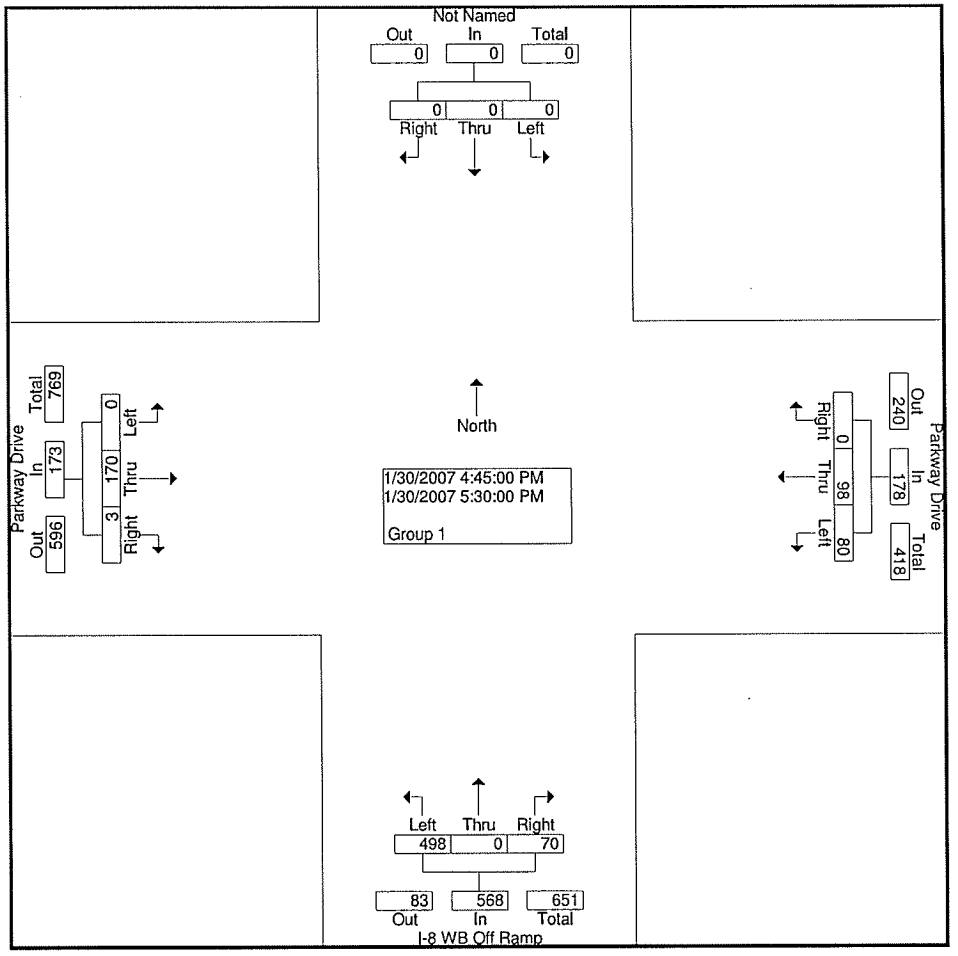
File Name : 06283131
Site Code : 00283131
Start Date : 9/27/2006
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By: S. Mockler
Board #: D1-2279
Loc:Parkway Dr & I-8 WB Ramps

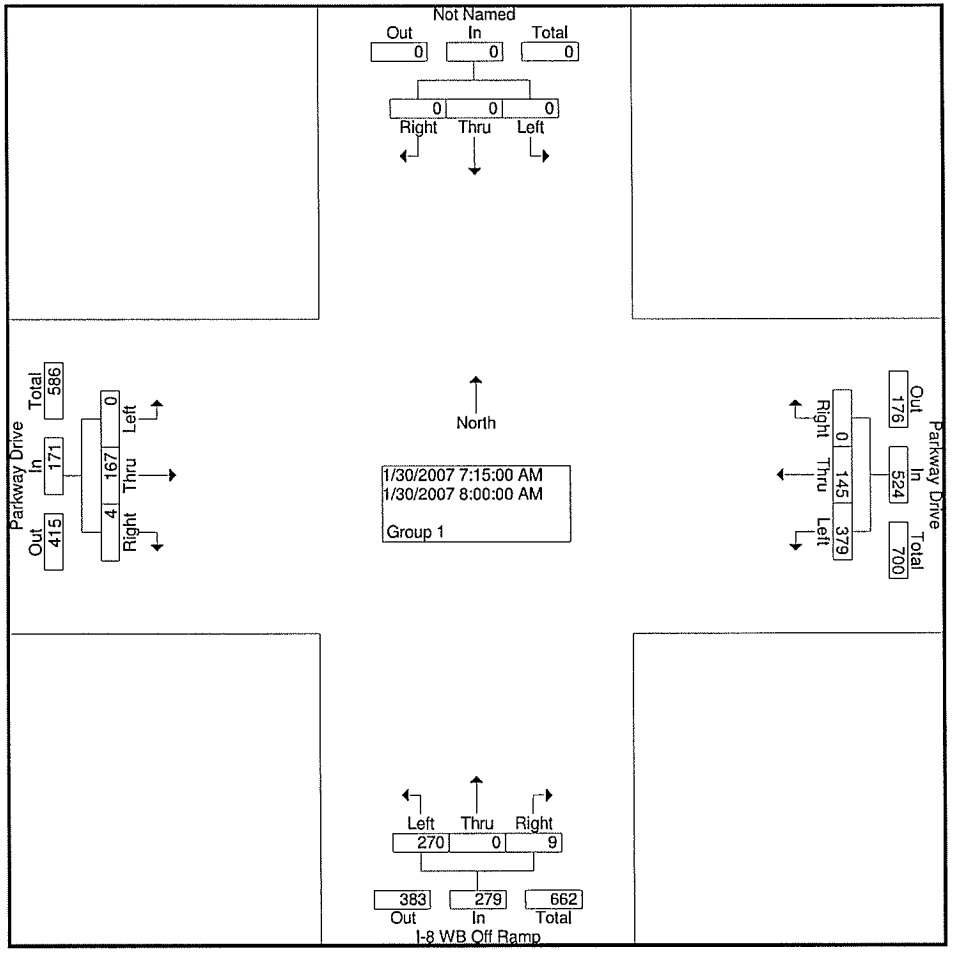
File Name : 07037011
Site Code : 00037011
Start Date : 1/30/2007
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:S. Mockler
Board #: D1-2279
Loc:Parkway Dr & I-8 WB Ramps

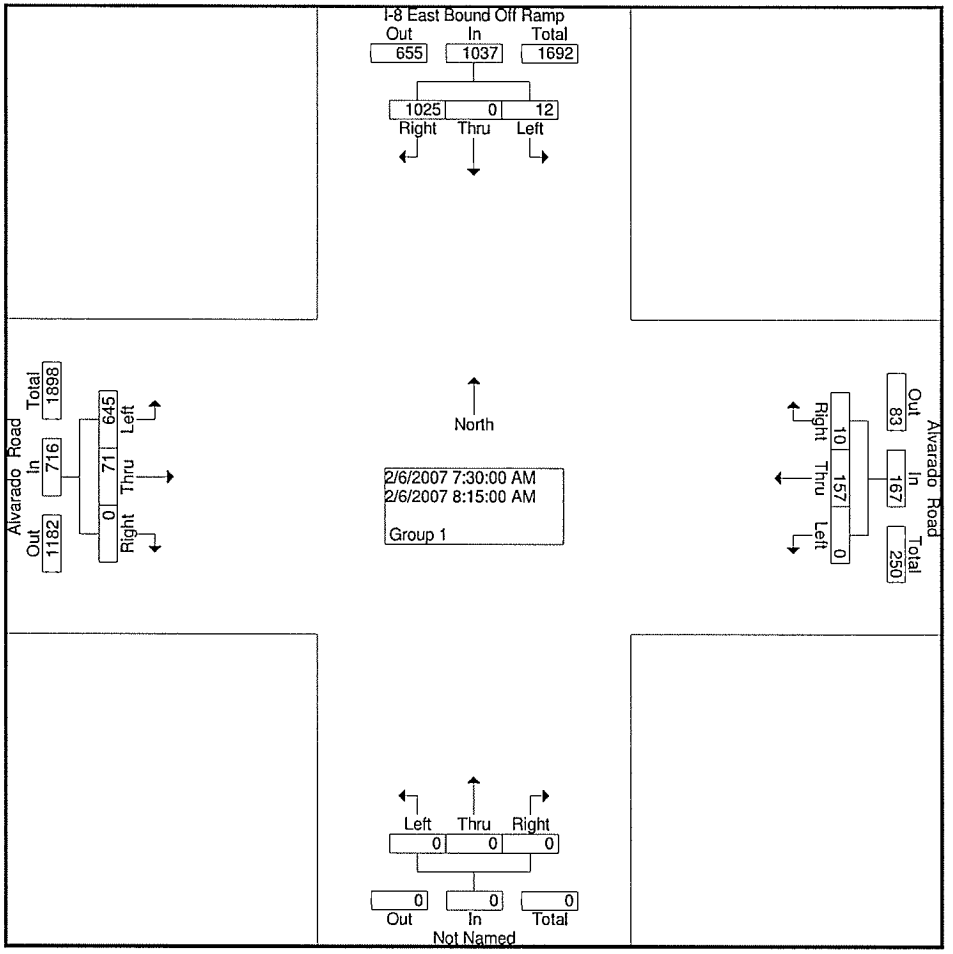
File Name : 07037010
Site Code : 00037010
Start Date : 1/30/2007
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By: D.Wellman
Board #: D1- 1426
Loc: Alvarado Rd & I-8 EB Ramps

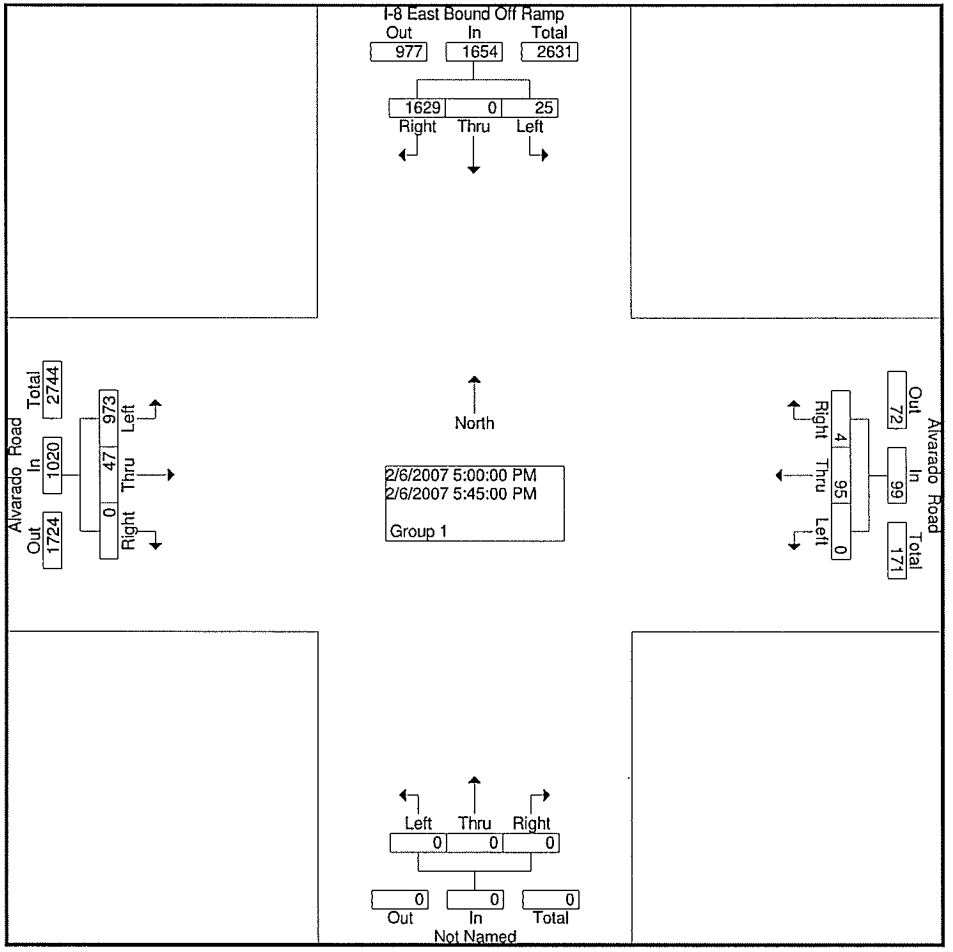
File Name : 07037020
Site Code : 00037020
Start Date : 2/6/2007
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

Weather: Clear & Dry
Counted By:D. Wellman
Board #: D1-1426
Loc: Alvarado Rd & I-8 EB Ramps

File Name : 07037021
Site Code : 00037021
Start Date : 2/6/2007
Page No : 2



Traffic Data Service Southwest
Event Counts

28303-01 EventCount-2112 -- English (ENU)

Datasets:

Site:	**[28303] College Ave - Btwn Del Cerro Blvd & I-8 EB Ramps**
Input A:	1 - North bound. - Added to totals. (1)
Input B:	3 - South bound. - Excluded from totals. (0)
Survey Duration:	10:41 Tuesday, September 26, 2006 => 8:04 Saturday, September 30, 2006
File:	Z:\mcdata\LLG\2006\283\2830330SEP2006.EC0 (Plus)
Identifier:	A999VJFX MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**11:00 Tuesday, September 26, 2006 => 8:00 Saturday, September 30, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 111862 / 112198 (99.70%)

* Tuesday, September 26, 2006=10841 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	**777**	**856**	**896**	**1093**	**1054**	**1191**	**1267**	**1210**	**802**	**606**	**562**	**339**	**188**	
-	-	-	-	-	-	-	-	-	-	-	180	228	197	323	252	289	**314**	305	239	163	179	111	55	26
-	-	-	-	-	-	-	-	-	-	-	202	192	202	297	278	305	**331**	303	205	167	131	85	54	27
-	-	-	-	-	-	-	-	-	-	-	194	235	222	248	242	310	**329**	305	195	139	128	80	41	21
-	-	-	-	-	-	-	-	-	-	-	201	201	275	225	282	287	**293**	297	163	137	124	63	38	20

PM Peak 1700 - 1800 (1267), PM PHF=0.96

* Wednesday, September 27, 2006=14433, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
94	**56**	**28**	**34**	**52**	**108**	**386**	**835**	**654**	**650**	**628**	**934**	**939**	**885**	**1032**	**1026**	**1222**	**1243**	**1034**	**808**	**688**	**565**	**291**	**241**	
26	14	8	3	7	18	52	309	152	159	134	210	**285**	217	273	255	318	**331**	236	229	197	168	99	69	43
27	12	7	9	10	18	65	203	160	159	151	**215**	215	199	261	247	280	**314**	268	203	189	164	83	58	35
21	15	7	7	12	22	86	153	127	168	161	**247**	211	211	245	259	**294**	291	258	193	156	131	53	65	28
20	15	6	15	23	50	183	170	215	164	182	**262**	228	258	253	265	**330**	307	272	183	146	102	56	49	26

AM Peak 1115 - 1215 (1009), AM PHF=0.89 PM Peak 1630 - 1730 (1269), PM PHF=0.96

* Thursday, September 28, 2006=14392, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
132	**59**	**43**	**36**	**51**	**93**	**399**	**797**	**638**	**659**	**633**	**763**	**888**	**914**	**1133**	**1138**	**1216**	**1196**	**1083**	**783**	**614**	**548**	**382**	**194**	
43	15	6	8	8	18	48	306	164	181	146	183	**187**	197	308	297	311	**284**	289	213	169	165	114	57	36
35	17	10	9	12	23	72	185	145	184	141	177	**260**	229	287	267	293	**297**	271	222	157	139	100	47	31
28	15	16	10	10	19	98	130	155	168	158	196	**224**	240	257	262	286	**322**	265	174	141	121	89	53	26
26	12	11	9	21	33	181	176	174	126	188	**207**	217	248	281	312	**326**	293	258	174	147	123	79	37	24

AM Peak 1145 - 1245 (878), AM PHF=0.84 PM Peak 1645 - 1745 (1229), PM PHF=0.94

* Friday, September 29, 2006=14783, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
117	**89**	**70**	**37**	**61**	**114**	**383**	**825**	**699**	**705**	**710**	**842**	**880**	**1054**	**1128**	**1017**	**1120**	**1190**	**1011**	**769**	**590**	**645**	**423**	**304**	
36	30	22	8	13	13	51	322	179	213	170	209	**218**	242	309	243	297	270	**282**	214	165	157	145	85	52
31	23	22	11	11	22	69	193	177	169	158	**225**	223	226	273	264	265	**302**	272	211	153	161	96	84	54
26	18	16	7	16	29	97	130	167	156	177	**209**	210	281	301	251	267	**295**	232	200	138	170	100	65	49
24	18	10	11	21	50	166	180	176	167	205	**199**	229	305	245	259	291	**323**	225	144	134	157	82	70	34

AM Peak 1115 - 1215 (851), AM PHF=0.95 PM Peak 1715 - 1815 (1202), PM PHF=0.93

* Saturday, September 30, 2006=1106 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
189	**154**	**121**	**60**	**39**	**52**	**157**	**334**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
52	43	39	18	5	9	25	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	34	29	11	13	8	25	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	44	22	18	5	16	39	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	33	31	13	16	19	68	116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

14413

Traffic Data Service Southwest
Event Counts

28303-01 EventCount-2113 -- English (ENU)

Datasets:

Site:	**[28303] College Ave - Btwn Del Cerro Blvd & I-8 EB Ramps**
Input A:	1 - North bound. - Excluded from totals. (0)
Input B:	3 - South bound. - Added to totals. (1)
Survey Duration:	10:41 Tuesday, September 26, 2006 => 8:04 Saturday, September 30, 2006
File:	Z:\mcdata\LLG\2006\283\2830330SEP2006.EC0 (Plus)
Identifier:	A999VJFX MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**11:00 Tuesday, September 26, 2006 => 8:00 Saturday, September 30, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 111862 / 112198 (99.70%)

* Tuesday, September 26, 2006=9176 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	**812**	**838**	**850**	**1154**	**960**	**940**	**979**	**851**	**581**	**456**	**468**	**190**	**97**	
-	-	-	-	-	-	-	-	-	-	-	176	247	216	231	**268**	219	249	222	189	123	216	64	28	19
-	-	-	-	-	-	-	-	-	-	-	213	205	219	**315**	250	223	237	225	146	103	87	46	22	10
-	-	-	-	-	-	-	-	-	-	-	199	193	227	**350**	238	243	247	218	113	116	92	44	32	17
-	-	-	-	-	-	-	-	-	-	-	224	193	188	**258**	204	255	246	186	133	114	73	36	15	11

PM Peak 1415 - 1515 (1191), PM PHF=0.85

* Wednesday, September 27, 2006=15119, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
57	**23**	**25**	**25**	**88**	**321**	**673**	**1466**	**1229**	**1064**	**885**	**815**	**993**	**882**	**1040**	**1002**	**992**	**970**	**932**	**575**	**439**	**305**	**187**	**131**	
19	6	7	1	20	49	96	**364**	288	266	229	204	226	227	214	**280**	266	251	255	183	111	104	50	40	26
10	7	2	5	17	50	124	**395**	298	254	204	195	269	220	**249**	230	199	258	253	140	119	82	67	36	23
17	6	6	10	16	102	211	**383**	338	294	230	230	283	225	**339**	252	256	234	233	141	116	74	35	33	24
11	4	10	9	35	120	242	**324**	305	250	222	186	215	210	**238**	240	271	227	191	111	93	45	35	22	18

AM Peak 0700 - 0800 (1466), AM PHF=0.93 PM Peak 1415 - 1515 (1106), PM PHF=0.82

* Thursday, September 28, 2006=15119, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
91	**32**	**8**	**31**	**78**	**318**	**715**	**1443**	**1174**	**1023**	**870**	**900**	**817**	**890**	**1153**	**1023**	**958**	**963**	**910**	**597**	**446**	**332**	**228**	**119**	
26	11	3	3	14	50	109	**315**	288	268	213	225	218	220	216	**277**	252	241	246	180	124	94	75	42	21
23	11	2	9	10	53	135	**396**	295	250	201	214	204	220	**294**	267	236	248	244	158	108	99	54	13	19
24	6	1	11	26	100	224	**386**	285	272	242	239	202	238	**352**	247	244	252	238	112	110	79	54	34	18
18	4	2	8	28	115	247	**346**	306	233	214	222	193	212	**291**	232	226	222	182	147	104	60	45	30	12

AM Peak 0700 - 0800 (1443), AM PHF=0.91 PM Peak 1415 - 1515 (1214), PM PHF=0.86

* Friday, September 29, 2006=15751, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
70	**29**	**29**	**24**	**84**	**292**	**676**	**1346**	**1200**	**1074**	**953**	**927**	**951**	**887**	**1204**	**1015**	**873**	**951**	**903**	**718**	**420**	**580**	**315**	**230**	
21	7	4	3	17	42	117	**336**	288	287	218	222	229	225	219	**250**	214	259	233	194	116	105	80	61	32
19	8	9	9	13	55	126	**395**	294	257	243	232	235	229	**339**	266	194	218	227	201	103	120	98	65	30
18	5	14	11	18	84	195	**339**	352	288	261	256	270	222	**398**	266	228	245	235	165	94	195	85	62	34
12	9	2	1	36	111	238	**276**	266	242	231	217	217	211	**248**	233	237	229	208	158	107	160	52	42	18

AM Peak 0700 - 0800 (1346), AM PHF=0.85 PM Peak 1415 - 1515 (1235), PM PHF=0.78

* Saturday, September 30, 2006=1141 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
114	**82**	**45**	**27**	**56**	**100**	**258**	**459**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	28	11	6	16	13	28	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	21	19	7	10	21	55	112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	19	9	10	14	35	88	123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	14	6	4	16	31	87	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

15119

Traffic Data Service Southwest
Event Counts

28306-01 EventCount-2096 -- English (ENU)

Datasets:

Site:	**[28306] College Ave - S/O Montezuma Rd**
Input A:	1 - North bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	13:47 Tuesday, September 26, 2006 => 13:58 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\28306N01OCT2006.EC0 (Plus)
Identifier:	M280P4JB MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 41299 / 53433 (77.29%)

* Tuesday, September 26, 2006=5035 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**818**	**860**	**945**	**697**	**634**	**550**	**322**	**209**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	221	213	222	204	170	148	111	63	39
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	228	256	149	156	138	85	56	34
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	215	258	172	156	124	66	41	34
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	204	209	172	152	140	60	49	18

* Wednesday, September 27, 2006=14846, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
125	**80**	**40**	**62**	**77**	**261**	**677**	**1408**	**1275**	**841**	**678**	**879**	**819**	**886**	**855**	**908**	**787**	**838**	**877**	**679**	**629**	**585**	**334**	**246**	
39	14	10	14	14	38	103	**339**	290	200	171	171	214	189	199	**204**	194	237	189	198	182	188	102	70	59
34	17	11	11	12	72	122	**341**	319	222	181	210	187	253	208	**245**	202	207	223	170	156	126	81	72	51
34	23	10	19	22	71	181	**393**	386	232	178	269	211	221	244	**238**	188	184	262	153	143	140	88	52	38
18	26	9	18	29	80	271	**335**	280	187	148	229	207	223	204	**221**	203	210	203	158	148	131	63	52	28

AM Peak 0700 - 0800 (1408), AM PHF=0.90 PM Peak 1500 - 1600 (908), PM PHF=0.93

* Thursday, September 28, 2006=15189, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
176	**101**	**55**	**57**	**85**	**240**	**695**	**1602**	**1009**	**919**	**792**	**813**	**900**	**851**	**776**	**910**	**834**	**845**	**895**	**771**	**610**	**546**	**431**	**276**	
59	36	16	11	17	44	91	**328**	230	348	182	165	294	193	220	228	199	206	**238**	213	158	149	145	83	59
51	24	9	17	15	58	136	**437**	241	204	185	202	202	213	177	232	197	188	**222**	181	146	153	109	75	69
38	30	11	17	28	64	199	**448**	261	183	233	196	200	222	181	254	204	222	**236**	201	161	116	95	63	41
28	11	19	12	25	74	269	**389**	277	184	192	250	204	223	198	196	234	**229**	199	176	145	128	82	55	35

AM Peak 0700 - 0800 (1602), AM PHF=0.89 PM Peak 1745 - 1845 (925), PM PHF=0.97

* Friday, September 29, 2006=6228 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
204	**160**	**95**	**54**	**108**	**231**	**613**	**1317**	**1030**	**829**	**737**	**850**	-	-	-	-	-	-	-	-	-	-	-	-	
59	41	31	22	15	32	92	320	224	183	166	176	-	-	-	-	-	-	-	-	-	-	-	-	-
69	39	22	10	13	57	117	356	248	219	179	250	-	-	-	-	-	-	-	-	-	-	-	-	-
41	47	14	13	30	64	166	350	303	239	226	206	-	-	-	-	-	-	-	-	-	-	-	-	-
35	33	28	9	50	78	238	291	255	188	166	218	-	-	-	-	-	-	-	-	-	-	-	-	-

15018

Traffic Data Service Southwest
Event Counts

28306S-03 EventCount-2098 -- English (ENU)

Datasets:

Site:	**[28306S] College Ave - S/O Montezuma Rd**
Input A:	3 - South bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	13:45 Tuesday, September 26, 2006 => 14:20 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\28306S01OCT2006.EC0 (Plus)
Identifier:	M504J6JA MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 41538 / 56687 (73.28%)

*** Tuesday, September 26, 2006=6777 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1186**	**1271**	**1244**	**886**	**776**	**756**	**387**	**271**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	295	295	255	210	198	120	83	65
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	281	340	312	208	196	189	88	65	44
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	278	324	323	204	190	190	95	73	33
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	311	312	314	219	180	179	84	50	27

*** Wednesday, September 27, 2006=14834, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
169	**83**	**54**	**35**	**42**	**115**	**222**	**481**	**508**	**671**	**671**	**778**	**971**	**943**	**1072**	**1234**	**1216**	**1178**	**1231**	**909**	**795**	**756**	**431**	**269**	
65	23	15	9	12	23	33	92	139	181	164	200	**269**	278	263	312	331	298	272	**331**	181	201	125	66	75
44	23	12	13	6	22	53	112	78	133	148	189	**250**	221	261	306	286	299	**314**	222	197	179	130	93	50
33	23	11	5	8	26	62	129	128	175	149	165	**211**	207	259	324	298	296	**320**	176	205	190	84	61	43
27	14	16	8	16	44	74	148	163	182	210	**224**	241	237	289	292	301	285	**325**	180	212	186	92	49	27

AM Peak 1145 - 1245 (954), AM PHF=0.89 PM Peak 1815 - 1915 (1290), PM PHF=0.97

*** Thursday, September 28, 2006=15567, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
195	**74**	**56**	**56**	**37**	**92**	**189**	**436**	**574**	**678**	**737**	**828**	**1027**	**964**	**1165**	**1306**	**1273**	**1202**	**1241**	**986**	**823**	**736**	**523**	**369**	
75	23	26	15	6	11	26	91	163	144	180	237	**232**	213	305	301	**316**	305	318	295	220	197	148	118	62
50	17	9	16	8	22	53	94	101	181	166	183	**304**	225	271	305	**318**	302	308	252	189	171	148	103	59
43	14	11	12	9	22	55	128	143	156	173	192	**274**	252	308	**357**	312	320	303	218	196	185	144	91	61
27	20	10	13	14	37	55	123	167	197	218	**216**	217	274	281	**343**	327	275	312	221	218	183	83	57	55

AM Peak 1145 - 1245 (1026), AM PHF=0.84 PM Peak 1530 - 1630 (1334), PM PHF=0.93

*** Friday, September 29, 2006=4359 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
237	**128**	**87**	**53**	**51**	**98**	**212**	**508**	**495**	**712**	**807**	**971**	-	-	-	-	-	-	-	-	-	-	-	-	
62	26	20	13	10	18	43	84	121	186	205	243	-	-	-	-	-	-	-	-	-	-	-	-	-
59	49	30	13	13	19	40	107	108	163	177	236	-	-	-	-	-	-	-	-	-	-	-	-	-
61	27	19	15	10	25	42	178	137	161	191	213	-	-	-	-	-	-	-	-	-	-	-	-	-
55	26	18	12	18	36	87	139	129	202	234	279	-	-	-	-	-	-	-	-	-	-	-	-	-

15201

Traffic Data Service Southwest
Event Counts

28307-02 EventCount-2212 -- English (ENU)

Datasets:

Site:	**[28307] Montezuma Rd - W/O 55th St**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Excluded from totals. (0)
Survey Duration:	9:26 Tuesday, October 03, 2006 => 15:35 Friday, October 06, 2006
File:	Z:\mcdata\LLG\2006\283\2830706Oct2006.EC0 (Plus)
Identifier:	A6548T9F MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**10:00 Tuesday, October 03, 2006 => 1:00 Friday, October 06, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 81789 / 81972 (99.78%)

* Tuesday, October 03, 2006=10627 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	**864**	**668**	**789**	**838**	**721**	**1130**	**1128**	**1332**	**1267**	**559**	**485**	**399**	**283**	**164**	
-	-	-	-	-	-	-	-	-	-	174	145	250	177	138	209	241	313	**309**	167	140	117	79	50	40
-	-	-	-	-	-	-	-	-	-	225	156	188	203	173	301	274	340	**366**	129	115	96	70	44	19
-	-	-	-	-	-	-	-	-	-	280	152	179	270	192	314	309	350	**360**	131	119	119	75	40	26
-	-	-	-	-	-	-	-	-	-	185	215	172	188	218	306	304	**329**	232	132	111	67	59	30	18

PM Peak 1745 - 1845 (1364), PM PHF=0.93

* Wednesday, October 04, 2006=14565, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
103	**61**	**29**	**21**	**35**	**96**	**274**	**888**	**1191**	**835**	**730**	**744**	**769**	**897**	**787**	**1298**	**1230**	**1357**	**1188**	**560**	**488**	**431**	**326**	**227**	
40	15	6	3	6	17	32	111	**210**	148	153	167	160	213	170	252	282	315	**360**	158	133	106	94	59	36
19	14	8	8	4	22	48	181	**328**	189	180	167	184	210	206	315	336	**344**	299	143	110	110	96	69	30
26	15	7	6	14	25	80	307	**380**	293	222	222	239	261	197	396	307	**352**	304	118	134	118	65	53	22
18	17	8	4	11	32	114	**289**	273	205	175	188	186	213	214	335	305	**346**	225	141	111	97	71	46	28

AM Peak 0745 - 0845 (1207), AM PHF=0.79 PM Peak 1715 - 1815 (1402), PM PHF=0.97

* Thursday, October 05, 2006=14932, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
116	**62**	**39**	**23**	**30**	**122**	**285**	**1244**	**981**	**917**	**813**	**690**	**807**	**815**	**743**	**1094**	**1160**	**1414**	**1271**	**631**	**554**	**465**	**379**	**277**	
36	15	11	4	7	19	35	**181**	172	354	173	154	289	174	182	238	247	311	**321**	167	134	123	120	73	56
30	12	14	8	5	25	57	**340**	194	267	224	141	186	203	177	280	280	**372**	358	180	142	121	95	81	39
22	15	10	4	3	37	61	**433**	261	162	246	180	176	250	191	291	313	**352**	364	149	140	119	76	64	41
28	20	4	7	15	41	132	**290**	354	134	170	215	156	188	193	285	320	**379**	228	135	138	102	88	59	41

AM Peak 0700 - 0800 (1244), AM PHF=0.72 PM Peak 1715 - 1815 (1424), PM PHF=0.94

* Friday, October 06, 2006=177 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

14749

Traffic Data Service Southwest
Event Counts

28307-02 EventCount-2213 -- English (ENU)

Datasets:

Site:	**[28307] Montezuma Rd - W/O 55th St**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	9:26 Tuesday, October 03, 2006 => 15:35 Friday, October 06, 2006
File:	Z:\mcdata\LLG\2006\283\2830706Oct2006.EC0 (Plus)
Identifier:	A6548T9F MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**10:00 Tuesday, October 03, 2006 => 1:00 Friday, October 06, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 81789 / 81972 (99.78%)

* Tuesday, October 03, 2006=11600 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**723**	**640**	**1014**	**973**	**947**	**1281**	**1041**	**1090**	**1182**	**737**	**679**	**744**	**330**	**219**	
-	-	-	-	-	-	-	-	-	-	141	215	203	149	321	238	**260**	259	228	278	154	190	116	68	33
-	-	-	-	-	-	-	-	-	-	127	119	354	184	188	**383**	229	320	272	170	138	197	79	49	29
-	-	-	-	-	-	-	-	-	-	173	146	259	234	231	**359**	254	276	322	154	203	214	80	58	27
-	-	-	-	-	-	-	-	-	-	282	160	198	406	207	**301**	298	235	360	135	184	143	55	44	24

PM Peak 1515 - 1615 (1303), PM PHF=0.85

* Wednesday, October 04, 2006=14453, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
113	**61**	**30**	**26**	**33**	**122**	**482**	**1002**	**785**	**605**	**586**	**829**	**875**	**878**	**849**	**1087**	**988**	**1082**	**1148**	**733**	**792**	**849**	**315**	**183**	
33	17	13	7	7	19	54	217	**256**	150	138	200	266	275	254	220	269	226	265	**272**	176	211	101	44	48
29	23	5	4	4	25	93	**276**	178	124	130	170	204	163	161	324	211	304	**263**	175	192	213	80	53	40
27	8	6	7	13	31	161	**259**	145	141	126	181	169	185	198	279	259	282	**262**	154	251	238	70	50	37
24	13	6	8	9	47	174	**250**	206	190	192	278	236	255	236	264	249	270	**358**	132	173	187	64	36	31

AM Peak 0715 - 0815 (1041), AM PHF=0.94 PM Peak 1815 - 1915 (1155), PM PHF=0.81

* Thursday, October 05, 2006=15275, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
156	**52**	**39**	**23**	**27**	**131**	**470**	**986**	**726**	**619**	**707**	**707**	**1025**	**1094**	**1092**	**1414**	**1059**	**1122**	**1002**	**740**	**671**	**806**	**379**	**228**	
48	15	12	7	3	25	62	199	220	143	89	205	**220**	218	409	**278**	252	291	228	255	173	163	132	61	38
40	17	13	8	7	33	73	277	165	222	139	161	**334**	225	265	**433**	225	256	269	178	167	229	91	63	41
37	13	3	4	11	30	153	260	163	132	165	147	**264**	251	214	**374**	278	296	229	140	176	231	92	46	39
31	7	11	4	6	43	182	250	178	122	314	**194**	207	400	204	**329**	304	279	276	167	155	183	64	58	42

AM Peak 1145 - 1245 (1012), AM PHF=0.76 PM Peak 1500 - 1600 (1414), PM PHF=0.82

* Friday, October 06, 2006=160 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
160	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

14864

Traffic Data Service Southwest
Event Counts

28308-02 EventCount-2101 -- English (ENU)

Datasets:

Site:	**[28308] !Montezuma Rd - Btwn 55th St & College Ave**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Excluded from totals. (0)
Survey Duration:	13:10 Tuesday, September 26, 2006 => 15:04 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\UM28308a01.EC0 (Plus)
Identifier:	M264XG37 MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 67392 / 90055 (74.83%)

*** Tuesday, September 26, 2006=6061 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1279**	**1279**	**1119**	**604**	**628**	**615**	**311**	**226**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	319	336	158	142	146	92	66	35
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	325	353	284	163	144	168	66	58	29
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	328	329	234	144	179	179	72	55	30
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	278	265	139	163	122	81	47	22

*** Wednesday, September 27, 2006=12326, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
116	**72**	**34**	**13**	**18**	**45**	**141**	**424**	**560**	**590**	**501**	**601**	**693**	**717**	**771**	**1110**	**1097**	**1223**	**1191**	**603**	**597**	**620**	**329**	**260**	
35	14	8	2	2	13	25	53	108	132	123	141	**186**	187	181	228	285	320	**336**	186	129	148	88	66	34
29	21	9	4	6	7	29	103	118	133	109	111	**160**	171	160	236	264	312	**314**	151	158	137	89	75	50
30	18	7	3	3	13	36	133	162	152	115	**158**	141	172	229	328	287	**322**	308	122	149	160	74	61	39
22	19	10	4	7	12	51	135	172	173	154	**191**	206	187	201	318	261	**269**	233	144	161	175	78	58	28

AM Peak 1130 - 1230 (695), AM PHF=0.91 PM Peak 1730 - 1830 (1241), PM PHF=0.92

*** Thursday, September 28, 2006=12974, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
151	**94**	**42**	**26**	**23**	**40**	**133**	**546**	**512**	**685**	**717**	**593**	**783**	**742**	**761**	**1064**	**1134**	**1226**	**1105**	**705**	**603**	**599**	**402**	**288**	
34	31	22	6	10	5	27	78	99	221	147	138	**224**	163	207	217	281	276	**345**	192	150	158	120	94	58
50	26	7	8	2	7	26	116	96	202	164	116	**228**	170	167	289	276	**312**	297	179	144	151	100	78	61
39	19	10	6	8	15	31	189	138	121	192	137	**173**	195	183	276	305	**311**	256	173	162	134	93	63	50
28	18	3	6	3	13	49	163	179	141	214	**202**	158	214	204	282	272	**327**	207	161	147	156	89	53	36

AM Peak 1145 - 1245 (827), AM PHF=0.91 PM Peak 1715 - 1815 (1295), PM PHF=0.94

*** Friday, September 29, 2006=3499 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
205	**136**	**97**	**40**	**38**	**56**	**129**	**393**	**548**	**569**	**569**	**719**	-	-	-	-	-	-	-	-	-	-	-	-	
58	32	30	8	13	7	14	54	120	129	129	160	-	-	-	-	-	-	-	-	-	-	-	-	-
61	43	32	13	14	9	30	92	122	124	113	160	-	-	-	-	-	-	-	-	-	-	-	-	-
50	28	13	11	4	23	35	117	169	153	152	190	-	-	-	-	-	-	-	-	-	-	-	-	-
36	33	22	8	7	17	50	130	137	163	175	209	-	-	-	-	-	-	-	-	-	-	-	-	-

12650

Traffic Data Service Southwest
Event Counts

28308-02 EventCount-2102 -- English (ENU)

Datasets:

Site:	**[28308] !Montezuma Rd - Btwn 55th St & College Ave**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	13:10 Tuesday, September 26, 2006 => 15:04 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\UM28308a01.EC0 (Plus)
Identifier:	M264XG37 MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 67392 / 90055 (74.83%)

* Tuesday, September 26, 2006=4315 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**870**	**763**	**829**	**488**	**454**	**473**	**265**	**173**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260	197	151	173	111	116	84	51	19
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	195	195	99	120	96	75	41	44
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	196	231	101	100	134	57	38	28
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	175	252	115	123	127	49	43	16

* Wednesday, September 27, 2006=11387, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
107	**47**	**28**	**20**	**49**	**125**	**483**	**1105**	**947**	**513**	**481**	**572**	**646**	**687**	**624**	**849**	**712**	**705**	**790**	**534**	**461**	**429**	**301**	**172**	
19	15	11	9	4	25	64	207	**221**	157	118	139	165	194	170	**183**	177	173	168	196	119	129	86	45	37
44	11	11	2	6	21	81	**322**	259	97	125	120	159	144	144	**213**	144	235	157	134	118	105	86	40	35
28	15	3	5	18	27	140	**320**	223	128	114	149	163	164	154	**234**	180	165	220	88	126	94	80	42	30
16	6	3	4	21	52	198	**256**	244	131	124	164	159	185	156	**219**	211	132	245	116	98	101	49	45	21

AM Peak 0715 - 0815 (1119), AM PHF=0.87 PM Peak 1500 - 1600 (849), PM PHF=0.91

* Thursday, September 28, 2006=12225, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
123	**77**	**30**	**29**	**36**	**125**	**513**	**1099**	**821**	**556**	**531**	**569**	**787**	**779**	**875**	**927**	**823**	**782**	**831**	**547**	**380**	**466**	**298**	**221**	
37	32	8	9	7	19	63	**282**	238	183	120	157	222	166	270	161	**226**	220	188	172	95	140	87	66	44
35	19	9	9	4	31	98	**309**	205	141	121	131	212	160	200	**274**	175	196	213	123	125	100	82	52	46
30	15	10	6	12	28	145	**266**	193	126	122	126	225	194	212	**236**	199	187	203	131	101	115	66	64	33
21	11	3	5	13	47	207	**242**	185	106	168	155	128	259	193	**256**	223	179	227	121	59	111	63	39	32

AM Peak 0700 - 0800 (1099), AM PHF=0.89 PM Peak 1515 - 1615 (992), PM PHF=0.91

* Friday, September 29, 2006=4605 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
155	**102**	**76**	**50**	**49**	**126**	**450**	**1048**	**786**	**585**	**515**	**663**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
44	28	27	21	6	21	64	212	199	146	138	165	-	-	-	-	-	-	-	-	-	-	-	-	-
46	23	19	11	7	21	87	313	201	133	114	150	-	-	-	-	-	-	-	-	-	-	-	-	-
33	26	14	11	17	36	133	324	205	158	134	171	-	-	-	-	-	-	-	-	-	-	-	-	-
32	25	16	7	19	48	166	199	181	148	129	177	-	-	-	-	-	-	-	-	-	-	-	-	-

11804

Traffic Data Service Southwest
Event Counts

28309-02 EventCount-2099 -- English (ENU)

Datasets:

Site:	**[28309] Montezuma Rd - Btwn College Ave & E. Campus Dr**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Excluded from totals. (0)
Survey Duration:	14:11 Tuesday, September 26, 2006 => 14:57 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830901OCT2006.EC0 (Plus)
Identifier:	A647KH81 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 59091 / 78308 (75.46%)

*** Tuesday, September 26, 2006=4472 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**903**	**849**	**788**	**542**	**433**	**457**	**271**	**229**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230	217	215	172	112	109	90	62	46
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	211	195	138	93	136	62	69	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	232	215	109	115	124	63	59	25
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	189	163	123	113	88	56	39	30

*** Wednesday, September 27, 2006=9555, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
132	**66**	**32**	**19**	**18**	**24**	**93**	**377**	**550**	**466**	**408**	**451**	**510**	**549**	**597**	**797**	**819**	**849**	**825**	**534**	**436**	**456**	**307**	**240**	
46	22	7	3	8	8	11	56	82	**91**	114	96	136	123	148	159	211	**242**	221	173	105	99	80	53	50
31	13	6	7	5	5	19	86	**128**	126	92	93	117	146	144	176	188	**219**	219	127	102	109	99	74	33
25	18	12	5	2	4	21	119	**183**	119	87	131	121	148	145	228	191	**194**	197	112	116	118	64	62	38
30	13	7	4	3	7	42	116	**157**	130	115	131	136	132	160	234	**229**	194	188	122	113	130	64	51	36

AM Peak 0815 - 0915 (559), AM PHF=0.76 PM Peak 1645 - 1745 (884), PM PHF=0.91

*** Thursday, September 28, 2006=10286, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
157	**70**	**42**	**31**	**14**	**24**	**109**	**493**	**463**	**656**	**602**	**461**	**629**	**562**	**597**	**792**	**864**	**811**	**771**	**557**	**500**	**488**	**319**	**274**	
50	20	16	8	6	7	23	74	90	**253**	104	112	190	116	156	137	**211**	197	217	172	117	134	103	86	45
33	20	13	6	4	4	22	103	80	**205**	135	103	158	144	148	187	**216**	209	184	146	116	122	81	67	48
38	13	12	9	4	6	19	155	**129**	101	187	106	158	139	143	**225**	221	216	204	126	130	113	63	61	34
36	17	1	8	0	7	45	161	**164**	97	176	140	123	163	150	**243**	216	189	166	113	137	119	72	60	46

AM Peak 0830 - 0930 (751), AM PHF=0.74 PM Peak 1530 - 1630 (895), PM PHF=0.92

*** Friday, September 29, 2006=2802 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
173	**139**	**92**	**47**	**21**	**40**	**84**	**318**	**489**	**459**	**442**	**498**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
45	46	29	11	8	12	13	41	80	95	87	109	-	-	-	-	-	-	-	-	-	-	-	-	-
48	32	25	14	9	4	14	77	116	100	119	143	-	-	-	-	-	-	-	-	-	-	-	-	-
34	30	15	10	2	15	20	86	164	137	118	130	-	-	-	-	-	-	-	-	-	-	-	-	-
46	31	23	12	2	9	37	114	129	127	118	116	-	-	-	-	-	-	-	-	-	-	-	-	-

9921

Traffic Data Service Southwest
Event Counts

28309-02 EventCount-2100 -- English (ENU)

Datasets:

Site:	**[28309] Montezuma Rd - Btwn College Ave & E. Campus Dr**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	14:11 Tuesday, September 26, 2006 => 14:57 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830901OCT2006.EC0 (Plus)
Identifier:	A647KH81 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 59091 / 78308 (75.46%)

* Tuesday, September 26, 2006=4606 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**969**	**796**	**907**	**458**	**447**	**552**	**259**	**218**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285	174	186	142	126	142	81	66	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	219	219	191	115	115	123	64	44	30
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	196	242	108	102	157	55	50	34
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	207	288	93	104	130	59	58	20

* Wednesday, September 27, 2006=11021, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
115	**50**	**31**	**15**	**39**	**129**	**361**	**766**	**814**	**478**	**505**	**573**	**671**	**662**	**641**	**916**	**695**	**684**	**883**	**610**	**461**	**453**	**275**	**194**	
31	14	9	6	4	18	58	180	**185**	121	124	141	195	186	192	196	186	152	156	**252**	114	112	94	57	47
30	13	7	0	6	23	62	210	**190**	112	96	129	141	144	135	232	152	198	**200**	120	108	116	73	55	36
34	16	7	6	19	49	104	195	**228**	118	132	129	156	144	132	257	175	169	**230**	123	107	105	62	48	33
20	7	8	3	10	39	137	181	**211**	127	153	174	179	188	182	231	182	165	**297**	115	132	120	46	34	29

AM Peak 0800 - 0900 (814), AM PHF=0.89 PM Peak 1815 - 1915 (979), PM PHF=0.82

* Thursday, September 28, 2006=12233, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
145	**70**	**36**	**24**	**40**	**129**	**399**	**994**	**655**	**492**	**506**	**534**	**849**	**813**	**956**	**1107**	**814**	**729**	**905**	**558**	**457**	**461**	**331**	**229**	
47	28	8	4	7	14	48	**262**	159	152	97	164	196	152	320	201	**238**	185	205	179	130	114	123	60	57
36	15	10	9	8	24	65	**256**	153	153	104	115	280	153	224	**293**	166	198	223	142	106	103	70	74	43
33	13	10	6	16	41	120	**202**	165	97	124	127	231	211	238	**324**	206	178	225	140	111	116	70	53	42
29	14	8	5	9	50	166	**274**	178	90	181	128	142	297	174	**289**	204	168	252	97	110	128	68	42	36

AM Peak 0700 - 0800 (994), AM PHF=0.91 PM Peak 1515 - 1615 (1144), PM PHF=0.88

* Friday, September 29, 2006=4115 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
178	**96**	**81**	**53**	**47**	**121**	**341**	**757**	**650**	**537**	**548**	**706**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
57	28	20	20	5	14	57	155	150	131	134	191	-	-	-	-	-	-	-	-	-	-	-	-	-
43	29	29	10	12	21	47	209	174	103	111	149	-	-	-	-	-	-	-	-	-	-	-	-	-
42	20	15	10	18	41	107	208	165	147	142	144	-	-	-	-	-	-	-	-	-	-	-	-	-
36	19	17	13	12	45	130	185	161	156	161	222	-	-	-	-	-	-	-	-	-	-	-	-	-

11627

Traffic Data Service Southwest
Event Counts

28304S-03 EventCount-2093 -- English (ENU)

Datasets:

Site:	**[28304S] College Ave - Btwn I-8 EB Ramps & Zura Way**
Input A:	3 - South bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	12:03 Tuesday, September 26, 2006 => 13:53 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\28304S01OCT2006.EC0 (Plus)
Identifier:	M508KRAN MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 47907 / 65713 (72.90%)

* Tuesday, September 26, 2006=5935 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**928**	**924**	**1198**	**827**	**654**	**690**	**418**	**296**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	225	280	207	182	198	157	82	70
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246	223	290	241	163	194	88	86	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	226	322	186	166	145	94	79	46
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	250	306	193	143	153	79	49	31

* Wednesday, September 27, 2006=17428, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
178	**88**	**74**	**55**	**75**	**160**	**315**	**1016**	**1047**	**1089**	**890**	**1029**	**1080**	**1254**	**1178**	**1393**	**1063**	**1151**	**1241**	**846**	**717**	**658**	**490**	**341**	
70	26	14	16	17	23	57	175	185	**269**	182	222	243	283	234	**344**	286	274	258	259	157	165	160	94	82
31	23	17	14	8	34	64	228	235	**265**	185	258	272	303	301	**377**	252	268	346	235	198	183	151	95	53
46	23	21	11	16	41	66	320	**301**	279	267	260	323	342	295	**342**	267	335	357	189	174	161	94	84	54
31	16	22	14	34	62	128	293	**326**	276	256	289	242	326	**348**	330	258	274	280	163	188	149	85	68	31

AM Peak 0830 - 0930 (1161), AM PHF=0.89 PM Peak 1445 - 1545 (1411), PM PHF=0.94

* Thursday, September 28, 2006=18473, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
220	**89**	**75**	**74**	**57**	**149**	**380**	**1045**	**1281**	**1270**	**1179**	**1002**	**1243**	**1177**	**1218**	**1278**	**1067**	**1002**	**1296**	**939**	**748**	**755**	**555**	**374**	
82	26	31	28	12	24	68	161	278	**353**	223	244	336	268	269	**315**	269	267	277	289	190	200	139	117	59
53	21	13	23	5	31	78	285	208	**380**	306	240	328	283	291	**337**	251	273	301	229	185	171	163	93	61
54	18	17	10	15	40	101	298	**380**	278	314	215	293	328	323	**357**	297	233	386	218	192	201	124	87	46
31	24	14	13	25	54	133	301	**415**	259	336	303	286	298	**335**	269	250	229	332	203	181	183	129	77	45

AM Peak 0830 - 0930 (1528), AM PHF=0.92 PM Peak 1445 - 1545 (1344), PM PHF=0.94

* Friday, September 29, 2006=6071 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
211	**137**	**101**	**79**	**66**	**152**	**343**	**789**	**939**	**1114**	**1028**	**1112**	-	-	-	-	-	-	-	-	-	-	-	-	
59	36	36	26	16	40	70	151	194	302	225	240	-	-	-	-	-	-	-	-	-	-	-	-	-
61	35	21	23	14	21	66	184	236	246	234	269	-	-	-	-	-	-	-	-	-	-	-	-	-
46	35	22	16	4	37	86	242	279	303	293	302	-	-	-	-	-	-	-	-	-	-	-	-	-
45	31	22	14	32	54	121	212	230	263	276	301	-	-	-	-	-	-	-	-	-	-	-	-	-

17951

Traffic Data Service Southwest
Event Counts

28304N-01 EventCount-2092 -- English (ENU)

Datasets:

Site:	**[28304N] College Ave - Btwn I-8 EB Ramps & Zura Way**
Input A:	1 - North bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	11:55 Tuesday, September 26, 2006 => 14:26 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\28304N01OCT2006.EC0 (Plus)
Identifier:	E395JD8W MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 58874 / 80316 (73.30%)

* Tuesday, September 26, 2006=8501 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1614**	**1504**	**1527**	**945**	**953**	**1151**	**476**	**331**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	425	383	340	327	195	267	175	94	65
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	411	412	360	202	268	273	120	94	62
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	365	387	391	218	237	319	82	57	54
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413	322	436	198	253	292	99	86	44

* Wednesday, September 27, 2006=20896, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
225	**107**	**80**	**69**	**92**	**303**	**621**	**1116**	**994**	**1048**	**992**	**1281**	**1277**	**1289**	**1359**	**1573**	**1379**	**1490**	**1457**	**1111**	**1038**	**1087**	**525**	**383**	
65	24	24	12	13	47	119	308	216	276	266	331	**405**	379	442	**391**	372	368	334	389	245	315	169	114	66
62	21	14	9	16	66	125	258	221	260	208	249	**256**	282	276	**409**	321	392	357	260	284	250	143	119	76
54	27	21	27	32	102	152	277	254	231	230	**318**	266	306	297	**399**	325	394	359	244	222	273	122	67	76
44	35	21	21	31	88	225	273	303	281	288	**383**	350	322	344	**374**	361	336	407	218	287	249	91	83	45

AM Peak 1130 - 1230 (1362), AM PHF=0.84 PM Peak 1500 - 1600 (1573), PM PHF=0.96

* Thursday, September 28, 2006=22008, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
263	**160**	**69**	**70**	**118**	**285**	**620**	**1226**	**941**	**1088**	**1081**	**1168**	**1535**	**1341**	**1632**	**1557**	**1506**	**1454**	**1483**	**995**	**1071**	**1130**	**683**	**532**	
66	49	13	13	21	38	99	308	227	331	220	336	**410**	304	358	**389**	461	372	356	318	226	289	211	231	83
76	42	11	21	22	58	117	310	214	293	234	252	**418**	314	**489**	381	281	386	360	239	275	308	168	147	83
76	44	25	16	35	89	167	291	258	258	287	275	**405**	372	**444**	382	370	363	417	244	284	251	172	89	67
45	25	20	20	40	100	237	317	242	206	340	**305**	302	351	**341**	405	394	333	350	194	286	282	132	65	60

AM Peak 1145 - 1245 (1538), AM PHF=0.92 PM Peak 1415 - 1515 (1663), PM PHF=0.85

* Friday, September 29, 2006=7469 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
293	**220**	**139**	**84**	**132**	**291**	**577**	**1078**	**999**	**1085**	**1151**	**1420**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
83	61	38	24	21	38	102	335	223	279	284	410	-	-	-	-	-	-	-	-	-	-	-	-	-
83	58	43	23	33	64	126	219	232	246	238	315	-	-	-	-	-	-	-	-	-	-	-	-	-
67	51	26	19	34	89	150	257	268	275	297	315	-	-	-	-	-	-	-	-	-	-	-	-	-
60	50	32	18	44	100	199	267	276	285	332	380	-	-	-	-	-	-	-	-	-	-	-	-	-

21452

Traffic Data Service Southwest
Event Counts

28305-01 EventCount-2095 -- English (ENU)

Datasets:

Site:	**[28305] College Ave - Btwn Zura Way & Montequma Rd**
Input A:	1 - North bound. - Excluded from totals. (0)
Input B:	3 - South bound. - Added to totals. (1)
Survey Duration:	11:02 Tuesday, September 26, 2006 => 15:08 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830501OCT2006.EC0 (Plus)
Identifier:	A7987E8Y MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 92576 / 128844 (71.85%)

* Tuesday, September 26, 2006=6595 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1002**	**1116**	**1370**	**921**	**717**	**730**	**448**	**291**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	259	252	307	252	183	208	163	78	70
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	242	291	366	244	176	223	106	80	43
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	303	355	192	188	165	104	78	41
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	272	270	342	233	170	134	75	55	39

* Wednesday, September 27, 2006=16811, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
193	**89**	**69**	**47**	**78**	**165**	**351**	**832**	**887**	**859**	**834**	**922**	**1013**	**1085**	**1123**	**1390**	**1079**	**1171**	**1273**	**964**	**801**	**753**	**504**	**329**	
70	29	17	11	22	24	58	156	180	236	207	215	**241**	270	247	**332**	284	292	255	334	191	193	167	91	73
43	20	15	12	8	38	93	204	197	166	171	217	**245**	252	261	**410**	255	277	369	226	186	205	147	94	53
41	24	20	13	15	44	99	254	237	242	214	209	**280**	263	300	**326**	285	321	347	214	220	191	105	82	46
39	16	17	11	33	59	101	218	273	215	242	**281**	247	300	315	**322**	255	281	302	190	204	164	85	62	31

AM Peak 1145 - 1245 (1047), AM PHF=0.93 PM Peak 1500 - 1600 (1390), PM PHF=0.85

* Thursday, September 28, 2006=18166, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
203	**94**	**68**	**72**	**61**	**159**	**360**	**798**	**1033**	**1037**	**948**	**992**	**1137**	**1075**	**1240**	**1350**	**1146**	**1132**	**1463**	**1138**	**897**	**815**	**546**	**402**	
73	30	25	21	11	23	58	125	246	276	210	253	**280**	237	248	329	340	295	315	**366**	229	230	135	115	64
53	21	16	23	12	43	98	208	212	328	227	226	**334**	253	298	337	251	276	**343**	297	237	201	163	112	69
46	18	18	15	12	39	92	229	274	210	241	222	**275**	314	351	363	282	294	**414**	263	229	199	128	99	59
31	25	9	13	26	54	112	236	301	223	270	**291**	248	271	343	321	273	267	**391**	212	202	185	120	76	49

AM Peak 1145 - 1245 (1180), AM PHF=0.88 PM Peak 1815 - 1915 (1514), PM PHF=0.91

* Friday, September 29, 2006=5728 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
241	**143**	**104**	**74**	**69**	**171**	**353**	**773**	**792**	**941**	**987**	**1080**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
64	38	34	25	17	40	70	139	173	250	242	244	-	-	-	-	-	-	-	-	-	-	-	-	-
69	34	18	23	15	26	81	196	202	227	219	248	-	-	-	-	-	-	-	-	-	-	-	-	-
59	39	22	14	6	49	78	211	225	248	224	265	-	-	-	-	-	-	-	-	-	-	-	-	-
49	32	30	12	31	56	124	227	192	216	302	323	-	-	-	-	-	-	-	-	-	-	-	-	-

-17489

Traffic Data Service Southwest
Event Counts

28305-01 EventCount-2094 -- English (ENU)

Datasets:

Site:	**[28305] College Ave - Btwn Zura Way & Montequma Rd**
Input A:	1 - North bound. - Added to totals. (1)
Input B:	3 - South bound. - Excluded from totals. (0)
Survey Duration:	11:02 Tuesday, September 26, 2006 => 15:08 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830501OCT2006.EC0 (Plus)
Identifier:	A7987E8Y MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 92576 / 128844 (71.85%)

* Tuesday, September 26, 2006=5932 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1122**	**1018**	**1042**	**713**	**671**	**725**	**373**	**268**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	345	250	227	223	157	190	128	79	50
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	272	269	166	187	191	101	76	48
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	252	256	270	172	156	166	61	48	39
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	240	276	152	171	178	83	65	40

* Wednesday, September 27, 2006=16004, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
177	**104**	**66**	**67**	**85**	**293**	**591**	**1088**	**987**	**898**	**818**	**1004**	**928**	**1004**	**915**	**1016**	**966**	**999**	**1050**	**803**	**692**	**729**	**406**	**318**	
50	19	19	12	12	41	112	**278**	224	229	217	235	278	245	247	245	255	249	212	**263**	187	237	127	90	55
48	21	14	10	12	64	121	**255**	218	237	182	221	183	234	223	261	247	257	**240**	193	185	149	104	98	56
39	25	16	27	31	107	148	**272**	265	217	212	274	226	268	215	259	214	248	**281**	188	153	180	95	59	59
40	39	17	18	30	81	210	**283**	280	215	207	274	241	257	230	251	250	245	**317**	159	167	163	80	71	37

AM Peak 0700 - 0800 (1088), AM PHF=0.96 PM Peak 1815 - 1915 (1101), PM PHF=0.87

* Thursday, September 28, 2006=16924, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
207	**130**	**65**	**65**	**111**	**278**	**596**	**1241**	**896**	**989**	**884**	**899**	**1105**	**1018**	**1104**	**1231**	**973**	**951**	**1064**	**807**	**714**	**710**	**523**	**363**	
55	39	13	15	21	33	93	**295**	215	339	213	240	323	225	311	**267**	264	245	253	233	182	194	181	134	71
56	34	10	18	21	61	111	**307**	192	254	201	195	286	226	329	**306**	220	234	268	213	176	193	124	93	76
59	37	22	17	33	89	162	**289**	246	211	249	226	270	268	233	**306**	232	252	296	200	167	146	123	73	58
37	20	20	15	36	95	230	**350**	243	185	221	238	226	299	231	**352**	257	220	247	161	189	177	95	63	45

AM Peak 0700 - 0800 (1241), AM PHF=0.89 PM Peak 1500 - 1600 (1231), PM PHF=0.87

* Friday, September 29, 2006=6415 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
250	**195**	**123**	**85**	**123**	**282**	**539**	**1055**	**932**	**924**	**857**	**1050**	-	-	-	-	-	-	-	-	-	-	-	-	
71	52	36	26	18	33	89	314	206	243	209	281	-	-	-	-	-	-	-	-	-	-	-	-	-
76	47	40	22	29	60	124	220	231	219	192	253	-	-	-	-	-	-	-	-	-	-	-	-	-
58	51	20	19	31	89	142	241	261	257	246	258	-	-	-	-	-	-	-	-	-	-	-	-	-
45	45	27	18	45	100	184	280	234	205	210	258	-	-	-	-	-	-	-	-	-	-	-	-	-

16464

Traffic Data Service Southwest
Event Counts

28302-02 EventCount-2090 -- English (ENU)

Datasets:

Site:	**[28302] Alvarado Rd - Btwn Reservoir Dr & 70th**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	15:20 Tuesday, September 26, 2006 => 14:33 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830201OCT2006.EC0 (Plus)
Identifier:	M355ARX4 MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Split (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 40321 / 50326 (80.12%)

* Tuesday, September 26, 2006=1126 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**241**	**195**	**218**	**146**	**116**	**103**	**60**	**47**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	53	41	44	38	24	21	17	7
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	43	64	37	37	23	13	11	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	48	56	34	18	28	13	7	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	51	57	31	23	28	13	12	0

* Wednesday, September 27, 2006=4887, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
17	**7**	**11**	**7**	**19**	**80**	**158**	**464**	**660**	**461**	**329**	**289**	**303**	**348**	**349**	**309**	**223**	**186**	**218**	**155**	**109**	**79**	**65**	**41**	
7	1	3	2	2	8	22	61	**126**	118	85	70	69	70	74	**81**	60	41	38	49	31	24	24	10	8
6	2	1	0	6	16	33	85	**173**	110	78	67	83	108	72	**76**	62	53	61	33	28	12	19	12	8
4	4	1	2	1	24	43	154	**192**	127	69	85	77	73	**98**	80	50	48	68	37	21	29	10	9	8
0	0	6	3	10	32	60	164	**169**	106	97	67	74	97	**105**	72	51	44	51	36	29	14	12	10	7

AM Peak 0800 - 0900 (660), AM PHF=0.86 PM Peak 1430 - 1530 (360), PM PHF=0.86

* Thursday, September 28, 2006=5152, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
31	**11**	**17**	**10**	**21**	**93**	**139**	**610**	**615**	**468**	**373**	**307**	**356**	**374**	**313**	**322**	**217**	**210**	**202**	**147**	**117**	**81**	**71**	**47**	
8	3	6	3	5	8	23	64	**182**	149	89	71	84	**75**	71	78	65	47	43	48	30	25	25	7	5
8	3	3	2	8	18	35	126	**139**	109	109	79	99	**86**	83	78	67	56	58	25	32	25	16	16	12
8	4	5	3	2	28	32	**186**	140	106	99	76	83	**107**	74	82	37	53	46	45	26	20	11	17	8
7	1	3	2	6	39	49	**234**	154	104	76	81	90	**106**	85	84	48	54	55	29	29	11	19	7	5

AM Peak 0730 - 0830 (741), AM PHF=0.79 PM Peak 1300 - 1400 (374), PM PHF=0.87

* Friday, September 29, 2006=2376 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
30	**15**	**14**	**13**	**20**	**65**	**130**	**406**	**544**	**451**	**359**	**329**	-	-	-	-	-	-	-	-	-	-	-	-	
5	1	1	1	6	9	23	52	125	125	88	82	-	-	-	-	-	-	-	-	-	-	-	-	-
12	4	5	5	7	14	27	88	133	99	81	76	-	-	-	-	-	-	-	-	-	-	-	-	-
8	5	7	5	2	14	36	120	144	133	109	88	-	-	-	-	-	-	-	-	-	-	-	-	-
5	5	1	2	5	28	44	146	142	94	81	83	-	-	-	-	-	-	-	-	-	-	-	-	-

5020

Traffic Data Service Southwest
Event Counts

28302-02 EventCount-2091 -- English (ENU)

Datasets:

Site:	**[28302] Alvarado Rd - Btwn Reservoir Dr & 70th**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Subtracted from totals. (-1)
Survey Duration:	15:20 Tuesday, September 26, 2006 => 14:33 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830201OCT2006.EC0 (Plus)
Identifier:	M355ARX4 MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Split (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 12:00 Friday, September 29, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 40321 / 50326 (80.12%)

*** Tuesday, September 26, 2006=1962 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**518**	**473**	**355**	**184**	**155**	**154**	**53**	**70**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	159	90	57	46	32	12	14	8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	118	116	104	47	42	41	14	27	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	106	85	41	42	41	14	19	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	145	92	76	39	25	40	13	10	5

*** Wednesday, September 27, 2006=4755, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
27	**15**	**11**	**8**	**3**	**26**	**90**	**123**	**155**	**240**	**325**	**383**	**365**	**317**	**392**	**460**	**442**	**456**	**310**	**207**	**159**	**103**	**68**	**70**	
8	3	4	3	0	3	6	22	37	60	93	95	**114**	71	86	110	125	**161**	89	77	50	33	26	17	11
9	5	3	2	0	8	22	22	28	60	77	75	**100**	74	89	103	98	**108**	86	46	40	10	21	29	9
5	5	2	3	1	8	30	44	38	54	76	**97**	78	82	117	132	**104**	93	63	51	31	34	11	18	7
5	2	2	0	2	7	32	35	52	66	79	**116**	73	90	100	115	**115**	94	72	33	38	26	10	6	6

AM Peak 1130 - 1230 (427), AM PHF=0.92 PM Peak 1630 - 1730 (488), PM PHF=0.76

*** Thursday, September 28, 2006=4977, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
33	**15**	**11**	**5**	**10**	**27**	**79**	**123**	**165**	**259**	**298**	**426**	**400**	**362**	**410**	**479**	**499**	**453**	**317**	**215**	**147**	**112**	**59**	**73**	
11	8	3	0	0	3	13	29	35	40	72	112	**113**	91	94	123	124	**140**	88	77	34	26	18	16	8
9	4	3	2	3	4	23	27	31	74	62	**114**	105	73	88	109	104	**114**	85	38	33	30	18	25	14
7	1	2	1	5	11	21	47	51	74	93	**93**	93	83	103	124	**146**	104	69	59	50	27	9	22	7
6	2	3	2	2	9	22	20	48	71	71	**107**	89	115	125	123	**125**	95	75	41	30	29	14	10	7

AM Peak 1115 - 1215 (427), AM PHF=0.94 PM Peak 1630 - 1730 (525), PM PHF=0.90

*** Friday, September 29, 2006=1544 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
36	**25**	**25**	**16**	**15**	**23**	**63**	**114**	**177**	**279**	**339**	**432**	-	-	-	-	-	-	-	-	-	-	-	-	
8	2	3	5	0	6	4	16	39	77	74	103	-	-	-	-	-	-	-	-	-	-	-	-	-
14	8	6	2	7	1	23	20	35	64	77	97	-	-	-	-	-	-	-	-	-	-	-	-	-
7	8	11	4	5	7	20	42	45	59	87	102	-	-	-	-	-	-	-	-	-	-	-	-	-
7	7	5	5	3	9	16	36	58	79	101	130	-	-	-	-	-	-	-	-	-	-	-	-	-

48606

Traffic Data Service Southwest
Event Counts

28301-02 EventCount-2087 -- English (ENU)

Datasets:

Site:	**[28301] Alvarado Rd - Btwn E. Campus Dr & Reservoir Dr**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	15:09 Tuesday, September 26, 2006 => 14:51 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830101OCT2006.EC0 (Plus)
Identifier:	B102GC7E MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Split (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 9:00 Saturday, September 30, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 41241 / 42135 (97.88%)

* Tuesday, September 26, 2006=1024 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**244**	**207**	**222**	**117**	**79**	**60**	**55**	**40**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	58	54	30	27	19	24	14	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	52	59	32	20	10	11	10	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	49	65	32	21	16	10	7	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	48	44	23	11	15	10	9	1

* Wednesday, September 27, 2006=4115, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
26	**13**	**9**	**5**	**16**	**47**	**142**	**435**	**487**	**319**	**264**	**246**	**276**	**290**	**292**	**268**	**240**	**200**	**188**	**125**	**76**	**57**	**57**	**37**	
12	7	3	0	2	4	17	61	**102**	70	70	66	82	**71**	74	73	69	61	46	32	24	15	24	10	10
9	3	2	2	2	10	32	72	**109**	82	53	59	67	**80**	62	64	67	45	53	34	22	13	13	13	9
4	3	2	3	8	15	44	159	**161**	89	62	58	64	**81**	80	75	56	53	56	35	10	16	9	6	6
1	0	2	0	4	18	49	**143**	115	78	79	63	**63**	58	76	56	48	41	33	24	20	13	11	8	6

AM Peak 0745 - 0845 (515), AM PHF=0.80 PM Peak 1245 - 1345 (295), PM PHF=0.91

* Thursday, September 28, 2006=4325, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
31	**10**	**7**	**5**	**14**	**53**	**143**	**564**	**419**	**327**	**306**	**273**	**296**	**299**	**279**	**284**	**237**	**192**	**215**	**120**	**85**	**67**	**56**	**43**	
10	2	3	2	1	7	21	86	**121**	109	68	63	79	57	**64**	79	65	62	51	34	27	19	16	12	4
9	4	1	2	4	9	39	**114**	106	78	79	62	70	**71**	69	63	60	42	60	28	24	16	13	15	10
6	2	1	0	6	15	32	**178**	96	68	93	81	78	**89**	75	81	57	46	57	36	21	16	13	9	4
6	2	2	1	3	22	51	**186**	96	72	66	67	69	**82**	71	61	55	42	47	22	13	16	14	7	1

AM Peak 0715 - 0815 (599), AM PHF=0.81 PM Peak 1315 - 1415 (306), PM PHF=0.86

* Friday, September 29, 2006=3903, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
19	**14**	**10**	**10**	**20**	**47**	**138**	**329**	**351**	**332**	**297**	**277**	**291**	**300**	**271**	**254**	**213**	**181**	**141**	**127**	**107**	**66**	**70**	**38**	
4	4	2	4	4	6	17	46	**82**	97	62	72	76	**87**	68	74	62	47	44	24	33	12	18	10	7
10	1	1	3	3	4	33	70	**90**	79	76	65	69	**75**	62	68	53	48	36	40	25	17	16	14	4
4	3	7	1	6	13	37	**102**	99	80	76	76	**81**	65	64	53	62	47	32	30	28	19	22	9	7
1	6	0	2	7	24	51	**111**	80	76	83	64	**65**	73	77	59	36	39	29	33	21	18	14	5	8

AM Peak 0730 - 0830 (385), AM PHF=0.87 PM Peak 1230 - 1330 (308), PM PHF=0.89

* Saturday, September 30, 2006=295 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
26	**21**	**15**	**15**	**15**	**19**	**53**	**62**	**69**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	6	4	3	7	4	6	16	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	2	5	4	2	2	21	9	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	8	2	5	4	7	11	16	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	5	4	3	2	6	15	21	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

4220

Traffic Data Service Southwest
Event Counts

28301-02 EventCount-2086 -- English (ENU)

Datasets:

Site:	**[28301] Alvarado Rd - Btwn E. Campus Dr & Reservoir Dr**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Subtracted from totals. (-1)
Survey Duration:	15:09 Tuesday, September 26, 2006 => 14:51 Sunday, October 01, 2006
File:	Z:\mcdata\LLG\2006\283\2830101OCT2006.EC0 (Plus)
Identifier:	B102GC7E MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Split (Count)

Profile:

Filter time:	**16:00 Tuesday, September 26, 2006 => 9:00 Saturday, September 30, 2006**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 41241 / 42135 (97.88%)

* Tuesday, September 26, 2006=1469 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**336**	**364**	**277**	**142**	**110**	**118**	**66**	**56**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	100	66	46	24	23	16	8	13
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	90	72	34	30	34	19	22	8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	91	63	34	29	32	13	15	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	83	76	28	27	29	18	11	4

* Wednesday, September 27, 2006=4037, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
30	**15**	**12**	**10**	**10**	**90**	**118**	**114**	**181**	**231**	**266**	**310**	**271**	**298**	**296**	**362**	**337**	**309**	**240**	**166**	**121**	**125**	**58**	**67**	
13	5	5	1	2	11	21	25	51	58	87	85	**69**	70	70	87	**90**	78	66	60	27	32	16	15	13
8	4	3	5	0	15	21	24	41	56	54	62	**85**	68	69	**88**	57	67	63	45	38	25	18	24	10
5	3	0	4	5	26	25	32	33	59	56	**75**	52	78	76	**98**	94	98	51	35	26	38	17	20	6
4	3	4	0	3	38	51	33	56	58	69	**88**	65	82	81	**89**	96	66	60	26	30	30	7	8	10

AM Peak 1130 - 1230 (317), AM PHF=0.90 PM Peak 1515 - 1615 (365), PM PHF=0.93

* Thursday, September 28, 2006=4125, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
39	**15**	**4**	**10**	**17**	**80**	**98**	**86**	**186**	**246**	**234**	**312**	**320**	**289**	**334**	**356**	**364**	**338**	**253**	**188**	**117**	**105**	**68**	**66**	
13	7	1	2	2	8	25	21	41	36	53	**83**	76	56	77	92	**97**	101	70	69	30	20	20	16	9
10	4	1	4	3	11	30	22	39	67	53	**75**	80	59	84	83	**78**	65	58	43	34	34	18	17	14
6	2	1	4	6	19	19	27	55	82	65	**74**	72	74	88	81	**110**	86	60	47	24	23	15	19	8
10	2	1	0	6	42	24	16	51	61	63	**80**	92	100	85	**100**	79	86	65	29	29	28	15	14	3

AM Peak 1100 - 1200 (312), AM PHF=0.94 PM Peak 1545 - 1645 (385), PM PHF=0.88

* Friday, September 29, 2006=3942, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
34	**29**	**18**	**13**	**28**	**75**	**85**	**128**	**213**	**253**	**279**	**322**	**334**	**295**	**331**	**297**	**304**	**275**	**183**	**127**	**91**	**86**	**78**	**64**	
9	4	3	5	4	2	12	21	40	73	76	85	**83**	72	**65**	58	87	73	51	42	21	15	23	10	13
14	6	6	1	9	8	25	33	62	58	49	66	**67**	56	**79**	93	60	83	48	30	26	23	18	15	13
8	10	6	6	8	24	18	34	51	54	72	72	**89**	68	**99**	63	91	64	47	27	23	18	17	23	10
3	9	3	1	7	41	30	40	60	68	82	**99**	95	**99**	88	83	66	55	37	28	21	30	20	16	11

AM Peak 1145 - 1245 (338), AM PHF=0.85 PM Peak 1345 - 1445 (342), PM PHF=0.86

* Saturday, September 30, 2006=342 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
47	**35**	**26**	**19**	**14**	**46**	**41**	**46**	**68**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	12	5	2	5	2	11	7	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9	8	4	6	5	5	9	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	2	9	9	2	14	10	12	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	12	4	4	1	25	15	18	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

4081

Traffic Data Service Southwest
Event Counts

EventCount-69 -- English (ENU)

Datasets:

Site:	**[08101] Montezuma Road - Btwn Fairmount Avenue & Collwood Blvd**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Excluded from totals. (0)
Survey Duration:	12:25 Tuesday, March 06, 2007 => 9:55 Monday, March 12, 2007
File:	Z:\mcdata\LLG\2007\081\0810112Mar2007.EC0 (Plus)
Identifier:	M293M05F MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**13:00 Tuesday, March 06, 2007 => 10:00 Thursday, March 08, 2007**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 93108 / 133700 (69.64%)

* Tuesday, March 06, 2007=16349 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1404**	**1556**	**2311**	**2268**	**2658**	**1987**	**1201**	**994**	**939**	**610**	**421**	
-	-	-	-	-	-	-	-	-	-	-	-	-	289	330	464	588	602	538	337	251	247	193	125	66
-	-	-	-	-	-	-	-	-	-	-	-	-	325	387	601	559	695	516	304	281	270	171	107	71
-	-	-	-	-	-	-	-	-	-	-	-	-	437	390	610	570	687	512	328	225	214	115	100	55
-	-	-	-	-	-	-	-	-	-	-	-	-	353	449	636	551	674	421	232	237	208	131	89	53

* Wednesday, March 07, 2007=24993, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
245	**136**	**86**	**47**	**45**	**164**	**446**	**1000**	**1363**	**1101**	**1062**	**1205**	**1271**	**1401**	**1543**	**2297**	**2361**	**2587**	**2117**	**1308**	**1105**	**1028**	**690**	**385**	
66	41	30	16	9	23	70	168	**260**	241	246	272	274	304	314	510	630	586	**593**	380	278	281	216	120	62
71	46	28	11	10	31	101	264	**313**	248	275	285	333	333	358	590	588	**699**	554	330	305	279	195	111	49
55	21	15	5	6	44	113	273	**413**	330	284	317	332	384	413	608	551	**650**	543	301	254	246	147	85	58
53	28	13	15	20	66	162	295	**377**	282	257	331	332	380	458	589	592	**652**	427	297	268	222	132	69	56

AM Peak 0800 - 0900 (1363), AM PHF=0.83 PM Peak 1715 - 1815 (2594), PM PHF=0.93

* Thursday, March 08, 2007=5104 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
225	**141**	**90**	**44**	**51**	**179**	**487**	**1363**	**1225**	**1299**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
62	40	24	11	11	27	78	232	266	441	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	42	16	12	8	36	105	381	244	329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58	33	32	8	16	44	134	418	335	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	26	18	13	16	72	170	332	380	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Data Service Southwest
Event Counts

EventCount-69 -- English (ENU)

Datasets:

Site:	**[08101] Montezuma Road - Btwn Fairmount Avenue & Collwood Blvd**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	12:25 Tuesday, March 06, 2007 => 9:55 Monday, March 12, 2007
File:	Z:\mcdata\LLG\2007\081\0810112Mar2007.EC0 (Plus)
Identifier:	M293M05F MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**13:00 Tuesday, March 06, 2007 => 10:00 Thursday, March 08, 2007**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 93108 / 133700 (69.64%)

*** Tuesday, March 06, 2007=13442 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1393**	**1738**	**1916**	**1577**	**1685**	**1555**	**1119**	**854**	**889**	**450**	**266**	
-	-	-	-	-	-	-	-	-	-	-	-	-	269	557	423	400	437	394	384	191	253	162	80	42
-	-	-	-	-	-	-	-	-	-	-	-	-	319	385	458	369	432	344	268	223	200	114	65	39
-	-	-	-	-	-	-	-	-	-	-	-	-	374	405	556	374	450	395	233	226	225	103	69	31
-	-	-	-	-	-	-	-	-	-	-	-	-	431	391	479	434	366	422	234	214	211	71	52	31

*** Wednesday, March 07, 2007=24823, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
143	**79**	**69**	**89**	**146**	**588**	**1525**	**2491**	**1833**	**1336**	**1108**	**1220**	**1377**	**1516**	**1449**	**1615**	**1485**	**1513**	**1620**	**1190**	**833**	**928**	**427**	**243**	
42	27	26	18	21	68	236	**572**	527	418	287	344	420	453	440	367	399	384	350	**404**	205	215	127	67	53
39	18	15	20	29	110	324	**633**	480	320	261	250	316	361	320	394	347	362	**402**	281	213	246	116	64	42
31	11	17	24	48	208	423	**645**	398	294	256	248	351	320	354	428	368	403	**404**	281	215	208	95	62	42
31	23	11	27	48	202	542	**641**	428	304	304	378	290	382	335	426	371	364	**464**	224	200	259	89	50	21

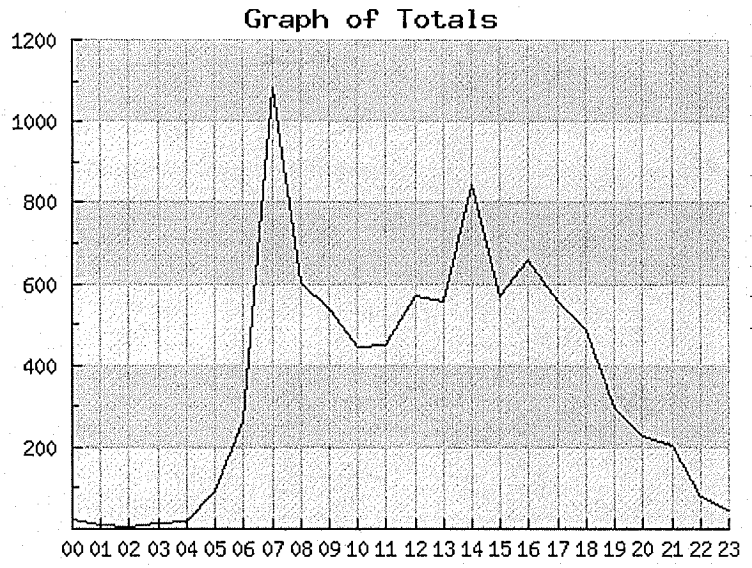
AM Peak 0700 - 0800 (2491), AM PHF=0.97 PM Peak 1815 - 1915 (1674), PM PHF=0.90

*** Thursday, March 08, 2007=8396 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
158	**107**	**74**	**91**	**141**	**553**	**1478**	**2432**	**1964**	**1398**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
53	40	23	21	9	63	233	563	593	363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	23	19	19	35	110	314	627	448	383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	19	15	24	49	202	416	646	481	349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	25	17	27	48	178	515	596	442	303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Weekly Vehicle Volume Report

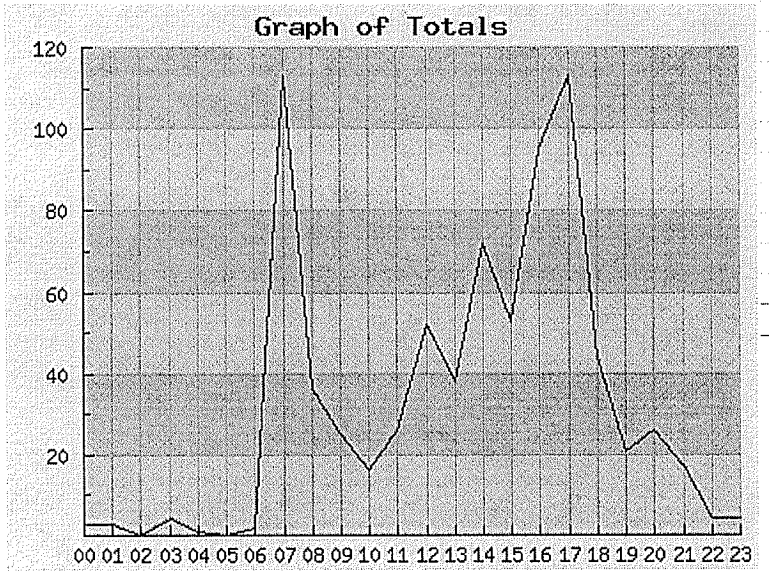
Location:
Del Cerro Blvd btwn Capri Dr and Vinley Pl
File Number: 64001
Counter ID: 6370
Direction: East Bound Volume
Report Duration:
Tuesday Sep 26, 2006 - 00:00 to
Monday Oct 02, 2006 - 23:59
Other Notes:
None at this time.



Time	Sun 10/01	Mon 10/02	Tue 9/26	Wed 9/27	Thu 9/28	Fri 9/29	Sat 9/30	7 Day Total
00:00 - 00:59	0	0	2	9	13	0	0	24
01:00 - 01:59	0	0	5	0	5	0	0	10
02:00 - 02:59	0	0	2	3	0	0	0	5
03:00 - 03:59	0	0	5	4	3	0	0	12
04:00 - 04:59	0	0	3	9	7	0	0	19
05:00 - 05:59	0	0	34	31	28	0	0	93
06:00 - 06:59	0	0	92	78	92	0	0	262
07:00 - 07:59	0	0	351	358	373	0	0	1082
08:00 - 08:59	0	0	204	199	200	0	0	603
09:00 - 09:59	0	0	166	194	179	0	0	539
10:00 - 10:59	0	0	166	144	133	0	0	443
11:00 - 11:59	0	0	153	145	150	0	0	448
12:00 - 12:59	0	0	130	283	157	0	0	570
13:00 - 13:59	0	0	153	219	184	0	0	556
14:00 - 14:59	0	0	334	188	322	0	0	844
15:00 - 15:59	0	0	194	189	189	0	0	572
16:00 - 16:59	0	0	198	259	202	0	0	659
17:00 - 17:59	0	0	185	212	160	0	0	557
18:00 - 18:59	0	0	149	192	146	0	0	487
19:00 - 19:59	0	0	108	84	104	0	0	296
20:00 - 20:59	0	0	53	74	102	0	0	229
21:00 - 21:59	0	0	107	59	40	0	0	206
22:00 - 22:59	0	0	30	16	35	0	0	81
23:00 - 23:59	0	0	11	19	15	0	0	45
Total	**0**	**0**	**2835**	**2968**	**2839**	**0**	**0**	**8642**
AM Peak Hour	0:00 0:59	0:00 0:59	7:30 8:29	7:00 7:59	7:00 7:59	0:00 0:59	0:00 0:59	
Volume	0	0	359	358	373	0	0	
PM Peak Hour	12:00 12:59	12:00 12:59	14:00 14:59	12:15 13:14	14:00 14:59	12:00 12:59	12:00 12:59	
Volume	0	0	334	312	322	0	0	

Weekly Vehicle Volume Report

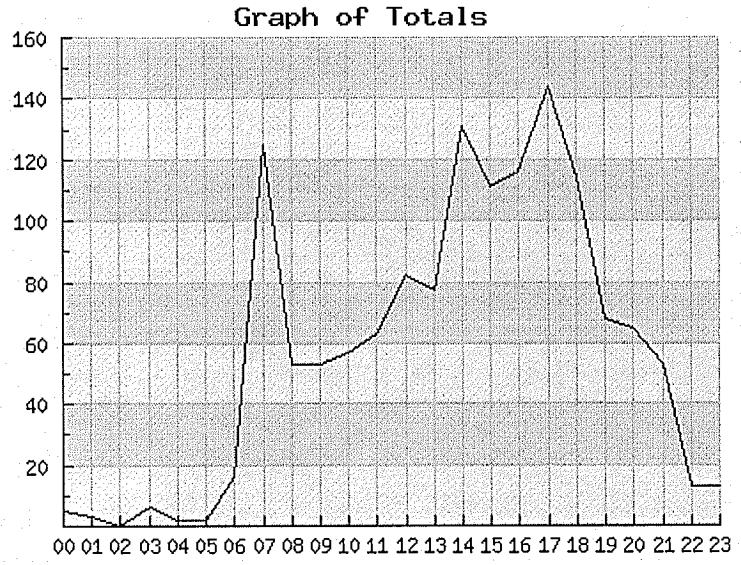
Location:
Rockhurst Dr btwn Lambda Dr and College Ave
File Number: 64002
Counter ID: N037
Direction: West Bound Volume
Report Duration:
Tuesday Sep 26, 2006 - 00:00 to
Monday Oct 02, 2006 - 23:59
Other Notes:
None at this time.



Time	Sun 10/01	Mon 10/02	Tue 9/26	Wed 9/27	Thu 9/28	Fri 9/29	Sat 9/30	7 Day Total
00:00 - 00:59	0	0	1	0	2	0	0	3
01:00 - 01:59	0	0	2	1	0	0	0	3
02:00 - 02:59	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	3	1	0	0	0	4
04:00 - 04:59	0	0	0	0	1	0	0	1
05:00 - 05:59	0	0	0	0	0	0	0	0
06:00 - 06:59	0	0	1	0	1	0	0	2
07:00 - 07:59	0	0	36	41	36	0	0	113
08:00 - 08:59	0	0	8	15	13	0	0	36
09:00 - 09:59	0	0	10	10	5	0	0	25
10:00 - 10:59	0	0	6	5	5	0	0	16
11:00 - 11:59	0	0	12	8	6	0	0	26
12:00 - 12:59	0	0	7	36	9	0	0	52
13:00 - 13:59	0	0	16	10	12	0	0	38
14:00 - 14:59	0	0	26	8	38	0	0	72
15:00 - 15:59	0	0	21	15	17	0	0	53
16:00 - 16:59	0	0	25	31	39	0	0	95
17:00 - 17:59	0	0	31	47	35	0	0	113
18:00 - 18:59	0	0	21	12	11	0	0	44
19:00 - 19:59	0	0	8	8	5	0	0	21
20:00 - 20:59	0	0	8	8	10	0	0	26
21:00 - 21:59	0	0	8	6	3	0	0	17
22:00 - 22:59	0	0	4	0	0	0	0	4
23:00 - 23:59	0	0	1	1	2	0	0	4
Total	**0**	**0**	**255**	**263**	**250**	**0**	**0**	**768**
AM Peak Hour	0:00 0:59	0:00 0:59	7:15 8:14	7:15 8:14	7:15 8:14	0:00 0:59	0:00 0:59	
Volume	0	0	39	43	37	0	0	
PM Peak Hour	12:00 12:59	12:00 12:59	13:45 14:44	16:45 17:44	16:15 17:14	12:00 12:59	12:00 12:59	
Volume	0	0	36	51	41	0	0	

Weekly Vehicle Volume Report

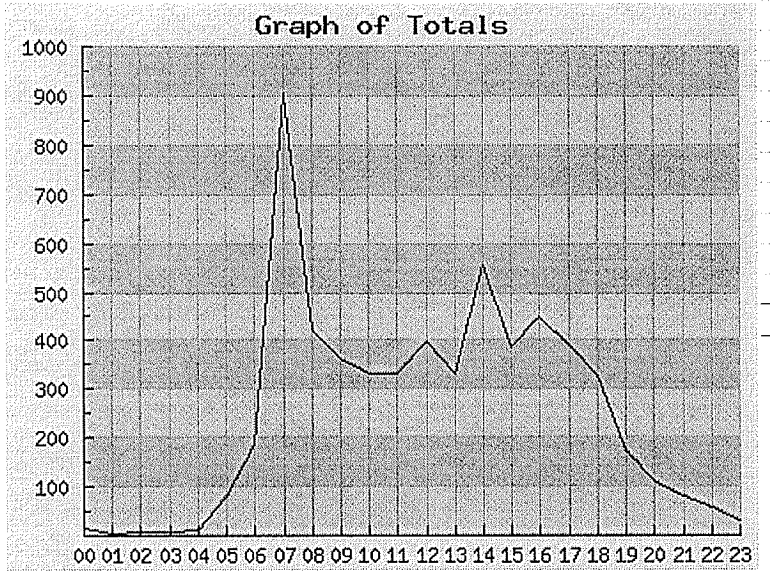
Location:
Lambda Dr btwn Theta Pl and Vinley Pl
File Number: 64003
Counter ID: N036
Direction: West Bound Volume
Report Duration:
Tuesday Sep 26, 2006 - 00:00 to
Monday Oct 02, 2006 - 23:59
Other Notes:
None at this time.



Time	Sun 10/01	Mon 10/02	Tue 9/26	Wed 9/27	Thu 9/28	Fri 9/29	Sat 9/30	7 Day Total
00:00 - 00:59	0	0	2	2	1	0	0	5
01:00 - 01:59	0	0	0	0	3	0	0	3
02:00 - 02:59	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	2	1	3	0	0	6
04:00 - 04:59	0	0	0	1	1	0	0	2
05:00 - 05:59	0	0	0	1	1	0	0	2
06:00 - 06:59	0	0	3	3	10	0	0	16
07:00 - 07:59	0	0	41	34	50	0	0	125
08:00 - 08:59	0	0	13	19	21	0	0	53
09:00 - 09:59	0	0	20	21	12	0	0	53
10:00 - 10:59	0	0	22	19	16	0	0	57
11:00 - 11:59	0	0	18	24	21	0	0	63
12:00 - 12:59	0	0	29	37	16	0	0	82
13:00 - 13:59	0	0	35	22	20	0	0	77
14:00 - 14:59	0	0	52	26	53	0	0	131
15:00 - 15:59	0	0	44	36	31	0	0	111
16:00 - 16:59	0	0	40	43	33	0	0	116
17:00 - 17:59	0	0	42	56	46	0	0	144
18:00 - 18:59	0	0	41	37	36	0	0	114
19:00 - 19:59	0	0	18	24	26	0	0	68
20:00 - 20:59	0	0	14	26	25	0	0	65
21:00 - 21:59	0	0	15	18	20	0	0	53
22:00 - 22:59	0	0	8	4	1	0	0	13
23:00 - 23:59	0	0	2	8	3	0	0	13
Total	**0**	**0**	**461**	**462**	**449**	**0**	**0**	**1372**
AM Peak Hour	0:00 0:59	0:00 0:59	7:00 7:59	7:00 7:59	7:00 7:59	0:00 0:59	0:00 0:59	
Volume	0	0	41	34	50	0	0	
PM Peak Hour	12:00 12:59	12:00 12:59	13:45 14:44	17:00 17:59	14:00 14:59	12:00 12:59	12:00 12:59	
Volume	0	0	52	56	53	0	0	

Weekly Vehicle Volume Report

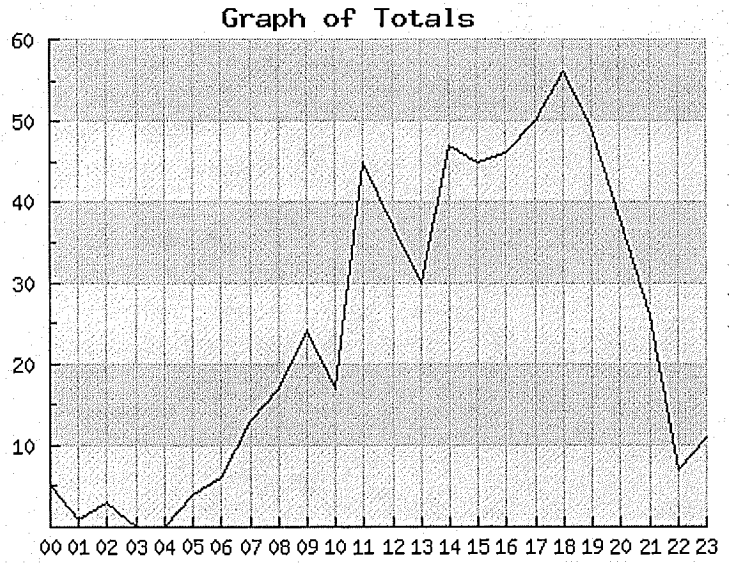
Location:
Del Cerro Blvd btwn Theta Pl and Capri Dr
File Number: 64004
Counter ID: 6411
Direction: East Bound Volume
Report Duration:
Tuesday Sep 26, 2006 - 00:00 to
Monday Oct 02, 2006 - 23:59
Other Notes:
None at this time.



Time	Sun 10/01	Mon 10/02	Tue 9/26	Wed 9/27	Thu 9/28	Fri 9/29	Sat 9/30	7 Day Total
00:00 - 00:59	0	0	2	6	9	0	0	17
01:00 - 01:59	0	0	2	0	3	0	0	5
02:00 - 02:59	0	0	2	3	1	0	0	6
03:00 - 03:59	0	0	3	3	2	0	0	8
04:00 - 04:59	0	0	1	4	5	0	0	10
05:00 - 05:59	0	0	29	25	26	0	0	80
06:00 - 06:59	0	0	62	59	64	0	0	185
07:00 - 07:59	0	0	286	309	309	0	0	904
08:00 - 08:59	0	0	149	129	144	0	0	422
09:00 - 09:59	0	0	113	129	120	0	0	362
10:00 - 10:59	0	0	121	109	102	0	0	332
11:00 - 11:59	0	0	107	106	120	0	0	333
12:00 - 12:59	0	0	87	211	101	0	0	399
13:00 - 13:59	0	0	88	113	130	0	0	331
14:00 - 14:59	0	0	220	117	220	0	0	557
15:00 - 15:59	0	0	135	114	137	0	0	386
16:00 - 16:59	0	0	141	159	148	0	0	448
17:00 - 17:59	0	0	138	128	124	0	0	390
18:00 - 18:59	0	0	86	135	107	0	0	328
19:00 - 19:59	0	0	53	54	66	0	0	173
20:00 - 20:59	0	0	29	38	45	0	0	112
21:00 - 21:59	0	0	36	31	14	0	0	81
22:00 - 22:59	0	0	23	12	22	0	0	57
23:00 - 23:59	0	0	8	11	10	0	0	29
Total	**0**	**0**	**1921**	**2005**	**2029**	**0**	**0**	**5955**
AM Peak Hour	0:00 0:59	0:00 0:59	7:15 8:14	7:00 7:59	7:00 7:59	0:00 0:59	0:00 0:59	
Volume	0	0	295	309	309	0	0	
PM Peak Hour	12:00 12:59	12:00 12:59	14:15 15:14	12:00 12:59	14:00 14:59	12:00 12:59	12:00 12:59	
Volume	0	0	224	211	220	0	0	

Weekly Vehicle Volume Report

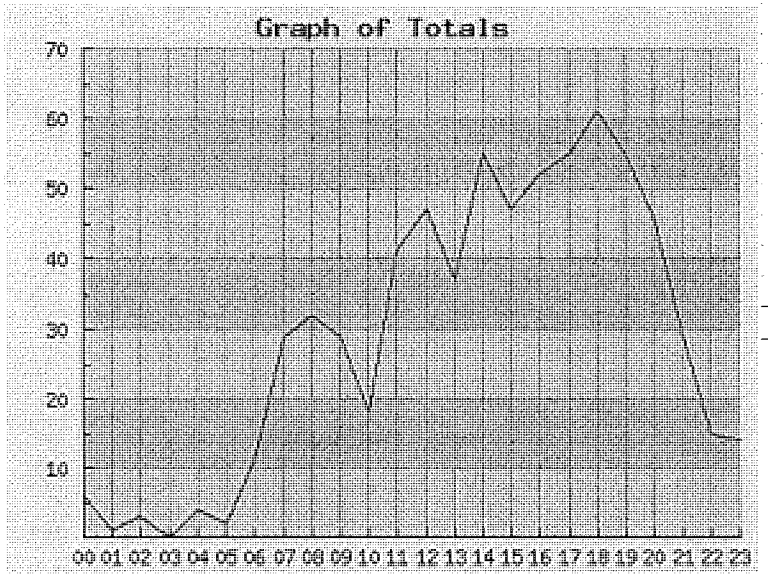
Location:
Mill Peak Rd n/o Genoa Dr
File Number: 64009
Counter ID: N116
Direction: North Bound Volume
Report Duration:
Tuesday Sep 26, 2006 - 00:00 to
Monday Oct 02, 2006 - 23:59
Other Notes:
None at this time.



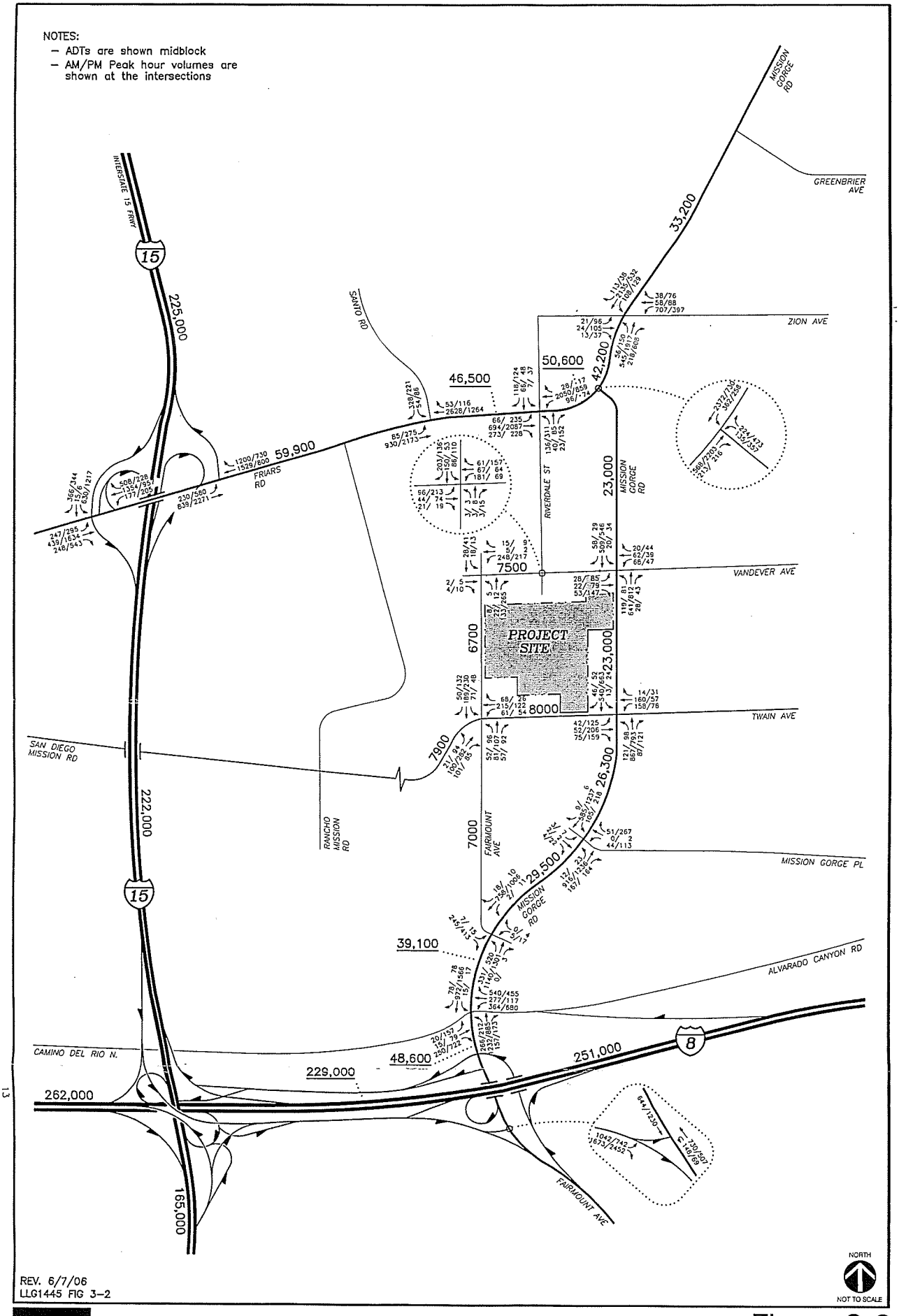
Time	Sun 10/01	Mon 10/02	Tue 9/26	Wed 9/27	Thu 9/28	Fri 9/29	Sat 9/30	7 Day Total
00:00 - 00:59	0	0	1	2	2	0	0	5
01:00 - 01:59	0	0	0	0	1	0	0	1
02:00 - 02:59	0	0	0	1	2	0	0	3
03:00 - 03:59	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0
05:00 - 05:59	0	0	1	1	2	0	0	4
06:00 - 06:59	0	0	2	3	1	0	0	6
07:00 - 07:59	0	0	6	2	5	0	0	13
08:00 - 08:59	0	0	4	3	10	0	0	17
09:00 - 09:59	0	0	9	6	9	0	0	24
10:00 - 10:59	0	0	3	9	5	0	0	17
11:00 - 11:59	0	0	12	13	20	0	0	45
12:00 - 12:59	0	0	10	16	11	0	0	37
13:00 - 13:59	0	0	9	9	12	0	0	30
14:00 - 14:59	0	0	16	12	19	0	0	47
15:00 - 15:59	0	0	16	9	20	0	0	45
16:00 - 16:59	0	0	14	12	20	0	0	46
17:00 - 17:59	0	0	15	20	15	0	0	50
18:00 - 18:59	0	0	17	20	19	0	0	56
19:00 - 19:59	0	0	16	18	15	0	0	49
20:00 - 20:59	0	0	10	18	10	0	0	38
21:00 - 21:59	0	0	7	7	12	0	0	26
22:00 - 22:59	0	0	3	2	2	0	0	7
23:00 - 23:59	0	0	1	5	5	0	0	11
Total	**0**	**0**	**172**	**188**	**217**	**0**	**0**	**577**
AM Peak Hour	0:00 0:59	0:00 0:59	11:00 11:59	11:00 11:59	11:00 11:59	0:00 0:59	0:00 0:59	
Volume	0	0	12	13	20	0	0	
PM Peak Hour	12:00 12:59	12:00 12:59	17:30 18:29	17:15 18:14	16:15 17:14	12:00 12:59	12:00 12:59	
Volume	0	0	19	22	21	0	0	

Weekly Vehicle Volume Report

Location:
Genoa Dr btwn Capri Dr and Arno Dr
File Number: 64007
Counter ID: N026
Direction: South Bound Volume
Report Duration:
Tuesday Sep 26, 2006 - 00:00 to
Monday Oct 02, 2006 - 23:59
Other Notes:
None at this time.



Time	Sun 10/01	Mon 10/02	Tue 9/26	Wed 9/27	Thu 9/28	Fri 9/29	Sat 9/30	7 Day Total
00:00 - 00:59	0	0	1	2	3	0	0	6
01:00 - 01:59	0	0	0	0	1	0	0	1
02:00 - 02:59	0	0	0	1	2	0	0	3
03:00 - 03:59	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	1	3	0	0	0	4
05:00 - 05:59	0	0	0	0	2	0	0	2
06:00 - 06:59	0	0	4	1	6	0	0	11
07:00 - 07:59	0	0	11	13	5	0	0	29
08:00 - 08:59	0	0	9	7	16	0	0	32
09:00 - 09:59	0	0	11	8	10	0	0	29
10:00 - 10:59	0	0	5	9	4	0	0	18
11:00 - 11:59	0	0	12	12	17	0	0	41
12:00 - 12:59	0	0	16	19	12	0	0	47
13:00 - 13:59	0	0	9	11	17	0	0	37
14:00 - 14:59	0	0	26	13	16	0	0	55
15:00 - 15:59	0	0	17	13	17	0	0	47
16:00 - 16:59	0	0	15	16	21	0	0	52
17:00 - 17:59	0	0	22	21	12	0	0	55
18:00 - 18:59	0	0	21	20	20	0	0	61
19:00 - 19:59	0	0	19	22	14	0	0	55
20:00 - 20:59	0	0	10	16	20	0	0	46
21:00 - 21:59	0	0	6	9	14	0	0	29
22:00 - 22:59	0	0	7	3	5	0	0	15
23:00 - 23:59	0	0	1	8	5	0	0	14
Total	**0**	**0**	**223**	**227**	**239**	**0**	**0**	**689**
AM Peak Hour	0:00 0:59	0:00 0:59	7:30 8:29	7:00 7:59	11:00 11:59	0:00 0:59	0:00 0:59	
Volume	0	0	15	13	17	0	0	
PM Peak Hour	12:00 12:59	12:00 12:59	17:30 18:29	18:15 19:14	15:45 16:44	12:00 12:59	12:00 12:59	
Volume	0	0	27	23	23	0	0	



REV. 6/7/06
LLG1445 FIG 3-2

LINSCOTT LAW & GREENSPAN engineers

Figure 3-2

Existing Traffic Volumes AM/PM Peak Hours & ADT

Centerpointe at Grantville

CITY OF SAN DIEGO - TRAFFIC ENGINEERING

Machine Count Traffic Volumes - City Streets

All From Dates 1/1/2003 to 10/31/2006

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION		WK-DAY VOLUME	STARTING DATE	FILE NUMBER
FAIRMOUNT AV	[CHOLLAS PY - RDG VW DR]	01850 - 02000	3212	*TOTAL	:	8180		
FAIRMOUNT AV	[HOME AV - LAUREL ST]	02300 - 02500	3210	SOUTH	:	10170	4/27/2004	0394-04
				NORTH	:	9300	4/30/2004	0393-04
FAIRMOUNT AV	[POPLAR ST - MANZANITA PL]	03100 - 03200	3213	SOUTH	:	9650	4/8/2004	0315-04
				NORTH	:	7820	4/9/2004	0314-04
FAIRMOUNT AV	[LANDIS ST - WIGHTMAN ST]	03700 - 03800	NONE	NORTH	:	5470	4/13/2004	0354-04
			3214	NORTH	:	8250	5/9/2006	0218-06
				SOUTH	:	5530	5/9/2006	0218-06
				*TOTAL	:	13780		
FAIRMOUNT AV	[WIGHTMAN ST - UNIVERSITY AV]	03800 - 04000	3302	NORTH	:	6340	4/13/2004	0352-04
				SOUTH	:	6340	4/13/2004	0353-04
				*TOTAL	:	12680		
FAIRMOUNT AV	[POLK AV - ORANGE AV]	04100 - 04200	3300	NORTH	:	8930	4/19/2005	0233-05
				SOUTH	:	3560	4/19/2005	0233-05
				*TOTAL	:	12490		
FAIRMOUNT AV	[ORANGE AV - EL CAJON BL]	04200 - 04300	3301	BOTH	:	10780	4/13/2004	0351-04
FAIRMOUNT AV	[43 ST (N) - ALDINE DR]	04400 - 04700	3452	NORTH	:	9910	4/28/2005	0251-05
				SOUTH	:	9270	4/28/2005	0251-05
				*TOTAL	:	19180		
FAIRMOUNT AV	[ALDINE DR - MONTEZUMA RD]	04700 - 05100	3451	NORTH	:	20350	4/28/2005	0250-05
				SOUTH	:	18780	4/28/2005	0250-05
				*TOTAL	:	39130		
FAIRMOUNT AV	[MONTEZUMA RD - CAM RIO S]	05100 - 05400	3454	NORTH	:	42420	4/28/2005	0252-05
				SOUTH	:	36800	4/28/2005	0252-05
				*TOTAL	:	79220		
FAIRMOUNT AV	[MSS GORGE RD - SN DIEGO MSS RD]	05800 - 06100	3455	NORTH	:	5090	5/11/2006	0110-06
				SOUTH	:	5000	5/11/2006	0110-06
				*TOTAL	:	10090		

2005 CALTRANS COUNTS

District	Route	County	Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
11	8	SD	6.27	SAN DIEGO, FAIRMONT AVENUE	16900	231000	229000	18600	253000	251000
11	8	SD	7.06	SAN DIEGO, WARING ROAD	18600	253000	251000	17700	238000	238000
11	8	SD	8.34	SAN DIEGO, COLLEGE AVENUE	17700	238000	238000	16000	216000	214000
11	8	SD	9.59	LA MESA, LAKE MURRAY BOULEVARD	16000	216000	214000	15100	203000	201000
11	8	SD	10.57	LA MESA, FLETCHER PARKWAY	15100	203000	201000	13900	187000	185000

APPENDIX G

EXISTING INTERSECTION, RAMP METER, & FREEWAY ANALYSIS CALCULATION SHEETS

1: Camino del Rio N & Fairmount Ave

Ex AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1583	1610	2981	1441	1770	3450		3433	3539	1464
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1583	1610	2981	1441	1770	3450		3433	3539	1464
Volume (vph)	20	15	250	364	277	540	266	1232	157	15	972	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	16	272	396	301	587	289	1339	171	16	1057	85
RTOR Reduction (vph)	0	0	217	0	19	405	0	5	0	0	0	32
Lane Group Flow (vph)	22	16	55	280	553	27	289	1505	0	16	1057	53
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	5.2	5.2	30.5	37.2	37.2	10.1	30.5	91.5		10.1	71.1	71.1
Effective Green, g (s)	5.2	5.2	30.5	37.2	37.2	10.1	30.5	91.5		10.1	71.1	71.1
Actuated g/C Ratio	0.03	0.03	0.19	0.23	0.23	0.06	0.19	0.57		0.06	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	55	58	302	374	693	91	337	1973		217	1573	651
v/s Ratio Prot	c0.01	0.01	c0.17	0.17	c0.19	c0.30	0.16	c0.44		0.00	0.30	
v/s Ratio Perm												0.06
v/c Ratio	0.40	0.28	0.18	0.75	0.80	0.30	0.86	0.76		0.07	0.67	0.08
Uniform Delay, d1	75.9	75.6	54.3	57.1	57.9	71.6	62.6	26.0		70.5	35.2	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.09		1.00	1.00	1.00
Incremental Delay, d2	4.7	2.6	0.3	8.0	6.4	1.9	16.1	2.4		0.1	2.3	0.2
Delay (s)	80.6	78.1	54.6	65.0	64.2	73.4	81.1	30.8		70.7	37.5	25.9
Level of Service	F	E	D	E	E	E	F	C		E	D	C
Approach Delay (s)		57.6			67.5			38.9			37.1	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	47.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

Ex AM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	1042	1673	148	0	730	644	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1133	1818	161	0	793	700	0
RTOR Reduction (vph)	0	143	0	0	0	0	0
Lane Group Flow (vph)	1133	1675	161	0	793	700	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	90.0	90.0	19.4		62.0	38.6	
Effective Green, g (s)	90.0	90.0	19.4		62.0	38.6	
Actuated g/C Ratio	0.56	0.56	0.12		0.39	0.24	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1931	1891	215		1371	1227	
v/s Ratio Prot	0.33		c0.09		c0.22	0.14	
v/s Ratio Perm		0.54					
v/c Ratio	0.59	0.89	0.75		0.58	0.57	
Uniform Delay, d1	22.9	30.5	67.9		38.7	53.4	
Progression Factor	1.00	1.00	1.00		1.00	0.98	
Incremental Delay, d2	0.5	5.4	13.3		1.8	1.5	
Delay (s)	23.3	35.9	81.3		40.5	53.9	
Level of Service	C	D	F		D	D	
Approach Delay (s)	31.1				47.4	53.9	
Approach LOS	C				D	D	

Intersection Summary

HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3388	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3388	
Volume (vph)	38	65	50	658	138	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	71	54	715	150	16
RTOR Reduction (vph)	0	0	0	240	5	0
Lane Group Flow (vph)	41	71	54	475	161	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	4.1	12.3	4.2	40.3	40.3	
Effective Green, g (s)	4.1	12.3	4.2	40.3	40.3	
Actuated g/C Ratio	0.07	0.20	0.07	0.67	0.67	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	120	378	129	1053	2253	
v/s Ratio Prot	c0.02	0.04	c0.03	c0.45	0.05	
v/s Ratio Perm						
v/c Ratio	0.34	0.19	0.42	0.45	0.07	
Uniform Delay, d1	27.0	20.0	27.0	4.9	3.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.2	2.2	1.4	0.1	
Delay (s)	28.7	20.3	29.2	6.3	3.6	
Level of Service	C	C	C	A	A	
Approach Delay (s)		23.3	7.9		3.6	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		0.95	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96			0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3501		1680	3335			1737		1681	1694	1454
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3501		1680	3335			1737		1681	1694	1454
Volume (vph)	867	378	16	10	703	246	38	6	8	110	6	125
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	942	411	17	11	764	267	41	7	9	120	7	136
RTOR Reduction (vph)	0	3	0	0	34	0	0	7	0	0	0	115
Lane Group Flow (vph)	942	425	0	11	997	0	0	50	0	62	65	21
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	25.0	54.4		0.8	30.2			16.0		16.0	16.0	16.0
Effective Green, g (s)	25.0	54.4		0.8	30.2			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.53		0.01	0.29			0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	832	1845		13	976			269		261	263	225
v/s Ratio Prot	c0.27	0.12		0.01	c0.31			c0.03		0.04	0.04	
v/s Ratio Perm												0.09
v/c Ratio	1.13	0.23		0.85	1.02			0.19		0.24	0.25	0.09
Uniform Delay, d1	39.1	13.1		51.1	36.5			37.9		38.2	38.3	37.4
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	74.3	0.1		166.4	34.4			1.5		2.1	2.2	0.8
Delay (s)	113.4	13.2		217.6	70.9			39.5		40.4	40.5	38.2
Level of Service	F	B		F	E			D		D	D	D
Approach Delay (s)		82.1			72.4			39.5			39.3	
Approach LOS		F			E			D			D	

Intersection Summary

HCM Average Control Delay	73.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

Ex AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3532		1770	3412			1578		1681	1715	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3532		1770	3412			1578		1681	1715	1583
Volume (vph)	75	380	3	36	1042	166	14	10	61	32	7	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	413	3	39	1133	180	15	11	66	35	8	82
RTOR Reduction (vph)	0	1	0	0	13	0	0	55	0	0	0	77
Lane Group Flow (vph)	82	415	0	39	1300	0	0	37	0	21	22	5
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	6.0	43.0		3.4	40.4			16.3		16.3	16.3	6.0
Effective Green, g (s)	6.0	43.0		3.4	40.4			16.3		16.3	16.3	6.0
Actuated g/C Ratio	0.06	0.45		0.04	0.43			0.17		0.17	0.17	0.06
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	112	1599		63	1451			271		288	294	100
v/s Ratio Prot	0.05	c0.12		0.02	c0.38			c0.06		0.01	c0.01	c0.05
v/s Ratio Perm												
v/c Ratio	0.73	0.26		0.62	0.90			0.14		0.07	0.07	0.05
Uniform Delay, d1	43.7	16.1		45.2	25.3			33.4		33.0	33.0	41.8
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	21.7	0.1		16.7	7.6			1.1		0.5	0.5	0.2
Delay (s)	65.4	16.2		61.9	32.9			34.4		33.5	33.5	42.0
Level of Service	E	B		E	C			C		C	C	D
Approach Delay (s)		24.3			33.7			34.4			39.1	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

Ex AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1836	1583	1681	1657		1770	3539	1583	1770	3516	
Flt Permitted		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1836	1583	1681	1657		1770	3539	1583	1770	3516	
Volume (vph)	118	281	190	523	104	64	85	494	225	70	823	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	305	207	568	113	70	92	537	245	76	895	24
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	192	0	1	0
Lane Group Flow (vph)	0	433	207	378	365	0	92	537	53	76	918	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Effective Green, g (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Actuated g/C Ratio		0.23	0.13	0.22	0.22		0.13	0.33	0.22	0.07	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		431	200	364	359		224	1185	343	123	977	
v/s Ratio Prot		c0.24	c0.13	0.22	c0.23		0.05	0.15	0.15	0.04	c0.26	
v/s Ratio Perm												
v/c Ratio		1.00	1.03	1.04	1.02		0.41	0.45	0.15	0.62	0.94	
Uniform Delay, d1		42.4	48.4	43.4	43.4		44.6	28.9	35.2	50.1	39.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		44.5	73.1	57.5	51.9		1.2	1.3	0.2	8.9	17.4	
Delay (s)		86.9	121.5	100.9	95.3		45.8	30.1	35.4	59.0	56.5	
Level of Service		F	F	F	F		D	C	D	E	E	
Approach Delay (s)		98.1			98.1			33.3			56.7	
Approach LOS		F			F			C			E	

Intersection Summary

HCM Average Control Delay	68.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

7: I-8WB Ramp & College Ave

Ex AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	418	0	103	0	731	499	0	626	910
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	454	0	112	0	795	542	0	680	989
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	454	0	112	0	795	542	0	680	989
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				17.1		100.0		74.9	100.0		74.9	100.0
Effective Green, g (s)				17.1		100.0		74.9	100.0		74.9	100.0
Actuated g/C Ratio				0.17		1.00		0.75	1.00		0.75	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				565		1555		2651	1536		2651	1536
v/s Ratio Prot								0.22			0.19	
v/s Ratio Perm				0.14		0.07			0.35			0.64
v/c Ratio				0.80		0.07		0.30	0.35		0.26	0.64
Uniform Delay, d1				39.8		0.0		4.1	0.0		3.9	0.0
Progression Factor				1.00		1.00		1.47	1.00		1.00	1.00
Incremental Delay, d2				8.1		0.1		0.3	0.6		0.2	2.1
Delay (s)				48.0		0.1		6.2	0.6		4.1	2.1
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			38.5			3.9			2.9	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

8: I-8EB Ramp & College Ave

Ex AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	- 0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	434	0	1728	0	0	0	0	796	211	0	743	301
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	0	1878	0	0	0	0	865	229	0	808	327
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	472	0	1770	0	0	0	0	865	229	0	808	327
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					1593	1536		1593	1536
v/s Ratio Prot								c0.24			0.23	
v/s Ratio Perm	0.14		0.55						0.15			0.21
v/c Ratio	0.30		1.10					0.54	0.15		0.51	0.21
Uniform Delay, d1	16.4		26.5					20.0	0.0		19.6	0.0
Progression Factor	1.00		1.00					0.60	1.00		0.81	1.00
Incremental Delay, d2	0.1		53.7					0.9	0.1		1.1	0.3
Delay (s)	16.5		80.2					12.9	0.1		17.0	0.3
Level of Service	B		F					B	A		B	A
Approach Delay (s)		67.4			0.0			10.3			12.2	
Approach LOS		E			A			B			B	

Intersection Summary

HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

9: Canyon Crest Dr & College Ave

Ex AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1799	1506		1827	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1799	1506		1827	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	62	26	32	69	109	141	154	804	51	472	1117	882
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	28	35	75	118	153	167	874	55	513	1214	959
RTOR Reduction (vph)	0	0	31	0	0	109	0	0	39	0	0	853
Lane Group Flow (vph)	0	95	4	0	193	44	167	874	16	513	1214	106
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		11.1	11.1		15.3	29.0	15.8	28.6	28.6	29.0	41.8	11.1
Effective Green, g (s)		11.1	11.1		15.3	29.0	15.8	28.6	28.6	29.0	41.8	11.1
Actuated g/C Ratio		0.11	0.11		0.15	0.29	0.16	0.29	0.29	0.29	0.42	0.11
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		200	167		280	459	280	1012	431	996	2126	309
v/s Ratio Prot		0.05			c0.11	0.10	c0.09	c0.25		0.15	c0.24	c0.34
v/s Ratio Perm			0.02						0.04			
v/c Ratio		0.48	0.02		0.69	0.10	0.60	0.86	0.04	0.52	0.57	0.34
Uniform Delay, d1		41.7	39.6		40.1	25.9	39.1	33.9	25.8	29.6	22.2	41.1
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.87	0.83	4.34
Incremental Delay, d2		1.8	0.1		6.9	0.1	3.4	9.7	0.2	0.2	0.4	0.3
Delay (s)		43.5	39.7		47.0	26.0	42.5	43.6	25.9	25.9	18.9	178.7
Level of Service		D	D		D	C	D	D	C	C	B	F
Approach Delay (s)		42.5			37.7			42.5			77.3	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	64.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

10: Zura Way & College Ave

Ex AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	94	867	86	489	955
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	102	942	93	532	1038
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2544	511			1056	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2544	511			1056	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	79			17	
cM capacity (veh/h)	4	491			644	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	102	471	471	93	532	519	519
Volume Left	0	0	0	0	532	0	0
Volume Right	102	0	0	93	0	0	0
cSH	491	1700	1700	1700	644	1700	1700
Volume to Capacity	0.21	0.28	0.28	0.05	0.83	0.31	0.31
Queue Length 95th (ft)	19	0	0	0	218	0	0
Control Delay (s)	14.3	0.0	0.0	0.0	31.4	0.0	0.0
Lane LOS	B				D		
Approach Delay (s)	14.3	0.0			10.6		
Approach LOS	B						

Intersection Summary

Average Delay	6.7		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1459	1770	3539	1466	3433	3427		1770	3539	1470
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1459	1770	3539	1466	3433	3427		1770	3539	1470
Volume (vph)	173	259	109	28	545	153	424	820	139	93	322	138
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	282	118	30	592	166	461	891	151	101	350	150
RTOR Reduction (vph)	0	0	98	0	0	129	0	12	0	0	0	108
Lane Group Flow (vph)	188	282	20	30	592	37	461	1030	0	101	350	42
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	14.7	14.7	14.7	19.5	19.5	19.5	13.1	28.1		9.3	24.3	24.3
Effective Green, g (s)	14.7	14.7	14.7	19.5	19.5	19.5	13.1	28.1		9.3	24.3	24.3
Actuated g/C Ratio	0.17	0.17	0.17	0.22	0.22	0.22	0.15	0.32		0.11	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	297	594	245	394	788	326	513	1099		188	982	408
v/s Ratio Prot	c0.11	0.08		0.02	c0.17		c0.13	c0.30		0.06	0.10	
v/s Ratio Perm			0.08			0.11						0.10
v/c Ratio	0.63	0.47	0.08	0.08	0.75	0.11	0.90	0.94		0.54	0.36	0.10
Uniform Delay, d1	33.9	33.0	30.8	26.9	31.8	27.2	36.6	28.9		37.1	25.4	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.4	0.6	0.1	0.1	4.1	0.2	18.3	15.7		2.9	1.0	0.5
Delay (s)	38.3	33.6	30.9	27.0	35.8	27.3	54.9	44.6		40.0	26.4	24.0
Level of Service	D	C	C	C	D	C	D	D		D	C	C
Approach Delay (s)		34.5			33.7			47.7			28.1	
Approach LOS		C			C			D			C	

Intersection Summary

HCM Average Control Delay	38.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	238	58	33	322	16	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	259	63	36	350	17	3
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			332		732	310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			332		732	310
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		95	100
cM capacity (veh/h)			1217		371	718

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	322	386	17	3
Volume Left	0	36	17	0
Volume Right	63	0	0	3
cSH	1700	1217	371	718
Volume to Capacity	0.19	0.03	0.05	0.00
Queue Length 95th (ft)	0	2	4	0
Control Delay (s)	0.0	1.0	15.2	10.0
Lane LOS		A	C	B
Approach Delay (s)	0.0	1.0	14.4	
Approach LOS			B	

Intersection Summary

Average Delay	0.9		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1714		1770	1863	1770	1543
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1714		1770	1863	1770	1543
Volume (vph)	89	71	158	393	107	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	77	172	427	116	72
RTOR Reduction (vph)	37	0	0	0	0	39
Lane Group Flow (vph)	137	0	172	427	116	33
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	10.9		9.2	24.1	26.7	26.7
Effective Green, g (s)	10.9		9.2	24.1	26.7	26.7
Actuated g/C Ratio	0.19		0.16	0.41	0.45	0.45
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318		277	764	804	701
v/s Ratio Prot	0.10		0.10	c0.23	c0.07	
v/s Ratio Perm						0.05
v/c Ratio	0.43		0.62	0.56	0.14	0.05
Uniform Delay, d1	21.2		23.2	13.3	9.4	9.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		4.3	0.9	0.4	0.1
Delay (s)	22.2		27.4	14.2	9.8	9.1
Level of Service	C		C	B	A	A
Approach Delay (s)	22.2			18.0	9.5	
Approach LOS	C			B	A	

Intersection Summary

HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.95		1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1522	1770	1754		1770	4832		1770	3532	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1522	1770	1754		1770	4832		1770	3532	
Volume (vph)	30	11	178	247	65	31	101	564	193	27	1221	12
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	12	193	268	71	34	110	613	210	29	1327	13
RTOR Reduction (vph)	0	0	177	0	18	0	0	45	0	0	1	0
Lane Group Flow (vph)	0	45	16	268	87	0	110	778	0	29	1339	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		6.3	6.3	15.5	15.5		7.7	34.2		2.8	29.3	
Effective Green, g (s)		6.3	6.3	15.5	15.5		7.7	34.2		2.8	29.3	
Actuated g/C Ratio		0.08	0.08	0.21	0.21		0.10	0.46		0.04	0.39	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		151	128	367	363		182	2209		66	1384	
v/s Ratio Prot		0.03		c0.15	0.06		c0.06	0.17		0.02	c0.38	
v/s Ratio Perm			0.13									
v/c Ratio		0.30	0.13	0.73	0.24		0.60	0.35		0.44	0.97	
Uniform Delay, d1		32.2	31.7	27.7	24.7		32.1	13.1		35.2	22.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1	0.4	7.3	0.3		5.6	0.4		4.6	17.6	
Delay (s)		33.3	32.2	35.0	25.1		37.7	13.6		39.9	39.9	
Level of Service		C	C	C	C		D	B		D	D	
Approach Delay (s)		32.4			32.2			16.4			39.9	
Approach LOS		C			C			B			D	

Intersection Summary

HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3408		3433	1863	2787	1770	3539	1531	1770	3539	1530
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3408		3433	1863	2787	1770	3539	1531	1770	3539	1530
Volume (vph)	77	104	25	339	215	323	143	1004	333	120	383	316
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	113	27	368	234	351	155	1091	362	130	416	343
RTOR Reduction (vph)	0	18	0	0	0	310	0	0	184	0	0	187
Lane Group Flow (vph)	84	122	0	368	234	41	155	1091	178	130	416	156
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.0	9.0		17.8	17.8	12.2	13.6	48.5	48.5	12.2	47.1	47.1
Effective Green, g (s)	9.0	9.0		17.8	17.8	12.2	13.6	48.5	48.5	12.2	47.1	47.1
Actuated g/C Ratio	0.09	0.09		0.17	0.17	0.12	0.13	0.47	0.47	0.12	0.46	0.46
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	299	296		590	320	329	233	1658	717	209	1611	696
v/s Ratio Prot	0.02	c0.04		0.11	c0.13	c0.13	0.09	c0.31		0.07	0.12	
v/s Ratio Perm									0.24			0.22
v/c Ratio	0.28	0.41		0.62	0.73	0.13	0.67	0.66	0.25	0.62	0.26	0.22
Uniform Delay, d1	44.2	44.7		39.7	40.6	40.9	42.8	21.1	16.5	43.5	17.4	17.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9		2.1	8.3	0.2	7.0	2.1	0.8	5.7	0.4	0.7
Delay (s)	44.7	45.7		41.8	48.9	41.0	49.8	23.2	17.4	49.1	17.8	17.9
Level of Service	D	D		D	D	D	D	C	B	D	B	B
Approach Delay (s)		45.3			43.3			24.4			22.4	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	167	0	379	145	270	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	182	0	412	158	293	10
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total (vph)	182	412	158	293	10	
Volume Left (vph)	0	412	0	293	0	
Volume Right (vph)	0	0	0	0	10	
Hadj (s)	0.03	0.53	0.03	0.53	-0.67	
Departure Headway (s)	6.3	6.5	6.0	7.1	5.9	
Degree Utilization, x	0.32	0.74	0.26	0.58	0.02	
Capacity (veh/h)	538	546	584	481	573	
Control Delay (s)	12.3	24.5	9.9	18.3	7.8	
Approach Delay (s)	12.3	20.5		17.9		
Approach LOS	B	C		C		

Intersection Summary

Delay	18.3		
HCM Level of Service	C		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1530	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1530	1770	2787
Volume (vph)	645	71	157	10	12	1025
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	701	77	171	11	13	1114
RTOR Reduction (vph)	0	0	0	10	0	706
Lane Group Flow (vph)	701	77	171	1	13	408
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	26.9	40.8	9.9	9.9	24.7	26.9
Effective Green, g (s)	26.9	40.8	9.9	9.9	24.7	26.9
Actuated g/C Ratio	0.37	0.56	0.13	0.13	0.34	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1256	1034	251	206	595	1020
v/s Ratio Prot	0.20	0.04	c0.09		c0.01	c0.40
v/s Ratio Perm				0.01		
v/c Ratio	0.56	0.07	0.68	0.01	0.02	0.40
Uniform Delay, d1	18.6	7.6	30.3	27.5	16.3	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	7.4	0.0	0.1	0.3
Delay (s)	19.1	7.6	37.7	27.6	16.4	17.6
Level of Service	B	A	D	C	B	B
Approach Delay (s)		18.0	37.1		17.5	
Approach LOS		B	D		B	

Intersection Summary

HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

1: Camino del Rio N & Fairmount Ave

Ex PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1739	1583	1610	3089	1441	1770	3410		3433	3539	1462
Flt Permitted	0.95	0.98	1.00	0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1739	1583	1610	3089	1441	1770	3410		3433	3539	1462
Volume (vph)	157	79	722	680	117	455	212	885	173	17	1566	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	86	785	739	127	495	230	962	188	18	1702	85
RTOR Reduction (vph)	0	0	128	0	0	283	0	9	0	0	0	23
Lane Group Flow (vph)	125	132	657	370	496	212	230	1141	0	18	1702	62
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.0	15.0	42.0	30.0	30.0	25.9	42.0	73.1		25.9	57.0	57.0
Effective Green, g (s)	15.0	15.0	42.0	30.0	30.0	25.9	42.0	73.1		25.9	57.0	57.0
Actuated g/C Ratio	0.09	0.09	0.26	0.19	0.19	0.16	0.26	0.46		0.16	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	158	163	416	302	579	233	465	1558		556	1261	521
v/s Ratio Prot	0.07	c0.08	c0.50	c0.23	0.16	c0.34	0.13	0.34		0.01	c0.48	
v/s Ratio Perm												0.06
v/c Ratio	0.79	0.81	1.58	1.23	1.22dl	0.91	0.49	0.73		0.03	1.35	0.12
Uniform Delay, d1	71.0	71.1	59.0	65.0	62.9	65.9	50.0	35.5		56.5	51.5	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.92		1.00	1.00	1.00
Incremental Delay, d2	23.1	24.8	272.4	127.2	11.9	34.9	0.8	2.9		0.0	162.7	0.5
Delay (s)	94.0	95.9	331.4	192.2	74.8	100.8	57.3	35.4		56.5	214.2	35.1
Level of Service	F	F	F	F	E	F	E	D		E	F	D
Approach Delay (s)		273.1			116.2			39.1			204.2	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	154.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

Ex PM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	742	2452	69	0	507	1230	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	807	2665	75	0	551	1337	0
RTOR Reduction (vph)	0	9	0	0	0	0	0
Lane Group Flow (vph)	807	2656	75	0	551	1337	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	103.0	103.0	6.0		49.0	39.0	
Effective Green, g (s)	103.0	103.0	6.0		49.0	39.0	
Actuated g/C Ratio	0.64	0.64	0.04		0.31	0.24	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2210	2164	66		1084	1239	
v/s Ratio Prot	0.24		c0.04		0.16	c0.26	
v/s Ratio Perm		0.79					
v/c Ratio	0.37	1.23	1.14		0.51	1.08	
Uniform Delay, d1	13.3	28.5	77.0		45.6	60.5	
Progression Factor	1.00	1.00	1.00		1.00	0.97	
Incremental Delay, d2	0.1	106.7	152.7		1.7	37.3	
Delay (s)	13.4	135.2	229.7		47.3	95.9	
Level of Service	B	F	F		D	F	
Approach Delay (s)	106.9				69.2	95.9	
Approach LOS	F				E	F	

Intersection Summary

HCM Average Control Delay	99.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3402	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3402	
Volume (vph)	18	67	85	274	376	29
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	73	92	298	409	32
RTOR Reduction (vph)	0	0	0	109	5	0
Lane Group Flow (vph)	20	73	92	189	436	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	1.8	13.2	7.4	36.5	36.5	
Effective Green, g (s)	1.8	13.2	7.4	36.5	36.5	
Actuated g/C Ratio	0.03	0.23	0.13	0.63	0.63	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	55	426	239	1001	2152	
v/s Ratio Prot	c0.01	0.04	c0.05	c0.19	0.13	
v/s Ratio Perm						
v/c Ratio	0.36	0.17	0.38	0.19	0.20	
Uniform Delay, d1	27.4	17.9	23.1	4.4	4.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.1	0.2	1.0	0.4	0.2	
Delay (s)	31.4	18.1	24.1	4.8	4.7	
Level of Service	C	B	C	A	A	
Approach Delay (s)		20.9	9.4		4.7	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97			0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (prot)	3433	3500		1770	3395			1730		1681	1689	1466
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (perm)	3433	3500		1770	3395			1730		1681	1689	1466
Volume (vph)	338	985	44	21	655	152	42	8	12	417	10	309
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	367	1071	48	23	712	165	46	9	13	453	11	336
RTOR Reduction (vph)	0	3	0	0	18	0	0	8	0	0	0	277
Lane Group Flow (vph)	367	1116	0	23	859	0	0	60	0	227	237	59
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	14.7	42.2		1.5	29.0			16.1		16.1	16.1	16.1
Effective Green, g (s)	14.7	42.2		1.5	29.0			16.1		16.1	16.1	16.1
Actuated g/C Ratio	0.16	0.46		0.02	0.32			0.18		0.18	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	549	1607		29	1071			303		294	296	257
v/s Ratio Prot	c0.11	0.32		0.01	c0.26			c0.04		0.14	0.14	
v/s Ratio Perm												0.23
v/c Ratio	0.67	0.69		0.79	0.80			0.20		0.77	0.80	0.23
Uniform Delay, d1	36.3	19.7		45.0	28.8			32.4		36.2	36.4	32.6
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.1	1.3		83.5	4.4			1.5		17.7	20.0	2.1
Delay (s)	39.4	21.0		128.6	33.2			33.8		53.8	56.3	34.6
Level of Service	D	C		F	C			C		D	E	C
Approach Delay (s)		25.6			35.7			33.8			46.5	
Approach LOS		C			D			C			D	

Intersection Summary

HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

Ex PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.94		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3528		1770	3410			1561		1681	1722	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3528		1770	3410			1561		1681	1722	1583
Volume (vph)	84	1135	14	98	636	103	17	11	94	119	35	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1234	15	107	691	112	18	12	102	129	38	151
RTOR Reduction (vph)	0	1	0	0	14	0	0	84	0	0	0	139
Lane Group Flow (vph)	91	1248	0	107	789	0	0	48	0	81	86	12
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	7.7	38.9		6.0	37.2			16.1		16.1	16.1	7.7
Effective Green, g (s)	7.7	38.9		6.0	37.2			16.1		16.1	16.1	7.7
Actuated g/C Ratio	0.08	0.42		0.06	0.40			0.17		0.17	0.17	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	146	1474		114	1363			270		291	298	131
v/s Ratio Prot	0.05	c0.35		0.06	0.24			c0.08		0.05	c0.05	c0.10
v/s Ratio Perm												
v/c Ratio	0.62	0.85		0.94	0.58			0.18		0.28	0.29	0.10
Uniform Delay, d1	41.3	24.4		43.4	21.8			32.8		33.5	33.5	39.5
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	8.0	4.7		64.4	0.6			1.4		2.4	2.4	0.3
Delay (s)	49.3	29.1		107.7	22.4			34.3		35.8	35.9	39.8
Level of Service	D	C		F	C			C		D	D	D
Approach Delay (s)		30.5			32.5			34.3			37.7	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

Ex PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1827	1583	1681	1582		1770	3539	1583	1770	3504	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1827	1583	1681	1582		1770	3539	1583	1770	3504	
Volume (vph)	68	104	87	325	43	102	116	761	385	195	567	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	113	95	353	47	111	126	827	418	212	616	27
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	333	0	3	0
Lane Group Flow (vph)	0	187	95	259	226	0	126	827	85	212	640	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		14.7	11.1	19.3	19.3		11.1	34.4	19.3	10.1	33.4	
Effective Green, g (s)		14.7	11.1	19.3	19.3		11.1	34.4	19.3	10.1	33.4	
Actuated g/C Ratio		0.16	0.12	0.20	0.20		0.12	0.36	0.20	0.11	0.35	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		284	186	343	323		208	1288	323	189	1238	
v/s Ratio Prot		c0.10	0.06	0.15	0.16		0.07	c0.23	c0.26	c0.12	0.18	
v/s Ratio Perm												
v/c Ratio		0.66	0.51	0.76	0.70		0.61	0.64	0.26	1.12	0.52	
Uniform Delay, d1		37.5	39.2	35.4	34.9		39.6	24.9	31.6	42.2	24.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.4	2.4	9.1	6.5		4.9	2.5	0.4	101.9	1.5	
Delay (s)		43.0	41.5	44.5	41.4		44.5	27.4	32.1	144.1	25.7	
Level of Service		D	D	D	D		D	C	C	F	C	
Approach Delay (s)		42.5			43.0			30.4			55.1	
Approach LOS		D			D			C			E	

Intersection Summary

HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	424	0	295	0	983	1264	0	497	482
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	461	0	321	0	1068	1374	0	540	524
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	461	0	321	0	1068	1374	0	540	524
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				17.3		100.0		74.7	100.0		74.7	100.0
Effective Green, g (s)				17.3		100.0		74.7	100.0		74.7	100.0
Actuated g/C Ratio				0.17		1.00		0.75	1.00		0.75	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				572		1555		2644	1536		2644	1536
v/s Ratio Prot								0.30			0.15	
v/s Ratio Perm				0.14		0.21			0.89			0.34
v/c Ratio				0.81		0.21		0.40	0.89		0.20	0.34
Uniform Delay, d1				39.7		0.0		4.6	0.0		3.8	0.0
Progression Factor				1.00		1.00		0.99	1.00		1.00	1.00
Incremental Delay, d2				8.1		0.3		0.3	6.3		0.2	0.6
Delay (s)				47.9		0.3		4.9	6.3		4.0	0.6
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			28.3			5.7			2.3	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	608	0	713	0	0	0	0	1639	522	0	685	236
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	661	0	775	0	0	0	0	1782	567	0	745	257
RTOR Reduction (vph)	0	0	179	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	661	0	596	0	0	0	0	1782	567	0	745	257
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	27.9		27.9					64.1	100.0		64.1	100.0
Effective Green, g (s)	27.9		27.9					64.1	100.0		64.1	100.0
Actuated g/C Ratio	0.28		0.28					0.64	1.00		0.64	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	922		958					2268	1536		2268	1536
v/s Ratio Prot								c0.50			0.21	
v/s Ratio Perm	0.20		0.23						0.37			0.17
v/c Ratio	0.72		0.62					0.79	0.37		0.33	0.17
Uniform Delay, d1	32.5		31.5					13.0	0.0		8.2	0.0
Progression Factor	1.00		1.00					0.90	1.00		0.53	1.00
Incremental Delay, d2	2.7		1.3					0.3	0.1		0.4	0.2
Delay (s)	35.2		32.7					11.9	0.1		4.7	0.2
Level of Service	D		C					B	A		A	A
Approach Delay (s)		33.8			0.0			9.1			3.5	
Approach LOS		C			A			A			A	

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

9: Canyon Crest Dr & College Ave

Ex PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1781	1506		1793	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1781	1506		1793	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	414	38	30	48	14	311	35	1436	71	215	1073	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	450	41	33	52	15	338	38	1561	77	234	1166	120
RTOR Reduction (vph)	0	0	25	0	0	296	0	0	29	0	0	91
Lane Group Flow (vph)	0	491	8	0	67	42	38	1561	48	234	1166	29
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		7.7	12.3	5.2	40.0	40.0	12.3	47.1	24.0
Effective Green, g (s)		24.0	24.0		7.7	12.3	5.2	40.0	40.0	12.3	47.1	24.0
Actuated g/C Ratio		0.24	0.24		0.08	0.12	0.05	0.40	0.40	0.12	0.47	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		427	361		138	195	92	1416	602	422	2395	669
v/s Ratio Prot		c0.28			c0.04	c0.21	0.02	c0.44		0.07	0.23	0.04
v/s Ratio Perm			0.02						0.05			
v/c Ratio		1.15	0.02		0.49	0.21	0.41	1.10	0.08	0.55	0.49	0.04
Uniform Delay, d1		38.0	29.0		44.3	39.5	45.9	30.0	18.6	41.3	18.2	29.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.03	0.92	1.69
Incremental Delay, d2		91.3	0.0		2.7	0.5	3.0	57.1	0.3	1.5	0.7	0.0
Delay (s)		129.3	29.1		46.9	40.0	48.9	87.1	18.8	44.1	17.5	49.4
Level of Service		F	C		D	D	D	F	B	D	B	D
Approach Delay (s)		123.0			41.2			83.1			24.1	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	62.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

10: Zura Way & College Ave

Ex PM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	480	977	33	242	944
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	522	1062	36	263	1026
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2121	571			1118	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2121	571			1118	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			57	
cM capacity (veh/h)	24	449			610	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	522	531	531	36	263	513	513
Volume Left	0	0	0	0	263	0	0
Volume Right	522	0	0	36	0	0	0
cSH	449	1700	1700	1700	610	1700	1700
Volume to Capacity	1.16	0.31	0.31	0.02	0.43	0.30	0.30
Queue Length 95th (ft)	482	0	0	0	54	0	0
Control Delay (s)	124.2	0.0	0.0	0.0	15.3	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	124.2	0.0			3.1		
Approach LOS	F						

Intersection Summary

Average Delay	23.7		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1465	1770	3539	1458	3433	3483		1770	3539	1466
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1465	1770	3539	1458	3433	3483		1770	3539	1466
Volume (vph)	228	644	469	154	393	123	247	567	43	177	616	127
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	700	510	167	427	134	268	616	47	192	670	138
RTOR Reduction (vph)	0	0	303	0	0	109	0	5	0	0	0	102
Lane Group Flow (vph)	248	700	207	167	427	25	268	658	0	192	670	36
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.8	22.8	22.8	17.1	17.1	17.1	11.9	24.1		11.9	24.1	24.1
Effective Green, g (s)	22.8	22.8	22.8	17.1	17.1	17.1	11.9	24.1		11.9	24.1	24.1
Actuated g/C Ratio	0.25	0.25	0.25	0.19	0.19	0.19	0.13	0.26		0.13	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	439	878	363	329	659	271	445	913		229	928	384
v/s Ratio Prot	0.14	0.20		0.09	c0.12		0.08	c0.19		c0.11	0.19	
v/s Ratio Perm			0.35			0.09						0.09
v/c Ratio	0.56	0.80	0.57	0.51	0.65	0.09	0.60	0.72		0.84	0.72	0.09
Uniform Delay, d1	30.2	32.4	30.3	33.6	34.6	31.0	37.8	30.8		39.1	30.9	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	5.1	2.2	1.2	2.2	0.1	2.3	4.9		22.6	4.8	0.5
Delay (s)	31.9	37.5	32.4	34.8	36.8	31.1	40.1	35.7		61.7	35.7	26.1
Level of Service	C	D	C	C	D	C	D	D		E	D	C
Approach Delay (s)		34.8			35.3			37.0			39.4	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	270	17	10	290	47	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	293	18	11	315	51	23
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			322		660	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			322		660	323
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	97
cM capacity (veh/h)			1228		417	706

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	312	326	51	23
Volume Left	0	11	51	0
Volume Right	18	0	0	23
cSH	1700	1228	417	706
Volume to Capacity	0.18	0.01	0.12	0.03
Queue Length 95th (ft)	0	1	10	3
Control Delay (s)	0.0	0.3	14.8	10.3
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.3	13.4	
Approach LOS			B	

Intersection Summary

Average Delay	1.6		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

13: Alvarado Rd & Reservoir Dr

Ex PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1774		1770	1863	1770	1541
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1774		1770	1863	1770	1541
Volume (vph)	251	91	93	119	101	133
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	99	101	129	110	145
RTOR Reduction (vph)	15	0	0	0	0	82
Lane Group Flow (vph)	357	0	101	129	110	63
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	17.3		7.5	28.8	28.1	28.1
Effective Green, g (s)	17.3		7.5	28.8	28.1	28.1
Actuated g/C Ratio	0.27		0.12	0.44	0.43	0.43
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	473		205	827	766	667
v/s Ratio Prot	c0.21		c0.06	0.07	0.06	
v/s Ratio Perm						0.09
v/c Ratio	0.76		0.49	0.16	0.14	0.09
Uniform Delay, d1	21.9		26.9	10.8	11.1	10.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8		1.9	0.1	0.4	0.3
Delay (s)	28.6		28.8	10.9	11.5	11.2
Level of Service	C		C	B	B	B
Approach Delay (s)	28.6			18.7	11.3	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

14: Parkway Dr & Lake Murray Blvd

Ex PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1519	1770	1667		1770	4941		1770	3503	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1519	1770	1667		1770	4941		1770	3503	
Volume (vph)	43	10	65	487	76	110	107	842	141	19	689	37
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	11	71	529	83	120	116	915	153	21	749	40
RTOR Reduction (vph)	0	0	65	0	47	0	0	18	0	0	3	0
Lane Group Flow (vph)	0	58	6	529	156	0	116	1050	0	21	786	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		6.5	6.5	24.6	24.6		8.1	31.5		2.8	26.2	
Effective Green, g (s)		6.5	6.5	24.6	24.6		8.1	31.5		2.8	26.2	
Actuated g/C Ratio		0.08	0.08	0.30	0.30		0.10	0.39		0.03	0.32	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		143	121	535	504		176	1912		61	1128	
v/s Ratio Prot		0.03		c0.30	0.12		c0.07	0.22		0.01	c0.23	
v/s Ratio Perm			0.05									
v/c Ratio		0.41	0.05	0.99	0.31		0.66	0.55		0.34	0.70	
Uniform Delay, d1		35.6	34.6	28.3	21.9		35.3	19.4		38.4	24.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.2	35.6	0.4		8.6	1.1		3.4	3.6	
Delay (s)		37.5	34.7	63.9	22.2		43.9	20.6		41.8	27.7	
Level of Service		D	C	E	C		D	C		D	C	
Approach Delay (s)		36.0			52.3			22.8			28.1	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3411		3433	1863	2787	1770	3539	1527	1770	3539	1527
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3411		3433	1863	2787	1770	3539	1527	1770	3539	1527
Volume (vph)	171	302	72	607	92	625	111	792	489	138	463	107
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	186	328	78	660	100	679	121	861	532	150	503	116
RTOR Reduction (vph)	0	17	0	0	0	593	0	0	346	0	0	73
Lane Group Flow (vph)	186	389	0	660	100	86	121	861	186	150	503	43
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	16.5	16.5		25.6	25.6	14.0	12.0	38.7	38.7	14.0	40.7	40.7
Effective Green, g (s)	16.5	16.5		25.6	25.6	14.0	12.0	38.7	38.7	14.0	40.7	40.7
Actuated g/C Ratio	0.15	0.15		0.23	0.23	0.13	0.11	0.35	0.35	0.13	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	511	508		793	430	352	192	1236	533	224	1300	561
v/s Ratio Prot	0.05	c0.12		c0.19	0.05	c0.24	0.07	0.24		0.08	0.14	
v/s Ratio Perm									0.35			0.08
v/c Ratio	0.36	0.77		0.83	0.23	0.24	0.63	0.70	0.35	0.67	0.39	0.08
Uniform Delay, d1	42.4	45.3		40.6	34.6	43.6	47.3	31.0	26.7	46.2	25.8	22.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	6.8		7.5	0.3	0.4	6.6	3.3	1.8	7.4	0.9	0.3
Delay (s)	42.9	52.1		48.0	34.9	44.0	53.9	34.3	28.5	53.6	26.7	23.1
Level of Service	D	D		D	C	D	D	C	C	D	C	C
Approach Delay (s)		49.2			45.2			33.8			31.4	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	170	0	80	98	498	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	185	0	87	107	541	76
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total (vph)	185	87	107	541	76	
Volume Left (vph)	0	87	0	541	0	
Volume Right (vph)	0	0	0	0	76	
Hadj (s)	0.03	0.53	0.03	0.53	-0.67	
Departure Headway (s)	6.6	7.3	6.8	6.3	5.1	
Degree Utilization, x	0.34	0.18	0.20	0.94	0.11	
Capacity (veh/h)	538	478	515	567	694	
Control Delay (s)	12.9	10.7	10.3	47.9	7.5	
Approach Delay (s)	12.9	10.5		43.0		
Approach LOS	B	B		E		

Intersection Summary

Delay	31.1		
HCM Level of Service	D		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1522	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1522	1770	2787
Volume (vph)	973	47	95	4	25	1629
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1058	51	103	4	27	1771
RTOR Reduction (vph)	0	0	0	4	0	619
Lane Group Flow (vph)	1058	51	103	0	27	1152
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	46.6	58.9	8.3	8.3	19.1	46.6
Effective Green, g (s)	46.6	58.9	8.3	8.3	19.1	46.6
Actuated g/C Ratio	0.54	0.68	0.10	0.10	0.22	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1860	1276	180	147	393	1510
v/s Ratio Prot	0.31	0.03	c0.06		c0.02	c0.64
v/s Ratio Perm				0.00		
v/c Ratio	0.57	0.04	0.57	0.00	0.07	0.76
Uniform Delay, d1	13.0	4.4	37.2	35.1	26.4	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	4.3	0.0	0.3	2.3
Delay (s)	13.4	4.4	41.5	35.1	26.8	17.7
Level of Service	B	A	D	D	C	B
Approach Delay (s)		13.0	41.3		17.9	
Approach LOS		B	D		B	

Intersection Summary

HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

RAMP METER ANALYSIS

EXISTING, EXISTING + PROJECT

Fixed Rate Method

Location/Condition	Peak Hour	Peak Hour Demand D	Flow F	Excess Demand E	Delay (min)	Queue (ft)
I-8/College Avenue Interchange						
NB College Avenue to WB I-8					2 SOV	
Existing	AM	250	318	0	0	0
Existing + Project	AM	260	318	0	0	0
Project Increase	AM	10	318	0	0	0
SB College Avenue to WB I-8					2 SOV	
Existing	AM	455	318	137	26	3425
Existing + Project	AM	462	318	144	27	3588
Project Increase	AM	7	318	7	1	163
NB College Avenue to EB I-8					1 SOV	
Existing	PM	522	318	204	38	5100
Existing + Project	PM	591	318	273	52	6825
Project Increase	PM	69	318	69	14	1725
SB College Avenue to EB I-8					1 SOV	
Existing	PM	236	318	0	0	0
Existing + Project	PM	236	318	0	0	0
Project Increase	PM	0	318	0	0	0
I-8/Lake Blvd/ 70th Street Interchange						
SB Lake Boulevard to WB I-8					1 SOV + 1 HOV	
Existing	AM	684	828	0	0	0
Existing + Project	AM	684	828	0	0	0
Project Increase	AM	0	828	0	0	0
I-8/Fairmount Ave Interchange						
SB Fairmount Ave to EB I-8					1 SOV	
Existing	PM	430	492	0	0	0
Existing + Project	PM	432	492	0	0	0
Project Increase	PM	2	492	0	0	0

Freeway Mainline Operations
Existing Conditions

Freeway Segment	Dir.	# of Lanes	Hourly Capacity[a]	ADT [b]	% K [c]		% D[c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 8															
Fairmount Ave to Waring Rd	EB	5	10,000	251,000	0.061	0.077	0.250	0.604	0.965	3946	12103	0.395	1.210	A	F(0)
	WB	6	12,000		0.061	0.077	0.751	0.396		11869	7925	0.989	0.660	E	C
Waring Rd to College Ave	EB	5	10,000	238,000	0.075	0.074	0.374	0.604	0.965	6868	10969	0.687	1.097	C	F(0)
	WB	5	10,000		0.075	0.074	0.626	0.396		11506	7183	1.151	0.718	F(0)	C
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	214,000	0.073	0.078	0.330	0.600	0.963	5313	10392	0.578	1.130	B	F(0)
	WB	5	10,000		0.073	0.078	0.670	0.400		10842	6919	1.084	0.692	F(0)	C
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	201,000	0.073	0.078	0.330	0.600	0.963	4991	9761	0.542	1.061	B	F(0)
	WB	4	8,000		0.073	0.078	0.670	0.400		10184	6499	1.273	0.812	F(1)	D

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per auxilary lane.
b. Existing ADT Volumes from CALTRANS
c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "2005 Traffic Volumes", June 2006
d. Truck Factor from "2005 Annual Average Daily Truck Traffic on the California State Highway System", November 2006.
e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

APPENDIX H

CUMULATIVE PROJECTS INFORMATION

Updated CPs as of 15 October

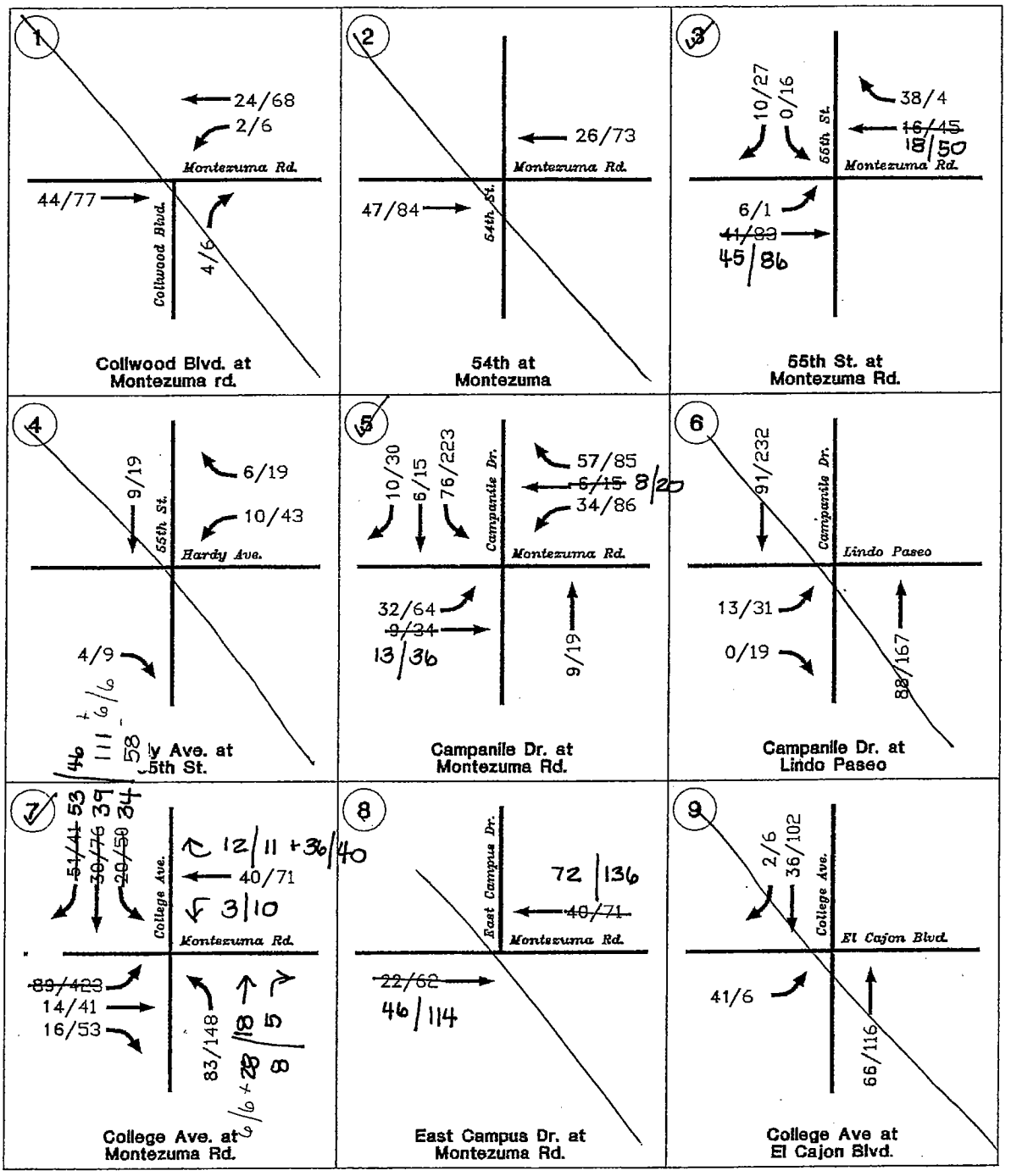


FIGURE 3-12

Paseo Project Only AM/PM Peak Hour Traffic + other CPs

CD-U 2799-PAS-C.dwg

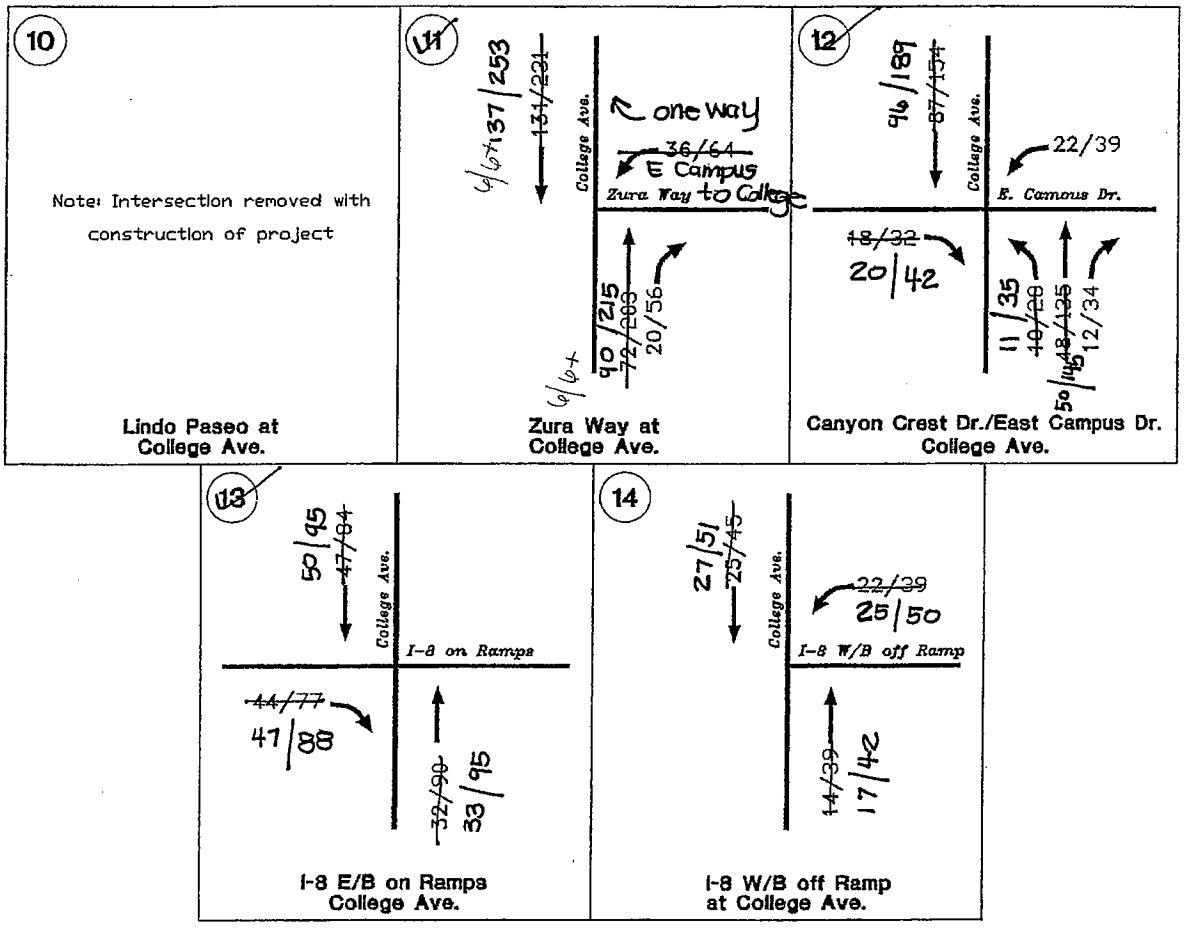


FIGURE 3-12

Project Only AM/PM Peak Hour Traffic

CD-U 2799-PAS-C.dwg

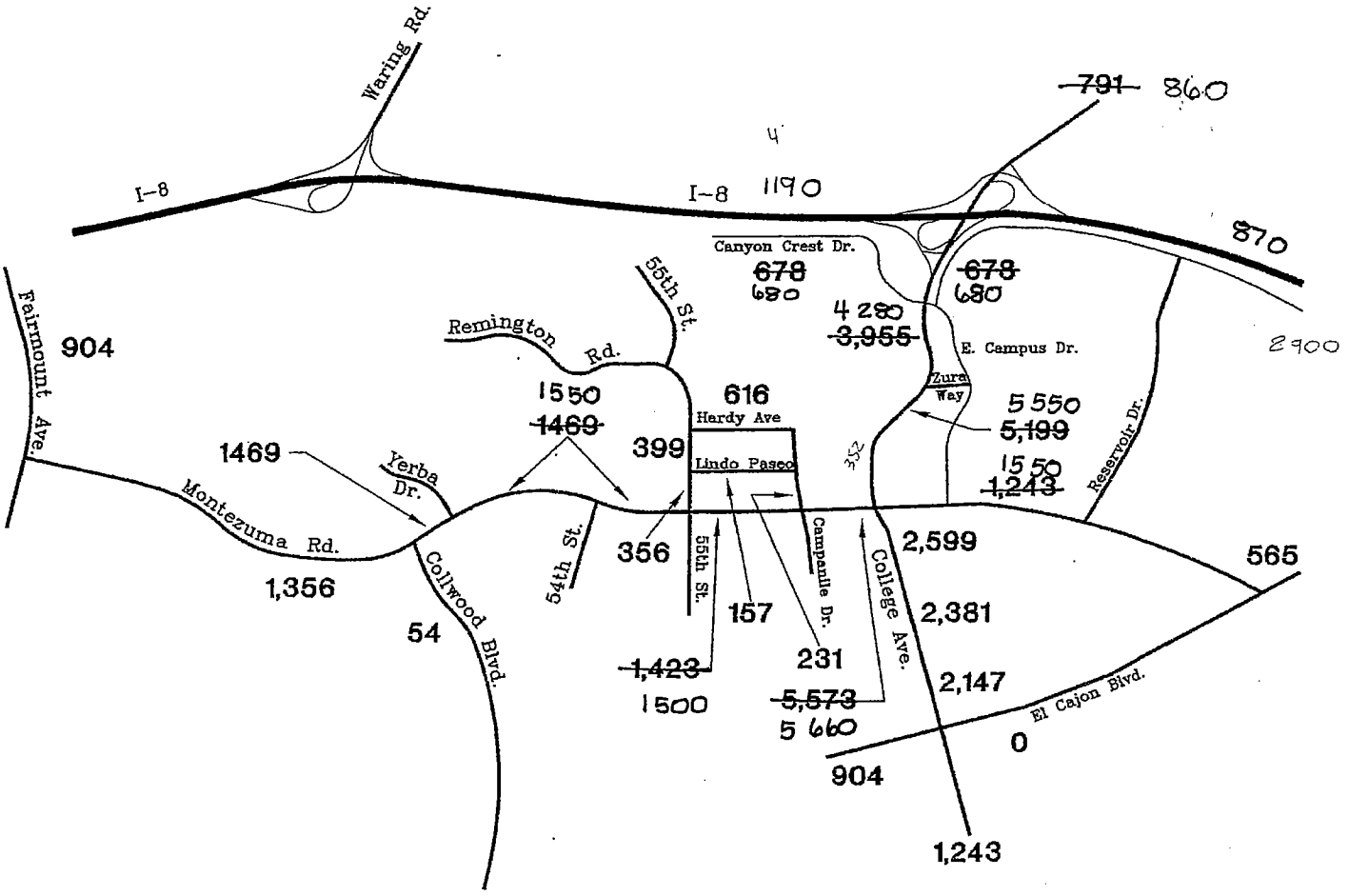


FIGURE 3-11

Paseo Project Only Average Daily Traffic + other CDs

CD-U 2799-PAS-C.dwg

Edgerton, Robert

From: Jim Darrish [jdarrish@foundation.sdsu.edu]
Sent: Wednesday, June 30, 2004 2:50 PM
To: Edgerton, Robert
Subject: Other Projects Info

Robert, per your request, the other projects information is as follows:

Aztec Inn - 4-story, 74 room hotel of Type V construction built over a single level subterranean garage with 75 spaces. There will also be 2 meeting rooms totaling 1800 sf and approx. 1000 sf of retail, lobby and service areas. Total GSF of development site is 24,453 sf and GSF of building 50,000sf plus 25,000 sf of parking.

Sanctuary Suites - Type V apartment building consisting of 11 units of housing, all 2 bedrooms, and one commercial space which is about 1800 sf. Total building GSF is 17450 sf. Site area is 8700 sf. There is also ground level/partially underground parking consisting of 26 spaces in about 8000 sf.

PHASE I STATES @ 8,000

James M Darrish
Sr. Project Manager
San Diego State University Foundation
5250 Campanile Drive 4th Floor
San Diego, CA 92182-1940
619-594-3969 Off
619-855-2700 Cell
619-583-5439 Fax

74 room 10/room = 740

		In	Out
AM PK =	44	26	18
PM PK =	59	36	24

Aztec Inn.

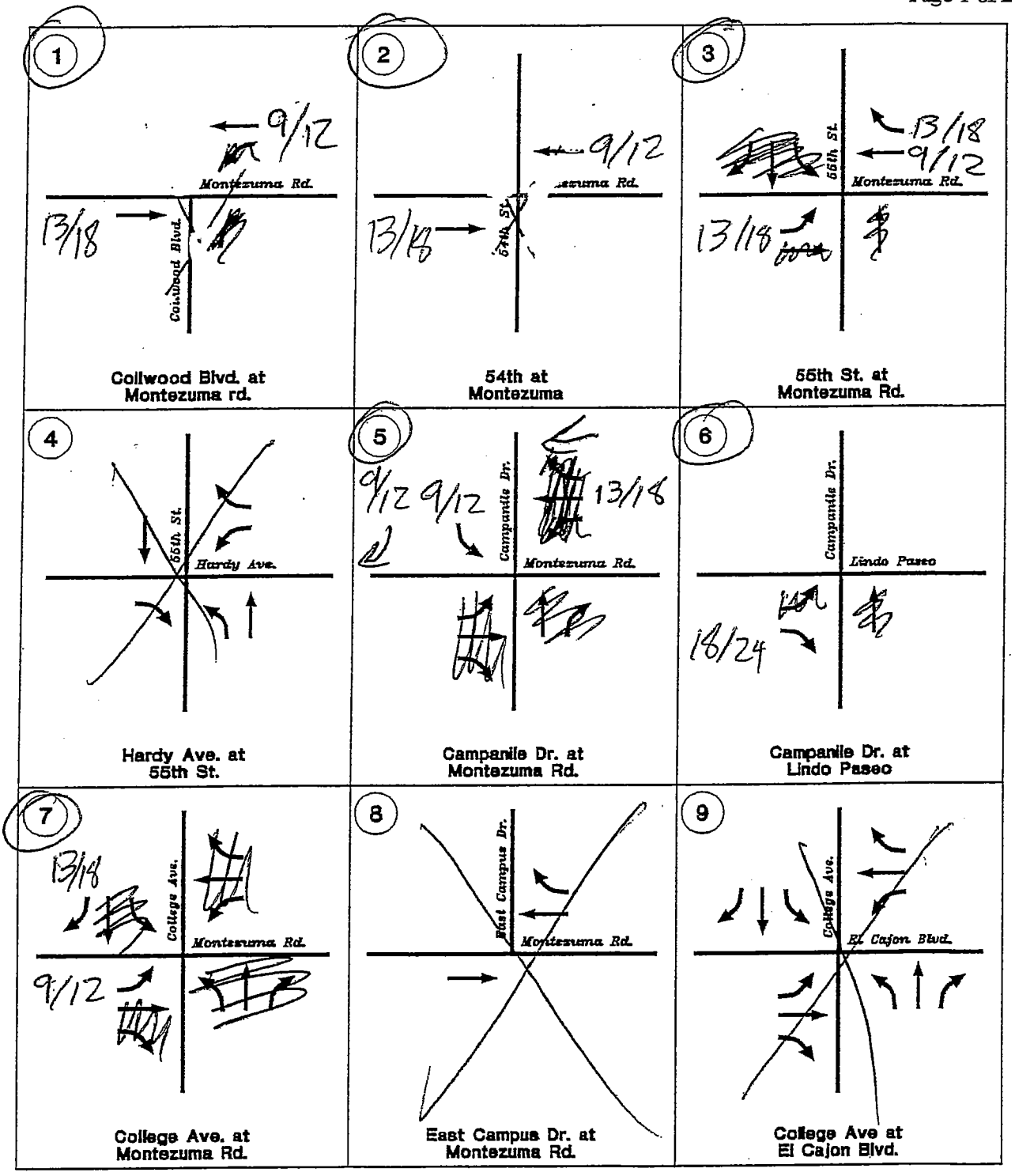


FIGURE 7-3

Other Project AM/PM Peak Hour Traffic

CD-S 2799-PAS-A.dwg

Aztec Inn

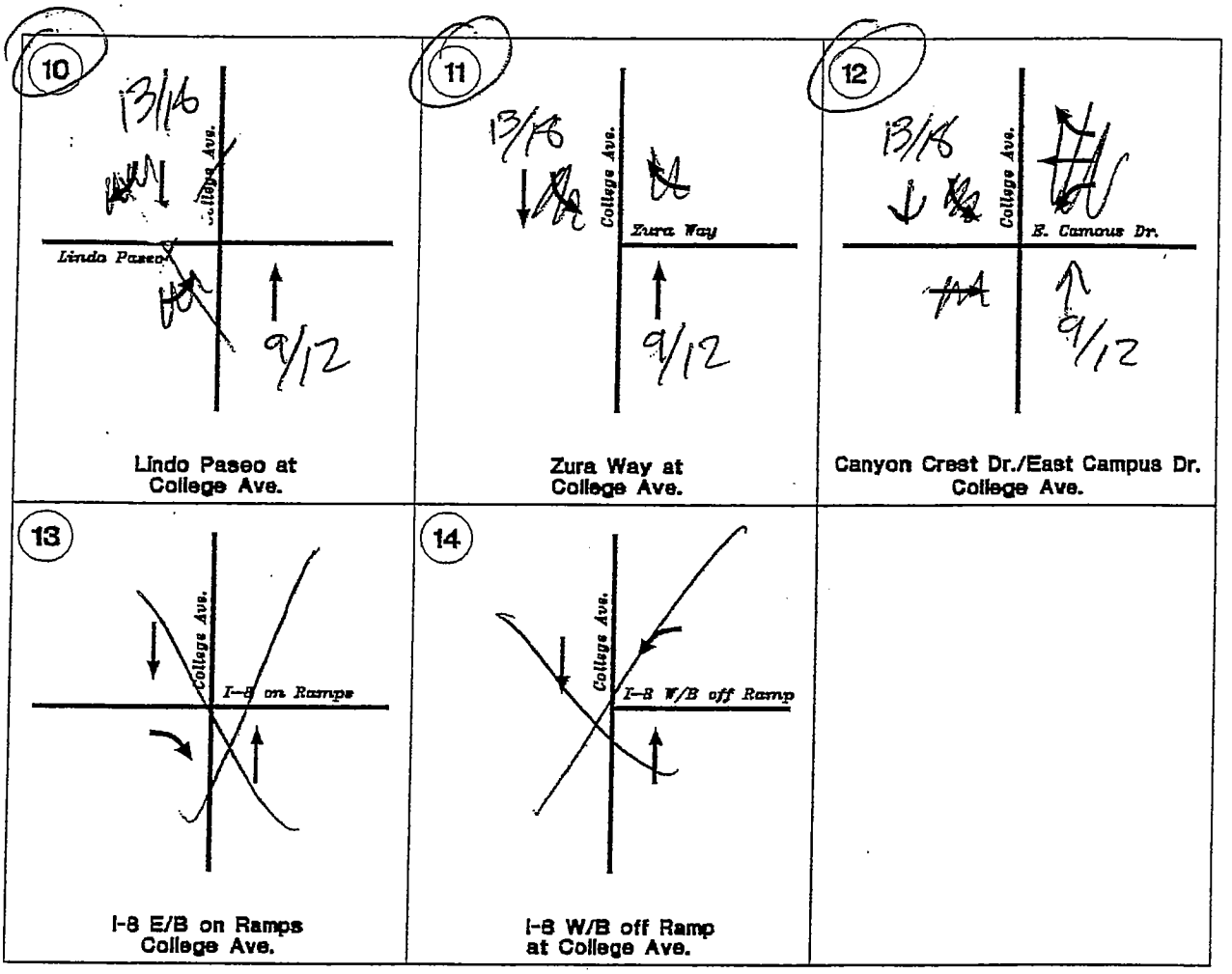


FIGURE 7-3

Other Project AM/PM Peak Hour Traffic

CD-S 2799-PAS-A.dwg

Development Services
1222 First Avenue
San Diego, CA 92101-4153

THE CITY OF SAN DIEGO

FAX TRANSMITTAL

SDSU Cumulative Projects

Date: 7/27/04

The following 6 total pages (including this cover page) are intended for:

To:	Stacy Raed	**From:**	George El-Ghassein
Company	LLG	**Division**	Development Services
FAX #	(858) 300 - 8210	**FAX #**	(619) 446-5499
Phone #	(858) 300 - 8800	**Phone #**	(619) 446-5234

Subject: Projects in El Cajon Blvd Area

Comments:

As requested. Pls contact me if you have any questions.

If there are any problems with receiving this FAX transmission (such as missing pages), please contact the Sender at the "From" phone number given above.

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El Cerrito Gateway Mixed Use. Pts# 39398

Trip Generation:

The proposed 220 multi-family units (including 70 condominiums and 150 affordable rental units) and 10,000 square feet retail space is estimated to generate 1,720 average daily trips with 118 morning peak-hour trips and 168 afternoon peak-hour trips. Please be advised that trip credit may be applicable to the existing currently occupied and active uses on this site. In order to determine this credit, applicant should provide square footage of all uses currently occupied.

Trip Generation:

Pending submittal of existing use information, a traffic study will be required. Please be advised that this traffic study should be scoped with Transportation Development Section.

Add 3404 El Cajon Blv

Traffic study is required

Traffic study hasn't been submitted yet.

Mesa Common:

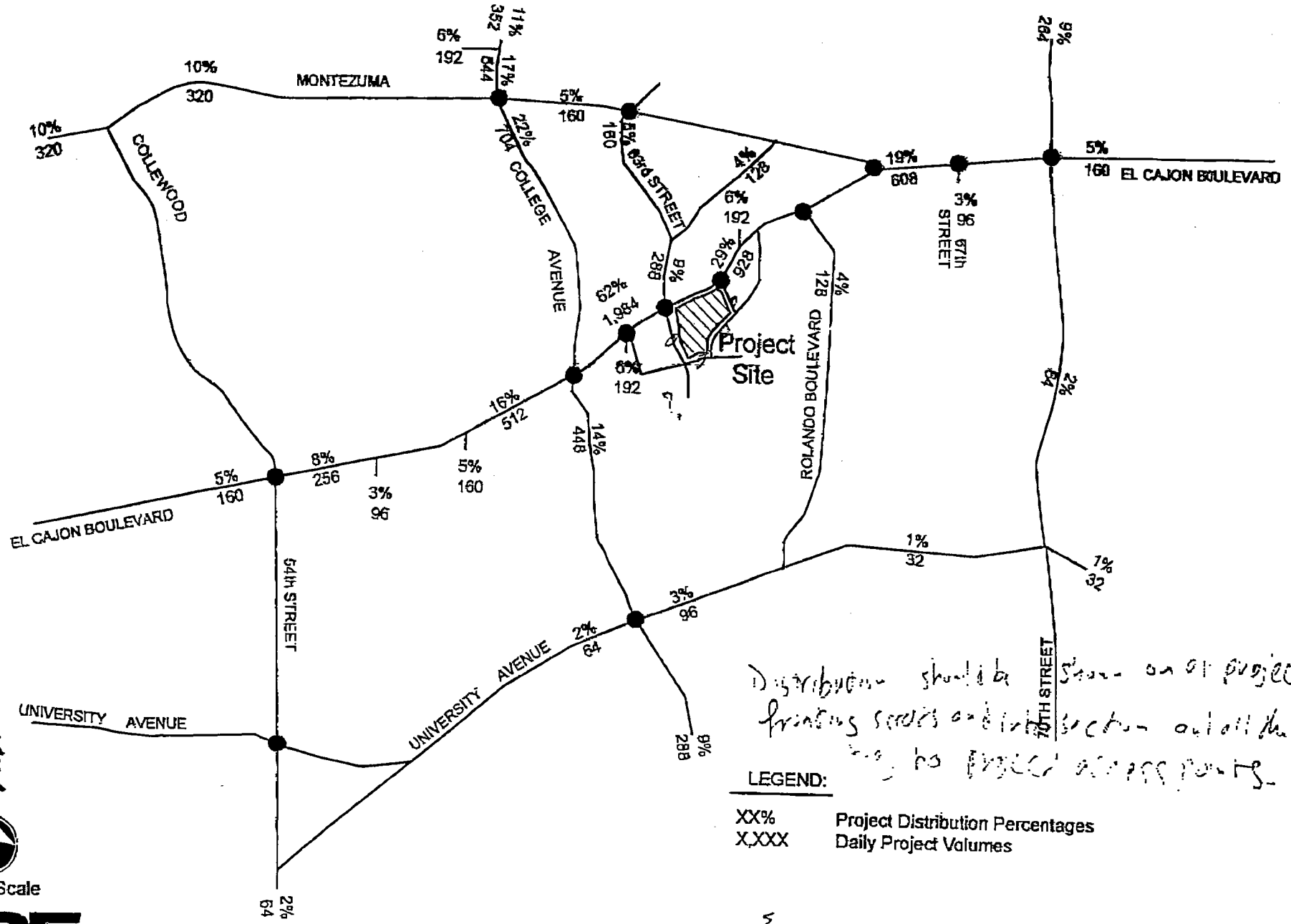
Trip Generation: The Proposed Project consisting of 52 multi-family units and 2,833 SF retail space is estimated to generate 425 ADTs with 28 AM Peak hour tri and 41 PM Peak hour trips.

Address 6456 El-Cajon Blv

Traffic study is not required

(4)

Centerpointe
Add: 4710 Art St.



Distribution should be shown on or project fronting streets only in direction outside the way to project access points.

Not to Scale

RBF

JN 55-130137 March 2004

check dist w/ street eng.

Project Percent Distribution

Exhibit 6

Centrepoint

Trip Generation

The City of San Diego trip generation rates were used to forecast the project-generated trips by land use. Table 6 summarizes the forecast trips associated with the proposed multi-family and retail project.

Double check MIX-w/ George

TABLE 6
FORECAST PROJECT GENERATED TRIPS

Land Use	Units	Vehicle Trips						
		Daily	AM Peak			PM Peak		
			Total	In	Out	Total	In	Out
Trip Generation Rate								
Multifamily Residential (Condominiums)	du	6 trips/du	8%	20%	80%	10%	70%	30%
Commercial (Weekday)	Sq. Ft.	40 /1000 sf	3%	60%	40%	9%	50%	50%
Forecast Project Trips								
Multifamily Residential (Condominiums)	400 Units	2,400	192	38	154	240	168	72
Commercial (Weekday)	20,000 sf	800	24	14	10	72	36	36
Total Project		**3,200**	**216**	**53**	**163**	**312**	**204**	**108**

Source: *City of San Diego Traffic Study Guidelines; du = dwelling units; sf = square feet*

As shown in Table 6, the proposed multifamily project is forecast to generate 3,200 daily trips. With 216 trips occurring in the a.m. peak hour and 312 occurring in the p.m. peak hour. The existing land use generates a total of 5, 998 trips per day with 180 in the a.m. peak hour and 600 in the p.m. peak hour. Therefore the project is forecast to result in a net decrease in traffic through the study area.

+36 AM trips

AM trips increase. Also it should be stated how these exist. trips are arrived and the above should show the difference in trips

Trip Distribution

Trip distribution percentages were calculated based on a Series 10 Select Zone Model run obtained from SANDAG existing traffic patterns and understanding of the existing roadway system. Exhibit 6 shows the forecast trip percent distribution of project-generated trips.

Ann F. Gonsalves
May 3, 2004

Sorority Row

Urban Systems Associates, Inc.

ATTACHMENT 5

Change In AM & PM Peak Street Segment Traffic & ADT

Segment	Limits	Change	CHANGE ADT
Montezuma Road	West of Campanile	0	0
	Campanile to College Ave.	-4 Trips	-33
"	East of College Ave.	0	0
College Avenue	North of Montezuma Rd.	0	0
	Montezuma to Project	+6 Trips	+64
	South of Project	0	0

Significance:

Montezuma Road = Reduction = Not Significant

College Avenue ~~= 25,000 ADT x 0.10 = 2,500;~~
6 Trips/2,500 ~~= 0.0024 = Not Significant~~

Include LOS

ADT

College

-33 Montezuma

+64

CD-5 / 1702-ATT-5.wpd

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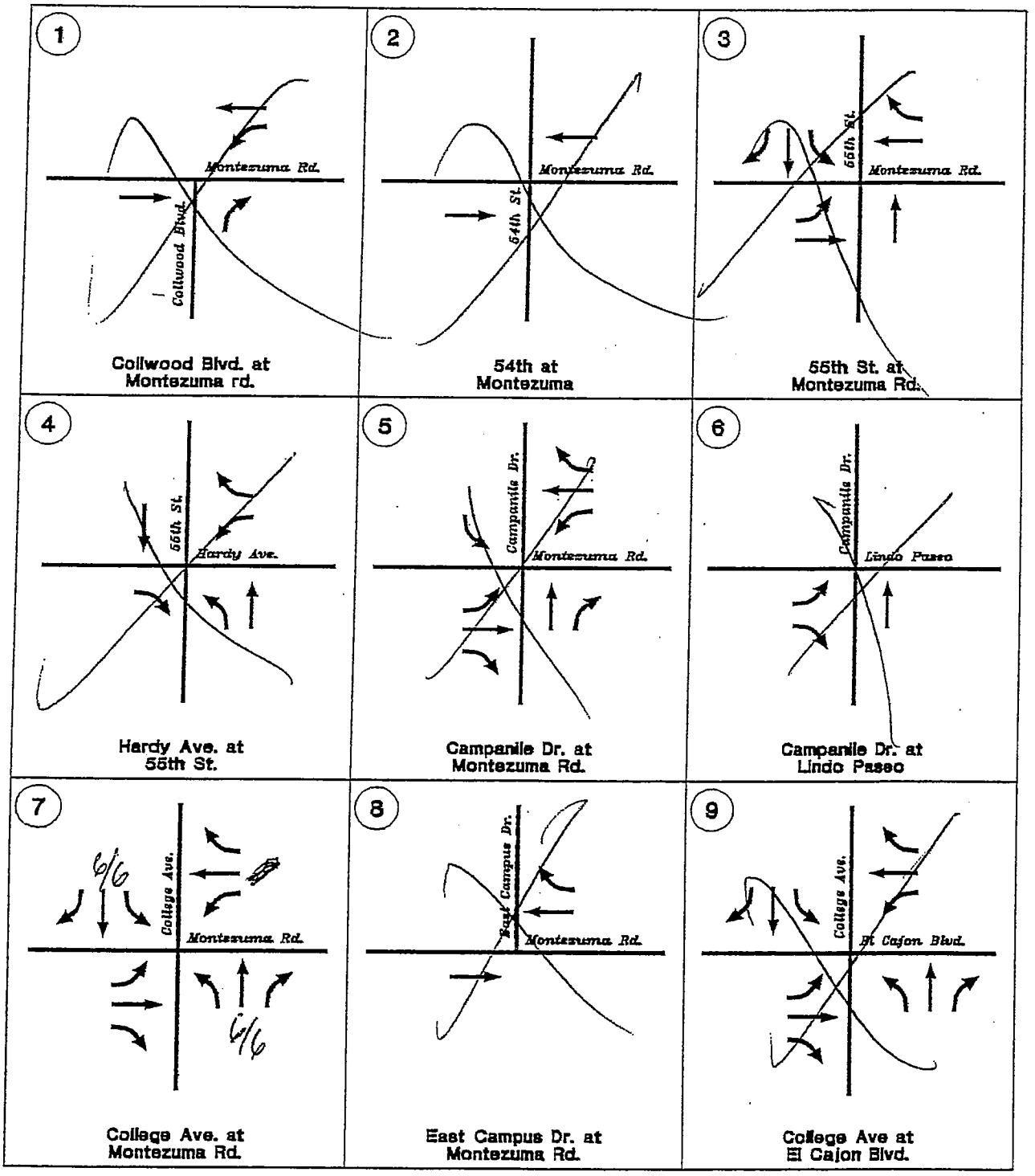


SORORITY ROW.

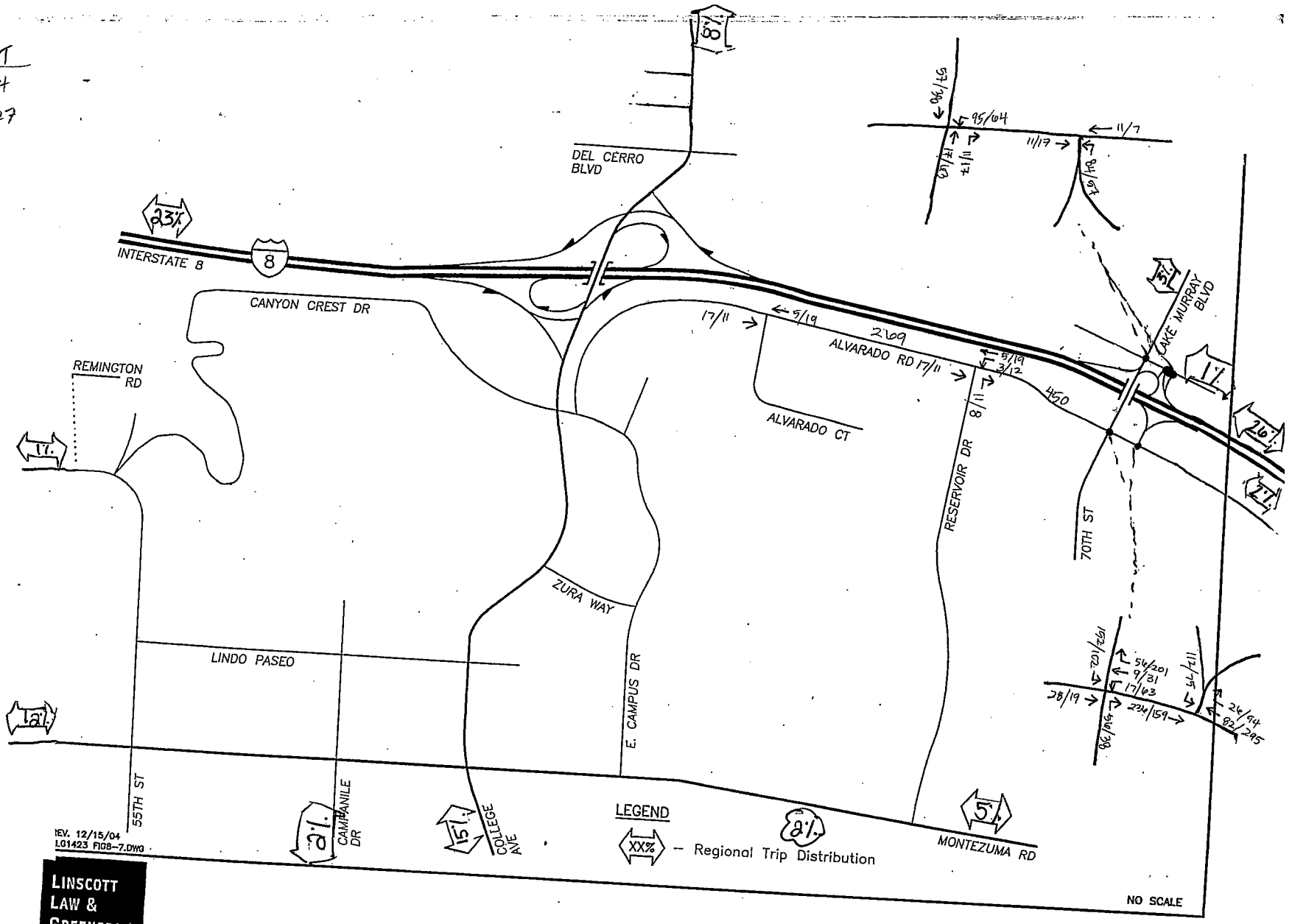
FIGURE 7-3

Other Project AM/PM Peak Hour Traffic

CD-S 2799-PAS-A.dwg

	IN	OUT
AM	563	174
PM	378	627

ADT = 8990



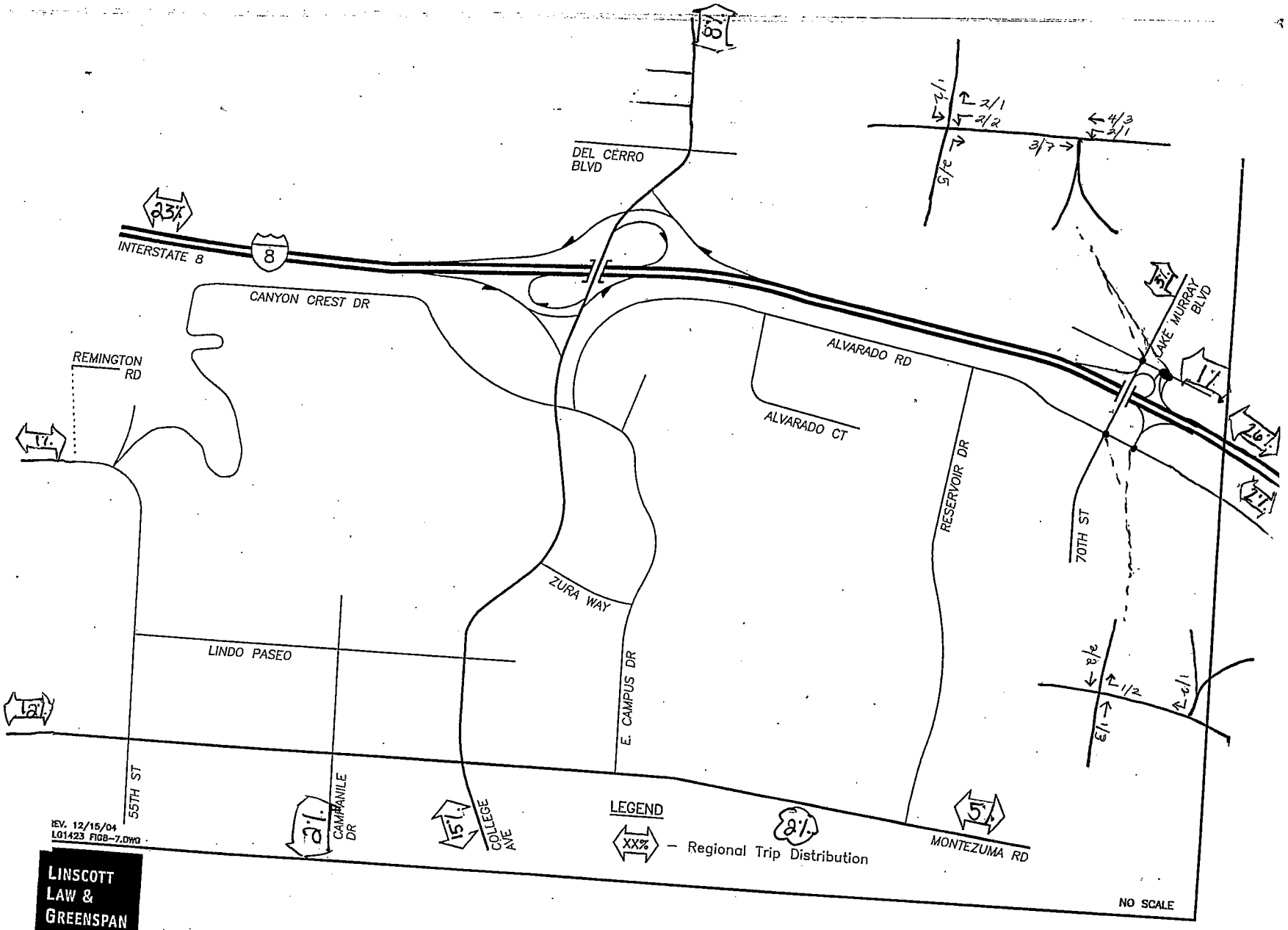
REV. 12/15/04
LG1423 FIG8-7.DWG

LINSCOTT LAW & GREENSPAN engineers

(1) Alvarado Creek Assignment

	IN	OUT
AM	12	18
PM	25	17

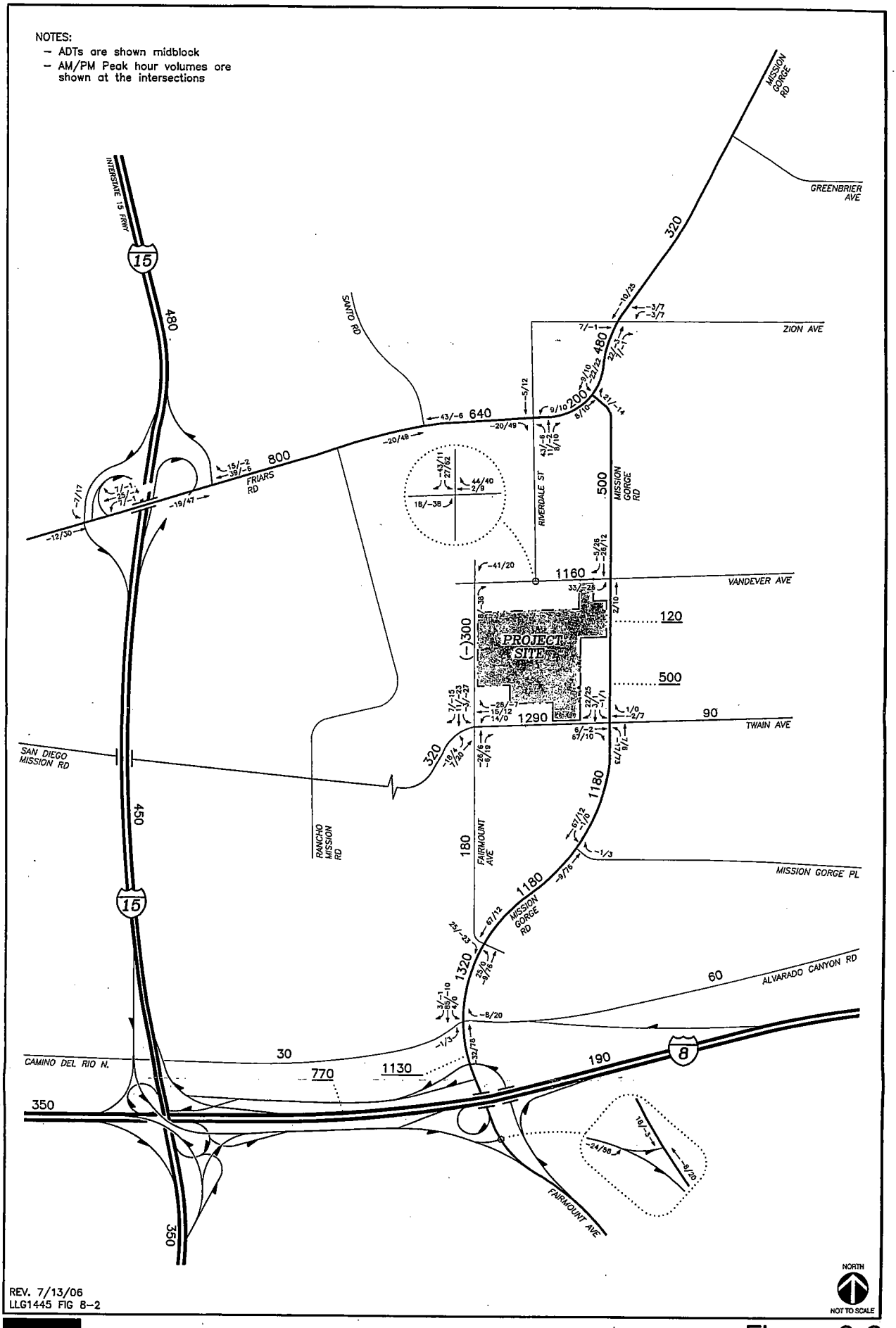
ADT = 600



REV. 12/15/04
LG1423 FIGB-7.DWG

LINSCOTT LAW & GREENSPAN engineers

② Coleman Assignment



REV. 7/13/06
LLG1445 FIG 8-2

LINSCOTT LAW & GREENSPAN engineers

Figure 8-2

Net Project Traffic Assignment AM/PM Peak Hours & ADT

Centerpointe at Grantville

APPENDIX H1

SANDAG TROLLEY FORECAST

Appendix H-1

SDSU Trolley Stop Ridership Comparison

Scenario	Boardings
Existing	5,982
Year 2010	7,909
Year 2012 (Calculated)	8,442
Year 2015	9,242
Year 2025 (Calculated)	14,714
Year 2030	17,450
SDSU Transit Ridership	
Year 2006	
Student Headcount	33,441
79% SDSU Transit Usage	4,726
Year 2012	
Student Headcount	35,535
79% SDSU Transit Usage	6,669
Yea 2025	
Student Headcount	44,826
79% SDSU Transit Usage	11,624

Source: Conversations with SANDAG personnel (3/07)

APPENDIX I

EXISTING + PROJECT INTERSECTION, RAMP METER, & FREEWAY ANALYSIS CALCULATION SHEETS

1: Camino del Rio N & Fairmount Ave

E + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1583	1610	2984	1441	1770	3450		3433	3539	1464
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1583	1610	2984	1441	1770	3450		3433	3539	1464
Volume (vph)	20	15	250	364	277	540	266	1233	157	15	981	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	16	272	396	301	587	289	1340	171	16	1066	85
RTOR Reduction (vph)	0	0	160	0	19	392	0	5	0	0	0	33
Lane Group Flow (vph)	22	16	112	278	551	44	289	1506	0	16	1066	52
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	5.2	5.2	29.1	35.7	35.7	11.2	29.1	91.9		11.2	74.0	74.0
Effective Green, g (s)	5.2	5.2	29.1	35.7	35.7	11.2	29.1	91.9		11.2	74.0	74.0
Actuated g/C Ratio	0.03	0.03	0.18	0.22	0.22	0.07	0.18	0.57		0.07	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	55	58	288	359	666	101	322	1982		240	1637	677
v/s Ratio Prot	c0.01	0.01	c0.17	0.17	c0.19	c0.30	0.16	c0.44		0.00	0.30	
v/s Ratio Perm												0.06
v/c Ratio	0.40	0.28	0.39	0.77	0.83	0.43	0.90	0.76		0.07	0.65	0.08
Uniform Delay, d1	75.9	75.6	57.6	58.4	59.2	71.3	64.0	25.7		69.5	33.1	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.18		1.00	1.00	1.00
Incremental Delay, d2	4.7	2.6	0.9	10.0	8.4	2.9	22.3	2.3		0.1	2.0	0.2
Delay (s)	80.6	78.1	58.5	68.4	67.6	74.3	89.3	32.6		69.6	35.1	24.2
Level of Service	F	E	E	E	E	E	F	C		E	D	C
Approach Delay (s)		61.1			70.0			41.7			34.8	
Approach LOS		E			E			D			C	

Intersection Summary

HCM Average Control Delay	49.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

E + P AM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	1042	1691	148	0	731	648	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1133	1838	161	0	795	704	0
RTOR Reduction (vph)	0	131	0	0	0	0	0
Lane Group Flow (vph)	1133	1707	161	0	795	704	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	90.6	90.6	19.2		61.4	38.2	
Effective Green, g (s)	90.6	90.6	19.2		61.4	38.2	
Actuated g/C Ratio	0.57	0.57	0.12		0.38	0.24	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1944	1903	212		1358	1214	
v/s Ratio Prot	0.33		c0.09		c0.22	0.14	
v/s Ratio Perm		0.55					
v/c Ratio	0.58	0.90	0.76		0.59	0.58	
Uniform Delay, d1	22.5	30.6	68.2		39.2	53.8	
Progression Factor	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	6.0	14.4		1.9	1.5	
Delay (s)	22.9	36.6	82.6		41.0	55.5	
Level of Service	C	D	F		D	E	
Approach Delay (s)	31.4				48.0	55.5	
Approach LOS	C				D	E	

Intersection Summary

HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3389	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3389	
Volume (vph)	42	65	50	694	142	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	71	54	754	154	16
RTOR Reduction (vph)	0	0	0	254	5	0
Lane Group Flow (vph)	46	71	54	500	165	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	4.1	12.3	4.2	40.0	40.0	
Effective Green, g (s)	4.1	12.3	4.2	40.0	40.0	
Actuated g/C Ratio	0.07	0.20	0.07	0.66	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	120	380	130	1050	2248	
v/s Ratio Prot	c0.03	0.04	c0.03	c0.48	0.05	
v/s Ratio Perm						
v/c Ratio	0.38	0.19	0.42	0.48	0.07	
Uniform Delay, d1	26.9	19.9	26.9	5.0	3.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.0	0.2	2.1	1.5	0.1	
Delay (s)	28.9	20.1	29.0	6.5	3.7	
Level of Service	C	C	C	A	A	
Approach Delay (s)		23.6	8.0		3.7	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		0.95	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96			0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3505		1685	3320			1737		1681	1694	1454
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3505		1685	3320			1737		1681	1694	1454
Volume (vph)	885	417	16	10	710	273	38	6	8	113	6	127
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	962	453	17	11	772	297	41	7	9	123	7	138
RTOR Reduction (vph)	0	2	0	0	39	0	0	7	0	0	0	117
Lane Group Flow (vph)	962	468	0	11	1030	0	0	50	0	63	67	21
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	25.0	54.4		0.8	30.2			16.0		16.0	16.0	16.0
Effective Green, g (s)	25.0	54.4		0.8	30.2			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.53		0.01	0.29			0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	832	1848		13	972			269		261	263	225
v/s Ratio Prot	c0.28	0.13		0.01	c0.32			c0.03		0.04	0.04	
v/s Ratio Perm												0.09
v/c Ratio	1.16	0.25		0.85	1.06			0.19		0.24	0.25	0.10
Uniform Delay, d1	39.1	13.3		51.1	36.5			37.9		38.3	38.4	37.4
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	83.8	0.1		166.4	46.1			1.5		2.2	2.3	0.8
Delay (s)	122.9	13.4		217.6	82.6			39.5		40.5	40.7	38.2
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		86.9			83.9			39.5			39.4	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	80.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

E + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3533		1770	3411			1582		1681	1715	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3533		1770	3411			1582		1681	1715	1583
Volume (vph)	75	421	3	40	1071	170	18	10	65	32	7	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	458	3	43	1164	185	20	11	71	35	8	82
RTOR Reduction (vph)	0	1	0	0	13	0	0	59	0	0	0	77
Lane Group Flow (vph)	82	460	0	43	1336	0	0	43	0	21	22	5
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	6.0	43.9		3.4	41.3			16.3		16.3	16.3	6.0
Effective Green, g (s)	6.0	43.9		3.4	41.3			16.3		16.3	16.3	6.0
Actuated g/C Ratio	0.06	0.46		0.04	0.43			0.17		0.17	0.17	0.06
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	111	1617		63	1469			269		286	291	99
v/s Ratio Prot	0.05	c0.13		0.02	c0.40			c0.06		0.01	c0.01	c0.05
v/s Ratio Perm												
v/c Ratio	0.74	0.28		0.68	0.91			0.16		0.07	0.08	0.05
Uniform Delay, d1	44.2	16.2		45.7	25.5			34.0		33.5	33.5	42.3
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	22.4	0.1		26.3	8.5			1.3		0.5	0.5	0.2
Delay (s)	66.6	16.3		72.1	34.1			35.2		34.0	34.0	42.5
Level of Service	E	B		E	C			D		C	C	D
Approach Delay (s)		23.9			35.3			35.2			39.6	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

E + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1834	1583	1681	1658		1770	3539	1583	1770	3515	
Flt Permitted		0.98	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1834	1583	1681	1658		1770	3539	1583	1770	3515	
Volume (vph)	125	281	271	528	104	64	105	500	226	70	858	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	305	295	574	113	70	114	543	246	76	933	26
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	193	0	1	0
Lane Group Flow (vph)	0	441	295	381	368	0	114	543	53	76	958	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Effective Green, g (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Actuated g/C Ratio		0.23	0.13	0.22	0.22		0.13	0.33	0.22	0.07	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		430	200	364	359		224	1185	343	123	977	
v/s Ratio Prot		c0.24	c0.19	0.23	c0.23		0.06	0.15	0.16	0.04	c0.27	
v/s Ratio Perm												
v/c Ratio		1.03	1.48	1.05	1.03		0.51	0.46	0.16	0.62	0.98	
Uniform Delay, d1		42.4	48.4	43.4	43.4		45.2	29.0	35.2	50.1	39.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		50.1	238.8	59.9	54.2		1.8	1.3	0.2	8.9	24.4	
Delay (s)		92.5	287.2	103.3	97.6		47.0	30.2	35.4	59.0	64.1	
Level of Service		F	F	F	F		D	C	D	E	E	
Approach Delay (s)		170.5			100.5			33.8			63.7	
Approach LOS		F			F			C			E	

Intersection Summary

HCM Average Control Delay	86.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

7: I-8WB Ramp & College Ave

E + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	482	0	104	0	757	520	0	734	923
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	524	0	113	0	823	565	0	798	1003
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	524	0	113	0	823	565	0	798	1003
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				19.1		100.0		72.9	100.0		72.9	100.0
Effective Green, g (s)				19.1		100.0		72.9	100.0		72.9	100.0
Actuated g/C Ratio				0.19		1.00		0.73	1.00		0.73	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				631		1555		2580	1536		2580	1536
v/s Ratio Prot								0.23			0.23	
v/s Ratio Perm				0.16		0.07			0.37			0.65
v/c Ratio				0.83		0.07		0.32	0.37		0.31	0.65
Uniform Delay, d1				38.9		0.0		4.8	0.0		4.7	0.0
Progression Factor				1.00		1.00		1.58	1.00		1.00	1.00
Incremental Delay, d2				9.1		0.1		0.3	0.6		0.3	2.2
Delay (s)				48.0		0.1		7.8	0.6		5.1	2.2
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			39.5			4.9			3.5	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

8: I-8EB Ramp & College Ave

E + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	437	0	1846	0	0	0	0	840	222	0	911	305
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	475	0	2007	0	0	0	0	913	241	0	990	332
RTOR Reduction (vph)	0	0	61	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	475	0	1946	0	0	0	0	913	241	0	990	332
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					1593	1536		1593	1536
v/s Ratio Prot								0.26			c0.28	
v/s Ratio Perm	0.14		0.58						0.16			0.22
v/c Ratio	0.31		1.21					0.57	0.16		0.62	0.22
Uniform Delay, d1	16.4		26.5					20.4	0.0		21.0	0.0
Progression Factor	1.00		1.00					0.76	1.00		0.80	1.00
Incremental Delay, d2	0.1		98.6					0.7	0.1		1.8	0.3
Delay (s)	16.5		125.1					16.2	0.1		18.6	0.3
Level of Service	B		F					B	A		B	A
Approach Delay (s)		104.3			0.0			12.9			14.0	
Approach LOS		F			A			B			B	

Intersection Summary

HCM Average Control Delay	58.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1796	1506		1824	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1796	1506		1824	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	75	27	34	86	118	171	172	816	137	599	1191	968
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	29	37	93	128	186	187	887	149	651	1295	1052
RTOR Reduction (vph)	0	0	33	0	0	128	0	0	113	0	0	928
Lane Group Flow (vph)	0	111	4	0	221	58	187	887	36	651	1295	124
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		11.8	11.8		16.9	31.3	16.8	24.0	24.0	31.3	38.5	11.8
Effective Green, g (s)		11.8	11.8		16.9	31.3	16.8	24.0	24.0	31.3	38.5	11.8
Actuated g/C Ratio		0.12	0.12		0.17	0.31	0.17	0.24	0.24	0.31	0.38	0.12
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		212	178		308	495	297	849	361	1075	1958	329
v/s Ratio Prot		0.06			c0.12	0.12	0.11	c0.25		c0.19	c0.25	c0.38
v/s Ratio Perm			0.02						0.10			
v/c Ratio		0.52	0.02		0.72	0.12	0.63	1.04	0.10	0.61	0.66	0.38
Uniform Delay, d1		41.5	39.0		39.3	24.5	38.7	38.0	29.6	29.1	25.4	40.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.91	0.83	4.13
Incremental Delay, d2		2.3	0.1		7.8	0.1	4.1	43.2	0.5	0.1	0.2	0.1
Delay (s)		43.8	39.1		47.0	24.6	42.8	81.2	30.1	26.5	21.1	168.3
Level of Service		D	D		D	C	D	F	C	C	C	F
Approach Delay (s)		42.6			36.8			69.1			73.9	
Approach LOS		D			D			E			E	

Intersection Summary

HCM Average Control Delay	68.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	102	972	99	540	986
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	111	1057	108	587	1072
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2786	568			1184	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2786	568			1184	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	75			0	
cM capacity (veh/h)	0	450			576	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	111	528	528	108	587	536	536
Volume Left	0	0	0	0	587	0	0
Volume Right	111	0	0	108	0	0	0
cSH	450	1700	1700	1700	576	1700	1700
Volume to Capacity	0.25	0.31	0.31	0.06	1.02	0.32	0.32
Queue Length 95th (ft)	24	0	0	0	389	0	0
Control Delay (s)	15.6	0.0	0.0	0.0	69.4	0.0	0.0
Lane LOS	C				F		
Approach Delay (s)	15.6	0.0			24.6		
Approach LOS	C						

Intersection Summary

Average Delay	14.5		
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1460	1770	3539	1464	3433	3432		1770	3539	1468
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1460	1770	3539	1464	3433	3432		1770	3539	1468
Volume (vph)	216	259	111	29	545	174	446	873	139	97	336	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	282	121	32	592	189	485	949	151	105	365	162
RTOR Reduction (vph)	0	0	98	0	0	148	0	12	0	0	0	118
Lane Group Flow (vph)	235	282	23	32	592	41	485	1088	0	105	365	44
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	17.0	17.0	17.0	19.8	19.8	19.8	13.1	28.1		9.3	24.3	24.3
Effective Green, g (s)	17.0	17.0	17.0	19.8	19.8	19.8	13.1	28.1		9.3	24.3	24.3
Actuated g/C Ratio	0.19	0.19	0.19	0.22	0.22	0.22	0.15	0.31		0.10	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	334	667	275	389	777	321	499	1069		182	953	395
v/s Ratio Prot	c0.13	0.08		0.02	c0.17		c0.14	c0.32		0.06	0.10	
v/s Ratio Perm			0.08			0.13						0.11
v/c Ratio	0.70	0.42	0.08	0.08	0.76	0.13	0.97	1.02		0.58	0.38	0.11
Uniform Delay, d1	34.2	32.3	30.2	28.0	33.0	28.3	38.4	31.0		38.6	26.8	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.6	0.4	0.1	0.1	4.4	0.2	33.0	32.1		4.4	1.2	0.6
Delay (s)	40.8	32.7	30.3	28.1	37.4	28.5	71.3	63.2		43.0	28.0	25.4
Level of Service	D	C	C	C	D	C	E	E		D	C	C
Approach Delay (s)		35.2			35.0			65.7			29.8	
Approach LOS		D			C			E			C	

Intersection Summary

HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	246	197	118	340	31	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	267	214	128	370	34	13
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			492		1021	394
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			492		1021	394
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		85	98
cM capacity (veh/h)			1063		227	644

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	482	498	34	13
Volume Left	0	128	34	0
Volume Right	214	0	0	13
cSH	1700	1063	227	644
Volume to Capacity	0.28	0.12	0.15	0.02
Queue Length 95th (ft)	0	10	13	2
Control Delay (s)	0.0	3.3	23.6	10.7
Lane LOS		A	C	B
Approach Delay (s)	0.0	3.3	20.0	
Approach LOS			C	

Intersection Summary

Average Delay	2.5		
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

13: Alvarado Rd & Reservoir Dr

E + P AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1727		1770	1863	1770	1543
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1727		1770	1863	1770	1543
Volume (vph)	105	72	158	483	120	66
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	78	172	525	130	72
RTOR Reduction (vph)	30	0	0	0	0	40
Lane Group Flow (vph)	162	0	172	525	130	32
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	12.1		9.3	25.4	26.6	26.6
Effective Green, g (s)	12.1		9.3	25.4	26.6	26.6
Actuated g/C Ratio	0.20		0.16	0.42	0.44	0.44
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	348		274	789	785	684
v/s Ratio Prot	0.11		0.10	c0.28	c0.07	
v/s Ratio Perm						0.05
v/c Ratio	0.46		0.63	0.67	0.17	0.05
Uniform Delay, d1	21.1		23.7	13.9	10.0	9.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		4.4	2.1	0.5	0.1
Delay (s)	22.1		28.2	16.0	10.5	9.6
Level of Service	C		C	B	B	A
Approach Delay (s)	22.1			19.0	10.2	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

14: Parkway Dr & Lake Murray Blvd

E + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.95		1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1521	1770	1755		1770	4832		1770	3532	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1521	1770	1755		1770	4832		1770	3532	
Volume (vph)	30	11	178	314	65	31	101	566	193	27	1234	12
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	12	193	341	71	34	110	615	210	29	1341	13
RTOR Reduction (vph)	0	0	177	0	17	0	0	46	0	0	1	0
Lane Group Flow (vph)	0	45	16	341	88	0	110	779	0	29	1353	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		6.3	6.3	18.5	18.5		7.7	33.3		2.8	28.4	
Effective Green, g (s)		6.3	6.3	18.5	18.5		7.7	33.3		2.8	28.4	
Actuated g/C Ratio		0.08	0.08	0.24	0.24		0.10	0.43		0.04	0.37	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		147	125	426	422		177	2092		64	1304	
v/s Ratio Prot		0.03		c0.19	0.06		c0.06	0.17		0.02	c0.38	
v/s Ratio Perm			0.13									
v/c Ratio		0.31	0.13	0.80	0.21		0.62	0.37		0.45	1.04	
Uniform Delay, d1		33.2	32.7	27.5	23.3		33.2	14.7		36.3	24.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.5	10.3	0.2		6.6	0.5		5.0	35.3	
Delay (s)		34.4	33.2	37.8	23.6		39.8	15.2		41.3	59.5	
Level of Service		C	C	D	C		D	B		D	E	
Approach Delay (s)		33.4			34.5			18.1			59.2	
Approach LOS		C			C			B			E	

Intersection Summary

HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3418		3433	1863	2787	1770	3539	1531	1770	3539	1530
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3418		3433	1863	2787	1770	3539	1531	1770	3539	1530
Volume (vph)	79	114	25	339	224	323	143	1004	333	120	383	396
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	124	27	368	243	351	155	1091	362	130	416	430
RTOR Reduction (vph)	0	16	0	0	0	310	0	0	185	0	0	238
Lane Group Flow (vph)	86	135	0	368	243	41	155	1091	177	130	416	192
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.3	9.3		18.2	18.2	12.2	13.6	47.5	47.5	12.2	46.1	46.1
Effective Green, g (s)	9.3	9.3		18.2	18.2	12.2	13.6	47.5	47.5	12.2	46.1	46.1
Actuated g/C Ratio	0.09	0.09		0.18	0.18	0.12	0.13	0.46	0.46	0.12	0.45	0.45
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	308		605	329	329	233	1629	705	209	1581	683
v/s Ratio Prot	0.03	c0.04		0.11	c0.13	c0.13	0.09	c0.31		0.07	0.12	
v/s Ratio Perm									0.24			0.28
v/c Ratio	0.28	0.44		0.61	0.74	0.13	0.67	0.67	0.25	0.62	0.26	0.28
Uniform Delay, d1	43.8	44.5		39.2	40.2	40.7	42.6	21.7	17.0	43.3	17.9	18.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0		1.7	8.4	0.2	7.0	2.2	0.9	5.7	0.4	1.0
Delay (s)	44.3	45.5		40.9	48.6	40.9	49.6	23.9	17.9	49.0	18.3	19.1
Level of Service	D	D		D	D	D	D	C	B	D	B	B
Approach Delay (s)		45.0			42.9			25.0			22.7	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	167	0	379	149	333	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	182	0	412	162	362	10

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	182	412	162	362	10
Volume Left (vph)	0	412	0	362	0
Volume Right (vph)	0	0	0	0	10
Hadj (s)	0.03	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	6.8	6.3	7.2	6.0
Degree Utilization, x	0.34	0.78	0.28	0.72	0.02
Capacity (veh/h)	508	520	553	483	570
Control Delay (s)	13.1	28.5	10.6	25.7	7.9
Approach Delay (s)	13.1	23.4		25.2	
Approach LOS	B	C		D	

Intersection Summary

Delay	22.3		
HCM Level of Service	C		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1530	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1530	1770	2787
Volume (vph)	654	72	166	10	12	1025
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	711	78	180	11	13	1114
RTOR Reduction (vph)	0	0	0	9	0	708
Lane Group Flow (vph)	711	78	180	2	13	406
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	27.0	41.3	10.3	10.3	24.7	27.0
Effective Green, g (s)	27.0	41.3	10.3	10.3	24.7	27.0
Actuated g/C Ratio	0.36	0.56	0.14	0.14	0.33	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1253	1040	259	213	591	1017
v/s Ratio Prot	0.21	0.04	c0.10		c0.01	c0.40
v/s Ratio Perm				0.01		
v/c Ratio	0.57	0.08	0.69	0.01	0.02	0.40
Uniform Delay, d1	18.8	7.5	30.4	27.4	16.5	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	7.8	0.0	0.1	0.3
Delay (s)	19.4	7.6	38.2	27.5	16.6	17.7
Level of Service	B	A	D	C	B	B
Approach Delay (s)		18.2	37.6		17.7	
Approach LOS		B	D		B	

Intersection Summary

HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

1: Camino del Rio N & Fairmount Ave

E + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1739	1583	1610	3074	1441	1770	3411		3433	3539	1462
Flt Permitted	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1739	1583	1610	3074	1441	1770	3411		3433	3539	1462
Volume (vph)	157	79	722	680	117	460	212	890	173	17	1571	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	86	785	739	127	500	230	967	188	18	1708	85
RTOR Reduction (vph)	0	0	128	0	1	283	0	9	0	0	0	23
Lane Group Flow (vph)	125	132	657	370	508	204	230	1146	0	18	1708	62
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.0	15.0	42.0	30.0	30.0	24.9	42.0	74.1		24.9	57.0	57.0
Effective Green, g (s)	15.0	15.0	42.0	30.0	30.0	24.9	42.0	74.1		24.9	57.0	57.0
Actuated g/C Ratio	0.09	0.09	0.26	0.19	0.19	0.16	0.26	0.46		0.16	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	158	163	416	302	576	224	465	1580		534	1261	521
v/s Ratio Prot	0.07	c0.08	c0.50	c0.23	0.17	c0.34	0.13	0.34		0.01	c0.48	
v/s Ratio Perm												0.06
v/c Ratio	0.79	0.81	1.58	1.23	1.22dl	0.91	0.49	0.73		0.03	1.35	0.12
Uniform Delay, d1	71.0	71.1	59.0	65.0	63.3	66.5	50.0	34.7		57.3	51.5	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.12	0.91		1.00	1.00	1.00
Incremental Delay, d2	23.1	24.8	272.4	127.2	14.8	36.8	0.8	2.7		0.0	164.8	0.5
Delay (s)	94.0	95.9	331.4	192.2	78.1	103.2	56.8	34.4		57.4	216.3	35.1
Level of Service	F	F	F	F	E	F	E	C		E	F	D
Approach Delay (s)		273.1			118.0			38.1			206.2	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	155.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

E + P PM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	742	2460	69	0	512	1233	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	807	2674	75	0	557	1340	0
RTOR Reduction (vph)	0	8	0	0	0	0	0
Lane Group Flow (vph)	807	2666	75	0	557	1340	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	101.0	101.0	6.0		51.0	41.0	
Effective Green, g (s)	101.0	101.0	6.0		51.0	41.0	
Actuated g/C Ratio	0.63	0.63	0.04		0.32	0.26	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2167	2122	66		1128	1303	
v/s Ratio Prot	0.24		c0.04		0.16	c0.26	
v/s Ratio Perm		0.80					
v/c Ratio	0.37	1.26	1.14		0.49	1.03	
Uniform Delay, d1	14.2	29.5	77.0		44.1	59.5	
Progression Factor	1.00	1.00	1.00		1.00	0.95	
Incremental Delay, d2	0.1	119.3	152.7		1.5	16.3	
Delay (s)	14.3	148.8	229.7		45.6	72.7	
Level of Service	B	F	F		D	E	
Approach Delay (s)	117.6				67.5	72.7	
Approach LOS	F				E	E	

Intersection Summary

HCM Average Control Delay	100.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

3: Remington Rd & Aztec Circle

E + P PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3399	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3399	
Volume (vph)	20	67	85	291	415	34
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	73	92	316	451	37
RTOR Reduction (vph)	0	0	0	102	4	0
Lane Group Flow (vph)	22	73	92	214	484	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	1.7	12.8	7.1	43.6	43.6	
Effective Green, g (s)	1.7	12.8	7.1	43.6	43.6	
Actuated g/C Ratio	0.03	0.20	0.11	0.68	0.68	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	47	370	205	1072	2301	
v/s Ratio Prot	c0.01	0.04	c0.05	c0.20	0.14	
v/s Ratio Perm						
v/c Ratio	0.47	0.20	0.45	0.20	0.21	
Uniform Delay, d1	30.9	21.5	26.8	3.9	3.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.2	0.3	1.6	0.4	0.2	
Delay (s)	38.1	21.8	28.4	4.3	4.1	
Level of Service	D	C	C	A	A	
Approach Delay (s)		25.6	9.7		4.1	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: Montezuma Rd & 55th St

E + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97			0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (prot)	3433	3500		1770	3392			1730		1681	1689	1464
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (perm)	3433	3500		1770	3392			1730		1681	1689	1464
Volume (vph)	346	1007	44	21	697	165	42	8	12	446	10	328
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	376	1095	48	23	758	179	46	9	13	485	11	357
RTOR Reduction (vph)	0	3	0	0	19	0	0	8	0	0	0	296
Lane Group Flow (vph)	376	1140	0	23	918	0	0	60	0	243	253	61
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.1	43.7		1.5	30.1			16.0		16.0	16.0	16.0
Effective Green, g (s)	15.1	43.7		1.5	30.1			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.16	0.47		0.02	0.32			0.17		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	556	1641		28	1095			297		289	290	251
v/s Ratio Prot	c0.11	0.33		0.01	c0.28			c0.04		0.14	0.15	
v/s Ratio Perm												0.24
v/c Ratio	0.68	0.69		0.82	0.84			0.20		0.84	0.87	0.24
Uniform Delay, d1	36.7	19.5		45.7	29.3			33.1		37.4	37.6	33.4
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.3	1.3		96.0	5.8			1.5		24.5	28.4	2.3
Delay (s)	40.0	20.8		141.7	35.0			34.6		61.9	66.0	35.7
Level of Service	D	C		F	D			C		E	E	D
Approach Delay (s)		25.5			37.6			34.6			52.1	
Approach LOS		C			D			C			D	

Intersection Summary

HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

E + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.94		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3524		1770	3416			1564		1681	1720	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3524		1770	3416			1564		1681	1720	1583
Volume (vph)	84	1181	19	100	688	105	19	11	96	124	35	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1284	21	109	748	114	21	12	104	135	38	151
RTOR Reduction (vph)	0	1	0	0	13	0	0	86	0	0	0	139
Lane Group Flow (vph)	91	1304	0	109	849	0	0	51	0	84	89	12
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	7.7	40.2		6.0	38.5			16.1		16.1	16.1	7.7
Effective Green, g (s)	7.7	40.2		6.0	38.5			16.1		16.1	16.1	7.7
Actuated g/C Ratio	0.08	0.43		0.06	0.41			0.17		0.17	0.17	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	144	1501		113	1393			267		287	293	129
v/s Ratio Prot	0.05	c0.37		0.06	0.25			c0.09		0.05	c0.05	c0.10
v/s Ratio Perm												
v/c Ratio	0.63	0.87		0.96	0.61			0.19		0.29	0.30	0.10
Uniform Delay, d1	42.0	24.7		44.1	22.0			33.6		34.2	34.2	40.1
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	8.7	5.6		72.9	0.8			1.6		2.6	2.7	0.3
Delay (s)	50.7	30.3		117.0	22.8			35.1		36.8	36.9	40.5
Level of Service	D	C		F	C			D		D	D	D
Approach Delay (s)		31.6			33.4			35.1			38.5	
Approach LOS		C			C			D			D	

Intersection Summary

HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

E + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1583	1681	1582		1770	3539	1583	1770	3495	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1826	1583	1681	1582		1770	3539	1583	1770	3495	
Volume (vph)	71	104	123	327	43	102	202	799	390	195	588	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	113	134	355	47	111	220	868	424	212	639	35
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	338	0	3	0
Lane Group Flow (vph)	0	190	134	260	227	0	220	868	86	212	671	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		14.9	14.1	19.3	19.3		14.1	34.4	19.3	10.1	30.4	
Effective Green, g (s)		14.9	14.1	19.3	19.3		14.1	34.4	19.3	10.1	30.4	
Actuated g/C Ratio		0.16	0.15	0.20	0.20		0.15	0.36	0.20	0.11	0.32	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		287	236	343	322		264	1286	323	189	1122	
v/s Ratio Prot		c0.10	0.08	0.15	0.16		0.12	c0.25	c0.27	c0.12	0.19	
v/s Ratio Perm												
v/c Ratio		0.66	0.57	0.76	0.70		0.83	0.67	0.27	1.12	0.60	
Uniform Delay, d1		37.5	37.5	35.5	35.0		39.2	25.4	31.7	42.3	27.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.6	3.1	9.2	6.8		19.7	2.9	0.4	101.9	2.4	
Delay (s)		43.2	40.6	44.7	41.9		58.8	28.3	32.2	144.2	29.4	
Level of Service		D	D	D	D		E	C	C	F	C	
Approach Delay (s)		42.1			43.3			33.8			56.8	
Approach LOS		D			D			C			E	

Intersection Summary

HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	460	0	300	0	1107	1389	0	550	488
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	500	0	326	0	1203	1510	0	598	530
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	500	0	326	0	1203	1510	0	598	530
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				18.4		100.0		73.6	100.0		73.6	100.0
Effective Green, g (s)				18.4		100.0		73.6	100.0		73.6	100.0
Actuated g/C Ratio				0.18		1.00		0.74	1.00		0.74	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				608		1555		2605	1536		2605	1536
v/s Ratio Prot								0.34			0.17	
v/s Ratio Perm				0.15		0.21			0.98			0.35
v/c Ratio				0.82		0.21		0.46	0.98		0.23	0.35
Uniform Delay, d1				39.2		0.0		5.3	0.0		4.2	0.0
Progression Factor				1.00		1.00		0.93	1.00		1.00	1.00
Incremental Delay, d2				8.8		0.3		0.3	13.9		0.2	0.6
Delay (s)				48.0		0.3		5.2	13.9		4.4	0.6
Level of Service				D		A		A	B		A	A
Approach Delay (s)		0.0			29.2			10.0			2.6	
Approach LOS		A			C			B			A	

Intersection Summary

HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	622	0	781	0	0	0	0	1874	591	0	772	238
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	676	0	849	0	0	0	0	2037	642	0	839	259
RTOR Reduction (vph)	0	0	131	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	676	0	718	0	0	0	0	2037	642	0	839	259
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	29.4		29.4					62.6	100.0		62.6	100.0
Effective Green, g (s)	29.4		29.4					62.6	100.0		62.6	100.0
Actuated g/C Ratio	0.29		0.29					0.63	1.00		0.63	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	971		1010					2215	1536		2215	1536
v/s Ratio Prot								c0.58			0.24	
v/s Ratio Perm	0.20		0.25						0.42			0.17
v/c Ratio	0.70		0.71					0.92	0.42		0.38	0.17
Uniform Delay, d1	31.3		31.5					16.5	0.0		9.2	0.0
Progression Factor	1.00		1.00					1.38	1.00		0.55	1.00
Incremental Delay, d2	2.2		2.4					0.8	0.1		0.5	0.2
Delay (s)	33.5		33.9					23.6	0.1		5.6	0.2
Level of Service	C		C					C	A		A	A
Approach Delay (s)		33.7			0.0			18.0			4.3	
Approach LOS		C			A			B			A	

Intersection Summary

HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1781	1506		1784	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1781	1506		1784	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	506	48	49	137	18	444	43	1515	121	298	1106	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	550	52	53	149	20	483	47	1647	132	324	1202	162
RTOR Reduction (vph)	0	0	35	0	0	318	0	0	56	0	0	123
Lane Group Flow (vph)	0	602	18	0	169	165	47	1647	76	324	1202	39
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		14.3	16.4	5.6	29.3	29.3	16.4	40.1	24.0
Effective Green, g (s)		24.0	24.0		14.3	16.4	5.6	29.3	29.3	16.4	40.1	24.0
Actuated g/C Ratio		0.24	0.24		0.14	0.16	0.06	0.29	0.29	0.16	0.40	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		427	361		255	260	99	1037	441	563	2039	669
v/s Ratio Prot		c0.34			c0.09	c0.31	0.03	c0.47		0.09	0.24	0.06
v/s Ratio Perm			0.04						0.09			
v/c Ratio		1.41	0.05		0.66	0.64	0.47	1.59	0.17	0.58	0.59	0.06
Uniform Delay, d1		38.0	29.2		40.6	39.0	45.8	35.4	26.3	38.6	23.5	29.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.91	0.93	1.91
Incremental Delay, d2		197.9	0.1		6.3	5.0	3.6	269.3	0.8	1.3	1.2	0.0
Delay (s)		235.9	29.3		46.9	44.0	49.3	304.7	27.2	36.3	23.1	56.0
Level of Service		F	C		D	D	D	F	C	D	C	E
Approach Delay (s)		219.2			44.8			278.0			28.8	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	151.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	534	1048	39	266	1057
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	580	1139	42	289	1149
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2312	610			1202	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2312	610			1202	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			49	
cM capacity (veh/h)	15	423			567	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	580	570	570	42	289	574	574
Volume Left	0	0	0	0	289	0	0
Volume Right	580	0	0	42	0	0	0
cSH	423	1700	1700	1700	567	1700	1700
Volume to Capacity	1.37	0.34	0.34	0.02	0.51	0.34	0.34
Queue Length 95th (ft)	689	0	0	0	72	0	0
Control Delay (s)	207.7	0.0	0.0	0.0	17.8	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	207.7	0.0			3.6		
Approach LOS	F						

Intersection Summary

Average Delay	39.3		
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1464	1770	3539	1458	3433	3486		1770	3539	1466
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1464	1770	3539	1458	3433	3486		1770	3539	1466
Volume (vph)	257	644	493	164	393	137	257	599	43	196	660	176
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	700	536	178	427	149	279	651	47	213	717	191
RTOR Reduction (vph)	0	0	294	0	0	121	0	5	0	0	0	141
Lane Group Flow (vph)	279	700	242	178	427	28	279	693	0	213	717	50
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.8	22.8	22.8	17.1	17.1	17.1	12.1	24.1		12.1	24.1	24.1
Effective Green, g (s)	22.8	22.8	22.8	17.1	17.1	17.1	12.1	24.1		12.1	24.1	24.1
Actuated g/C Ratio	0.25	0.25	0.25	0.19	0.19	0.19	0.13	0.26		0.13	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	438	876	362	329	657	271	451	912		233	926	384
v/s Ratio Prot	0.16	0.20		0.10	c0.12		0.08	0.20		c0.12	c0.20	
v/s Ratio Perm			0.37			0.10						0.13
v/c Ratio	0.64	0.80	0.67	0.54	0.65	0.10	0.62	0.76		0.91	0.77	0.13
Uniform Delay, d1	31.0	32.5	31.2	33.9	34.7	31.1	37.8	31.3		39.5	31.5	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	5.1	4.6	1.8	2.2	0.2	2.5	5.9		36.3	6.3	0.7
Delay (s)	34.0	37.7	35.9	35.8	37.0	31.3	40.3	37.2		75.8	37.8	26.7
Level of Service	C	D	D	D	D	C	D	D		E	D	C
Approach Delay (s)		36.3			35.6			38.1			43.1	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	291	82	50	307	198	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	316	89	54	334	215	123
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			415		823	381
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			415		823	381
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		33	81
cM capacity (veh/h)			1134		321	655

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	405	388	215	123
Volume Left	0	54	215	0
Volume Right	89	0	0	123
cSH	1700	1134	321	655
Volume to Capacity	0.24	0.05	0.67	0.19
Queue Length 95th (ft)	0	4	113	17
Control Delay (s)	0.0	1.6	36.2	11.8
Lane LOS		A	E	B
Approach Delay (s)	0.0	1.6	27.3	
Approach LOS			D	

Intersection Summary

Average Delay	8.7		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1785		1770	1863	1770	1539
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1785		1770	1863	1770	1539
Volume (vph)	349	106	93	170	107	133
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	379	115	101	185	116	145
RTOR Reduction (vph)	11	0	0	0	0	90
Lane Group Flow (vph)	483	0	101	185	116	55
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	23.5		7.8	35.3	26.7	26.7
Effective Green, g (s)	23.5		7.8	35.3	26.7	26.7
Actuated g/C Ratio	0.34		0.11	0.50	0.38	0.38
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	599		197	939	675	587
v/s Ratio Prot	c0.28		c0.06	0.10	0.07	
v/s Ratio Perm						0.09
v/c Ratio	0.81		0.51	0.20	0.17	0.09
Uniform Delay, d1	21.2		29.3	9.5	14.3	13.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8		2.2	0.1	0.6	0.3
Delay (s)	29.0		31.6	9.7	14.9	14.2
Level of Service	C		C	A	B	B
Approach Delay (s)	29.0			17.4	14.5	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1519	1770	1667		1770	4938		1770	3504	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1519	1770	1667		1770	4938		1770	3504	
Volume (vph)	43	10	65	523	76	110	107	856	146	19	695	37
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	11	71	568	83	120	116	930	159	21	755	40
RTOR Reduction (vph)	0	0	65	0	47	0	0	19	0	0	3	0
Lane Group Flow (vph)	0	58	6	568	156	0	116	1070	0	21	792	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		6.5	6.5	24.6	24.6		8.1	31.5		2.8	26.2	
Effective Green, g (s)		6.5	6.5	24.6	24.6		8.1	31.5		2.8	26.2	
Actuated g/C Ratio		0.08	0.08	0.30	0.30		0.10	0.39		0.03	0.32	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		143	121	535	504		176	1911		61	1128	
v/s Ratio Prot		0.03		c0.32	0.12		c0.07	0.22		0.01	c0.23	
v/s Ratio Perm			0.05									
v/c Ratio		0.41	0.05	1.06	0.31		0.66	0.56		0.34	0.70	
Uniform Delay, d1		35.6	34.6	28.4	21.9		35.3	19.5		38.4	24.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.2	56.3	0.4		8.6	1.2		3.4	3.7	
Delay (s)		37.5	34.7	84.7	22.2		43.9	20.7		41.8	27.8	
Level of Service		D	C	F	C		D	C		D	C	
Approach Delay (s)		36.0			68.2			23.0			28.2	
Approach LOS		D			E			C			C	

Intersection Summary

HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

15: Alvarado Rd & 70th St

E + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3434		3433	1863	2787	1770	3539	1527	1770	3539	1527
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3434		3433	1863	2787	1770	3539	1527	1770	3539	1527
Volume (vph)	190	379	72	607	96	625	111	792	489	138	463	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	412	78	660	104	679	121	861	532	150	503	162
RTOR Reduction (vph)	0	13	0	0	0	598	0	0	357	0	0	107
Lane Group Flow (vph)	207	477	0	660	104	81	121	861	175	150	503	55
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	20.0	20.0		25.3	25.3	13.2	12.0	36.4	36.4	13.2	37.6	37.6
Effective Green, g (s)	20.0	20.0		25.3	25.3	13.2	12.0	36.4	36.4	13.2	37.6	37.6
Actuated g/C Ratio	0.18	0.18		0.23	0.23	0.12	0.11	0.33	0.33	0.12	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	619	619		783	425	332	192	1162	501	211	1200	518
v/s Ratio Prot	0.06	c0.14		c0.19	0.06	c0.24	0.07	0.24		0.08	0.14	
v/s Ratio Perm									0.35			0.11
v/c Ratio	0.33	0.77		0.84	0.24	0.24	0.63	0.74	0.35	0.71	0.42	0.11
Uniform Delay, d1	39.6	43.3		40.9	35.0	44.3	47.3	33.1	28.3	47.0	28.2	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	5.9		8.2	0.3	0.4	6.6	4.3	1.9	10.7	1.1	0.4
Delay (s)	40.0	49.2		49.1	35.3	44.7	53.9	37.3	30.2	57.7	29.3	25.5
Level of Service	D	D		D	D	D	D	D	C	E	C	C
Approach Delay (s)		46.4			46.0			36.1			33.8	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

16: Parkway Dr & I-8 WB

E + P PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	175	0	80	101	531	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	190	0	87	110	577	76
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total (vph)	190	87	110	577	76	
Volume Left (vph)	0	87	0	577	0	
Volume Right (vph)	0	0	0	0	76	
Hadj (s)	0.03	0.53	0.03	0.53	-0.67	
Departure Headway (s)	6.6	7.4	6.9	6.3	5.1	
Degree Utilization, x	0.35	0.18	0.21	1.01	0.11	
Capacity (veh/h)	538	477	514	577	692	
Control Delay (s)	13.1	10.8	10.5	64.3	7.5	
Approach Delay (s)	13.1	10.6		57.7		
Approach LOS	B	B		F		

Intersection Summary

Delay	40.6		
HCM Level of Service	E		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1521	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1521	1770	2787
Volume (vph)	1040	57	99	4	25	1629
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1130	62	108	4	27	1771
RTOR Reduction (vph)	0	0	0	4	0	606
Lane Group Flow (vph)	1130	62	108	0	27	1165
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	47.9	60.5	8.6	8.6	19.0	47.9
Effective Green, g (s)	47.9	60.5	8.6	8.6	19.0	47.9
Actuated g/C Ratio	0.55	0.69	0.10	0.10	0.22	0.55
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1879	1288	183	149	384	1526
v/s Ratio Prot	0.33	0.03	c0.06		c0.02	c0.64
v/s Ratio Perm				0.00		
v/c Ratio	0.60	0.05	0.59	0.00	0.07	0.76
Uniform Delay, d1	13.4	4.3	37.8	35.6	27.2	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	5.0	0.0	0.4	2.3
Delay (s)	13.9	4.3	42.8	35.6	27.6	17.7
Level of Service	B	A	D	D	C	B
Approach Delay (s)		13.4	42.5		17.9	
Approach LOS		B	D		B	

Intersection Summary

HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

RAMP METER ANALYSIS

EXISTING, EXISTING + PROJECT

Fixed Rate Method

Location/Condition	Peak Hour	Peak Hour Demand D	Flow F	Excess Demand E	Delay (min)	Queue (ft)
I-8/College Avenue Interchange						
NB College Avenue to WB I-8					2 SOV	
Existing	AM	250	318	0	0	0
Existing + Project	AM	260	318	0	0	0
Project Increase	AM	10	318	0	0	0
SB College Avenue to WB I-8					2 SOV	
Existing	AM	455	318	137	26	3425
Existing + Project	AM	462	318	144	27	3588
Project Increase	AM	7	318	7	1	163
NB College Avenue to EB I-8					1 SOV	
Existing	PM	522	318	204	38	5100
Existing + Project	PM	591	318	273	52	6825
Project Increase	PM	69	318	69	14	1725
SB College Avenue to EB I-8					1 SOV	
Existing	PM	236	318	0	0	0
Existing + Project	PM	236	318	0	0	0
Project Increase	PM	0	318	0	0	0
I-8/Lake Blvd/ 70th Street Interchange						
SB Lake Boulevard to WB I-8					1 SOV + 1 HOV	
Existing	AM	684	828	0	0	0
Existing + Project	AM	684	828	0	0	0
Project Increase	AM	0	828	0	0	0
I-8/Fairmount Ave Interchange						
SB Fairmount Ave to EB I-8					1 SOV	
Existing	PM	430	492	0	0	0
Existing + Project	PM	432	492	0	0	0
Project Increase	PM	2	492	0	0	0

Freeway Mainline Operations
Existing + Total Project

Freeway Segment	Dir.	# of Lanes	Hourly Capacity[a]	ADT	Existing Peak Hour Volume [b]		Project Volume		Existing + Project Peak Hour Volume		V/C [c]		LOS		Δ V/C	
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 8																
Fairmount Ave to Waring Rd	EB	5	10000	253,910	3946	12103	121	82	4067	12185	0.407	1.218	A	**F(0)**	0.012	**0.008**
	WB	6	12000		11869	7925	34	131	11903	8056	0.992	0.671	E	C	**0.003**	0.011
Waring Rd to College Ave	EB	5	10000	240,910	6868	10969	121	82	6989	11051	0.699	1.105	C	**F(0)**	0.012	**0.008**
	WB	5	10000		11506	7183	34	131	11540	7314	1.154	0.731	**F(0)**	C	**0.003**	0.013
College Ave to Lake Murray Blvd	EB	4 + 1	9200	216,030	5313	10392	15	71	5328	10463	0.579	1.137	B	**F(0)**	0.002	**0.008**
	WB	5	10000		10842	6919	65	41	10907	6960	1.091	0.696	**F(0)**	C	**0.006**	0.004
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9200	203,950	4991	9761	24	138	5015	9899	0.545	1.076	B	**F(0)**	0.003	**0.015**
	WB	4	8000		10184	6499	128	74	10312	6573	1.289	0.822	**F(1)**	D	**0.016**	0.009

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per HOV lane
b. Values calculated in the Existing Conditions table
c. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

APPENDIX J

NEAR-TERM WITHOUT PROJECT INTERSECTION, RAMP METER, & FREEWAY ANALYSIS CALCULATION SHEETS

1: Camino del Rio N & Fairmount Ave
2012 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1583	1610	2971	1441	1770	3450		3433	3539	1464
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1583	1610	2971	1441	1770	3450		3433	3539	1464
Volume (vph)	21	16	260	379	288	562	277	1282	163	16	1011	81
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	17	283	412	313	611	301	1393	177	17	1099	88
RTOR Reduction (vph)	0	0	157	0	21	393	0	5	0	0	0	35
Lane Group Flow (vph)	23	17	126	294	584	44	301	1565	0	17	1099	53
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.5	6.5	30.2	37.8	37.8	10.8	30.2	88.9		10.8	69.5	69.5
Effective Green, g (s)	6.5	6.5	30.2	37.8	37.8	10.8	30.2	88.9		10.8	69.5	69.5
Actuated g/C Ratio	0.04	0.04	0.19	0.24	0.24	0.07	0.19	0.56		0.07	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	68	72	299	380	702	97	334	1917		232	1537	636
v/s Ratio Prot	c0.01	0.01	c0.18	0.18	c0.20	c0.30	0.17	c0.46		0.00	0.31	
v/s Ratio Perm												0.06
v/c Ratio	0.34	0.24	0.42	0.77	0.83	0.46	0.90	0.82		0.07	0.72	0.08
Uniform Delay, d1	74.7	74.3	57.2	57.1	58.1	71.8	63.4	28.9		69.9	37.1	26.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.11		1.00	1.00	1.00
Incremental Delay, d2	2.9	1.7	1.0	9.5	8.3	3.4	22.0	3.2		0.1	2.9	0.3
Delay (s)	77.6	76.0	58.1	66.6	66.4	75.2	89.7	35.2		70.0	40.0	26.8
Level of Service	E	E	E	E	E	E	F	D		E	D	C
Approach Delay (s)		60.5			69.3			44.0			39.5	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave
2012 AM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	1084	1741	154	0	759	670	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1178	1892	167	0	825	728	0
RTOR Reduction (vph)	0	100	0	0	0	0	0
Lane Group Flow (vph)	1178	1792	167	0	825	728	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	93.3	93.3	19.2		58.7	35.5	
Effective Green, g (s)	93.3	93.3	19.2		58.7	35.5	
Actuated g/C Ratio	0.58	0.58	0.12		0.37	0.22	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2002	1960	212		1298	1128	
v/s Ratio Prot	0.34		c0.09		c0.23	0.14	
v/s Ratio Perm		0.56					
v/c Ratio	0.59	0.91	0.79		0.64	0.65	
Uniform Delay, d1	21.2	29.8	68.4		41.8	56.5	
Progression Factor	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	7.1	17.4		2.4	2.0	
Delay (s)	21.6	36.9	85.8		44.2	58.3	
Level of Service	C	D	F		D	E	
Approach Delay (s)	31.0				51.2	58.3	
Approach LOS	C				D	E	

Intersection Summary

HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3389	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3389	
Volume (vph)	42	71	55	719	151	16
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	77	60	782	164	17
RTOR Reduction (vph)	0	0	0	265	6	0
Lane Group Flow (vph)	46	77	60	517	175	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	4.0	12.2	4.2	39.5	39.5	
Effective Green, g (s)	4.0	12.2	4.2	39.5	39.5	
Actuated g/C Ratio	0.07	0.20	0.07	0.66	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	119	381	131	1047	2242	
v/s Ratio Prot	c0.03	0.04	c0.03	c0.49	0.05	
v/s Ratio Perm						
v/c Ratio	0.39	0.20	0.46	0.49	0.08	
Uniform Delay, d1	26.7	19.7	26.7	5.1	3.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.3	2.5	1.7	0.1	
Delay (s)	28.8	20.0	29.2	6.7	3.7	
Level of Service	C	B	C	A	A	
Approach Delay (s)		23.3	8.3		3.7	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		0.96	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96			0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3506		1690	3318			1738		1681	1694	1454
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3506		1690	3318			1738		1681	1694	1454
Volume (vph)	954	458	17	11	787	307	42	7	9	120	7	147
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1037	498	18	12	855	334	46	8	10	130	8	160
RTOR Reduction (vph)	0	2	0	0	40	0	0	7	0	0	0	135
Lane Group Flow (vph)	1037	514	0	12	1149	0	0	57	0	67	71	25
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	25.0	54.4		0.8	30.2			16.0		16.0	16.0	16.0
Effective Green, g (s)	25.0	54.4		0.8	30.2			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.53		0.01	0.29			0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	832	1848		13	971			269		261	263	225
v/s Ratio Prot	c0.30	0.15		0.01	c0.36			c0.04		0.04	0.04	
v/s Ratio Perm												0.11
v/c Ratio	1.25	0.28		0.92	1.18			0.21		0.26	0.27	0.11
Uniform Delay, d1	39.1	13.5		51.2	36.5			38.1		38.4	38.4	37.5
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	120.9	0.1		207.3	93.3			1.8		2.4	2.5	1.0
Delay (s)	160.0	13.6		258.5	129.8			39.9		40.7	41.0	38.5
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		111.4			131.0			39.9			39.6	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	110.6	HCM Level of Service	F
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

2012 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3533		1770	3376			1596		1681	1703	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3533		1770	3376			1596		1681	1703	1583
Volume (vph)	114	429	3	73	1147	239	15	20	67	111	14	92
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	466	3	79	1247	260	16	22	73	121	15	100
RTOR Reduction (vph)	0	1	0	0	17	0	0	61	0	0	0	92
Lane Group Flow (vph)	124	468	0	79	1490	0	0	50	0	66	70	8
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	48.0		4.8	44.8			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	48.0		4.8	44.8			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.48		0.05	0.44			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	140	1682		84	1500			253		267	270	126
v/s Ratio Prot	c0.07	c0.13		0.04	c0.45			c0.07		0.04	c0.04	0.06
v/s Ratio Perm												
v/c Ratio	0.89	0.28		0.94	0.99			0.20		0.25	0.26	0.06
Uniform Delay, d1	45.9	15.9		47.9	27.8			36.8		37.1	37.2	42.9
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	43.6	0.1		78.1	21.5			1.7		2.2	2.3	0.2
Delay (s)	89.5	16.0		126.0	49.3			38.5		39.3	39.5	43.1
Level of Service	F	B		F	D			D		D	D	D
Approach Delay (s)		31.4			53.2			38.5			41.0	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

2012 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1836	1583	1681	1657		1770	3539	1583	1770	3519	
Flt Permitted		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1836	1583	1681	1657		1770	3539	1583	1770	3519	
Volume (vph)	118	281	190	523	104	64	85	557	225	70	927	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	305	207	568	113	70	92	605	245	76	1008	24
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	192	0	1	0
Lane Group Flow (vph)	0	433	207	378	365	0	92	605	53	76	1031	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Effective Green, g (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Actuated g/C Ratio		0.23	0.13	0.22	0.22		0.13	0.33	0.22	0.07	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		431	200	364	359		224	1185	343	123	978	
v/s Ratio Prot		c0.24	c0.13	0.22	c0.23		0.05	0.17	0.15	0.04	c0.29	
v/s Ratio Perm												
v/c Ratio		1.00	1.03	1.04	1.02		0.41	0.51	0.15	0.62	1.05	
Uniform Delay, d1		42.4	48.4	43.4	43.4		44.6	29.6	35.2	50.1	40.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		44.5	73.1	57.5	51.9		1.2	1.6	0.2	8.9	44.0	
Delay (s)		86.9	121.5	100.9	95.3		45.8	31.1	35.4	59.0	84.0	
Level of Service		F	F	F	F		D	C	D	E	F	
Approach Delay (s)		98.1			98.1			33.7			82.3	
Approach LOS		F			F			C			F	

Intersection Summary

HCM Average Control Delay	75.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	482	0	113	0	816	546	0	711	995
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	524	0	123	0	887	593	0	773	1082
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	524	0	123	0	887	593	0	773	1082
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				19.1		100.0		72.9	100.0		72.9	100.0
Effective Green, g (s)				19.1		100.0		72.9	100.0		72.9	100.0
Actuated g/C Ratio				0.19		1.00		0.73	1.00		0.73	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				631		1555		2580	1536		2580	1536
v/s Ratio Prot								0.25			.0.22	
v/s Ratio Perm				0.16		0.08			0.39			0.70
v/c Ratio				0.83		0.08		0.34	0.39		0.30	0.70
Uniform Delay, d1				38.9		0.0		4.9	0.0		4.7	0.0
Progression Factor				1.00		1.00		1.53	1.00		1.00	1.00
Incremental Delay, d2				9.1		0.1		0.3	0.6		0.3	2.7
Delay (s)				48.0		0.1		7.8	0.6		5.0	2.7
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			38.9			4.9			3.7	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	475	0	1936	0	0	0	0	903	231	0	862	329
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	516	0	2104	0	0	0	0	982	251	0	937	358
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	516	0	2031	0	0	0	0	982	251	0	937	358
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					1593	1536		1593	1536
v/s Ratio Prot								c0.28			0.26	
v/s Ratio Perm	0.16		0.61						0.16			0.23
v/c Ratio	0.33		1.26					0.62	0.16		0.59	0.23
Uniform Delay, d1	16.6		26.5					20.9	0.0		20.6	0.0
Progression Factor	1.00		1.00					0.86	1.00		0.79	1.00
Incremental Delay, d2	0.1		121.6					0.2	0.0		1.5	0.3
Delay (s)	16.8		148.1					18.1	0.0		17.8	0.3
Level of Service	B		F					B	A		B	A
Approach Delay (s)		122.2			0.0			14.4			13.0	
Approach LOS		F			A			B			B	

Intersection Summary

HCM Average Control Delay	68.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

9: Canyon Crest Dr & College Ave
2012 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1799	1506		1822	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1799	1506		1822	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	68	28	55	97	119	154	179	929	70	516	1317	964
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	30	60	105	129	167	195	1010	76	561	1432	1048
RTOR Reduction (vph)	0	0	53	0	0	116	0	0	56	0	0	918
Lane Group Flow (vph)	0	104	7	0	234	51	195	1010	20	561	1432	130
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		11.7	11.7		17.6	30.6	17.4	24.1	24.1	30.6	37.3	11.7
Effective Green, g (s)		11.7	11.7		17.6	30.6	17.4	24.1	24.1	30.6	37.3	11.7
Actuated g/C Ratio		0.12	0.12		0.18	0.31	0.17	0.24	0.24	0.31	0.37	0.12
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		210	176		321	484	308	853	363	1050	1897	326
v/s Ratio Prot		0.06			c0.13	0.11	c0.11	c0.29		0.16	c0.28	c0.38
v/s Ratio Perm			0.04						0.05			
v/c Ratio		0.50	0.04		0.73	0.11	0.63	1.18	0.05	0.53	0.75	0.40
Uniform Delay, d1		41.4	39.2		38.9	24.9	38.3	38.0	29.2	28.8	27.4	40.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.88	0.85	4.21
Incremental Delay, d2		1.8	0.1		8.0	0.1	4.2	94.7	0.3	0.0	0.3	0.1
Delay (s)		43.2	39.3		47.0	25.0	42.5	132.6	29.5	25.4	23.4	172.4
Level of Service		D	D		D	C	D	F	C	C	C	F
Approach Delay (s)		41.8			37.8			112.8			75.1	
Approach LOS		D			D			F			E	

Intersection Summary

HCM Average Control Delay	80.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

10: Zura Way & College Ave
2012 AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	103	1044	114	535	1187
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	112	1135	124	582	1290
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2963	607			1279	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2963	607			1279	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	74			0	
cM capacity (veh/h)	0	425			530	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	112	567	567	124	582	645	645
Volume Left	0	0	0	0	582	0	0
Volume Right	112	0	0	124	0	0	0
cSH	425	1700	1700	1700	530	1700	1700
Volume to Capacity	0.26	0.33	0.33	0.07	1.10	0.38	0.38
Queue Length 95th (ft)	26	0	0	0	459	0	0
Control Delay (s)	16.5	0.0	0.0	0.0	95.8	0.0	0.0
Lane LOS	C				F		
Approach Delay (s)	16.5	0.0			29.8		
Approach LOS	C						

Intersection Summary

Average Delay	17.7		
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1459	1770	3539	1461	3433	3423		1770	3539	1463
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1459	1770	3539	1461	3433	3423		1770	3539	1463
Volume (vph)	282	297	135	34	636	215	547	931	160	136	397	204
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	307	323	147	37	691	234	595	1012	174	148	432	222
RTOR Reduction (vph)	0	0	115	0	0	180	0	13	0	0	0	165
Lane Group Flow (vph)	307	323	32	37	691	54	595	1173	0	148	432	57
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	20.4	20.4	20.4	21.9	21.9	21.9	12.1	24.2		12.1	24.2	24.2
Effective Green, g (s)	20.4	20.4	20.4	21.9	21.9	21.9	12.1	24.2		12.1	24.2	24.2
Actuated g/C Ratio	0.22	0.22	0.22	0.23	0.23	0.23	0.13	0.26		0.13	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	382	763	315	410	819	338	439	876		226	905	374
v/s Ratio Prot	c0.17	0.09		0.02	c0.20		c0.17	c0.35		0.08	0.12	
v/s Ratio Perm			0.10			0.16						0.15
v/c Ratio	0.80	0.42	0.10	0.09	0.84	0.16	1.36	1.34		0.65	0.48	0.15
Uniform Delay, d1	35.2	32.0	29.7	28.5	34.7	29.0	41.2	35.2		39.3	29.8	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.6	0.4	0.1	0.1	7.9	0.2	174.3	160.1		6.7	1.8	0.9
Delay (s)	46.8	32.4	29.9	28.6	42.6	29.2	215.5	195.3		45.9	31.6	28.1
Level of Service	D	C	C	C	D	C	F	F		D	C	C
Approach Delay (s)		37.6			38.8			202.0			33.3	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	104.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	270	63	36	370	17	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	293	68	39	402	18	3
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			372		828	348
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			372		828	348
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		94	100
cM capacity (veh/h)			1177		324	684

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	362	441	18	3
Volume Left	0	39	18	0
Volume Right	68	0	0	3
cSH	1700	1177	324	684
Volume to Capacity	0.21	0.03	0.06	0.00
Queue Length 95th (ft)	0	3	5	0
Control Delay (s)	0.0	1.0	16.8	10.3
Lane LOS		A	C	B
Approach Delay (s)	0.0	1.0	15.8	
Approach LOS			C	

Intersection Summary

Average Delay	1.0		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1713		1770	1863	1770	1543
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1713		1770	1863	1770	1543
Volume (vph)	97	78	173	430	117	72
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	85	188	467	127	78
RTOR Reduction (vph)	37	0	0	0	0	43
Lane Group Flow (vph)	153	0	188	467	127	35
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	11.7		9.7	25.4	26.7	26.7
Effective Green, g (s)	11.7		9.7	25.4	26.7	26.7
Actuated g/C Ratio	0.19		0.16	0.42	0.44	0.44
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333		286	787	786	685
v/s Ratio Prot	0.11		0.11	c0.25	c0.07	
v/s Ratio Perm						0.05
v/c Ratio	0.46		0.66	0.59	0.16	0.05
Uniform Delay, d1	21.4		23.6	13.4	10.0	9.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		5.4	1.2	0.4	0.1
Delay (s)	22.4		29.0	14.6	10.4	9.6
Level of Service	C		C	B	B	A
Approach Delay (s)	22.4			18.7	10.1	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.95		1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1521	1770	1751		1770	4825		1770	3532	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1521	1770	1751		1770	4825		1770	3532	
Volume (vph)	33	12	195	270	71	34	110	617	211	30	1335	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	13	212	293	77	37	120	671	229	33	1451	14
RTOR Reduction (vph)	0	0	118	0	17	0	0	55	0	0	1	0
Lane Group Flow (vph)	0	49	94	293	97	0	120	845	0	33	1464	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		10.6	10.6	17.0	17.0		7.0	49.3		3.5	45.8	
Effective Green, g (s)		10.6	10.6	17.0	17.0		7.0	49.3		3.5	45.8	
Actuated g/C Ratio		0.11	0.11	0.18	0.18		0.07	0.51		0.04	0.48	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		198	167	312	309		129	2468		64	1678	
v/s Ratio Prot		0.03		c0.17	0.07		c0.07	c0.19		0.02	c0.41	
v/s Ratio Perm			0.14									
v/c Ratio		0.25	0.56	0.94	0.31		0.93	0.34		0.52	0.87	
Uniform Delay, d1		39.3	40.7	39.2	34.6		44.5	13.9		45.6	22.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	4.3	34.8	0.6		58.0	0.4		6.9	6.6	
Delay (s)		39.9	44.9	74.0	35.2		102.5	14.3		52.5	29.3	
Level of Service		D	D	E	D		F	B		D	C	
Approach Delay (s)		44.0			63.1			24.7			29.8	
Approach LOS		D			E			C			C	

Intersection Summary

HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3410		3433	1863	2787	1770	3539	1529	1770	3539	1529
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3410		3433	1863	2787	1770	3539	1529	1770	3539	1529
Volume (vph)	84	114	27	371	235	353	156	1098	364	131	419	346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	124	29	403	255	384	170	1193	396	142	455	376
RTOR Reduction (vph)	0	17	0	0	0	339	0	0	189	0	0	208
Lane Group Flow (vph)	91	136	0	403	255	45	170	1193	207	142	455	168
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.6	9.6		18.9	18.9	12.5	15.0	50.5	50.5	12.5	48.0	48.0
Effective Green, g (s)	9.6	9.6		18.9	18.9	12.5	15.0	50.5	50.5	12.5	48.0	48.0
Actuated g/C Ratio	0.09	0.09		0.18	0.18	0.12	0.14	0.47	0.47	0.12	0.45	0.45
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	305		604	328	324	247	1663	718	206	1580	683
v/s Ratio Prot	0.03	c0.04		0.12	c0.14	c0.14	0.10	c0.34		0.08	0.13	
v/s Ratio Perm									0.26			0.25
v/c Ratio	0.30	0.44		0.67	0.78	0.14	0.69	0.72	0.29	0.69	0.29	0.25
Uniform Delay, d1	45.8	46.4		41.4	42.3	42.7	44.0	22.8	17.5	45.6	18.9	18.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0		2.8	11.0	0.2	7.7	2.7	1.0	9.2	0.5	0.9
Delay (s)	46.3	47.5		44.2	53.3	42.9	51.8	25.5	18.5	54.9	19.4	19.4
Level of Service	D	D		D	D	D	D	C	B	D	B	B
Approach Delay (s)		47.0			45.9			26.4			24.5	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	107.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	183	0	414	159	295	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	0	450	173	321	11
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total (vph)	199	450	173	321	11	
Volume Left (vph)	0	450	0	321	0	
Volume Right (vph)	0	0	0	0	11	
Hadj (s)	0.03	0.53	0.03	0.53	-0.67	
Departure Headway (s)	6.6	6.7	6.2	7.3	6.1	
Degree Utilization, x	0.36	0.83	0.30	0.65	0.02	
Capacity (veh/h)	519	532	567	471	556	
Control Delay (s)	13.3	33.6	10.5	21.9	8.0	
Approach Delay (s)	13.3	27.2		21.4		
Approach LOS	B	D		C		

Intersection Summary

Delay	23.1		
HCM Level of Service	C		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1531	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1531	1770	2787
Volume (vph)	705	78	172	11	13	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	766	85	187	12	14	1218
RTOR Reduction (vph)	0	0	0	10	0	748
Lane Group Flow (vph)	766	85	187	2	14	470
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	30.7	47.9	13.2	13.2	23.7	30.7
Effective Green, g (s)	30.7	47.9	13.2	13.2	23.7	30.7
Actuated g/C Ratio	0.39	0.60	0.17	0.17	0.30	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1324	1121	309	254	527	1075
v/s Ratio Prot	0.22	0.05	c0.10		c0.01	c0.44
v/s Ratio Perm				0.01		
v/c Ratio	0.58	0.08	0.61	0.01	0.03	0.44
Uniform Delay, d1	19.3	6.6	30.8	27.7	19.8	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	3.3	0.0	0.1	0.3
Delay (s)	20.0	6.6	34.1	27.7	19.9	18.4
Level of Service	B	A	C	C	B	B
Approach Delay (s)		18.6	33.7		18.4	
Approach LOS		B	C		B	

Intersection Summary

HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

1: Camino del Rio N & Fairmount Ave

2012 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1740	1583	1610	3072	1441	1770	3410		3433	3539	1462
Flt Permitted	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1740	1583	1610	3072	1441	1770	3410		3433	3539	1462
Volume (vph)	163	82	751	707	122	473	221	921	180	18	1629	81
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	89	816	768	133	514	240	1001	196	20	1771	88
RTOR Reduction (vph)	0	0	127	0	1	274	0	10	0	0	0	24
Lane Group Flow (vph)	130	136	689	384	532	224	240	1187	0	20	1771	64
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.2	15.2	41.0	29.8	29.8	26.7	41.0	72.3		26.7	58.0	58.0
Effective Green, g (s)	15.2	15.2	41.0	29.8	29.8	26.7	41.0	72.3		26.7	58.0	58.0
Actuated g/C Ratio	0.10	0.10	0.26	0.19	0.19	0.17	0.26	0.45		0.17	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	165	406	300	572	240	454	1541		573	1283	530
v/s Ratio Prot	0.08	c0.08	c0.52	c0.24	0.17	0.35	0.14	0.35		0.01	c0.50	
v/s Ratio Perm												0.06
v/c Ratio	0.81	0.82	1.70	1.28	1.28dl	0.93	0.53	0.77		0.03	1.38	0.12
Uniform Delay, d1	71.0	71.1	59.5	65.1	64.1	65.8	51.2	36.9		55.9	51.0	34.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.92		1.00	1.00	1.00
Incremental Delay, d2	25.9	27.1	323.9	149.2	22.0	39.9	1.0	3.5		0.0	176.1	0.5
Delay (s)	97.0	98.2	383.4	214.3	86.0	105.7	58.7	37.3		55.9	227.1	34.5
Level of Service	F	F	F	F	F	F	E	D		E	F	C
Approach Delay (s)		313.2			127.7			40.9			216.3	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	169.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

2012 PM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	772	2551	72	0	527	1280	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	839	2773	78	0	573	1391	0
RTOR Reduction (vph)	0	7	0	0	0	0	0
Lane Group Flow (vph)	839	2766	78	0	573	1391	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	103.0	103.0	6.0		49.0	39.0	
Effective Green, g (s)	103.0	103.0	6.0		49.0	39.0	
Actuated g/C Ratio	0.64	0.64	0.04		0.31	0.24	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2210	2164	66		1084	1239	
v/s Ratio Prot	0.24		c0.04		0.16	c0.27	
v/s Ratio Perm		0.83					
v/c Ratio	0.38	1.28	1.18		0.53	1.12	
Uniform Delay, d1	13.4	28.5	77.0		45.9	60.5	
Progression Factor	1.00	1.00	1.00		1.00	0.97	
Incremental Delay, d2	0.1	128.8	168.1		1.8	56.4	
Delay (s)	13.5	157.3	245.1		47.8	115.1	
Level of Service	B	F	F		D	F	
Approach Delay (s)	123.9				71.4	115.1	
Approach LOS	F				E	F	

Intersection Summary

HCM Average Control Delay	115.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3402	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3402	
Volume (vph)	20	73	93	300	411	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	79	101	326	447	35
RTOR Reduction (vph)	0	0	0	122	5	0
Lane Group Flow (vph)	22	79	101	204	477	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	1.7	13.2	7.5	35.4	35.4	
Effective Green, g (s)	1.7	13.2	7.5	35.4	35.4	
Actuated g/C Ratio	0.03	0.23	0.13	0.63	0.63	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	53	434	247	990	2128	
v/s Ratio Prot	c0.01	0.04	c0.05	c0.21	0.14	
v/s Ratio Perm						
v/c Ratio	0.42	0.18	0.41	0.21	0.22	
Uniform Delay, d1	27.0	17.4	22.5	4.6	4.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.2	0.2	1.1	0.5	0.2	
Delay (s)	32.2	17.6	23.6	5.0	4.9	
Level of Service	C	B	C	A	A	
Approach Delay (s)		20.8	9.4		4.9	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97			0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (prot)	3433	3502		1770	3398			1730		1681	1689	1462
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (perm)	3433	3502		1770	3398			1730		1681	1689	1462
Volume (vph)	371	1163	48	23	766	170	46	9	13	472	11	365
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	403	1264	52	25	833	185	50	10	14	513	12	397
RTOR Reduction (vph)	0	3	0	0	17	0	0	8	0	0	0	330
Lane Group Flow (vph)	403	1313	0	25	1001	0	0	66	0	257	268	67
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.7	46.0		1.5	31.8			16.1		16.1	16.1	16.1
Effective Green, g (s)	15.7	46.0		1.5	31.8			16.1		16.1	16.1	16.1
Actuated g/C Ratio	0.16	0.48		0.02	0.33			0.17		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	563	1683		28	1129			291		283	284	246
v/s Ratio Prot	c0.12	c0.38		0.01	c0.30			c0.04		0.15	0.16	
v/s Ratio Perm												0.27
v/c Ratio	0.72	0.78		0.89	0.89			0.23		0.91	0.94	0.27
Uniform Delay, d1	37.9	20.6		47.0	30.2			34.4		39.1	39.4	34.7
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	4.3	2.4		123.8	8.6			1.8		34.3	40.7	2.7
Delay (s)	42.2	23.1		170.8	38.8			36.2		73.4	80.1	37.4
Level of Service	D	C		F	D			D		E	F	D
Approach Delay (s)		27.5			42.0			36.2			59.8	
Approach LOS		C			D			D			E	

Intersection Summary

HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.97			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3528		1770	3337			1596		1681	1706	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3528		1770	3337			1596		1681	1706	1583
Volume (vph)	156	1277	15	193	715	198	19	31	103	353	53	182
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	1388	16	210	777	215	21	34	112	384	58	198
RTOR Reduction (vph)	0	1	0	0	26	0	0	73	0	0	0	182
Lane Group Flow (vph)	170	1403	0	210	966	0	0	94	0	215	227	16
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	42.9		6.0	40.9			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	42.9		6.0	40.9			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.44		0.06	0.42			0.17		0.17	0.17	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	146	1562		110	1408			264		278	282	131
v/s Ratio Prot	0.10	c0.40		c0.12	0.30			c0.10		0.13	c0.13	0.13
v/s Ratio Perm												
v/c Ratio	1.16	0.90		1.91	0.69			0.36		0.77	0.80	0.12
Uniform Delay, d1	44.4	25.0		45.4	22.8			35.9		38.7	38.9	41.2
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	125.5	7.3		441.0	1.4			3.7		18.7	21.2	0.4
Delay (s)	169.9	32.2		486.4	24.2			39.6		57.4	60.2	41.6
Level of Service	F	C		F	C			D		E	E	D
Approach Delay (s)		47.1			104.9			39.6			53.5	
Approach LOS		D			F			D			D	

Intersection Summary

HCM Average Control Delay	67.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	96.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1827	1583	1681	1582		1770	3539	1583	1770	3509	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1827	1583	1681	1582		1770	3539	1583	1770	3509	
Volume (vph)	68	104	87	325	43	102	116	874	385	195	671	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	113	95	353	47	111	126	950	418	212	729	27
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	306	0	2	0
Lane Group Flow (vph)	0	187	95	259	226	0	126	950	112	212	754	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		14.7	11.1	19.3	19.3		11.1	34.4	19.3	10.1	33.4	
Effective Green, g (s)		14.7	11.1	19.3	19.3		11.1	34.4	19.3	10.1	33.4	
Actuated g/C Ratio		0.16	0.12	0.20	0.20		0.12	0.36	0.20	0.11	0.35	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		284	186	343	323		208	1288	323	189	1240	
v/s Ratio Prot		c0.10	0.06	0.15	0.16		0.07	c0.27	c0.26	c0.12	0.22	
v/s Ratio Perm												
v/c Ratio		0.66	0.51	0.76	0.70		0.61	0.74	0.35	1.12	0.61	
Uniform Delay, d1		37.5	39.2	35.4	34.9		39.6	26.1	32.2	42.2	25.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.4	2.4	9.1	6.5		4.9	3.8	0.6	101.9	2.2	
Delay (s)		43.0	41.5	44.5	41.4		44.5	29.9	32.8	144.1	27.4	
Level of Service		D	D	D	D		D	C	C	F	C	
Approach Delay (s)		42.5			43.0			32.0			53.0	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	514	0	323	0	1117	1382	0	594	527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	559	0	351	0	1214	1502	0	646	573
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	559	0	351	0	1214	1502	0	646	573
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				20.3		100.0		71.7	100.0		71.7	100.0
Effective Green, g (s)				20.3		100.0		71.7	100.0		71.7	100.0
Actuated g/C Ratio				0.20		1.00		0.72	1.00		0.72	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				671		1555		2537	1536		2537	1536
v/s Ratio Prot								0.34			0.18	
v/s Ratio Perm				0.17		0.23			0.98			0.37
v/c Ratio				0.83		0.23		0.48	0.98		0.25	0.37
Uniform Delay, d1				38.2		0.0		6.1	0.0		4.9	0.0
Progression Factor				1.00		1.00		0.90	1.00		1.00	1.00
Incremental Delay, d2				8.7		0.3		0.3	11.6		0.2	0.7
Delay (s)				47.0		0.3		5.8	11.6		5.1	0.7
Level of Service				D		A		A	B		A	A
Approach Delay (s)		0.0			29.0			9.0			3.1	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	665	0	868	0	0	0	0	1887	571	0	844	258
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	0	943	0	0	0	0	2051	621	0	917	280
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	723	0	847	0	0	0	0	2051	621	0	917	280
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	34.0		34.0					58.0	100.0		58.0	100.0
Effective Green, g (s)	34.0		34.0					58.0	100.0		58.0	100.0
Actuated g/C Ratio	0.34		0.34					0.58	1.00		0.58	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1123		1168					2053	1536		2053	1536
v/s Ratio Prot								c0.58			0.26	
v/s Ratio Perm	0.22		0.27						0.40			0.18
v/c Ratio	0.64		0.73					1.00	0.40		0.45	0.18
Uniform Delay, d1	27.9		28.9					21.0	0.0		11.9	0.0
Progression Factor	1.00		1.00					0.97	1.00		0.60	1.00
Incremental Delay, d2	1.3		2.3					5.7	0.1		0.7	0.3
Delay (s)	29.2		31.2					26.2	0.1		7.8	0.3
Level of Service	C		C					C	A		A	A
Approach Delay (s)		30.3			0.0			20.1			6.1	
Approach LOS		C			A			C			A	

Intersection Summary

HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

9: Canyon Crest Dr & College Ave

2012 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1781	1506		1786	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1781	1506		1786	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	453	42	75	91	15	340	73	1715	112	235	1362	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	492	46	82	99	16	370	79	1864	122	255	1480	130
RTOR Reduction (vph)	0	0	60	0	0	321	0	0	42	0	0	95
Lane Group Flow (vph)	0	538	22	0	115	49	79	1864	80	255	1480	35
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		11.3	13.3	8.5	35.4	35.4	13.3	40.2	24.0
Effective Green, g (s)		24.0	24.0		11.3	13.3	8.5	35.4	35.4	13.3	40.2	24.0
Actuated g/C Ratio		0.24	0.24		0.11	0.13	0.08	0.35	0.35	0.13	0.40	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		427	361		202	211	150	1253	533	457	2044	669
v/s Ratio Prot		c0.30			c0.06	c0.23	0.04	c0.53		0.07	0.29	0.05
v/s Ratio Perm			0.05						0.08			
v/c Ratio		1.26	0.06		0.57	0.23	0.53	1.49	0.15	0.56	0.72	0.05
Uniform Delay, d1		38.0	29.3		42.0	38.8	43.8	32.3	22.0	40.6	25.2	29.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.09	0.89	1.65
Incremental Delay, d2		134.7	0.1		3.7	0.6	3.3	223.7	0.6	1.3	2.0	0.0
Delay (s)		172.7	29.4		45.7	39.4	47.1	256.0	22.6	45.5	24.5	48.3
Level of Service		F	C		D	D	D	F	C	D	C	D
Approach Delay (s)		153.8			40.9			234.3			29.1	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	129.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

10: Zura Way & College Ave

2012 PM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	525	1289	92	265	1291
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	571	1401	100	288	1403
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2699	741			1521	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2699	741			1521	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			33	
cM capacity (veh/h)	6	347			427	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	571	701	701	100	288	702	702
Volume Left	0	0	0	0	288	0	0
Volume Right	571	0	0	100	0	0	0
cSH	347	1700	1700	1700	427	1700	1700
Volume to Capacity	1.64	0.41	0.41	0.06	0.67	0.41	0.41
Queue Length 95th (ft)	855	0	0	0	121	0	0
Control Delay (s)	329.6	0.0	0.0	0.0	29.1	0.0	0.0
Lane LOS	F				D		
Approach Delay (s)	329.6	0.0			5.0		
Approach LOS	F						

Intersection Summary

Average Delay	52.2		
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1461	1770	3539	1458	3433	3479		1770	3539	1461
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1461	1770	3539	1458	3433	3479		1770	3539	1461
Volume (vph)	675	745	566	178	501	185	418	644	52	252	791	185
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	734	810	615	193	545	201	454	700	57	274	860	201
RTOR Reduction (vph)	0	0	282	0	0	159	0	6	0	0	0	151
Lane Group Flow (vph)	734	810	333	193	545	42	454	751	0	274	860	50
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	24.0	24.0	24.0	20.3	20.3	20.3	12.0	24.0		12.0	24.0	24.0
Effective Green, g (s)	24.0	24.0	24.0	20.3	20.3	20.3	12.0	24.0		12.0	24.0	24.0
Actuated g/C Ratio	0.25	0.25	0.25	0.21	0.21	0.21	0.12	0.25		0.12	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	441	882	364	373	746	307	428	867		221	882	364
v/s Ratio Prot	0.41	0.23		0.11	c0.15		0.13	0.22		c0.15	c0.24	
v/s Ratio Perm			0.42			0.14						0.14
v/c Ratio	1.66	0.92	0.92	0.52	0.73	0.14	1.06	0.87		1.24	0.98	0.14
Uniform Delay, d1	36.2	35.2	35.2	33.7	35.4	30.9	42.2	34.6		42.2	35.9	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	308.9	14.2	27.0	1.2	3.7	0.2	60.5	11.3		140.3	24.8	0.8
Delay (s)	345.0	49.4	62.1	34.9	39.1	31.1	102.7	45.9		182.5	60.7	28.9
Level of Service	F	D	E	C	D	C	F	D		F	E	C
Approach Delay (s)		153.5			36.5			67.2			80.9	
Approach LOS		F			D			E			F	

Intersection Summary

HCM Average Control Delay	98.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	322	19	11	348	51	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	350	21	12	378	55	25
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			381		782	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			381		782	380
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		84	96
cM capacity (veh/h)			1168		353	656

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	371	390	55	25
Volume Left	0	12	55	0
Volume Right	21	0	0	25
cSH	1700	1168	353	656
Volume to Capacity	0.22	0.01	0.16	0.04
Queue Length 95th (ft)	0	1	14	3
Control Delay (s)	0.0	0.4	17.1	10.7
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.4	15.1	
Approach LOS			C	

Intersection Summary

Average Delay	1.6		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1773		1770	1863	1770	1541
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1773		1770	1863	1770	1541
Volume (vph)	274	100	102	130	110	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	109	111	141	120	158
RTOR Reduction (vph)	15	0	0	0	0	92
Lane Group Flow (vph)	392	0	111	141	120	66
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	19.0		7.9	30.9	27.8	27.8
Effective Green, g (s)	19.0		7.9	30.9	27.8	27.8
Actuated g/C Ratio	0.28		0.12	0.46	0.42	0.42
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	505		210	863	738	642
v/s Ratio Prot	c0.23		c0.06	0.08	0.07	
v/s Ratio Perm						0.10
v/c Ratio	0.78		0.53	0.16	0.16	0.10
Uniform Delay, d1	21.9		27.6	10.4	12.2	11.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4		2.4	0.1	0.5	0.3
Delay (s)	29.2		30.0	10.5	12.6	12.2
Level of Service	C		C	B	B	B
Approach Delay (s)	29.2			19.1	12.4	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1516	1770	1665		1770	4939		1770	3503	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1516	1770	1665		1770	4939		1770	3503	
Volume (vph)	47	11	71	533	83	120	117	921	154	21	753	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	12	77	579	90	130	127	1001	167	23	818	43
RTOR Reduction (vph)	0	0	71	0	52	0	0	20	0	0	3	0
Lane Group Flow (vph)	0	63	6	579	168	0	127	1148	0	23	858	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.2	7.2	32.1	32.1		8.1	35.5		1.5	28.9	
Effective Green, g (s)		7.2	7.2	32.1	32.1		8.1	35.5		1.5	28.9	
Actuated g/C Ratio		0.08	0.08	0.35	0.35		0.09	0.38		0.02	0.31	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		140	118	616	579		155	1900		29	1097	
v/s Ratio Prot		0.04		c0.33	0.13		c0.07	0.24		0.01	c0.25	
v/s Ratio Perm			0.05									
v/c Ratio		0.45	0.05	0.94	0.29		0.82	0.60		0.79	0.78	
Uniform Delay, d1		40.7	39.4	29.2	21.8		41.4	22.8		45.2	28.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3	0.2	22.3	0.3		27.4	1.4		83.5	5.6	
Delay (s)		43.0	39.6	51.4	22.1		68.8	24.2		128.8	34.4	
Level of Service		D	D	D	C		E	C		F	C	
Approach Delay (s)		41.1			43.4			28.6			36.8	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	92.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3410		3433	1863	2787	1770	3539	1526	1770	3539	1526
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3410		3433	1863	2787	1770	3539	1526	1770	3539	1526
Volume (vph)	187	330	79	664	101	683	121	866	535	151	506	117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	359	86	722	110	742	132	941	582	164	550	127
RTOR Reduction (vph)	0	18	0	0	0	649	0	0	374	0	0	82
Lane Group Flow (vph)	203	427	0	722	110	93	132	941	208	164	550	45
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	17.5	17.5		27.4	27.4	14.3	12.9	39.3	39.3	14.3	40.7	40.7
Effective Green, g (s)	17.5	17.5		27.4	27.4	14.3	12.9	39.3	39.3	14.3	40.7	40.7
Actuated g/C Ratio	0.15	0.15		0.24	0.24	0.12	0.11	0.34	0.34	0.12	0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	525	521		822	446	348	199	1215	524	221	1258	542
v/s Ratio Prot	0.06	c0.13		c0.21	0.06	c0.27	0.07	0.27		0.09	0.16	
v/s Ratio Perm									0.38			0.08
v/c Ratio	0.39	0.82		0.88	0.25	0.27	0.66	0.77	0.40	0.74	0.44	0.08
Uniform Delay, d1	43.7	47.0		41.9	35.2	45.4	48.7	33.6	28.6	48.3	28.2	24.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	9.8		10.5	0.3	0.4	8.1	4.9	2.2	12.6	1.1	0.3
Delay (s)	44.1	56.7		52.5	35.5	45.8	56.8	38.5	30.8	60.9	29.3	24.8
Level of Service	D	E		D	D	D	E	D	C	E	C	C
Approach Delay (s)		52.8			48.1			37.3			34.8	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	186	0	87	107	545	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	202	0	95	116	592	84

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	202	95	116	592	84
Volume Left (vph)	0	95	0	592	0
Volume Right (vph)	0	0	0	0	84
Hadj (s)	0.03	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.6	7.4	6.9	6.4	5.2
Degree Utilization, x	0.37	0.19	0.22	1.05	0.12
Capacity (veh/h)	536	475	511	571	681
Control Delay (s)	13.5	11.0	10.7	75.3	7.7
Approach Delay (s)	13.5	10.8		66.9	
Approach LOS	B	B		F	

Intersection Summary

Delay	46.1		
HCM Level of Service	E		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1521	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1521	1770	2787
Volume (vph)	1064	51	104	4	27	1781
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1157	55	113	4	29	1936
RTOR Reduction (vph)	0	0	0	4	0	546
Lane Group Flow (vph)	1157	55	113	0	29	1390
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	51.1	64.0	8.9	8.9	16.8	51.1
Effective Green, g (s)	51.1	64.0	8.9	8.9	16.8	51.1
Actuated g/C Ratio	0.58	0.72	0.10	0.10	0.19	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1976	1343	187	152	335	1604
v/s Ratio Prot	0.34	0.03	c0.06		c0.02	c0.69
v/s Ratio Perm				0.00		
v/c Ratio	0.59	0.04	0.60	0.00	0.09	0.87
Uniform Delay, d1	12.1	3.6	38.3	36.0	29.7	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	5.4	0.0	0.5	5.2
Delay (s)	12.5	3.6	43.7	36.0	30.2	21.2
Level of Service	B	A	D	D	C	C
Approach Delay (s)		12.1	43.4		21.3	
Approach LOS		B	D		C	

Intersection Summary

HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

RAMP METER ANALYSIS

Year 2012 and Year 2012 + Project

Fixed Rate Method

Location/Condition	Peak Hour	Peak Hour Demand D	Flow F	Excess Demand E	Delay (min)	Queue (ft)
I-8/College Avenue Interchange						
NB College Avenue to WB I-8					2 SOV	
Year 2012	AM	273	318	0	0	0
Year 2012 + Project	AM	279	318	0	0	0
Project Increase	AM	6	318	0	0	0
SB College Avenue to WB I-8					2 SOV	
Year 2012	AM	498	318	180	34	4488
Year 2012 + Project	AM	500	318	182	34	4538
Project Increase	AM	2	318	2	0	50
NB College Avenue to EB I-8					1 SOV	
Year 2012	PM	571	318	253	48	6325
Year 2012 + Project	PM	585	318	267	50	6675
Project Increase	PM	14	318	14	3	350
SB College Avenue to EB I-8					1 SOV	
Year 2012	PM	258	318	0	0	0
Year 2012 + Project	PM	258	318	0	0	0
Project Increase	PM	0	318	0	0	0
I-8/Lake Blvd/ 70th Street Interchange						
SB Lake Boulevard to WB I-8					1 SOV + 1 HOV	
Year 2012	AM	814	828	0	0	0
Year 2012 + Project	AM	814	828	0	0	0
Project Increase	AM	0	828	0	0	0
I-8/Fairmount Ave Interchange						
SB Fairmount Ave to EB I-8					1 SOV	
Year 2012	PM	447	492	0	0	0
Year 2012 + Project	PM	448	492	0	0	0
Project Increase	PM	1	492	0	0	0

Freeway Mainline Operations
Year 2012

Year 2012 No Project

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Year 2012 Without Project Peak Hour Volume [e]		V/C [f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 8															
Fairmount Ave to Waring Rd	EB	5	10,000	254,360	0.075	0.074	0.374	0.604	0.965	7340	11723	0.734	1.172	C	F(0)
	WB	5	10,000		0.075	0.074	0.626	0.396		12297	7677	1.230	0.768	F(0)	C
Waring Rd to College Ave	EB	5	10,000	239,960	0.075	0.074	0.374	0.604	0.965	6925	11060	0.692	1.106	C	F(0)
	WB	5	10,000		0.075	0.074	0.626	0.396		11601	7242	1.160	0.724	F(0)	C
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	219,040	0.073	0.078	0.330	0.600	0.963	5439	10637	0.591	1.156	B	F(0)
	WB	5	10,000		0.073	0.078	0.670	0.400		11098	7082	1.110	0.708	F(0)	C
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	202,120	0.073	0.078	0.330	0.600	0.963	5018	9815	0.545	1.067	B	F(0)
	WB	4	8,000		0.073	0.078	0.670	0.400		10240	6535	1.280	0.817	F(1)	D

Year 2012 With Project

Freeway Segment	Dir.	# of Lanes	cvf78	ADT [b]	Year 2012 Without Project Peak Hour Volume [e]		Project Peak Hour Volume		Year 2012 With Project Peak Hour Volume [e]		V/C [f]		LOS		Δ V/C	
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 8																
Fairmount Ave to Waring Rd	EB	5	10,000	255,060	7340	11723	26	28	7366	11751	0.737	1.175	C	F(0)	0.003	0.003
	WB	5	10,000		12297	7677	15	26	12312	7703	1.231	0.770	F(0)	C	0.002	0.003
Waring Rd to College Ave	EB	5	10,000	240,660	6925	11060	26	28	6951	11088	0.695	1.109	C	F(0)	0.003	0.003
	WB	5	10,000		11601	7242	15	26	11616	7268	1.162	0.727	F(0)	C	0.001	0.003
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	219,410	5439	10637	6	14	5445	10651	0.592	1.158	B	F(0)	0.001	0.002
	WB	5	10,000		11098	7082	14	13	11112	7095	1.111	0.710	F(0)	C	0.001	0.001
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	202,690	5018	9815	10	22	5028	9837	0.547	1.069	B	F(0)	0.001	0.002
	WB	4	8,000		10240	6535	21	21	10261	6556	1.283	0.820	F(1)	D	0.003	0.003

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per HOV lane
b. Year 2030 ADT Volumes from SANDAG Series 10.0 Model
c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "1999 Traffic Volumes", June 2000
d. Truck Factor from "2000 Annual Average Daily Truck Traffic on the California State Highway System", Jan 2002
e. Values calculated in the Existing Conditions table
f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)
g. 3 lanes + 1 HOV lane in each direction.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

APPENDIX K

NEAR-TERM WITH PROJECT INTERSECTION, RAMP METER, & FREEWAY ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1770	1583	1610	2971	1441	1770	3450		3433	3539	1464
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1770	1583	1610	2971	1441	1770	3450		3433	3539	1464
Volume (vph)	21	16	260	379	288	562	277	1282	163	16	1012	81
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	17	283	412	313	611	301	1393	177	17	1100	88
RTOR Reduction (vph)	0	0	157	0	21	393	0	5	0	0	0	35
Lane Group Flow (vph)	23	17	126	294	584	44	301	1565	0	17	1100	53
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.5	6.5	30.2	37.8	37.8	10.8	30.2	88.9		10.8	69.5	69.5
Effective Green, g (s)	6.5	6.5	30.2	37.8	37.8	10.8	30.2	88.9		10.8	69.5	69.5
Actuated g/C Ratio	0.04	0.04	0.19	0.24	0.24	0.07	0.19	0.56		0.07	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	68	72	299	380	702	97	334	1917		232	1537	636
v/s Ratio Prot	c0.01	0.01	c0.18	0.18	c0.20	c0.30	0.17	c0.46		0.00	0.31	
v/s Ratio Perm												0.06
v/c Ratio	0.34	0.24	0.42	0.77	0.83	0.46	0.90	0.82		0.07	0.72	0.08
Uniform Delay, d1	74.7	74.3	57.2	57.1	58.1	71.8	63.4	28.9		69.9	37.1	26.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.11		1.00	1.00	1.00
Incremental Delay, d2	2.9	1.7	1.0	9.5	8.3	3.4	22.0	3.2		0.1	2.9	0.3
Delay (s)	77.6	76.0	58.1	66.6	66.4	75.2	89.7	35.2		70.0	40.0	26.8
Level of Service	E	E	E	E	E	E	F	D		E	D	C
Approach Delay (s)		60.5			69.3			44.0			39.5	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	1084	1743	154	0	759	670	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1178	1895	167	0	825	728	0
RTOR Reduction (vph)	0	100	0	0	0	0	0
Lane Group Flow (vph)	1178	1795	167	0	825	728	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	93.5	93.5	19.2		58.5	35.3	
Effective Green, g (s)	93.5	93.5	19.2		58.5	35.3	
Actuated g/C Ratio	0.58	0.58	0.12		0.37	0.22	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2006	1964	212		1294	1122	
v/s Ratio Prot	0.34		c0.09		c0.23	0.14	
v/s Ratio Perm		0.56					
v/c Ratio	0.59	0.91	0.79		0.64	0.65	
Uniform Delay, d1	21.0	29.7	68.4		42.0	56.7	
Progression Factor	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	7.1	17.4		2.4	2.0	
Delay (s)	21.5	36.7	85.8		44.4	58.6	
Level of Service	C	D	F		D	E	
Approach Delay (s)	30.9				51.4	58.6	
Approach LOS	C				D	E	

Intersection Summary

HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

3: Remington Rd & Aztec Circle

2012 + P AM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3390	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3390	
Volume (vph)	42	71	55	723	152	16
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	77	60	786	165	17
RTOR Reduction (vph)	0	0	0	266	6	0
Lane Group Flow (vph)	46	77	60	520	176	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	4.0	12.2	4.2	39.5	39.5	
Effective Green, g (s)	4.0	12.2	4.2	39.5	39.5	
Actuated g/C Ratio	0.07	0.20	0.07	0.66	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	119	381	131	1047	2243	
v/s Ratio Prot	c0.03	0.04	c0.03	c0.50	0.05	
v/s Ratio Perm						
v/c Ratio	0.39	0.20	0.46	0.50	0.08	
Uniform Delay, d1	26.7	19.7	26.7	5.1	3.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.3	2.5	1.7	0.1	
Delay (s)	28.8	20.0	29.2	6.8	3.7	
Level of Service	C	B	C	A	A	
Approach Delay (s)		23.3	8.4		3.7	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

4: Montezuma Rd & 55th St

2012 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96			0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3506		1770	3318			1738		1681	1694	1454
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3506		1770	3318			1738		1681	1694	1454
Volume (vph)	957	463	17	11	789	309	42	7	9	120	7	148
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1040	503	18	12	858	336	46	8	10	130	8	161
RTOR Reduction (vph)	0	2	0	0	40	0	0	7	0	0	0	136
Lane Group Flow (vph)	1040	519	0	12	1154	0	0	57	0	67	71	25
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	25.0	54.2		1.0	30.2			16.0		16.0	16.0	16.0
Effective Green, g (s)	25.0	54.2		1.0	30.2			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.53		0.01	0.29			0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	832	1841		17	971			269		261	263	225
v/s Ratio Prot	c0.30	0.15		0.01	c0.36			c0.04		0.04	0.04	
v/s Ratio Perm												0.11
v/c Ratio	1.25	0.28		0.71	1.19			0.21		0.26	0.27	0.11
Uniform Delay, d1	39.1	13.7		51.0	36.5			38.1		38.4	38.4	37.5
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	122.4	0.1		84.0	95.1			1.8		2.4	2.5	1.0
Delay (s)	161.5	13.7		134.9	131.6			39.9		40.7	41.0	38.5
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		112.2			131.6			39.9			39.6	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	111.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

2012 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3533		1770	3377			1596		1681	1703	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3533		1770	3377			1596		1681	1703	1583
Volume (vph)	114	434	3	73	1151	239	15	20	67	111	14	92
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	472	3	79	1251	260	16	22	73	121	15	100
RTOR Reduction (vph)	0	1	0	0	17	0	0	61	0	0	0	92
Lane Group Flow (vph)	124	474	0	79	1494	0	0	50	0	66	70	8
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	48.0		4.8	44.8			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	48.0		4.8	44.8			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.48		0.05	0.44			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	140	1682		84	1501			253		267	270	126
v/s Ratio Prot	c0.07	c0.13		0.04	c0.45			c0.07		0.04	c0.04	0.06
v/s Ratio Perm												
v/c Ratio	0.89	0.28		0.94	1.00			0.20		0.25	0.26	0.06
Uniform Delay, d1	45.9	16.0		47.9	27.9			36.8		37.1	37.2	42.9
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	43.6	0.1		78.1	21.9			1.7		2.2	2.3	0.2
Delay (s)	89.5	16.1		126.0	49.8			38.5		39.3	39.5	43.1
Level of Service	F	B		F	D			D		D	D	D
Approach Delay (s)		31.3			53.6			38.5			41.0	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	46.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

2012 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1835	1583	1681	1657		1770	3539	1583	1770	3519	
Flt Permitted		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1835	1583	1681	1657		1770	3539	1583	1770	3519	
Volume (vph)	120	281	213	523	104	64	91	561	225	70	934	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	305	232	568	113	70	99	610	245	76	1015	24
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	192	0	1	0
Lane Group Flow (vph)	0	435	232	378	365	0	99	610	53	76	1038	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Effective Green, g (s)		26.0	14.0	24.0	24.0		14.0	37.1	24.0	7.7	30.8	
Actuated g/C Ratio		0.23	0.13	0.22	0.22		0.13	0.33	0.22	0.07	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		431	200	364	359		224	1185	343	123	978	
v/s Ratio Prot		c0.24	c0.15	0.22	c0.23		0.06	0.17	0.15	0.04	c0.30	
v/s Ratio Perm												
v/c Ratio		1.01	1.16	1.04	1.02		0.44	0.51	0.15	0.62	1.06	
Uniform Delay, d1		42.4	48.4	43.4	43.4		44.8	29.6	35.2	50.1	40.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		45.7	113.4	57.5	51.9		1.4	1.6	0.2	8.9	46.4	
Delay (s)		88.1	161.8	100.9	95.3		46.2	31.2	35.4	59.0	86.4	
Level of Service		F	F	F	F		D	C	D	E	F	
Approach Delay (s)		113.7			98.1			33.8			84.5	
Approach LOS		F			F			C			F	

Intersection Summary

HCM Average Control Delay	79.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

7: I-8WB Ramp & College Ave

2012 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	496	0	113	0	826	557	0	737	999
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	539	0	123	0	898	605	0	801	1086
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	539	0	123	0	898	605	0	801	1086
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				19.7		100.0		72.3	100.0		72.3	100.0
Effective Green, g (s)				19.7		100.0		72.3	100.0		72.3	100.0
Actuated g/C Ratio				0.20		1.00		0.72	1.00		0.72	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				651		1555		2559	1536		2559	1536
v/s Ratio Prot								0.25			0.23	
v/s Ratio Perm				0.16		0.08			0.39			0.71
v/c Ratio				0.83		0.08		0.35	0.39		0.31	0.71
Uniform Delay, d1				38.5		0.0		5.1	0.0		5.0	0.0
Progression Factor				1.00		1.00		1.50	1.00		1.00	1.00
Incremental Delay, d2				8.5		0.1		0.3	0.7		0.3	2.8
Delay (s)				47.1		0.1		8.0	0.7		5.3	2.8
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			38.3			5.1			3.8	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

8: I-8EB Ramp & College Ave

2012 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	476	0	1961	0	0	0	0	923	236	0	901	330
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	517	0	2132	0	0	0	0	1003	257	0	979	359
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	517	0	2068	0	0	0	0	1003	257	0	979	359
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					1593	1536		1593	1536
v/s Ratio Prot								c0.28			0.28	
v/s Ratio Perm	0.16		0.62						0.17			0.23
v/c Ratio	0.33		1.28					0.63	0.17		0.61	0.23
Uniform Delay, d1	16.7		26.5					21.1	0.0		20.9	0.0
Progression Factor	1.00		1.00					0.86	1.00		0.79	1.00
Incremental Delay, d2	0.1		131.6					0.2	0.0		1.7	0.3
Delay (s)	16.8		158.1					18.2	0.0		18.1	0.3
Level of Service	B		F					B	A		B	A
Approach Delay (s)		130.5			0.0			14.5			13.4	
Approach LOS		F			A			B			B	

Intersection Summary

HCM Average Control Delay	72.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1798	1506		1820	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1798	1506		1820	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	72	28	56	106	121	173	183	931	84	549	1329	984
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	30	61	115	132	188	199	1012	91	597	1445	1070
RTOR Reduction (vph)	0	0	53	0	0	131	0	0	68	0	0	924
Lane Group Flow (vph)	0	108	8	0	247	57	199	1012	23	597	1445	146
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		12.3	12.3		18.3	30.4	16.7	23.0	23.0	30.4	36.7	12.3
Effective Green, g (s)		12.3	12.3		18.3	30.4	16.7	23.0	23.0	30.4	36.7	12.3
Actuated g/C Ratio		0.12	0.12		0.18	0.30	0.17	0.23	0.23	0.30	0.37	0.12
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		221	185		333	481	296	814	346	1044	1866	343
v/s Ratio Prot		0.06			c0.14	0.12	c0.11	c0.29		0.17	c0.28	c0.38
v/s Ratio Perm			0.04						0.06			
v/c Ratio		0.49	0.04		0.74	0.12	0.67	1.24	0.07	0.57	0.77	0.42
Uniform Delay, d1		40.9	38.6		38.6	25.1	39.1	38.5	30.1	29.3	28.0	40.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.88	0.83	4.04
Incremental Delay, d2		1.7	0.1		8.6	0.1	5.9	119.8	0.4	0.1	0.3	0.1
Delay (s)		42.6	38.7		47.2	25.2	45.0	158.3	30.5	26.0	23.5	163.9
Level of Service		D	D		D	C	D	F	C	C	C	F
Approach Delay (s)		41.2			37.7			132.0			72.3	
Approach LOS		D			D			F			E	

Intersection Summary

HCM Average Control Delay	83.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	105	1066	116	543	1199
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	114	1159	126	590	1303
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3011	619			1305	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3011	619			1305	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	73			0	
cM capacity (veh/h)	0	417			518	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	114	579	579	126	590	652	652
Volume Left	0	0	0	0	590	0	0
Volume Right	114	0	0	126	0	0	0
cSH	417	1700	1700	1700	518	1700	1700
Volume to Capacity	0.27	0.34	0.34	0.07	1.14	0.38	0.38
Queue Length 95th (ft)	27	0	0	0	502	0	0
Control Delay (s)	16.9	0.0	0.0	0.0	111.0	0.0	0.0
Lane LOS	C				F		
Approach Delay (s)	16.9	0.0			34.6		
Approach LOS	C						

Intersection Summary

Average Delay	20.5		
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1459	1770	3539	1461	3433	3424		1770	3539	1463
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1459	1770	3539	1461	3433	3424		1770	3539	1463
Volume (vph)	288	297	135	34	636	221	549	942	160	138	404	206
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	323	147	37	691	240	597	1024	174	150	439	224
RTOR Reduction (vph)	0	0	115	0	0	184	0	13	0	0	0	167
Lane Group Flow (vph)	313	323	32	37	691	56	597	1185	0	150	439	57
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	20.7	20.7	20.7	22.0	22.0	22.0	12.1	24.2		12.1	24.2	24.2
Effective Green, g (s)	20.7	20.7	20.7	22.0	22.0	22.0	12.1	24.2		12.1	24.2	24.2
Actuated g/C Ratio	0.22	0.22	0.22	0.23	0.23	0.23	0.13	0.25		0.13	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	386	771	318	410	820	338	437	872		225	902	373
v/s Ratio Prot	c0.18	0.09		0.02	c0.20		c0.17	c0.35		0.08	0.12	
v/s Ratio Perm			0.10			0.16						0.15
v/c Ratio	0.81	0.42	0.10	0.09	0.84	0.16	1.37	1.36		0.67	0.49	0.15
Uniform Delay, d1	35.3	32.0	29.7	28.6	34.8	29.2	41.4	35.4		39.5	30.1	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.2	0.4	0.1	0.1	7.9	0.2	178.9	168.8		7.3	1.9	0.9
Delay (s)	47.5	32.3	29.8	28.7	42.7	29.4	220.4	204.2		46.8	32.0	28.3
Level of Service	D	C	C	C	D	C	F	F		D	C	C
Approach Delay (s)		37.9			38.9			209.6			33.7	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	108.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	275	63	36	380	17	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	68	39	413	18	3
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			377		844	353
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			377		844	353
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		94	100
cM capacity (veh/h)			1171		317	679

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	367	452	18	3
Volume Left	0	39	18	0
Volume Right	68	0	0	3
cSH	1700	1171	317	679
Volume to Capacity	0.22	0.03	0.06	0.00
Queue Length 95th (ft)	0	3	5	0
Control Delay (s)	0.0	1.0	17.1	10.3
Lane LOS		A	C	B
Approach Delay (s)	0.0	1.0	16.1	
Approach LOS			C	

Intersection Summary

Average Delay	1.0		
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1717		1770	1863	1770	1543
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1717		1770	1863	1770	1543
Volume (vph)	102	78	173	440	117	72
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	85	188	478	127	78
RTOR Reduction (vph)	34	0	0	0	0	44
Lane Group Flow (vph)	162	0	188	478	127	34
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	12.0		9.8	25.8	26.7	26.7
Effective Green, g (s)	12.0		9.8	25.8	26.7	26.7
Actuated g/C Ratio	0.20		0.16	0.43	0.44	0.44
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	341		287	794	781	681
v/s Ratio Prot	0.11		0.11	c0.26	c0.07	
v/s Ratio Perm						0.05
v/c Ratio	0.47		0.66	0.60	0.16	0.05
Uniform Delay, d1	21.5		23.8	13.4	10.2	9.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		5.3	1.3	0.4	0.1
Delay (s)	22.5		29.1	14.7	10.6	9.8
Level of Service	C		C	B	B	A
Approach Delay (s)	22.5			18.7	10.3	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.95		1.00	0.96		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1797	1521	1770	1752		1770	4825		1770	3532	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1797	1521	1770	1752		1770	4825		1770	3532	
Volume (vph)	33	12	195	278	71	34	110	617	211	30	1336	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	13	212	302	77	37	120	671	229	33	1452	14
RTOR Reduction (vph)	0	0	121	0	17	0	0	55	0	0	1	0
Lane Group Flow (vph)	0	49	91	302	97	0	120	845	0	33	1465	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		10.4	10.4	17.8	17.8		7.0	48.3		3.5	44.8	
Effective Green, g (s)		10.4	10.4	17.8	17.8		7.0	48.3		3.5	44.8	
Actuated g/C Ratio		0.11	0.11	0.19	0.19		0.07	0.50		0.04	0.47	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		195	165	328	325		129	2428		65	1648	
v/s Ratio Prot		0.03		c0.17	0.07		c0.07	c0.19		0.02	c0.42	
v/s Ratio Perm			0.14									
v/c Ratio		0.25	0.55	0.92	0.30		0.93	0.35		0.51	0.89	
Uniform Delay, d1		39.2	40.6	38.4	33.7		44.3	14.4		45.4	23.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	3.7	30.1	0.5		58.0	0.4		6.1	7.6	
Delay (s)		39.9	44.3	68.5	34.2		102.3	14.8		51.5	30.9	
Level of Service		D	D	E	C		F	B		D	C	
Approach Delay (s)		43.5			59.1			25.1			31.4	
Approach LOS		D			E			C			C	

Intersection Summary

HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3413		3433	1863	2787	1770	3539	1529	1770	3539	1529
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3413		3433	1863	2787	1770	3539	1529	1770	3539	1529
Volume (vph)	84	118	27	371	236	353	156	1098	364	131	419	355
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	128	29	403	257	384	170	1193	396	142	455	386
RTOR Reduction (vph)	0	17	0	0	0	340	0	0	190	0	0	215
Lane Group Flow (vph)	91	140	0	403	257	44	170	1193	206	142	455	171
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.7	9.7		19.3	19.3	12.3	15.0	50.4	50.4	12.3	47.7	47.7
Effective Green, g (s)	9.7	9.7		19.3	19.3	12.3	15.0	50.4	50.4	12.3	47.7	47.7
Actuated g/C Ratio	0.09	0.09		0.18	0.18	0.11	0.14	0.47	0.47	0.11	0.44	0.44
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	307		615	334	318	247	1656	716	202	1567	677
v/s Ratio Prot	0.03	c0.05		0.12	c0.14	c0.14	0.10	c0.34		0.08	0.13	
v/s Ratio Perm									0.26			0.25
v/c Ratio	0.29	0.46		0.66	0.77	0.14	0.69	0.72	0.29	0.70	0.29	0.25
Uniform Delay, d1	45.8	46.5		41.1	42.1	42.9	44.1	23.0	17.6	45.9	19.2	18.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.1		2.5	10.2	0.2	7.7	2.7	1.0	10.6	0.5	0.9
Delay (s)	46.3	47.6		43.6	52.3	43.1	51.9	25.7	18.6	56.5	19.6	19.7
Level of Service	D	D		D	D	D	D	C	B	E	B	B
Approach Delay (s)		47.1			45.6			26.7			25.0	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	107.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	183	0	414	159	302	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	0	450	173	328	11
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total (vph)	199	450	173	328	11	
Volume Left (vph)	0	450	0	328	0	
Volume Right (vph)	0	0	0	0	11	
Hadj (s)	0.03	0.53	0.03	0.53	-0.67	
Departure Headway (s)	6.6	6.7	6.2	7.3	6.1	
Degree Utilization, x	0.37	0.84	0.30	0.67	0.02	
Capacity (veh/h)	516	529	563	471	555	
Control Delay (s)	13.4	34.3	10.6	22.7	8.0	
Approach Delay (s)	13.4	27.7		22.3		
Approach LOS	B	D		C		

Intersection Summary

Delay	23.7		
HCM Level of Service	C		
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1530	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1530	1770	2787
Volume (vph)	709	78	173	11	13	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	771	85	188	12	14	1218
RTOR Reduction (vph)	0	0	0	10	0	752
Lane Group Flow (vph)	771	85	188	2	14	466
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	30.9	48.2	13.3	13.3	24.6	30.9
Effective Green, g (s)	30.9	48.2	13.3	13.3	24.6	30.9
Actuated g/C Ratio	0.38	0.60	0.16	0.16	0.30	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1313	1111	307	252	539	1066
v/s Ratio Prot	0.22	0.05	c0.10		c0.01	c0.44
v/s Ratio Perm				0.01		
v/c Ratio	0.59	0.08	0.61	0.01	0.03	0.44
Uniform Delay, d1	19.9	6.9	31.4	28.2	19.7	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	3.6	0.0	0.1	0.3
Delay (s)	20.5	6.9	34.9	28.2	19.8	18.8
Level of Service	C	A	C	C	B	B
Approach Delay (s)		19.2	34.5		18.8	
Approach LOS		B	C		B	

Intersection Summary

HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

1: Camino del Rio N & Fairmount Ave

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1740	1583	1610	3072	1441	1770	3410		3433	3539	1462
Flt Permitted	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1740	1583	1610	3072	1441	1770	3410		3433	3539	1462
Volume (vph)	163	82	751	707	122	473	221	922	180	18	1629	81
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	89	816	768	133	514	240	1002	196	20	1771	88
RTOR Reduction (vph)	0	0	127	0	1	274	0	10	0	0	0	24
Lane Group Flow (vph)	130	136	689	384	532	224	240	1188	0	20	1771	64
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	15.2	15.2	41.0	29.8	29.8	26.7	41.0	72.3		26.7	58.0	58.0
Effective Green, g (s)	15.2	15.2	41.0	29.8	29.8	26.7	41.0	72.3		26.7	58.0	58.0
Actuated g/C Ratio	0.10	0.10	0.26	0.19	0.19	0.17	0.26	0.45		0.17	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	160	165	406	300	572	240	454	1541		573	1283	530
v/s Ratio Prot	0.08	c0.08	c0.52	c0.24	0.17	0.35	0.14	0.35		0.01	c0.50	
v/s Ratio Perm												0.06
v/c Ratio	0.81	0.82	1.70	1.28	1.28dl	0.93	0.53	0.77		0.03	1.38	0.12
Uniform Delay, d1	71.0	71.1	59.5	65.1	64.1	65.8	51.2	36.9		55.9	51.0	34.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.92		1.00	1.00	1.00
Incremental Delay, d2	25.9	27.1	323.9	149.2	22.0	39.9	1.0	3.5		0.0	176.1	0.5
Delay (s)	97.0	98.2	383.4	214.3	86.0	105.7	59.1	37.3		55.9	227.1	34.5
Level of Service	F	F	F	F	F	F	E	D		E	F	C
Approach Delay (s)		313.2			127.7			40.9			216.3	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	169.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

2012 + P PM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	772	2552	72	0	528	1280	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	839	2774	78	0	574	1391	0
RTOR Reduction (vph)	0	7	0	0	0	0	0
Lane Group Flow (vph)	839	2767	78	0	574	1391	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	104.0	104.0	6.0		48.0	38.0	
Effective Green, g (s)	104.0	104.0	6.0		48.0	38.0	
Actuated g/C Ratio	0.65	0.65	0.04		0.30	0.24	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2231	2185	66		1062	1208	
v/s Ratio Prot	0.24		c0.04		0.16	c0.27	
v/s Ratio Perm		0.83					
v/c Ratio	0.38	1.27	1.18		0.54	1.15	
Uniform Delay, d1	13.0	28.0	77.0		46.8	61.0	
Progression Factor	1.00	1.00	1.00		1.00	0.98	
Incremental Delay, d2	0.1	123.6	168.1		2.0	69.2	
Delay (s)	13.1	151.6	245.1		48.8	128.9	
Level of Service	B	F	F		D	F	
Approach Delay (s)	119.4				72.2	128.9	
Approach LOS	F				E	F	

Intersection Summary

HCM Average Control Delay	116.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

3: Remington Rd & Aztec Circle

2012 + P PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3402	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3402	
Volume (vph)	20	73	93	302	416	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	79	101	328	452	35
RTOR Reduction (vph)	0	0	0	115	4	0
Lane Group Flow (vph)	22	79	101	213	483	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	1.7	13.1	7.4	39.3	39.3	
Effective Green, g (s)	1.7	13.1	7.4	39.3	39.3	
Actuated g/C Ratio	0.03	0.22	0.12	0.65	0.65	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	50	404	228	1030	2214	
v/s Ratio Prot	c0.01	0.04	c0.05	c0.21	0.14	
v/s Ratio Perm						
v/c Ratio	0.44	0.20	0.44	0.21	0.22	
Uniform Delay, d1	28.9	19.3	24.6	4.3	4.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.1	0.2	1.4	0.5	0.2	
Delay (s)	35.0	19.6	26.0	4.7	4.5	
Level of Service	C	B	C	A	A	
Approach Delay (s)		22.9	9.7		4.5	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: Montezuma Rd & 55th St

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97			0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (prot)	3433	3502		1770	3398			1730		1681	1689	1462
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.95	1.00
Satd. Flow (perm)	3433	3502		1770	3398			1730		1681	1689	1462
Volume (vph)	372	1168	48	23	770	171	46	9	13	475	11	368
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	1270	52	25	837	186	50	10	14	516	12	400
RTOR Reduction (vph)	0	3	0	0	17	0	0	8	0	0	0	333
Lane Group Flow (vph)	404	1319	0	25	1006	0	0	66	0	258	270	67
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.7	46.0		1.5	31.8			16.1		16.1	16.1	16.1
Effective Green, g (s)	15.7	46.0		1.5	31.8			16.1		16.1	16.1	16.1
Actuated g/C Ratio	0.16	0.48		0.02	0.33			0.17		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	563	1683		28	1129			291		283	284	246
v/s Ratio Prot	c0.12	c0.38		0.01	c0.30			c0.04		0.15	0.16	
v/s Ratio Perm												0.27
v/c Ratio	0.72	0.78		0.89	0.89			0.23		0.91	0.95	0.27
Uniform Delay, d1	37.9	20.7		47.0	30.3			34.4		39.1	39.4	34.7
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	4.4	2.5		123.8	9.0			1.8		34.9	42.1	2.7
Delay (s)	42.3	23.2		170.8	39.3			36.2		74.0	81.6	37.4
Level of Service	D	C		F	D			D		E	F	D
Approach Delay (s)		27.6			42.5			36.2			60.4	
Approach LOS		C			D			D			E	

Intersection Summary

HCM Average Control Delay	40.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.97			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (prot)	1770	3529		1770	3338			1596		1681	1706	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.96	1.00
Satd. Flow (perm)	1770	3529		1770	3338			1596		1681	1706	1583
Volume (vph)	156	1284	15	193	720	198	19	31	103	353	53	182
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	1396	16	210	783	215	21	34	112	384	58	198
RTOR Reduction (vph)	0	1	0	0	26	0	0	73	0	0	0	182
Lane Group Flow (vph)	170	1411	0	210	972	0	0	94	0	215	227	16
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	43.1		6.0	41.1			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	43.1		6.0	41.1			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.44		0.06	0.42			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	146	1566		109	1413			263		277	281	130
v/s Ratio Prot	0.10	c0.40		c0.12	0.30			c0.10		0.13	c0.13	0.13
v/s Ratio Perm												
v/c Ratio	1.16	0.90		1.93	0.69			0.36		0.78	0.81	0.13
Uniform Delay, d1	44.6	25.0		45.6	22.8			36.0		38.8	39.1	41.3
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	125.5	7.5		448.9	1.4			3.8		19.0	21.6	0.4
Delay (s)	170.0	32.6		494.4	24.2			39.8		57.8	60.6	41.7
Level of Service	F	C		F	C			D		E	E	D
Approach Delay (s)		47.3			105.9			39.8			53.8	
Approach LOS		D			F			D			D	

Intersection Summary

HCM Average Control Delay	67.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1583	1681	1582		1770	3539	1583	1770	3507	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1826	1583	1681	1582		1770	3539	1583	1770	3507	
Volume (vph)	69	104	97	325	43	102	141	882	385	195	678	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	113	105	353	47	111	153	959	418	212	737	29
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	303	0	2	0
Lane Group Flow (vph)	0	188	105	259	226	0	153	959	115	212	764	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		14.8	12.1	19.3	19.3		12.1	34.4	19.3	10.1	32.4	
Effective Green, g (s)		14.8	12.1	19.3	19.3		12.1	34.4	19.3	10.1	32.4	
Actuated g/C Ratio		0.16	0.13	0.20	0.20		0.13	0.36	0.20	0.11	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		286	202	343	323		226	1287	323	189	1201	
v/s Ratio Prot		c0.10	0.07	0.15	0.16		0.09	c0.27	c0.26	c0.12	0.22	
v/s Ratio Perm												
v/c Ratio		0.66	0.52	0.76	0.70		0.68	0.75	0.36	1.12	0.64	
Uniform Delay, d1		37.5	38.5	35.4	35.0		39.4	26.3	32.3	42.2	26.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.4	2.3	9.1	6.5		7.8	4.0	0.7	101.9	2.6	
Delay (s)		42.9	40.8	44.5	41.4		47.2	30.2	33.0	144.2	28.7	
Level of Service		D	D	D	D		D	C	C	F	C	
Approach Delay (s)		42.1			43.0			32.7			53.8	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

7: I-8WB Ramp & College Ave

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	526	0	324	0	1149	1406	0	610	529
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	572	0	352	0	1249	1528	0	663	575
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	572	0	352	0	1249	1528	0	663	575
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				20.6		100.0		71.4	100.0		71.4	100.0
Effective Green, g (s)				20.6		100.0		71.4	100.0		71.4	100.0
Actuated g/C Ratio				0.21		1.00		0.71	1.00		0.71	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				681		1555		2527	1536		2527	1536
v/s Ratio Prot								0.35			0.19	
v/s Ratio Perm				0.17		0.23			0.99			0.37
v/c Ratio				0.84		0.23		0.49	0.99		0.26	0.37
Uniform Delay, d1				38.1		0.0		6.3	0.0		5.0	0.0
Progression Factor				1.00		1.00		0.89	1.00		1.00	1.00
Incremental Delay, d2				9.0		0.3		0.3	13.6		0.3	0.7
Delay (s)				47.1		0.3		5.9	13.6		5.3	0.7
Level of Service				D		A		A	B		A	A
Approach Delay (s)		0.0			29.3			10.1			3.2	
Approach LOS		A			C			B			A	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

8: I-8EB Ramp & College Ave

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	669	0	892	0	0	0	0	1939	585	0	872	258
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	727	0	970	0	0	0	0	2108	636	0	948	280
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	727	0	885	0	0	0	0	2108	636	0	948	280
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	35.3		35.3					56.7	100.0		56.7	100.0
Effective Green, g (s)	35.3		35.3					56.7	100.0		56.7	100.0
Actuated g/C Ratio	0.35		0.35					0.57	1.00		0.57	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1166		1212					2007	1536		2007	1536
v/s Ratio Prot								c0.60			0.27	
v/s Ratio Perm	0.22		0.28						0.41			0.18
v/c Ratio	0.62		0.73					1.05	0.41		0.47	0.18
Uniform Delay, d1	26.8		28.2					21.6	0.0		12.8	0.0
Progression Factor	1.00		1.00					1.03	1.00		0.63	1.00
Incremental Delay, d2	1.0		2.2					24.2	0.1		0.8	0.3
Delay (s)	27.9		30.4					46.6	0.1		8.8	0.3
Level of Service	C		C					D	A		A	A
Approach Delay (s)		29.3			0.0			35.8			6.8	
Approach LOS		C			A			D			A	

Intersection Summary

HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1781	1506		1785	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1781	1506		1785	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	474	44	80	102	16	372	75	1728	129	273	1368	128
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	515	48	87	111	17	404	82	1878	140	297	1487	139
RTOR Reduction (vph)	0	0	62	0	0	328	0	0	49	0	0	101
Lane Group Flow (vph)	0	563	25	0	128	76	82	1878	91	297	1487	38
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		12.0	14.5	8.7	33.5	33.5	14.5	39.3	24.0
Effective Green, g (s)		24.0	24.0		12.0	14.5	8.7	33.5	33.5	14.5	39.3	24.0
Actuated g/C Ratio		0.24	0.24		0.12	0.14	0.09	0.34	0.34	0.14	0.39	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		427	361		214	230	154	1186	505	498	1998	669
v/s Ratio Prot		c0.32			c0.07	c0.26	0.05	c0.53		0.09	0.29	0.05
v/s Ratio Perm			0.06						0.09			
v/c Ratio		1.32	0.07		0.60	0.33	0.53	1.58	0.18	0.60	0.74	0.06
Uniform Delay, d1		38.0	29.4		41.7	38.4	43.7	33.2	23.5	40.0	26.0	29.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.09	0.89	1.59
Incremental Delay, d2		159.1	0.1		4.4	0.8	3.5	266.6	0.8	1.7	2.2	0.0
Delay (s)		197.1	29.5		46.2	39.2	47.2	299.9	24.3	45.2	25.4	46.5
Level of Service		F	C		D	D	D	F	C	D	C	D
Approach Delay (s)		174.6			40.9			271.6			30.0	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	146.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	534	1310	93	269	1310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	580	1424	101	292	1424
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2741	515			1545	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2741	515			1545	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			30	
cM capacity (veh/h)	5	488			418	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	580	475	475	475	101	292	712	712
Volume Left	0	0	0	0	0	292	0	0
Volume Right	580	0	0	0	101	0	0	0
cSH	488	1700	1700	1700	1700	418	1700	1700
Volume to Capacity	1.19	0.28	0.28	0.28	0.06	0.70	0.42	0.42
Queue Length 95th (ft)	540	0	0	0	0	131	0	0
Control Delay (s)	130.6	0.0	0.0	0.0	0.0	31.3	0.0	0.0
Lane LOS	F					D		
Approach Delay (s)	130.6	0.0				5.3		
Approach LOS	F							

Intersection Summary

Average Delay	22.2		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1461	1770	3539	1458	3433	3480		1770	3539	1461
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1461	1770	3539	1458	3433	3480		1770	3539	1461
Volume (vph)	680	745	568	179	501	191	419	655	52	257	800	190
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	739	810	617	195	545	208	455	712	57	279	870	207
RTOR Reduction (vph)	0	0	280	0	0	164	0	6	0	0	0	155
Lane Group Flow (vph)	739	810	337	195	545	44	455	763	0	279	870	52
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	24.0	24.0	24.0	20.3	20.3	20.3	12.0	24.0		12.0	24.0	24.0
Effective Green, g (s)	24.0	24.0	24.0	20.3	20.3	20.3	12.0	24.0		12.0	24.0	24.0
Actuated g/C Ratio	0.25	0.25	0.25	0.21	0.21	0.21	0.12	0.25		0.12	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	441	882	364	373	746	307	428	867		221	882	364
v/s Ratio Prot	0.42	0.23		0.11	c0.15		0.13	0.22		c0.16	c0.25	
v/s Ratio Perm			0.42			0.14						0.14
v/c Ratio	1.68	0.92	0.93	0.52	0.73	0.14	1.06	0.88		1.26	0.99	0.14
Uniform Delay, d1	36.2	35.2	35.3	33.7	35.4	30.9	42.2	34.8		42.2	36.0	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	313.9	14.2	28.8	1.3	3.7	0.2	61.2	12.4		149.1	27.2	0.8
Delay (s)	350.0	49.4	64.1	35.0	39.1	31.1	103.4	47.2		191.3	63.2	28.9
Level of Service	F	D	E	D	D	C	F	D		F	E	C
Approach Delay (s)		156.2			36.5			68.1			84.3	
Approach LOS		F			D			E			F	

Intersection Summary

HCM Average Control Delay	100.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	334	19	11	358	51	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	363	21	12	389	55	25
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			394		806	393
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			394		806	393
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		84	96
cM capacity (veh/h)			1155		342	645

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	384	401	55	25
Volume Left	0	12	55	0
Volume Right	21	0	0	25
cSH	1700	1155	342	645
Volume to Capacity	0.23	0.01	0.16	0.04
Queue Length 95th (ft)	0	1	14	3
Control Delay (s)	0.0	0.3	17.6	10.8
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.3	15.5	
Approach LOS			C	

Intersection Summary

Average Delay	1.6		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

13: Alvarado Rd & Reservoir Dr

2012 + P PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1776		1770	1863	1770	1541
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1776		1770	1863	1770	1541
Volume (vph)	286	100	102	140	110	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	311	109	111	152	120	158
RTOR Reduction (vph)	14	0	0	0	0	93
Lane Group Flow (vph)	406	0	111	152	120	65
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	19.7		7.9	31.6	27.6	27.6
Effective Green, g (s)	19.7		7.9	31.6	27.6	27.6
Actuated g/C Ratio	0.29		0.12	0.47	0.41	0.41
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	521		208	876	727	633
v/s Ratio Prot	c0.24		c0.06	0.08	0.07	
v/s Ratio Perm						0.10
v/c Ratio	0.78		0.53	0.17	0.17	0.10
Uniform Delay, d1	21.8		27.9	10.3	12.5	12.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2		2.6	0.1	0.5	0.3
Delay (s)	29.0		30.5	10.4	13.0	12.5
Level of Service	C		C	B	B	B
Approach Delay (s)	29.0			18.9	12.7	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

14: Parkway Dr & Lake Murray Blvd

2012 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790	1515	1770	1665		1770	4938		1770	3503	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1790	1515	1770	1665		1770	4938		1770	3503	
Volume (vph)	47	11	71	541	83	120	117	922	155	21	753	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	12	77	588	90	130	127	1002	168	23	818	43
RTOR Reduction (vph)	0	0	71	0	51	0	0	20	0	0	3	0
Lane Group Flow (vph)	0	63	6	588	169	0	127	1150	0	23	858	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.2	7.2	32.8	32.8		8.1	35.3		1.5	28.7	
Effective Green, g (s)		7.2	7.2	32.8	32.8		8.1	35.3		1.5	28.7	
Actuated g/C Ratio		0.08	0.08	0.35	0.35		0.09	0.38		0.02	0.31	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		139	118	626	588		154	1878		29	1083	
v/s Ratio Prot		0.04		c0.33	0.13		c0.07	0.24		0.01	c0.25	
v/s Ratio Perm			0.05									
v/c Ratio		0.45	0.05	0.94	0.29		0.82	0.61		0.79	0.79	
Uniform Delay, d1		40.9	39.6	29.0	21.6		41.7	23.2		45.5	29.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3	0.2	21.9	0.3		28.7	1.5		83.5	5.9	
Delay (s)		43.3	39.8	51.0	21.9		70.4	24.7		129.0	35.3	
Level of Service		D	D	D	C		E	C		F	D	
Approach Delay (s)		41.4			43.0			29.2			37.7	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3413		3433	1863	2787	1770	3539	1526	1770	3539	1526
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3413		3433	1863	2787	1770	3539	1526	1770	3539	1526
Volume (vph)	189	339	79	664	102	683	121	866	535	151	506	125
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	368	86	722	111	742	132	941	582	164	550	136
RTOR Reduction (vph)	0	17	0	0	0	649	0	0	374	0	0	89
Lane Group Flow (vph)	205	437	0	722	111	93	132	941	208	164	550	47
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	18.0	18.0		27.3	27.3	14.2	12.9	38.3	38.3	14.2	39.6	39.6
Effective Green, g (s)	18.0	18.0		27.3	27.3	14.2	12.9	38.3	38.3	14.2	39.6	39.6
Actuated g/C Ratio	0.16	0.16		0.24	0.24	0.12	0.11	0.34	0.34	0.12	0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	543	540		824	447	348	201	1191	514	221	1231	531
v/s Ratio Prot	0.06	c0.13		c0.21	0.06	c0.27	0.07	0.27		0.09	0.16	
v/s Ratio Perm									0.38			0.09
v/c Ratio	0.38	0.81		0.88	0.25	0.27	0.66	0.79	0.41	0.74	0.45	0.09
Uniform Delay, d1	42.9	46.2		41.6	35.0	45.1	48.3	34.1	29.0	48.0	28.6	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	8.7		10.3	0.3	0.4	7.5	5.4	2.4	12.6	1.2	0.3
Delay (s)	43.3	55.0		52.0	35.2	45.5	55.8	39.5	31.4	60.6	29.8	25.3
Level of Service	D	D		D	D	D	E	D	C	E	C	C
Approach Delay (s)		51.4			47.7			37.9			35.0	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	113.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	187	0	87	108	553	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	203	0	95	117	601	84

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	203	95	117	601	84
Volume Left (vph)	0	95	0	601	0
Volume Right (vph)	0	0	0	0	84
Hadj (s)	0.03	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.6	7.4	6.9	6.4	5.2
Degree Utilization, x	0.37	0.19	0.23	1.07	0.12
Capacity (veh/h)	536	475	511	573	680
Control Delay (s)	13.5	11.0	10.7	80.3	7.7
Approach Delay (s)	13.5	10.8		71.5	
Approach LOS	B	B		F	

Intersection Summary

Delay	49.1		
HCM Level of Service	E		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1521	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1521	1770	2787
Volume (vph)	1072	52	105	4	27	1781
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1165	57	114	4	29	1936
RTOR Reduction (vph)	0	0	0	4	0	565
Lane Group Flow (vph)	1165	57	114	0	29	1371
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	50.6	63.6	9.0	9.0	17.7	50.6
Effective Green, g (s)	50.6	63.6	9.0	9.0	17.7	50.6
Actuated g/C Ratio	0.57	0.71	0.10	0.10	0.20	0.57
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1945	1327	188	153	351	1579
v/s Ratio Prot	0.34	0.03	c0.06		c0.02	c0.69
v/s Ratio Perm				0.00		
v/c Ratio	0.60	0.04	0.61	0.00	0.08	0.87
Uniform Delay, d1	12.7	3.8	38.5	36.1	29.2	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	5.4	0.0	0.5	5.3
Delay (s)	13.2	3.8	43.9	36.1	29.6	21.9
Level of Service	B	A	D	D	C	C
Approach Delay (s)		12.8	43.6		22.0	
Approach LOS		B	D		C	

Intersection Summary

HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

APPENDIX L

HORIZON YEAR WITHOUT PROJECT INTERSECTION, RAMP METER, & FREEWAY ANALYSIS CALCULATION SHEETS

1: Camino del Rio N & Fairmount Ave

2030 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1751	1583	1610	2981	1441	1770	3442		3433	3539	1462
Flt Permitted	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1751	1583	1610	2981	1441	1770	3442		3433	3539	1462
Volume (vph)	30	20	380	460	410	690	400	1420	200	20	1120	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	413	500	446	750	435	1543	217	22	1217	130
RTOR Reduction (vph)	0	0	144	0	20	381	0	7	0	0	0	50
Lane Group Flow (vph)	27	28	269	383	765	147	435	1753	0	22	1217	80
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.9	6.9	36.0	46.9	46.9	14.0	36.0	76.2		14.0	54.2	54.2
Effective Green, g (s)	6.9	6.9	36.0	46.9	46.9	14.0	36.0	76.2		14.0	54.2	54.2
Actuated g/C Ratio	0.04	0.04	0.22	0.29	0.29	0.09	0.22	0.48		0.09	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	72	76	356	472	874	126	398	1639		300	1199	495
v/s Ratio Prot	c0.02	0.02	c0.26	0.24	c0.26	c0.37	0.25	c0.51		0.01	0.34	
v/s Ratio Perm												0.09
v/c Ratio	0.38	0.37	0.76	0.81	0.88	1.16	1.09	1.07		0.07	1.02	0.16
Uniform Delay, d1	74.5	74.4	57.9	52.4	53.8	73.0	62.0	41.9		67.0	52.9	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	1.03		1.00	1.00	1.00
Incremental Delay, d2	3.3	3.0	8.8	10.2	9.8	130.7	68.7	41.8		0.1	29.8	0.7
Delay (s)	77.7	77.4	66.7	62.6	63.5	203.7	139.0	84.9		67.1	82.7	37.7
Level of Service	E	E	E	E	E	F	F	F		E	F	D
Approach Delay (s)		68.0			107.0			95.6			78.2	
Approach LOS		E			F			F			E	

Intersection Summary

HCM Average Control Delay	92.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

2030 AM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	1090	1850	170	0	770	680	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	2011	185	0	837	739	0
RTOR Reduction (vph)	0	83	0	0	0	0	0
Lane Group Flow (vph)	1185	1928	185	0	837	739	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	96.0	96.0	20.3		56.0	31.7	
Effective Green, g (s)	96.0	96.0	20.3		56.0	31.7	
Actuated g/C Ratio	0.60	0.60	0.13		0.35	0.20	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2060	2017	225		1239	1007	
v/s Ratio Prot	0.35		c0.10		0.24	c0.15	
v/s Ratio Perm		0.60					
v/c Ratio	0.58	0.96	0.82		0.68	0.73	
Uniform Delay, d1	19.5	30.0	68.1		44.3	60.2	
Progression Factor	1.00	1.00	1.00		1.00	1.10	
Incremental Delay, d2	0.4	11.3	20.9		3.0	1.8	
Delay (s)	19.9	41.3	89.0		47.2	68.2	
Level of Service	B	D	F		D	E	
Approach Delay (s)	33.4				54.8	68.2	
Approach LOS	C				D	E	

Intersection Summary

HCM Average Control Delay	43.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.98	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3386	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3386	
Volume (vph)	50	90	70	830	180	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	98	76	902	196	22
RTOR Reduction (vph)	0	0	0	318	7	0
Lane Group Flow (vph)	54	98	76	584	211	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	4.0	12.3	4.3	37.3	37.3	
Effective Green, g (s)	4.0	12.3	4.3	37.3	37.3	
Actuated g/C Ratio	0.07	0.21	0.07	0.65	0.65	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	123	398	139	1025	2193	
v/s Ratio Prot	c0.03	0.05	c0.04	c0.57	0.06	
v/s Ratio Perm						
v/c Ratio	0.44	0.25	0.55	0.57	0.10	
Uniform Delay, d1	25.7	18.8	25.7	5.7	3.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	0.3	4.3	2.3	0.1	
Delay (s)	28.2	19.1	30.1	8.0	3.9	
Level of Service	C	B	C	A	A	
Approach Delay (s)		22.4	9.7		3.9	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96			0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3503		1770	3319			1743		1681	1696	1455
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3503		1770	3319			1743		1681	1696	1455
Volume (vph)	1096	521	20	20	896	348	50	10	10	140	10	170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1191	566	22	22	974	378	54	11	11	152	11	185
RTOR Reduction (vph)	0	2	0	0	40	0	0	6	0	0	0	156
Lane Group Flow (vph)	1191	586	0	22	1312	0	0	70	0	79	84	29
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	25.0	52.8		1.6	29.4			16.0		16.0	16.0	16.0
Effective Green, g (s)	25.0	52.8		1.6	29.4			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.52		0.02	0.29			0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	838	1806		28	953			272		263	265	227
v/s Ratio Prot	c0.35	0.17		0.01	c0.41			c0.04		0.05	0.05	
v/s Ratio Perm												0.13
v/c Ratio	1.42	0.32		0.79	1.38			0.26		0.30	0.32	0.13
Uniform Delay, d1	38.7	14.4		50.2	36.5			38.0		38.2	38.3	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	196.5	0.1		82.7	176.2			2.3		2.9	3.1	1.2
Delay (s)	235.2	14.5		133.0	212.7			40.3		41.2	41.5	38.3
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		162.3			211.4			40.3			39.7	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	166.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

2030 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3520		1770	3383			1605		1681	1712	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3520		1770	3383			1605		1681	1712	1583
Volume (vph)	132	499	10	94	1346	267	30	29	100	126	26	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	542	11	102	1463	290	33	32	109	137	28	120
RTOR Reduction (vph)	0	2	0	0	16	0	0	60	0	0	0	110
Lane Group Flow (vph)	143	551	0	102	1737	0	0	114	0	80	85	10
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.46		0.06	0.44			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	142	1619		106	1489			257		269	274	127
v/s Ratio Prot	c0.08	0.16		0.06	c0.52			c0.11		0.05	c0.05	0.08
v/s Ratio Perm												
v/c Ratio	1.01	0.34		0.96	1.17			0.44		0.30	0.31	0.08
Uniform Delay, d1	46.0	17.3		46.9	28.0			38.0		37.0	37.1	42.6
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	77.4	0.1		74.9	82.6			5.4		2.8	2.9	0.3
Delay (s)	123.4	17.4		121.8	110.6			43.4		39.9	40.0	42.8
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		39.2			111.2			43.4			41.2	
Approach LOS		D			F			D			D	

Intersection Summary

HCM Average Control Delay	84.0	HCM Level of Service	F
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

2030 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1835	1583	1681	1658		1770	3539	1583	1770	3515	
Flt Permitted		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1835	1583	1681	1658		1770	3539	1583	1770	3515	
Volume (vph)	150	350	240	650	130	80	110	661	280	90	1090	30
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	380	261	707	141	87	120	718	304	98	1185	33
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	238	0	1	0
Lane Group Flow (vph)	0	543	261	470	457	0	120	718	66	98	1217	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	24.0	24.0		14.0	34.6	24.0	9.4	30.0	
Effective Green, g (s)		26.0	14.0	24.0	24.0		14.0	34.6	24.0	9.4	30.0	
Actuated g/C Ratio		0.24	0.13	0.22	0.22		0.13	0.31	0.22	0.09	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		434	201	367	362		225	1113	345	151	959	
v/s Ratio Prot		c0.30	c0.16	0.28	c0.28		0.07	0.20	0.19	0.06	c0.35	
v/s Ratio Perm												
v/c Ratio		1.25	1.30	1.28	1.26		0.53	0.65	0.19	0.65	1.27	
Uniform Delay, d1		42.0	48.0	43.0	43.0		44.9	32.4	35.1	48.7	40.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		130.9	165.9	145.7	138.7		2.4	2.9	0.3	9.2	129.1	
Delay (s)		172.9	213.9	188.7	181.7		47.4	35.3	35.4	57.9	169.1	
Level of Service		F	F	F	F		D	D	D	E	F	
Approach Delay (s)		186.2			185.2			36.6			160.9	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	137.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	582	0	140	0	984	670	0	865	1090
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	633	0	152	0	1070	728	0	940	1185
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	633	0	152	0	1070	728	0	940	1185
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				22.6		100.0		69.4	100.0		69.4	100.0
Effective Green, g (s)				22.6		100.0		69.4	100.0		69.4	100.0
Actuated g/C Ratio				0.23		1.00		0.69	1.00		0.69	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				747		1555		2456	1536		2456	1536
v/s Ratio Prot								0.30			0.27	
v/s Ratio Perm				0.19		0.10			0.47			0.77
v/c Ratio				0.85		0.10		0.44	0.47		0.38	0.77
Uniform Delay, d1				37.0		0.0		6.7	0.0		6.4	0.0
Progression Factor				1.00		1.00		1.16	1.00		1.00	1.00
Incremental Delay, d2				8.8		0.1		0.4	0.7		0.5	3.8
Delay (s)				45.9		0.1		8.2	0.7		6.8	3.8
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			37.0			5.2			5.1	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	590	0	2454	0	0	0	0	1212	410	0	1147	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	641	0	2667	0	0	0	0	1317	446	0	1247	446
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	641	0	2640	0	0	0	0	1317	446	0	1247	446
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					1593	1536		1593	1536
v/s Ratio Prot								c0.37			0.35	
v/s Ratio Perm	0.19		0.78						0.29			0.29
v/c Ratio	0.41		1.64					0.83	0.29		0.78	0.29
Uniform Delay, d1	17.4		26.5					24.1	0.0		23.4	0.0
Progression Factor	1.00		1.00					1.09	1.00		0.79	1.00
Incremental Delay, d2	0.2		288.9					0.5	0.0		3.7	0.5
Delay (s)	17.6		315.4					26.7	0.0		22.1	0.5
Level of Service	B		F					C	A		C	A
Approach Delay (s)		257.7			0.0			20.0			16.4	
Approach LOS		F			A			B			B	

Intersection Summary

HCM Average Control Delay	135.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1800	1506		1822	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1800	1506		1822	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	90	40	68	112	140	190	210	1228	94	620	1717	1160
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	43	74	122	152	207	228	1335	102	674	1866	1261
RTOR Reduction (vph)	0	0	59	0	0	165	0	0	58	0	0	766
Lane Group Flow (vph)	0	141	15	0	274	42	228	1335	44	674	1866	495
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		20.3	20.3		19.2	20.5	17.3	24.0	24.0	20.5	27.2	20.3
Effective Green, g (s)		20.3	20.3		19.2	20.5	17.3	24.0	24.0	20.5	27.2	20.3
Actuated g/C Ratio		0.20	0.20		0.19	0.20	0.17	0.24	0.24	0.20	0.27	0.20
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		365	306		350	325	306	849	361	704	1383	566
v/s Ratio Prot		0.08			c0.15	0.13	0.13	c0.38		c0.20	c0.37	c0.45
v/s Ratio Perm			0.05						0.07			
v/c Ratio		0.39	0.05		0.78	0.13	0.75	1.57	0.12	0.96	1.35	0.87
Uniform Delay, d1		34.5	32.1		38.4	32.5	39.3	38.0	29.8	39.3	36.4	38.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.88	0.93	2.09
Incremental Delay, d2		0.7	0.1		10.9	0.2	9.5	263.3	0.7	3.9	157.6	1.5
Delay (s)		35.1	32.1		49.3	32.7	48.7	301.3	30.5	38.4	191.6	82.1
Level of Service		D	C		D	C	D	F	C	D	F	F
Approach Delay (s)		34.1			42.1			250.1			128.1	
Approach LOS		C			D			F			F	

Intersection Summary

HCM Average Control Delay	151.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	120	1272	140	630	1461
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	130	1383	152	685	1588
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3566	731			1555	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3566	731			1555	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	63			0	
cM capacity (veh/h)	0	352			415	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	130	691	691	152	685	794	794
Volume Left	0	0	0	0	685	0	0
Volume Right	130	0	0	152	0	0	0
cSH	352	1700	1700	1700	415	1700	1700
Volume to Capacity	0.37	0.41	0.41	0.09	1.65	0.47	0.47
Queue Length 95th (ft)	42	0	0	0	1004	0	0
Control Delay (s)	21.1	0.0	0.0	0.0	327.2	0.0	0.0
Lane LOS	C				F		
Approach Delay (s)	21.1	0.0			98.6		
Approach LOS	C						

Intersection Summary

Average Delay	57.6		
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

11: Montezuma Rd & College Ave
2030 AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1457	1770	3539	1459	3433	3426		1770	3539	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1457	1770	3539	1459	3433	3426		1770	3539	1459
Volume (vph)	329	354	156	40	740	260	603	1040	170	150	440	241
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	358	385	170	43	804	283	655	1130	185	163	478	262
RTOR Reduction (vph)	0	0	131	0	0	212	0	13	0	0	0	198
Lane Group Flow (vph)	358	385	39	43	804	71	655	1302	0	163	478	64
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.6	22.6	22.6	23.9	23.9	23.9	12.0	24.0		12.0	24.0	24.0
Effective Green, g (s)	22.6	22.6	22.6	23.9	23.9	23.9	12.0	24.0		12.0	24.0	24.0
Actuated g/C Ratio	0.23	0.23	0.23	0.24	0.24	0.24	0.12	0.24		0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	406	812	334	429	859	354	418	835		216	862	355
v/s Ratio Prot	c0.20	0.11		0.02	c0.23		c0.19	c0.38		0.09	0.14	
v/s Ratio Perm			0.12			0.19						0.18
v/c Ratio	0.88	0.47	0.12	0.10	0.94	0.20	1.57	1.56		0.75	0.55	0.18
Uniform Delay, d1	36.7	32.8	30.0	29.0	36.6	29.7	43.2	37.2		41.8	32.6	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.5	0.4	0.2	0.1	17.1	0.3	266.5	257.6		13.9	2.6	1.1
Delay (s)	56.2	33.3	30.2	29.1	53.6	30.0	309.8	294.9		55.7	35.1	30.6
Level of Service	E	C	C	C	D	C	F	F		E	D	C
Approach Delay (s)		41.7			46.8			299.8			37.5	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM Average Control Delay	145.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

12: Alvarado Rd & Alvarado Ct
2030 AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	397	290	90	515	80	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	432	315	98	560	87	22
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			757		1365	609
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			757		1365	609
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		39	96
cM capacity (veh/h)			847		141	487

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	747	658	87	22
Volume Left	0	98	87	0
Volume Right	315	0	0	22
cSH	1700	847	141	487
Volume to Capacity	0.44	0.12	0.61	0.04
Queue Length 95th (ft)	0	10	81	3
Control Delay (s)	0.0	2.9	64.5	12.7
Lane LOS		A	F	B
Approach Delay (s)	0.0	2.9	54.1	
Approach LOS			F	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1721		1770	1863	1770	1539
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1721		1770	1863	1770	1539
Volume (vph)	167	120	263	635	170	121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	130	286	690	185	132
RTOR Reduction (vph)	31	0	0	0	0	83
Lane Group Flow (vph)	281	0	286	690	185	49
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	16.4		16.4	36.8	26.7	26.7
Effective Green, g (s)	16.4		16.4	36.8	26.7	26.7
Actuated g/C Ratio	0.23		0.23	0.51	0.37	0.37
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	395		406	959	661	575
v/s Ratio Prot	0.18		0.16	c0.37	c0.10	
v/s Ratio Perm						0.09
v/c Ratio	0.71		0.70	0.72	0.28	0.09
Uniform Delay, d1	25.4		25.3	13.4	15.7	14.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0		5.5	2.6	1.1	0.3
Delay (s)	31.3		30.8	16.0	16.7	14.8
Level of Service	C		C	B	B	B
Approach Delay (s)	31.3			20.3	15.9	
Approach LOS	C			C	B	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.94		1.00	0.95		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1522	1770	1738		1770	4776		1770	3530	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1803	1522	1770	1738		1770	4776		1770	3530	
Volume (vph)	40	20	210	447	90	52	120	677	293	41	1487	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	228	486	98	57	130	736	318	45	1616	22
RTOR Reduction (vph)	0	0	106	0	21	0	0	71	0	0	1	0
Lane Group Flow (vph)	0	65	122	486	134	0	130	983	0	45	1637	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		11.7	11.7	23.0	23.0		6.0	43.3		3.5	40.8	
Effective Green, g (s)		11.7	11.7	23.0	23.0		6.0	43.3		3.5	40.8	
Actuated g/C Ratio		0.12	0.12	0.24	0.24		0.06	0.44		0.04	0.42	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		216	183	418	410		109	2121		64	1477	
v/s Ratio Prot		0.04		c0.27	0.09		c0.07	0.22		0.03	c0.46	
v/s Ratio Perm			0.15									
v/c Ratio		0.30	0.67	1.16	0.33		1.19	0.46		0.70	1.11	
Uniform Delay, d1		39.2	41.0	37.2	30.8		45.8	19.0		46.5	28.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	8.9	96.5	0.5		147.0	0.7		29.5	59.0	
Delay (s)		40.0	50.0	133.8	31.3		192.7	19.7		76.0	87.3	
Level of Service		D	D	F	C		F	B		E	F	
Approach Delay (s)		47.7			109.0			38.7			87.0	
Approach LOS		D			F			D			F	

Intersection Summary

HCM Average Control Delay	72.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3403		3433	1863	2787	1770	3539	1525	1770	3539	1525
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3403		3433	1863	2787	1770	3539	1525	1770	3539	1525
Volume (vph)	170	238	60	427	439	487	300	1361	456	312	522	670
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	259	65	464	477	529	326	1479	496	339	567	728
RTOR Reduction (vph)	0	18	0	0	0	366	0	0	209	0	0	228
Lane Group Flow (vph)	185	306	0	464	477	163	326	1479	287	339	567	500
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	14.6	14.6		26.0	26.0	18.0	22.0	44.0	44.0	18.0	40.0	40.0
Effective Green, g (s)	14.6	14.6		26.0	26.0	18.0	22.0	44.0	44.0	18.0	40.0	40.0
Actuated g/C Ratio	0.12	0.12		0.22	0.22	0.15	0.19	0.37	0.37	0.15	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	423	419		753	408	423	328	1313	566	269	1194	514
v/s Ratio Prot	0.05	c0.10		0.14	c0.26	0.19	0.18	c0.42		c0.19	0.16	
v/s Ratio Perm									0.33			0.48
v/c Ratio	0.44	0.73		0.62	1.17	0.39	0.99	1.13	0.51	1.26	0.47	0.97
Uniform Delay, d1	48.2	50.1		41.8	46.3	45.3	48.2	37.3	28.9	50.3	31.0	38.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	6.3		1.5	99.4	0.6	47.8	67.2	3.2	143.5	1.4	33.5
Delay (s)	48.9	56.3		43.3	145.7	45.9	96.0	104.5	32.1	193.8	32.4	72.3
Level of Service	D	E		D	F	D	F	F	C	F	C	E
Approach Delay (s)		53.6			77.5			87.7			83.6	
Approach LOS		D			E			F			F	

Intersection Summary

HCM Average Control Delay	81.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	118.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	244	0	462	215	454	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	265	0	502	234	493	22

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	265	502	234	493	22
Volume Left (vph)	0	502	0	493	0
Volume Right (vph)	0	0	0	0	22
Hadj (s)	0.03	0.53	0.03	0.53	-0.67
Departure Headway (s)	7.4	7.6	7.1	7.8	6.6
Degree Utilization, x	0.54	1.06	0.46	1.06	0.04
Capacity (veh/h)	485	472	505	471	539
Control Delay (s)	18.8	83.0	14.7	86.6	8.6
Approach Delay (s)	18.8	61.3		83.3	
Approach LOS	C	F		F	

Intersection Summary

Delay	61.3		
HCM Level of Service	F		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1533	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1533	1770	2787
Volume (vph)	780	376	382	46	142	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	848	409	415	50	154	1338
RTOR Reduction (vph)	0	0	0	36	0	536
Lane Group Flow (vph)	848	409	415	14	154	802
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	33.7	61.2	23.5	23.5	17.5	33.7
Effective Green, g (s)	33.7	61.2	23.5	23.5	17.5	33.7
Actuated g/C Ratio	0.39	0.71	0.27	0.27	0.20	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1334	1315	505	416	357	1083
v/s Ratio Prot	0.25	0.22	c0.22		c0.09	c0.48
v/s Ratio Perm				0.03		
v/c Ratio	0.64	0.31	0.82	0.03	0.43	0.74
Uniform Delay, d1	21.5	4.8	29.6	23.2	30.3	22.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	10.4	0.0	3.8	2.8
Delay (s)	22.5	4.9	40.0	23.3	34.0	25.5
Level of Service	C	A	D	C	C	C
Approach Delay (s)		16.8	38.2		26.4	
Approach LOS		B	D		C	

Intersection Summary

HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

1: Camino del Rio N & Fairmount Ave
2030 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1739	1583	1610	3093	1441	1770	3399		3433	3539	1461
Flt Permitted	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1739	1583	1610	3093	1441	1770	3399		3433	3539	1461
Volume (vph)	240	120	1090	850	170	580	320	1020	220	20	1800	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	130	1185	924	185	630	348	1109	239	22	1957	130
RTOR Reduction (vph)	0	0	127	0	0	249	0	11	0	0	0	31
Lane Group Flow (vph)	190	201	1058	462	647	381	348	1337	0	22	1957	99
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.0	16.0	47.0	29.0	29.0	35.0	47.0	64.0		35.0	52.0	52.0
Effective Green, g (s)	16.0	16.0	47.0	29.0	29.0	35.0	47.0	64.0		35.0	52.0	52.0
Actuated g/C Ratio	0.10	0.10	0.29	0.18	0.18	0.22	0.29	0.40		0.22	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	168	174	465	292	561	315	520	1360		751	1150	475
v/s Ratio Prot	0.11	c0.12	c0.75	c0.29	0.21	0.44	0.20	0.40		0.01	c0.55	
v/s Ratio Perm												0.09
v/c Ratio	1.13	1.16	2.28	1.58	1.58dl	1.21	0.67	0.98		0.03	1.70	0.21
Uniform Delay, d1	72.0	72.0	56.5	65.5	65.5	62.5	49.7	47.5		49.1	54.0	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.89		1.00	1.00	1.00
Incremental Delay, d2	109.0	116.1	580.6	277.8	87.9	119.9	3.1	19.9		0.0	319.5	1.0
Delay (s)	181.0	188.1	637.1	343.3	153.4	182.4	59.1	62.0		49.2	373.5	40.1
Level of Service	F	F	F	F	F	F	E	E		D	F	D
Approach Delay (s)		524.8			214.4			61.4			349.6	
Approach LOS		F			F			E			F	

Intersection Summary

HCM Average Control Delay	286.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.89		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	153.2%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave
2030 PM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	790	2700	90	0	540	1300	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	859	2935	98	0	587	1413	0
RTOR Reduction (vph)	0	12	0	0	0	0	0
Lane Group Flow (vph)	859	2923	98	0	587	1413	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	103.0	103.0	8.0		49.0	37.0	
Effective Green, g (s)	103.0	103.0	8.0		49.0	37.0	
Actuated g/C Ratio	0.64	0.64	0.05		0.31	0.23	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2210	2164	89		1084	1176	
v/s Ratio Prot	0.25		c0.06		0.17	c0.28	
v/s Ratio Perm		0.87					
v/c Ratio	0.39	1.35	1.10		0.54	1.20	
Uniform Delay, d1	13.5	28.5	76.0		46.2	61.5	
Progression Factor	1.00	1.00	1.00		1.00	0.95	
Incremental Delay, d2	0.1	161.0	125.4		1.9	91.5	
Delay (s)	13.7	189.5	201.4		48.1	149.9	
Level of Service	B	F	F		D	F	
Approach Delay (s)	149.7				70.0	149.9	
Approach LOS	F				E	F	

Intersection Summary

HCM Average Control Delay	140.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

3: Remington Rd & Aztec Circle

2030 PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3399	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3399	
Volume (vph)	30	90	110	350	470	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	98	120	380	511	43
RTOR Reduction (vph)	0	0	0	147	5	0
Lane Group Flow (vph)	33	98	120	233	549	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	1.8	13.5	7.7	33.9	33.9	
Effective Green, g (s)	1.8	13.5	7.7	33.9	33.9	
Actuated g/C Ratio	0.03	0.24	0.14	0.61	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	58	454	259	969	2080	
v/s Ratio Prot	c0.02	0.05	c0.06	c0.24	0.16	
v/s Ratio Perm						
v/c Ratio	0.57	0.22	0.46	0.24	0.26	
Uniform Delay, d1	26.4	16.7	21.9	4.9	5.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.2	0.2	1.3	0.6	0.3	
Delay (s)	38.6	17.0	23.3	5.5	5.3	
Level of Service	D	B	C	A	A	
Approach Delay (s)		22.4	9.7		5.3	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: Montezuma Rd & 55th St

2030 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			0.98		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97			0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3499		1770	3396			1718		1681	1691	1460
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3499		1770	3396			1718		1681	1691	1460
Volume (vph)	431	1323	60	30	865	194	60	10	20	546	20	417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	468	1438	65	33	940	211	65	11	22	593	22	453
RTOR Reduction (vph)	0	3	0	0	18	0	0	10	0	0	0	378
Lane Group Flow (vph)	468	1500	0	33	1133	0	0	88	0	300	315	75
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	17.8	46.9		2.3	31.4			16.1		16.1	16.1	16.1
Effective Green, g (s)	17.8	46.9		2.3	31.4			16.1		16.1	16.1	16.1
Actuated g/C Ratio	0.18	0.48		0.02	0.32			0.17		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	627	1685		42	1095			284		278	280	241
v/s Ratio Prot	c0.14	c0.43		0.02	c0.34			c0.06		0.18	0.19	
v/s Ratio Perm												0.31
v/c Ratio	0.75	0.89		0.79	1.04			0.31		1.08	1.12	0.31
Uniform Delay, d1	37.7	22.9		47.3	33.0			35.8		40.7	40.7	35.8
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	6.3		62.3	36.7			2.8		76.6	91.7	3.3
Delay (s)	42.5	29.2		109.6	69.7			38.6		117.3	132.4	39.1
Level of Service	D	C		F	E			D		F	F	D
Approach Delay (s)		32.4			70.8			38.6			88.6	
Approach LOS		C			E			D			F	

Intersection Summary

HCM Average Control Delay	56.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

2030 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3520		1770	3346			1587		1681	1712	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3520		1770	3346			1587		1681	1712	1583
Volume (vph)	174	1494	30	246	835	215	30	39	150	373	75	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1624	33	267	908	234	33	42	163	405	82	228
RTOR Reduction (vph)	0	2	0	0	23	0	0	78	0	0	0	210
Lane Group Flow (vph)	189	1655	0	267	1119	0	0	160	0	237	250	18
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.46		0.06	0.44			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	142	1619		106	1472			254		269	274	127
v/s Ratio Prot	0.11	c0.47		c0.15	0.34			c0.15		0.14	c0.15	0.14
v/s Ratio Perm												
v/c Ratio	1.33	1.02		2.52	0.76			0.63		0.88	0.91	0.14
Uniform Delay, d1	46.0	27.0		47.0	23.6			39.2		41.1	41.3	42.8
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	189.1	28.2		710.6	2.4			11.3		31.3	35.8	0.5
Delay (s)	235.1	55.2		757.6	25.9			50.5		72.3	77.2	43.3
Level of Service	F	E		F	C			D		E	E	D
Approach Delay (s)		73.6			164.6			50.5			64.8	
Approach LOS		E			F			D			E	

Intersection Summary

HCM Average Control Delay	101.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

2030 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583	1681	1581		1770	3539	1583	1770	3498	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583	1681	1581		1770	3539	1583	1770	3498	
Volume (vph)	90	130	110	400	60	130	150	1021	480	250	776	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	141	120	435	65	141	163	1110	522	272	843	43
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	320	0	3	0
Lane Group Flow (vph)	0	239	120	324	291	0	163	1110	202	272	883	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		18.2	12.6	22.6	22.6		12.6	34.2	22.6	10.1	31.7	
Effective Green, g (s)		18.2	12.6	22.6	22.6		12.6	34.2	22.6	10.1	31.7	
Actuated g/C Ratio		0.18	0.12	0.22	0.22		0.12	0.34	0.22	0.10	0.31	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		329	197	376	353		221	1197	354	177	1097	
v/s Ratio Prot		c0.13	0.08	0.19	0.20		0.09	c0.31	c0.33	c0.15	0.25	
v/s Ratio Perm												
v/c Ratio		0.73	0.61	0.86	0.82		0.74	0.93	0.57	1.54	0.80	
Uniform Delay, d1		39.1	41.9	37.7	37.3		42.7	32.3	34.9	45.5	31.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		7.8	5.3	18.0	14.3		12.1	13.6	2.2	267.8	6.3	
Delay (s)		46.9	47.2	55.7	51.7		54.7	45.8	37.2	313.3	38.2	
Level of Service		D	D	E	D		D	D	D	F	D	
Approach Delay (s)		47.0			53.7			44.1			102.8	
Approach LOS		D			D			D			F	

Intersection Summary

HCM Average Control Delay	63.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	101.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	609	0	400	0	1349	1690	0	705	580
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	662	0	435	0	1466	1837	0	766	630
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	662	0	435	0	1466	1837	0	766	630
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				23.6		100.0		68.4	100.0		68.4	100.0
Effective Green, g (s)				23.6		100.0		68.4	100.0		68.4	100.0
Actuated g/C Ratio				0.24		1.00		0.68	1.00		0.68	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				780		1555		2421	1536		2421	1536
v/s Ratio Prot								0.41			0.22	
v/s Ratio Perm				0.20		0.28			1.20			0.41
v/c Ratio				0.85		0.28		0.61	1.20		0.32	0.41
Uniform Delay, d1				36.5		0.0		8.5	50.0		6.4	0.0
Progression Factor				1.00		1.00		0.75	1.00		1.00	1.00
Incremental Delay, d2				8.6		0.4		0.1	88.8		0.3	0.8
Delay (s)				45.1		0.4		6.5	138.8		6.7	0.8
Level of Service				D		A		A	F		A	A
Approach Delay (s)		0.0			27.4			80.1			4.1	
Approach LOS		A			C			F			A	

Intersection Summary

HCM Average Control Delay	51.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	820	0	1077	0	0	0	0	2500	1010	0	1094	320
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	891	0	1171	0	0	0	0	2717	1098	0	1189	348
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	891	0	1136	0	0	0	0	2717	1098	0	1189	348
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	42.8		42.8					49.2	100.0		49.2	100.0
Effective Green, g (s)	42.8		42.8					49.2	100.0		49.2	100.0
Actuated g/C Ratio	0.43		0.43					0.49	1.00		0.49	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1414		1470					1741	1536		1741	1536
v/s Ratio Prot								c0.77			0.34	
v/s Ratio Perm	0.27		0.34						0.71			0.23
v/c Ratio	0.63		0.77					1.56	0.71		0.68	0.23
Uniform Delay, d1	22.4		24.4					25.4	0.0		19.4	0.0
Progression Factor	1.00		1.00					0.82	1.00		0.73	1.00
Incremental Delay, d2	0.9		2.6					252.5	0.3		2.1	0.3
Delay (s)	23.3		27.0					273.3	0.3		16.3	0.3
Level of Service	C		C					F	A		B	A
Approach Delay (s)		25.4			0.0			194.7			12.7	
Approach LOS		C			A			F			B	

Intersection Summary

HCM Average Control Delay	109.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1782	1506		1787	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1782	1506		1787	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	550	60	102	109	20	410	98	2235	134	290	1724	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	65	111	118	22	446	107	2429	146	315	1874	163
RTOR Reduction (vph)	0	0	66	0	0	317	0	0	41	0	0	94
Lane Group Flow (vph)	0	663	45	0	140	129	107	2429	105	315	1874	69
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		12.7	15.7	10.0	31.6	31.6	15.7	37.3	24.0
Effective Green, g (s)		24.0	24.0		12.7	15.7	10.0	31.6	31.6	15.7	37.3	24.0
Actuated g/C Ratio		0.24	0.24		0.13	0.16	0.10	0.32	0.32	0.16	0.37	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		428	361		227	249	177	1118	476	539	1897	669
v/s Ratio Prot		c0.37			c0.08	c0.28	0.06	c0.69		0.09	0.37	0.06
v/s Ratio Perm			0.07						0.10			
v/c Ratio		1.55	0.12		0.62	0.52	0.60	2.17	0.22	0.58	0.99	0.10
Uniform Delay, d1		38.0	29.8		41.3	38.7	43.1	34.2	25.1	39.1	31.1	29.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.11	0.84	1.25
Incremental Delay, d2		258.4	0.2		4.9	1.8	5.7	530.6	1.1	1.1	14.7	0.0
Delay (s)		296.4	29.9		46.3	40.5	48.8	564.8	26.2	44.7	41.0	36.9
Level of Service		F	C		D	D	D	F	C	D	D	D
Approach Delay (s)		258.2			41.9			514.9			41.2	
Approach LOS		F			D			F			D	

Intersection Summary

HCM Average Control Delay	266.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	132.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	610	1563	106	310	1541
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	663	1699	115	337	1675
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3230	889			1834	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3230	889			1834	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			0	
cM capacity (veh/h)	0	277			323	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	663	849	849	115	337	838	838
Volume Left	0	0	0	0	337	0	0
Volume Right	663	0	0	115	0	0	0
cSH	277	1700	1700	1700	323	1700	1700
Volume to Capacity	2.40	0.50	0.50	0.07	1.04	0.49	0.49
Queue Length 95th (ft)	1325	0	0	0	304	0	0
Control Delay (s)	668.2	0.0	0.0	0.0	98.8	0.0	0.0
Lane LOS	F				F		
Approach Delay (s)	668.2	0.0			16.5		
Approach LOS	F						

Intersection Summary

Average Delay	106.1		
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

11: Montezuma Rd & College Ave

2030 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1459	1770	3539	1457	3433	3477		1770	3539	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1459	1770	3539	1457	3433	3477		1770	3539	1459
Volume (vph)	733	871	633	190	581	220	458	720	60	290	856	221
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	797	947	688	207	632	239	498	783	65	315	930	240
RTOR Reduction (vph)	0	0	274	0	0	175	0	6	0	0	0	181
Lane Group Flow (vph)	797	947	414	207	632	64	498	842	0	315	930	59
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	24.0	24.0	24.0	22.2	22.2	22.2	12.0	24.0		12.0	24.0	24.0
Effective Green, g (s)	24.0	24.0	24.0	22.2	22.2	22.2	12.0	24.0		12.0	24.0	24.0
Actuated g/C Ratio	0.24	0.24	0.24	0.23	0.23	0.23	0.12	0.24		0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	433	865	357	400	800	329	420	850		216	865	357
v/s Ratio Prot	0.45	0.27		0.12	c0.18		0.15	0.24		c0.18	c0.26	
v/s Ratio Perm			0.47			0.16						0.16
v/c Ratio	1.84	1.09	1.16	0.52	0.79	0.19	1.19	0.99		1.46	1.08	0.16
Uniform Delay, d1	37.1	37.1	37.1	33.3	35.8	30.8	43.1	37.0		43.1	37.1	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	387.2	59.8	98.3	1.1	5.3	0.3	105.3	28.7		230.0	52.9	1.0
Delay (s)	424.3	96.9	135.4	34.4	41.1	31.1	148.4	65.7		273.1	90.0	30.2
Level of Service	F	F	F	C	D	C	F	E		F	F	C
Approach Delay (s)		215.1			37.6			96.3			119.2	
Approach LOS		F			D			F			F	

Intersection Summary

HCM Average Control Delay	137.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

12: Alvarado Rd & Alvarado Ct

2030 PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	441	90	50	479	230	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	479	98	54	521	250	120
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			587		1178	548
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			587		1178	548
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		0	77
cM capacity (veh/h)			980		196	527

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	577	575	250	120
Volume Left	0	54	250	0
Volume Right	98	0	0	120
cSH	1700	980	196	527
Volume to Capacity	0.34	0.06	1.28	0.23
Queue Length 95th (ft)	0	4	341	22
Control Delay (s)	0.0	1.5	205.5	13.8
Lane LOS		A	F	B
Approach Delay (s)	0.0	1.5	143.5	
Approach LOS			F	

Intersection Summary

Average Delay	35.4		
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

13: Alvarado Rd & Reservoir Dr
2030 PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1772		1770	1863	1770	1537
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1772		1770	1863	1770	1537
Volume (vph)	411	150	162	209	160	228
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	447	163	176	227	174	248
RTOR Reduction (vph)	14	0	0	0	0	164
Lane Group Flow (vph)	596	0	176	227	174	84
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	26.1		12.7	42.8	26.1	26.1
Effective Green, g (s)	26.1		12.7	42.8	26.1	26.1
Actuated g/C Ratio	0.34		0.17	0.56	0.34	0.34
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	601		292	1037	601	522
v/s Ratio Prot	c0.34		c0.10	0.12	0.10	
v/s Ratio Perm						0.16
v/c Ratio	0.99		0.60	0.22	0.29	0.16
Uniform Delay, d1	25.3		29.8	8.6	18.6	17.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	34.5		3.5	0.1	1.2	0.7
Delay (s)	59.8		33.2	8.7	19.8	18.4
Level of Service	E		C	A	B	B
Approach Delay (s)	59.8			19.4	19.0	
Approach LOS	E			B	B	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

14: Parkway Dr & Lake Murray Blvd
2030 PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.97		1.00	0.99	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1517	1770	1657		1770	4906		1770	3499	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1517	1770	1657		1770	4906		1770	3499	
Volume (vph)	50	20	80	756	100	161	130	1053	222	32	848	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	87	822	109	175	141	1145	241	35	922	54
RTOR Reduction (vph)	0	0	80	0	56	0	0	30	0	0	4	0
Lane Group Flow (vph)	0	76	7	822	228	0	141	1356	0	35	972	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.9	7.9	37.2	37.2		7.0	30.5		2.3	25.8	
Effective Green, g (s)		7.9	7.9	37.2	37.2		7.0	30.5		2.3	25.8	
Actuated g/C Ratio		0.08	0.08	0.40	0.40		0.07	0.32		0.02	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		151	128	701	656		132	1594		43	961	
v/s Ratio Prot		0.04		c0.46	0.17		c0.08	0.28		0.02	c0.28	
v/s Ratio Perm			0.06									
v/c Ratio		0.50	0.06	1.17	0.35		1.07	0.85		0.81	1.01	
Uniform Delay, d1		41.1	39.6	28.4	19.9		43.5	29.6		45.6	34.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6	0.2	92.3	0.3		97.7	5.9		69.6	31.8	
Delay (s)		43.8	39.8	120.7	20.2		141.2	35.5		115.2	65.8	
Level of Service		D	D	F	C		F	D		F	E	
Approach Delay (s)		41.6			94.9			45.2			67.6	
Approach LOS		D			F			D			E	

Intersection Summary

HCM Average Control Delay	65.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3411		3433	1863	2787	1770	3539	1524	1770	3539	1523
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3411		3433	1863	2787	1770	3539	1524	1770	3539	1523
Volume (vph)	370	629	150	793	221	1043	230	1073	628	292	632	230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	684	163	862	240	1134	250	1166	683	317	687	250
RTOR Reduction (vph)	0	17	0	0	0	551	0	0	306	0	0	180
Lane Group Flow (vph)	402	830	0	862	240	583	250	1166	377	317	687	70
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	25.0	25.0		26.0	26.0	18.0	19.5	35.0	35.0	18.0	33.5	33.5
Effective Green, g (s)	25.0	25.0		26.0	26.0	18.0	19.5	35.0	35.0	18.0	33.5	33.5
Actuated g/C Ratio	0.21	0.21		0.22	0.22	0.15	0.16	0.29	0.29	0.15	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	715	711		744	404	418	288	1032	445	266	988	425
v/s Ratio Prot	0.12	c0.25		c0.25	0.13	c0.41	0.14	0.33		0.18	0.19	
v/s Ratio Perm									0.45			0.16
v/c Ratio	0.56	1.17		1.16	0.59	1.40	0.87	1.13	0.85	1.19	0.70	0.16
Uniform Delay, d1	42.6	47.5		47.0	42.3	51.0	49.0	42.5	40.0	51.0	38.7	32.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	89.8		86.0	2.3	191.9	23.0	70.9	17.8	117.2	4.0	0.8
Delay (s)	43.6	137.3		133.0	44.6	242.9	72.0	113.4	57.8	168.2	42.7	33.5
Level of Service	D	F		F	D	F	E	F	E	F	D	C
Approach Delay (s)		107.2			179.3			90.4			72.6	
Approach LOS		F			F			F			E	

Intersection Summary

HCM Average Control Delay	119.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	254	0	101	150	737	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	276	0	110	163	801	98
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total (vph)	276	110	163	801	98	
Volume Left (vph)	0	110	0	801	0	
Volume Right (vph)	0	0	0	0	98	
Hadj (s)	0.03	0.53	0.03	0.53	-0.67	
Departure Headway (s)	6.7	7.6	7.1	6.8	5.6	
Degree Utilization, x	0.52	0.23	0.32	1.51	0.15	
Capacity (veh/h)	528	464	498	533	631	
Control Delay (s)	16.7	11.7	12.2	258.2	8.4	
Approach Delay (s)	16.7	12.0		231.0		
Approach LOS	C	B		F		

Intersection Summary

Delay	148.9		
HCM Level of Service	F		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1528	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1528	1770	2787
Volume (vph)	1170	249	475	104	125	1962
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1272	271	516	113	136	2133
RTOR Reduction (vph)	0	0	0	86	0	452
Lane Group Flow (vph)	1272	271	516	27	136	1681
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	47.0	75.0	24.0	24.0	17.0	47.0
Effective Green, g (s)	47.0	75.0	24.0	24.0	17.0	47.0
Actuated g/C Ratio	0.47	0.75	0.24	0.24	0.17	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1614	1397	447	367	301	1310
v/s Ratio Prot	0.37	0.15	c0.28		c0.08	c0.77
v/s Ratio Perm				0.07		
v/c Ratio	0.79	0.19	1.15	0.07	0.45	1.28
Uniform Delay, d1	22.3	3.7	38.0	29.4	37.3	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	92.2	0.1	4.8	133.5
Delay (s)	24.9	3.7	130.2	29.5	42.1	160.0
Level of Service	C	A	F	C	D	F
Approach Delay (s)		21.2	112.1		153.0	
Approach LOS		C	F		F	

Intersection Summary

HCM Average Control Delay	101.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

RAMP METER ANALYSIS

Year 2030 and Year 2030 + Project

Fixed Rate Method

Location/Condition	Peak Hour	Peak Hour Demand D	Flow F	Excess Demand E	Delay (min)	Queue (ft)
I-8/College Avenue Interchange						
NB College Avenue to WB I-8					2 SOV	
Year 2030	AM	335	318	17	3	425
Year 2030 + Project	AM	346	318	28	5	688
Project Increase	AM	11	318	11	2	263
SB College Avenue to WB I-8					2 SOV	
Year 2030	AM	545	318	227	43	5675
Year 2030 + Project	AM	552	318	234	44	5838
Project Increase	AM	7	318	7	1	163
NB College Avenue to EB I-8					1 SOV	
Year 2030	PM	1010	318	692	131	17300
Year 2030 + Project	PM	1079	318	761	144	19025
Project Increase	PM	69	318	69	13	1725
SB College Avenue to EB I-8					1 SOV	
Year 2030	PM	320	318	2	0	50
Year 2030 + Project	PM	322	318	4	1	100
Project Increase	PM	2	318	2	0	50
I-8/Lake Blvd/ 70th Street Interchange						
SB Lake Boulevard to WB I-8					1 SOV + 1 HOV	
Year 2030	AM	576	828	0	0	0
Year 2030 + Project	AM	576	828	0	0	0
Project Increase	AM	0	828	0	0	0
I-8/Fairmount Ave Interchange						
SB Fairmount Ave to EB I-8					1 SOV	
Year 2030	PM	450	492	0	0	0
Year 2030 + Project	PM	452	492	0	0	0
Project Increase	PM	2	492	0	0	0

Freeway Mainline Operations
Year 2030

Year 2030 No Project

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Year 2030 Without Project Peak Hour Volume [e]		V/C [f]		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 8															
Fairmount Ave to Waring Rd	EB	5	10,000	263,000	0.075	0.074	0.374	0.604	0.965	7590	12122	0.759	1.212	C	F(0)
	WB	5	10,000		0.075	0.074	0.626	0.396		12714	7937	1.271	0.794	F(1)	C
Waring Rd to College Ave	EB	5	10,000	245,000	0.075	0.074	0.374	0.604	0.965	7070	11292	0.707	1.129	C	F(0)
	WB	5	10,000		0.075	0.074	0.626	0.396		11844	7394	1.184	0.739	F(0)	C
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	232,000	0.073	0.078	0.330	0.600	0.963	5760	11266	0.626	1.225	C	F(0)
	WB	5	10,000		0.073	0.078	0.670	0.400		11754	7501	1.175	0.750	F(0)	C
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	205,000	0.073	0.078	0.330	0.600	0.963	5090	9955	0.553	1.082	B	F(0)
	WB	4	8,000		0.073	0.078	0.670	0.400		10386	6628	1.298	0.829	F(1)	D

Year 2030 With Project

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	Year 2030 With Project Peak Hour Volume [e]		Project Peak Hour Volume		Year 2030 With Project Peak Hour Volume [e]		V/C [f]		LOS		Δ V/C	
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 8																
Fairmount Ave to Waring Rd	EB	5	10,000	265,910	7590	12122	121	82	7711	12204	0.771	1.220	C	**F(0)**	0.012	0.008
	WB	5	10,000		12714	7937	34	131	12748	8068	1.275	0.807	F(1)	D	0.003	0.013
Waring Rd to College Ave	EB	5	10,000	247,910	7070	11292	121	82	7191	11374	0.719	1.137	C	**F(0)**	0.012	0.008
	WB	5	10,000		11844	7394	34	131	11878	7525	1.188	0.753	F(0)	C	0.003	0.013
College Ave to Lake Murray Blvd	EB	4 + 1	9,200	234,030	5760	11266	15	71	5775	11337	0.628	1.232	C	**F(0)**	0.002	0.008
	WB	5	10,000		11754	7501	65	41	11819	7542	1.182	0.754	**F(0)**	C	0.006	0.004
Lake Murray Blvd to Fletcher Pkwy	EB	4 + 1	9,200	207,950	5090	9955	24	138	5114	10093	0.556	1.097	B	**F(0)**	0.003	0.015
	WB	4	8,000		10386	6628	128	74	10514	6702	1.314	0.838	**F(1)**	D	0.016	0.009

Footnotes:

a. Capacity calculated at 2000 vph per lane and 1200 vph per HOV lane
b. Year 2030 ADT Volumes from SANDAG Series 10.0 Model
c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS "1999 Traffic Volumes", June 2000
d. Truck Factor from "2000 Annual Average Daily Truck Traffic on the California State Highway System", Jan 2002
e. Values calculated in the Existing Conditions table
f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)
g. 3 lanes + 1 HOV lane in each direction.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

APPENDIX M

HORIZON YEAR WITH PROJECT INTERSECTION, RAMP METER, & FREEWAY ANALYSIS CALCULATION SHEETS

1: Camino del Rio N & Fairmount Ave

2030 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1751	1583	1610	2997	1441	1770	3442		3433	3539	1462
Flt Permitted	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1751	1583	1610	2997	1441	1770	3442		3433	3539	1462
Volume (vph)	30	20	380	460	410	690	400	1421	200	20	1129	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	413	500	446	750	435	1545	217	22	1227	130
RTOR Reduction (vph)	0	0	143	0	16	374	0	7	0	0	0	50
Lane Group Flow (vph)	27	28	270	376	751	179	435	1755	0	22	1227	80
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.9	6.9	36.0	45.9	45.9	17.0	36.0	74.2		17.0	55.2	55.2
Effective Green, g (s)	6.9	6.9	36.0	45.9	45.9	17.0	36.0	74.2		17.0	55.2	55.2
Actuated g/C Ratio	0.04	0.04	0.22	0.29	0.29	0.11	0.22	0.46		0.11	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	72	76	356	462	860	153	398	1596		365	1221	504
v/s Ratio Prot	c0.02	0.02	c0.26	0.23	c0.26	c0.38	0.25	c0.51		0.01	0.35	
v/s Ratio Perm												0.09
v/c Ratio	0.38	0.37	0.76	0.81	0.87	1.17	1.09	1.10		0.06	1.00	0.16
Uniform Delay, d1	74.5	74.4	58.0	53.1	54.3	71.5	62.0	42.9		64.3	52.4	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.14	1.04		1.00	1.00	1.00
Incremental Delay, d2	3.3	3.0	9.0	10.5	9.7	126.7	68.7	53.5		0.1	26.9	0.7
Delay (s)	77.7	77.4	66.9	63.6	64.0	198.2	139.1	98.1		64.4	79.3	37.0
Level of Service	E	E	E	E	E	F	F	F		E	E	D
Approach Delay (s)		68.2			107.7			106.2			75.1	
Approach LOS		E			F			F			E	

Intersection Summary

HCM Average Control Delay	96.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

2: I-8 EB Off Ramp & Fairmont Ave

2030 + P AM

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	1090	1868	170	0	771	684	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	2030	185	0	838	743	0
RTOR Reduction (vph)	0	83	0	0	0	0	0
Lane Group Flow (vph)	1185	1947	185	0	838	743	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	96.0	96.0	20.3		56.0	31.7	
Effective Green, g (s)	96.0	96.0	20.3		56.0	31.7	
Actuated g/C Ratio	0.60	0.60	0.13		0.35	0.20	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2060	2017	225		1239	1007	
v/s Ratio Prot	0.35		c0.10		0.24	c0.15	
v/s Ratio Perm		0.60					
v/c Ratio	0.58	0.97	0.82		0.68	0.74	
Uniform Delay, d1	19.5	30.4	68.1		44.3	60.2	
Progression Factor	1.00	1.00	1.00		1.00	1.11	
Incremental Delay, d2	0.4	12.8	20.9		3.0	1.9	
Delay (s)	19.9	43.2	89.0		47.3	68.5	
Level of Service	B	D	F		D	E	
Approach Delay (s)	34.6				54.8	68.5	
Approach LOS	C				D	E	

Intersection Summary

HCM Average Control Delay	43.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

3: Remington Rd & Aztec Circle

2030 + P AM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3387	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3387	
Volume (vph)	54	90	70	866	184	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	98	76	941	200	22
RTOR Reduction (vph)	0	0	0	331	7	0
Lane Group Flow (vph)	59	98	76	610	215	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	4.0	12.2	4.2	37.2	37.2	
Effective Green, g (s)	4.0	12.2	4.2	37.2	37.2	
Actuated g/C Ratio	0.07	0.21	0.07	0.65	0.65	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	123	396	136	1026	2195	
v/s Ratio Prot	c0.03	0.05	c0.04	c0.59	0.07	
v/s Ratio Perm						
v/c Ratio	0.48	0.25	0.56	0.59	0.10	
Uniform Delay, d1	25.7	18.8	25.7	5.8	3.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.9	0.3	4.9	2.5	0.1	
Delay (s)	28.6	19.1	30.6	8.3	3.9	
Level of Service	C	B	C	A	A	
Approach Delay (s)		22.7	10.0		3.9	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

4: Montezuma Rd & 55th St

2030 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.96			0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3506		1770	3308			1743		1681	1696	1455
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3506		1770	3308			1743		1681	1696	1455
Volume (vph)	1114	560	20	20	903	375	50	10	10	143	10	172
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1211	609	22	22	982	408	54	11	11	155	11	187
RTOR Reduction (vph)	0	2	0	0	44	0	0	6	0	0	0	158
Lane Group Flow (vph)	1211	629	0	22	1346	0	0	70	0	81	85	29
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	25.0	52.8		1.6	29.4			16.0		16.0	16.0	16.0
Effective Green, g (s)	25.0	52.8		1.6	29.4			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.52		0.02	0.29			0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	838	1808		28	950			272		263	265	227
v/s Ratio Prot	c0.35	0.18		0.01	c0.42			c0.04		0.05	0.05	
v/s Ratio Perm												0.13
v/c Ratio	1.45	0.35		0.79	1.42			0.26		0.31	0.32	0.13
Uniform Delay, d1	38.7	14.6		50.2	36.5			38.0		38.3	38.4	37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	207.0	0.1		82.7	193.7			2.3		3.0	3.2	1.2
Delay (s)	245.7	14.8		133.0	230.2			40.3		41.3	41.5	38.4
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		166.6			228.7			40.3			39.8	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	175.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

5: Montezuma Rd & Campanile Dr

2030 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3522		1770	3384			1606		1681	1712	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3522		1770	3384			1606		1681	1712	1583
Volume (vph)	132	540	10	98	1375	271	34	29	104	126	26	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	587	11	107	1495	295	37	32	113	137	28	120
RTOR Reduction (vph)	0	1	0	0	16	0	0	59	0	0	0	110
Lane Group Flow (vph)	143	597	0	107	1774	0	0	123	0	80	85	10
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.46		0.06	0.44			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	142	1620		106	1489			257		269	274	127
v/s Ratio Prot	c0.08	0.17		0.06	c0.53			c0.11		0.05	c0.05	0.08
v/s Ratio Perm												
v/c Ratio	1.01	0.37		1.01	1.19			0.48		0.30	0.31	0.08
Uniform Delay, d1	46.0	17.6		47.0	28.0			38.2		37.0	37.1	42.6
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	77.4	0.1		90.0	93.0			6.3		2.8	2.9	0.3
Delay (s)	123.4	17.7		137.0	121.0			44.5		39.9	40.0	42.8
Level of Service	F	B		F	F			D		D	D	D
Approach Delay (s)		38.1			121.9			44.5			41.2	
Approach LOS		D			F			D			D	

Intersection Summary

HCM Average Control Delay	90.0	HCM Level of Service	F
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

6: Del Cerro Blvd & College Ave

2030 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1834	1583	1681	1658		1770	3539	1583	1770	3515	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1834	1583	1681	1658		1770	3539	1583	1770	3515	
Volume (vph)	157	350	321	655	130	80	130	667	281	90	1125	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	380	349	712	141	87	141	725	305	98	1223	35
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	238	0	2	0
Lane Group Flow (vph)	0	551	349	473	459	0	141	725	67	98	1256	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	24.0	24.0		14.0	34.6	24.0	9.4	30.0	
Effective Green, g (s)		26.0	14.0	24.0	24.0		14.0	34.6	24.0	9.4	30.0	
Actuated g/C Ratio		0.24	0.13	0.22	0.22		0.13	0.31	0.22	0.09	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		433	201	367	362		225	1113	345	151	959	
v/s Ratio Prot		c0.30	c0.22	0.28	c0.28		0.08	0.20	0.19	0.06	c0.36	
v/s Ratio Perm												
v/c Ratio		1.27	1.74	1.29	1.27		0.63	0.65	0.19	0.65	1.31	
Uniform Delay, d1		42.0	48.0	43.0	43.0		45.5	32.5	35.1	48.7	40.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		139.7	351.3	149.1	140.9		5.4	3.0	0.3	9.2	146.8	
Delay (s)		181.7	399.3	192.1	183.9		50.9	35.5	35.4	57.9	186.8	
Level of Service		F	F	F	F		D	D	D	E	F	
Approach Delay (s)		266.1			188.0			37.3			177.5	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	160.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	646	0	141	0	1010	691	0	973	1103
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	702	0	153	0	1098	751	0	1058	1199
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	702	0	153	0	1098	751	0	1058	1199
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				24.9		100.0		67.1	100.0		67.1	100.0
Effective Green, g (s)				24.9		100.0		67.1	100.0		67.1	100.0
Actuated g/C Ratio				0.25		1.00		0.67	1.00		0.67	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				823		1555		2375	1536		2375	1536
v/s Ratio Prot								0.31			0.30	
v/s Ratio Perm				0.21		0.10			0.49			0.78
v/c Ratio				0.85		0.10		0.46	0.49		0.45	0.78
Uniform Delay, d1				35.8		0.0		7.8	0.0		7.7	0.0
Progression Factor				1.00		1.00		1.08	1.00		1.00	1.00
Incremental Delay, d2				8.5		0.1		0.4	0.8		0.6	4.0
Delay (s)				44.3		0.1		8.9	0.8		8.3	4.0
Level of Service				D		A		A	A		A	A
Approach Delay (s)		0.0			36.4			5.6			6.0	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	593	0	2572	0	0	0	0	1256	421	0	1315	414
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	645	0	2796	0	0	0	0	1365	458	0	1429	450
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	645	0	2781	0	0	0	0	1365	458	0	1429	450
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					1593	1536		1593	1536
v/s Ratio Prot								0.39			c0.40	
v/s Ratio Perm	0.20		0.81						0.30			0.29
v/c Ratio	0.42		1.72					0.86	0.30		0.90	0.29
Uniform Delay, d1	17.5		26.5					24.6	0.0		25.4	0.0
Progression Factor	1.00		1.00					1.09	1.00		0.77	1.00
Incremental Delay, d2	0.2		328.1					0.6	0.0		7.8	0.4
Delay (s)	17.6		354.6					27.5	0.0		27.4	0.4
Level of Service	B		F					C	A		C	A
Approach Delay (s)		291.4			0.0			20.6			21.0	
Approach LOS		F			A			C			C	

Intersection Summary

HCM Average Control Delay	151.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

9: Canyon Crest Dr & College Ave
2030 + P AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1799	1506		1821	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1799	1506		1821	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	103	41	70	129	149	220	228	1240	180	747	1791	1246
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	45	76	140	162	239	248	1348	196	812	1947	1354
RTOR Reduction (vph)	0	0	59	0	0	198	0	0	109	0	0	766
Lane Group Flow (vph)	0	157	17	0	302	41	248	1348	87	812	1947	588
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		22.5	22.5		20.3	17.2	17.0	24.0	24.0	17.2	24.2	22.5
Effective Green, g (s)		22.5	22.5		20.3	17.2	17.0	24.0	24.0	17.2	24.2	22.5
Actuated g/C Ratio		0.22	0.22		0.20	0.17	0.17	0.24	0.24	0.17	0.24	0.22
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		405	339		370	272	301	849	361	590	1231	627
v/s Ratio Prot		0.09			c0.17	0.15	0.14	0.38		c0.24	c0.38	c0.49
v/s Ratio Perm			0.05						0.13			
v/c Ratio		0.39	0.05		0.82	0.15	0.82	1.59	0.24	1.38	1.58	0.94
Uniform Delay, d1		32.9	30.4		38.1	35.2	40.1	38.0	30.6	41.4	37.9	38.1
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.89	0.97	1.83
Incremental Delay, d2		0.6	0.1		13.0	0.3	16.5	270.1	1.6	170.3	262.1	3.1
Delay (s)		33.5	30.4		51.1	35.5	56.5	308.1	32.2	207.2	299.0	72.9
Level of Service		C	C		D	D	E	F	C	F	F	E
Approach Delay (s)		32.5			44.2			243.1			206.5	
Approach LOS		C			D			F			F	

Intersection Summary

HCM Average Control Delay	197.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

10: Zura Way & College Ave
2030 + P AM

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	128	1377	153	681	1492
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	139	1497	166	740	1622
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3808	788			1683	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3808	788			1683	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	57			0	
cM capacity (veh/h)	0	323			370	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	139	748	748	166	740	811	811
Volume Left	0	0	0	0	740	0	0
Volume Right	139	0	0	166	0	0	0
cSH	323	1700	1700	1700	370	1700	1700
Volume to Capacity	0.43	0.44	0.44	0.10	2.00	0.48	0.48
Queue Length 95th (ft)	52	0	0	0	1291	0	0
Control Delay (s)	24.3	0.0	0.0	0.0	483.8	0.0	0.0
Lane LOS	C				F		
Approach Delay (s)	24.3	0.0			151.6		
Approach LOS	C						

Intersection Summary

Average Delay	86.8		
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1457	1770	3539	1457	3433	3430		1770	3539	1457
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1457	1770	3539	1457	3433	3430		1770	3539	1457
Volume (vph)	372	354	158	41	740	281	625	1093	170	154	454	252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	385	172	45	804	305	679	1188	185	167	493	274
RTOR Reduction (vph)	0	0	131	0	0	202	0	12	0	0	0	208
Lane Group Flow (vph)	404	385	41	45	804	103	679	1361	0	167	493	66
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	23.9	23.9	23.9	24.0	24.0	24.0	12.0	24.0		12.0	24.0	24.0
Effective Green, g (s)	23.9	23.9	23.9	24.0	24.0	24.0	12.0	24.0		12.0	24.0	24.0
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.12	0.24		0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	423	847	349	425	850	350	412	824		213	850	350
v/s Ratio Prot	c0.23	0.11		0.03	c0.23		c0.20	c0.40		0.09	0.14	
v/s Ratio Perm			0.12			0.21						0.19
v/c Ratio	0.96	0.45	0.12	0.11	0.95	0.29	1.65	1.65		0.78	0.58	0.19
Uniform Delay, d1	37.5	32.4	29.7	29.6	37.3	31.0	44.0	38.0		42.7	33.5	30.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	32.1	0.4	0.2	0.1	18.9	0.5	302.3	298.6		17.0	2.9	1.2
Delay (s)	69.6	32.8	29.9	29.7	56.2	31.5	346.3	336.6		59.7	36.4	31.4
Level of Service	E	C	C	C	E	C	F	F		E	D	C
Approach Delay (s)		47.8			48.6			339.8			39.1	
Approach LOS		D			D			F			D	

Intersection Summary

HCM Average Control Delay	163.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	405	429	175	533	95	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	440	466	190	579	103	32
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			917		1653	693
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			917		1653	693
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			74		0	93
cM capacity (veh/h)			738		79	436

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	907	770	103	32
Volume Left	0	190	103	0
Volume Right	466	0	0	32
cSH	1700	738	79	436
Volume to Capacity	0.53	0.26	1.31	0.07
Queue Length 95th (ft)	0	26	198	6
Control Delay (s)	0.0	6.3	297.6	13.9
Lane LOS		A	F	B
Approach Delay (s)	0.0	6.3	231.2	
Approach LOS			F	

Intersection Summary

Average Delay	19.9		
Intersection Capacity Utilization	103.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1727		1770	1863	1770	1539
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1727		1770	1863	1770	1539
Volume (vph)	183	121	263	725	183	121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	199	132	286	788	199	132
RTOR Reduction (vph)	28	0	0	0	0	83
Lane Group Flow (vph)	303	0	286	788	199	49
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	17.2		16.5	37.7	26.7	26.7
Effective Green, g (s)	17.2		16.5	37.7	26.7	26.7
Actuated g/C Ratio	0.24		0.23	0.52	0.37	0.37
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	410		403	970	653	568
v/s Ratio Prot	0.19		0.16	c0.42	c0.11	
v/s Ratio Perm						0.09
v/c Ratio	0.74		0.71	0.81	0.30	0.09
Uniform Delay, d1	25.5		25.7	14.4	16.2	14.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8		5.7	5.3	1.2	0.3
Delay (s)	32.3		31.4	19.7	17.5	15.2
Level of Service	C		C	B	B	B
Approach Delay (s)	32.3			22.8	16.6	
Approach LOS	C			C	B	

Intersection Summary

HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.94		1.00	0.95		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1522	1770	1738		1770	4776		1770	3530	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1803	1522	1770	1738		1770	4776		1770	3530	
Volume (vph)	40	20	210	514	90	52	120	679	293	41	1500	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	228	559	98	57	130	738	318	45	1630	22
RTOR Reduction (vph)	0	0	104	0	21	0	0	72	0	0	1	0
Lane Group Flow (vph)	0	65	124	559	134	0	130	984	0	45	1651	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		11.8	11.8	25.0	25.0		6.0	41.3		3.5	38.8	
Effective Green, g (s)		11.8	11.8	25.0	25.0		6.0	41.3		3.5	38.8	
Actuated g/C Ratio		0.12	0.12	0.26	0.26		0.06	0.42		0.04	0.40	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		218	184	453	445		109	2021		63	1403	
v/s Ratio Prot		0.04		c0.32	0.09		c0.07	0.22		0.03	c0.47	
v/s Ratio Perm			0.15									
v/c Ratio		0.30	0.68	1.23	0.30		1.19	0.49		0.71	1.18	
Uniform Delay, d1		39.1	41.1	36.3	29.3		45.8	20.5		46.6	29.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8	9.4	123.2	0.4		147.0	0.8		31.7	87.4	
Delay (s)		39.9	50.5	159.5	29.6		192.8	21.3		78.3	116.8	
Level of Service		D	D	F	C		F	C		E	F	
Approach Delay (s)		48.1			131.3			40.1			115.8	
Approach LOS		D			F			D			F	

Intersection Summary

HCM Average Control Delay	90.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3408		3433	1863	2787	1770	3539	1525	1770	3539	1525
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3408		3433	1863	2787	1770	3539	1525	1770	3539	1525
Volume (vph)	172	248	60	427	448	487	300	1361	456	312	522	750
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	270	65	464	487	529	326	1479	496	339	567	815
RTOR Reduction (vph)	0	18	0	0	0	358	0	0	209	0	0	207
Lane Group Flow (vph)	187	317	0	464	487	171	326	1479	287	339	567	608
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	14.8	14.8		27.0	27.0	18.0	17.0	43.0	43.0	18.0	44.0	44.0
Effective Green, g (s)	14.8	14.8		27.0	27.0	18.0	17.0	43.0	43.0	18.0	44.0	44.0
Actuated g/C Ratio	0.12	0.12		0.23	0.23	0.15	0.14	0.36	0.36	0.15	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	428	425		780	423	422	253	1281	552	268	1311	565
v/s Ratio Prot	0.05	c0.10		0.14	c0.26	0.19	0.18	0.42		c0.19	0.16	
v/s Ratio Perm									0.33			0.53
v/c Ratio	0.44	0.75		0.59	1.15	0.41	1.29	1.15	0.52	1.26	0.43	1.08
Uniform Delay, d1	48.1	50.2		41.0	45.9	45.6	50.9	37.9	29.8	50.4	28.0	37.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	7.0		1.2	92.0	0.6	156.2	78.8	3.5	145.5	1.0	59.9
Delay (s)	48.9	57.2		42.2	137.9	46.2	207.1	116.7	33.2	195.9	29.1	97.3
Level of Service	D	E		D	F	D	F	F	C	F	C	F
Approach Delay (s)		54.2			75.1			111.5			94.2	
Approach LOS		D			E			F			F	

Intersection Summary

HCM Average Control Delay	92.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	118.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	244	0	462	219	517	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	265	0	502	238	562	22

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	265	502	238	562	22
Volume Left (vph)	0	502	0	562	0
Volume Right (vph)	0	0	0	0	22
Hadj (s)	0.03	0.53	0.03	0.53	-0.67
Departure Headway (s)	7.4	7.6	7.1	7.8	6.6
Degree Utilization, x	0.54	1.06	0.47	1.21	0.04
Capacity (veh/h)	485	472	505	470	538
Control Delay (s)	18.8	83.0	14.9	138.1	8.6
Approach Delay (s)	18.8	61.1		133.3	
Approach LOS	C	F		F	

Intersection Summary

Delay	80.5		
HCM Level of Service	F		
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1533	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1533	1770	2787
Volume (vph)	789	377	391	46	142	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	858	410	425	50	154	1338
RTOR Reduction (vph)	0	0	0	36	0	533
Lane Group Flow (vph)	858	410	425	14	154	805
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	33.8	61.8	24.0	24.0	17.5	33.8
Effective Green, g (s)	33.8	61.8	24.0	24.0	17.5	33.8
Actuated g/C Ratio	0.39	0.71	0.27	0.27	0.20	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1329	1319	512	421	355	1079
v/s Ratio Prot	0.25	0.22	c0.23		c0.09	c0.48
v/s Ratio Perm				0.03		
v/c Ratio	0.65	0.31	0.83	0.03	0.43	0.75
Uniform Delay, d1	21.9	4.8	29.7	23.2	30.6	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	10.9	0.0	3.8	2.9
Delay (s)	22.9	4.9	40.7	23.2	34.4	25.9
Level of Service	C	A	D	C	C	C
Approach Delay (s)		17.1	38.8		26.8	
Approach LOS		B	D		C	

Intersection Summary

HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1739	1583	1610	3093	1441	1770	3399		3433	3539	1461
Flt Permitted	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1739	1583	1610	3093	1441	1770	3399		3433	3539	1461
Volume (vph)	240	120	1090	850	170	585	320	1025	220	20	1805	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	130	1185	924	185	636	348	1114	239	22	1962	130
RTOR Reduction (vph)	0	0	127	0	0	249	0	12	0	0	0	31
Lane Group Flow (vph)	190	201	1058	462	647	387	348	1341	0	22	1962	99
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.0	16.0	47.0	29.0	29.0	36.0	47.0	63.0		36.0	52.0	52.0
Effective Green, g (s)	16.0	16.0	47.0	29.0	29.0	36.0	47.0	63.0		36.0	52.0	52.0
Actuated g/C Ratio	0.10	0.10	0.29	0.18	0.18	0.22	0.29	0.39		0.22	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	168	174	465	292	561	324	520	1338		772	1150	475
v/s Ratio Prot	0.11	c0.12	c0.75	c0.29	0.21	0.44	0.20	0.40		0.01	c0.55	
v/s Ratio Perm												0.09
v/c Ratio	1.13	1.16	2.28	1.58	1.58dl	1.20	0.67	1.00		0.03	1.71	0.21
Uniform Delay, d1	72.0	72.0	56.5	65.5	65.5	62.0	49.7	48.5		48.4	54.0	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.12	0.89		1.00	1.00	1.00
Incremental Delay, d2	109.0	116.1	580.6	277.8	87.9	114.0	3.1	24.5		0.0	321.5	1.0
Delay (s)	181.0	188.1	637.1	343.3	153.4	176.0	58.5	67.6		48.4	375.5	40.1
Level of Service	F	F	F	F	F	F	E	E		D	F	D
Approach Delay (s)		524.8			211.9			65.7			351.4	
Approach LOS		F			F			E			F	

Intersection Summary

HCM Average Control Delay	287.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.90		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	153.4%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.76	1.00		0.95	0.91	
Frpb, ped/bikes	1.00	0.93	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.85	1.00		1.00	1.00	
Flt Protected	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (prot)	3433	3361	1770		3539	5085	
Flt Permitted	0.95	1.00	0.95		1.00	1.00	
Satd. Flow (perm)	3433	3361	1770		3539	5085	
Volume (vph)	790	2708	90	0	545	1303	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	859	2943	98	0	592	1416	0
RTOR Reduction (vph)	0	12	0	0	0	0	0
Lane Group Flow (vph)	859	2931	98	0	592	1416	0
Confl. Peds. (#/hr)	10	10					
Turn Type		Perm	custom				
Protected Phases	4		5		2	6	
Permitted Phases		4	5				
Actuated Green, G (s)	101.0	101.0	8.0		51.0	39.0	
Effective Green, g (s)	101.0	101.0	8.0		51.0	39.0	
Actuated g/C Ratio	0.63	0.63	0.05		0.32	0.24	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	2167	2122	89		1128	1239	
v/s Ratio Prot	0.25		c0.06		0.17	c0.28	
v/s Ratio Perm		0.88					
v/c Ratio	0.40	1.38	1.10		0.52	1.14	
Uniform Delay, d1	14.5	29.5	76.0		44.6	60.5	
Progression Factor	1.00	1.00	1.00		1.00	0.93	
Incremental Delay, d2	0.1	174.6	125.4		1.7	65.3	
Delay (s)	14.6	204.1	201.4		46.3	121.6	
Level of Service	B	F	F		D	F	
Approach Delay (s)	161.3				68.4	121.6	
Approach LOS	F				E	F	

Intersection Summary

HCM Average Control Delay	140.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

3: Remington Rd & Aztec Circle

2030 + P PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	3397	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	3397	
Volume (vph)	32	90	110	367	509	45
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	98	120	399	553	49
RTOR Reduction (vph)	0	0	0	155	6	0
Lane Group Flow (vph)	35	98	120	244	596	0
Confl. Peds. (#/hr)	20			20	20	20
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Over		
Protected Phases	7	4	8	6	6	
Permitted Phases						
Actuated Green, G (s)	1.8	13.5	7.7	33.9	33.9	
Effective Green, g (s)	1.8	13.5	7.7	33.9	33.9	
Actuated g/C Ratio	0.03	0.24	0.14	0.61	0.61	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	58	454	259	969	2079	
v/s Ratio Prot	c0.02	0.05	c0.06	c0.25	0.18	
v/s Ratio Perm						
v/c Ratio	0.60	0.22	0.46	0.25	0.29	
Uniform Delay, d1	26.4	16.7	21.9	4.9	5.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.4	0.2	1.3	0.6	0.3	
Delay (s)	42.9	17.0	23.3	5.6	5.4	
Level of Service	D	B	C	A	A	
Approach Delay (s)		23.8	9.7		5.4	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: Montezuma Rd & 55th St

2030 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.98		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97			0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3499		1770	3395			1718		1681	1691	1460
Flt Permitted	0.95	1.00		0.95	1.00			0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3499		1770	3395			1718		1681	1691	1460
Volume (vph)	439	1345	60	30	907	207	60	10	20	575	20	436
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	477	1462	65	33	986	225	65	11	22	625	22	474
RTOR Reduction (vph)	0	3	0	0	18	0	0	10	0	0	0	396
Lane Group Flow (vph)	477	1524	0	33	1193	0	0	88	0	315	332	78
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	18.1	47.0		2.3	31.2			16.1		16.1	16.1	16.1
Effective Green, g (s)	18.1	47.0		2.3	31.2			16.1		16.1	16.1	16.1
Actuated g/C Ratio	0.19	0.48		0.02	0.32			0.17		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	637	1687		42	1086			284		278	279	241
v/s Ratio Prot	c0.14	c0.44		0.02	c0.36			c0.06		0.19	0.20	
v/s Ratio Perm												0.32
v/c Ratio	0.75	0.90		0.79	1.10			0.31		1.13	1.19	0.32
Uniform Delay, d1	37.5	23.2		47.4	33.2			35.8		40.7	40.7	35.9
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	7.2		62.3	58.2			2.8		94.7	115.4	3.6
Delay (s)	42.4	30.4		109.6	91.4			38.6		135.4	156.1	39.5
Level of Service	D	C		F	F			D		F	F	D
Approach Delay (s)		33.2			91.9			38.6			101.0	
Approach LOS		C			F			D			F	

Intersection Summary

HCM Average Control Delay	66.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (prot)	1770	3518		1770	3354			1588		1681	1712	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	0.97	1.00
Satd. Flow (perm)	1770	3518		1770	3354			1588		1681	1712	1583
Volume (vph)	174	1540	35	248	887	217	32	39	152	378	75	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1674	38	270	964	236	35	42	165	411	82	228
RTOR Reduction (vph)	0	2	0	0	21	0	0	77	0	0	0	210
Lane Group Flow (vph)	189	1710	0	270	1179	0	0	165	0	240	253	18
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split			Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Effective Green, g (s)	8.0	46.0		6.0	44.0			16.0		16.0	16.0	8.0
Actuated g/C Ratio	0.08	0.46		0.06	0.44			0.16		0.16	0.16	0.08
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	142	1618		106	1476			254		269	274	127
v/s Ratio Prot	0.11	c0.49		c0.15	0.36			c0.15		0.14	c0.15	0.14
v/s Ratio Perm												
v/c Ratio	1.33	1.06		2.55	0.80			0.65		0.89	0.92	0.14
Uniform Delay, d1	46.0	27.0		47.0	24.2			39.4		41.2	41.4	42.8
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	189.1	39.2		723.1	3.1			12.1		33.0	37.8	0.5
Delay (s)	235.1	66.2		770.1	27.3			51.5		74.1	79.2	43.3
Level of Service	F	E		F	C			D		E	E	D
Approach Delay (s)		83.0			163.7			51.5			66.2	
Approach LOS		F			F			D			E	

Intersection Summary

HCM Average Control Delay	105.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583	1681	1581		1770	3539	1583	1770	3491	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583	1681	1581		1770	3539	1583	1770	3491	
Volume (vph)	93	130	146	402	60	130	236	1059	485	250	797	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	141	159	437	65	141	257	1151	527	272	866	51
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	310	0	4	0
Lane Group Flow (vph)	0	242	159	325	292	0	257	1151	217	272	913	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		18.3	14.1	22.7	22.7		14.1	34.2	22.7	10.1	30.2	
Effective Green, g (s)		18.3	14.1	22.7	22.7		14.1	34.2	22.7	10.1	30.2	
Actuated g/C Ratio		0.18	0.14	0.22	0.22		0.14	0.34	0.22	0.10	0.30	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		330	220	377	354		246	1195	355	176	1041	
v/s Ratio Prot		c0.13	0.10	0.19	0.20		0.15	c0.33	c0.33	c0.15	0.26	
v/s Ratio Perm												
v/c Ratio		0.73	0.72	0.86	0.83		1.04	0.96	0.61	1.55	0.88	
Uniform Delay, d1		39.2	41.7	37.8	37.4		43.6	32.9	35.3	45.6	33.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.2	11.1	18.0	14.5		69.6	18.6	3.1	271.6	10.4	
Delay (s)		47.4	52.9	55.8	51.9		113.2	51.5	38.4	317.2	44.2	
Level of Service		D	D	E	D		F	D	D	F	D	
Approach Delay (s)		49.5			53.9			56.1			106.7	
Approach LOS		D			D			E			F	

Intersection Summary

HCM Average Control Delay	69.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

7: I-8WB Ramp & College Ave

2030 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.95	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		3539	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		3539	1536		3539	1536
Volume (vph)	0	0	0	645	0	405	0	1473	1815	0	758	586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	701	0	440	0	1601	1973	0	824	637
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	701	0	440	0	1601	1973	0	824	637
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				24.9		100.0		67.1	100.0		67.1	100.0
Effective Green, g (s)				24.9		100.0		67.1	100.0		67.1	100.0
Actuated g/C Ratio				0.25		1.00		0.67	1.00		0.67	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				823		1555		2375	1536		2375	1536
v/s Ratio Prot								0.45			0.23	
v/s Ratio Perm				0.21		0.28			1.28			0.41
v/c Ratio				0.85		0.28		0.67	1.28		0.35	0.41
Uniform Delay, d1				35.8		0.0		9.9	50.0		7.1	0.0
Progression Factor				1.00		1.00		0.69	1.00		1.00	1.00
Incremental Delay, d2				8.5		0.5		0.1	128.5		0.4	0.8
Delay (s)				44.3		0.5		6.9	178.5		7.5	0.8
Level of Service				D		A		A	F		A	A
Approach Delay (s)		0.0			27.4			101.6			4.6	
Approach LOS		A			C			F			A	

Intersection Summary

HCM Average Control Delay	65.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

8: I-8EB Ramp & College Ave

2030 + P PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.95	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					3539	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					3539	1536		3539	1536
Volume (vph)	834	0	1145	0	0	0	0	2735	1079	0	1181	322
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	907	0	1245	0	0	0	0	2973	1173	0	1284	350
RTOR Reduction (vph)	0	0	25	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	907	0	1220	0	0	0	0	2973	1173	0	1284	350
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	44.3		44.3					47.7	100.0		47.7	100.0
Effective Green, g (s)	44.3		44.3					47.7	100.0		47.7	100.0
Actuated g/C Ratio	0.44		0.44					0.48	1.00		0.48	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1464		1521					1688	1536		1688	1536
v/s Ratio Prot								c0.84			0.36	
v/s Ratio Perm	0.27		0.36						0.76			0.23
v/c Ratio	0.62		0.80					1.76	0.76		0.76	0.23
Uniform Delay, d1	21.4		24.1					26.1	0.0		21.5	0.0
Progression Factor	1.00		1.00					1.14	1.00		0.74	1.00
Incremental Delay, d2	0.8		3.1					342.8	0.3		3.1	0.3
Delay (s)	22.2		27.2					372.6	0.3		18.9	0.3
Level of Service	C		C					F	A		B	A
Approach Delay (s)		25.1			0.0			267.3			14.9	
Approach LOS		C			A			F			B	

Intersection Summary

HCM Average Control Delay	149.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	106.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1782	1506		1783	1583	1770	3539	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1782	1506		1783	1583	1770	3539	1506	3433	5085	2787
Volume (vph)	642	70	121	198	24	543	106	2314	184	373	1757	189
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	698	76	132	215	26	590	115	2515	200	405	1910	205
RTOR Reduction (vph)	0	0	68	0	0	304	0	0	60	0	0	116
Lane Group Flow (vph)	0	774	64	0	241	286	115	2515	140	405	1910	89
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		18.0	18.0	10.9	24.0	24.0	18.0	31.1	24.0
Effective Green, g (s)		24.0	24.0		18.0	18.0	10.9	24.0	24.0	18.0	31.1	24.0
Actuated g/C Ratio		0.24	0.24		0.18	0.18	0.11	0.24	0.24	0.18	0.31	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		428	361		321	285	193	849	361	618	1581	669
v/s Ratio Prot		c0.43			c0.14	c0.37	0.06	c0.71		0.12	0.38	0.07
v/s Ratio Perm			0.09						0.13			
v/c Ratio		1.81	0.18		0.75	1.00	0.60	2.96	0.39	0.66	1.21	0.13
Uniform Delay, d1		38.0	30.2		38.9	41.0	42.5	38.0	31.8	38.1	34.5	29.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.12	0.89	1.18
Incremental Delay, d2		373.0	0.2		9.5	54.0	4.9	886.2	3.1	1.6	97.6	0.1
Delay (s)		411.0	30.4		48.4	95.0	47.3	924.2	35.0	44.2	128.2	35.2
Level of Service		F	C		D	F	D	F	C	D	F	D
Approach Delay (s)		355.5			81.5			825.7			107.2	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	422.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	148.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	664	1634	112	334	1654
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	722	1776	122	363	1798
Pedestrians	20					20
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	2					2
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3421	928			1918	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3421	928			1918	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			0	
cM capacity (veh/h)	0	261			300	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	722	888	888	122	363	899	899
Volume Left	0	0	0	0	363	0	0
Volume Right	722	0	0	122	0	0	0
cSH	261	1700	1700	1700	300	1700	1700
Volume to Capacity	2.77	0.52	0.52	0.07	1.21	0.53	0.53
Queue Length 95th (ft)	1550	0	0	0	407	0	0
Control Delay (s)	835.3	0.0	0.0	0.0	158.5	0.0	0.0
Lane LOS	F				F		
Approach Delay (s)	835.3	0.0			26.6		
Approach LOS	F						

Intersection Summary

Average Delay	138.2		
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1459	1770	3539	1457	3433	3480		1770	3539	1459
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1459	1770	3539	1457	3433	3480		1770	3539	1459
Volume (vph)	762	871	657	200	581	234	468	752	60	309	900	270
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	828	947	714	217	632	254	509	817	65	336	978	293
RTOR Reduction (vph)	0	0	268	0	0	174	0	6	0	0	0	221
Lane Group Flow (vph)	828	947	446	217	632	80	509	876	0	336	978	72
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	24.0	24.0	24.0	22.2	22.2	22.2	12.0	24.0		12.0	24.0	24.0
Effective Green, g (s)	24.0	24.0	24.0	22.2	22.2	22.2	12.0	24.0		12.0	24.0	24.0
Actuated g/C Ratio	0.24	0.24	0.24	0.23	0.23	0.23	0.12	0.24		0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	433	865	357	400	800	329	420	851		216	865	357
v/s Ratio Prot	0.47	0.27		0.12	c0.18		0.15	0.25		c0.19	c0.28	
v/s Ratio Perm			0.49			0.17						0.20
v/c Ratio	1.91	1.09	1.25	0.54	0.79	0.24	1.21	1.03		1.56	1.13	0.20
Uniform Delay, d1	37.1	37.1	37.1	33.5	35.8	31.1	43.1	37.1		43.1	37.1	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	419.0	59.8	133.2	1.5	5.3	0.4	115.6	38.6		271.5	73.2	1.3
Delay (s)	456.1	96.9	170.3	35.0	41.1	31.5	158.7	75.7		314.6	110.3	30.7
Level of Service	F	F	F	D	D	C	F	E		F	F	C
Approach Delay (s)		237.5			37.7			106.1			138.5	
Approach LOS		F			D			F			F	

Intersection Summary

HCM Average Control Delay	152.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	462	155	90	496	381	202
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	502	168	98	539	414	220
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			681		1341	606
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			681		1341	606
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		0	55
cM capacity (veh/h)			904		147	488

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	671	637	414	220
Volume Left	0	98	414	0
Volume Right	168	0	0	220
cSH	1700	904	147	488
Volume to Capacity	0.39	0.11	2.81	0.45
Queue Length 95th (ft)	0	9	937	57
Control Delay (s)	0.0	2.7	880.9	18.2
Lane LOS		A	F	C
Approach Delay (s)	0.0	2.7	582.0	
Approach LOS			F	

Intersection Summary

Average Delay	190.9		
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1780		1770	1863	1770	1537
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1780		1770	1863	1770	1537
Volume (vph)	509	165	162	260	166	228
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	553	179	176	283	180	248
RTOR Reduction (vph)	12	0	0	0	0	164
Lane Group Flow (vph)	720	0	176	283	180	84
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	26.1		12.7	42.8	26.1	26.1
Effective Green, g (s)	26.1		12.7	42.8	26.1	26.1
Actuated g/C Ratio	0.34		0.17	0.56	0.34	0.34
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	604		292	1037	601	522
v/s Ratio Prot	c0.41		c0.10	0.15	0.10	
v/s Ratio Perm						0.16
v/c Ratio	1.19		0.60	0.27	0.30	0.16
Uniform Delay, d1	25.4		29.8	8.9	18.7	17.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	102.2		3.5	0.1	1.3	0.7
Delay (s)	127.6		33.2	9.1	20.0	18.4
Level of Service	F		C	A	B	B
Approach Delay (s)	127.6			18.3	19.1	
Approach LOS	F			B	B	

Intersection Summary

HCM Average Control Delay	67.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.97		1.00	0.99	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1517	1770	1657		1770	4904		1770	3499	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1517	1770	1657		1770	4904		1770	3499	
Volume (vph)	50	20	80	792	100	161	130	1067	227	32	854	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	87	861	109	175	141	1160	247	35	928	54
RTOR Reduction (vph)	0	0	80	0	56	0	0	30	0	0	4	0
Lane Group Flow (vph)	0	76	7	861	228	0	141	1377	0	35	978	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.9	7.9	37.2	37.2		7.0	30.5		2.3	25.8	
Effective Green, g (s)		7.9	7.9	37.2	37.2		7.0	30.5		2.3	25.8	
Actuated g/C Ratio		0.08	0.08	0.40	0.40		0.07	0.32		0.02	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		151	128	701	656		132	1593		43	961	
v/s Ratio Prot		0.04		c0.49	0.17		c0.08	0.29		0.02	c0.28	
v/s Ratio Perm			0.06									
v/c Ratio		0.50	0.06	1.23	0.35		1.07	0.86		0.81	1.02	
Uniform Delay, d1		41.1	39.6	28.4	19.9		43.5	29.8		45.6	34.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6	0.2	115.0	0.3		97.7	6.5		69.6	33.4	
Delay (s)		43.8	39.8	143.4	20.2		141.2	36.3		115.2	67.5	
Level of Service		D	D	F	C		F	D		F	E	
Approach Delay (s)		41.6			112.8			45.8			69.1	
Approach LOS		D			F			D			E	

Intersection Summary

HCM Average Control Delay	71.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3423		3433	1863	2787	1770	3539	1523	1770	3539	1523
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3423		3433	1863	2787	1770	3539	1523	1770	3539	1523
Volume (vph)	389	706	150	793	225	1043	230	1073	628	292	632	272
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	423	767	163	862	245	1134	250	1166	683	317	687	296
RTOR Reduction (vph)	0	15	0	0	0	554	0	0	291	0	0	221
Lane Group Flow (vph)	423	915	0	862	245	580	250	1166	392	317	687	75
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	29.0	29.0		25.0	25.0	17.0	19.5	33.0	33.0	17.0	30.5	30.5
Effective Green, g (s)	29.0	29.0		25.0	25.0	17.0	19.5	33.0	33.0	17.0	30.5	30.5
Actuated g/C Ratio	0.24	0.24		0.21	0.21	0.14	0.16	0.28	0.28	0.14	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	830	827		715	388	395	288	973	419	251	899	387
v/s Ratio Prot	0.12	c0.27		c0.25	0.13	c0.41	0.14	0.33		0.18	0.19	
v/s Ratio Perm									0.45			0.19
v/c Ratio	0.51	1.11		1.21	0.63	1.47	0.87	1.20	0.93	1.26	0.76	0.19
Uniform Delay, d1	39.4	45.5		47.5	43.3	51.5	49.0	43.5	42.4	51.5	41.4	35.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	64.6		105.5	3.3	223.7	23.0	99.3	30.2	146.2	6.1	1.1
Delay (s)	39.8	110.1		153.0	46.6	275.2	72.0	142.8	72.7	197.7	47.6	36.2
Level of Service	D	F		F	D	F	E	F	E	F	D	D
Approach Delay (s)		88.1			203.2			111.6			81.6	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	130.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	259	0	101	153	770	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	282	0	110	166	837	98

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	282	110	166	837	98
Volume Left (vph)	0	110	0	837	0
Volume Right (vph)	0	0	0	0	98
Hadj (s)	0.03	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	7.6	7.1	6.8	5.6
Degree Utilization, x	0.53	0.23	0.33	1.59	0.15
Capacity (veh/h)	527	463	497	532	628
Control Delay (s)	17.0	11.7	12.3	290.3	8.4
Approach Delay (s)	17.0	12.1		260.8	
Approach LOS	C	B		F	

Intersection Summary

Delay	168.8		
HCM Level of Service	F		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1528	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1528	1770	2787
Volume (vph)	1237	259	479	104	125	1962
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1345	282	521	113	136	2133
RTOR Reduction (vph)	0	0	0	85	0	454
Lane Group Flow (vph)	1345	282	521	28	136	1679
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	46.0	75.0	25.0	25.0	17.0	46.0
Effective Green, g (s)	46.0	75.0	25.0	25.0	17.0	46.0
Actuated g/C Ratio	0.46	0.75	0.25	0.25	0.17	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1579	1397	466	382	301	1282
v/s Ratio Prot	0.39	0.15	c0.28		c0.08	c0.77
v/s Ratio Perm				0.07		
v/c Ratio	0.85	0.20	1.12	0.07	0.45	1.31
Uniform Delay, d1	24.0	3.7	37.5	28.7	37.3	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.1	78.0	0.1	4.8	145.2
Delay (s)	28.6	3.8	115.5	28.7	42.1	172.2
Level of Service	C	A	F	C	D	F
Approach Delay (s)		24.3	100.1		164.4	
Approach LOS		C	F		F	

Intersection Summary

HCM Average Control Delay	105.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

APPENDIX N

ILV ANALYSIS WORKSHEETS

EXISTING INTERSECTION

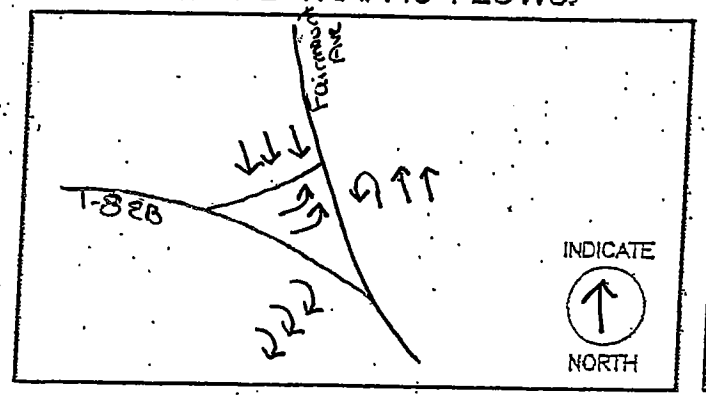
Signalized Intersection
CAPACITY ANALYSIS

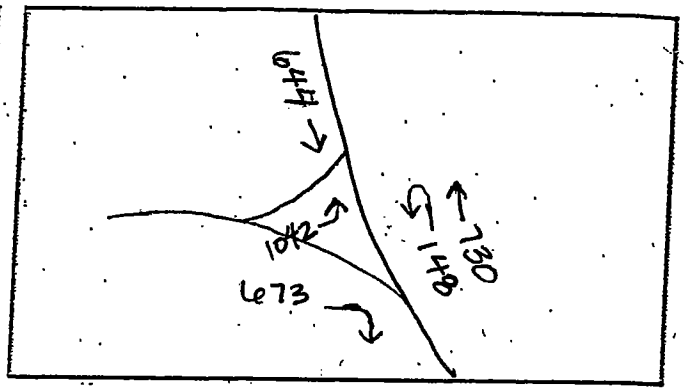
INTERSECTION Fairmount Ave | I-88 OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

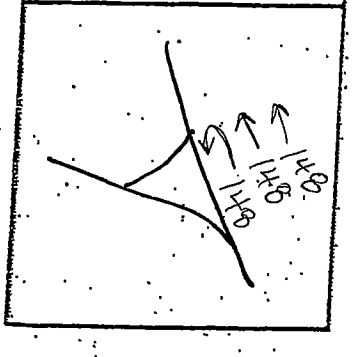
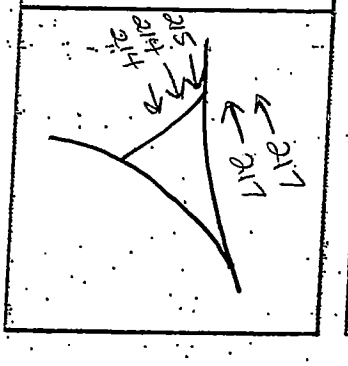
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
148	217	521	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
866

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING B

INTERSECTION

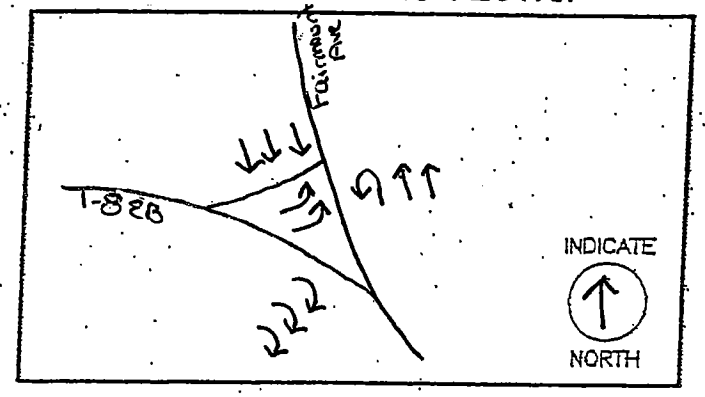
Signalized Intersection
CAPACITY ANALYSIS

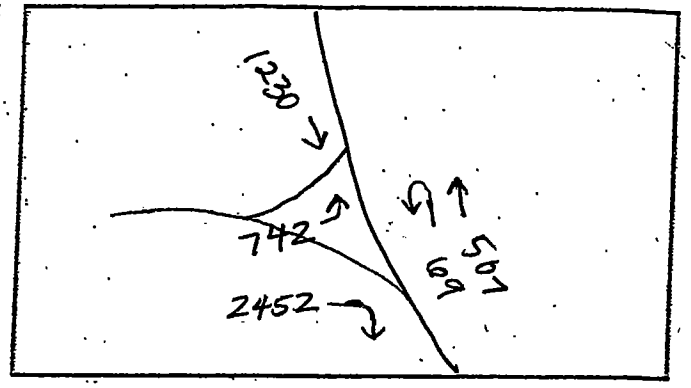
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

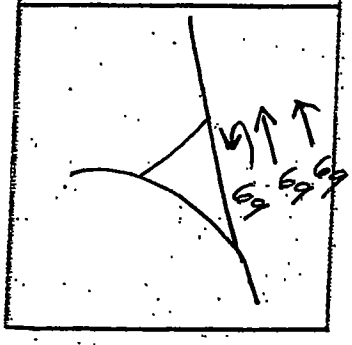
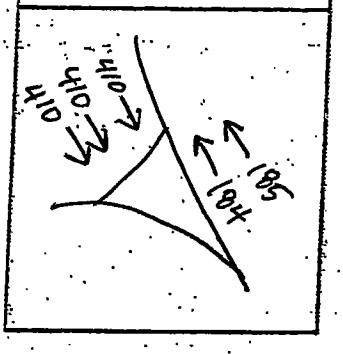
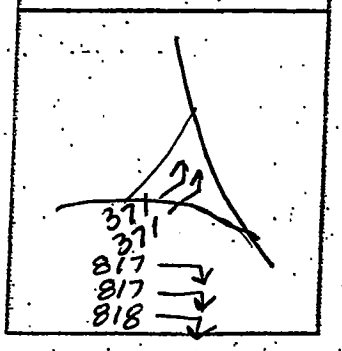
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
69	410	818	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1297

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

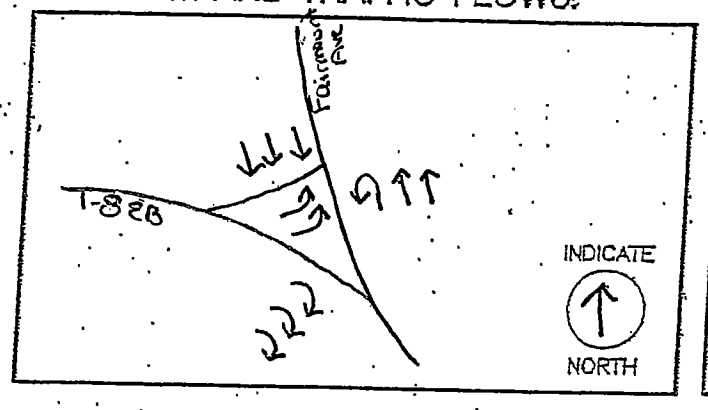
Signalized Intersection
CAPACITY ANALYSIS

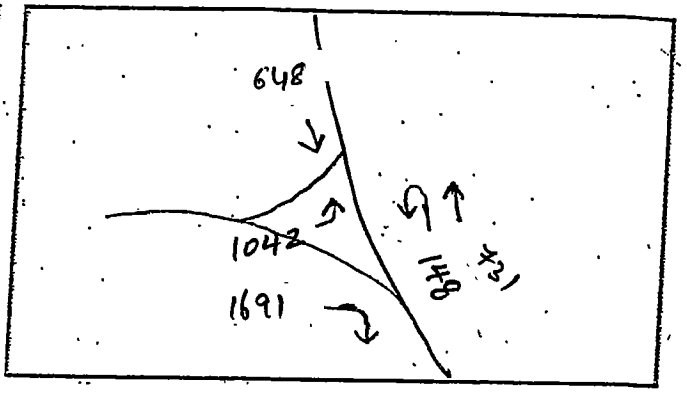
INTERSECTION Fairmount Ave | I-88 OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

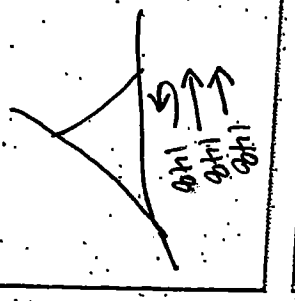
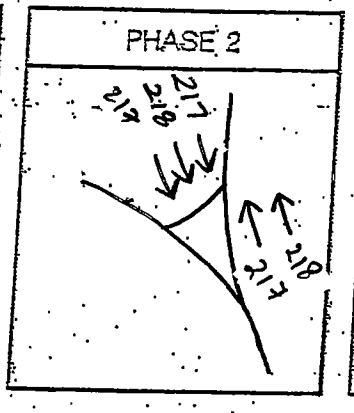
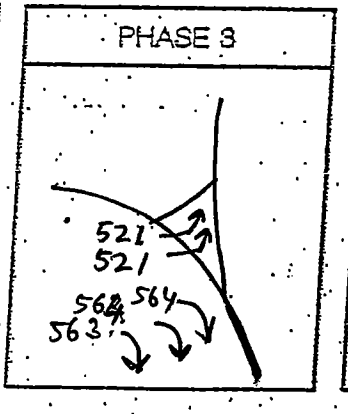
TIME _____ (AM)/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
148	218	564	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
930

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

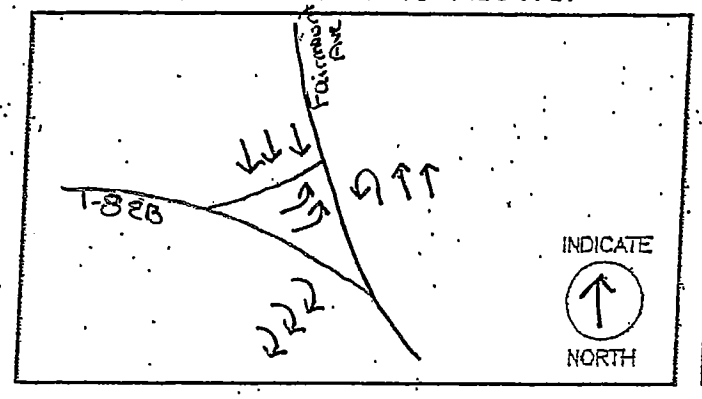
Signalized Intersection
CAPACITY ANALYSIS

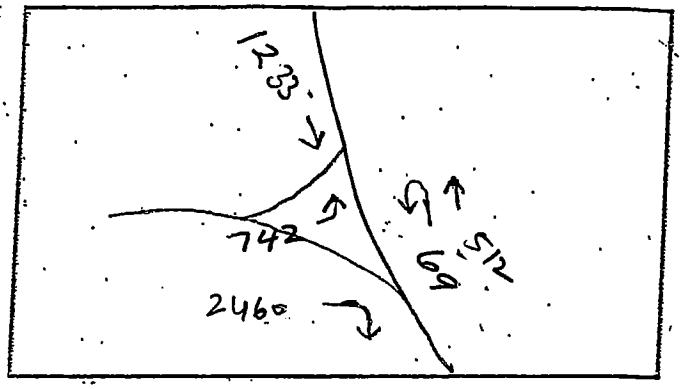
INTERSECTION Fairmount Ave | I-88 OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

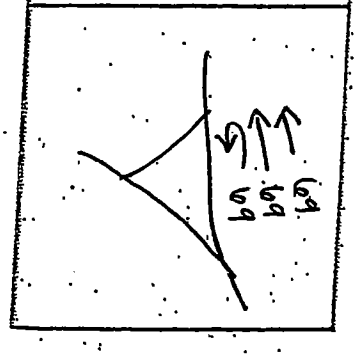
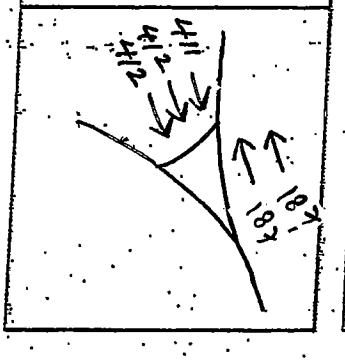
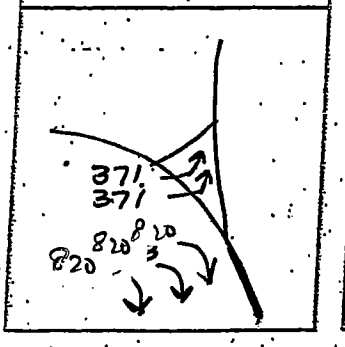
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
69	412	820	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1301

☐ < 1200 ILV/HR.

☒ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012

INTERSECTION

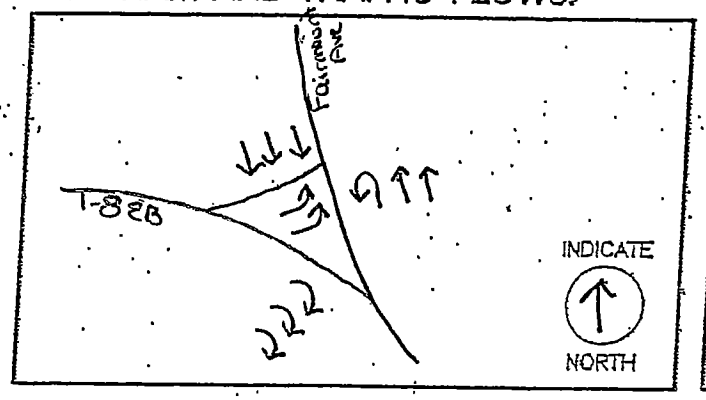
Signalized Intersection
CAPACITY ANALYSIS

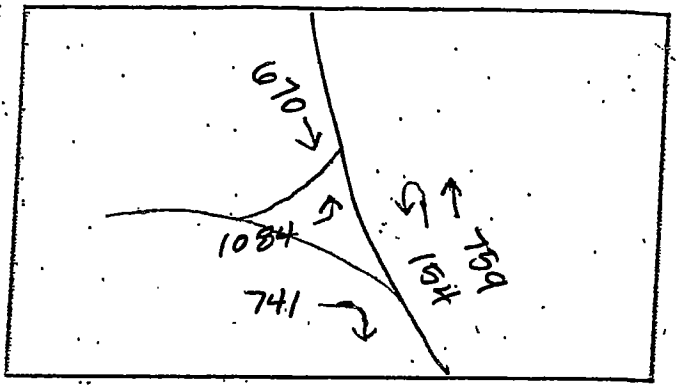
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

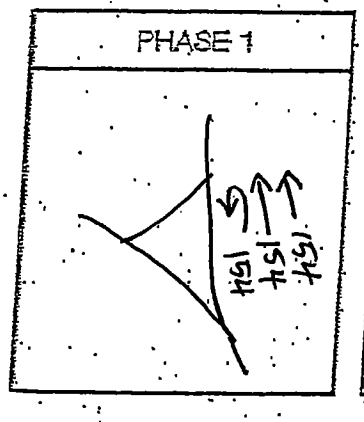
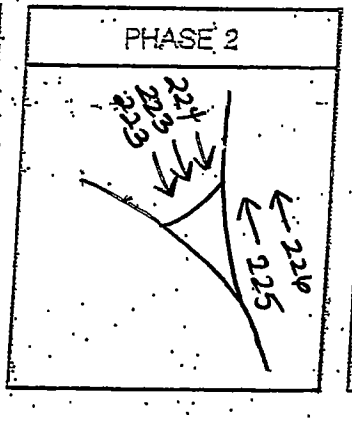
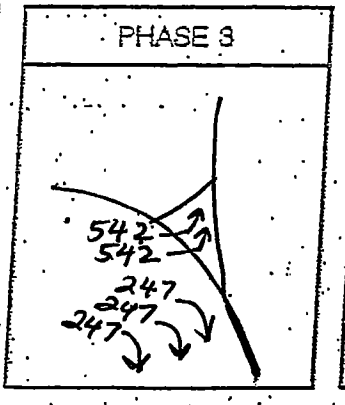
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
154	226	542	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
922

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012
INTERSECTION

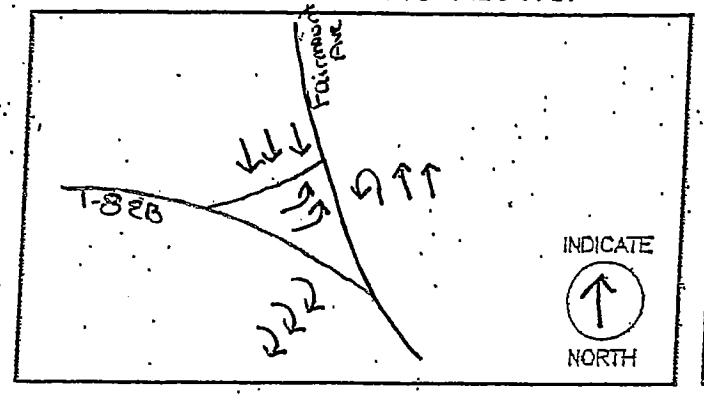
Signalized Intersection
CAPACITY ANALYSIS

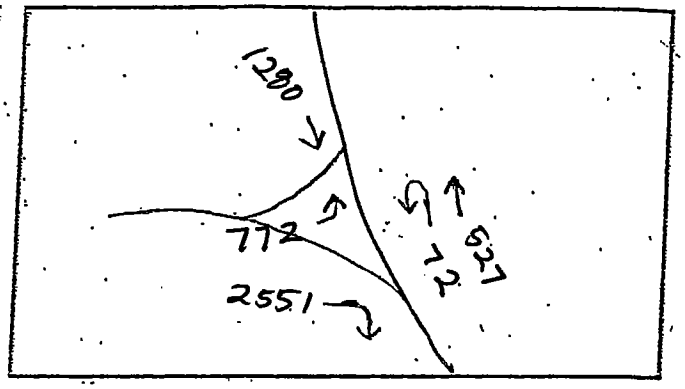
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

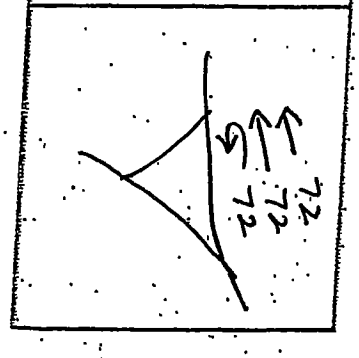
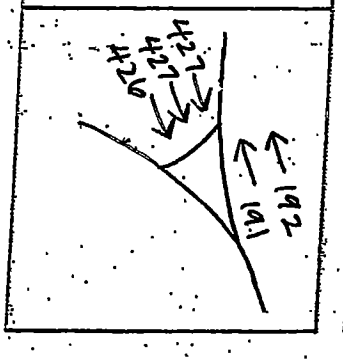
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
72	427	851	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1350

☐ < 1200 ILV/HR.

☒ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

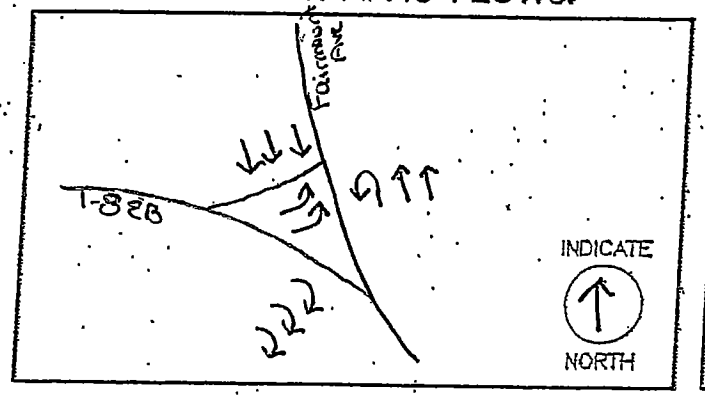
Signalized Intersection
CAPACITY ANALYSIS

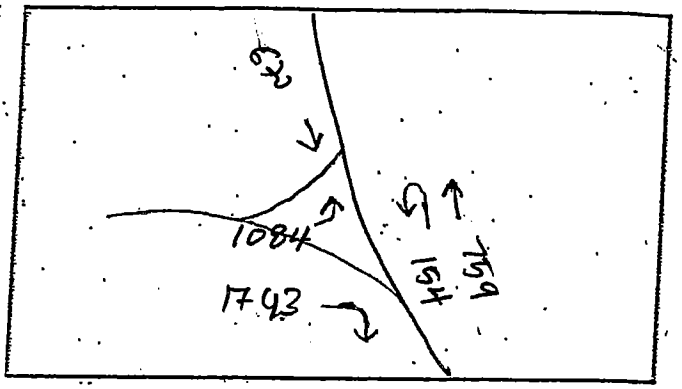
INTERSECTION Fairmount Ave | I-88 OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

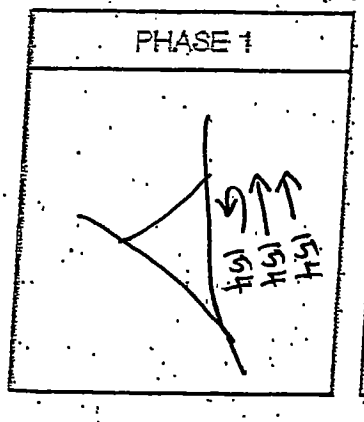
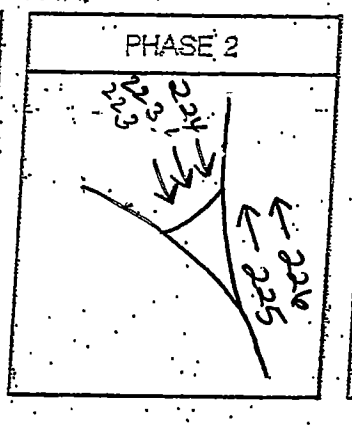
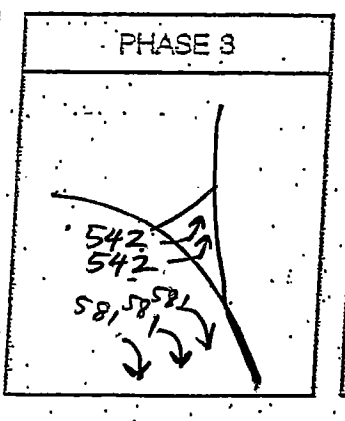
TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
154	226	581	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
961

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

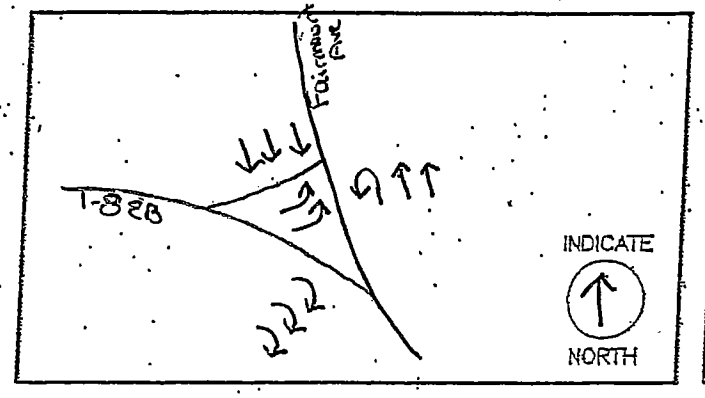
Signalized Intersection
CAPACITY ANALYSIS

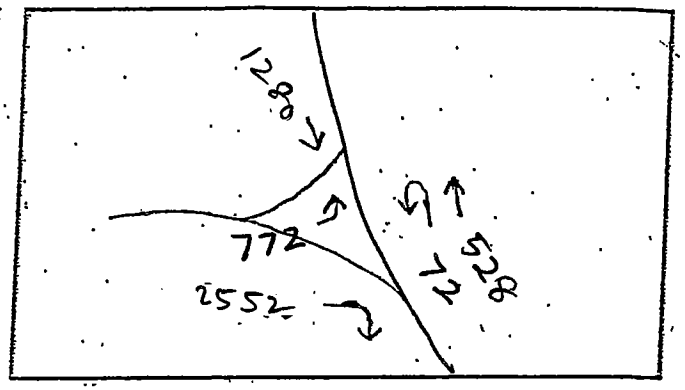
INTERSECTION Fairmount Ave | I-88 OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

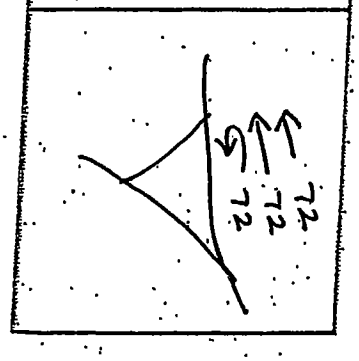
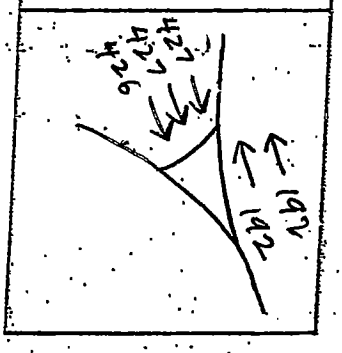
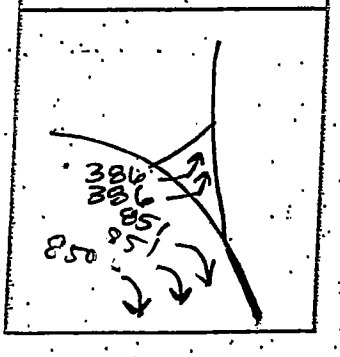
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
72	427	851	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1350

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

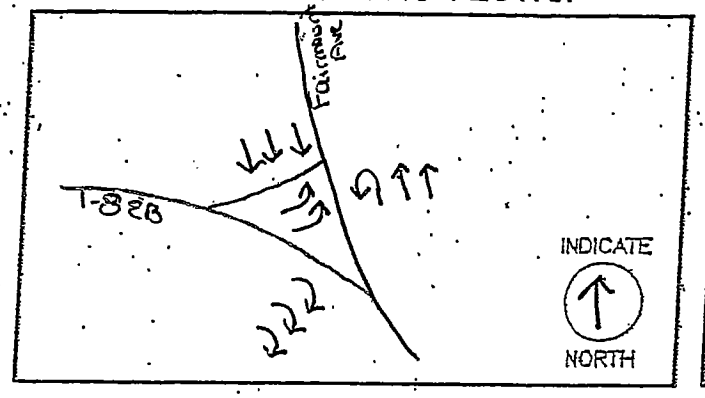
Signalized Intersection
CAPACITY ANALYSIS

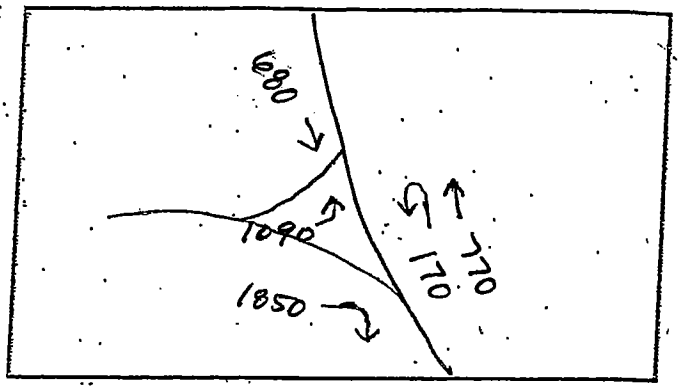
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

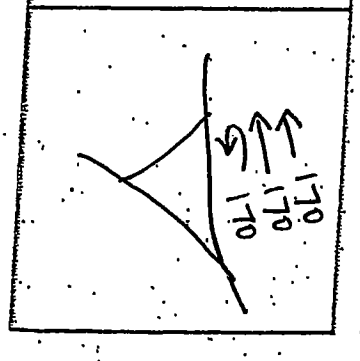
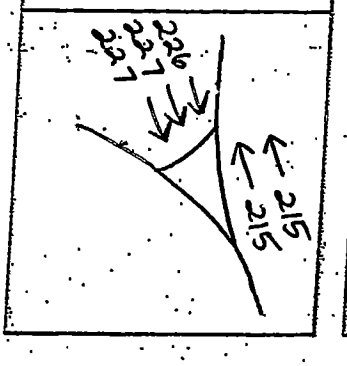
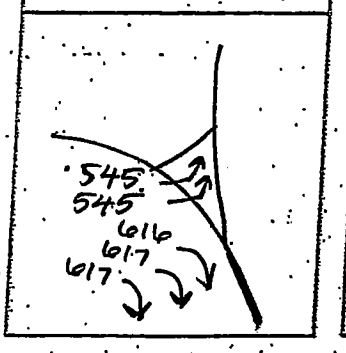
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
170	227	617	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1614

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

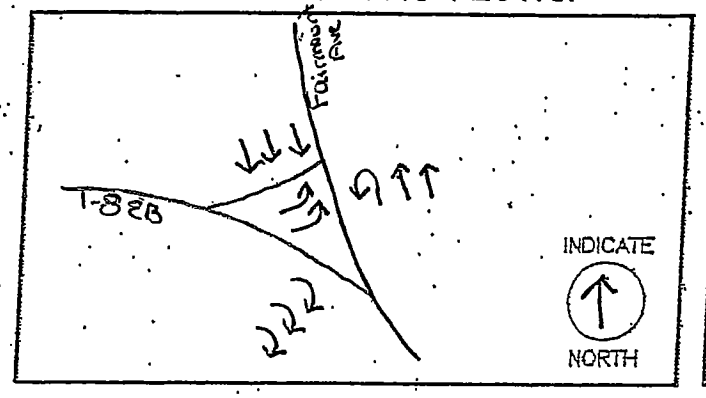
Signalized Intersection
CAPACITY ANALYSIS

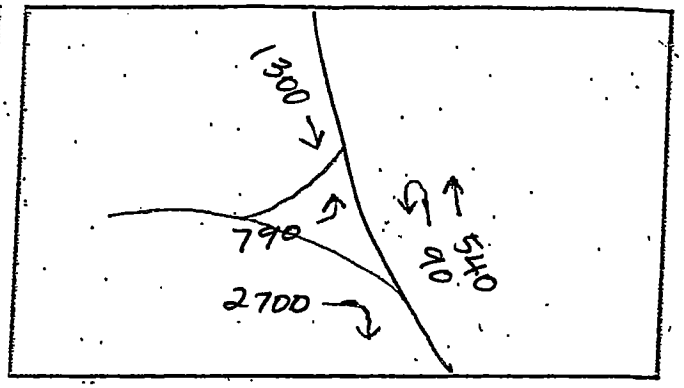
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

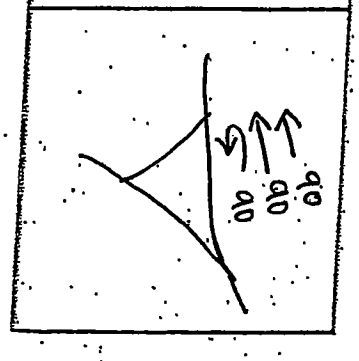
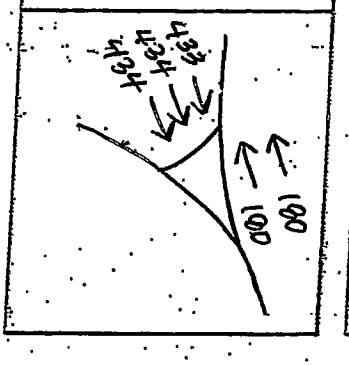
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
90	434	900	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1424

☐ < 1200 ILV/HR.

☒ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

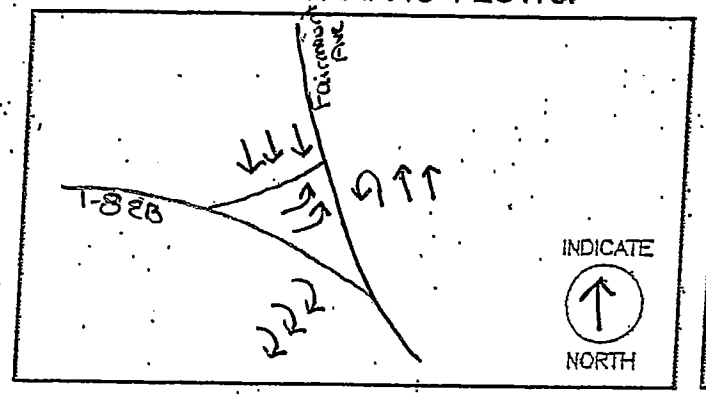
Signalized Intersection
CAPACITY ANALYSIS

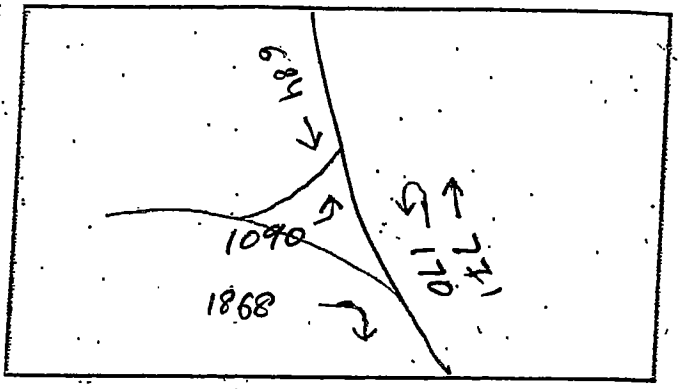
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

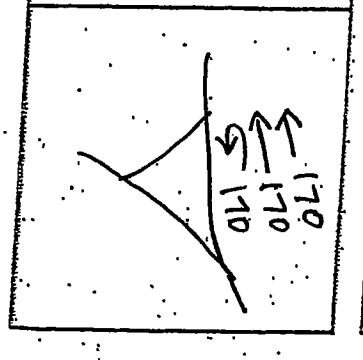
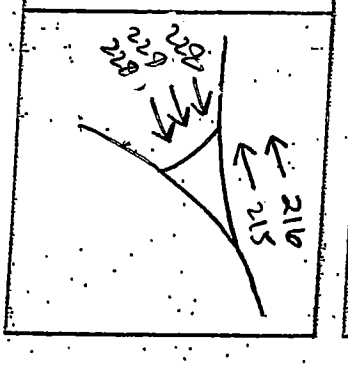
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
170	228	623	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1021

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

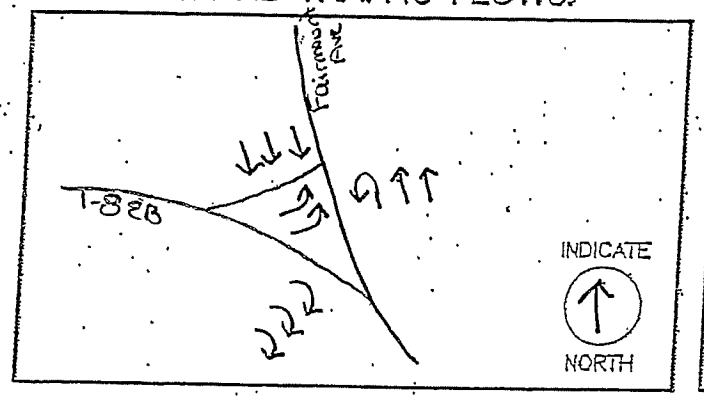
Signalized Intersection
CAPACITY ANALYSIS

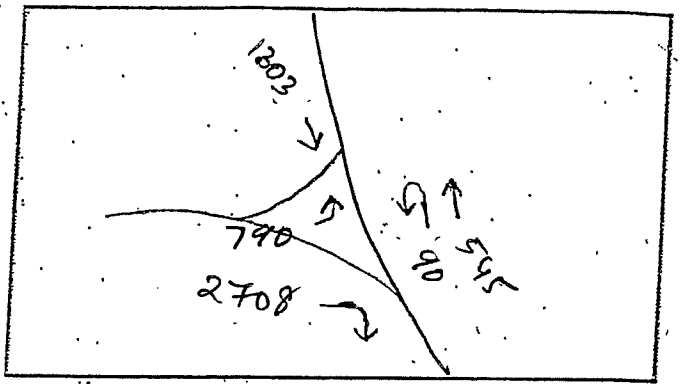
INTERSECTION Fairmount Ave | I-88B OFF-Ramp DIST. CO. RTE. P.M. _____

BY CL DATE _____

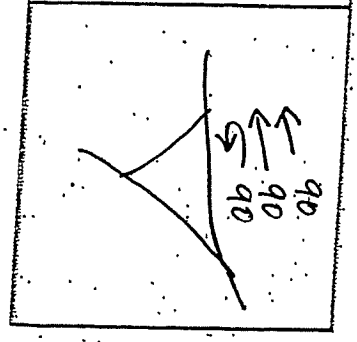
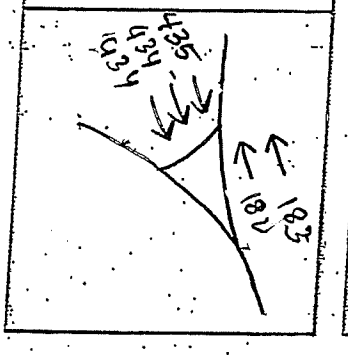
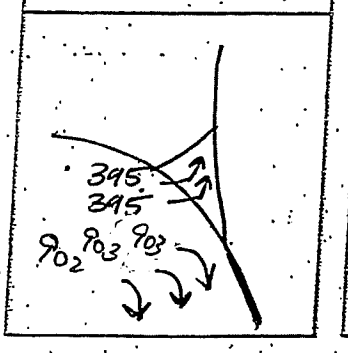
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
90	434	903	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1427

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

Existing

INTERSECTION

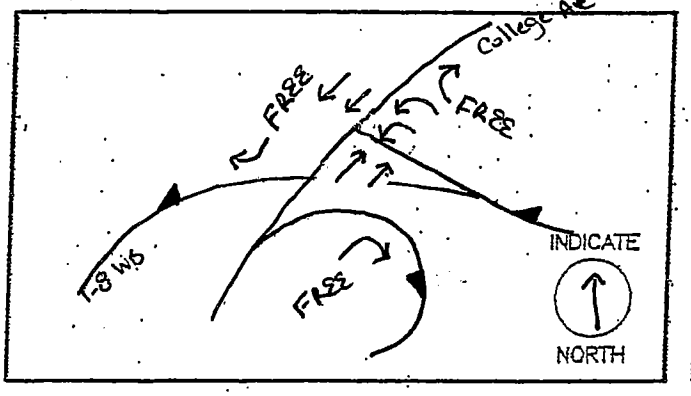
Signalized Intersection
CAPACITY ANALYSIS

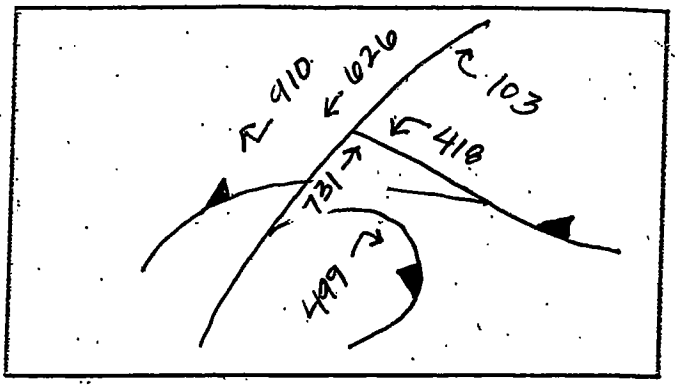
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
209 209	313 313 366 365		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
209	366		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
575

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING INTERSECTION

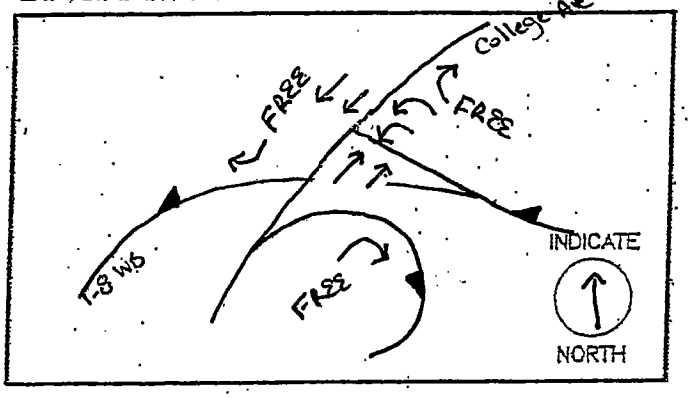
Signalized Intersection
CAPACITY ANALYSIS

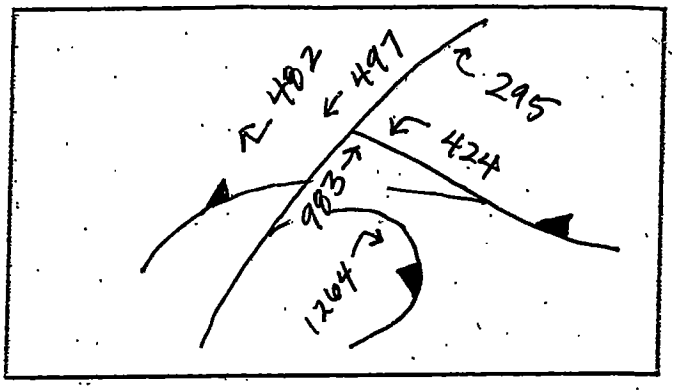
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

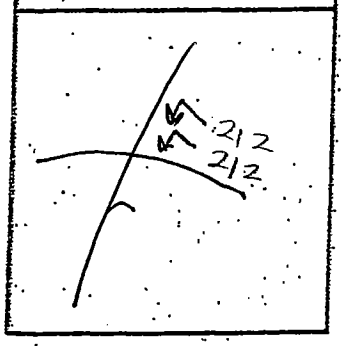
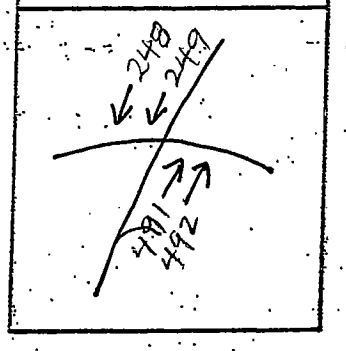
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
212	492		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
704

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

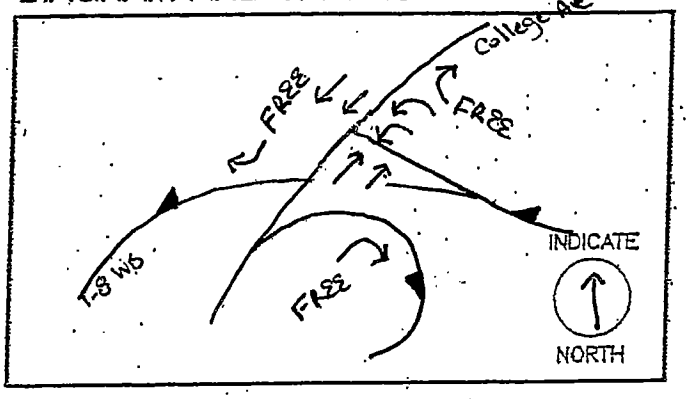
Signalized Intersection
CAPACITY ANALYSIS

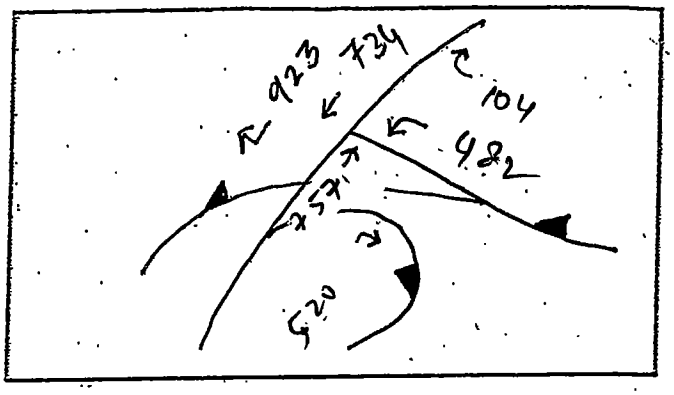
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY _____ DATE _____

TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
241 241	367 367 378 379		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
241	379		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
620

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

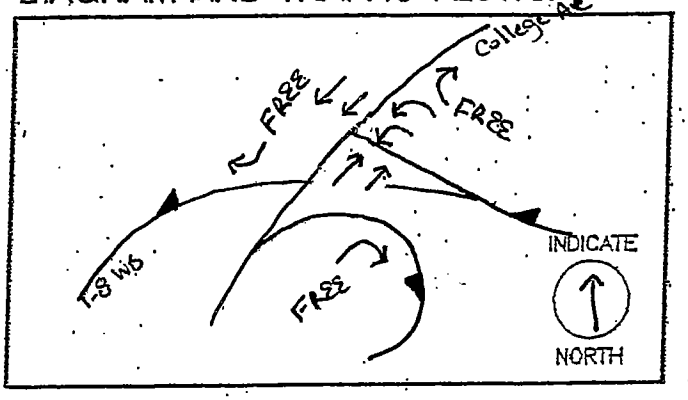
Signalized Intersection
CAPACITY ANALYSIS

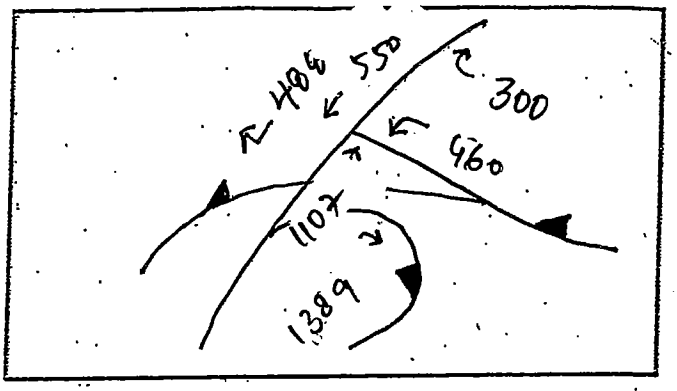
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY _____ DATE _____

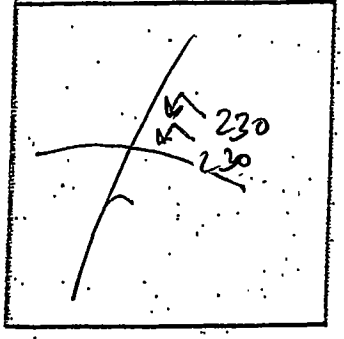
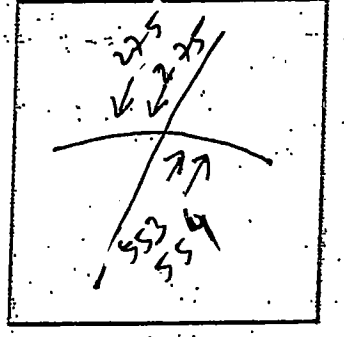
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
236	554		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
784

- [x] < 1200 ILV/HR.
- [ ] > 1200 BUT < 1500 ILV/HR.
- [ ] > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012

INTERSECTION

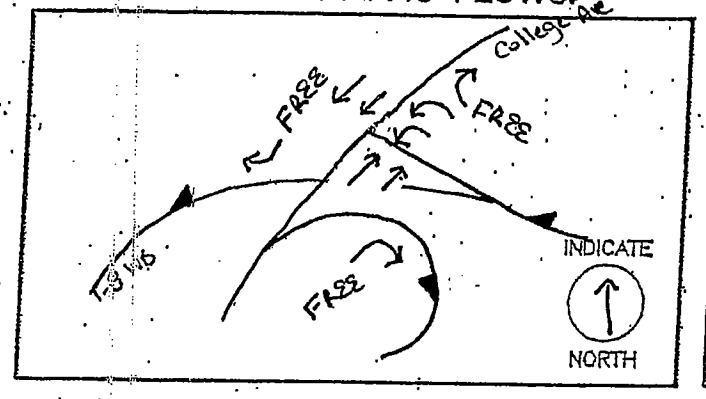
Signalized Intersection
CAPACITY ANALYSIS

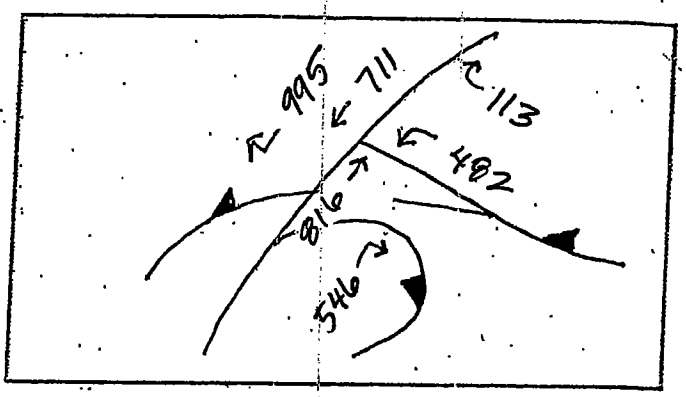
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
241 241	355 356 408 408		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
241	408		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
649

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012

INTERSECTION

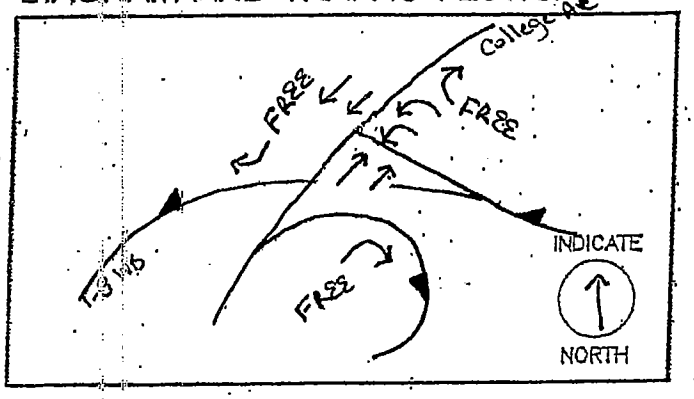
Signalized Intersection
CAPACITY ANALYSIS

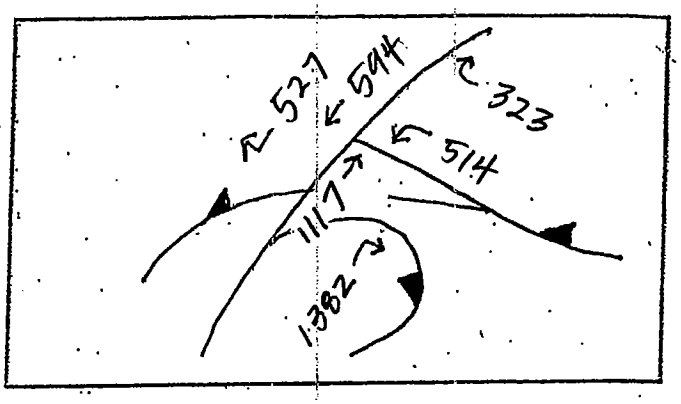
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY a DATE _____

TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
257 257	297 297 559 559		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
257	559		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
816

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

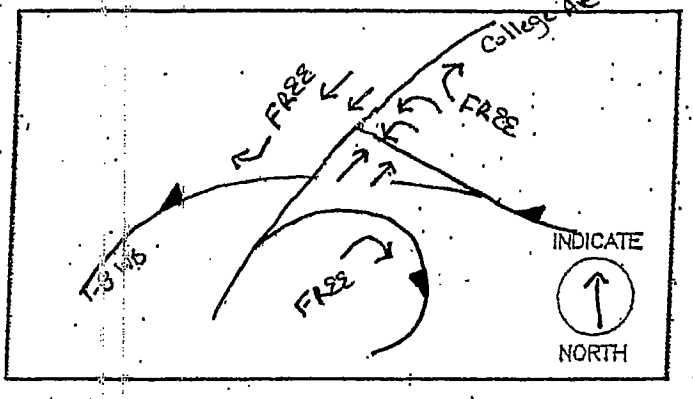
Signalized Intersection
CAPACITY ANALYSIS

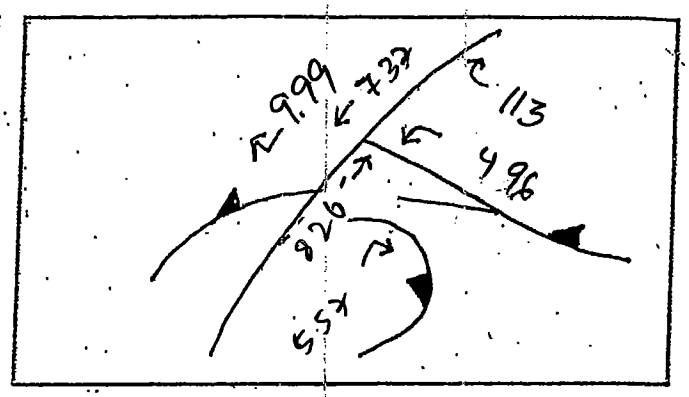
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
248 248	368 369 413 413		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
248	413		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
661

- [x] < 1200 ILV/HR.
- [ ] > 1200 BUT < 1500 ILV/HR.
- [ ] > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

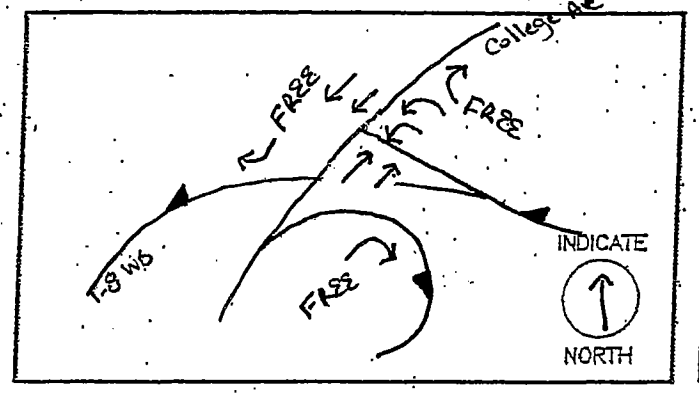
Signalized Intersection
CAPACITY ANALYSIS

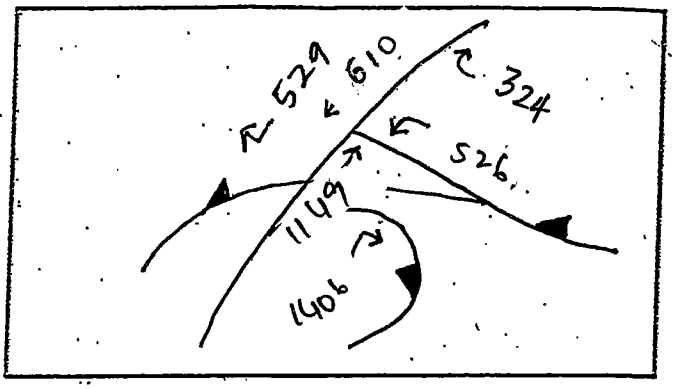
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
263 263	306 306 575 575		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
263	575		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
838

- [x] < 1200 ILV/HR.
- [ ] > 1200 BUT < 1500 ILV/HR.
- [ ] > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

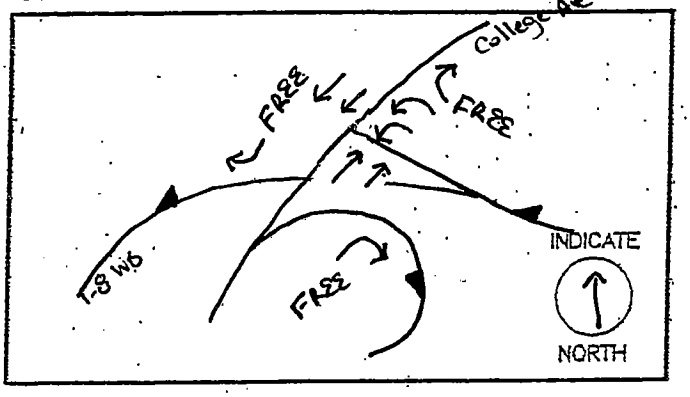
Signalized Intersection
CAPACITY ANALYSIS

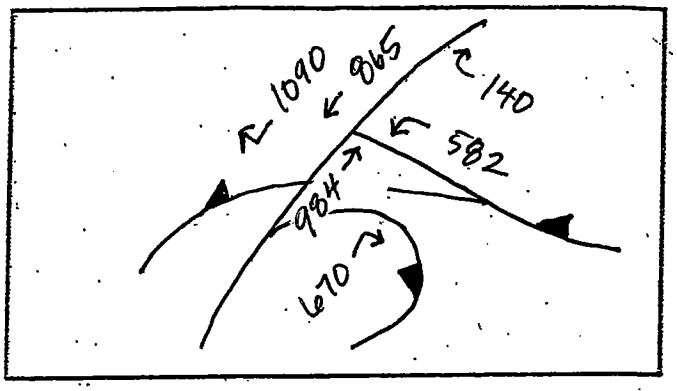
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
291 291	432 433 492 492		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
291	492		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
783

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

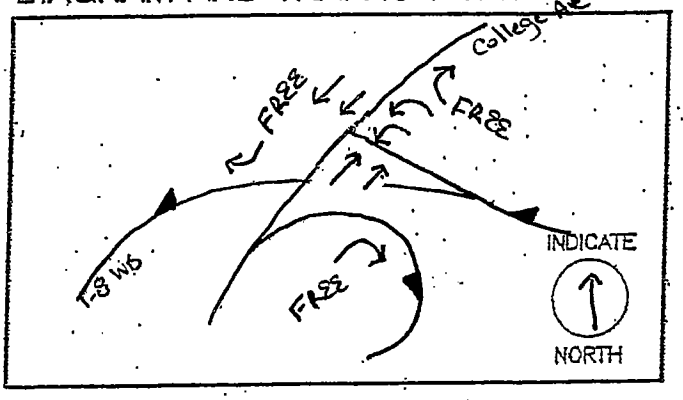
Signalized Intersection
CAPACITY ANALYSIS

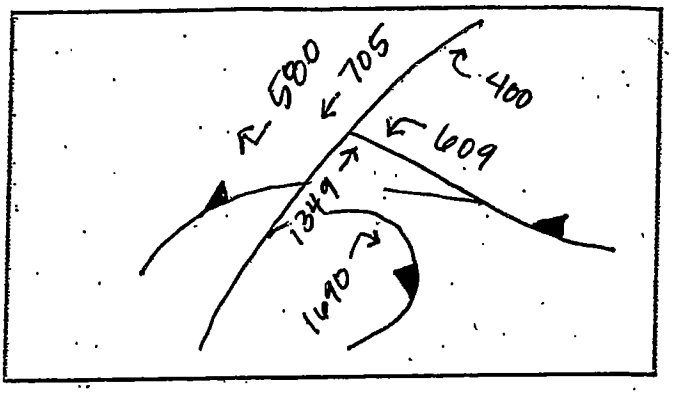
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

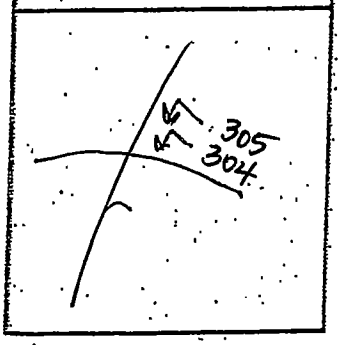
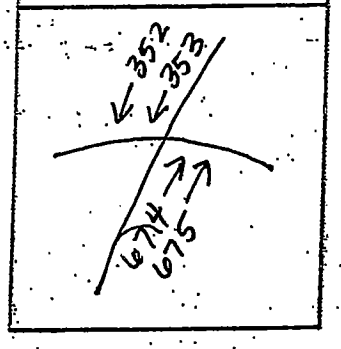
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
305	675		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
980

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

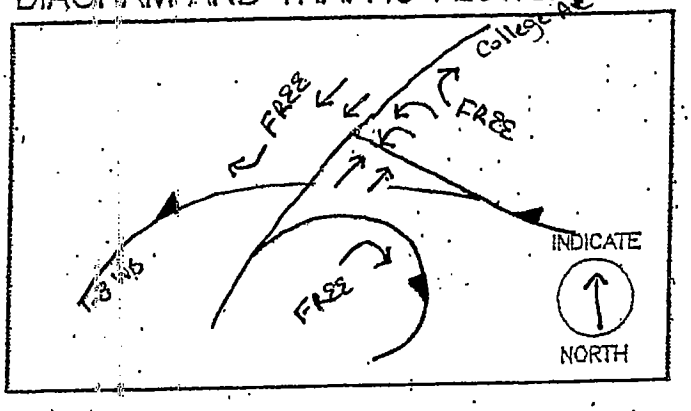
Signalized Intersection
CAPACITY ANALYSIS

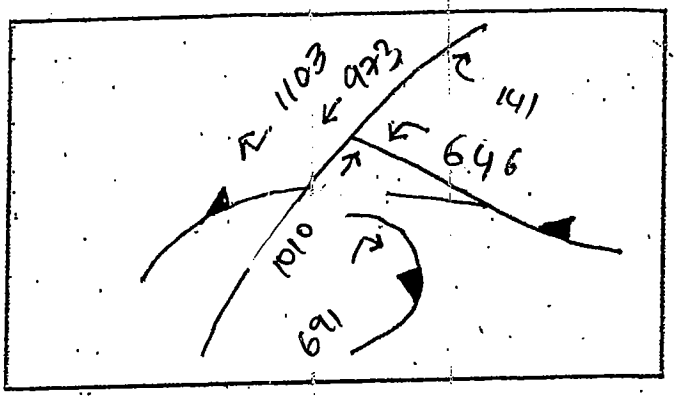
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
323 323	486 486 505 505		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
323	505		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
828

- [x] < 1200 ILV/HR.
- [ ] > 1200 BUT < 1500 ILV/HR.
- [ ] > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

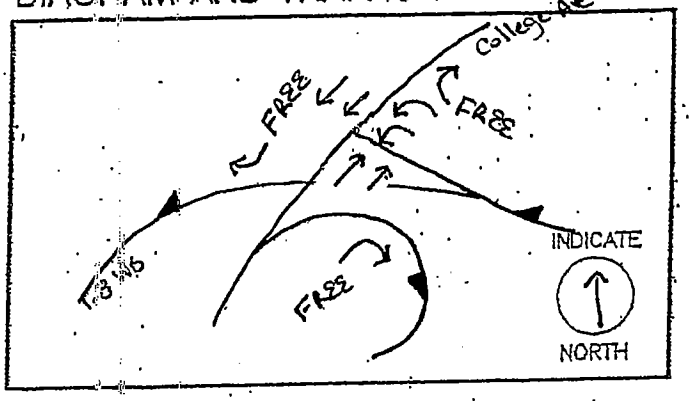
Signalized Intersection
CAPACITY ANALYSIS

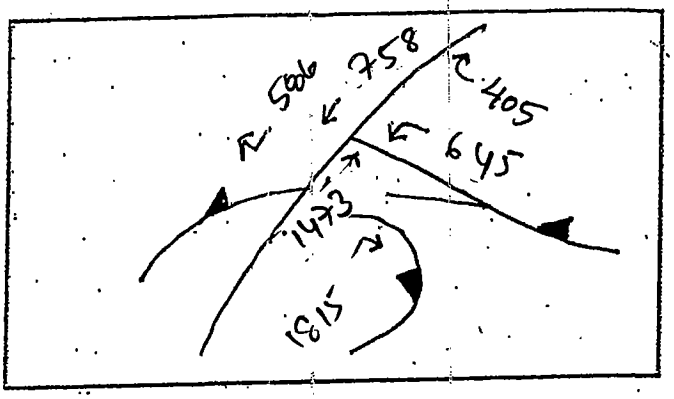
INTERSECTION College Ave / I-8 WB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

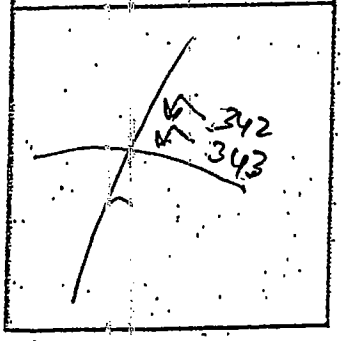
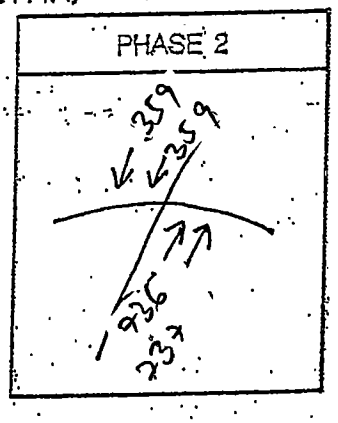
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
343	737		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1080

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

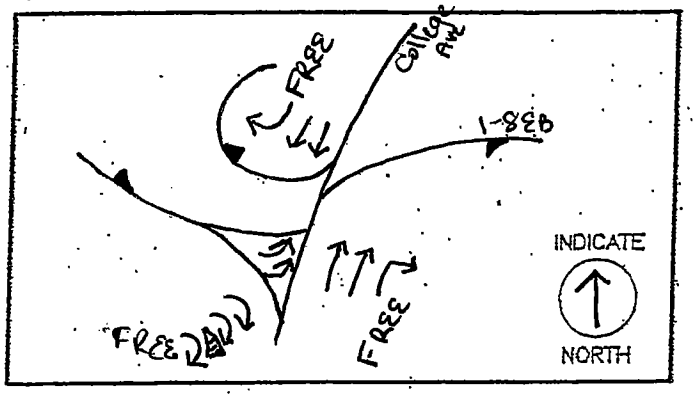
INTERSECTION College Ave / I-8 EB Ramps

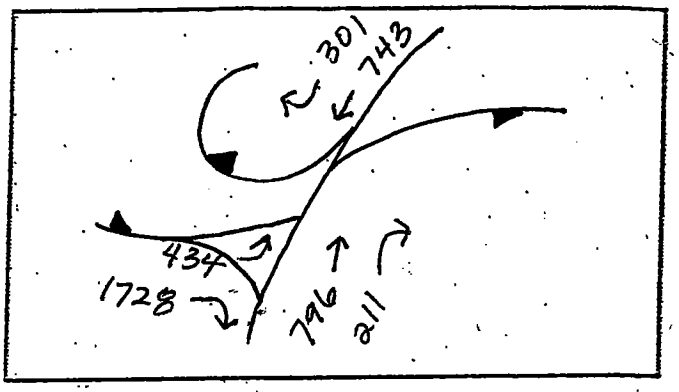
DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
217 217		371 372 398 398	

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
217		398	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
615

- [x] < 1200 ILV/HR.
- [ ] > 1200 BUT < 1500 ILV/HR.
- [ ] > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING

INTERSECTION

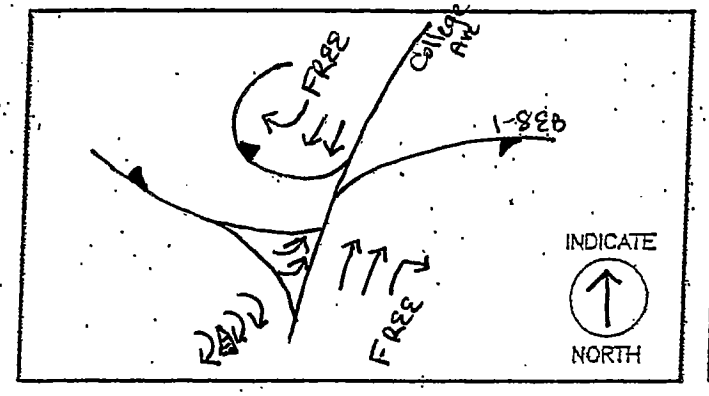
Signalized Intersection
CAPACITY ANALYSIS

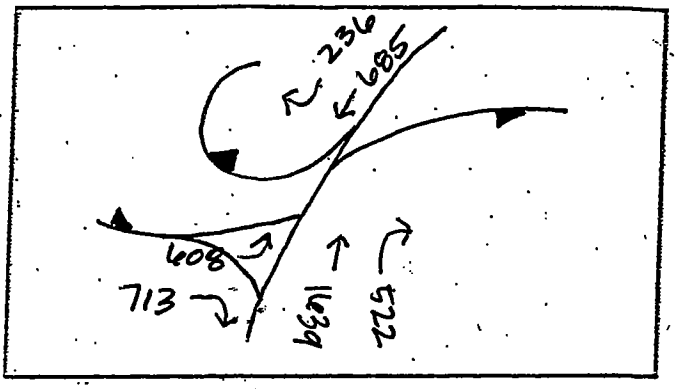
INTERSECTION College Ave / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

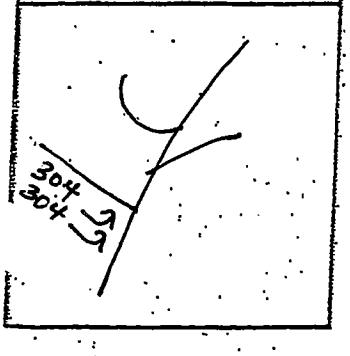
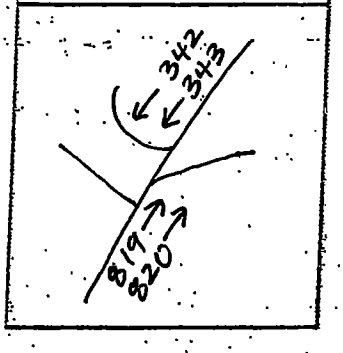
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
304	820		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1124

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

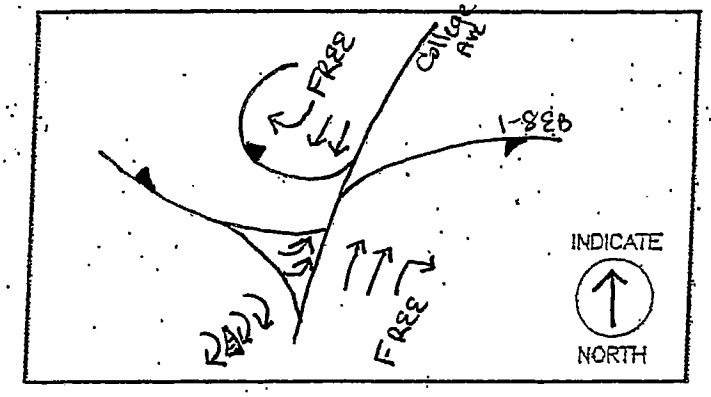
Signalized Intersection
CAPACITY ANALYSIS

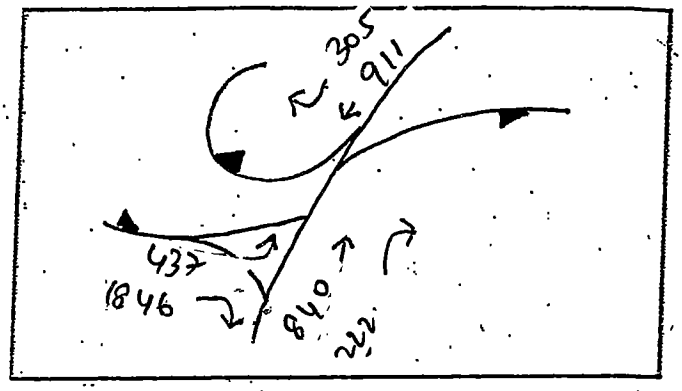
INTERSECTION College Ave / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

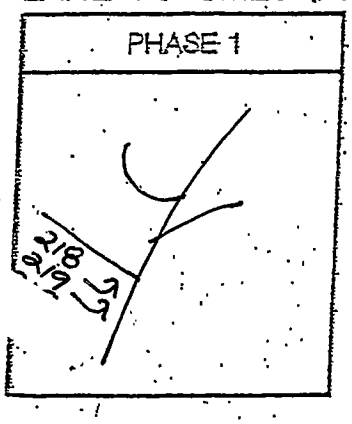
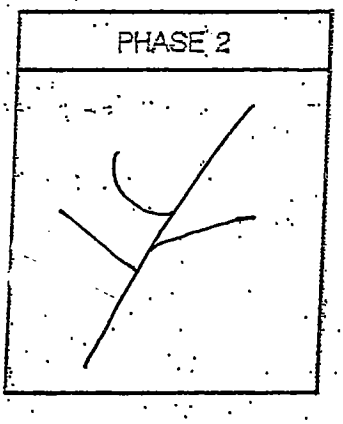
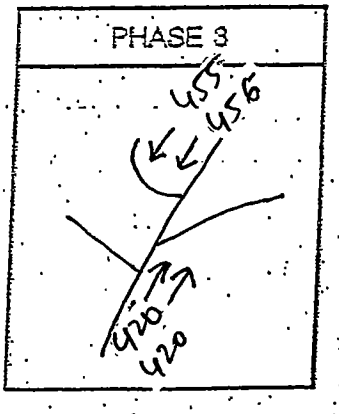
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
219		455	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
674

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

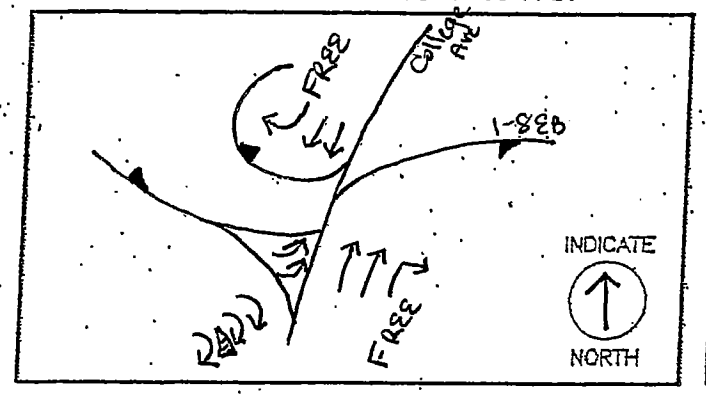
Signalized Intersection
CAPACITY ANALYSIS

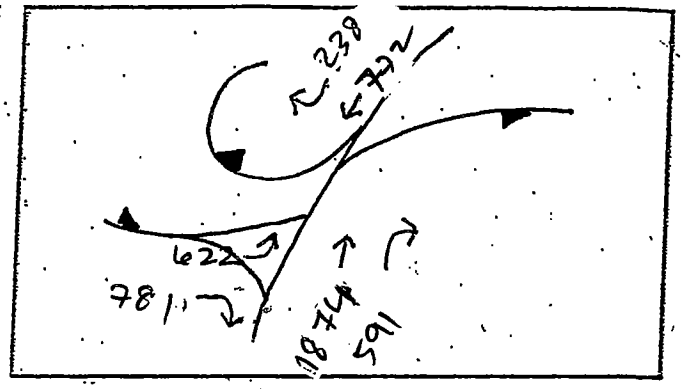
INTERSECTION College Ave / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

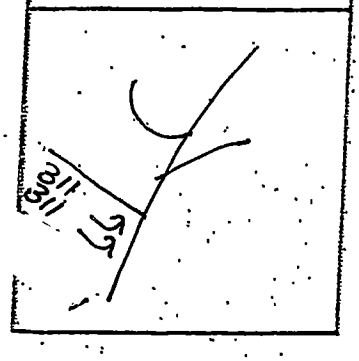
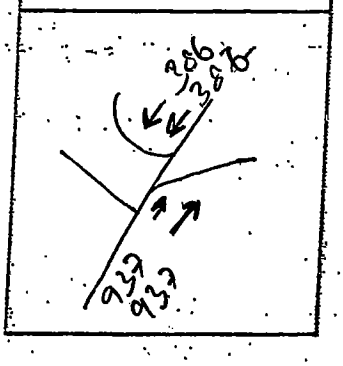
TIME _____ AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
311	937		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1248

☐ < 1200 ILV/HR.

☒ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012

INTERSECTION

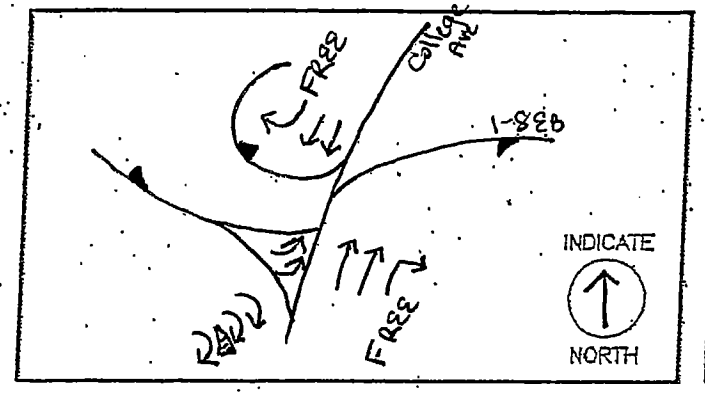
Signalized Intersection
CAPACITY ANALYSIS

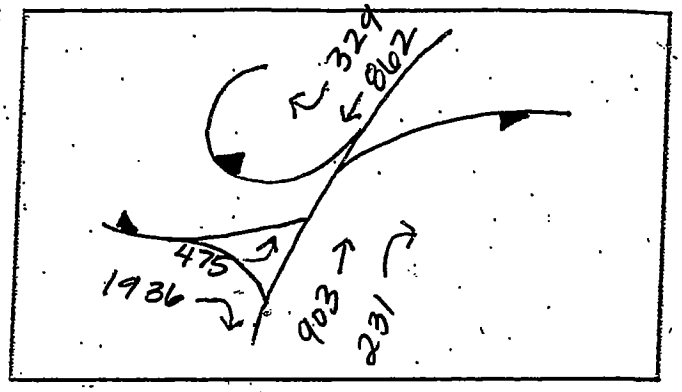
INTERSECTION College Ave / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

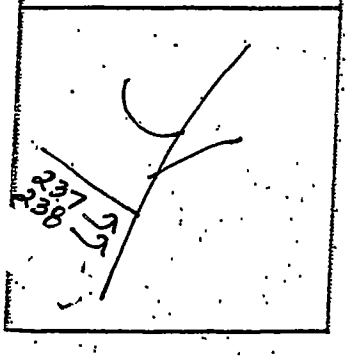
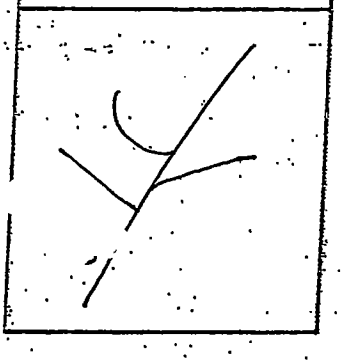
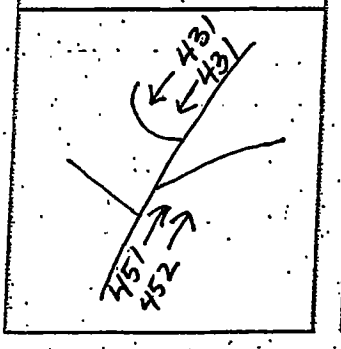
TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
238		452	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
690

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012

INTERSECTION

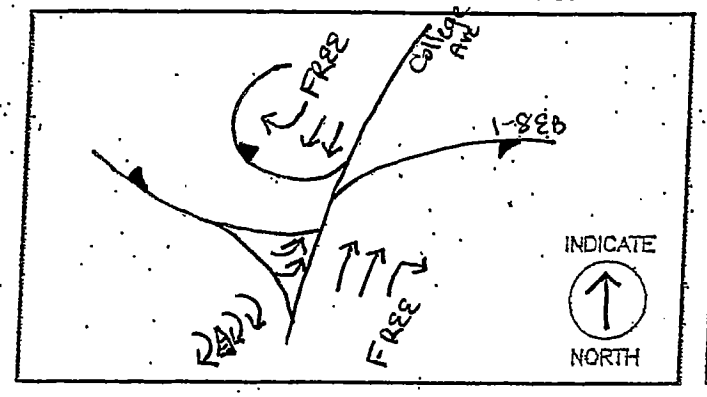
Signalized Intersection
CAPACITY ANALYSIS

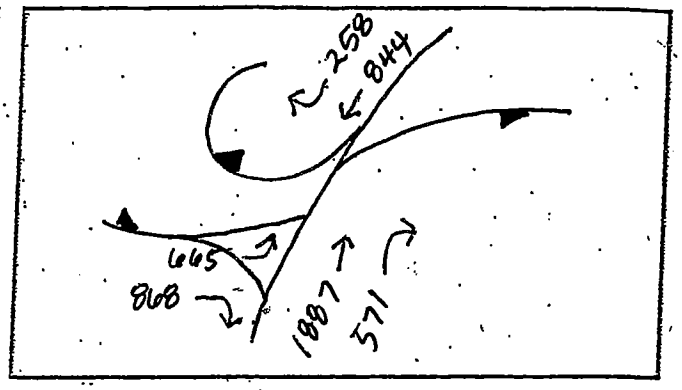
INTERSECTION College Ave / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

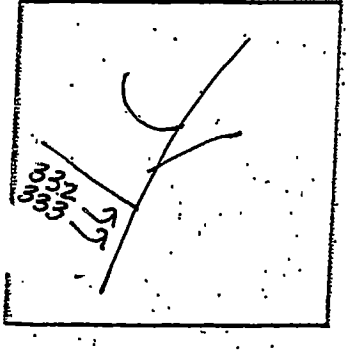
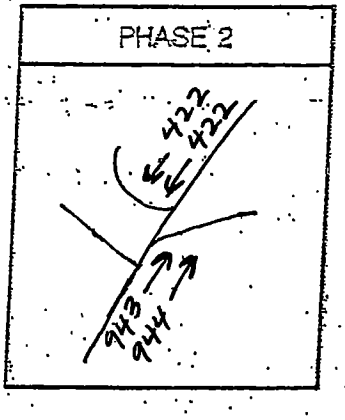
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
333	944		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1277

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

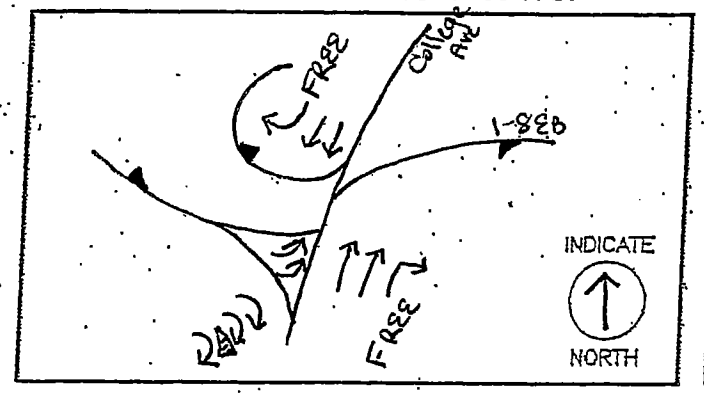
INTERSECTION College Ave / I-8 EB Ramps

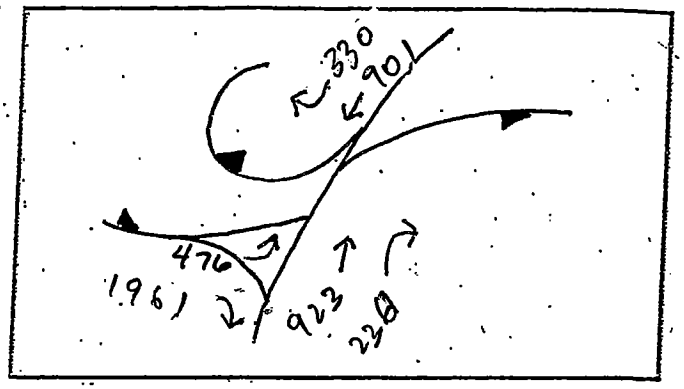
DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
238 238		450 451 461 462	

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
238		462	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
700

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

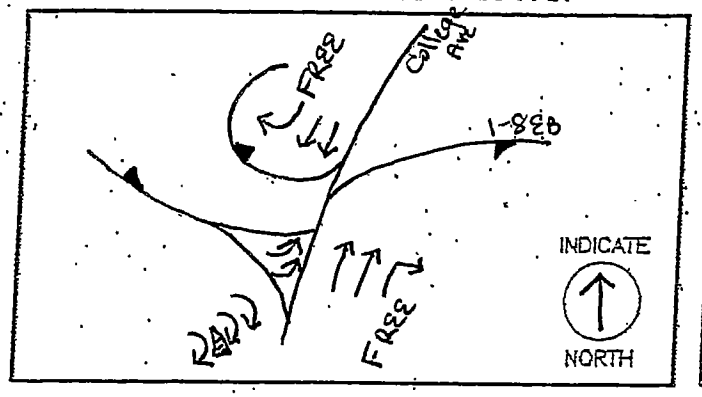
INTERSECTION College Ave / I-8 EB Ramps

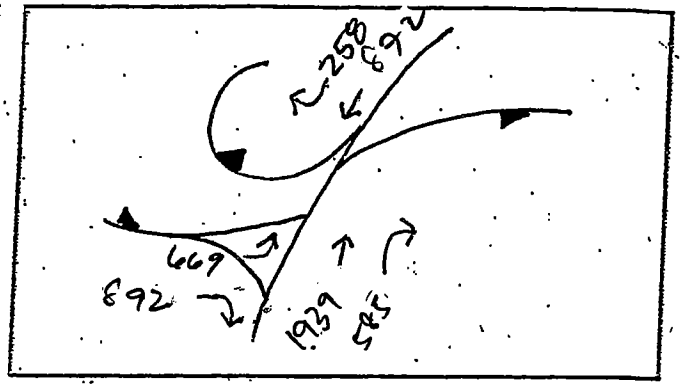
DIST. CO. RTE. P.M. _____

BY CL DATE _____

TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
334 335	436 436 969 970		

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
335	970		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1305

☐ < 1200 ILV/HR.

☒ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

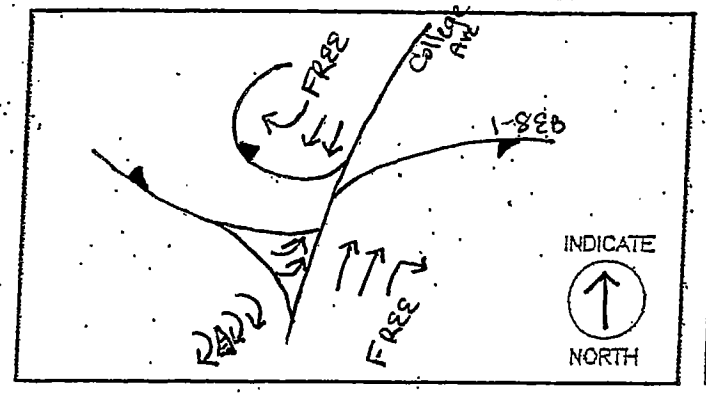
INTERSECTION College Ave / I-8 EB Ramps

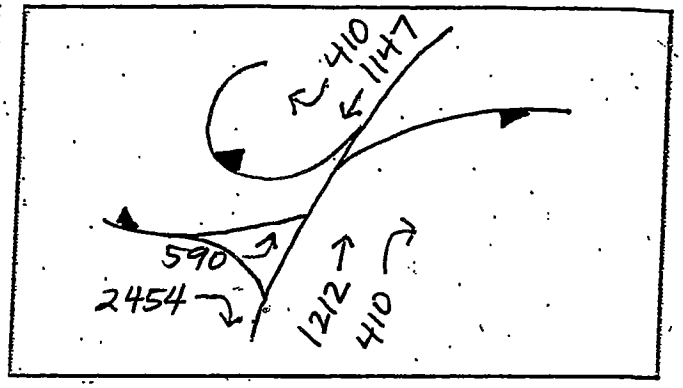
DIST. CO. RTE. P.M. _____

BY CL DATE _____

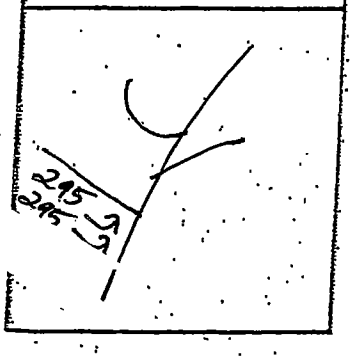
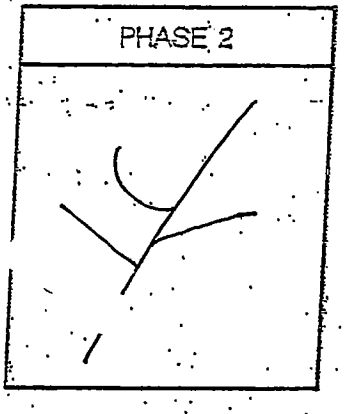
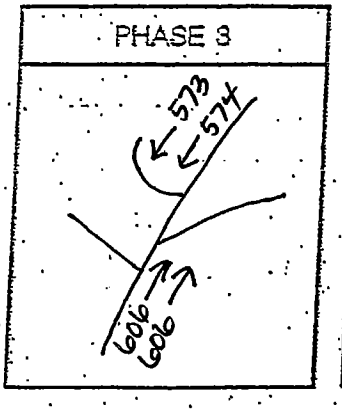
TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
295		606	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
901

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

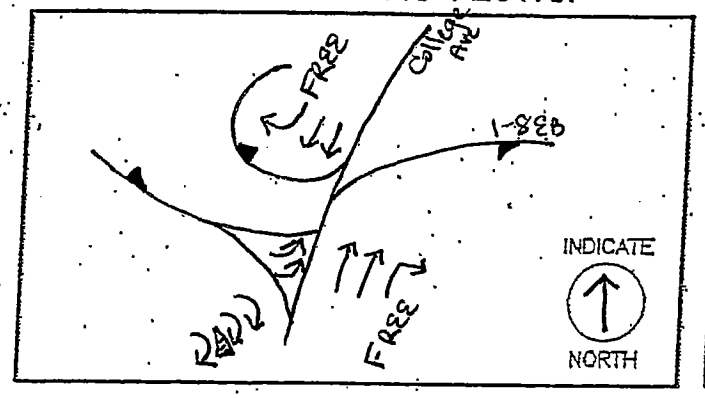
INTERSECTION College Ave / I-8 EB Ramps

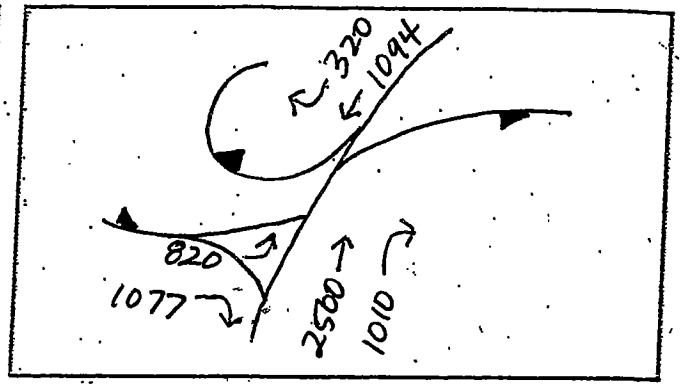
DIST. CO. RTE. P.M. _____

BY CL DATE _____

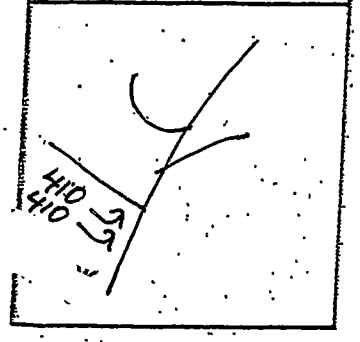
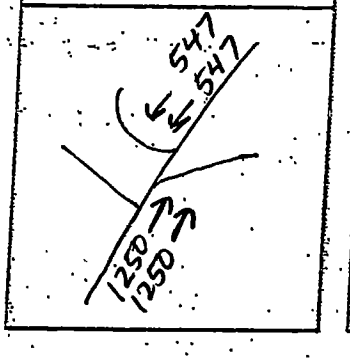
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
410	1250		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1660

- ☐ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☒ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

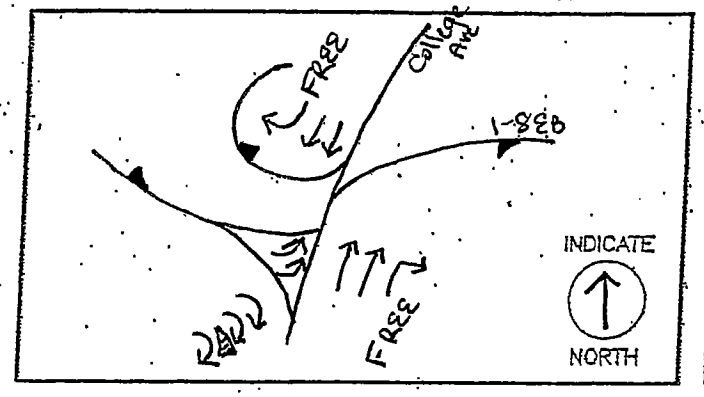
INTERSECTION College Ave / I-8 EB Ramps

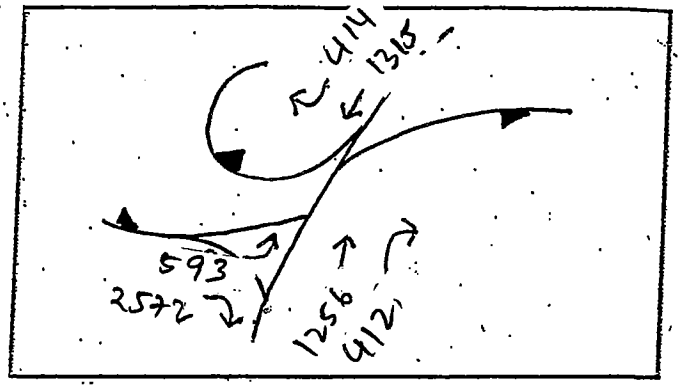
DIST. CO. RTE. P.M. _____

BY CL DATE _____

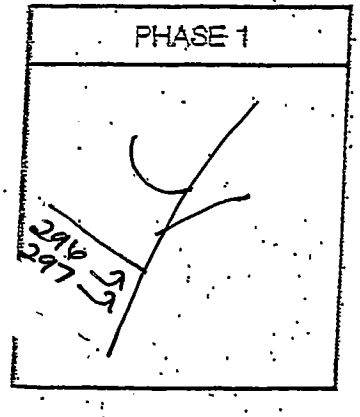
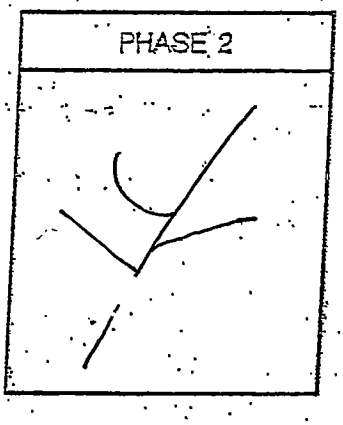
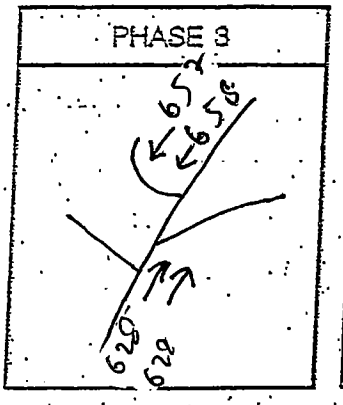
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
297		658	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
955

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

> 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

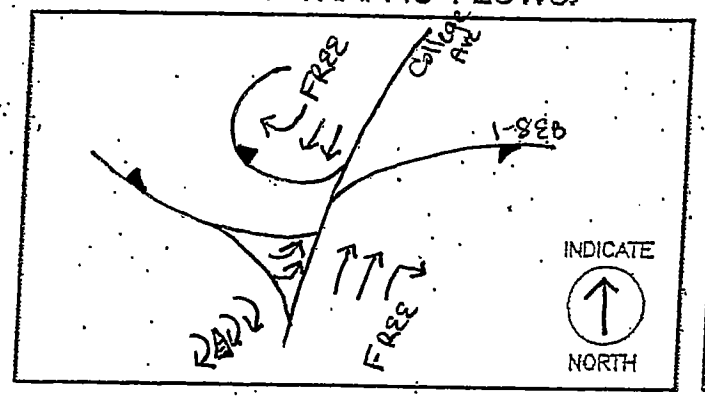
INTERSECTION College Ave / I-8 EB Ramps

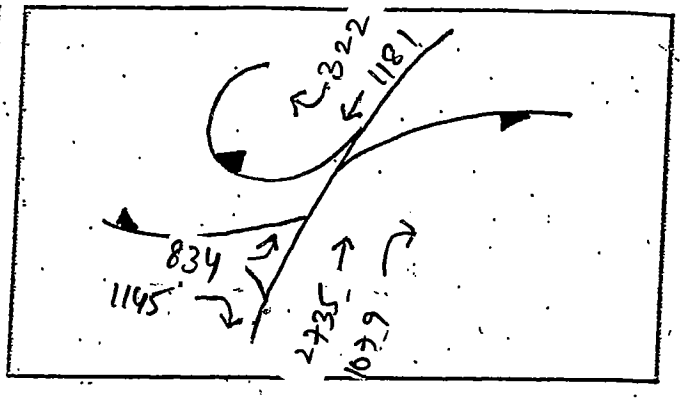
DIST. CO. RTE. P.M. _____

BY CL DATE _____

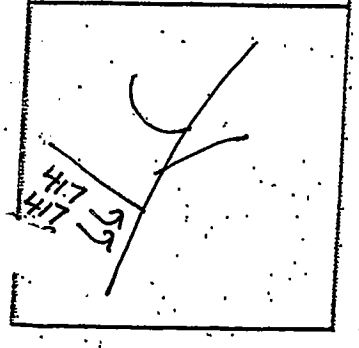
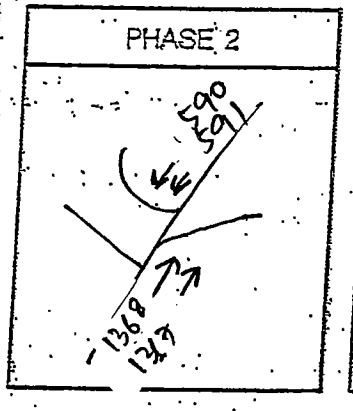
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
417	1368		

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1785

- ☐ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☒ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING

INTERSECTION

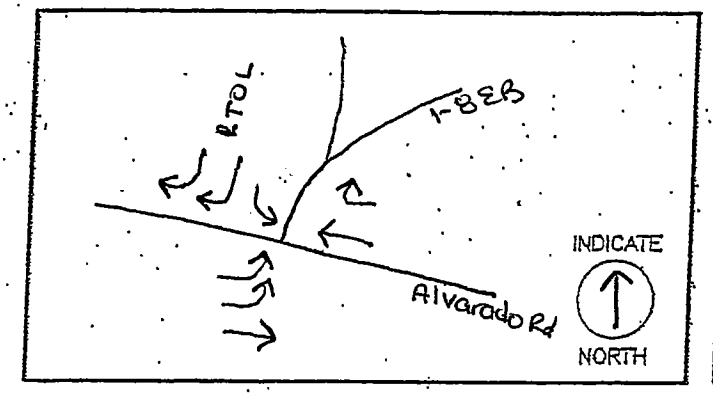
Signalized Intersection
CAPACITY ANALYSIS

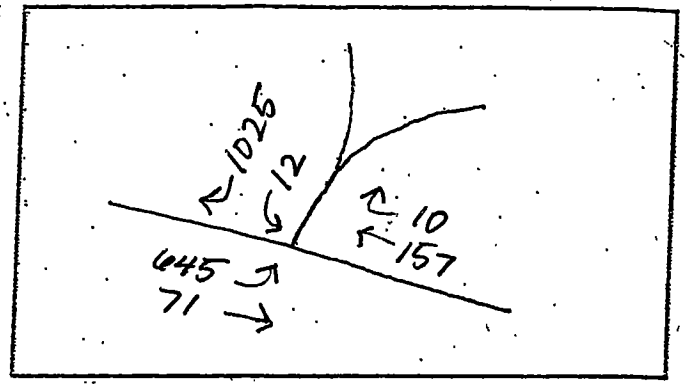
INTERSECTION Alvarado Rd / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

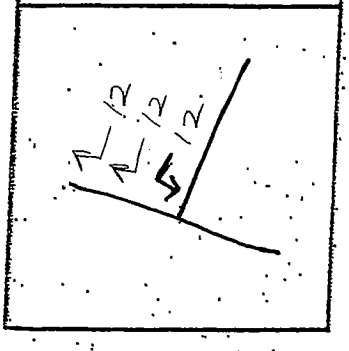
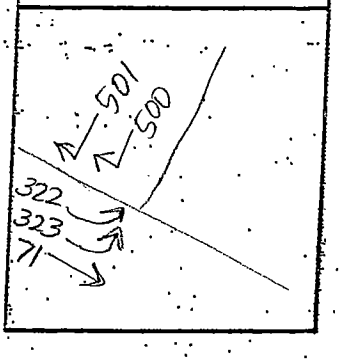
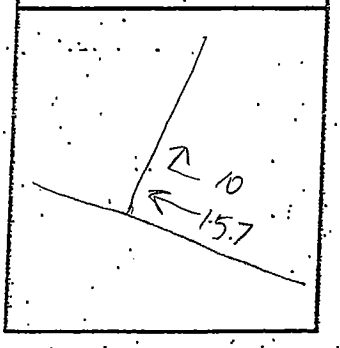
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
12	501	157	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
670

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING

INTERSECTION

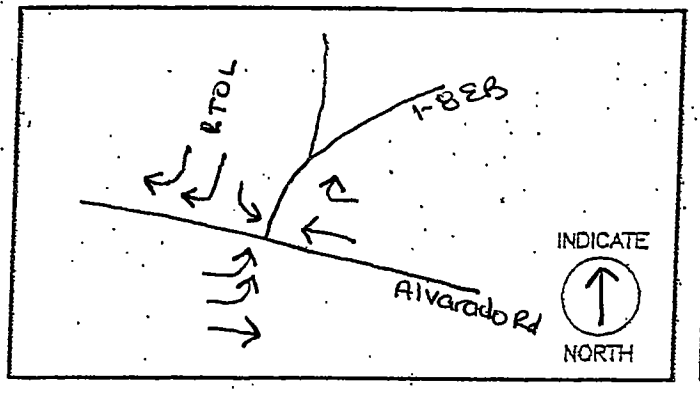
Signalized Intersection
CAPACITY ANALYSIS

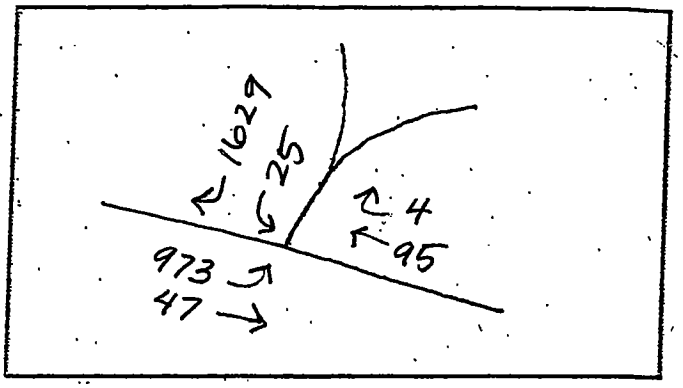
INTERSECTION Alvarado Rd / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

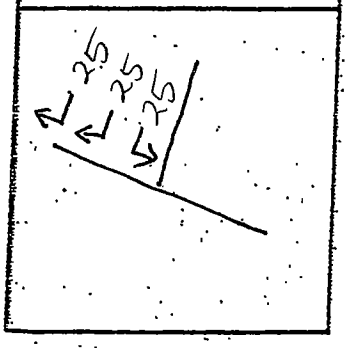
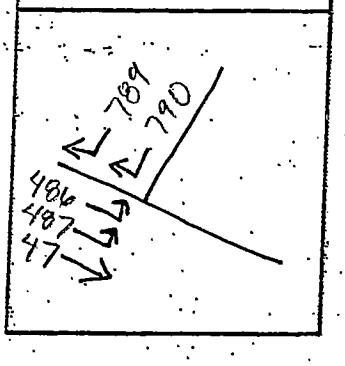
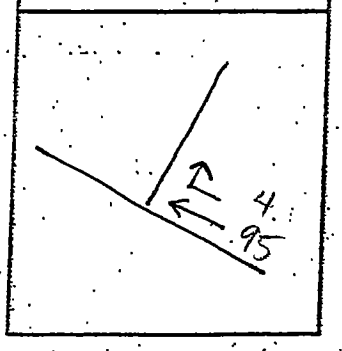
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
25	790	95	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
910

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT

INTERSECTION

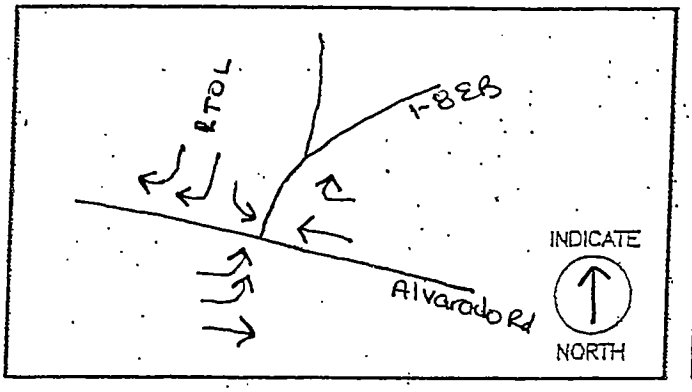
Signalized Intersection
CAPACITY ANALYSIS

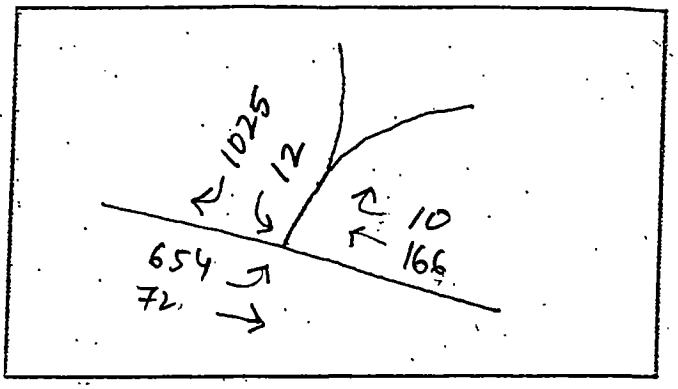
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

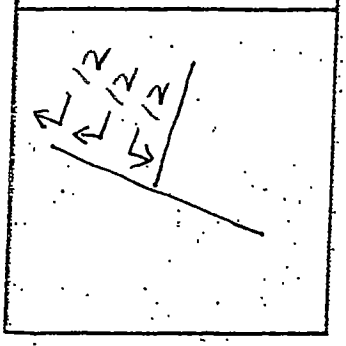
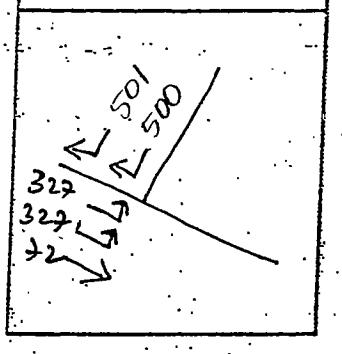
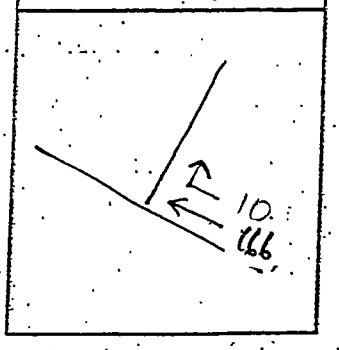
TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
12	501	166	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
679

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

EXISTING + PROJECT
INTERSECTION

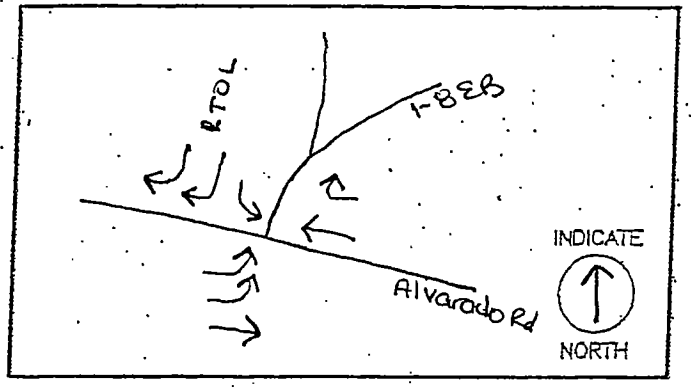
Signalized Intersection
CAPACITY ANALYSIS

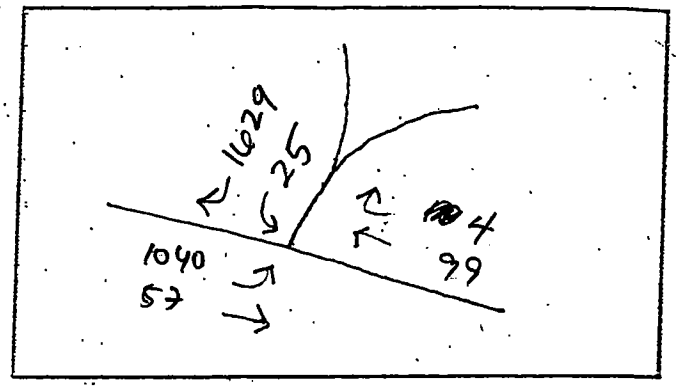
INTERSECTION Alvarado Rd / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

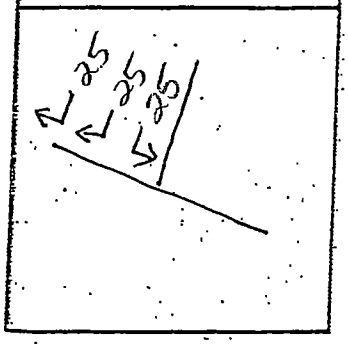
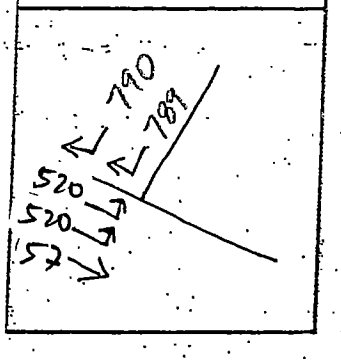
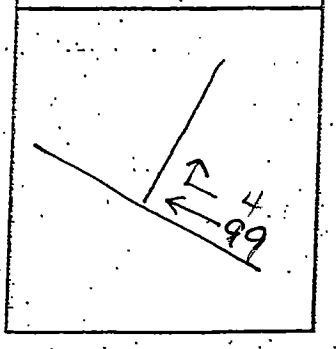
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
25	790	99	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
914

- [x] < 1200 ILV/HR.
- [ ] > 1200 BUT < 1500 ILV/HR.
- [ ] > 1500 ILV/HR (CAPACITY).

REMARKS:

YEAR 2012

INTERSECTION

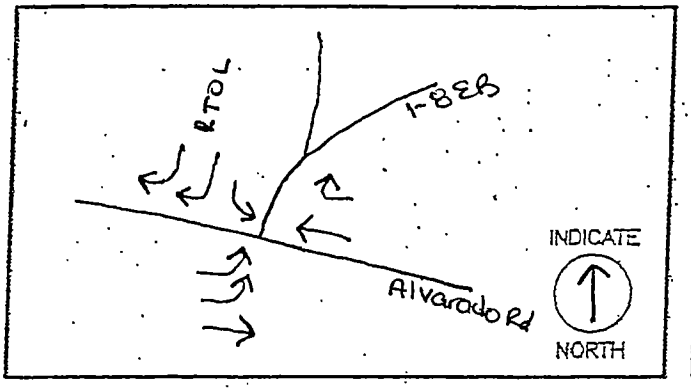
Signalized Intersection
CAPACITY ANALYSIS

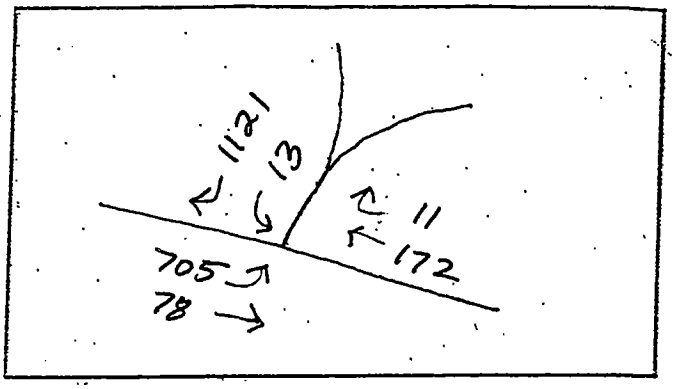
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

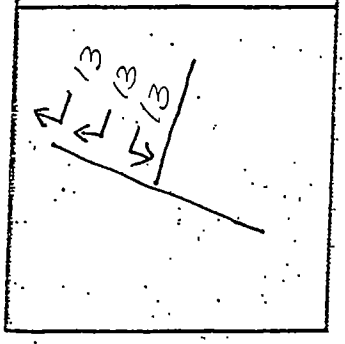
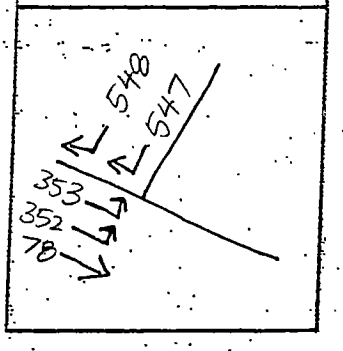
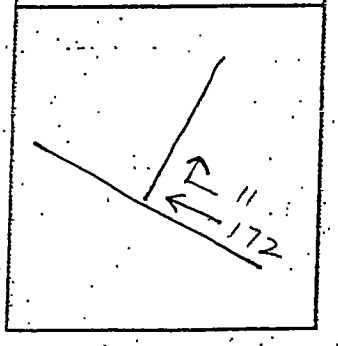
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
13	548	172	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
733

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012

INTERSECTION

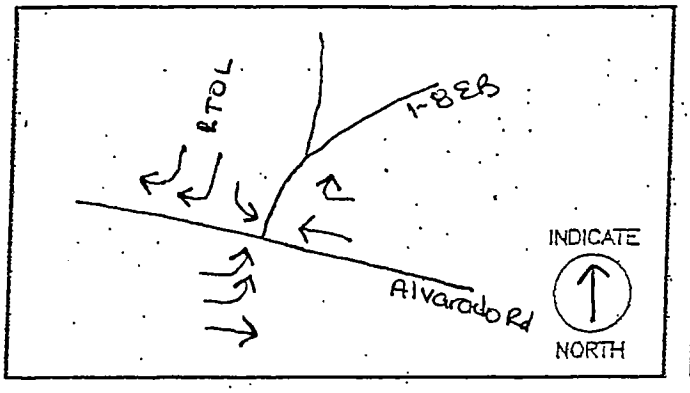
Signalized Intersection
CAPACITY ANALYSIS

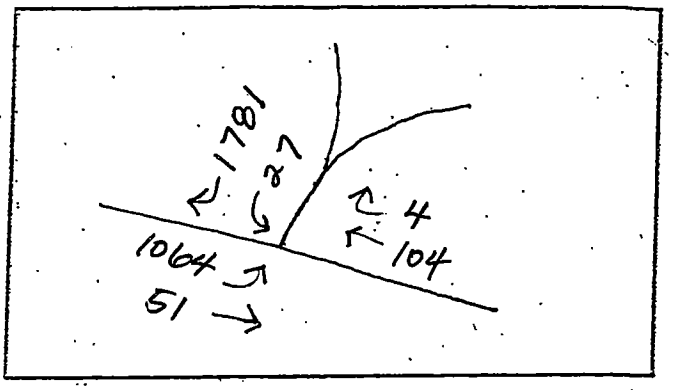
INTERSECTION Alvarado Rd / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

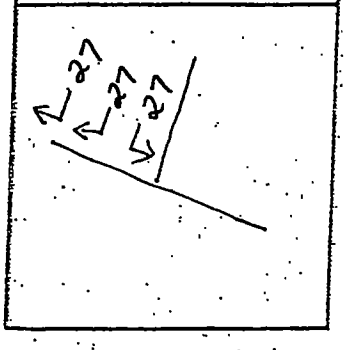
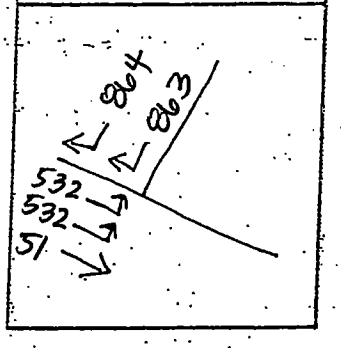
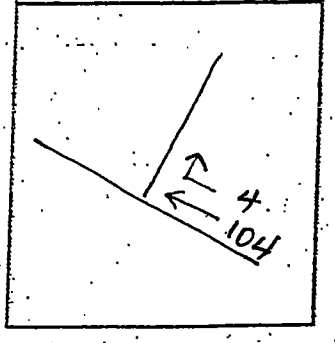
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
27	864	104	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
995

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

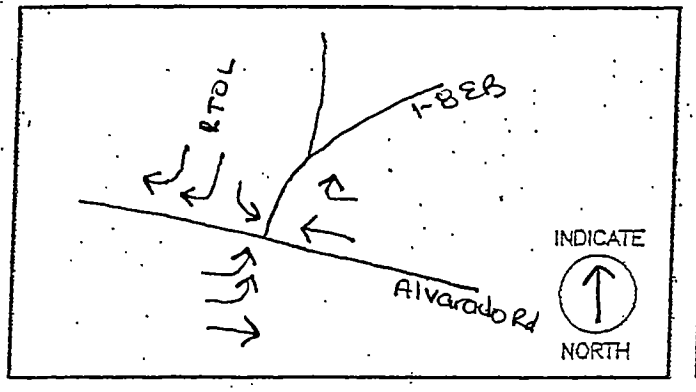
Signalized Intersection
CAPACITY ANALYSIS

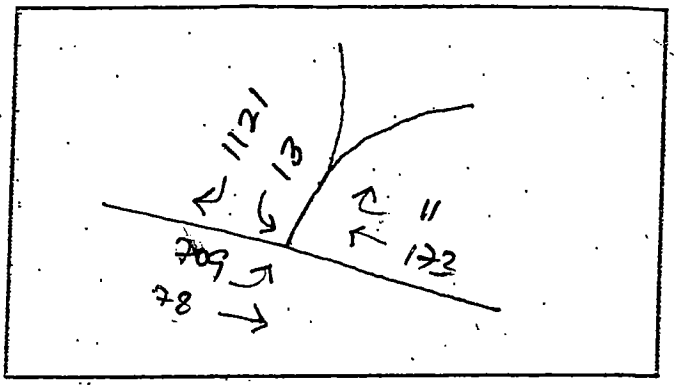
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

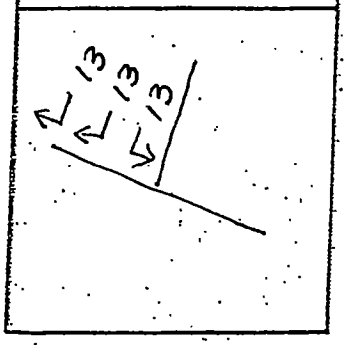
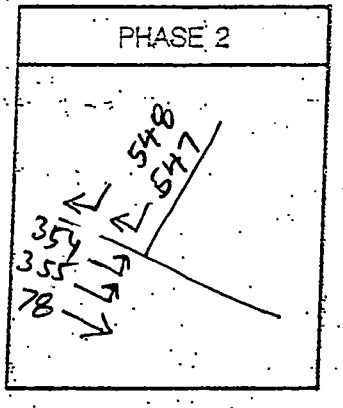
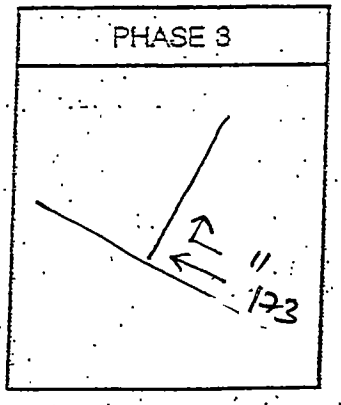
TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
13	548	173	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
734

- ☒ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2012 + PROJECT

INTERSECTION

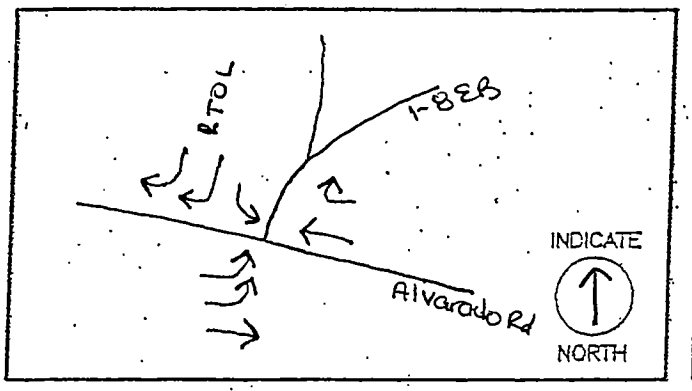
Signalized Intersection
CAPACITY ANALYSIS

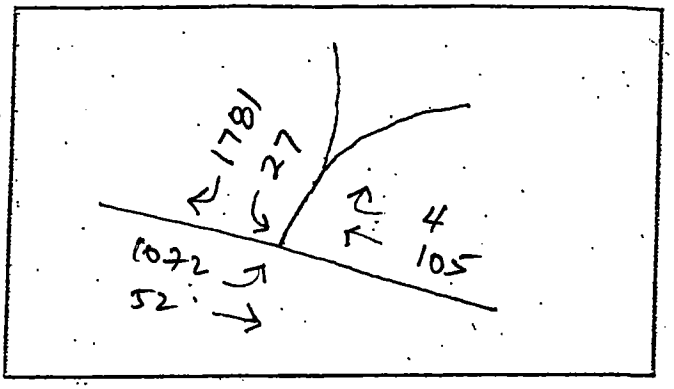
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

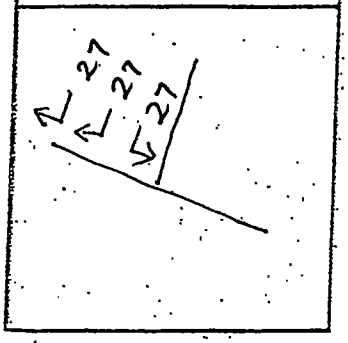
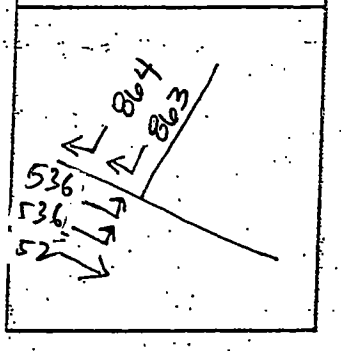
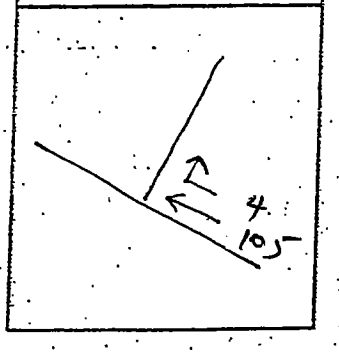
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
27	864	105	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
996

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

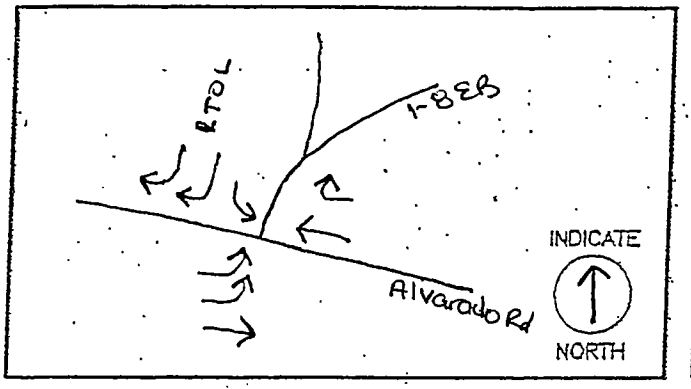
Signalized Intersection
CAPACITY ANALYSIS

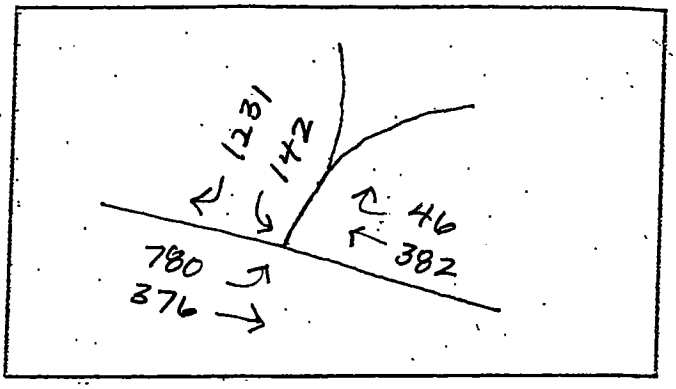
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

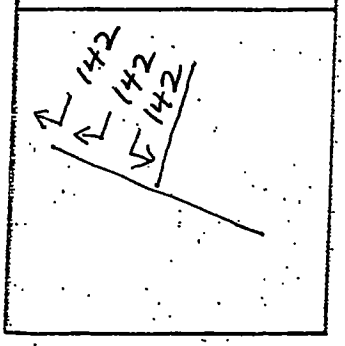
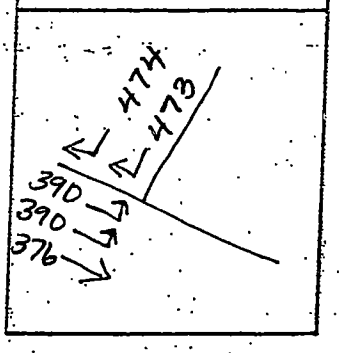
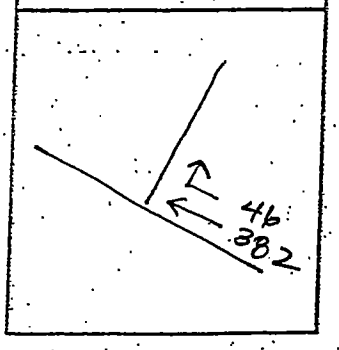
TIME _____ (AM) PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
142	474	382	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
998

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030

INTERSECTION

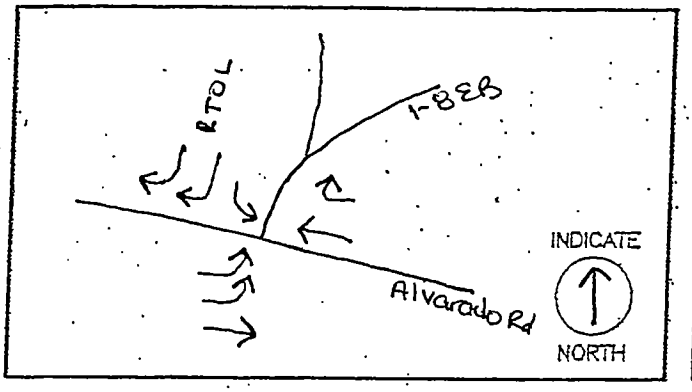
Signalized Intersection
CAPACITY ANALYSIS

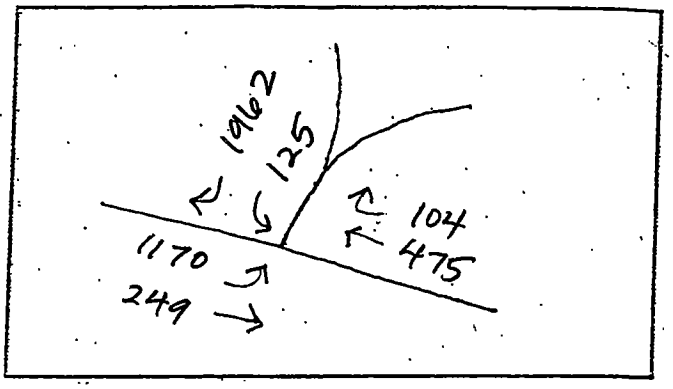
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

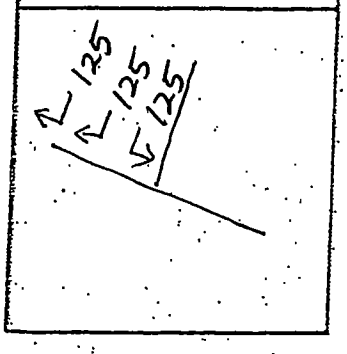
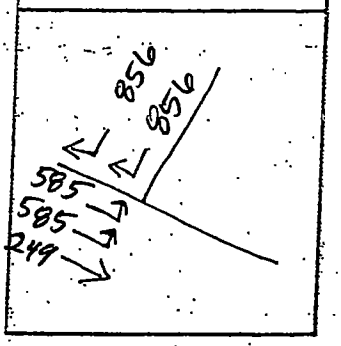
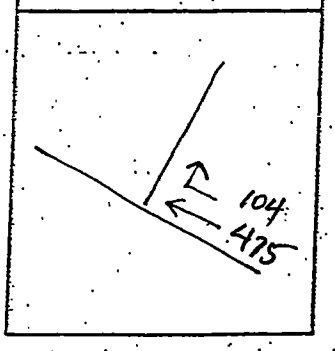
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
125	856	475	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1456

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

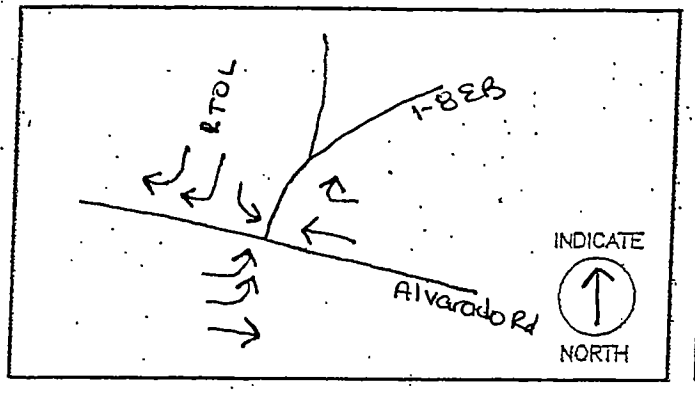
Signalized Intersection
CAPACITY ANALYSIS

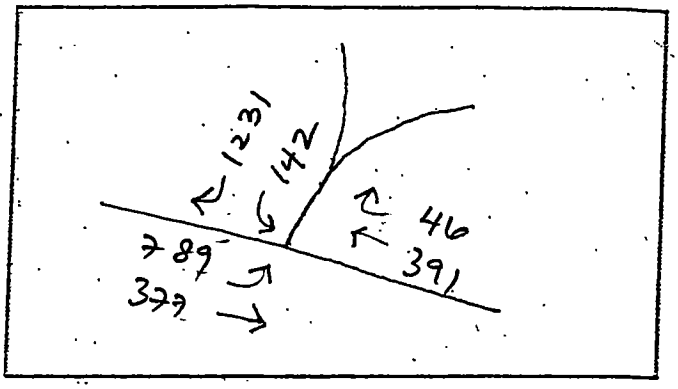
INTERSECTION Alvarado Rd / I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

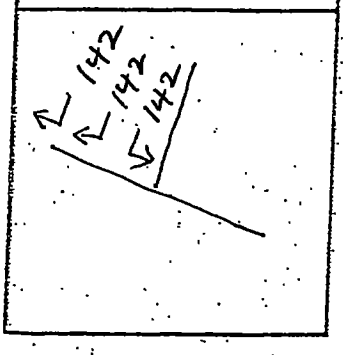
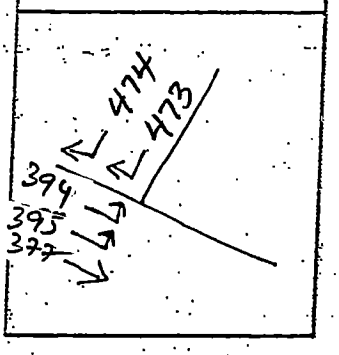
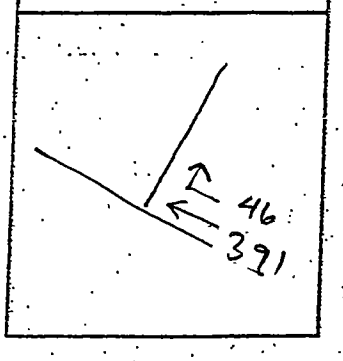
TIME _____ AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
142	474	391	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1067

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

YEAR 2030 + PROJECT

INTERSECTION

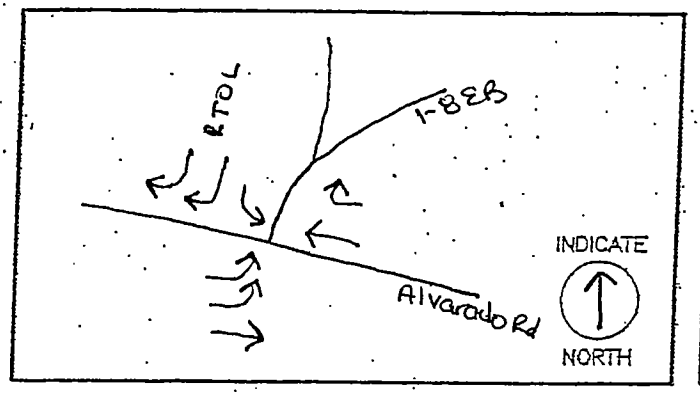
Signalized Intersection
CAPACITY ANALYSIS

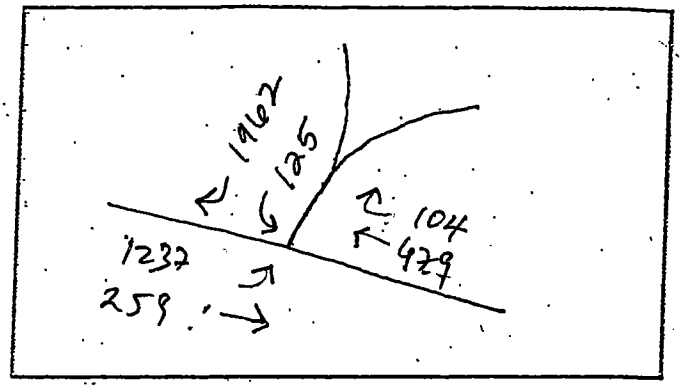
INTERSECTION Alvarado Rd | I-8 EB Ramps DIST. CO. RTE. P.M. _____

BY CL DATE _____

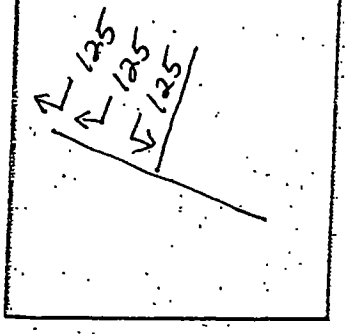
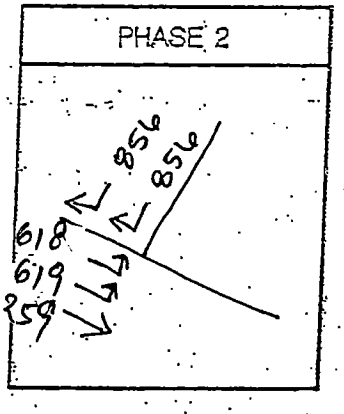
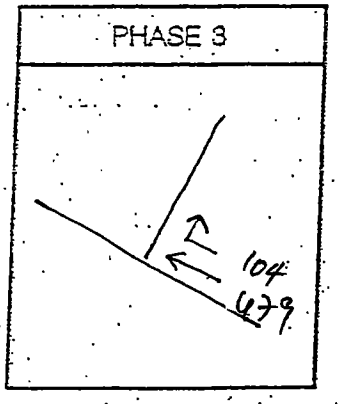
TIME _____ AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
125	856	479	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1460

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

APPENDIX O

EXISTING PARKING COUNT SHEETS

Linscott Law & Greenspan

4542 Ruffner Street, Suite 100, San Diego, CA 92111

WEDNESDAY

Location: Parking Structure #3 & #6 East Campus Drive & Montezuma Road

Start Date: 10/11/2006
File Name: 642-01-2

	Parking Structure #3			Parking Structure #6				
Start Time	Faculity & Staff Spaces Available	Students Spaces Available	Other Occupied	Faculity & Staff Spaces Available	Students Spaces Available	Other Occupied		
8:00	0	694 (Occcupied)	4	0	1375	1		
9:00	0	1056	3	0	1240	2		
10:00	1	904	3	0	888	1		
11:00	2	866	4	0	818	0		
13:00	0	876	3	0	889	1		
14:00	3	887	3	0	1081	0		
15:00	3	974	3	0	1070	0		
16:00	14	1139	5	0	1180	0		

Other comprised of: visitor, handicap, special permit, etc.

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Linscott Law & Greenspan

4542 Ruffner Street, Suite 100, San Diego, CA 92111

TUESDAY

Location: Parking Structure #3 & #6 East Campus Drive & Montezuma Road

Start Date: 10/10/2006
File Name: 642-01-1

	Parking Structure #3			Parking Structure #6				
Start Time	Faculity & Staff Spaces Available	Students Spaces Available	Other Occupied	Faculity & Staff Spaces Available	Students Spaces Available	Other Occupied		
8:00	0	1392	3	0	1573	0		
9:00	0	862	3	0	1032	2		
10:00	0	569	3	0	671	4		
11:00	3	206	4	0	445	4		
13:00	1	261	4	0	457	14		
14:00	2	457	2	0	618	3		
15:00	3	591	3	0	652	3		
16:00	9	863	5	0	869	2		

Other comprised of: visitor, handicap, special permit, etc.

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT A

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	375	133	244	356	355	354	355	304	280
Other	21	4	5	8	9	6	9	7	5
TOTAL	396	137	249	364	364	360	364	311	285

Notes: F=Number Full spaces E= Number of Empty spaces

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INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT B

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	0
Other	8	5	7	7	6	4	5	5	6
TOTAL	8	5	7	7	6	4	5	5	6

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT C

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	478	209	229	266	288	269	263	247	238
Other	13	4	4	3	3	4	3	2	1
TOTAL	491	213	233	269	291	273	266	249	239

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT D

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	351	0	0	2	2	5	4	2	0
Other	4	7	7	8	7	8	7	6	6
TOTAL	355	7	7	10	9	13	11	8	6

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT E

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	162	89	161	163	157	162	160	155	162
Other	6	0	0	0	0	0	0	0	0
TOTAL	168	89	161	163	157	162	160	155	162

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT F

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	253	184	239	247	248	240	243	240	208
Students	0		4						
Other	41	2	11	16	20	22	33	30	25
TOTAL	294	186	254	263	268	262	276	270	233

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT G

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	152	31	70	88	94	92	92	87	88
Students	0	0	0	0	0	0	0	0	0
Other	23	8	8	9	8	8	6	9	9
TOTAL	175	39	78	97	102	100	98	96	97

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT H

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	0
Other	23	4	5	3	8	9	9	7	9
TOTAL									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT I

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff									
Students		Not counted by TDSSW							
Other									
TOTAL									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT J

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff									
Students		Not counted by TDSSW							
Other									
TOTAL									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT K

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	0
Other	14	3	4	5	7	3	3	3	4
TOTAL	14	3	4	5	7	3	3	3	4

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT L

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	0
Other	98	18	25	22	23	24	24	25	23
TOTAL	98	18	25	22	23	24	24	25	23

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT M

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	46	14	13	22	18	21	21	21	32
Other	7	0	0	0	6	0	1	1	1
TOTAL	53	14	13	22	24	21	22	22	33

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT N

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	
Other	9	0	3	5	8	3	0	0	0
TOTAL	9	0	3	5	8	3	0	0	0

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT P

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	0
Other	38	0	0	1	1	1	1	2	1
TOTAL	38	0	0	1	1	1	1	2	1

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT Q

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	42	2	5	6	4	23	9	5	4
Other	4	0	1	2	1	0	0	0	0
TOTAL	46	2	6	8	5	23	9	5	4

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT R

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	19	11	7	10	11	6	12	5	3
Other	8	1	1	2	3	2	3	2	2
TOTAL	27	12	8	12	14	8	15	7	5

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT S

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff									
Students		Not counted by TDSSW							
Other									
TOTAL									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT T

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff									
Students		Not counted by TDSSW							
Other									
Total									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT U

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	141	141	140	139	134	136	138	138	140
Other	6	6	6	6	4	5	6	6	4
Total	160	147	146	145	138	141	144	144	144

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT V

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	66	67	66	66	66	63	66	63	64
Other	18	6	9	9	9	10	11	7	10
Total	84	73	75	75	75	73	77	70	74

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT W

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	349	174	351	340	343	294	333	335	349
Students	0	0	0	0	0	0	0	0	0
Other	4	0	1	3	4	2	1	2	3
Total	353	174	352	343	347	296	334	337	352

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT X

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	97	32	44	57	50	59	60	53	48
Students	380	54	156	246	298	241	209	198	189
Other	6	3	1	1	0	0	0	2	2
Total	483	89	201	304	348	300	269	253	239

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING LOT Y

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff									
Students		Not counted by TDSSW							
Other									
Total									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING PS 1

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	1047	254	368	563	683	719	662	667	744
Students	762	422	759	761	759	724	743	737	703
Other	93	24	36	49	52	54	54	58	48
Total	1902	700	1163	1373	1494	1497	1459	1462	1495

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING PS 2

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	496	174	446	495	494	461	476	457	404
Students	0	0	0	0	0	0	0	0	0
Other	18	8	10	9	9	10	11	8	7
Other (Underground Area)	39	8	20	24	25	25	25	28	27
Total	553	190	476	528	528	496	512	493	438

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING PS 3

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff									
Students		Not counted by TDSSW							
Other									
Total									

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING PS 4

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	560	183	329	437	500	486	476	425	445
Students	1363	911	1358	1334	1345	1201	1263	1275	1329
Other	189	11	30	39	37	23	25	21	26
Total	2112	1105	1717	1810	1882	1710	1764	1721	1800

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING PS 5

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	17	16	17	17	16	17	17	14	13
Students	1379	508	898	1140	1180	1126	1135	1032	950
Other	53	7	11	21	25	25	28	27	26
Total	1449	531	926	1178	1221	1168	1180	1073	989

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING PS 8

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	122	112	133	133	132	131	131	116	110
Students	0	0	0	0	0	0	0	0	0
Other	61	10	22	31	28	41	41	41	34
Total	183	122	155	164	160	172	172	157	144

Notes: F=Number Full spaces E= Number of Empty spaces

INVENTORY SHEET
SAN DIEGO STATE UNIVERSITY
PARKING Bldg 59 (Student Services)

Date: Wed 10/11/06
Counted By:

USE	TOTAL SUPPLY	COUNT TIMES							
		8:00 AM	9:00 AM	10:00 AM	11:00 AM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Faculty/Staff	0	0	0	0	0	0	0	0	0
Students	0	0	0	0	0	0	0	0	0
Other	82	23	35	40	39	51	54	53	56
Total	82	23	35	40	39	51	54	53	56

Notes: F=Number Full spaces E= Number of Empty spaces

Projected Parking Space Inventory Through 2010

Spaces available By Year/Semester

Lots and Structures	2000	2001		2002		2003		2004		2005		2006		2010 +	FUTURE NET CHANGE	NOTES
	F	S	F	S	F	S	F	S	F	S	F	S	F			
A	155	155	464	464	464	155	464	464	464	464	464	464	464	464	-	
B (New @ GMCS)	16	16	-	-	-	-	8	8	8	8	8	8	8	8	-	
C	519	519	278	278	278	519	515	515	515	515	515	515	515	515	-	
D	432	432	310	432	432	432	432	432	432	432	432	432	432		(432)	REMOVE FOR ALVARADO
E \ UPPER	256	256	512	313	514	256	282	282	182	182	182	182	182	182	-	
E \ LOWER (CCC)									79	79	79	79	79	79	-	
F	348	348	260	168	260	260	260	260	263	263	263	263	263	-	(263)	REM FOR FUTURE BUSINESS
G	123	123	11	11	11	11	11	11	11	11	11	267	267	187	(80)	REDUCE FOR ZURA WAY
East H	18	18	23	23	23	18	23	23	23	23	23	23	23	23	-	
I			9	12	9	9	9	9	9	9	9	9	9	-	(9)	TEMP LEASED LOT - NEW LOC
J	111	111	111	111	111	96	96	96	-	-	-	-	-	-	-	REMOVE FOR HEATH CTR
K	14	14	14	14	14	14	14	14	14	14	14	14	14	14	-	
L	105	105	98	105	98	98	98	98	98	98	98	98	98	68	(30)	REDUCE FOR STUDENT UNION
M	51	51	51	51	51	51	51	51	51	51	51	51	51	51	-	
N	30	30	30	30	30	30	30	30	9	9	9	9	9	9	-	
O			12	12	12	12	12	12	-	-	-	-	-	-	-	REMOVE FOR HEATH CTR
P (New @ Leisure Con)	12	12	40	40	40	40	40	-	-	32	32	32	32	-	(32)	RET TO FOUNDATION - PASEO
Q (New @ PS2)	16	16						44	44	44	44	44	44	44	-	
R	12	12	14	12	14	12	14	-	-	-	48	48	48	48	-	REVISED FOR TENNIS - SFBL
S	356	356	367	384	367	359	369		150	150					-	REMOVE FOR AQUATIC CTR
T	29	29	34	29	34	29	34	34	34	34	34	34	34	34	-	
U	152	152	156	87	156	152	156	156	156	156	156	156	156		(156)	REMOVE FOR PS7
V	83	83	83	83	83	97	83	83	83	83	83	83	83	63	(20)	REDUCE FOR INTNTL STUDENTS
W	361	361	61	61	61	61	61	61	383	383	383	383	383	383	-	
X	500	500	450	450	450	450	210	494	500	500	500	500	500	400	(100)	REDUCE FOR PHYSICAL PLANT
Y	24	24	24	24	24	24	24								-	
Z			10	10	10	10	10	10							-	
ALVARADO LOT													657		(657)	TEMP SERGE FOR ALVARADO
TOTAL INNER CORE	356	361	266	256	264	292	347	350	325	235	227	227	215	215	-	
TOTAL SURFACE	4,079	4,084	3,688	3,460	3,810	3,487	3,653	3,537	3,833	3,775	3,665	3,921	4,546	2,787	(1,759)	
PS 1	1,941	1,941	1,921	1,921	1,921	1,921	1,921	1,921	1,921	1,921	1,921	1,921	1,921	1,921	-	
PS 2	600	600	600	600	600	508	508	551	508	508	508	508	508	508	-	
ESCG									39	39	39	39	39	39	-	
PS 3	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	1,871	-	
PS 4	1,970	1,970	1,917	1,917	1,917	1,917	1,917	1,917	1,977	1,977	1,977	1,977	1,977	1,977	-	
SSGAR		80	80	80	80	80	80	80	80	80	80	80	80	80	-	
PS 5	1,372	1,372	1,376	1,376	1,376	1,440	1,376	1,376	1,440	1,440	1,440	1,440	1,440	1,440	-	
PS 6			2,478	2,478	2,478	2,458	2,478	2,458	2,458	2,458	2,458	2,458	2,458	2,458	-	
SHC GAR													62	62	-	
PS 8												219	219	219	-	
PS 7														468	468	
ALVARADO GARAGE														2,071	2,071	
TOTAL STRUCTURES	7,754	7,834	10,243	10,243	10,243	10,195	10,151	10,174	10,294	10,294	10,294	10,513	10,575	13,114	2,539	
TOTAL INVENTORY	11,833	11,918	13,931	13,703	14,053	13,682	13,804	13,711	14,127	14,069	13,959	14,434	15,121	15,901	780	
NET OF PREVIOUS		85	2,013	(228)	350	(371)	122	(93)	416	(58)	(110)	475	687	1,333	2007- 2010+	
CUMULATIVE CHANGE		85	2,098	1,870	2,220	1,849	1,971	1,878	2,294	2,236	2,126	2,601	3,288	4,068		

APPENDIX P

COLLEGE COMMUNITY REDEVELOPMENT EIR MITIGATION MEASURES

CONCEPTUAL PLAN

EXHIBIT C

Developing the conceptual land-use development strategy for the College Community Redevelopment Plan has been a collaborative and unique challenge. Together, the five proposed project areas will revitalize the community surrounding San Diego State University. Besides providing housing and parking for students and faculty, the project will offer the community and SDSU improved infrastructure and other public facilities. University-related office space, research and development facilities; a hotel/conference center and supporting retail space.

PROJECT SITES

A

CORE SUB-AREA
- Student Housing
- Commercial Mixed-Use
- Religious Centers
- Fraternities and Sororities

The land-use program includes: residential apartments ranging from 1,538 to 2,050 units; eighteen fraternities and expansion provisions for three new houses; twelve sororities and expansion provisions for five new houses south of Montezuma Road; relocation of six religious centers in a campus setting along the northwest side of Hardy Avenue; and retail space from 250,000 to 300,000 square feet, serving local community and the University.

B

55TH STREET SUB-AREA
- Faculty/Staff Housing
- Graduate Student Housing

The land-use program includes: 500 to 600 residential units.

C

ALVARADO ROAD SUB-AREA
- University-Serving Office/ Research & Development

The land-use program includes: 600,000 square feet of new office space, serving University-related staff; and 110,000 square feet of research and development space.

D

LOT A SUB-AREA
- Hotel/Conference Center

The land-use program includes: a hotel/conference center ranging from 150 to 300 rooms with 15,000 square feet of conference space, serving the University and the community.

E

MONTEZUMA SCHOOL SUB-AREA
- Institutional

The land-use program includes community-based uses such as: a daycare and preschool; a library; a community park; and the potential opening of a public or private pre-K through eighth grade elementary school.

FIGURE 12-1

SUB-AREA BOUNDARIES

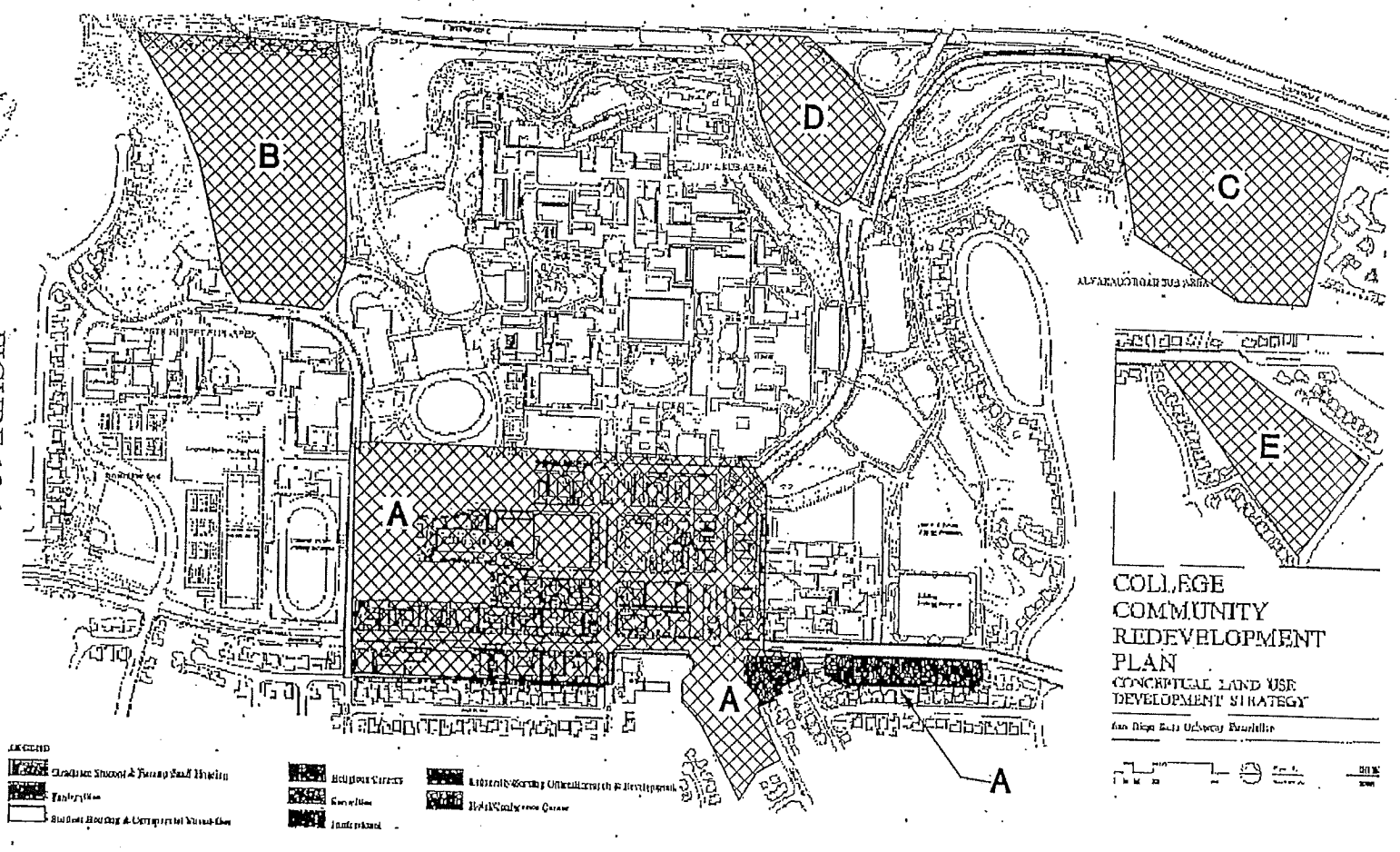

FIGURE 12-1

TABLE 12-1

Environmental Impacts & Mitigation Measures

TABLE 1-1
ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES
(Continued)

TRANSPORTATION

Potential Environmental Impact

Significant impacts to traffic/circulation will occur at nine key intersections and at three key intersections during SAC event inbound and/or outbound peak hours. Six street segments will also experience significant impacts resulting from future average daily traffic levels. Although not proposed as part of the Redevelopment Project, the extension of Waring Road from the Waring Road/I-8 interchange to Canyon Crest Drive as a two-lane roadway was reviewed and several major benefits noted.

Mitigation Measures

Traffic

Transportation Phasing Plan

1. A transportation phasing plan shall be prepared and implemented to address the following issues associated with proposed phases of development within the Project Area:

   a. Traffic improvements phasing (which mitigation measures are required at each stage of development);

   b. Site access (determination of appropriate traffic control to allow access from an individual development project site to the street system); and

   c. Review of individual development project site plans and analysis of internal circulation issues;

   d. Review of project parking demand and determination of required parking spaces based on project site plans.

College Avenue

2. College Avenue shall be widened to six lanes between Montezuma Road and Interstate 8. The College Avenue bridge over I-8 shall be widened to include three northbound lanes and two southbound lanes. College Avenue shall be realigned in the area north of Lindo Paseo to eliminate the existing substandard curve.

3. As part of the College Avenue widening project, a signal should be installed to accommodate left turn access into the SDSU parking structure east of College Avenue. This signal is required because the City of San Diego does not typically allow unsignalized access to a six-lane roadway.

4. As part of the College Avenue widening project, the existing grade-separated pedestrian access to the campus shall be maintained and/or lengthened as necessary to continue to provide grade-separated pedestrian access.

70th Street

5. 70th Street shall be widened to six lanes through the Alvarado Road intersection and over the I-8 bridge, as recommended in the College Area Community Plan.

Alvarado Road

6. Alvarado Road shall be widened to two through lanes plus a two-way left turn lane between College Avenue and 70th Street with the widening to occur to the south of existing Alvarado Road; the road shall be realigned to eliminate existing substandard curves in the area east of College Avenue.

TABLE 12-1

Environmental Impacts & Mitigation Measures

TABLE 1-1
ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES
(Continued)

55th Street

7. 55th Street shall be widened to a four-lane collector between Montezuma Road and Hardy Avenue.

College Avenue/Montezuma Road Intersection and Vicinity (mitigation to achieve level of service D)

8. College Avenue shall be widened to six through lanes.

9. Double left turn lanes shall be provided for southbound, eastbound, and westbound movements.

10. A separate right turn land northbound shall be provided.

11. Median breaks at College Avenue/College Place and Montezuma Road/Rockford Road shall be closed and only right turns in and out will be allowed at these locations.

Montezuma Road/Campanile Drive Intersection

12. A double left turn lane southbound shall be provided (required mitigation for the SAC).

13. A separate right turn lane northbound shall be provided.

El Cajon Boulevard/College Avenue Intersection and Vicinity (mitigation to achieve level of service D)

14. College Avenue shall be widened to six through lanes in the vicinity of El Cajon Boulevard with transition to four through lanes outside the intersection area.

15. Eastbound and westbound separate right turn lanes shall be provided.

16. Double left turn lanes northbound and southbound shall be provided.

College Avenue/Linda Paseo Intersection

17. College Avenue shall be widened to six through lanes.

18. Double left turn lanes, a through lane, and a right turn lane eastbound shall be provided.

19. A left turn lane, through lane, and right turn lane westbound shall be provided.

20. A separate right turn land northbound shall be provided.

College Avenue/Navajo Road Intersection

21. Two through lanes and two separate right turn lanes shall be provided on the northbound approach.

Montezuma Road/55th Street Intersection

22. A left turn lane, left/through/right lane, and a right turn lane on the southbound approach shall be provided (required mitigation for the SAC).

TABLE 12-1

Environmental Impacts & Mitigation Measures

TABLE 1-1
ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES
(Continued)

College Avenue/Canyon Crest Drive Intersection (mitigation to achieve level of service D)

23. College Avenue shall be widened to six through lanes.

24. A left turn lane, a left/through, and a right turn lane eastbound shall be provided.

25. A left turn lane, a left/through, and double right turn lanes westbound shall be provided.

26. As an alternative to widening Canyon Crest Drive/Alvarado Road along its present alignment, consider the re-routing Alvarado Road directly through the SDSU parking lot C during the preliminary design of the Alvarado Road widening and the College Avenue/ Canyon Crest Drive intersection improvement.

Alvarado Road/70th Street Intersection

27. 70th Street shall be widened to six through lanes through this intersection and the 70th Street interchange with I-8. 70th Street shall transition to four through lanes north of I-8 and south of Alvarado Road.

28. A left turn lane, through lane, and right turn lane on the eastbound approach shall be provided.

El Cajon Boulevard/70th Street (mitigation to achieve level of service D)

29. Double left turn lanes and a separate right turn lane eastbound shall be provided.

Montezuma Road/Collwood Boulevard (mitigation to achieve level of service D)

30. Double left turn lanes westbound shall be provided.

Remington Road/55th Street

31. A traffic signal shall be installed and a separate left turn lane eastbound shall be provided. Remington Road and 55th Street (westbound) shall be widened to accommodate two through lanes eastbound an a through and through/right lane westbound. One additional left turn lane south bound shall be provided (all improvements are required as mitigation for the SAC).

Hardy Street/Campanile Drive Intersection

32. A traffic signal shall be installed if this intersection is in existence after development of this portion of the Project Area.

Lindo Paseo/Campanile Drive Intersection

33. A traffic signal shall be installed if this intersection is in existence after development of this portion of the Project Area.

55th Street/Lindo Paseo Intersection

34. A traffic signal shall be installed if this intersection is in existence after development of this portion of the Project Area.

Traffic Signal Interconnect

35. A system to interconnect all existing and future traffic signals in the study area shall be implemented. This may be accomplished through integration with the City's central traffic signal system or implementation of one or more local signal systems.

Travel Demand Management

36. Travel demand management strategies will be implemented to meet or exceed city-wide and regional requirements.

TABLE 12-1

Environmental Impacts & Mitigation Measures

TABLE 1-1
ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES
(Continued)

Ridesharing/Van Pooling

37. Development within the Core Sub-Area, Alvarado Road Sub-Area, and Lot A Sub-Area shall meet or exceed the region-wide and city-wide standards related to carpooling/vanpooling.

Bicycling/Walking

38. Development within the Project Area shall finance its fair share of bicycle and pedestrian facilities which are part of roadway improvement projects constructed as Redevelopment Project mitigation.

39. To the extent which bicycle and pedestrian facilities are included in a community-wide facilities financing plan for transportation improvements, development within the Project Area shall contribute a fair share toward such improvements. This fair share should be calculated as the proportion of roadway financing required from the project compared to the total roadway financing cost.

40. All site plans for individual development projects proposed within the Project Area shall meet or exceed city standards which are in place at the time of their approval for the encouragement of bicycling and walking as transportation modes.

Transit

41. The SDSU Foundation should implement two shuttle bus routes to serve the campus area and the Project Area. One route should connect the SDSU transit center with the proposed Trolley station at College Avenue and I-8. The second proposed route would serve the campus area as well as the Alvarado Road and 55th Street Sub-Areas. Other routings are possible to meet the intent of the recommended shuttle service. Shuttle service to the Trolley station should be on 15 minute headways from 6:00 AM to 11:00 PM. Shuttle service to the 55th Street/Alvarado Road Sub-Area should be on 15 minute headways from 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM, and on 30 minute headways at other periods of the day with operation from 6:00 AM to 8:00 PM. If the alternative of routing the Trolley line through the campus is implemented, the shuttle between the campus and the I-8/College Avenue area willnot be required.

42. The SDSU Foundation should work with the University, the City of San Diego, and the College Area Community to encourage the extension of the trolley line to the SDSU campus in order to improve traffic conditions.

43. All site plans for individual development projects within the Project Area should meet or exceed City standards which are in place at the time of their approval for the encouragement of transit use.

Impact After Mitigation

With implementation of the identified mitigation measures following the evaluation of proposed individual development projects, impacts to traffic/circulation can be reduced to a less than significant level.

PUBLIC SERVICES

Potential Environmental Impact

Law Enforcement

Demand for University Police Services will increase as a result of development within the Project Area.

Health Services

Demand for student health services will increase as a result of development within the Project Area.

APPENDIX Q

FAIR SHARE CONTRIBUTION CALCULATIONS

SDSU 2007 Master Plan Revision

FAIR SHARE CONTRIBUTION CALCULATIONS

DIRECT IMPACTS

Impacted Locations	Near-Term Project Traffic	Horizon Year + Project	Existing Traffic	Total % Fair Share [5]
Intersections [1]				
A-1 College Ave / Del Cerro Blvd	95	7,853	5,777	5%
A-2 College Ave / I-8 EB Ramps	213	13,867	8,616	4%
A-3 College Ave / Canyon Crest Dr	276	12,665	7,714	6%
A-4 College Ave / Zura Way	100	8,229	5,167	3%
A-5 College Ave / Montezuma Rd	81	10,758	6,991	2%
A-6 I-8 WB Ramps / Parkway Dr	17	2,835	1,886	2%
Segments [2]				
B-1 Alvarado Rd: E. Campus Dr to Reservoir Dr	270	17,510	8,300	3%
B-2 Alvarado Rd: Reservoir Dr to 70th St	270	18,520	9,890	3%
B-3 College Ave: I-8 EB Ramps to Zura Way	1,460	76,140	39,400	4%
Ramps [3]				
C-1 Northbound College Ave to Eastbound I-8	14	1,079	522	3%
Freeways [4]				
D-1 I-8: College Ave to Lake Murray Blvd	370	234,030	214,000	2%
D-2 I-8: Lake Murray Blvd to Fletcher Pkwy	570	207,950	201,000	8%

Footnotes:

1. Intersection fair share contributions are calculated using entering AM and PM peak hour volumes.
2. Segment fair share contributions are calculated using ADT volumes.
3. Ramp fair share contributions are calculated using entering AM and PM peak hour volumes.
4. Freeway mainline fair share contributios are calculated using ADT volumes.
5. Fair Share Percentage = Near-Term Project Traffic / (Horizon Year + Project - Existing Traffic)

SDSU 2007 Master Plan Revision

FAIR SHARE CONTRIBUTION CALCULATIONS

CUMULATIVE IMPACTS

Impacted Locations	Horizon Year Project Traffic	Horizon Year + Project	Existing Traffic	% Fair Share [5]
Intersections [1]				
E-1 I-8 WB Off ramp/ Fairmount Avenue	25	11,845	9,327	1%
E-2 55th St / Montezuma Road	229	7,496	5,506	12%
E-3 Campanile Dr / Montezuma Road	202	6,842	4,386	8%
E-4 College Ave / Del Cerro Blvd	355	7,853	5,777	17%
E-5 College Ave / I-8 WB Ramps	582	10,246	7,232	19%
E-6 College Ave / I-8 EB Ramps	823	13,867	8,616	16%
E-7 College Ave / Canyon Crest Dr	1,114	12,665	7,714	23%
E-8 College Ave / Zura Way	476	8,229	5,167	16%
E-9 College Ave / Montezuma Rd	402	10,758	6,991	11%
E-10 Alvarado Ct / Alvarado Rd	660	3,452	1,325	31%
E-11 Reservoir Dr / Alvarado Rd	290	3,086	1,672	21%
E-12 Lake Murray Blvd / Parkway Dr	143	7,142	5,306	8%
E-13 70th St / Alvarado Rd	243	11,976	7,351	5%
E-14 I-8 WB Ramps / Parkway Dr	108	2,835	1,886	11%
E-15 I-8 EB Ramps / Alvarado Rd	100	7,142	4,693	4%
Segments [2]				
F-1 Alvarado Rd: E. Campus Dr to Reservoir Dr	3,560	17,510	8,300	39%
F-2 Alvarado Rd: Reservoir Dr to 70th St	2,070	18,520	9,890	24%
F-3 College Ave: Del Cerro Blvd to I-8 EB Ramps	2,170	54,970	29,530	9%
F-4 College Ave: I-8 EB Ramps to Zura Way	6,570	76,140	39,400	18%
F-5 College Ave: Zura Way to Montezuma Rd	2,840	56,040	33,950	13%
F-6 College Ave: South of Montezuma Rd	1,710	40,200	30,220	17%
F-7 Montezuma Rd: Fairmount Ave to Collwood Blvd	1,280	58,280	49,820	15%
F-8 Montezuma Rd: 55th St to College Ave	1,580	35,010	24,460	15%
Ramps [3]				
G-1 Northbound College Ave to Eastbound I-8	69	1,079	522	12%
Freeways [4]				
H-1 I-8: Fairmount Ave to Waring Rd	2,910	265,910	251,000	20%
H-2 I-8: Waring Rd to College Ave	2,910	247,910	238,000	29%
H-3 I-8: College Ave to Lake Murray Blvd	2,030	234,030	214,000	10%
H-4 I-8: Lake Murray Blvd to Fletcher Pkwy	2,950	207,950	201,000	42%

Footnotes:

1. Intersection fair share contributions are calculated using entering AM and PM peak hour volumes.
2. Segment fair share contributions are calculated using ADT volumes.
3. Ramp fair share contributions are calculated using entering AM and PM peak hour volumes.
4. Freeway mainline fair share contributios are calculated using ADT volumes.
5. Fair Share Percentage = Horizon Year Project Traffic / (Horizon Year + Project - Existing Traffic)

APPENDIX R

MITIGATED INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.98		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1835	1583	3433	1714		1770	3539	1583	1770	3519	
Flt Permitted		0.99	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1835	1583	3433	1714		1770	3539	1583	1770	3519	
Volume (vph)	120	281	213	523	104	64	91	561	225	70	934	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	305	232	568	113	70	99	610	245	76	1015	24
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	195	0	1	0
Lane Group Flow (vph)	0	435	232	568	162	0	99	610	50	76	1038	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	22.2	22.2		14.0	37.3	22.2	7.6	30.9	
Effective Green, g (s)		26.0	14.0	22.2	22.2		14.0	37.3	22.2	7.6	30.9	
Actuated g/C Ratio		0.24	0.13	0.20	0.20		0.13	0.34	0.20	0.07	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		437	203	699	349		227	1210	322	123	997	
v/s Ratio Prot		c0.24	c0.15	c0.17	0.11		0.06	0.17	0.15	0.04	c0.30	
v/s Ratio Perm												
v/c Ratio		1.00	1.14	0.81	0.47		0.44	0.50	0.15	0.62	1.04	
Uniform Delay, d1		41.5	47.5	41.5	38.2		43.9	28.5	35.7	49.3	39.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		41.6	106.9	7.2	1.0		1.3	1.5	0.2	8.9	39.6	
Delay (s)		83.1	154.5	48.6	39.2		45.2	30.0	36.0	58.2	78.7	
Level of Service		F	F	D	D		D	C	D	E	E	
Approach Delay (s)		107.9			46.3			33.1			77.3	
Approach LOS		F			D			C			E	

Intersection Summary

HCM Average Control Delay	64.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	109.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.91	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					5085	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					5085	1536		3539	1536
Volume (vph)	476	0	1961	0	0	0	0	923	236	0	901	330
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	517	0	2132	0	0	0	0	1003	257	0	979	359
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	517	0	2123	0	0	0	0	1003	257	0	979	359
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	62.0		62.0					30.0	100.0		30.0	100.0
Effective Green, g (s)	62.0		62.0					30.0	100.0		30.0	100.0
Actuated g/C Ratio	0.62		0.62					0.30	1.00		0.30	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2048		2129					1526	1536		1062	1536
v/s Ratio Prot								0.20			c0.28	
v/s Ratio Perm	0.16		0.62						0.17			0.23
v/c Ratio	0.25		1.00					0.66	0.17		0.92	0.23
Uniform Delay, d1	8.6		18.9					30.5	0.0		33.9	0.0
Progression Factor	1.00		1.00					0.33	1.00		0.95	1.00
Incremental Delay, d2	0.1		18.7					1.8	0.2		13.8	0.3
Delay (s)	8.6		37.6					11.9	0.2		46.1	0.3
Level of Service	A		D					B	A		D	A
Approach Delay (s)		32.0			0.0			9.5			33.8	
Approach LOS		C			A			A			C	

Intersection Summary

HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1798	1506		1820	1583	1770	5085	1506	3433	5085	2787
Flt Permitted		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1798	1506		1820	1583	1770	5085	1506	3433	5085	2787
Volume (vph)	72	28	56	106	121	173	183	931	84	549	1329	984
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	30	61	115	132	188	199	1012	91	597	1445	1070
RTOR Reduction (vph)	0	0	51	0	0	150	0	0	63	0	0	818
Lane Group Flow (vph)	0	108	10	0	247	38	199	1012	28	597	1445	252
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		16.3	16.3		16.6	20.4	16.0	30.7	30.7	20.4	35.1	16.3
Effective Green, g (s)		16.3	16.3		16.6	20.4	16.0	30.7	30.7	20.4	35.1	16.3
Actuated g/C Ratio		0.16	0.16		0.17	0.20	0.16	0.31	0.31	0.20	0.35	0.16
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		293	245		302	323	283	1561	462	700	1785	454
v/s Ratio Prot		0.06			c0.14	0.12	0.11	c0.20		0.17	c0.28	c0.38
v/s Ratio Perm			0.04						0.06			
v/c Ratio		0.37	0.04		0.82	0.12	0.70	0.65	0.06	0.85	0.81	0.56
Uniform Delay, d1		37.3	35.3		40.2	32.5	39.8	30.0	24.5	38.4	29.4	38.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.97	0.92	1.47
Incremental Delay, d2		0.8	0.1		15.6	0.2	7.7	2.1	0.3	3.0	1.2	0.4
Delay (s)		38.1	35.3		55.9	32.6	47.4	32.1	24.7	40.3	28.2	57.1
Level of Service		D	D		E	C	D	C	C	D	C	E
Approach Delay (s)		37.1			45.8			33.9			40.4	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.91	1.00	0.97	0.91	0.88
Frpb, ped/bikes		1.00	0.95		1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1781	1506		1785	1583	1770	5085	1506	3433	5085	2787
Flt Permitted		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1781	1506		1785	1583	1770	5085	1506	3433	5085	2787
Volume (vph)	474	44	80	102	16	372	75	1728	129	273	1368	128
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	515	48	87	111	17	404	82	1878	140	297	1487	139
RTOR Reduction (vph)	0	0	62	0	0	328	0	0	70	0	0	101
Lane Group Flow (vph)	0	563	25	0	128	76	82	1878	70	297	1487	38
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0		12.0	14.5	8.7	33.5	33.5	14.5	39.3	24.0
Effective Green, g (s)		24.0	24.0		12.0	14.5	8.7	33.5	33.5	14.5	39.3	24.0
Actuated g/C Ratio		0.24	0.24		0.12	0.14	0.09	0.34	0.34	0.14	0.39	0.24
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		427	361		214	230	154	1703	505	498	1998	669
v/s Ratio Prot		c0.32			c0.07	c0.26	0.05	c0.37		0.09	0.29	0.05
v/s Ratio Perm			0.06						0.09			
v/c Ratio		1.32	0.07		0.60	0.33	0.53	1.10	0.14	0.60	0.74	0.06
Uniform Delay, d1		38.0	29.4		41.7	38.4	43.7	33.2	23.2	40.0	26.0	29.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.09	0.89	1.59
Incremental Delay, d2		159.1	0.1		4.4	0.8	3.5	55.7	0.6	1.7	2.2	0.0
Delay (s)		197.1	29.5		46.2	39.2	47.2	88.9	23.7	45.2	25.4	46.5
Level of Service		F	C		D	D	D	F	C	D	C	D
Approach Delay (s)		174.6			40.9			82.9			30.0	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	70.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.91	1.00	1.00	0.95
Frpb, ped/bikes		0.95	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.86	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1535	5085	1583	1770	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1535	5085	1583	1770	3539
Volume (vph)	0	534	1310	93	269	1310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	580	1424	101	292	1424
RTOR Reduction (vph)	0	371	0	65	0	0
Lane Group Flow (vph)	0	209	1424	36	292	1424
Confl. Peds. (#/hr)		20		20	20	
Turn Type		custom		Prot	Prot	
Protected Phases			4	4	1	6
Permitted Phases		8				
Actuated Green, G (s)		34.4	34.4	34.4	53.1	53.1
Effective Green, g (s)		34.4	34.4	34.4	53.1	53.1
Actuated g/C Ratio		0.36	0.36	0.36	0.56	0.56
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		553	1832	570	984	1968
v/s Ratio Prot			0.28	0.06	0.17	c0.40
v/s Ratio Perm		0.38				
v/c Ratio		0.38	0.78	0.06	0.30	0.72
Uniform Delay, d1		22.6	27.1	20.0	11.3	15.7
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	2.1	0.0	0.2	2.3
Delay (s)		23.1	29.3	20.1	11.4	18.1
Level of Service		C	C	C	B	B
Approach Delay (s)	23.1		28.7			17.0
Approach LOS	C		C			B

Intersection Summary

HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1459	1770	3539	1461	3433	5085	1463	1770	5085	1463
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1459	1770	3539	1461	3433	5085	1463	1770	5085	1463
Volume (vph)	288	297	135	34	636	221	549	942	160	138	404	206
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	323	147	37	691	240	597	1024	174	150	439	224
RTOR Reduction (vph)	0	0	115	0	0	184	0	0	130	0	0	167
Lane Group Flow (vph)	313	323	32	37	691	56	597	1024	44	150	439	57
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	20.7	20.7	20.7	22.0	22.0	22.0	12.1	24.2	24.2	12.1	24.2	24.2
Effective Green, g (s)	20.7	20.7	20.7	22.0	22.0	22.0	12.1	24.2	24.2	12.1	24.2	24.2
Actuated g/C Ratio	0.22	0.22	0.22	0.23	0.23	0.23	0.13	0.25	0.25	0.13	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	386	771	318	410	820	338	437	1295	373	225	1295	373
v/s Ratio Prot	c0.18	0.09		0.02	c0.20		c0.17	c0.20		0.08	0.09	
v/s Ratio Perm			0.10			0.16			0.12			0.15
v/c Ratio	0.81	0.42	0.10	0.09	0.84	0.16	1.37	0.79	0.12	0.67	0.34	0.15
Uniform Delay, d1	35.3	32.0	29.7	28.6	34.8	29.2	41.5	33.0	27.2	39.5	28.9	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	0.4	0.1	0.1	7.9	0.2	178.9	5.0	0.6	7.3	0.7	0.9
Delay (s)	47.5	32.3	29.8	28.7	42.7	29.4	220.4	38.0	27.9	46.8	29.6	28.3
Level of Service	D	C	C	C	D	C	F	D	C	D	C	C
Approach Delay (s)		37.9			38.9			97.7			32.4	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	61.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1461	1770	3539	1458	3433	5085	1461	1770	5085	1461
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1461	1770	3539	1458	3433	5085	1461	1770	5085	1461
Volume (vph)	680	745	568	179	501	191	419	655	52	257	800	190
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	739	810	617	195	545	208	455	712	57	279	870	207
RTOR Reduction (vph)	0	0	280	0	0	164	0	0	43	0	0	155
Lane Group Flow (vph)	739	810	337	195	545	44	455	712	14	279	870	52
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	24.0	24.0	20.3	20.3	20.3	12.0	24.0	24.0	12.0	24.0	24.0
Effective Green, g (s)	24.0	24.0	24.0	20.3	20.3	20.3	12.0	24.0	24.0	12.0	24.0	24.0
Actuated g/C Ratio	0.25	0.25	0.25	0.21	0.21	0.21	0.12	0.25	0.25	0.12	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	441	882	364	373	746	307	428	1267	364	221	1267	364
v/s Ratio Prot	0.42	0.23		0.11	c0.15		0.13	0.14		c0.16	c0.17	
v/s Ratio Perm			0.42			0.14			0.04			0.14
v/c Ratio	1.68	0.92	0.93	0.52	0.73	0.14	1.06	0.56	0.04	1.26	0.69	0.14
Uniform Delay, d1	36.1	35.2	35.3	33.7	35.4	30.9	42.1	31.6	27.4	42.1	32.7	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	313.9	14.2	28.8	1.3	3.7	0.2	61.2	1.8	0.2	149.1	3.0	0.8
Delay (s)	350.0	49.4	64.1	35.0	39.1	31.1	103.4	33.4	27.6	191.3	35.8	28.9
Level of Service	F	D	E	D	D	C	F	C	C	F	D	C
Approach Delay (s)		156.2			36.5			59.1			66.7	
Approach LOS		F			D			E			E	

Intersection Summary

HCM Average Control Delay	94.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863		1770	1863	1770	1504
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863		1770	1863	1770	1504
Volume (vph)	187	0	87	108	553	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	0	95	117	601	84
RTOR Reduction (vph)	0	0	0	0	0	33
Lane Group Flow (vph)	203	0	95	117	601	51
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.5		8.6	27.1	53.3	53.3
Effective Green, g (s)	14.5		8.6	27.1	53.3	53.3
Actuated g/C Ratio	0.16		0.10	0.31	0.60	0.60
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306		172	571	1067	907
v/s Ratio Prot	c0.11		c0.05	0.06	c0.34	
v/s Ratio Perm						0.06
v/c Ratio	0.66		0.55	0.20	0.56	0.06
Uniform Delay, d1	34.7		38.1	22.7	10.6	7.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3		3.8	0.2	2.2	0.1
Delay (s)	40.0		41.9	22.9	12.7	7.3
Level of Service	D		D	C	B	A
Approach Delay (s)	40.0			31.4	12.0	
Approach LOS	D			C	B	

Intersection Summary

HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1751	1583	1610	2998	1441	1770	4945		3433	5085	1461
Flt Permitted	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1751	1583	1610	2998	1441	1770	4945		3433	5085	1461
Volume (vph)	30	20	380	460	410	690	400	1421	200	20	1129	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	22	413	500	446	750	435	1545	217	22	1227	130
RTOR Reduction (vph)	0	0	141	0	15	371	0	12	0	0	0	77
Lane Group Flow (vph)	27	28	272	376	752	182	435	1750	0	22	1227	53
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.9	6.9	37.1	52.7	52.7	18.1	37.1	66.3		18.1	47.3	47.3
Effective Green, g (s)	6.9	6.9	37.1	52.7	52.7	18.1	37.1	66.3		18.1	47.3	47.3
Actuated g/C Ratio	0.04	0.04	0.23	0.33	0.33	0.11	0.23	0.41		0.11	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	72	76	367	530	987	163	410	2049		388	1503	432
v/s Ratio Prot	c0.02	0.02	c0.26	0.23	c0.26	c0.38	0.25	c0.36		0.01	0.24	
v/s Ratio Perm												0.09
v/c Ratio	0.38	0.37	0.74	0.71	0.76	1.12	1.06	0.85		0.06	0.82	0.12
Uniform Delay, d1	74.5	74.4	57.0	46.9	48.0	71.0	61.5	42.5		63.3	52.3	41.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.04		1.00	1.00	1.00
Incremental Delay, d2	3.3	3.0	7.8	4.3	3.5	105.8	56.6	3.8		0.1	5.0	0.6
Delay (s)	77.7	77.4	64.8	51.3	51.5	176.7	122.2	47.9		63.4	57.3	41.7
Level of Service	E	E	E	D	D	F	F	D		E	E	D
Approach Delay (s)		66.3			92.3			62.6			56.0	
Approach LOS		E			F			E			E	

Intersection Summary

HCM Average Control Delay	70.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.91	0.86	0.91	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1739	1583	1610	3093	1441	1770	4884		3433	5085	1461
Flt Permitted	0.95	0.98	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1739	1583	1610	3093	1441	1770	4884		3433	5085	1461
Volume (vph)	240	120	1090	850	170	585	320	1025	220	20	1805	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	130	1185	924	185	636	348	1114	239	22	1962	130
RTOR Reduction (vph)	0	0	127	0	0	249	0	21	0	0	0	45
Lane Group Flow (vph)	190	201	1058	462	647	387	348	1332	0	22	1962	85
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			5			5			10			10
Turn Type	Split		Over	Split		Over	Prot			Prot		Perm
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.0	16.0	47.0	29.0	29.0	36.0	47.0	63.0		36.0	52.0	52.0
Effective Green, g (s)	16.0	16.0	47.0	29.0	29.0	36.0	47.0	63.0		36.0	52.0	52.0
Actuated g/C Ratio	0.10	0.10	0.29	0.18	0.18	0.22	0.29	0.39		0.22	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	168	174	465	292	561	324	520	1923		772	1653	475
v/s Ratio Prot	0.11	c0.12	c0.75	c0.29	0.21	0.44	0.20	0.28		0.01	c0.39	
v/s Ratio Perm												0.09
v/c Ratio	1.13	1.16	2.27	1.58	1.58dl	1.20	0.67	0.69		0.03	1.19	0.18
Uniform Delay, d1	72.0	72.0	56.5	65.5	65.5	62.0	49.7	40.4		48.4	54.0	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.11	0.94		1.00	1.00	1.00
Incremental Delay, d2	109.0	116.1	580.6	277.8	87.9	114.0	3.0	1.9		0.0	90.5	0.8
Delay (s)	181.0	188.1	637.1	343.3	153.4	176.0	58.1	40.0		48.4	144.5	39.5
Level of Service	F	F	F	F	F	F	E	D		D	F	D
Approach Delay (s)		524.8			211.9			43.7			137.1	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	218.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.71		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	138.4%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		1.00		0.95	0.91	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.92		0.99		1.00	0.96	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.98		1.00	0.94	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.98	1.00
Satd. Flow (prot)	3433	3505		1770	3539	1457		1742		1681	1494	1373
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.98	1.00
Satd. Flow (perm)	3433	3505		1770	3539	1457		1742		1681	1494	1373
Volume (vph)	1114	560	20	20	903	375	50	10	10	143	10	172
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1211	609	22	22	982	408	54	11	11	155	11	187
RTOR Reduction (vph)	0	2	0	0	0	278	0	6	0	0	24	118
Lane Group Flow (vph)	1211	629	0	22	982	130	0	70	0	98	93	20
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	27.0	60.6		2.0	35.6	35.6		17.0		16.0	16.0	16.0
Effective Green, g (s)	27.0	60.6		2.0	35.6	35.6		17.0		16.0	16.0	16.0
Actuated g/C Ratio	0.24	0.54		0.02	0.32	0.32		0.15		0.14	0.14	0.14
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	831	1903		32	1129	465		265		241	214	197
v/s Ratio Prot	c0.35	0.18		0.01	0.28			c0.04		0.06	0.08	
v/s Ratio Perm						0.28						0.10
v/c Ratio	1.46	0.33		0.69	0.87	0.28		0.26		0.41	0.43	0.10
Uniform Delay, d1	42.3	14.2		54.5	35.8	28.4		41.8		43.5	43.7	41.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	212.5	0.1		47.1	7.3	0.3		2.4		5.0	6.3	1.0
Delay (s)	254.8	14.3		101.6	43.2	28.7		44.2		48.5	50.0	42.6
Level of Service	F	B		F	D	C		D		D	D	D
Approach Delay (s)		172.4			39.9			44.2			46.7	
Approach LOS		F			D			D			D	

Intersection Summary

HCM Average Control Delay	106.9	HCM Level of Service	F
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00		1.00		0.95	0.91	0.95
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92		0.98		1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (prot)	3433	3498		1770	3539	1461		1715		1681	1620	1383
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (perm)	3433	3498		1770	3539	1461		1715		1681	1620	1383
Volume (vph)	439	1345	60	30	907	207	60	10	20	575	20	436
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	477	1462	65	33	986	225	65	11	22	625	22	474
RTOR Reduction (vph)	0	3	0	0	0	148	0	9	0	0	0	277
Lane Group Flow (vph)	477	1524	0	33	986	77	0	89	0	322	325	197
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	15.0	49.4		2.3	36.7	36.7		17.0		23.1	23.1	23.1
Effective Green, g (s)	15.0	49.4		2.3	36.7	36.7		17.0		23.1	23.1	23.1
Actuated g/C Ratio	0.14	0.46		0.02	0.34	0.34		0.16		0.21	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	478	1603		38	1205	497		270		360	347	296
v/s Ratio Prot	c0.14	c0.44		0.02	0.28			c0.06		0.19	0.20	
v/s Ratio Perm						0.15						0.34
v/c Ratio	1.00	0.95		0.87	0.82	0.15		0.33		0.89	0.94	0.67
Uniform Delay, d1	46.4	28.0		52.6	32.5	24.7		40.3		41.2	41.6	38.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	40.3	12.7		93.8	4.4	0.1		3.2		27.0	34.6	11.3
Delay (s)	86.7	40.7		146.4	36.9	24.9		43.6		68.2	76.3	50.1
Level of Service	F	D		F	D	C		D		E	E	D
Approach Delay (s)		51.7			37.7			43.6			62.9	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	50.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	107.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00	0.91	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	3521		1770	3379			1814	1448	3221	1653	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	3521		1770	3379			1814	1448	3221	1653	1583
Volume (vph)	132	540	10	98	1375	271	34	29	104	126	26	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	587	11	107	1495	295	37	32	113	137	28	120
RTOR Reduction (vph)	0	1	0	0	15	0	0	0	96	0	0	111
Lane Group Flow (vph)	143	597	0	107	1775	0	0	69	17	108	57	9
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split		Perm	Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases									2			
Actuated Green, G (s)	8.0	50.0		11.0	53.0			17.0	17.0	16.0	16.0	8.0
Effective Green, g (s)	8.0	50.0		11.0	53.0			17.0	17.0	16.0	16.0	8.0
Actuated g/C Ratio	0.07	0.45		0.10	0.48			0.15	0.15	0.15	0.15	0.07
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	129	1600		177	1628			280	224	469	240	115
v/s Ratio Prot	c0.08	0.17		0.06	c0.53			0.04		0.03	c0.03	0.08
v/s Ratio Perm									0.08			
v/c Ratio	1.11	0.37		0.60	1.09			0.25	0.08	0.23	0.24	0.08
Uniform Delay, d1	51.0	19.7		47.4	28.5			40.9	39.8	41.6	41.6	47.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	111.3	0.1		5.7	51.2			2.1	0.7	1.1	2.3	0.3
Delay (s)	162.3	19.9		53.1	79.7			43.0	40.5	42.7	43.9	47.8
Level of Service	F	B		D	E			D	D	D	D	D
Approach Delay (s)		47.4			78.2			41.4			45.1	
Approach LOS		D			E			D			D	

Intersection Summary

HCM Average Control Delay	65.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.97			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1770	3517		1770	3348			1821	1583	3221	1652	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1770	3517		1770	3348			1821	1583	3221	1652	1583
Volume (vph)	174	1540	35	248	887	217	32	39	152	378	75	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1674	38	270	964	236	35	42	165	411	82	228
RTOR Reduction (vph)	0	2	0	0	20	0	0	0	165	0	0	198
Lane Group Flow (vph)	189	1710	0	270	1180	0	0	77	0	323	170	30
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Split		NA	Split		Over
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												
Actuated Green, G (s)	14.3	47.0		14.0	46.7			17.0	0.0	16.0	16.0	14.3
Effective Green, g (s)	14.3	47.0		14.0	46.7			17.0	0.0	16.0	16.0	14.3
Actuated g/C Ratio	0.13	0.43		0.13	0.42			0.15	0.00	0.15	0.15	0.13
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	230	1503		225	1421			281	0	469	240	206
v/s Ratio Prot	0.11	c0.49		c0.15	0.36			c0.04		0.10	c0.10	0.14
v/s Ratio Perm												
v/c Ratio	0.82	1.14		1.20	0.83			0.27	0.00	0.69	0.71	0.14
Uniform Delay, d1	46.6	31.5		48.0	28.1			41.1	55.0	44.6	44.8	42.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.5	70.7		124.7	4.3			2.4	0.0	8.0	16.2	0.3
Delay (s)	67.1	102.2		172.7	32.4			43.5	55.0	52.7	61.0	42.7
Level of Service	E	F		F	C			D	D	D	E	D
Approach Delay (s)		98.7			58.2			51.3			51.5	
Approach LOS		F			E			D			D	

Intersection Summary

HCM Average Control Delay	74.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.98		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1834	1583	3221	1575		1770	3539	1583	1770	3515	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1834	1583	3221	1575		1770	3539	1583	1770	3515	
Volume (vph)	157	350	321	655	130	80	130	667	281	90	1125	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	380	349	712	141	87	141	725	305	98	1223	35
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	239	0	2	0
Lane Group Flow (vph)	0	551	349	626	301	0	141	725	66	98	1256	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		26.0	14.0	23.6	23.6		14.0	34.7	23.6	9.4	30.1	
Effective Green, g (s)		26.0	14.0	23.6	23.6		14.0	34.7	23.6	9.4	30.1	
Actuated g/C Ratio		0.24	0.13	0.22	0.22		0.13	0.32	0.22	0.09	0.27	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		435	202	693	339		226	1119	341	152	964	
v/s Ratio Prot		c0.30	c0.22	0.19	c0.20		0.08	0.20	0.19	0.06	c0.36	
v/s Ratio Perm												
v/c Ratio		1.27	1.73	0.90	0.89		0.62	0.65	0.19	0.64	1.30	
Uniform Delay, d1		41.9	47.9	41.9	41.8		45.4	32.2	35.2	48.5	39.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		137.2	347.4	15.1	23.4		5.3	2.9	0.3	9.0	143.8	
Delay (s)		179.0	395.3	57.1	65.2		50.6	35.2	35.5	57.6	183.6	
Level of Service		F	F	E	E		D	D	D	E	F	
Approach Delay (s)		262.9			59.8			37.1			174.5	
Approach LOS		F			E			D			F	

Intersection Summary

HCM Average Control Delay	131.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	0.96		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1825	1583	3221	1472		1770	3539	1583	1770	3492	
Flt Permitted		0.98	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1825	1583	3221	1472		1770	3539	1583	1770	3492	
Volume (vph)	93	130	146	402	60	130	236	1059	485	250	797	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	141	159	437	65	141	257	1151	527	272	866	51
RTOR Reduction (vph)	0	0	0	0	58	0	0	0	321	0	3	0
Lane Group Flow (vph)	0	242	159	420	165	0	257	1151	206	272	914	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Split		Over	Split			Prot		Over	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases												
Actuated Green, G (s)		17.9	14.1	19.4	19.4		14.1	34.4	19.4	10.1	30.4	
Effective Green, g (s)		17.9	14.1	19.4	19.4		14.1	34.4	19.4	10.1	30.4	
Actuated g/C Ratio		0.18	0.14	0.20	0.20		0.14	0.35	0.20	0.10	0.31	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		334	228	639	292		255	1245	314	183	1085	
v/s Ratio Prot		c0.13	0.10	0.13	0.15		0.15	c0.33	c0.33	c0.15	0.26	
v/s Ratio Perm												
v/c Ratio		0.72	0.70	0.66	0.57		1.01	0.92	0.66	1.49	0.84	
Uniform Delay, d1		37.6	39.8	36.1	35.4		41.9	30.5	36.1	43.9	31.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		7.6	8.9	2.4	2.5		58.4	12.8	4.9	245.6	8.0	
Delay (s)		45.2	48.8	38.6	37.9		100.2	43.3	41.0	289.5	39.4	
Level of Service		D	D	D	D		F	D	D	F	D	
Approach Delay (s)		46.6			38.3			50.2			96.6	
Approach LOS		D			D			D			F	

Intersection Summary

HCM Average Control Delay	61.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frpb, ped/bikes				1.00		0.98		1.00	0.97		1.00	0.97
Flpb, ped/bikes				0.96		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3304		1555		5085	1536		3539	1536
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3304		1555		5085	1536		3539	1536
Volume (vph)	0	0	0	645	0	405	0	1473	1815	0	758	586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	701	0	440	0	1601	1973	0	824	637
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	701	0	440	0	1601	1973	0	824	637
Confl. Peds. (#/hr)				20		20			20			20
Turn Type				custom		Free			Free			Free
Protected Phases								2			6	
Permitted Phases				8		Free			Free			Free
Actuated Green, G (s)				25.7		100.0		66.3	100.0		66.3	100.0
Effective Green, g (s)				25.7		100.0		66.3	100.0		66.3	100.0
Actuated g/C Ratio				0.26		1.00		0.66	1.00		0.66	1.00
Clearance Time (s)				4.0				4.0			4.0	
Vehicle Extension (s)				3.0				3.0			3.0	
Lane Grp Cap (vph)				849		1555		3371	1536		2346	1536
v/s Ratio Prot								0.31			0.23	
v/s Ratio Perm				0.21		0.28			1.28			0.41
v/c Ratio				0.83		0.28		0.47	1.28		0.35	0.41
Uniform Delay, d1				35.0		0.0		8.3	50.0		7.4	0.0
Progression Factor				1.00		1.00		0.64	1.00		1.00	1.00
Incremental Delay, d2				6.6		0.5		0.0	128.5		0.4	0.8
Delay (s)				41.6		0.5		5.4	178.5		7.8	0.8
Level of Service				D		A		A	F		A	A
Approach Delay (s)		0.0			25.8			100.9			4.8	
Approach LOS		A			C			F			A	

Intersection Summary

HCM Average Control Delay	64.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.91	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					5085	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					5085	1536		3539	1536
Volume (vph)	593	0	2572	0	0	0	0	1256	421	0	1315	414
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	645	0	2796	0	0	0	0	1365	458	0	1429	450
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	645	0	2781	0	0	0	0	1365	458	0	1429	450
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	47.0		47.0					45.0	100.0		45.0	100.0
Effective Green, g (s)	47.0		47.0					45.0	100.0		45.0	100.0
Actuated g/C Ratio	0.47		0.47					0.45	1.00		0.45	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1553		1614					2288	1536		1593	1536
v/s Ratio Prot								0.27			c0.40	
v/s Ratio Perm	0.20		0.81						0.30			0.29
v/c Ratio	0.42		1.72					0.60	0.30		0.90	0.29
Uniform Delay, d1	17.5		26.5					20.7	0.0		25.4	0.0
Progression Factor	1.00		1.00					0.83	1.00		0.77	1.00
Incremental Delay, d2	0.2		328.1					0.6	0.3		7.8	0.4
Delay (s)	17.6		354.6					17.9	0.3		27.4	0.4
Level of Service	B		F					B	A		C	A
Approach Delay (s)		291.4			0.0			13.5			21.0	
Approach LOS		F			A			B			C	

Intersection Summary

HCM Average Control Delay	149.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.76					0.91	1.00		0.95	1.00
Frpb, ped/bikes	1.00		0.95					1.00	0.97		1.00	0.97
Flpb, ped/bikes	0.96		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3304		3434					5085	1536		3539	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3304		3434					5085	1536		3539	1536
Volume (vph)	834	0	1145	0	0	0	0	2735	1079	0	1181	322
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	907	0	1245	0	0	0	0	2973	1173	0	1284	350
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	907	0	1204	0	0	0	0	2973	1173	0	1284	350
Confl. Peds. (#/hr)	20		20						20			20
Turn Type	custom		custom						Free			Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	41.0		41.0					51.0	100.0		51.0	100.0
Effective Green, g (s)	41.0		41.0					51.0	100.0		51.0	100.0
Actuated g/C Ratio	0.41		0.41					0.51	1.00		0.51	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1355		1408					2593	1536		1805	1536
v/s Ratio Prot								c0.58			0.36	
v/s Ratio Perm	0.27		0.36						0.76			0.23
v/c Ratio	0.67		0.86					1.15	0.76		0.71	0.23
Uniform Delay, d1	24.0		26.8					24.5	0.0		18.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.63	1.00
Incremental Delay, d2	1.3		5.3					66.4	0.3		2.2	0.3
Delay (s)	25.3		32.1					90.9	0.3		14.1	0.3
Level of Service	C		C					F	A		B	A
Approach Delay (s)		29.2			0.0			65.3			11.1	
Approach LOS		C			A			E			B	

Intersection Summary

HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1732	1506	1681	1770	1583	1770	5085	1506	3433	5085	2787
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1732	1506	1681	1770	1583	1770	5085	1506	3433	5085	2787
Volume (vph)	103	41	70	129	149	220	228	1240	180	747	1791	1246
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	45	76	140	162	239	248	1348	196	812	1947	1354
RTOR Reduction (vph)	0	0	59	0	0	186	0	0	145	0	0	763
Lane Group Flow (vph)	77	80	17	140	162	53	248	1348	51	812	1947	591
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)	21.9	21.9	21.9	13.9	13.9	22.1	21.5	26.1	26.1	22.1	26.7	21.9
Effective Green, g (s)	21.9	21.9	21.9	13.9	13.9	22.1	21.5	26.1	26.1	22.1	26.7	21.9
Actuated g/C Ratio	0.22	0.22	0.22	0.14	0.14	0.22	0.22	0.26	0.26	0.22	0.27	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	368	379	330	234	246	350	381	1327	393	759	1358	610
v/s Ratio Prot	0.05	0.05		0.08	c0.09	0.15	0.14	0.27		c0.24	c0.38	c0.49
v/s Ratio Perm			0.05						0.13			
v/c Ratio	0.21	0.21	0.05	0.60	0.66	0.15	0.65	1.02	0.13	1.07	1.43	0.97
Uniform Delay, d1	32.0	32.0	30.8	40.4	40.8	31.4	35.8	37.0	28.3	39.0	36.6	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.99	1.76
Incremental Delay, d2	0.3	0.3	0.1	4.1	6.2	0.2	4.0	28.7	0.7	34.4	195.6	5.5
Delay (s)	32.2	32.3	30.9	44.5	47.0	31.6	39.8	65.7	29.0	68.8	231.8	73.6
Level of Service	C	C	C	D	D	C	D	E	C	E	F	E
Approach Delay (s)		31.8			39.6			58.1			147.5	
Approach LOS		C			D			E			F	

Intersection Summary

HCM Average Control Delay	110.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91	1.00	0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1701	1506	1681	1702	1583	1770	5085	1506	3433	5085	2787
Flt Permitted	0.95	0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1701	1506	1681	1702	1583	1770	5085	1506	3433	5085	2787
Volume (vph)	642	70	121	198	24	543	106	2314	184	373	1757	189
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	698	76	132	215	26	590	115	2515	200	405	1910	205
RTOR Reduction (vph)	0	0	102	0	0	273	0	0	86	0	0	116
Lane Group Flow (vph)	377	397	30	117	124	317	115	2515	114	405	1910	89
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type	Split		Perm	Split		Over	Prot		Perm	Prot		Over
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4						2			
Actuated Green, G (s)	23.0	23.0	23.0	12.2	12.2	22.8	11.9	26.0	26.0	22.8	36.9	23.0
Effective Green, g (s)	23.0	23.0	23.0	12.2	12.2	22.8	11.9	26.0	26.0	22.8	36.9	23.0
Actuated g/C Ratio	0.23	0.23	0.23	0.12	0.12	0.23	0.12	0.26	0.26	0.23	0.37	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	387	391	346	205	208	361	211	1322	392	783	1876	641
v/s Ratio Prot	0.22	c0.23		0.07	c0.07	c0.37	0.06	c0.49		0.12	0.38	0.07
v/s Ratio Perm			0.09						0.13			
v/c Ratio	0.97	1.02	0.09	0.57	0.60	0.88	0.55	1.90	0.29	0.52	1.02	0.14
Uniform Delay, d1	38.2	38.5	30.3	41.4	41.6	37.3	41.5	37.0	29.6	33.8	31.6	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	0.82	1.39
Incremental Delay, d2	38.6	49.4	0.1	3.8	4.5	20.6	2.9	408.9	1.9	0.4	20.9	0.1
Delay (s)	76.8	87.9	30.4	45.2	46.1	57.8	44.4	445.9	31.5	37.4	46.7	42.7
Level of Service	E	F	C	D	D	E	D	F	C	D	D	D
Approach Delay (s)		74.9			54.3			400.3			44.9	
Approach LOS		E			D			F			D	

Intersection Summary

HCM Average Control Delay	191.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes		0.95	1.00	0.91	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.86	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1527	3539	1446	1770	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1527	3539	1446	1770	3539
Volume (vph)	0	128	1377	153	681	1492
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	139	1497	166	740	1622
RTOR Reduction (vph)	0	77	0	77	0	0
Lane Group Flow (vph)	0	62	1497	89	740	1622
Confl. Peds. (#/hr)		20		20	20	
Turn Type		custom		Perm	Prot	
Protected Phases			4		1	6
Permitted Phases		8		4		
Actuated Green, G (s)		48.9	48.9	48.9	52.0	52.0
Effective Green, g (s)		48.9	48.9	48.9	52.0	52.0
Actuated g/C Ratio		0.45	0.45	0.45	0.48	0.48
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		686	1589	649	845	1690
v/s Ratio Prot			c0.42		0.42	c0.46
v/s Ratio Perm		0.09		0.11		
v/c Ratio		0.09	0.94	0.14	0.88	0.96
Uniform Delay, d1		17.2	28.6	17.6	25.5	27.4
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	11.5	0.1	10.1	14.2
Delay (s)		17.3	40.2	17.7	35.6	41.7
Level of Service		B	D	B	D	D
Approach Delay (s)	17.3		38.0			39.8
Approach LOS	B		D			D

Intersection Summary

HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes		0.95	1.00	0.91	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.86	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1527	3539	1445	1770	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1527	3539	1445	1770	3539
Volume (vph)	0	664	1634	112	334	1654
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	722	1776	122	363	1798
RTOR Reduction (vph)	0	394	0	47	0	0
Lane Group Flow (vph)	0	328	1776	75	363	1798
Confl. Peds. (#/hr)		20		20	20	
Turn Type		custom		Perm	Prot	
Protected Phases			4		1	6
Permitted Phases		8		4		
Actuated Green, G (s)		50.0	50.0	50.0	52.0	52.0
Effective Green, g (s)		50.0	50.0	50.0	52.0	52.0
Actuated g/C Ratio		0.45	0.45	0.45	0.47	0.47
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		694	1609	657	837	1673
v/s Ratio Prot			c0.50		0.21	c0.51
v/s Ratio Perm		0.47		0.08		
v/c Ratio		0.47	1.10	0.11	0.43	1.07
Uniform Delay, d1		20.8	30.0	17.3	19.2	29.0
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5	56.5	0.1	0.4	45.1
Delay (s)		21.4	86.5	17.3	19.6	74.1
Level of Service		C	F	B	B	E
Approach Delay (s)	21.4		82.1			65.0
Approach LOS	C		F			E

Intersection Summary

HCM Average Control Delay	65.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1457	3433	3539	1464	3433	3539	1464	3433	3539	2577
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1457	3433	3539	1464	3433	3539	1464	3433	3539	2577
Volume (vph)	372	354	158	41	740	281	625	1093	170	154	454	252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	385	172	45	804	305	679	1188	185	167	493	274
RTOR Reduction (vph)	0	0	140	0	0	199	0	0	114	0	0	203
Lane Group Flow (vph)	404	385	32	45	804	106	679	1188	71	167	493	71
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.6	17.6	17.6	23.6	23.6	23.6	12.0	24.1	24.1	12.0	24.1	24.1
Effective Green, g (s)	17.6	17.6	17.6	23.6	23.6	23.6	12.0	24.1	24.1	12.0	24.1	24.1
Actuated g/C Ratio	0.19	0.19	0.19	0.25	0.25	0.25	0.13	0.26	0.26	0.13	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	648	668	275	868	895	370	442	914	378	442	914	666
v/s Ratio Prot	0.12	0.11		0.01	c0.23		c0.20	c0.34		0.05	0.14	
v/s Ratio Perm			0.12			0.21			0.13			0.11
v/c Ratio	0.62	0.58	0.12	0.05	0.90	0.29	1.54	1.30	0.19	0.38	0.54	0.11
Uniform Delay, d1	34.8	34.5	31.4	26.4	33.7	28.1	40.6	34.6	27.0	37.2	29.8	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	1.2	0.2	0.0	11.7	0.4	252.4	143.0	1.1	0.5	2.3	0.3
Delay (s)	36.7	35.7	31.6	26.4	45.4	28.5	293.1	177.6	28.1	37.8	32.1	26.7
Level of Service	D	D	C	C	D	C	F	F	C	D	C	C
Approach Delay (s)		35.4			40.2			202.3			31.5	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	102.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1459	3433	3539	1457	3433	3539	1459	3433	3539	2568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1459	3433	3539	1457	3433	3539	1459	3433	3539	2568
Volume (vph)	762	871	657	200	581	234	468	752	60	309	900	270
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	828	947	714	217	632	254	509	817	65	336	978	293
RTOR Reduction (vph)	0	0	268	0	0	174	0	0	49	0	0	221
Lane Group Flow (vph)	828	947	446	217	632	80	509	817	16	336	978	72
Confl. Peds. (#/hr)	30		30	30		30	30		30	30		30
Confl. Bikes (#/hr)			15			15			15			15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	24.0	24.0	22.2	22.2	22.2	12.0	24.0	24.0	12.0	24.0	24.0
Effective Green, g (s)	24.0	24.0	24.0	22.2	22.2	22.2	12.0	24.0	24.0	12.0	24.0	24.0
Actuated g/C Ratio	0.24	0.24	0.24	0.23	0.23	0.23	0.12	0.24	0.24	0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	839	865	357	776	800	329	420	865	357	420	865	628
v/s Ratio Prot	0.24	0.27		0.06	c0.18		c0.15	0.23		0.10	c0.28	
v/s Ratio Perm			0.49			0.17			0.04			0.11
v/c Ratio	0.99	1.09	1.25	0.28	0.79	0.24	1.21	0.94	0.04	0.80	1.13	0.11
Uniform Delay, d1	36.9	37.1	37.1	31.4	35.8	31.1	43.1	36.4	28.3	41.9	37.1	28.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.6	59.8	133.2	0.2	5.3	0.4	115.6	19.8	0.2	10.4	73.2	0.4
Delay (s)	64.5	96.9	170.3	31.6	41.1	31.5	158.7	56.2	28.6	52.4	110.3	29.2
Level of Service	E	F	F	C	D	C	F	E	C	D	F	C
Approach Delay (s)		107.2			37.0			92.4			83.4	
Approach LOS		F			D			F			F	

Intersection Summary

HCM Average Control Delay	86.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1514	1770	1863	1770	1541
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1514	1770	1863	1770	1541
Volume (vph)	405	429	175	533	95	29
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	466	190	579	103	32
RTOR Reduction (vph)	0	307	0	0	0	22
Lane Group Flow (vph)	440	159	190	579	103	10
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.9	20.9	9.8	34.7	18.5	18.5
Effective Green, g (s)	20.9	20.9	9.8	34.7	18.5	18.5
Actuated g/C Ratio	0.34	0.34	0.16	0.57	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	636	517	283	1056	535	466
v/s Ratio Prot	0.24		c0.11	0.31	c0.06	
v/s Ratio Perm		0.31				0.02
v/c Ratio	0.69	0.31	0.67	0.55	0.19	0.02
Uniform Delay, d1	17.4	14.8	24.2	8.3	15.8	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.3	6.1	0.6	0.8	0.1
Delay (s)	20.6	15.2	30.3	8.9	16.6	15.1
Level of Service	C	B	C	A	B	B
Approach Delay (s)	17.8			14.2	16.3	
Approach LOS	B			B	B	

Intersection Summary

HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1499	1770	1863	1770	1534
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1499	1770	1863	1770	1534
Volume (vph)	462	155	90	496	381	202
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	502	168	98	539	414	220
RTOR Reduction (vph)	0	116	0	0	0	117
Lane Group Flow (vph)	502	52	98	539	414	103
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	27.9	27.9	8.0	39.9	42.1	42.1
Effective Green, g (s)	27.9	27.9	8.0	39.9	42.1	42.1
Actuated g/C Ratio	0.31	0.31	0.09	0.44	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	578	465	157	826	828	718
v/s Ratio Prot	c0.27		0.06	c0.29	c0.23	
v/s Ratio Perm		0.11				0.14
v/c Ratio	0.87	0.11	0.62	0.65	0.50	0.14
Uniform Delay, d1	29.3	22.2	39.5	19.6	16.6	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.1	7.5	1.9	2.2	0.4
Delay (s)	42.4	22.3	47.1	21.5	18.8	14.1
Level of Service	D	C	D	C	B	B
Approach Delay (s)	37.4			25.4	17.2	
Approach LOS	D			C	B	

Intersection Summary

HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1506	1770	1863	1770	1537
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1506	1770	1863	1770	1537
Volume (vph)	509	165	162	260	166	228
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	553	179	176	283	180	248
RTOR Reduction (vph)	0	118	0	0	0	164
Lane Group Flow (vph)	553	61	176	283	180	84
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	26.1	26.1	12.7	42.8	26.1	26.1
Effective Green, g (s)	26.1	26.1	12.7	42.8	26.1	26.1
Actuated g/C Ratio	0.34	0.34	0.17	0.56	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	632	511	292	1037	601	522
v/s Ratio Prot	c0.30		c0.10	0.15	0.10	
v/s Ratio Perm		0.12				0.16
v/c Ratio	0.88	0.12	0.60	0.27	0.30	0.16
Uniform Delay, d1	23.9	17.5	29.8	8.9	18.7	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.9	0.1	3.5	0.1	1.3	0.7
Delay (s)	36.7	17.6	33.2	9.1	20.0	18.4
Level of Service	D	B	C	A	B	B
Approach Delay (s)	32.0			18.3	19.1	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.94		1.00	0.95		1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803	1527	3433	1740		1770	4785		1770	5072	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1803	1527	3433	1740		1770	4785		1770	5072	
Volume (vph)	40	20	210	514	90	52	120	679	293	41	1500	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	22	228	559	98	57	130	738	318	45	1630	22
RTOR Reduction (vph)	0	0	202	0	22	0	0	63	0	0	1	0
Lane Group Flow (vph)	0	65	26	559	133	0	130	993	0	45	1651	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		8.6	8.6	17.5	17.5		8.1	29.3		4.7	25.9	
Effective Green, g (s)		8.6	8.6	17.5	17.5		8.1	29.3		4.7	25.9	
Actuated g/C Ratio		0.11	0.11	0.23	0.23		0.11	0.39		0.06	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		204	173	789	400		188	1842		109	1726	
v/s Ratio Prot		0.04		c0.16	0.09		c0.07	c0.22		0.03	c0.33	
v/s Ratio Perm			0.15									
v/c Ratio		0.32	0.15	0.71	0.33		0.69	0.54		0.41	0.96	
Uniform Delay, d1		31.1	30.4	27.0	24.4		32.8	18.2		34.4	24.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.4	2.9	0.5		10.5	1.1		2.5	13.5	
Delay (s)		32.0	30.8	29.9	24.9		43.3	19.3		36.9	38.1	
Level of Service		C	C	C	C		D	B		D	D	
Approach Delay (s)		31.1			28.8			21.9			38.0	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	0.97	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.96	1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	0.91		1.00	0.97		1.00	0.99	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1799	1521	3433	1659		1770	4908		1770	5029	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1799	1521	3433	1659		1770	4908		1770	5029	
Volume (vph)	50	20	80	792	100	161	130	1067	227	32	854	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	22	87	861	109	175	141	1160	247	35	928	54
RTOR Reduction (vph)	0	0	79	0	53	0	0	28	0	0	6	0
Lane Group Flow (vph)	0	76	8	861	231	0	141	1379	0	35	976	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		7.3	7.3	24.7	24.7		8.6	29.6		4.5	25.5	
Effective Green, g (s)		7.3	7.3	24.7	24.7		8.6	29.6		4.5	25.5	
Actuated g/C Ratio		0.09	0.09	0.30	0.30		0.10	0.36		0.05	0.31	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		160	135	1033	499		185	1770		97	1562	
v/s Ratio Prot		0.04		c0.25	0.17		c0.08	c0.29		0.02	0.20	
v/s Ratio Perm			0.06									
v/c Ratio		0.47	0.06	0.83	0.46		0.76	0.78		0.36	0.63	
Uniform Delay, d1		35.6	34.2	26.8	23.3		35.8	23.3		37.4	24.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2	0.2	5.9	0.7		16.8	3.5		2.3	1.9	
Delay (s)		37.8	34.4	32.7	24.0		52.6	26.8		39.7	26.1	
Level of Service		D	C	C	C		D	C		D	C	
Approach Delay (s)		36.0			30.5			29.2			26.6	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.91	1.00	1.00	0.91	0.88
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3408		3433	1863	2787	1770	5085	1525	1770	5085	2616
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3408		3433	1863	2787	1770	5085	1525	1770	5085	2616
Volume (vph)	172	248	60	427	448	487	300	1361	456	312	522	750
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	270	65	464	487	529	326	1479	496	339	567	815
RTOR Reduction (vph)	0	18	0	0	0	358	0	0	301	0	0	365
Lane Group Flow (vph)	187	317	0	464	487	171	326	1479	195	339	567	450
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	14.8	14.8		27.0	27.0	18.0	17.0	43.0	43.0	18.0	44.0	44.0
Effective Green, g (s)	14.8	14.8		27.0	27.0	18.0	17.0	43.0	43.0	18.0	44.0	44.0
Actuated g/C Ratio	0.12	0.12		0.23	0.23	0.15	0.14	0.36	0.36	0.15	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	428	425		780	423	422	253	1841	552	268	1883	969
v/s Ratio Prot	0.05	c0.10		0.14	c0.26	0.19	0.18	0.29		c0.19	0.11	
v/s Ratio Perm									0.33			0.31
v/c Ratio	0.44	0.75		0.59	1.15	0.41	1.29	0.80	0.35	1.26	0.30	0.46
Uniform Delay, d1	48.1	50.2		41.0	45.9	45.6	50.9	34.1	27.7	50.4	26.5	28.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	7.0		1.2	92.0	0.6	156.2	3.8	1.8	145.5	0.4	1.6
Delay (s)	48.9	57.2		42.2	137.9	46.2	207.1	37.9	29.5	195.9	26.9	30.0
Level of Service	D	E		D	F	D	F	D	C	F	C	C
Approach Delay (s)		54.2			75.1			60.1			61.7	
Approach LOS		D			E			E			E	

Intersection Summary

HCM Average Control Delay	63.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	118.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	1.00	0.88	1.00	0.91	1.00	1.00	0.91	0.88
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3423		3433	1863	2787	1770	5085	1522	1770	5085	2606
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3423		3433	1863	2787	1770	5085	1522	1770	5085	2606
Volume (vph)	389	706	150	793	225	1043	230	1073	628	292	632	272
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	423	767	163	862	245	1134	250	1166	683	317	687	296
RTOR Reduction (vph)	0	15	0	0	0	596	0	0	316	0	0	231
Lane Group Flow (vph)	423	915	0	862	245	538	250	1166	367	317	687	65
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	Split			Split		Over	Prot		Perm	Prot		Perm
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	31.0	31.0		27.0	27.0	19.0	19.5	27.0	27.0	19.0	26.5	26.5
Effective Green, g (s)	31.0	31.0		27.0	27.0	19.0	19.5	27.0	27.0	19.0	26.5	26.5
Actuated g/C Ratio	0.26	0.26		0.22	0.22	0.16	0.16	0.22	0.22	0.16	0.22	0.22
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	887	884		772	419	441	288	1144	342	280	1123	575
v/s Ratio Prot	0.12	c0.27		c0.25	0.13	c0.41	0.14	0.23		0.18	0.14	
v/s Ratio Perm									0.45			0.11
v/c Ratio	0.48	1.04		1.12	0.58	1.22	0.87	1.02	1.07	1.13	0.61	0.11
Uniform Delay, d1	37.6	44.5		46.5	41.5	50.5	49.0	46.5	46.5	50.5	42.1	37.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	39.7		69.4	2.1	118.1	23.0	31.5	69.3	94.2	2.5	0.4
Delay (s)	38.0	84.2		115.9	43.6	168.6	72.0	78.0	115.8	144.7	44.6	37.8
Level of Service	D	F		F	D	F	E	E	F	F	D	D
Approach Delay (s)		69.8			134.6			89.6			67.5	
Approach LOS		E			F			F			E	

Intersection Summary

HCM Average Control Delay	96.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863		1770	1863	1770	1505
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863		1770	1863	1770	1505
Volume (vph)	244	0	462	219	517	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	0	502	238	562	22
RTOR Reduction (vph)	0	0	0	0	0	14
Lane Group Flow (vph)	265	0	502	238	562	8
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	16.4		21.1	41.5	31.1	31.1
Effective Green, g (s)	16.4		21.1	41.5	31.1	31.1
Actuated g/C Ratio	0.20		0.26	0.51	0.39	0.39
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	379		463	959	683	581
v/s Ratio Prot	c0.14		c0.28	0.13	c0.32	
v/s Ratio Perm						0.01
v/c Ratio	0.70		1.08	0.25	0.82	0.01
Uniform Delay, d1	29.8		29.7	10.9	22.3	15.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6		66.5	0.1	10.8	0.0
Delay (s)	35.4		96.2	11.0	33.1	15.3
Level of Service	D		F	B	C	B
Approach Delay (s)	35.4			68.8	32.4	
Approach LOS	D			E	C	

Intersection Summary

HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863		1770	1863	1770	1512
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863		1770	1863	1770	1512
Volume (vph)	259	0	101	153	770	90
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	0	110	166	837	98
RTOR Reduction (vph)	0	0	0	0	0	40
Lane Group Flow (vph)	282	0	110	166	837	58
Confl. Peds. (#/hr)		10	10		10	10
Confl. Bikes (#/hr)		5				5
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	15.0		8.1	27.1	33.8	33.8
Effective Green, g (s)	15.0		8.1	27.1	33.8	33.8
Actuated g/C Ratio	0.22		0.12	0.39	0.49	0.49
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	406		208	733	868	742
v/s Ratio Prot	c0.15		c0.06	0.09	c0.47	
v/s Ratio Perm						0.06
v/c Ratio	0.69		0.53	0.23	0.96	0.08
Uniform Delay, d1	24.8		28.6	13.9	17.0	9.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1		2.4	0.2	23.0	0.2
Delay (s)	29.9		31.0	14.1	40.0	9.5
Level of Service	C		C	B	D	A
Approach Delay (s)	29.9			20.8	36.8	
Approach LOS	C			C	D	

Intersection Summary

HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	3539	1529	1770	2787
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	3539	1529	1770	2787
Volume (vph)	1237	259	479	104	125	1962
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1345	282	521	113	136	2133
RTOR Reduction (vph)	0	0	0	90	0	430
Lane Group Flow (vph)	1345	282	521	23	136	1703
Confl. Peds. (#/hr)	10			10	10	10
Confl. Bikes (#/hr)				5		5
Turn Type	Prot			Perm		Over
Protected Phases	7	4	8		6	7
Permitted Phases				8		
Actuated Green, G (s)	46.1	69.4	19.3	19.3	17.0	46.1
Effective Green, g (s)	46.1	69.4	19.3	19.3	17.0	46.1
Actuated g/C Ratio	0.49	0.74	0.20	0.20	0.18	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1676	1370	724	313	319	1361
v/s Ratio Prot	0.39	0.15	c0.15		c0.08	c0.77
v/s Ratio Perm				0.07		
v/c Ratio	0.80	0.21	0.72	0.07	0.43	1.25
Uniform Delay, d1	20.3	3.9	35.0	30.3	34.4	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	3.4	0.1	4.1	119.4
Delay (s)	23.2	4.0	38.5	30.4	38.5	143.5
Level of Service	C	A	D	C	D	F
Approach Delay (s)		19.9	37.0		137.2	
Approach LOS		B	D		F	

Intersection Summary

HCM Average Control Delay	81.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group