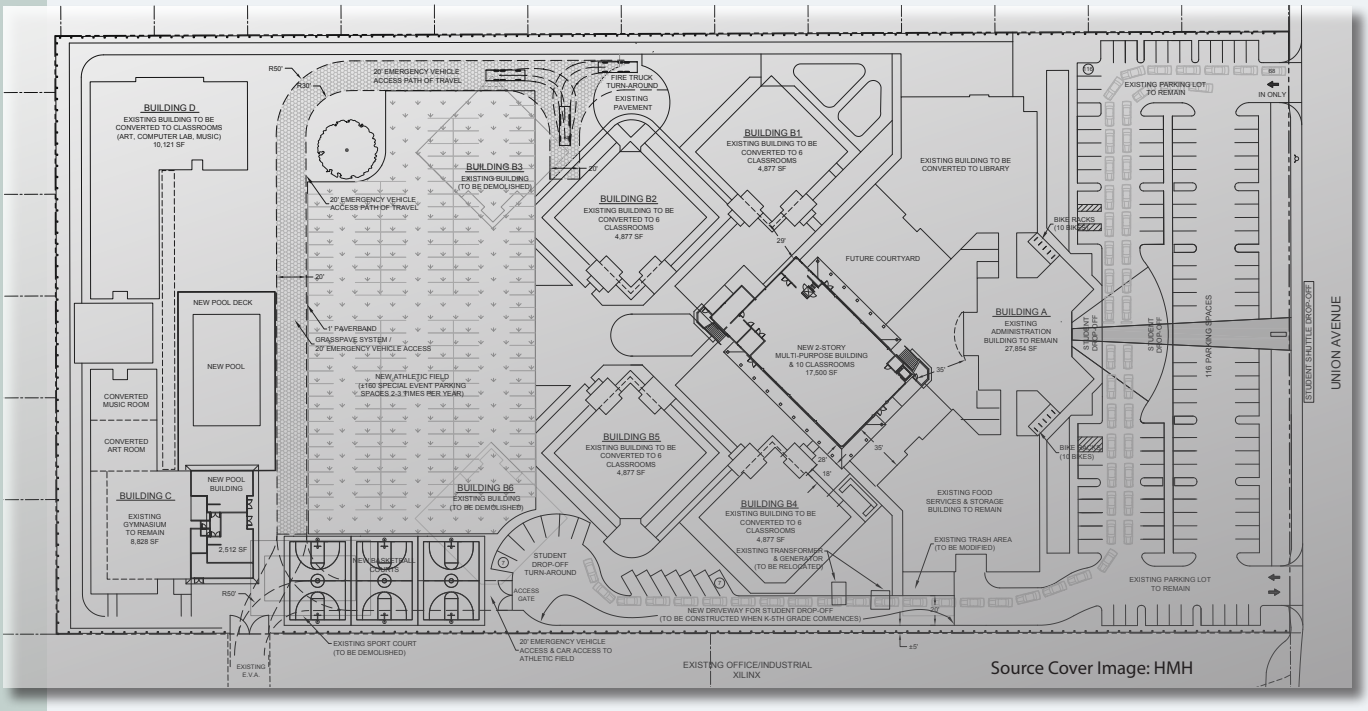
APPENDIX E

TRAFFIC IMPACT ANALYSIS

DRAFT:

Harker Elementary School on Union Avenue Transportation Impact Analysis



Source Cover Image: HMH

Prepared for: HARKER

Prepared by: FEHR PEERS

160 West Santa Clara Street
Suite 675
San José, CA 95113
(408) 278-1700

August 2012

Harker Union Avenue Elementary School Transportation Impact Analysis

Prepared for:
The Harker School

August 22, 2012

SJ12 -1362

FEHR PEERS

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EXECUTIVE SUMMARY

This report presents the results of the Transportation Impact Analysis (TIA) conducted for the proposed Harker Elementary School (the project). It was conducted to identify potential impacts of the school on the surrounding transportation system and to recommend mitigation measures (improvements) for significant impacts. The TIA was prepared according to guidelines of the City of San Jose and the Santa Clara Valley Transportation Authority (VTA), which is the congestion management agency for Santa Clara County.

The Harker School site is located at 4525 Union Avenue in San Jose, California, the current location of the Santa Clara County Children's Shelter. The school would be relocated from its current site at 4300 Bucknall Avenue, also in San Jose. The school will have a maximum enrollment of 600 students in grades K (kindergarten) through 5 and 100 faculty and staff.

Roadway system operations were evaluated under Existing, Existing plus Project, Background, Background plus Project, and Cumulative Conditions. The results were used to identify significant roadway system impacts. Impacts to the pedestrian, bicycle, and transit systems were also evaluated.

PROJECT TRAFFIC ESTIMATES

The amount of traffic generated by the project was estimated using traffic counts that were conducted at the existing school site on Bucknall Avenue. The number of students at the new Union Avenue site will remain the same, however the school start times will staggered further apart from 10 minutes to 40 minutes and a comprehensive shuttle bus program will be implemented. Therefore, traffic counts conducted at the Bucknall site measuring all of the vehicles entering and exiting the school, including parents and students, faculty, and staff were used as a starting point. Trip generation rates from Harker's Saratoga campus (Upper School, grade 9 through 12) and other sources were reviewed to ensure that the rates are reasonable. Under Project Conditions, Harker School is projected to generate 518 AM peak hour trips (278 in and 240 out) and 356 PM peak hour trips (180 in and 176 out) prior to the implementation of the enhanced shuttle bus program. The staggered start time and current children's center trip generation estimates were accounted for in these estimates.

IMPACTS

INTERSECTION

All of the study intersections will continue to operate at acceptable levels with the addition of Harker Elementary School traffic, with the exception of the intersection of Union Avenue and Camden Avenue under all study scenarios. This intersection currently operates unacceptably during the PM peak hour. However, the change in intersection operations due to the added traffic is not considered a significant impact based on criteria presented in the Introduction chapter (**Chapter 1**). Thus, the school will have a **less-than-significant impact** at all study intersections. The Intersection Levels of Service under all study conditions can be seen in **Table ES1**.

FREEWAY SEGMENTS

Harker Elementary School will impact five of the eleven freeway segments that are currently operating at LOS F by adding more than 1 percent of the capacity to those segments. Therefore the project will have a **significant impact** on freeway operations. The mitigation measure is to implement a comprehensive shuttle bus program to reduce the amount of traffic added to the roadway system, including the five freeway segments. With this shuttle program, the freeway impact will be **less-than-significant.**

FREEWAY RAMPS

Ramp analyses indicate current ramp metering rates of 280 vehicles per hour per lane (vphpl) for the northbound on-ramp and 470 vphpl for the southbound on-ramp. Those on-ramps have been observed to reach full capacity during a 10-15 minute interval during peak hours. The school is projected to add 121 vehicles to the northbound on-ramp during the morning peak hour and 27 vehicles to the southbound on-ramp during the evening peak hour prior to the shuttle reduction. With the shuttle reduction, the project will add 31 vehicles on the northbound on-ramp during the morning peak hour and 7 vehicles to the southbound on-ramp during the evening peak hour. Therefore the school will affect both AM and PM peak hour on-ramp operations. Freeway ramp operational impacts are not considered CEQA impacts per City guidelines.

PEDESTRIAN AND BICYCLE FACILITIES

The school will not affect existing or planned pedestrian and bicycle facilities in the vicinity of the school and therefore will have **less-than-significant** pedestrian and bicycle facility impacts.

TABLE ES-1 SCENARIO INTERSECTION LEVELS OF SERVICE SUMMARY TABLE

Intersection	Peak Hour	Existing		Existing plus Project				Background		Project			
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. V/C[3]	Δ in Crit. Delay[3]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. V/C[3]	Δ in Crit. Delay[3]
1. Union Ave. and Camden Ave.	AM	51.0	D-	53.7	D-	0.031	4.1	51.9	D-	54.5	D-	0.029	3.8
	PM	60.1	E	61.3	E	0.010	1.2	61.0	E	62.0	E	0.009	1.1
2. Union Ave. and Woodard St.	AM	19.9	B-	19.3	B-	0.021	-0.4	19.8	B-	19.3	B-	0.020	-0.4
	PM	24.1	C	23.7	C	0.016	-0.3	23.4	C	23.7	C	0.015	0.4
3. Union Ave. and Charmeran Ave.	AM	13.6	B	13.2	B	0.023	-0.2	13.6	B	13.1	B	0.031	-0.2
	PM	17.5	B	17.3	B	0.017	0.0	17.4	B	17.2	B	0.016	0.0
4. Union Ave. and Logic Dr./Cole Dr.	AM	24.9	C	24.7	C	0.054	0.9	25.8	C	26.0	C	0.051	1.5
	PM	14.2	B	13.4	B	0.044	-0.5	15.1	B	14.3	B	0.038	-0.6
5. Union Ave. and SR 85 NB ramps	AM	18.5	B-	21.2	C+	0.032	-12.7	18.5	B-	21.8	C+	0.044	-12.3
	PM	19.4	B-	18.6	B-	0.068	0.4	19.3	B-	18.7	B-	0.058	0.5
6. Union Ave. and Samaritan Dr./SR 85 SB on-ramp	AM	22.4	C+	22.7	C+	0.000	0.0	22.6	C+	22.9	C+	0.000	0.0
	PM	21.6	C+	21.7	C+	0.006	0.1	21.8	C+	22.0	C+	0.005	0.1
7. Samaritan Dr. and SR 85 SB off-ramp	AM	11.0	B+	11.7	B+	0.059	0.8	11.4	B+	12.1	B	0.052	0.8
	PM	9.4	A	9.4	A	0.034	-0.1	9.6	A	9.6	A	0.030	0.0

Notes: NB = Northbound, SB = Southbound

1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions for signalized intersections.
2. LOS = Level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package.
3. Delta calculated between Existing with and without Project Conditions and Background and Project Conditions.

Source: Fehr & Peers, August 2012.

TRANSIT SERVICE

The school will not affect transit services or facilities nor will it generate demand for transit services that cannot be accommodated by the existing bus route serving the site. Therefore the project will have a **less-than-significant** impact on transit.

SITE ACCESS AND ON-SITE CIRCULATION

The school site is served by two driveways on Union Avenue. Both driveways are unsignalized and accommodate all traffic turning movements, inbound and outbound left and right turns. Emergency vehicle access is also provided through an access easement to the adjacent Xlinx site. Sidewalks on Union Avenue provide pedestrian access and the VTA bus stop in front of the site provides transit access.

Harker is expected to maintain the two existing driveways. During peak school periods, vehicles would be restricted to only enter the site at the northern driveway and exit the site at the southern driveway for the ease of internal circulation. Children in kindergarten and 1st grade would be dropped off at the main building entrance. Children in 2nd through 5th grades would be dropped off in the driveway extension on the south side of the school.

Through industry standard simulation software program, the results indicate that long vehicle queues form at several locations including the school southern outbound driveway and Barrett Avenue due to the short distance between the exiting southern driveway and the signalized intersection at Union Avenue / Logic Drive – Cole Drive (approximately 250 feet) and the constant stream of traffic traveling southbound on Union Avenue.

With signal timing adjustment improvements and vehicle trip reductions due to the proposed comprehensive shuttle bus program, the school driveways will experience queuing improvement with the maximum northbound left turn queue of vehicles (from Union Avenue into the site) expected reach 9 vehicles or approximately 225 feet, (1 vehicle = 25 feet) while the eastbound (from Harker driveway) is expected to have a maximum queue of 250 feet, or 10 queuing vehicles during the AM peak hour. During the PM peak hour, the northbound left turn (from Union) is expected to experience a maximum queue of 100 feet, or approximately 4 queuing vehicles while the eastbound (from Harker driveway) is expected to have a maximum queue of 150 feet, or 6 queuing vehicles. Union Avenue queues are not expected to extend to the adjacent intersections and therefore would not affect their operations.

NEIGHBORHOOD INTRUSION

Daily traffic volumes on streets in the neighborhood to the north of the site were obtained from counts provided by the City of San Jose and are shown on **Figure 12**. Traffic volumes on Barrett Avenue range from approximately 1,100 to 1,600 vehicles per day (vpd), while Jacksol Drive carries 1,280 vpd and White Oaks Avenue carries 1,060 vpd. With two schools, traffic volumes on Woodard Avenue ranges from approximately 3,900 to 4,200. The amount of traffic that is acceptable on a local residential street is dependent on a variety of factors such as the number of residences on the street, the activities that occur on the street, roadway width, and the presence of sidewalks. A typical carrying capacity for neighborhood street ranges between 1,200 and 1,800 VPD. Existing volumes on the identified neighborhood streets are within this range with the exception of Woodard Avenue.

As part of the Traffic Demand Management Plan, the school's administration should create a working group with the neighborhood to assess neighborhood intrusion on an on-going basis and develop and implement traffic calming measures if needed.

1. INTRODUCTION

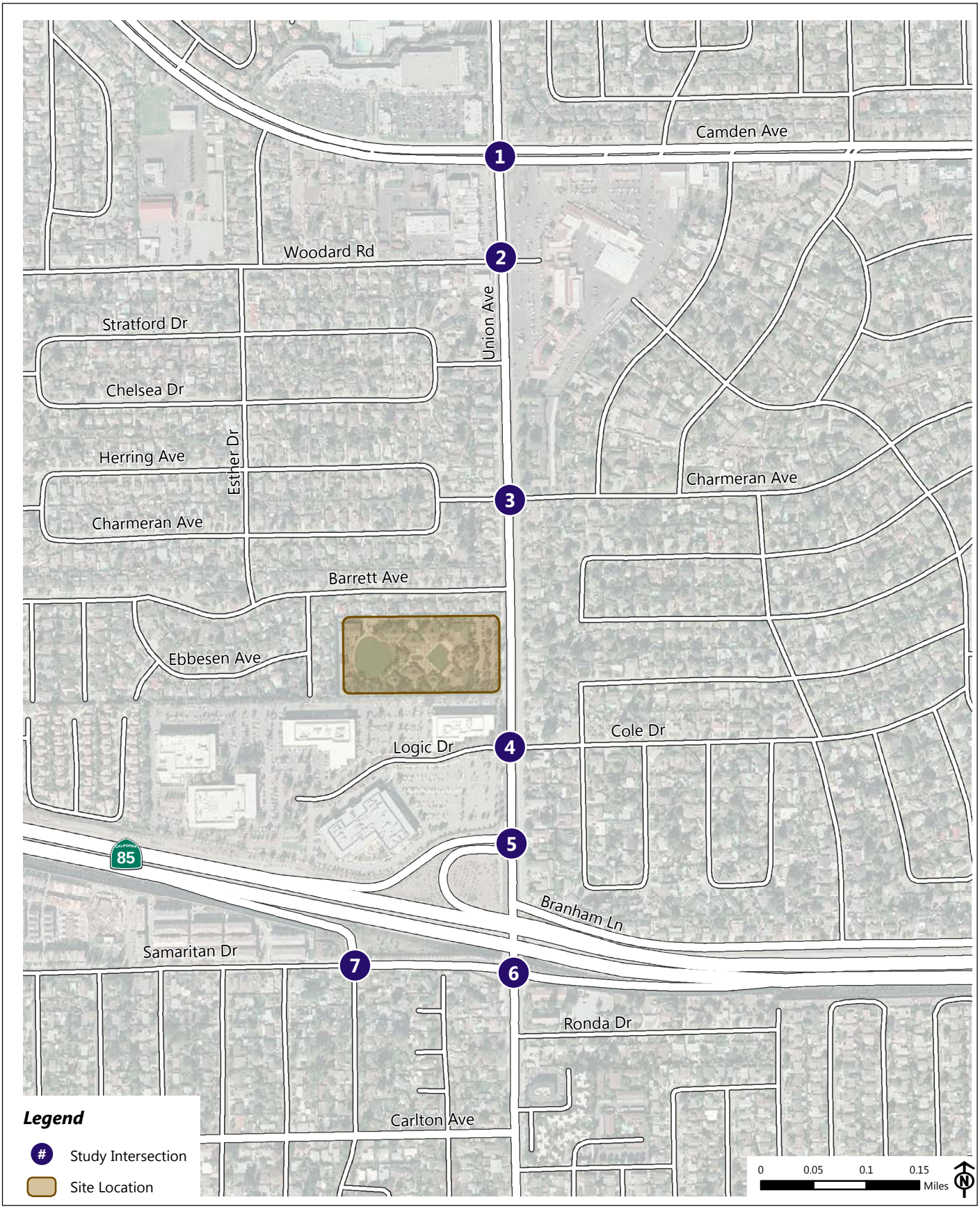
This report presents the results of the Transportation Impact Analysis (TIA) conducted for the proposed Harker Elementary School (the project). It was conducted to identify potential impacts of the school on the surrounding transportation system and to recommend mitigation measures (improvements) for significant impacts. The TIA was prepared according to guidelines of the City of San Jose and the Santa Clara Valley Transportation Authority (VTA), which is the congestion management agency for Santa Clara County.

PROJECT DESCRIPTION

The school site is located at 4525 Union Avenue in San Jose, California, the current location of the Santa Clara County Children's Shelter. Union Avenue is a four-lane arterial roadway in the vicinity of the school site. The school site is located near the interchange of Union Avenue and SR 85. The school would be relocated from its current site at 4300 Bucknall Avenue, also in San Jose. The new site location and the surrounding roadway network are shown on **Figure 1**.

The school will have a maximum enrollment of 600 students in grades K (kindergarten) through 5 and 100 faculty and staff. The school site will retain the two driveways on Union Avenue. There will be 116 parking spaces provided in the existing surface parking lot, which will remain, plus an additional 14 parking spaces located on a new internal roadway that will extend from the south driveway and end in a turn-around cul-de-sac. Student pick-up/drop-off will be located in several areas on the site as shown on the site plan in **Figure 2**. As proposed, nine (9) of the existing buildings would be retained with Buildings B1, B2, B4, B5, and D would be converted into classrooms. Buildings B3 and B6 will be demolished and a new multi-purpose building will be constructed in the center courtyard. The site will be used as a pre-school for 48 to 120 children prior to being converted to an elementary school. The pre-school will be in operation for approximately five to ten years. The campus will be open from 7:00 am to 6:00 pm. There will be two pre-school sessions each day; a half day session from 8:30 am to 12:00 pm and a full day session from 8:30 am to 3:30 pm.

An important aspect of the school will be its Transportation Demand Management (TDM) program which is designed to reduce the amount of traffic generated by the school and therefore its effects on the surrounding roadway system including streets in the adjacent neighborhood. The two main components of the TDM program are staggered start times, which will reduce the intensity of the traffic approaching and departing during the morning peak hour, and an extensive shuttle bus program, which will reduce the amount of school traffic added to both regional and local roadway facilities.



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Project Location and Study Intersections

Figure 1

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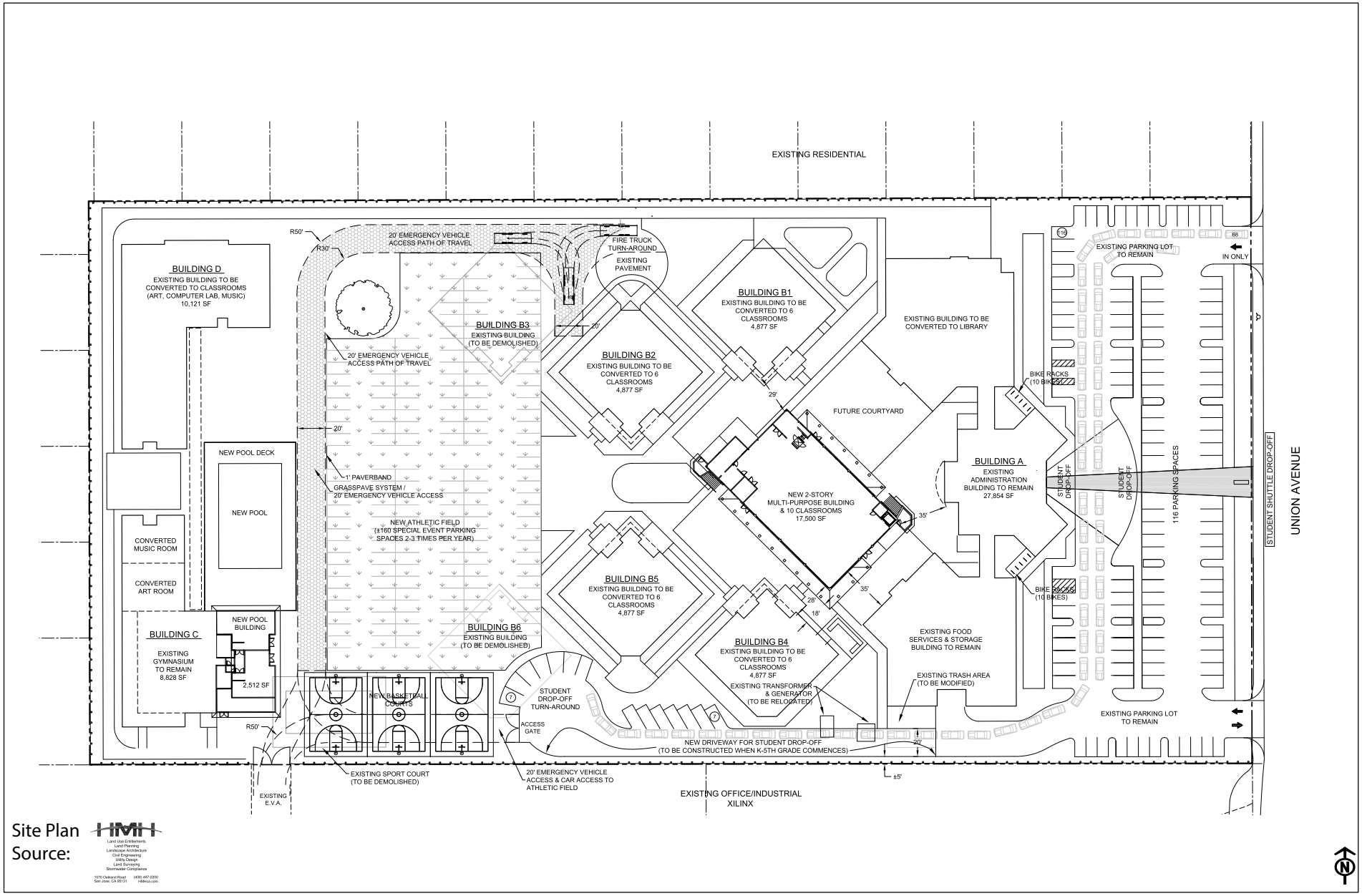

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Conceptual Site Plan

Figure 2

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ANALYSIS OVERVIEW

The TIA was conducted by evaluating the operations of key intersections near the site during the morning (AM) and evening (PM) commute periods, when traffic volumes on the surrounding streets are highest. These time periods are referred to as the AM and PM peak hours. The school also reaches its peak traffic period during the AM peak hour of the surrounding streets. Traffic volumes on the streets are substantially lower during the afternoon period when the school day ends. Therefore it was determined that analyses of the AM and PM peak hours would be the most critical. The effect of school traffic on the adjacent freeway mainline segments and metered on-ramps, plus its effect on pedestrian, bicycle, and transit modes were also evaluated.

STUDY INTERSECTIONS

The intersections evaluated in this study are:

1. Union Avenue and Camden Avenue*
2. Union Avenue and Woodard Street
3. Union Avenue and Charmeran Avenue
4. Union Avenue and Logic Drive/Cole Drive
5. Union Avenue and SR 85 northbound ramps
6. Union Avenue and Samaritan Drive/SR 85 southbound on-ramp
7. Samaritan Drive and SR 85 southbound off-ramp

*Designated Congestion Management Program (CMP) intersection by the Santa Clara Valley Transportation Authority (VTA)

FREEWAY SEGMENTS AND RAMPS

Segments of SR 85 north and south of Union Avenue were included in the study, as well as the SR 85 northbound and southbound on-ramps and off-ramps from Union Avenue. The specific freeway segments on SR 85 included in the study are:

1. South De Anza Boulevard to Saratoga Avenue

2. Saratoga Avenue to Winchester Boulevard
3. Winchester Boulevard to SR 17
4. SR 17 to Bascom Avenue
5. Bascom Avenue to Union Avenue
6. Union Avenue to Camden Avenue
7. Camden Avenue to Almaden Expressway

ANALYSIS SCENARIOS

The operations of the study intersections were evaluated during the AM and PM peak hours for the following scenarios:

Scenario 1: *Existing Conditions* – Existing volumes obtained from counts.

Scenario 2: *Existing Plus Project Conditions* – Existing volumes plus traffic generated by the proposed school.

Scenario 3: *Background Conditions* – Existing volumes plus traffic generated by approved development projects and funded transportation system improvements. The children shelter is assumed to be in full operation under this scenario.

Scenario 4: *Background Plus Project Conditions* – Traffic volumes for Scenario 3 plus traffic generated by the proposed school.

Scenario 5: *Cumulative (Expected Growth) with and without Project Conditions* – Existing volumes plus traffic generated by approved and pending development projects and funded transportation system improvements with and without traffic generated by the proposed school.

ANALYSIS METHODS

The operations of roadway facilities are described with the term *level of service*. Level of Service (LOS) is a qualitative description of traffic flow from the driver's perspective based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, the best operating conditions, to LOS F, the worst operating conditions. LOS E represents "at-capacity" operations. When traffic volumes exceed the capacity, stop-and-go conditions result, and operations are designated as LOS F.

SIGNALIZED INTERSECTIONS

Based on VTA's Level of Service Analysis Guidelines (June 2003), the method described in Chapter 16 of the 2000 *Highway Capacity Manual* (HCM) (Special Report 209, Transportation Research Board) with adjustments to account for conditions in Santa Clara County, was used to conduct the level of service calculations for the study intersections. This level of service method, which is approved by the City of San Jose, analyzes a signalized intersection's operation based on average control delay per vehicle. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using TRAFFIX 8.0 analysis software and is correlated to a LOS designation as shown in **Table 1**. The City of San José defines acceptable intersection operations as LOS D or better. The VTA has an LOS threshold of LOS E for CMP-designated intersections.

TABLE 1 SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2000 Highway Capacity Manual.

FREEWAY SEGMENTS

Freeway segments are evaluated using VTA's analysis procedure, which is based on the density of the traffic flow using methods described in the *2000 HCM*. Density is expressed in passenger cars per mile per lane. The Congestion Management Program ranges of densities for freeway segment levels of service are shown in **Table 2**. The LOS standard for freeway segments is LOS E.

TABLE 2 FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

Level of Service	Density (passenger cars per mile per lane)
A	≤ 11
B	11.1 to 18.0
C	18.1 to 26.0
D	26.1 to 46.0
E	46.1 to 58.0
F	> 58.0

Sources: *Traffic Level of Service Analysis Guidelines*, VTA Congestion Management Program, June 2003; *Highway Capacity Manual*, Transportation Research Board, 2000, VTA *Transportation Impact Analysis Guidelines*, March 2009.

RAMP QUEUING

Ramp queuing is evaluated using a combination of field observations and comparisons of the amount of added traffic to the threshold set as 1 percent of the ramp's capacity. For on-ramps, field observations are conducted to determine whether there are existing or potential queuing problems that could affect city street operations. If there are, then the ramp capacity is determined as either the ramp metering rate or 1,800 vehicles per hour, whichever is lower. For off-ramps, field observations are conducted to determine whether there are existing or potential queuing problems that could affect freeway operations. If there are, then the capacities of the individual turn movements of the ramp terminal intersection are calculated by dividing "Final Vol" by "Volume/Cap" from the TRAFFIX output sheet. The ramp capacity is computed as the sum of the individual turn movement capacities. The amount of traffic added by the project is compared to 1 percent of the capacity for both on and off-ramps. If it is equal to or greater than 1 percent of the capacity, then there is an operational impact.

SIGNIFICANT IMPACT CRITERIA

The following criteria, based on guidelines of the City of San Jose and VTA, were used to determine whether changes to the transportation system caused by the school would result in significant project impacts.

INTERSECTION IMPACT CRITERIA

The City of San Jose has established LOS D as their LOS standard. Traffic impacts at intersections would occur when the addition of traffic associated with implementation of a project causes:

- Intersection operations to deteriorate from an acceptable level (LOS D or better, with LOS exceptions described above) to an unacceptable level (LOS E or LOS F); or,
- Exacerbation of unacceptable operations by increasing the average critical delay by more than 4 seconds and increasing the critical volume-to-capacity (V/C) ratio by 0.010 or more at an intersection operating at LOS E or F (LOS F for regionally significant roads).
- The V/C ratio to increase by 0.01 or more at an intersection with unacceptable operations (LOS F) when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

FREEWAY SEGMENT IMPACT CRITERIA

The LOS standard for CMP freeway segments is LOS E. Traffic impacts on a CMP freeway segment occurs when the addition of project traffic causes:

- Freeway segment operations to deteriorate from an acceptable level (LOS E or better) under the Existing Conditions to an unacceptable level (LOS F); or
- An increase in traffic of more than one percent of the capacity of a segment that operates at LOS F under Existing Conditions.

FREEWAY RAMP IMPACT CRITERIA

Operational impacts of the project were evaluated by comparing the amount of added traffic to the capacity for ramps that have existing or potential queuing problems based on field observations. If the amount of traffic added by the project is equal to or greater than 1 percent of the capacity, then there is an operational impact.

PEDESTRIAN IMPACT CRITERIA

Significant impacts to pedestrian facilities would occur when a project or an element of the project:

- Creates a substantial increase in demand for pedestrian facilities where none currently exist or creates conditions that would lead to overcrowding on existing facilities; or
- Conflicts with an existing or planned pedestrian facility; or
- Conflicts with policies related to pedestrian activity adopted by the City of San Jose.

BICYCLE IMPACT CRITERIA

The General Plan for the City of San Jose identifies existing and planned bicycle networks and identifies improvements and/or related policies necessary to ensure that these facilities are safe and effective for City residents. Using the General Plan as a guide, significant impacts to bicycle facilities would occur when a project or an element of a project:

- Creates a substantial increase in demand for bicycle facilities where none currently exist or creates conditions that would lead to overcrowding on existing facilities; or
- Conflicts with an existing or planned bicycle facility; or
- Conflicts with policies related to bicycle activity adopted by the City of San Jose.

TRANSIT IMPACT CRITERIA

Significant impacts to transit service would occur if the project or any part of the project:

- Creates a substantial increase in transit demand that could not be accommodated by existing or planned transit capacity, measured by comparing the expected transit capacity with the expected demand for transit service; or
- Causes a substantial increase in delay or operating cost to a transit provider; or
- Reduces transit availability or interferes with existing transit users on a permanent basis, or
- Conflicts with transit policies adopted by the City of San Jose or VTA.

REPORT ORGANIZATION

The analysis results are presented in the following report chapters:

- **Chapter 2** describes the existing transportation system serving the project site and the current operating conditions of the key intersections and freeway segments.
- **Chapter 3** presents Background Conditions.
- **Chapter 4** discusses the method used to estimate the amount of traffic added to the surrounding roadways by the school, including a detailed description of the shuttle bus program.
- **Chapter 5** describes Project Conditions and presents transportation system impacts, driveway operations, potential additional Transportation Demand Measures, and the results of the site plan review.
- **Chapter 6** describes Existing plus Project Conditions.
- **Chapter 7** discusses Cumulative (Expected Growth) Conditions.

2. EXISTING CONDITIONS

This chapter describes the existing conditions of the roadway facilities, pedestrian and bicycle facilities, and transit service in the study area. It also presents existing traffic volumes and operations for the study intersections and freeway segments with the results of level of service calculations.

EXISTING ROADWAY NETWORK

State Route 85 (SR 85), Camden Avenue, and Union Avenue provide access to the site. Descriptions of these roadways are presented below. **Figure 1** shows the locations of these facilities in relation to the project site.

SR 85 extends from Mountain View in the north to south San Jose through the west side of the Santa Clara Valley. The freeway has two mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction. HOV lanes are also known as diamond lanes or carpool lanes and are restricted to use by buses, carpools, and motorcycles between 5:00 and 9:00 am and 3:00 and 7:00 pm. SR 85 has an interchange with Union Avenue that provides access to the project site. Weekday ramp metering is in effect on the northbound on-ramp at a rate of 280 vehicles per hour per lane (vphpl) during the AM peak hour and southbound on-ramp at a rate of 470 vphpl during the PM peak hour. The Santa Clara Valley Transportation Authority (VTA) has plans to convert the HOV lanes to Express Lanes where single-occupant vehicles (SOVs) can use them by paying a toll, similar to southbound I-680 over the Sunol Grade.

Camden Avenue is a six-lane divided arterial roadway that extends northwest from the southeast corner of San Jose to SR 17, where it turns into the San Tomas Expressway. Camden Avenue is approximately half a mile north of the project site, and has occasional on-street parking on the northbound/westbound side of the roadway.

Union Avenue is a four-lane north-south roadway that extends from Blossom Hill Road north to East Campbell Avenue. There is a short stretch with on-street parking on the west side of the street between Barrett Avenue and Charmeran Avenue.

TRANSIT SERVICE

The Santa Clara Valley Transportation Authority (VTA) provides bus and light rail transit (LRT) service in Santa Clara County. The site is served by Bus Route 62 which extends from the intersection of Piedmont and Sierra to Good Samaritan Hospital. It has a stop on Union Avenue in front of the project site, as shown on **Figure 3** and in the photo to the right. The bus stop has a bench for waiting passengers. This bus operates from 6:00 am to 11:00 pm. On weekdays, its service frequency is 30 minutes.

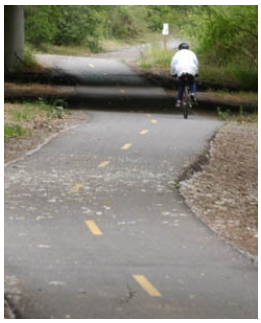
PEDESTRIAN FACILITIES

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals. **Figure 3** shows the pedestrian facilities near the project site. Sidewalks are provided on the majority of streets in the vicinity of the school site. Sidewalks are missing on Union Avenue between Cole Drive and SR 85. Sidewalks are also missing on the first blocks of Charmeran Avenue, Cole Drive, and Branham Lane east of Union Avenue. Pedestrian crosswalks are provided on at least one leg at all of the signalized study intersections. Pedestrian signals are provided at each of the crosswalk locations with the exception of the east leg of Intersection #3 Union Avenue / Charmeran Avenue.

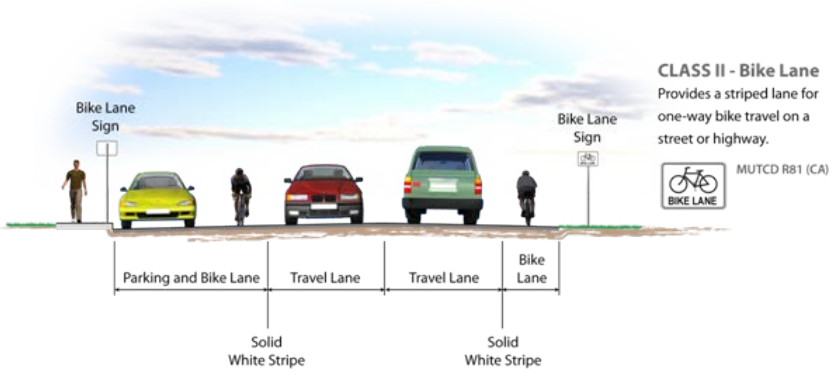
BICYCLE FACILITIES

There are three types of bikeway facilities, as described below and shown on the accompanying figures.

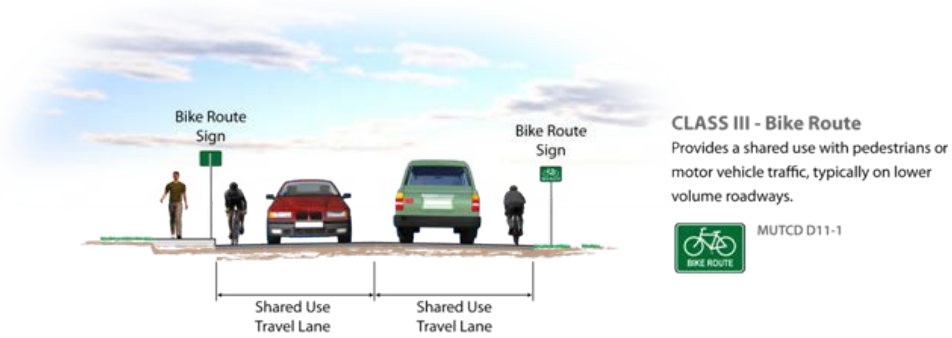
- *Class I Bikeway (Bike Path)* provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. In general, bike paths serve corridors not served by streets and highways or where sufficient right-of-way exists to allow such facilities to be constructed away from the influence of parallel streets and numerous vehicle conflicts.



- *Class II Bikeways (Bike Lanes)* are lanes for bicyclists adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- *Class III Bikeway (Bike Route)* are designated by signs or pavement markings for shared use with pedestrians or motor vehicles, but have no separated bike right-of-way or lane striping. Bike routes serve either to: a) provide continuity to other bicycle facilities, or b) designate preferred routes through high demand corridors.

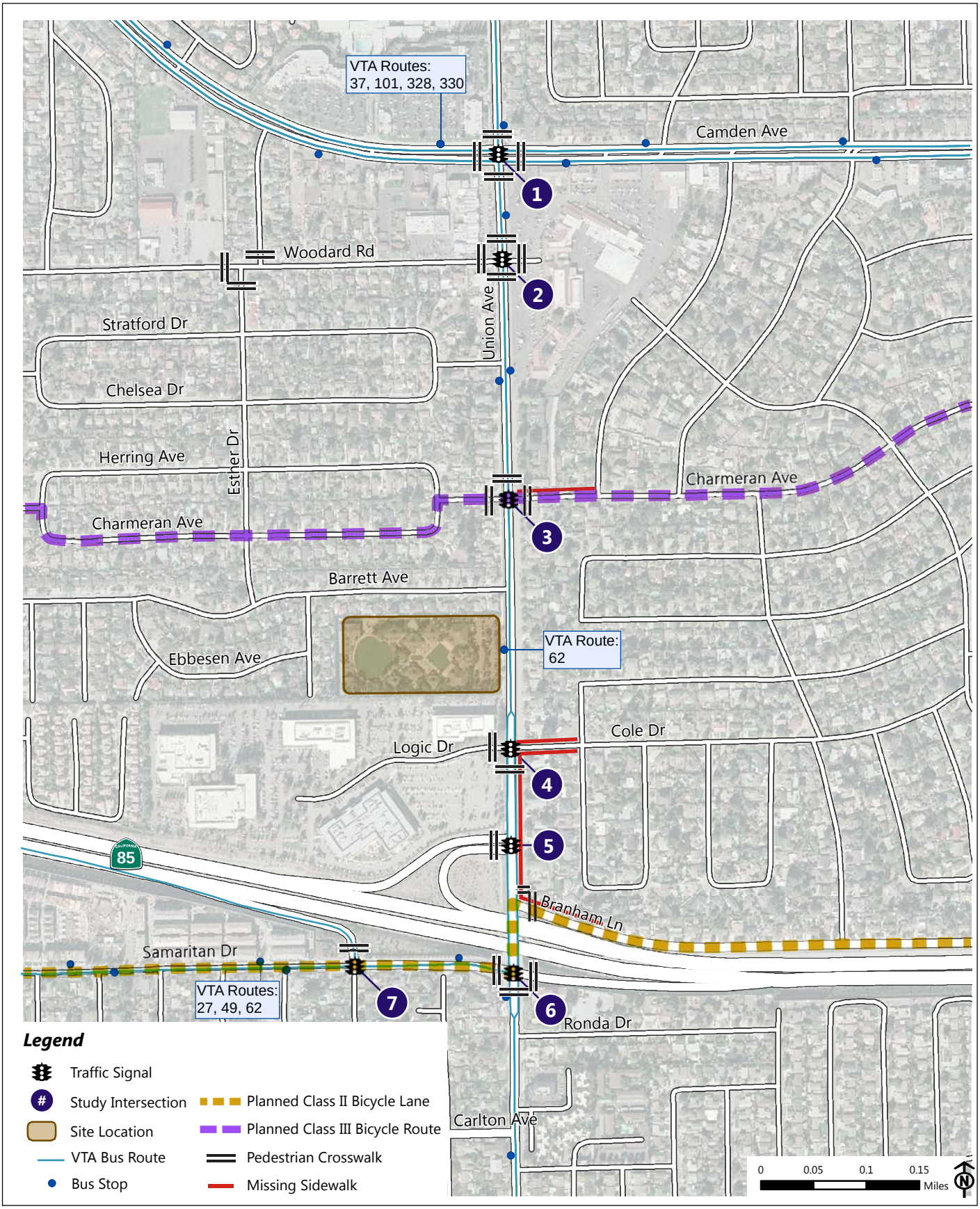


Bikeway planning and design in California typically relies on guidelines and design standards established by the California Department of Transportation (Caltrans) in the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design). The *VTA Bicycle Technical Guidelines* (December 2007) recommends that Caltrans standards regarding bicycle facility dimension be used as a minimum and provides supplemental information and guidance on when and how to better accommodate the many types of bicyclists.

Two bicycle facilities are planned for the area per the San Jose Bike Plan 2020. Class II bicycle lanes are planned for Samaritan Drive and Branham Lane, and a Class III bicycle route is planned for Charmeran Avenue. **Figure 3** shows existing and planned pedestrian and bicycle facilities.

INTERSECTION VOLUMES AND LANE CONFIGURATIONS

Available traffic counts were obtained from the City of San Jose and the VTA, which is also the Congestion Management Agency for Santa Clara County. These counts were supplemented with manual counts conducted in early December 2011 and in early June 2012 when schools were in normal session. The AM and PM peak hour turning movement volumes, lane configurations, and traffic control devices for the study intersections are presented on **Figure 4.** The count data are presented in **Appendix A**.



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Existing and Planned Pedestrian, Bicycle, and Transit Facilities

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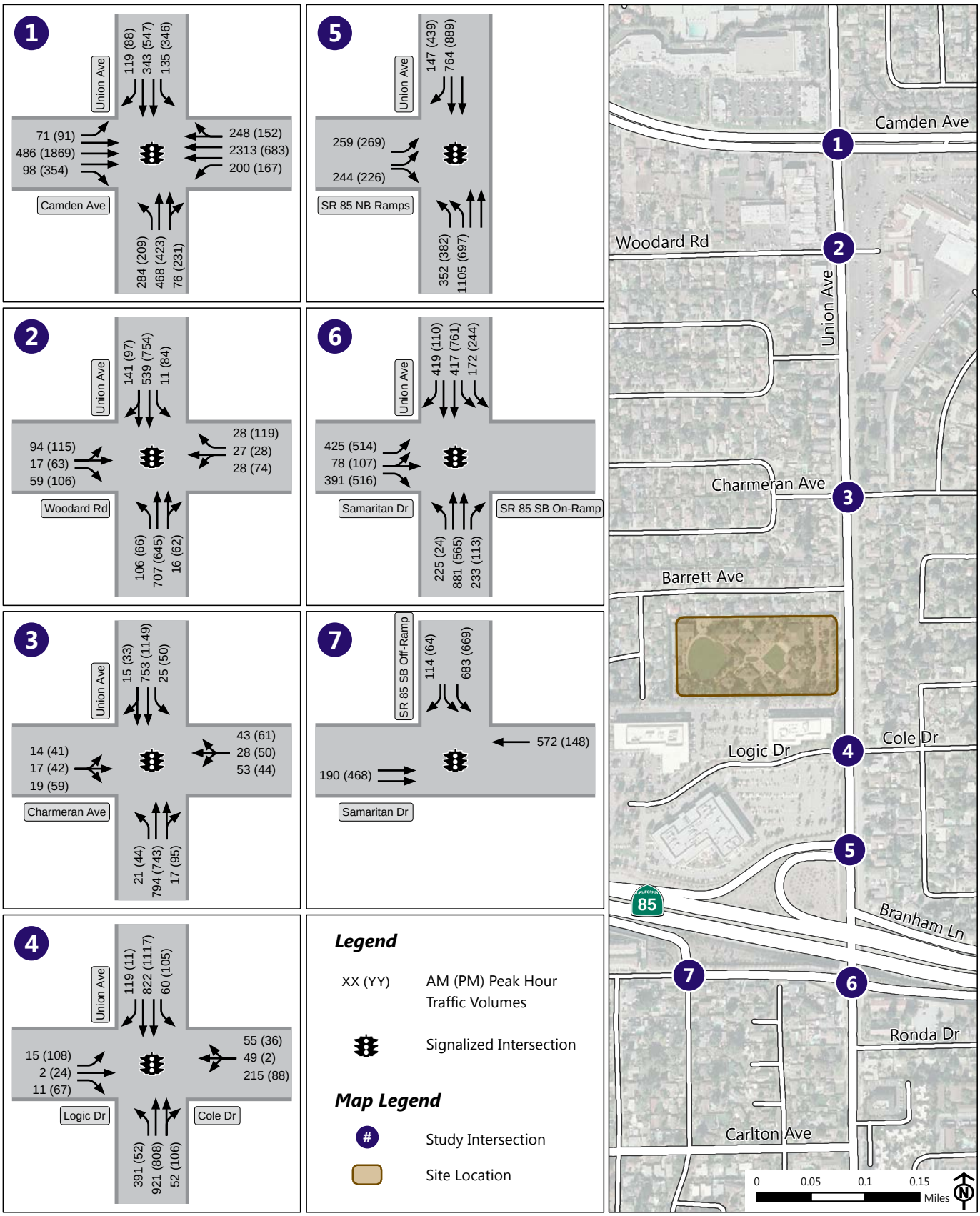
Figure 3



FEHR PEERS

Existing Peak-Hour Intersection Volumes, Lane Configurations, and Traffic Control Devices

Figure 4

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INTERSECTION OPERATIONS

The existing peak hour volumes, lane configurations, and traffic signal timings and phasings were used as inputs to the intersection level of service calculations conducted to evaluate existing intersection operations. The results are presented in **Table 3**. The calculations are contained in **Appendix B**.

TABLE 3 EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Count Date	Peak Hour	Delay[1]	LOS[2]
1. Union Ave. and Camden Ave.	Signal	11/3/2010 11/3/2010	AM PM	51.0 60.1	D- E
2. Union Ave. and Woodard St.	Signal	9/30/2010 9/30/2010	AM PM	19.9 24.1	B- C
3. Union Ave. and Charmeran Ave.	Signal	6/6/2012 6/6/2012	AM PM	13.6 17.5	B B
4. Union Ave. and Logic Dr./Cole Dr.	Signal	12/6/2011 6/6/2012	AM PM	24.9 14.2	C B
5. Union Ave. and SR 85 NB ramps	Signal	12/6/2011 6/6/2012	AM PM	18.5 19.4	B- B-
6. Union Ave. and Samaritan Dr./SR 85 SB on-ramp	Signal	12/6/2011 6/6/2012	AM PM	22.4 21.6	C+ C+
7. Samaritan Dr. and SR 85 SB off-ramp	Signal	6/6/2012 6/6/2012	AM PM	11.0 9.4	B+ A

Notes: NB = Northbound, SB = Southbound
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions for signalized intersections.
2. LOS = Level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package.

Source: Fehr & Peers, August 2012.

Acceptable intersection operations in the City of San Jose are defined as LOS D or better. The study intersections currently operate at acceptable levels, with the exception of the intersection of Union Avenue and Camden Avenue during the PM peak hour. This intersection is regionally significant and is a designated CMP intersection. According to the VTA, the LOS threshold for CMP-designated intersections is LOS E. However in San Jose, the City of San Jose threshold (LOS D) applies to CMP intersections.

FREEWAY OPERATIONS

The VTA monitors freeway performance and operations every two years. The results for both the mixed-flow lanes and the HOV lanes on the study freeway segments were obtained from the latest monitoring report (Valley Transportation Authority Monitoring and Conformance Report 2011) and are presented in **Table 4**.

Acceptable operations are defined as LOS E or better, indicating that some congestion is expected on the freeways in Santa Clara County during peak commute periods. Most of the study freeway segments are congested (operating at LOS F) in the northbound direction during the AM peak hour. Many of these segments are also operating at LOS F in the reverse direction (southbound) during the PM peak hour.

TABLE 4 EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

Freeway	From	To	Peak Hour	Mixed Flow		HOV	
				Density[1]	LOS[2]	Density[1]	LOS[2]
Northbound SR 85	Almaden Expressway	Camden Avenue	AM PM	**85** 36	**F** D	45 9	D A
	Camden Avenue	Union Avenue	AM PM	**70** 27	**F** D	42 10	D A
	Union Avenue	Bascom Avenue	AM PM	**60** 27	**F** D	37 11	D A
	Bascom Ave	SR 17	AM PM	**105** 14	**F** B	**77** 18	**F** B
	SR 17	Winchester Boulevard	AM PM	**85** 18	**F** B	**90** 8	**F** A
	Winchester Boulevard	Saratoga Avenue	AM PM	**69** 27	**F** D	46 8	D A
	Saratoga Avenue	Saratoga-Sunnyvale Road	AM PM	32 21	D C	31 7	D A
Southbound SR 85	Saratoga-Sunnyvale Road	Saratoga Avenue	AM PM	23 **65**	C **F**	6 26	A C
	Saratoga Avenue	Winchester Blvd	AM PM	30 54	D E	4 29	A D
	Winchester Boulevard	SR 17	AM PM	14 27	B D	6 24	A C

TABLE 4 EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

Freeway	From	To	Peak Hour	Mixed Flow		HOV	
				Density[1]	LOS[2]	Density[1]	LOS[2]
	SR 17	Bascom Avenue	AM PM	16 **68**	B **F**	14 25	B C
	Bascom Avenue	Union Avenue	AM PM	20 **81**	C **F**	5 37	A D
	Union Avenue	Camden Avenue	AM PM	31 52	D E	8 30	A D
	Camden Avenue	Almaden Expressway	AM PM	24 41	C D	10 24	A C

Notes: NB = Northbound, SB = Southbound
1. Measured in passenger cars per mile per lane.
2. LOS = Level of service.

Bold text indicates unacceptable operations (LOS F).
Source: 2011 Monitoring and Conformance Report, VTA June 2012.

FIELD OBSERVATIONS

Existing operations of the intersections and freeway on-ramp queuing due to the ramp meters were observed during field visits in December 2011 and early June 2012. In general, all of the study intersections operated at or near the calculated levels of service and all queues were cleared after one signal cycle. Through traffic Union Avenue and Camden Avenue experienced heavy queues (>15 vehicles per lane) during both peak hours. Uneven lane utilizations (longer queues in one of the lanes) were observed on the southbound through at Union Avenue/SR 85 northbound ramps and eastbound left turn at Union Avenue/Samaritan Drive/SR 85 southbound on-ramp. Turning vehicles were observed to occasionally spill out of existing turn pockets, as identified below:

- Union Avenue and Camden Avenue: northbound left, westbound left (AM and PM peak hours)
- Union Avenue and Logic Drive/Cole Drive: northbound left (AM and PM peak hours)
- Union Avenue and SR 85 northbound ramps: northbound left (AM peak hour)
- Union Avenue and Samaritan Drive/SR 85 southbound on-ramp: northbound left (AM peak hour)

The SR 85 northbound on-ramp queue was observed to extend beyond the available ramp capacity during the AM peak hour and affected intersection operations. Similarly, the SR 85 southbound on-ramp was observed to required full ramp capacity during the PM peak hour. It should be noted that these conditions only occurred for approximately 10-15 minutes during the whole observation. This is not

unusual for metered on-ramps as they are metered to maintain optimal freeway mainline flow. All SR 85 off ramps were served by their existing capacities with no queues extending to the mainline flow.

3. BACKGROUND CONDITIONS

This chapter presents the results of the intersection level of service calculations under Background Conditions. Background Conditions contain existing traffic volumes plus traffic projections for approved but not yet constructed or occupied development projects. Background conditions typically include fully-funded transportation system improvements. As of the time of this analysis, there are no transportation system improvements near the Union Avenue site.

TRAFFIC FROM APPROVED DEVELOPMENTS

The City of San Jose maintains a database of traffic projections from approved developments called the Approved Trips Inventory, or ATI. The ATI for each of the study intersections is contained in **Appendix C**. There are currently two approved developments that add traffic to Union Avenue via Samaritan Drive and SR 85.

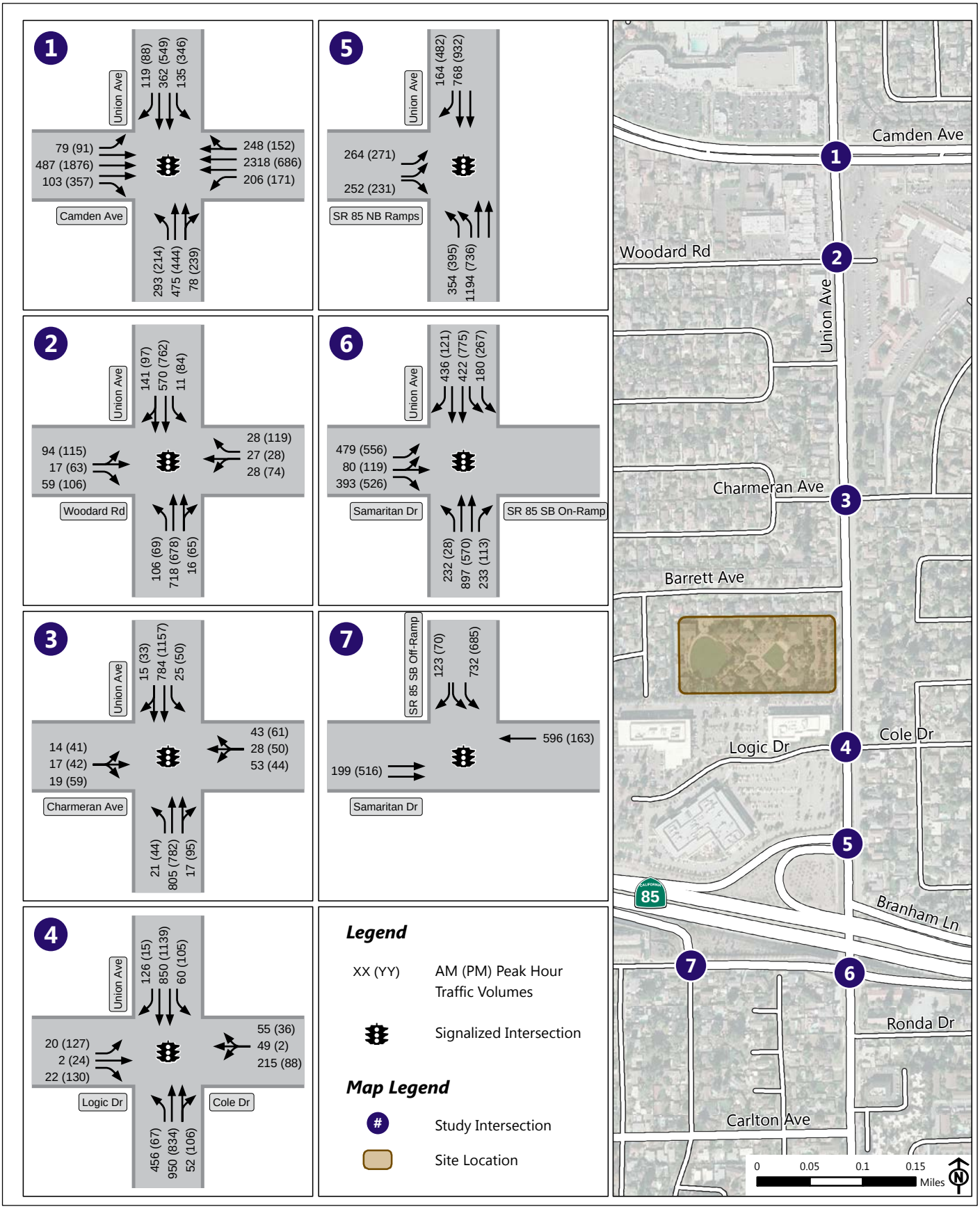
According to City guidelines, traffic generated by existing uses on the site are included under Background Conditions if the use was open within the past 5 years. The site is currently occupied by buildings that were used as a children's shelter until October 2009. When in full operation, the shelter averaged approximately 100 daily staff members and could support up to 95 children on-site. While the children's center is no longer in full operation, it is used as a receiving center with 25 staff members and generates 18 vehicle trips in the morning and 16 trips in the evening (based on driveway counts). Since most of the vehicle trips to and from the site are generated by staff, it is estimated that the children's shelter under full operation would generate four times the existing peak hour volumes (100 staff members vs. 25 staff members). The net new traffic (full operation – existing operation) generated by the children's shelter was estimated to be 36 inbound trip and 18 outbound trips during the AM peak hour and 18 inbound trip and 30 outbound trips during the PM peak hour. These trips were added under these conditions.

BACKGROUND TRAFFIC PROJECTIONS

Traffic projections from the ATIs and children's shelter were added to the existing intersection volumes on **Figure 4** to obtain traffic projections for Background Conditions. The results are presented on **Figure 5**.

INTERSECTION OPERATIONS

Level of service calculations were conducted to evaluate intersection operations under Background Conditions. The calculations are contained in **Appendix B** and the results are presented in **Table 5**.



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Background Peak-Hour Intersection Volumes, Lane Configurations, and Traffic Control Devices

Figure 5

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TABLE 5 BACKGROUND INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour	Background	
		Delay[1]	LOS[2]
1. Union Ave. and Camden Ave.	AM PM	51.9 61.0	D- E
2. Union Ave. and Woodard St.	AM PM	19.8 23.4	B- C
3. Union Ave. and Charmeran Ave.	AM PM	13.6 17.4	B B
4. Union Ave. and Logic Dr./Cole Dr.	AM PM	25.8 15.1	C B
5. Union Ave. and SR 85 NB ramps	AM PM	18.5 19.3	B- B-
6. Union Ave. and Samaritan Dr./SR 85 SB on-ramp	AM PM	22.6 21.8	C+ C+
7. Samaritan Dr. and SR 85 SB off-ramp	AM PM	11.4 9.6	B+ A

Notes: NB = Northbound, SB = Southbound
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions for signalized intersections.
2. LOS = Level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package.

Bold text indicates significant impact.
Source: Fehr & Peers, August 2012.

As under Existing Conditions, all of the study intersections will continue to operate at acceptable levels with the addition traffic from approved developments and children's center in full operation mode, with the exception of the intersection of Union Avenue and Camden Avenue during the PM peak hour.

4. SCHOOL TRAFFIC ESTIMATES

Harker Elementary School will add traffic to the surrounding roadways from parents dropping off and picking up their children and from faculty and staff driving to and from the school. The processes used to estimate the amount of traffic and how the traffic will approach and depart the site are described in this chapter. The amount of traffic is called "trip generation," and the directions of approach and departure are called "trip distribution." These two steps are combined and the school traffic is added to individual roadway segments and intersection turning movements in "trip assignment".

TRIP GENERATION

The school is moving from the Bucknall site to the Union Avenue site and the number of students will remain the same. However, the school start times will be more staggered at the Union Avenue site. Therefore, traffic counts conducted at the Bucknall site measuring all of the vehicles entering and exiting the school, including parents and students, faculty, and staff, were used as a starting point. Trip generation rates from Harker's Saratoga campus (Upper School, grade 9 through 12) and other sources were reviewed to ensure that the rates from the Bucknall site are reasonable. Trip generation rates at Harker's Saratoga campus are slightly lower than the Bucknall site as some of the students can drive themselves to school. Elementary (K-5th) and Private (K-8th) School rates published by the Institute of Transportation Engineers (ITE) are somewhat lower. A Challenger school in San Jose generates 1.17 trips per student in the AM peak hour, very similar to the rates of 1.23 trips per student for Harker, thus reinforcing that the Bucknall site rates are reasonable for use in this TIA

Currently the upper elementary grades begin at 8:15 am and the lower elementary grades begin at 8:20 and 8:25 am. At the Union Avenue site, the school start times will be changed to 8:00 am and 8:40 am. Spreading the school start times from a time span of 10 minutes to a time span of 40 minutes will increase the amount of traffic entering and exiting the site before and after the school's traffic peak hour. This will therefore reduce the amount of traffic generated by the school during the AM peak hour by approximately 20 percent.

Traffic generated by the fully operating children's shelter site (72 AM peak hour trips and 64 PM peak hour trips) was subtracted to yield the net new trips generated by the school under the Project Scenarios.

The trip generation estimates, reductions to account for the staggered start times, and trip credit for vehicle trips generated by the children's shelter are presented in **Table 6**, The school is projected to add

518 AM peak hour trips (278 in and 240 out) and 356 PM peak hour trips (180 in and 176 out) to the surrounding roadway system.

The school site will initially be used as a pre-school with 48 to 120 students. The amount of traffic generated by the pre-school was estimated by applying ITE trip generation rates for day care facilities as there are no rates for pre-schools. The trip generation estimates assuming 120-students are presented in **Table 6** and are 93 AM peak hour trips (49 inbound and 44 outbound) and 89 PM peak hour trips (42 inbound and 47 outbound). These estimates do not account for any trip credits associated with the children's shelter. The pre-school will generate fewer vehicle trips than the elementary school.

TABLE 6 HARKER TRIP GENERATION ESTIMATES

Item	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Bucknall Trip Rates[1]	0.68	0.55	1.23	0.34	0.36	0.70
Initial Trip Estimates (600 students)	408	330	738	204	216	420
Reduction due to Staggered Start Times	(82)	(66)	(148)	0	0	0
Reduction due to Existing Receiving Center Use	(48)	(24)	(72)	(24)	(40)	(64)
Net New Harker Trips	**278**	**240**	**518**	**180**	**176**	**356**
ITE Day Care Center (Preschool) Rates[2]	0.41	0.36	0.77	0.35	0.39	0.74
Preschool Trips (120 students)	49	44	93	42	47	89

Notes:
1. AM/PM peak hour trip rates were developed based on 05/07/2012 Harker Elementary School (4300 Bucknall Road, San Jose, CA.) vehicle survey: school student count - 604.
2. Trip Generation, 8th Edition, Institute of Transportation Engineers, Day Care Center (565).

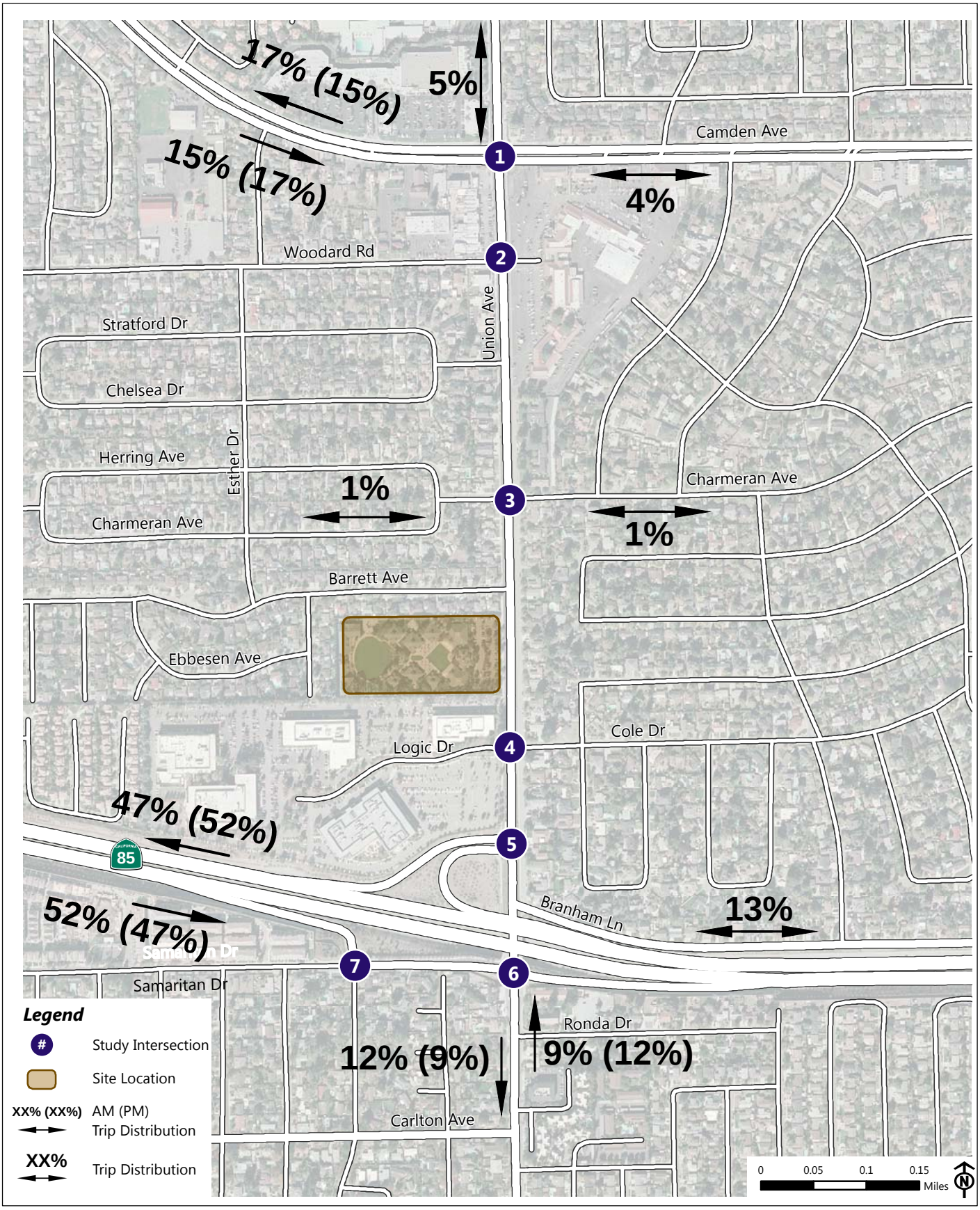
Source: Fehr & Peers, August 2012.

TRIP DISTRIBUTION

The directions of approach and departure were estimated based on the residence locations (zip codes) of existing Harker Elementary School students. The numbers and percentages of students residing in each zip code area and the routes from each zip code area to the school site were identified. The resulting major directions of approach and departure are shown on **Figure 6**.

TRIP ASSIGNMENT

The trips were assigned to the roadway system based on the directions of approach and departure and taking into consideration freeway congestion and ramp metering. For example, some of the traffic approaching the site from the north/west on SR 85 in the morning was assigned to exit the site to the north on Union Avenue and to the west on Camden Avenue with some traffic continuing to northbound SR 17/I-280 to avoid the congestion on northbound SR 85 and the time penalty due to the meters on the northbound on-ramp while some of the traffic was assigned to exit the site to the south on Union Avenue and to the west on Los Gatos Almaden Road. In the evening, similar amount of traffic would approach the site through north and south of Union Ave to avoid the congestion on southbound SR 85. For the this study, we assumed 10 percent (4 percent to/from north Union Avenue and 6 percent to/from south Union Avenue) of the AM and PM peak hour traffic from the north/west on SR 85 would re-route to avoid congestion on SR 85. The AM and PM peak hour trip assignments at the study intersections for the Project Conditions are shown on **Figure 7.**



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Directions of Approach and Departure

Figure 6

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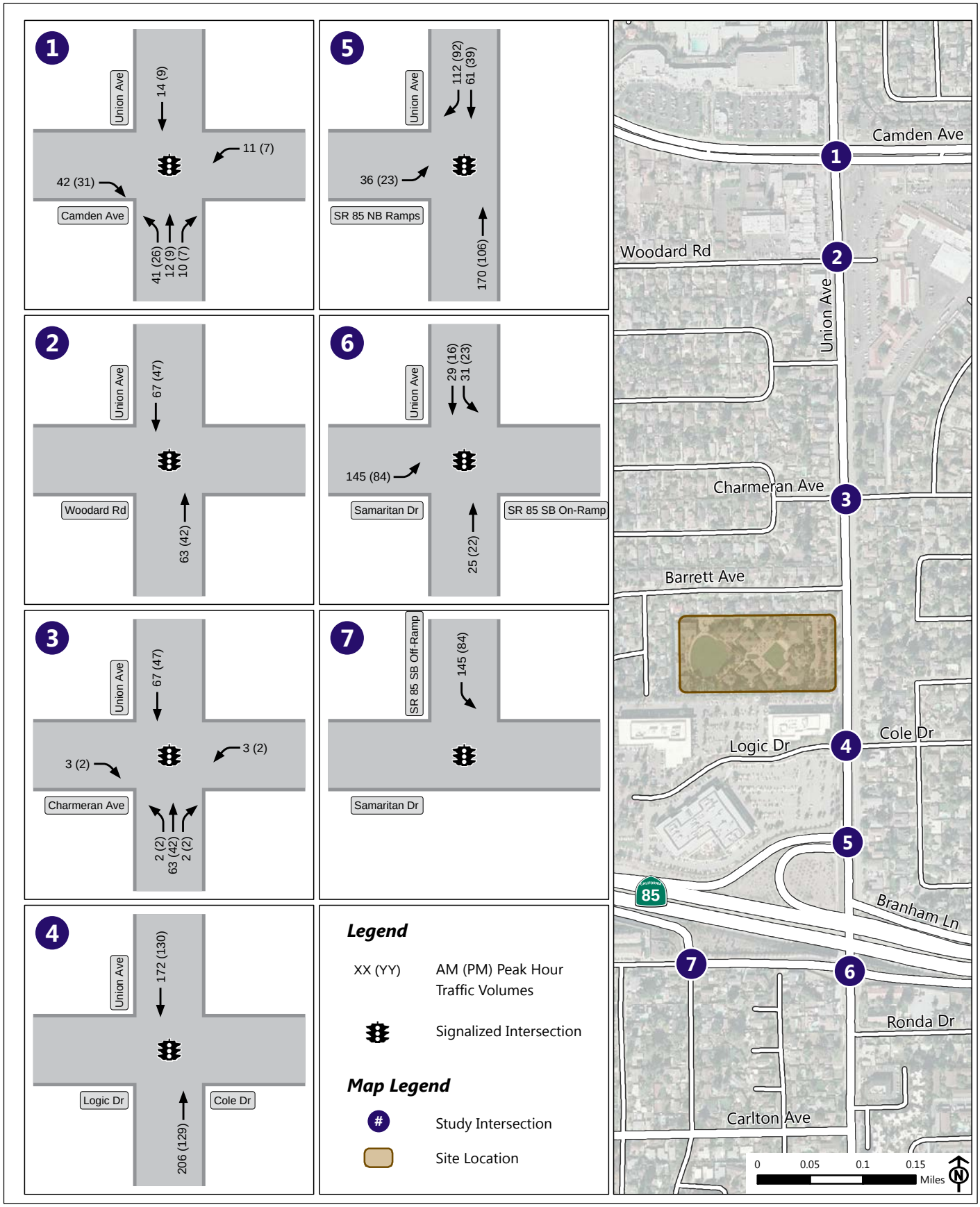

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School Trip Assignment

Figure 7

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5. PROJECT CONDITIONS

This chapter presents the results of the intersection level of service calculations under Project Conditions. Project Conditions contain traffic from Background Conditions plus traffic added by the proposed school (the project). Similar to Background Conditions, there are no transportation system improvements near the Union Avenue site under Project Conditions.

PROJECT TRAFFIC PROJECTIONS

Intersection volumes for Project Conditions are the traffic projections for Harker School presented on **Figure 7** added to the background volumes on **Figure 5**. The results are presented on **Figure 8**.

TRANSPORTATION SYSTEM IMPACTS & MITIGATION MEASURES

The potential impacts of the Harker Elementary School's Union Avenue campus on the surrounding transportation system were evaluated at nearby intersections, freeway segments, freeway ramps, and on pedestrian facilities, bicycle facilities, and transit service. Impacts and measures to mitigate those impacts are addressed in this chapter, including additional Transportation Demand Management (TDM) measures to reduce the amount of traffic generated by the school.

Intersection and freeway level of service calculation results and the significance criteria described in **Chapter 1**, Introduction were used to identify significant impacts of the Harker Elementary School on the surrounding transportation system.

INTERSECTIONS

The results of the intersection level of service calculations for Background and Project Conditions are presented in **Table 7**. Changes in critical volume-to-capacity ratios (V/C) and critical movement delays are also presented for use in determining significant impacts. (The calculations are contained in **Appendix B**). All of the study intersections will continue to operate at acceptable levels with the addition of Harker Elementary School traffic, with the exception of the intersection of Union Avenue and Camden Avenue during the PM peak hour. The change in intersection operations due to the added traffic is not considered a significant impact based on the criteria presented in the Introduction chapter (**Chapter 1**).

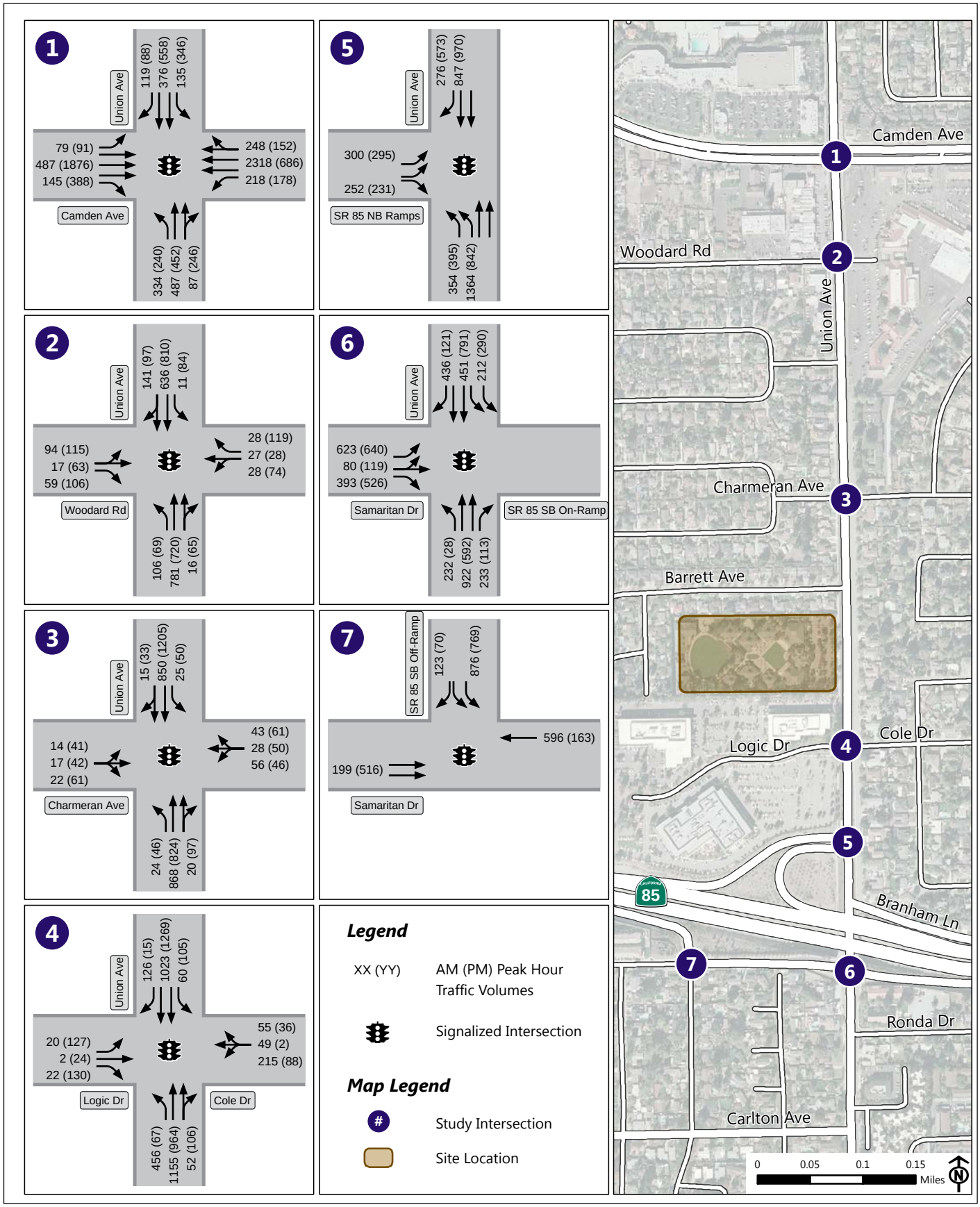
(For the school to have a significant impact, it would need to exacerbate conditions such that the critical delay would be increased by 4 or more seconds. The increase in delay is projected to be less than 4 seconds when compared to Background Conditions.) Thus, the school will have a **less-than-significant impact** on intersection operations.

TABLE 7 BACKGROUND AND PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour	Background		Project			
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. V/C[3]	Δ in Crit. Delay4
1. Union Ave. and Camden Ave.	AM PM	51.9 61.0	D- E	54.5 62.0	D- E	0.029 0.009	3.8 1.1
2. Union Ave. and Woodard St.	AM PM	19.8 23.4	B- C	19.3 23.7	B- C	0.020 0.015	-0.4 0.4
3. Union Ave. and Charmeran Ave.	AM PM	13.6 17.4	B B	13.1 17.2	B B	0.031 0.016	-0.2 0.0
4. Union Ave. and Logic Dr./Cole Dr.	AM PM	25.8 15.1	C B	26.0 14.3	C B	0.051 0.038	1.5 -0.6
5. Union Ave. and SR 85 NB ramps	AM PM	18.5 19.3	B- B-	21.8 18.7	C+ B-	0.044 0.058	-12.3 0.5
6. Union Ave. and Samaritan Dr./SR 85 SB on-ramp	AM PM	22.6 21.8	C+ C+	22.9 22.0	C+ C+	0.000 0.005	0.0 0.1
7. Samaritan Dr. and SR 85 SB off-ramp	AM PM	11.4 9.6	B+ A	12.1 9.6	B A	0.052 0.030	0.8 0.0

Notes: NB = Northbound, SB = Southbound
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions for signalized intersections.
2. LOS = Level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package.
3. Change in the critical volume-to-capacity ratio (V/C) between Background and Background plus Project Conditions.
4. 4. Change in critical movement delay between Background and Background plus Project Conditions.
5. 5. Critical movement shifted due to increase volume.

Bold text indicates significant impact.
Source: Fehr & Peers, August 2012.



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Project Peak-Hour Intersection Volumes, Lane Configurations, and Traffic Control Devices

Figure 8

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FREEWAY SEGMENTS

Freeway impacts are evaluated by comparing the amount of traffic added by a project to existing freeway volumes. These estimates differ from those used in the intersection analysis as they only include trip credits for traffic generated by the existing uses on the site.

Most of the morning inbound traffic generated by the school will be parents dropping off their children and therefore will be carpools. It was estimated that 85 percent of the AM inbound school traffic would be carpools and therefore would use the HOV lanes and the remaining 15 percent would be single-occupant vehicles and would use the mixed-flow lanes. It was estimated that after parents drop off their children they would no longer be in carpools. Therefore it was estimated that 10 percent of the outbound morning school traffic would be carpools and the remaining 90 percent would be single-occupant vehicles. The reverse would occur in the PM peak hour (most of the inbound traffic would be single-occupant vehicles and most of the outbound traffic would be carpools.) On the segments on SR 85 near Union Avenue all of the school traffic would use the mixed-flow lanes as it enters or exits the freeway. The project trips, the existing LOSs, the segment capacities, and the amounts of added project traffic expressed as a percent of the segment's capacity are presented in **Table 8**.

Freeway Impacts

As presented in Chapter 2, Existing Conditions, several of the freeway segments are currently operating at LOS F. The amount of traffic contributed by the school to five of the eleven LOS F segments will exceed the 1 percent of capacity threshold. Thus, the project will create a **significant** impact to the following freeway segments:

- Northbound SR 85 from Union Avenue to Bascom Avenue (AM Peak Hour mixed-flow lanes)
- Northbound SR 85 from Bascom Avenue to SR 17 (AM Peak Hour mixed-flow lanes)
- Northbound SR 85 from SR 17 to Winchester Boulevard (AM Peak Hour mixed-flow lanes)
- Northbound SR 85 from Winchester Boulevard to Saratoga Avenue (AM Peak Hour mixed-flow lanes)
- Southbound SR 85 from Bascom Avenue to Union Avenue (PM Peak Hour mixed-flow lanes)

TABLE 8 PROJECT FREEWAY SEGMENT LEVELS OF SERVICE

Freeway	From	To	Peak Hour	Mixed Flow[1]				HOV[1]			
				Trips	LOS	Cap	%[2]	Trips	LOS	Cap	%[2]
NB SR 85	Almaden Expressway	Camden Avenue	AM PM	6 23	F D	4,600	0.1% 0.5%	35 3	D A	1,650	2.1% 0.2%
	Camden Avenue	Union Avenue	AM PM	41 26	F D	4,600	0.9% 0.6%	0 0	D A	1,650	0.0% 0.0%
	Union Avenue	Bascom Avenue	AM PM	**121** 107	**F** D	4,600	**2.6%** 2.3%	0 0	D A	1,650	0.0% 0.0%
	Bascom Avenue[3]	SR 17	AM PM	**56** 7	**F** B	4,600	**1.2%** 0.2%	6 42	F C	1,650	0.4% 2.6%
	SR 17	Winchester Boulevard	AM PM	**56** 7	**F** B	4,600	**1.2%** 0.2%	6 42	F A	1,650	0.4% 2.6%
	Winchester Boulevard	Saratoga Avenue	AM PM	**56** 7	**F** D	4,600	**1.2%** 0.2%	6 42	D A	1,650	0.4% 2.6%
	Saratoga Avenue	Saratoga-Sunnyvale Rd	AM PM	56 7	D C	4,600	1.2% 0.2%	6 42	D A	1,650	0.4% 2.6%
SB SR 85	Saratoga-Sunnyvale Rd	Saratoga Avenue	AM PM	11 43	C F	4,600	0.2% 0.9%	64 5	A C	1,650	3.9% 0.3%
	Saratoga Avenue	Winchester Boulevard	AM PM	11 43	D E	4,600	0.2% 0.9%	64 5	A D	1,650	3.9% 0.3%
	Winchester Boulevard	SR 17	AM PM	11 43	B D	4,600	0.2% 0.9%	64 5	A C	1,650	3.9% 0.3%
	SR 17[3]	Bascom Avenue	AM PM	11 43	B F	4,600	0.2% 0.9%	64 5	B C	1,650	3.9% 0.3%
	Bascom Avenue	Union Avenue	AM PM	163 **93**	C **F**	4,600	3.5% **2.1%**	0 0	A D	1,650	0.0% 0.0%
	Union Avenue	Camden Avenue	AM PM	34 27	D E	4,600	0.7% 0.6%	0 0	A D	1,650	0.0% 0.0%
	Camden Avenue	Almaden Expressway	AM PM	30 5	C D	4,600	0.7% 0.1%	4 22	A C	1,650	0.2% 1.3%

Notes: NB = Northbound, SB = Southbound, Cap = Capacity

1. This study assumed 100% mixed-flow between Union Ave. and Bascom Ave. , 85% HOV/15% mixed-flow lane split for inbound traffic all other freeway segments, and 10%HOV/90% mixed flow lane split for outbound traffic on all other segments.
2. Percent determined by dividing the number of project trips by the freeway segment's capacity.
3. Vehicles entering/exiting SR 17 and I 880 are not expected to travel on this segment due to ramp locations.

Bold text indicates significant impact

Source: 2011 Monitoring and Conformance Report, VTA June 2012.

Freeway Mitigation Measures

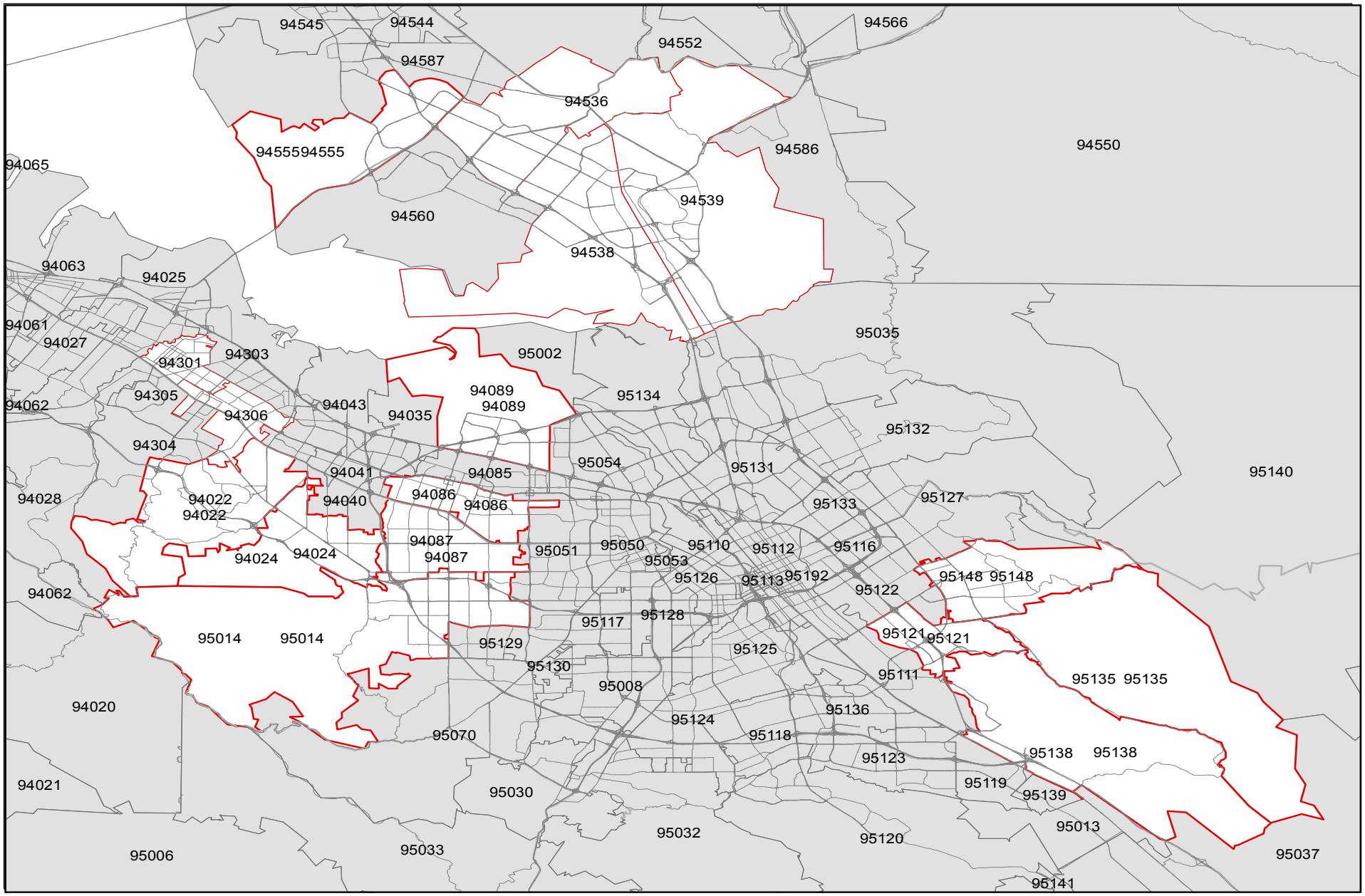
As shown in **Table 8**, the project would add more than 1 percent of the freeway's capacity to five of the eleven study freeway segments currently operating at LOS F thus creating a freeway impact. Harker will need to reduce the amount of traffic it adds to the freeway segments to reduce the impact to a less-than-significant level. This can be accomplished through a comprehensive shuttle bus program.

In addition to the current Fremont residents that are receiving shuttle services, Harker will provide additional buses to serve the Evergreen/Silver Creek area of San Jose, Palo Alto, Los Altos, Mountain View, Cupertino, Saratoga and Sunnyvale, as illustrated in **Figure 9.** These areas are home to 300 to 310 students. Based on the existing Fremont shuttle ridership (25 riders in an area with 35 students) and current subscription to the Palo Alto/Los Altos shuttle being added this Fall (35 riders in an area with 60 students), approximately 60 to 70 percent of the students in areas served by shuttle buses could reasonably be assumed to use the shuttle buses at the Union Avenue school site. This would equate to approximately 180 new riders. The trip reductions associated with the 180 added riders are estimated to be 240 AM peak hour vehicle trips (120 inbound and 120 outbound) and 160 PM peak hour trips (80 inbound and 80 outbound). **Table 9** shows the freeway volumes after shuttle service reductions.

TABLE 9 FREEWAY PROJECT VOLUMES BEFORE AND AFTER SHUTTLE MITIGATION

		Inbound			Outbound		
Time Period	**Time Period**	**SR 85 (SB)**	**SR 85 (NB)**	**Total**	**SR 85 (NB)**	**SR 85 (SB)**	**Total**
AM Peak Hour	Total Trips	163	41	204	121	34	155
	Shuttle Reduction	(90)	(30)	(120)	(90)	(30)	(120)
	Net New Trips	**73**	**11**	**84**	**31**	**4**	**35**
PM Peak Hour	Total Trips	93	26	119	107	27	134
	Shuttle Reduction	(60)	(20)	(80)	(60)	(20)	(80)
	Net New Trips	**33**	**6**	**39**	**47**	**7**	**54**

Notes: NB = Northbound, SB = Southbound
Source: Fehr & Peers, August 2012.



FEHR PEERS

Selected Shuttle Services Zip Code

Figure 9

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August 2012

Based on the residence locations (zip codes) of existing Harker Elementary School students, 75 percent of this reduction will affect freeway segments north of the SR 85/Union Avenue interchange and 25 percent will affect freeway segments to the south.

The added shuttle services are expected to reduce freeway traffic generated by the project to below the 1 percent capacity as presented in **Table 10**. With the successful implementation of the program, the project will have a **less-than-significant impact** on freeway mainline operations.

TABLE 10 PROJECT FREEWAY SEGMENT LEVELS OF SERVICE WITH SHUTTLE MITIGATION

Freeway	From	To	Peak Hour	Mixed Flow[1]				HOV[1]			
				Trips	LOS	Cap	%[2]	Trips	LOS	Cap	%[2]
NB SR 85	Union Avenue	Bascom Avenue	AM PM	31 47	F D	4,600	0.7% 1.0%	0 0	D A	1,650	0.0% 0.0%
	Bascom Avenue[3]	SR 17	AM PM	18 3	F B	4,600	0.4% 0.1%	2 18	F B	1,650	0.1% 1.1%
	SR 17	Winchester Boulevard	AM PM	18 3	F B	4,600	0.4% 0.1%	2 18	F A	1,650	0.1% 1.1%
	Winchester Boulevard	Saratoga Avenue	AM PM	18 3	F D	4,600	0.4% 0.1%	2 18	D A	1,650	0.1% 1.1%
SB SR 85	Bascom Avenue	Union Avenue	AM PM	73 33	C F	4,600	1.6% 0.7%	0 0	A D	1,650	0.0% 0.0%

Notes: NB = Northbound, SB = Southbound, Cap = Capacity
1. This study assumed 100% mixed-flow between Union Ave. and Bascom Ave. , 85% HOV/15% mixed-flow lane split for inbound traffic all other freeway segments, and 10%HOV/90% mixed flow lane split for outbound traffic on all other segments.
2. Percent determined by dividing the number of project trips by the freeway segment's capacity.
3. Vehicles entering/exiting SR 17 and I 880 are not expected to travel on this segment due to ramp locations.

Source: 2011 Monitoring and Conformance Report, VTA June 2012.

FREEWAY RAMPS

As discussed under "Field Observations," queuing was observed on the SR 85 northbound on-ramp during AM peak hour and on the SR 85 southbound on-ramp during PM peak hour. The existing vehicle storage area for the northbound on-ramp is 720-feet per lane with two mixed-flow lanes for a total of 1,440 feet while the southbound on-ramp has a vehicle storage area of 810-feet with one mixed-flow lane.

Ramp analyses indicate that a ramp metering rate of 280 vehicles per hour per lane (vphpl) is used for the northbound on-ramp during the AM peak hour. This equates to a vehicle queue of approximately 30 vehicles per lane (1 vehicle = 25 feet). During the PM peak hour, ramp analyses indicate a ramp metering

rate of 470 vphpl for the southbound on-ramp. This equates to a vehicle queue of approximately 32 vehicles per lane. The school is projected to add 121 vehicles to the northbound on-ramp during the morning peak hour and 27 vehicles to the southbound on-ramp during the evening peak hour prior to the shuttle reduction. With the shuttle reduction, the project will add 31 vehicles on the northbound on-ramp during the morning peak hour and 7 vehicles to the southbound on-ramp during the evening peak hour. The amount of traffic added to the northbound on-ramp in the morning and southbound on-ramp in the evening exceeds 1 percent of the ramp's capacity which is six vehicles for the northbound on-ramp and five vehicles for the southbound on-ramp. Therefore Harker School will affect operations of these ramps.

Caltrans' minimum and maximum metering rates were also analyzed as alternatives. If the minimum rate of 240 vphpl is used, the northbound on-ramp would have a maximum vehicle queue of approximately 97 vehicles per lane during the AM peak hour while the southbound on-ramp would a have maximum vehicle queue of approximately 553 vehicles during the PM peak hour. Both on-ramp queues would extend onto Union Avenue. If the maximum rate of 900 vphpl is used, both the northbound on-ramp and the southbound on-ramp would experience maximum vehicle queues of approximately 1 vehicle per lane.

PEDESTRIAN AND BICYCLE FACILITIES

Based on the zip code study for the existing Harker School, most of the students will be commuting by vehicle or shuttle. However, the staff may take advantage of surrounding amenities within walking distance of the site. To the north, there are several places for dining. In addition, there are many surrounding streets where bicycling is an option for Harker staff.

The school will not affect existing or planned pedestrian and bicycle facilities in the vicinity of the school and therefore will have **less-than-significant** pedestrian and bicycle facility impacts.

TRANSIT SERVICE

The school will not affect transit services or facilities nor generate demand for transit services that cannot be accommodated by the existing bus route serving the site. Therefore the project will have a **less-than-significant** impact on transit.

DRIVEWAY OPERATIONS

The school site is served by two driveways on Union Avenue. Both driveways currently accommodate all traffic turning movements, inbound and outbound left and right turns. It is likely that vehicular turning movements will be restricted at the driveways during peak morning and afternoon school traffic periods to manage traffic flows on-site and to reduce congestion. It is envisioned that the northern driveway will operate as an inbound driveway and the southern driveway will operate as an outbound driveway during these peak periods. Driveway volumes with the expanded shuttle bus program and the associated traffic reductions are presented on **Figure 10** and used for driveway operation analyses.

SimTraffic, the industry standard microsimulation software for detailed traffic operations analyses, was used to evaluate the operations of the driveways and their interactions with traffic on Union Avenue during the AM peak hour when both school traffic and Union Avenue traffic reach a peak. To account for the high proportion of school traffic entering and exiting the school near the school start times, a peak hour factor of 0.75 was used for the turning movements at the driveways. It was assumed that the existing Two Way Left Turn Lane (TWLTL) on Union Avenue would be striped as a left-turn lane for the northern driveway. Furthermore, it is assumed drop-off vehicles would stay on-site for an average of 15 seconds and that a majority of the drop-off activity would occur near the school's main building entrance resulting in a total on-site drop-off length of only 325 feet.

The results indicate that due to the short distance between the exiting driveway and the signalized intersection at Union Avenue / Logic Drive – Cole Drive (approximately 250 feet), the constant stream of traffic traveling southbound on Union Avenue, and the introduction of school traffic, long vehicle queues form at several locations. Queues formed on southbound Union Avenue extending past Charmeran Avenue, on eastbound Barrett Avenue (west of Union Avenue), and on eastbound Charmeran Avenue. Vehicles exiting the school site and turning right onto Union Avenue create a long queue that extends onto the school site.

The on-site drop-off queue is contained within the school site and does not extend onto Union Avenue. With signal timing adjustment improvements, the northbound left turn and southbound right turn vehicles entering the site do not impact the operations on Union Avenue. The maximum northbound left turn queue of vehicles (from Union Avenue into the site) is expected to be 9 vehicles or approximately 225 feet, (1 vehicle = 25 feet) while the eastbound (from Harker driveway) is expected to have a maximum queue of 250 feet, or 10 queuing vehicles during the AM peak hour. During the PM peak hour, the northbound left turn (from Union) is expected to experience a maximum queue of 100 feet, or approximately 4 queuing vehicles while the eastbound (from Harker driveway) is expected to have a

maximum queue of 150 feet, or 6 queuing vehicles. Union Avenue queues are not expected to extend to the adjacent intersections and therefore would not affect their operations.

SITE PLAN REVIEW

The site plan is shown on **Figure 2**. As discussed above, there are two driveways providing vehicular access to the site. Emergency vehicle access is also provided through the adjacent Xlinx site. Sidewalks on Union Avenue provide pedestrian access and the VTA bus stop in front of the site provides transit access. There are currently no dedicated bicycle facilities in the vicinity of the school site except the proposed bicycle parking spaces near the administration building.

Figure 11 presents proposed on-site traffic circulation patterns during peak school times.

At full built, two student drop-off locations have been identified: one in front of the administration building and a second drop-off location at the end of the driveway extension on the south side of the school. Vehicles are expected to enter through the northern driveway, drop off students at the appropriate drop-off locations, enter into the southern driveway turnaround at the end of the proposed cul-de-sac and exit the campus via the southern driveway. In the afternoon, parents are expected to pick up students at the same drop-off locations. Vehicles waiting on-site will be encourage to use both two parking isles in addition to the southern cul-de-sac extension should the demand be needed.

Harker is expected to maintain the existing vehicular parking layout of 116 parking spaces and add 14 spaces with the construction of the southern driveway cul-de-sac. Bike racks accommodating up to 10 bicycles will be placed on either side of the administration building for a total of 20 bicycle spaces.

Harker currently provides on-site personnel to direct traffic for better circulation and quicker drop-off times and should continue to provide personnel at the new school location.

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Project Driveway Volumes

Figure 10

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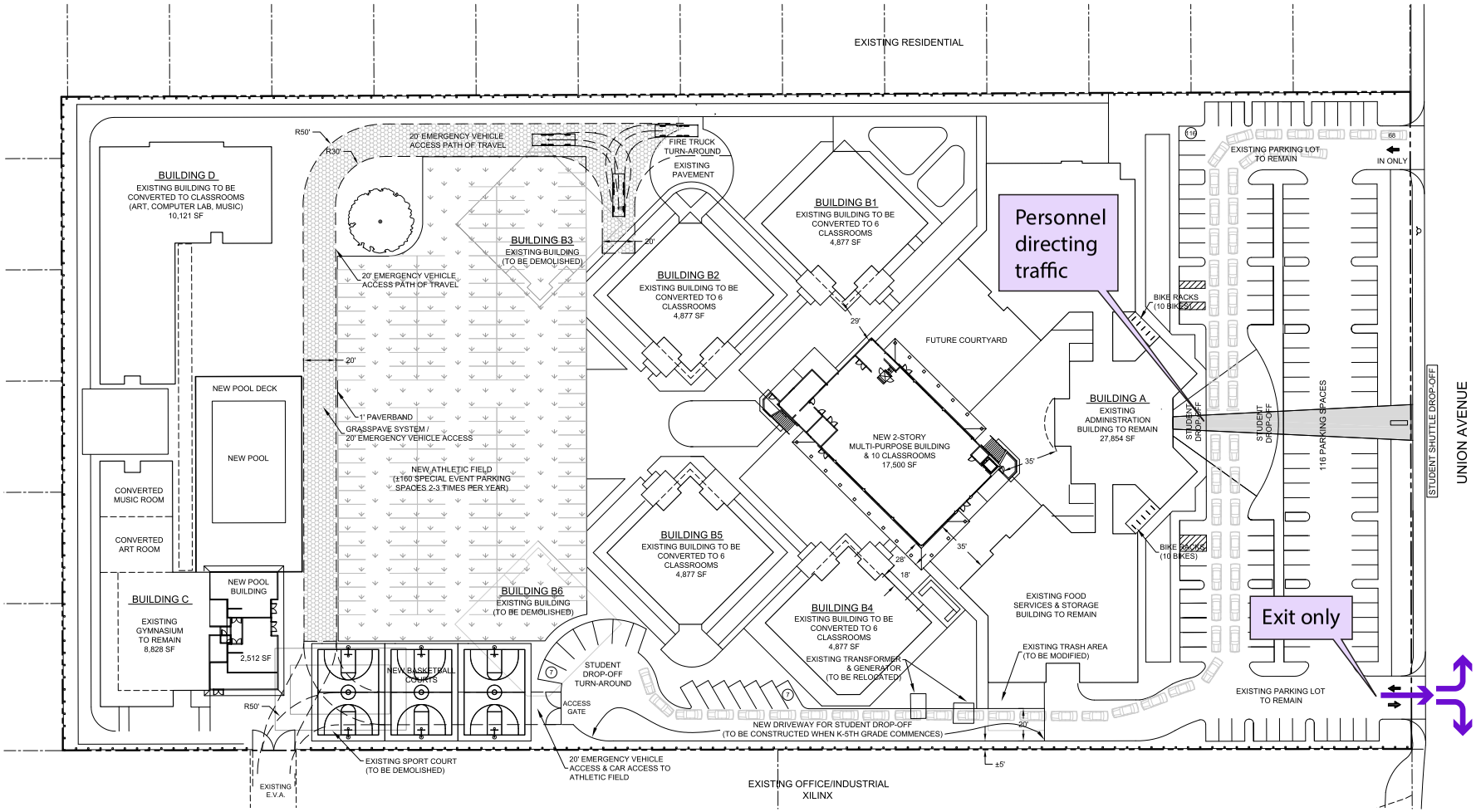
August 2012



Site Plan Source: HMH

Land Use Entitlements
Land Planning
Landscape Architecture
Civil Engineering
Utility Design
Land Surveying
Stormwater Compliance

1570 Oakland Road
San Jose, CA 95131
(408) 487-2200
HMHca.com

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On-Site Circulation During Peak School Times

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Figure 11

TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management is a term that is used to describe measures and strategies to reduce the number of vehicles entering and exiting a site. As discussed earlier, the school will implement staggered start time and shuttle bus service. Other measures that could be considered are:

- Remote drop-off/pick-up locations with shuttle buses or walking school buses
- Bicycle and pedestrian programs

REMOTE DROP-OFF/PICK-UP

Another way to reduce traffic volumes and the associated congestion on the school site it to have a remote student drop-off and pick-up area. The students are then transported to the site by either walking together in a supervised group, also known as a walking school bus an example is shown in the image to the right) if the location is close by or by shuttle bus. Remote drop-off/pick-up areas are often located in park-and-ride lots, at churches, or at retail establishments. A potential location would be at the Cambrian Park Plaza shopping center on the east side of Union Avenue at Woodard Road. The shuttle bus or the walking school bus could use this signalized intersection to cross Union Avenue to reach the school. Another option would be at the Camden Avenue park-and-ride lot located on the east side of Camden Avenue just south of SR 85. A shuttle bus would be needed for this site.

A walking school bus. *Source: PEDS.org*

BICYCLE AND PEDESTRIAN PROGRAMS

There are several neighborhoods near the school that are within walking and biking distance. As mentioned above there are sidewalks on Union Avenue in front of the school that provide access between these neighborhoods and the school. The school could implement pedestrian and bicycle safety programs to support walking and biking to school. These programs would include educational workshops that inform both parents and students about safe walking and biking behavior. Specific strategies of the program could include developing safe biking and walking route maps for students, adult-led bicycle trains (similar to the walking school bus), adult "corner captains" who add an extra set of eyes to key walking routes, and crossing guards at key walking route intersections.

A detail Harker TDM plan, including specific TDM measures, methods of communication and a designated TDM coordinator, was prepared and presented in **Appendix D**. A TDM monitoring plan was also developed as part of the project and presented in **Appendix E**.

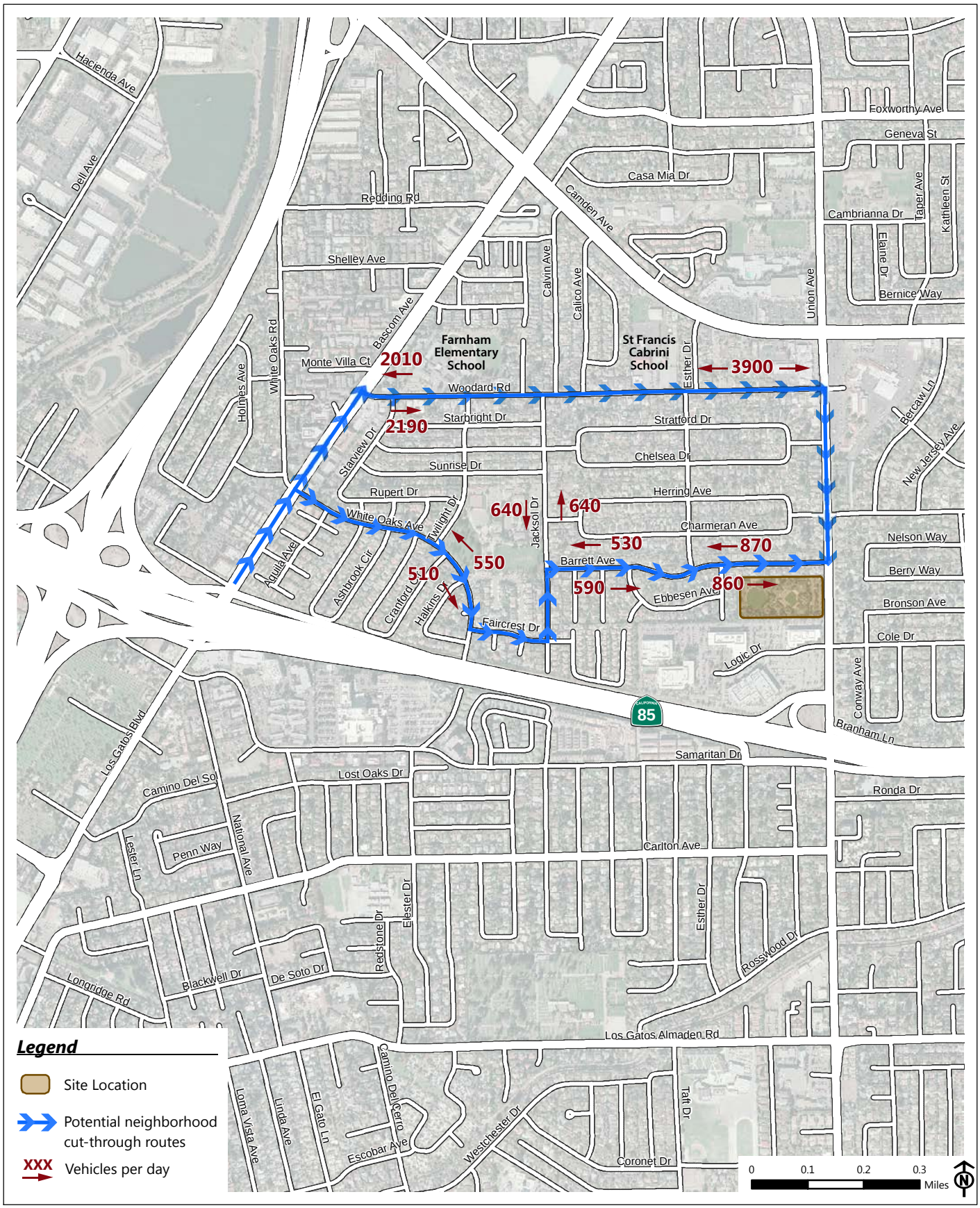
NEIGHBORHOOD INTRUSION

Residents who live in the neighborhood to the west of the school site are concerned about school traffic using neighborhood streets. They are concerned that traffic approaching the school will have difficulty turning left into the school site. Therefore, they expect that traffic approaching from the northwest on SR 85 would exit at Bascom Avenue and either turn right onto Woodard Road to Union Avenue or turn right onto White Oaks Avenue and use Faircrest Drive, Jacksol Drive, and Barrett Avenue to Union Avenue, and turn right on Union Avenue and into the school.

There are two schools on Woodard Avenue, Farnham Elementary School and St. Frances Cabrini School, so this would not be an attractive route, especially during the morning. As shown on **Figure 12** the route from White Oaks Avenue is circuitous.

Daily traffic volumes obtained from counts provided by the City of San Jose are also shown on **Figure 12**. Traffic volumes on Barrett Avenue range from approximately 1,100 to 1,600 vehicles per day (vpd), while Jacksol Drive carries 1,280 vpd and White Oaks Avenue carries 1,060 vpd. With two schools, traffic volumes on Woodard Avenue ranges from approximately 3,900 to 4,200. The amount of traffic that is acceptable on a local residential street is dependent on a variety of factors such as the number of residences on the street, the activities that occur on the street, roadway width, and the presence of sidewalks. A typical carrying capacity for neighborhood street ranges between 1,200 and 1,800 VPD. Existing volumes on the identified neighborhood streets are within this range with the exception of Woodard Avenue.

As part of the Traffic Demand Management Plan, the school's administration should create a working group with the neighborhood to assess neighborhood intrusion on an on-going basis and develop and implement traffic calming measures if needed.



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Potential Neighborhood Traffic Routes and Daily Volumes

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Figure 12

6. EXISTING PLUS PROJECT CONDITIONS

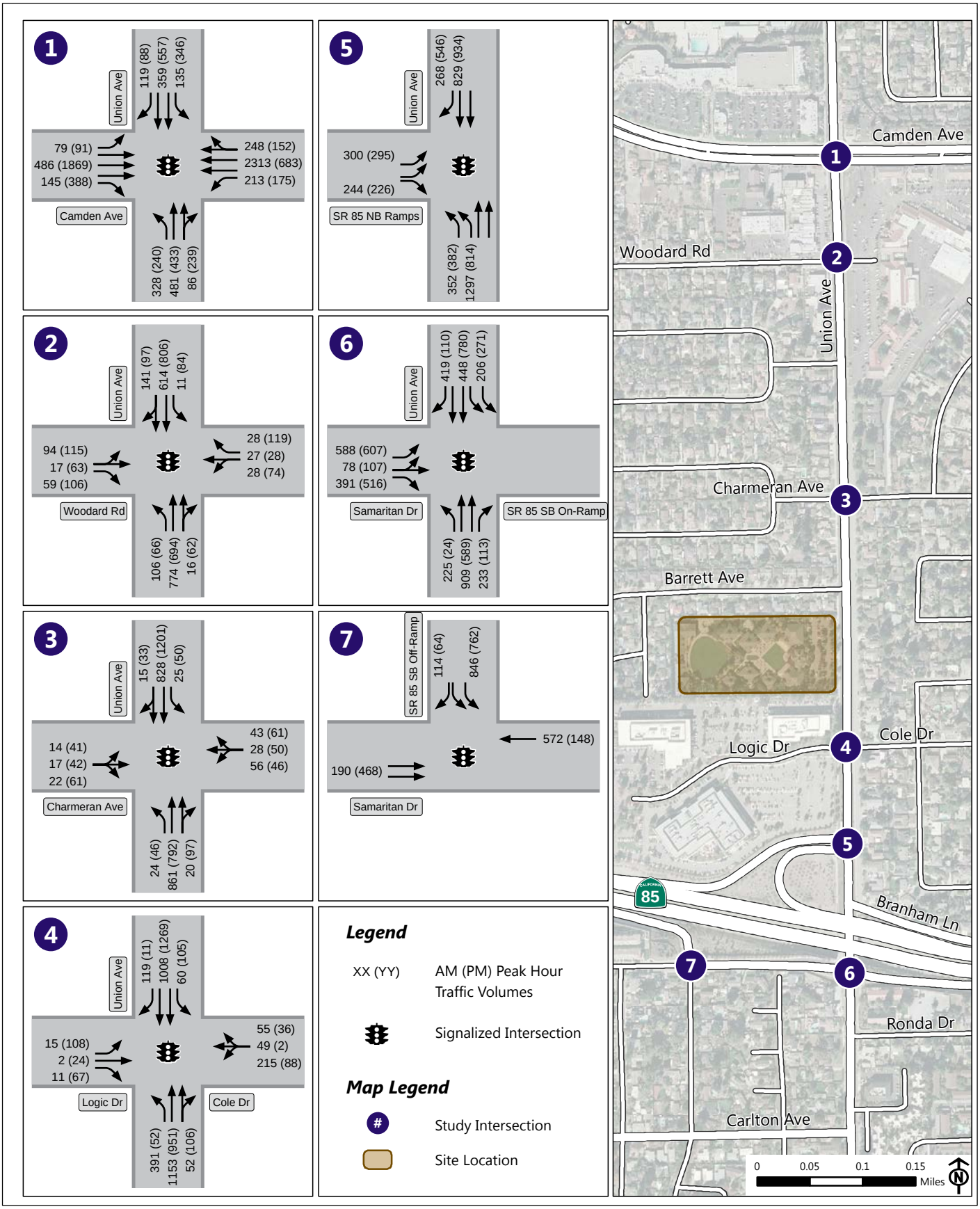
The Existing plus Project scenario describes a traffic condition that would occur if the project was constructed under current traffic conditions. It is unlikely that this condition would occur because other approved projects in the area will likely be constructed and occupied while this project is going through its development review process. This scenario describes a less-congested traffic condition than background plus Project conditions that ignores any potential traffic from other prior approvals. The school traffic estimates were added to the existing traffic volumes. Level of service calculations were conducted with the resulting volumes to determine the effects of the added school traffic on intersection and freeway operations

TRAFFIC VOLUMES

Intersection volumes for Existing plus Project Conditions are presented on **Figure 13**.

INTERSECTION OPERATIONS

The results of the intersection level of service calculations for Existing and Existing plus Project Conditions are presented in **Table 11**. Under Existing plus Project and Background plus Project Conditions, the increase delays are projected to be less than 4 seconds. Thus, the school will have a **less-than-significant impact** at the intersection of Camden Avenue and Union Avenue and all other intersections.



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Existing Plus Project Peak-Hour Intersection Volumes, Lane Configurations, and Traffic Control Devices

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August 2012

Figure 13

TABLE 11 EXISTING WITH AND WITHOUT PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour	Existing		Existing plus Project			
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. V/C[3]	Δ in Crit. Delay[4]
1. Union Ave. and Camden Ave.	AM PM	51.0 60.1	D- E	53.7 61.3	D- E	0.031 0.010	4.1 1.2
2. Union Ave. and Woodard St.	AM PM	19.9 24.1	B- C	19.3 23.7	B- C	0.021 0.016	-0.4 -0.3
3. Union Ave. and Charmeran Ave.	AM PM	13.6 17.5	B B	13.2 17.3	B B	0.023 0.017	-0.2 0.0
4. Union Ave. and Logic Dr./Cole Dr.	AM PM	24.9 14.2	C B	24.7 13.4	C B	0.054 0.044	0.9 -0.5
5. Union Ave. and SR 85 NB ramps	AM PM	18.5 19.4	B- B-	21.2 18.6	C+ B-	0.032 0.068	-12.7 0.4
6. Union Ave. and Samaritan Dr./SR 85 SB on-ramp	AM PM	22.4 21.6	C+ C+	22.7 21.7	C+ C+	0.000 0.006	0.0 0.1
7. Samaritan Dr. and SR 85 SB off-ramp	AM PM	11.0 9.4	B+ A	11.7 9.4	B+ A	0.059 0.034	0.8 -0.1

Notes: NB = Northbound, SB = Southbound
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions for signalized intersections.
2. LOS = Level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package.
3. Change in the critical volume-to-capacity ratio (V/C) between Existing and Existing plus Project Conditions.
4. Change in critical movement delay between Existing and Existing plus Project Conditions.
5. Critical movement shifted due to increase volume.

Bold text indicates significant impact.
Source: Fehr & Peers, August 2012.

7. CUMULATIVE (EXPECTED GROWTH) CONDITIONS

Cumulative Conditions are often referred to as Expected Growth Conditions in Santa Clara County. Traffic projections include existing volumes, traffic generated by approved developments, and traffic generated by pending developments. Pending developments were discussed with City staff. It was determined that there are few potential pending developments but these developments are not far enough into their planning stages to make reasonable assumptions regarding their trip generation and specific effects on intersection operations. However, several conclusions regarding Cumulative Conditions can be made:

1) Traffic volume increases due to future development will exacerbate unacceptable operations on segments of SR 85, at the Union Avenue on-ramps, and the intersection of Union Avenue and Camden Avenue
2) The VTA has developed a regional transportation plan, VTP 2035[1], to identify future transportation projects to accommodate project future travel demand, including Express Lanes on SR 85. However, with these improvements, traffic congestion on regional facilities will persist.

The shopping center on the southeast corner of Camden Avenue and Union Avenue is identified as a neighborhood village as part of the City's newly adopted 2040 General Plan. A specific development has not been filed. The General Plan, however, allows a neighborhood village that is composed of mixed residential and commercial uses. Redevelopment is anticipated within the next 20 years.

TRANSPORTATION SYSTEM IMPACTS & MITIGATION MEASURES

All impacts to the surrounding transportation system will be **less-than-significant**. The exception will be the freeway ramp, as discussed in the Impacts and Mitigation Measures Section under Existing Plus Project Conditions,

[1] Valley Transportation Plan 2035, Santa Clara Valley Transportation Authority, Adopted January 2009

APPENDIX A: INTERSECTION COUNTS

CSJ Traffix Database - Template
(Template modified Oct. 11, 2000)
(Database updated August 22, 2011)

Detailed Scenario Comparison Report
2000 HCM Operations (Future Volume Alternative)

Intersection #3088: CAMDEN/UNION

Scenario #1: Existing (AM)

Signal=Protect/Rights=Include

Final Vol:	119	343***		135
Lanes:	1 0	2	0	1

Final Vol:	Lanes:	Signal=Protect Rights=Include
79***	1	
	0	
486	3	
	0	
98	1	

Vol Cnt Date:	11/3/2010
Cycle Time (sec):	180
Loss Time (sec):	12
Critical V/C:	0.809
Avg Crit Del (sec/veh):	45.3
Avg Delay (sec/veh):	51.0
LOS:	D-

Signal=Protect Rights=Include	Lanes:	Final Vol:
	0	248
	1	
	2	2313***
	0	
	1	200

Lanes:	1	0	1	1	0
Final Vol:	284***		468		76

Signal=Protect/Rights=Include

Scenario #2: Existing (PM)

Signal=Protect/Rights=Include

Final Vol:	88	547		346***
Lanes:	1	0 2	0	1

Final Vol:	Lanes:	Signal=Protect Rights=Include
91	1	
	0	
1869***	3	
	0	
354	1	

Vol Cnt Date:	11/3/2010
Cycle Time (sec):	180
Loss Time (sec):	12
Critical V/C:	0.855
Avg Crit Del (sec/veh):	65.6
Avg Delay (sec/veh):	60.1
LOS:	E

Signal=Protect Rights=Include	Lanes:	Final Vol:
	0	152
	1	
	2	683
	0	
	1	167***

Lanes:	1	0	1	1	0
Final Vol:	209		423***		231

Signal=Protect/Rights=Include

	Change
Crit V/C:	+ 0.046
Avg Crit Del:	+ 20.4
Avg Del:	+ 9.1

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CSJ Traffix Database - Template
(Template modified Oct. 11, 2000)
(Database updated August 22, 2011)

Detailed Scenario Comparison Report
2000 HCM Operations (Future Volume Alternative)

Intersection #3833: UNION/WOODARD

Scenario #1: Existing (AM)

Signal=Protect/Rights=Include

Final Vol:	141		539		11***
Lanes:	0	1	1	0	1

Final Vol:	Lanes:	Signal=Protect Rights=Include		Lanes:	Final Vol:
94***	0			1	28
	1			0	
17	0			0	27***
	0			1	
59	1			0	28

Vol Cnt Date:	9/30/2010
Cycle Time (sec):	90
Loss Time (sec):	9
Critical V/C:	0.327
Avg Crit Del (sec/veh):	16.5
Avg Delay (sec/veh):	18.9
LOS:	B-

Lanes:	1	0	1	1	0
Final Vol:	106		707***		16

Signal=Protect/Rights=Include

Scenario #2: Existing (PM)

Signal=Protect/Rights=Include

Final Vol:	97		754***		84
Lanes:	0	1	1	0	1

Final Vol:	Lanes:	Signal=Protect Rights=Include		Lanes:	Final Vol:
115***	0			1	119***
	1			0	
63	0			0	28
	0			1	
106	1			0	74

Vol Cnt Date:	9/30/2010
Cycle Time (sec):	90
Loss Time (sec):	9
Critical V/C:	0.483
Avg Crit Del (sec/veh):	22.1
Avg Delay (sec/veh):	23.3
LOS:	C

Lanes:	1	0	1	1	0
Final Vol:	66***		645		62

Signal=Protect/Rights=Include

	Change
Crit V/C:	+ 0.156
Avg Crit Del:	+ 5.6
Avg Del:	+ 4.4

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Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 1am final
Site Code : 00000001
Start Date : 6/6/2012
Page No : 1

Groups Printed- Vehicles

	UNION AVE Southbound					CHARMERAN AVE Westbound					UNION AVE Northbound					CHARMERAN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	81	1	1	83	4	3	12	0	19	2	64	1	0	67	2	0	0	1	3	172
07:15 AM	4	91	3	0	98	12	1	11	0	24	2	104	2	0	108	1	1	1	0	3	233
07:30 AM	2	155	4	0	161	13	9	19	0	41	5	140	0	0	145	2	3	2	0	7	354
07:45 AM	1	181	10	0	192	12	15	24	0	51	5	185	2	0	192	1	19	3	0	23	458
Total	7	508	18	1	534	41	28	66	0	135	14	493	5	0	512	6	23	6	1	36	1217
08:00 AM	2	172	6	0	180	11	5	19	0	35	3	199	6	0	208	7	11	4	2	24	447
08:15 AM	5	192	7	1	205	11	15	7	0	33	9	196	7	0	212	5	3	7	1	16	466
08:30 AM	2	185	3	0	190	9	4	11	0	24	2	186	5	0	193	3	2	2	0	7	414
08:45 AM	6	204	9	0	219	12	4	16	0	32	3	213	3	0	219	4	1	1	1	7	477
Total	15	753	25	1	794	43	28	53	0	124	17	794	21	0	832	19	17	14	4	54	1804
Grand Total	22	1261	43	2	1328	84	56	119	0	259	31	1287	26	0	1344	25	40	20	5	90	3021
Apprch %	1.7	95	3.2	0.2		32.4	21.6	45.9	0		2.3	95.8	1.9	0		27.8	44.4	22.2	5.6		
Total %	0.7	41.7	1.4	0.1	44	2.8	1.9	3.9	0	8.6	1	42.6	0.9	0	44.5	0.8	1.3	0.7	0.2	3	

	UNION AVE Southbound					CHARMERAN AVE Westbound					UNION AVE Northbound					CHARMERAN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	172	6	0	180	11	5	**19**	0	**35**	3	199	6	0	208	**7**	**11**	4	**2**	**24**	447
08:15 AM	5	192	7	**1**	205	11	**15**	7	0	33	**9**	196	**7**	0	212	5	3	**7**	1	16	466
08:30 AM	2	185	3	0	190	9	4	11	0	24	2	186	5	0	193	3	2	2	0	7	414
08:45 AM	**6**	**204**	**9**	0	**219**	**12**	4	16	0	32	3	**213**	3	0	**219**	4	1	1	1	7	**477**
Total Volume	15	753	25	1	794	43	28	53	0	124	17	794	21	0	832	19	17	14	4	54	1804
% App. Total	1.9	94.8	3.1	0.1		34.7	22.6	42.7	0		2	95.4	2.5	0		35.2	31.5	25.9	7.4		
PHF	.625	.923	.694	.250	.906	.896	.467	.697	.000	.886	.472	.932	.750	.000	.950	.679	.386	.500	.500	.563	.945

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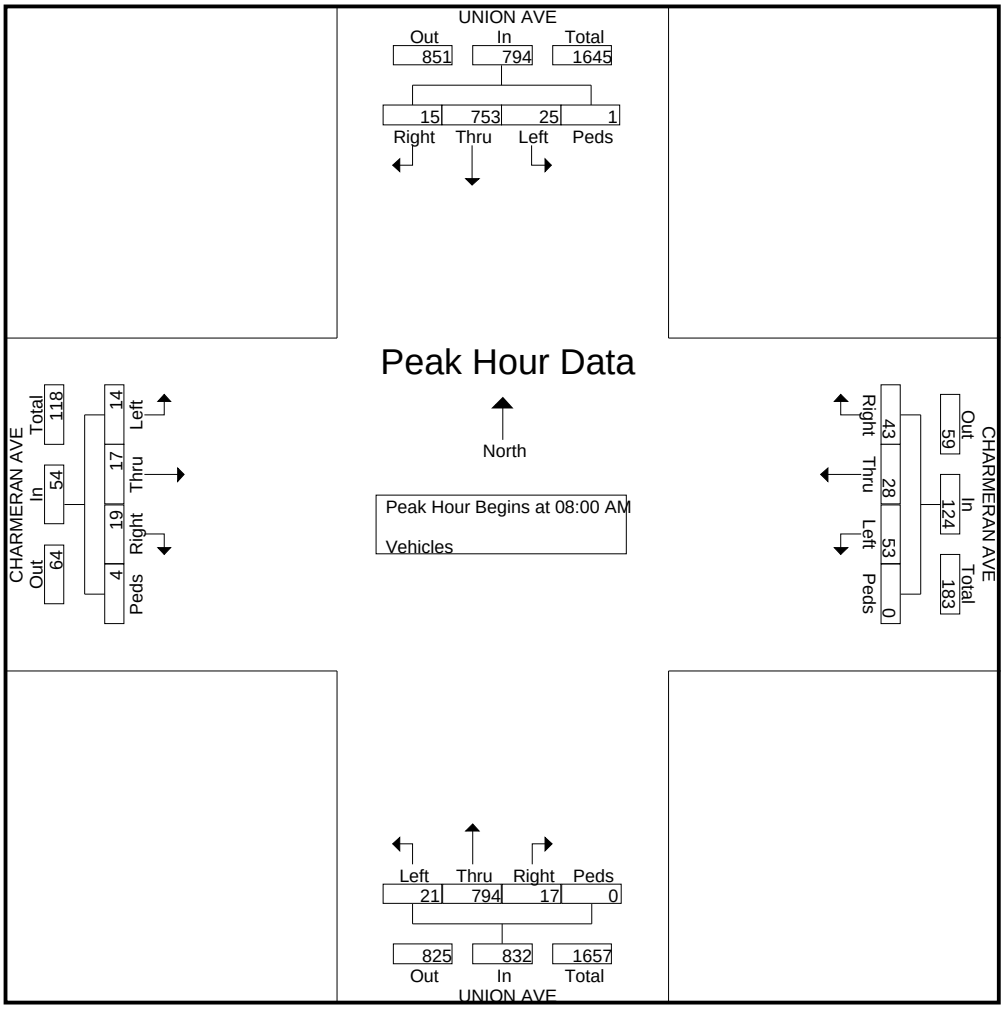

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Groups Printed- Vehicles

	UNION AVE Southbound					CHARMERAN AVE Westbound					UNION AVE Northbound					CHARMERAN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	2	248	4	0	254	1	0	1	0	2	6	158	5	0	169	5	0	3	0	8	433
04:15 PM	5	268	1	0	274	16	7	7	5	35	12	163	4	0	179	5	3	5	1	14	502
04:30 PM	7	258	5	0	270	6	3	7	2	18	19	160	14	0	193	8	1	2	0	11	492
04:45 PM	7	256	6	0	269	15	12	7	0	34	22	166	12	0	200	17	11	11	2	41	544
Total	21	1030	16	0	1067	38	22	22	7	89	59	647	35	0	741	35	15	21	3	74	1971
05:00 PM	8	293	8	4	313	12	22	19	4	57	24	200	8	0	232	16	16	15	0	47	649
05:15 PM	12	287	16	0	315	19	13	13	5	50	31	187	10	0	228	17	9	9	3	38	631
05:30 PM	6	291	12	1	310	18	9	9	1	37	22	183	13	0	218	15	9	12	4	40	605
05:45 PM	7	278	14	0	299	12	6	3	1	22	18	173	13	1	205	11	8	5	2	26	552
Total	33	1149	50	5	1237	61	50	44	11	166	95	743	44	1	883	59	42	41	9	151	2437
Grand Total	54	2179	66	5	2304	99	72	66	18	255	154	1390	79	1	1624	94	57	62	12	225	4408
Apprch %	2.3	94.6	2.9	0.2		38.8	28.2	25.9	7.1		9.5	85.6	4.9	0.1		41.8	25.3	27.6	5.3		
Total %	1.2	49.4	1.5	0.1	52.3	2.2	1.6	1.5	0.4	5.8	3.5	31.5	1.8	0	36.8	2.1	1.3	1.4	0.3	5.1	

	UNION AVE Southbound					CHARMERAN AVE Westbound					UNION AVE Northbound					CHARMERAN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	8	**293**	8	**4**	313	12	**22**	**19**	4	**57**	24	**200**	8	0	**232**	16	**16**	**15**	0	**47**	**649**
05:15 PM	**12**	287	**16**	0	**315**	**19**	13	13	**5**	50	**31**	187	10	0	228	**17**	9	9	3	38	631
05:30 PM	6	291	12	1	310	18	9	9	1	37	22	183	**13**	0	218	15	9	12	**4**	40	605
05:45 PM	7	278	14	0	299	12	6	3	1	22	18	173	13	**1**	205	11	8	5	2	26	552
Total Volume	33	1149	50	5	1237	61	50	44	11	166	95	743	44	1	883	59	42	41	9	151	2437
% App. Total																					
PHF	.688	.980	.781	.313	.982	.803	.568	.579	.550	.728	.766	.929	.846	.250	.952	.868	.656	.683	.563	.803	.939

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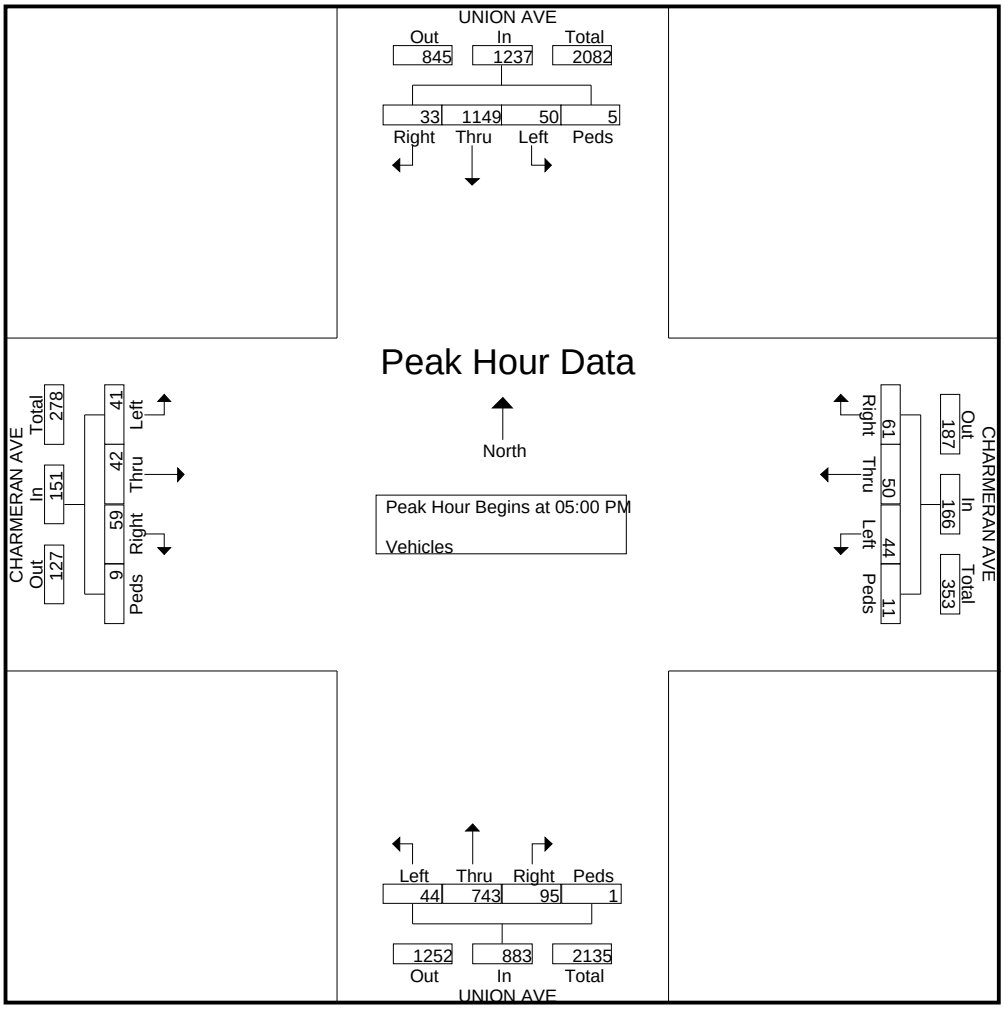

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Groups Printed- Vehicles

	UNION AVE Southbound					COLE DR Westbound					UNION AVE Northbound					LOGIC DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	99	4	0	109	8	5	22	1	36	4	117	21	0	142	0	0	1	0	1	288
07:15 AM	8	123	1	0	132	6	4	35	0	45	3	136	35	1	175	0	1	2	1	4	356
07:30 AM	14	129	5	0	148	12	6	38	0	56	11	216	31	1	259	0	0	0	2	2	465
07:45 AM	25	256	16	0	297	21	11	57	0	89	3	241	63	0	307	2	0	5	0	7	700
Total	53	607	26	0	686	47	26	152	1	226	21	710	150	2	883	2	1	8	3	14	1809
08:00 AM	25	228	23	0	276	13	13	89	0	115	19	220	98	0	337	0	0	3	0	3	731
08:15 AM	30	167	12	0	209	13	15	41	0	69	21	268	112	0	401	2	2	2	0	6	685
08:30 AM	39	171	9	0	219	8	10	28	0	46	9	192	118	0	319	7	0	5	1	13	597
08:45 AM	22	141	3	0	166	6	11	14	0	31	4	168	101	0	273	0	0	1	1	2	472
Total	116	707	47	0	870	40	49	172	0	261	53	848	429	0	1330	9	2	11	2	24	2485
Grand Total	169	1314	73	0	1556	87	75	324	1	487	74	1558	579	2	2213	11	3	19	5	38	4294
Apprch %	10.9	84.4	4.7	0		17.9	15.4	66.5	0.2		3.3	70.4	26.2	0.1		28.9	7.9	50	13.2		
Total %	3.9	30.6	1.7	0	36.2	2	1.7	7.5	0	11.3	1.7	36.3	13.5	0	51.5	0.3	0.1	0.4	0.1	0.9	

	UNION AVE Southbound					COLE DR Westbound					UNION AVE Northbound					LOGIC DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	25	**256**	16	0	**297**	**21**	11	57	0	89	3	241	63	0	307	2	0	**5**	0	7	700
08:00 AM	25	228	**23**	0	276	13	13	**89**	0	**115**	19	220	98	0	337	0	0	3	0	3	**731**
08:15 AM	30	167	12	0	209	13	**15**	41	0	69	**21**	**268**	112	0	**401**	2	**2**	2	0	6	685
08:30 AM	**39**	171	9	0	219	8	10	28	0	46	9	192	**118**	0	319	**7**	0	5	**1**	**13**	597
Total Volume	119	822	60	0	1001	55	49	215	0	319	52	921	391	0	1364	11	2	15	1	29	2713
% App. Total	11.9	82.1	6	0		17.2	15.4	67.4	0		3.8	67.5	28.7	0		37.9	6.9	51.7	3.4		
PHF	.763	.803	.652	.000	.843	.655	.817	.604	.000	.693	.619	.859	.828	.000	.850	.393	.250	.750	.250	.558	.928

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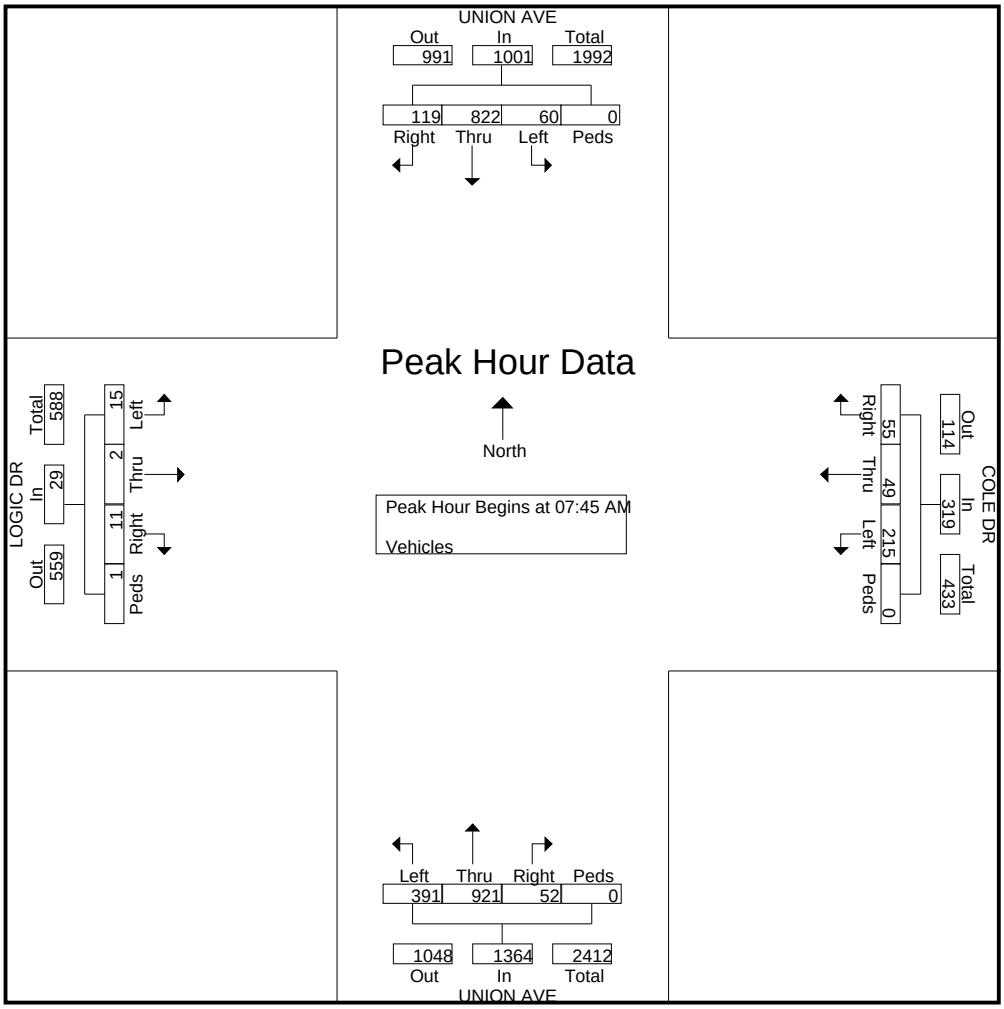

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File Name : 2PM FINAL
Site Code : 00000002
Start Date : 6/6/2012
Page No : 1

Groups Printed- Vehicles

	UNION AVE Southbound					COLE DR Westbound					UNION AVE Northbound					LOGIC DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	2	225	8	0	235	5	0	12	0	17	11	189	11	0	211	16	3	11	0	30	493
04:15 PM	5	250	9	0	264	8	1	6	0	15	10	179	9	0	198	9	3	5	0	17	494
04:30 PM	10	237	10	0	257	5	0	22	0	27	23	197	11	0	231	5	3	6	0	14	529
04:45 PM	1	270	16	0	287	7	0	25	0	32	27	208	8	0	243	6	5	10	0	21	583
Total	18	982	43	0	1043	25	1	65	0	91	71	773	39	0	883	36	14	32	0	82	2099
05:00 PM	2	320	20	0	342	6	1	11	0	18	25	214	10	0	249	3	10	29	0	42	651
05:15 PM	4	263	37	3	307	14	0	16	0	30	26	197	8	1	232	39	9	26	2	76	645
05:30 PM	4	264	32	5	305	9	1	36	0	46	28	189	26	0	243	19	0	43	3	65	659
05:45 PM	1	242	33	0	276	3	0	30	0	33	16	186	7	0	209	23	9	29	1	62	580
Total	11	1089	122	8	1230	32	2	93	0	127	95	786	51	1	933	84	28	127	6	245	2535
Grand Total	29	2071	165	8	2273	57	3	158	0	218	166	1559	90	1	1816	120	42	159	6	327	4634
Apprch %	1.3	91.1	7.3	0.4		26.1	1.4	72.5	0		9.1	85.8	5	0.1		36.7	12.8	48.6	1.8		
Total %	0.6	44.7	3.6	0.2	49.1	1.2	0.1	3.4	0	4.7	3.6	33.6	1.9	0	39.2	2.6	0.9	3.4	0.1	7.1	

	UNION AVE Southbound					COLE DR Westbound					UNION AVE Northbound					LOGIC DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	1	270	16	0	287	7	0	25	0	32	27	208	8	0	243	6	5	10	0	21	583
05:00 PM	2	**320**	20	0	**342**	6	**1**	11	0	18	25	**214**	10	0	**249**	3	**10**	29	0	42	651
05:15 PM	**4**	263	**37**	3	307	**14**	0	16	0	30	26	197	8	**1**	232	**39**	9	26	2	**76**	645
05:30 PM	4	264	32	**5**	305	9	1	**36**	0	**46**	**28**	189	**26**	0	243	19	0	**43**	**3**	65	**659**
Total Volume	11	1117	105	8	1241	36	2	88	0	126	106	808	52	1	967	67	24	108	5	204	2538
% App. Total																					
PHF	.688	.873	.709	.400	.907	.643	.500	.611	.000	.685	.946	.944	.500	.250	.971	.429	.600	.628	.417	.671	.963

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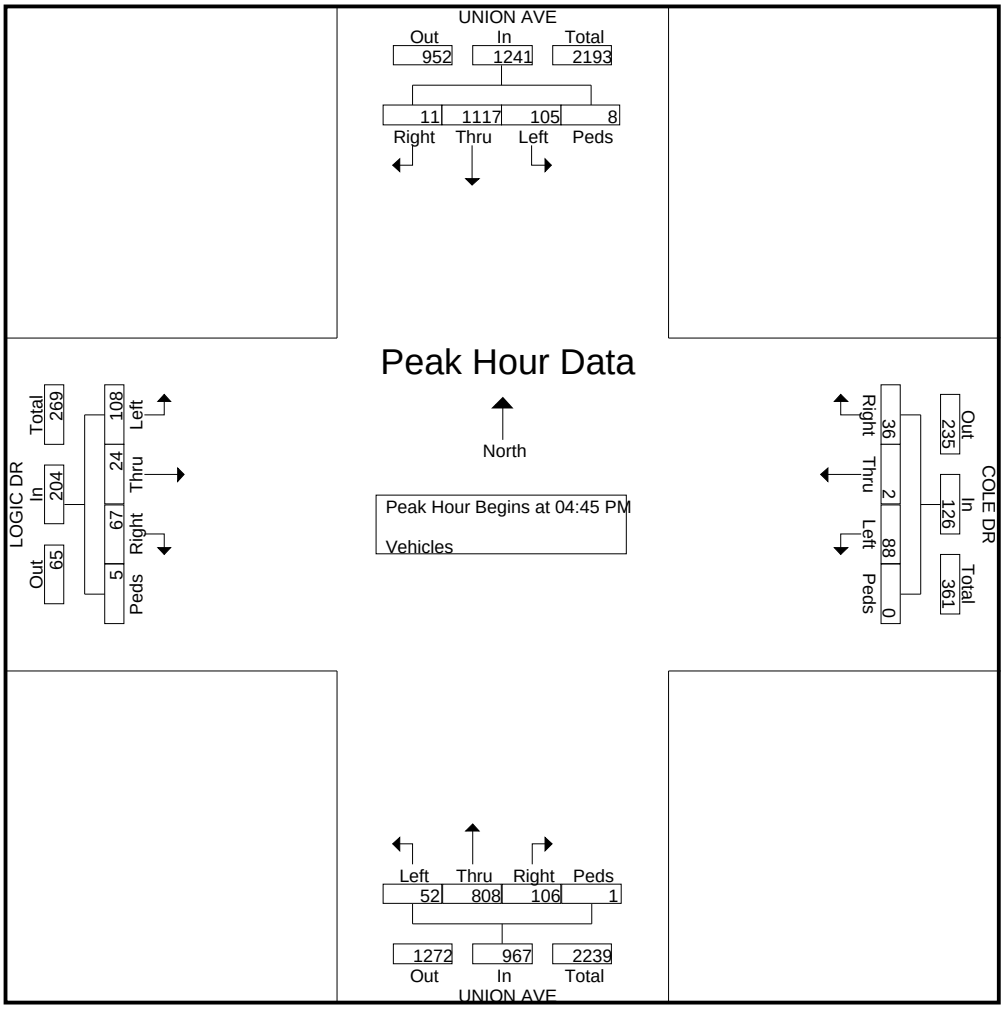

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File Name : 2AM FINAL
Site Code : 00000002
Start Date : 12/6/2011
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Groups Printed- Vehicles

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SR-85 NB RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	51	67	0	0	118	0	0	0	0	0	0	112	117	0	229	29	0	28	0	57	404
07:15 AM	45	114	0	0	159	0	0	0	0	0	0	153	92	0	245	42	0	28	0	70	474
07:30 AM	37	118	0	0	155	0	0	0	0	0	0	183	97	0	280	66	0	71	2	139	574
07:45 AM	32	217	0	0	249	0	0	0	0	0	0	221	80	0	301	80	0	78	0	158	708
Total	165	516	0	0	681	0	0	0	0	0	0	669	386	0	1055	217	0	205	2	424	2160
08:00 AM	45	259	0	0	304	0	0	0	0	0	0	276	87	0	363	51	0	67	3	121	788
08:15 AM	37	133	0	0	170	0	0	0	0	0	0	330	91	0	421	66	0	67	1	134	725
08:30 AM	33	155	0	0	188	0	0	0	0	0	0	269	94	0	363	47	0	45	0	92	643
08:45 AM	28	123	0	0	151	0	0	0	0	0	0	216	85	0	301	82	0	52	0	134	586
Total	143	670	0	0	813	0	0	0	0	0	0	1091	357	0	1448	246	0	231	4	481	2742
Grand Total	308	1186	0	0	1494	0	0	0	0	0	0	1760	743	0	2503	463	0	436	6	905	4902
Apprch %	20.6	79.4	0	0		0	0	0	0		0	70.3	29.7	0		51.2	0	48.2	0.7		
Total %	6.3	24.2	0	0	30.5	0	0	0	0	0	0	35.9	15.2	0	51.1	9.4	0	8.9	0.1	18.5	

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SR-85 NB RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	32	217	0	0	249	0	0	0	0	0	0	221	80	0	301	**80**	0	**78**	0	**158**	708
08:00 AM	**45**	**259**	0	0	**304**	0	0	0	0	0	0	276	87	0	363	51	0	67	**3**	121	**788**
08:15 AM	37	133	0	0	170	0	0	0	0	0	0	**330**	91	0	**421**	66	0	67	1	134	725
08:30 AM	33	155	0	0	188	0	0	0	0	0	0	269	**94**	0	363	47	0	45	0	92	643
Total Volume	147	764	0	0	911	0	0	0	0	0	0	1096	352	0	1448	244	0	257	4	505	2864
% App. Total																					
PHF	.817	.737	.000	.000	.749	.000	.000	.000	.000	.000	.000	.830	.936	.000	.860	.763	.000	.824	.333	.799	.909

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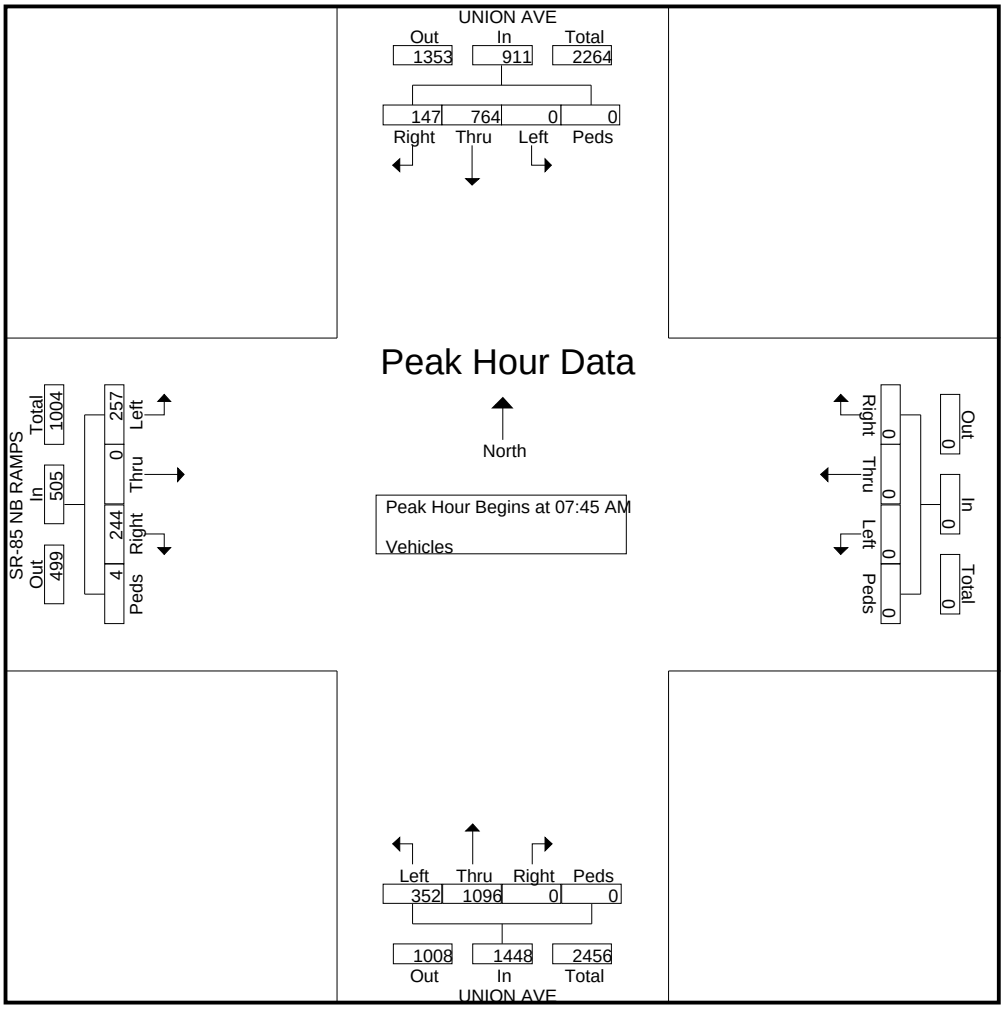

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File Name : 3PM FINAL
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Start Date : 6/6/2012
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Groups Printed- Vehicles

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SR-85 NB RAMP Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	64	206	0	0	270	0	0	0	0	0	0	153	88	0	241	52	0	51	4	107	618
04:15 PM	61	219	0	0	280	0	0	0	0	0	0	159	93	0	252	41	0	38	0	79	611
04:30 PM	73	207	0	0	280	0	0	0	0	0	0	174	91	0	265	45	0	68	1	114	659
04:45 PM	111	206	0	0	317	0	0	0	0	0	0	176	94	0	270	46	0	61	3	110	697
Total	309	838	0	0	1147	0	0	0	0	0	0	662	366	0	1028	184	0	218	8	410	2585
05:00 PM	118	222	0	0	340	0	0	0	0	0	0	171	108	0	279	65	0	67	1	133	752
05:15 PM	107	230	0	0	337	0	0	0	0	0	0	172	83	0	255	55	0	68	3	126	718
05:30 PM	103	231	0	0	334	0	0	0	0	0	0	165	97	0	262	60	0	68	1	129	725
05:45 PM	99	208	0	0	307	0	0	0	0	0	0	148	93	0	241	58	0	60	0	118	666
Total	427	891	0	0	1318	0	0	0	0	0	0	656	381	0	1037	238	0	263	5	506	2861
Grand Total	736	1729	0	0	2465	0	0	0	0	0	0	1318	747	0	2065	422	0	481	13	916	5446
Apprch %	29.9	70.1	0	0		0	0	0	0		0	63.8	36.2	0		46.1	0	52.5	1.4		
Total %	13.5	31.7	0	0	45.3	0	0	0	0	0	0	24.2	13.7	0	37.9	7.7	0	8.8	0.2	16.8	

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SR-85 NB RAMP Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	111	206	0	0	317	0	0	0	0	0	0	**176**	94	0	270	46	0	61	**3**	110	697
05:00 PM	**118**	222	0	0	**340**	0	0	0	0	0	0	171	**108**	0	**279**	**65**	0	67	1	**133**	**752**
05:15 PM	107	230	0	0	337	0	0	0	0	0	0	172	83	0	255	55	0	**68**	3	126	718
05:30 PM	103	**231**	0	0	334	0	0	0	0	0	0	165	97	0	262	60	0	68	1	129	725
Total Volume	439	889	0	0	1328	0	0	0	0	0	0	684	382	0	1066	226	0	264	8	498	2892
% App. Total	33.1	66.9	0	0		0	0	0	0		0	64.2	35.8	0		45.4	0	53	1.6		
PHF	.930	.962	.000	.000	.976	.000	.000	.000	.000	.000	.000	.972	.884	.000	.955	.869	.000	.971	.667	.936	.961

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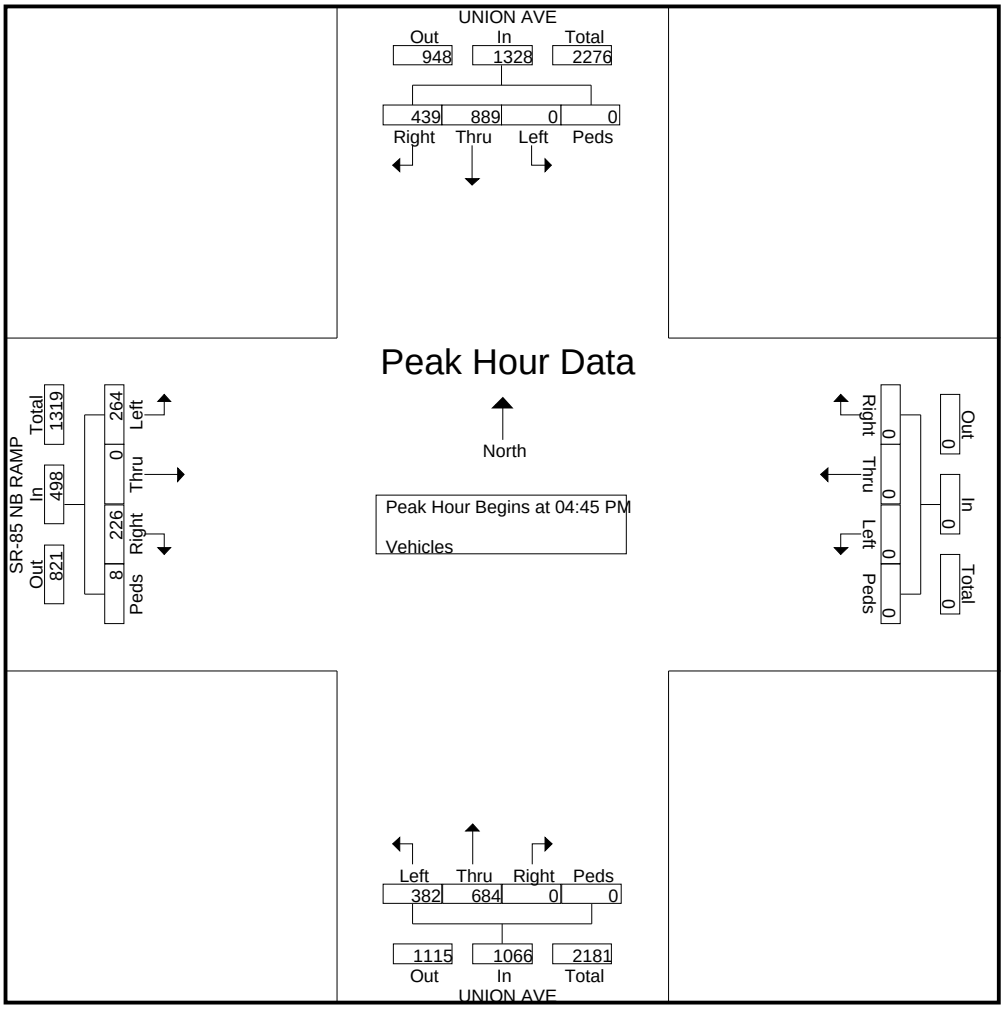

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Groups Printed- Vehicles

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	37	35	22	0	94	0	0	0	0	0	34	167	18	0	219	26	14	34	0	74	387
07:15 AM	54	60	31	0	145	0	0	0	0	0	28	159	33	0	220	44	13	60	0	117	482
07:30 AM	68	76	33	0	177	0	0	0	0	0	41	202	39	1	283	46	22	40	0	108	568
07:45 AM	117	122	49	0	288	0	0	0	0	0	49	176	57	0	282	124	32	64	1	221	791
Total	276	293	135	0	704	0	0	0	0	0	152	704	147	1	1004	240	81	198	1	520	2228
08:00 AM	115	139	46	0	300	0	0	0	0	0	55	231	46	0	332	120	17	107	3	247	879
08:15 AM	108	75	31	0	214	0	0	0	1	1	75	279	66	1	421	73	14	133	0	220	856
08:30 AM	77	79	46	0	202	0	0	0	2	2	54	195	56	0	305	74	15	121	0	210	719
08:45 AM	92	75	31	0	198	0	0	0	0	0	32	179	39	0	250	68	20	103	0	191	639
Total	392	368	154	0	914	0	0	0	3	3	216	884	207	1	1308	335	66	464	3	868	3093
Grand Total	668	661	289	0	1618	0	0	0	3	3	368	1588	354	2	2312	575	147	662	4	1388	5321
Apprch %	41.3	40.9	17.9	0		0	0	0	100		15.9	68.7	15.3	0.1		41.4	10.6	47.7	0.3		
Total %	12.6	12.4	5.4	0	30.4	0	0	0	0.1	0.1	6.9	29.8	6.7	0	43.5	10.8	2.8	12.4	0.1	26.1	

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**117**	122	**49**	0	288	0	0	0	0	0	49	176	57	0	282	**124**	**32**	64	1	221	791
08:00 AM	115	**139**	46	0	**300**	0	0	0	0	0	55	231	46	0	332	120	17	107	**3**	**247**	**879**
08:15 AM	108	75	31	0	214	0	0	0	1	1	**75**	**279**	**66**	**1**	**421**	73	14	**133**	0	220	856
08:30 AM	77	79	46	0	202	0	0	0	**2**	**2**	54	195	56	0	305	74	15	121	0	210	719
Total Volume	417	415	172	0	1004	0	0	0	3	3	233	881	225	1	1340	391	78	425	4	898	3245
% App. Total	41.5	41.3	17.1	0		0	0	0	100		17.4	65.7	16.8	0.1		43.5	8.7	47.3	0.4		
PHF	.891	.746	.878	.000	.837	.000	.000	.000	.375	.375	.777	.789	.852	.250	.796	.788	.609	.799	.333	.909	.923

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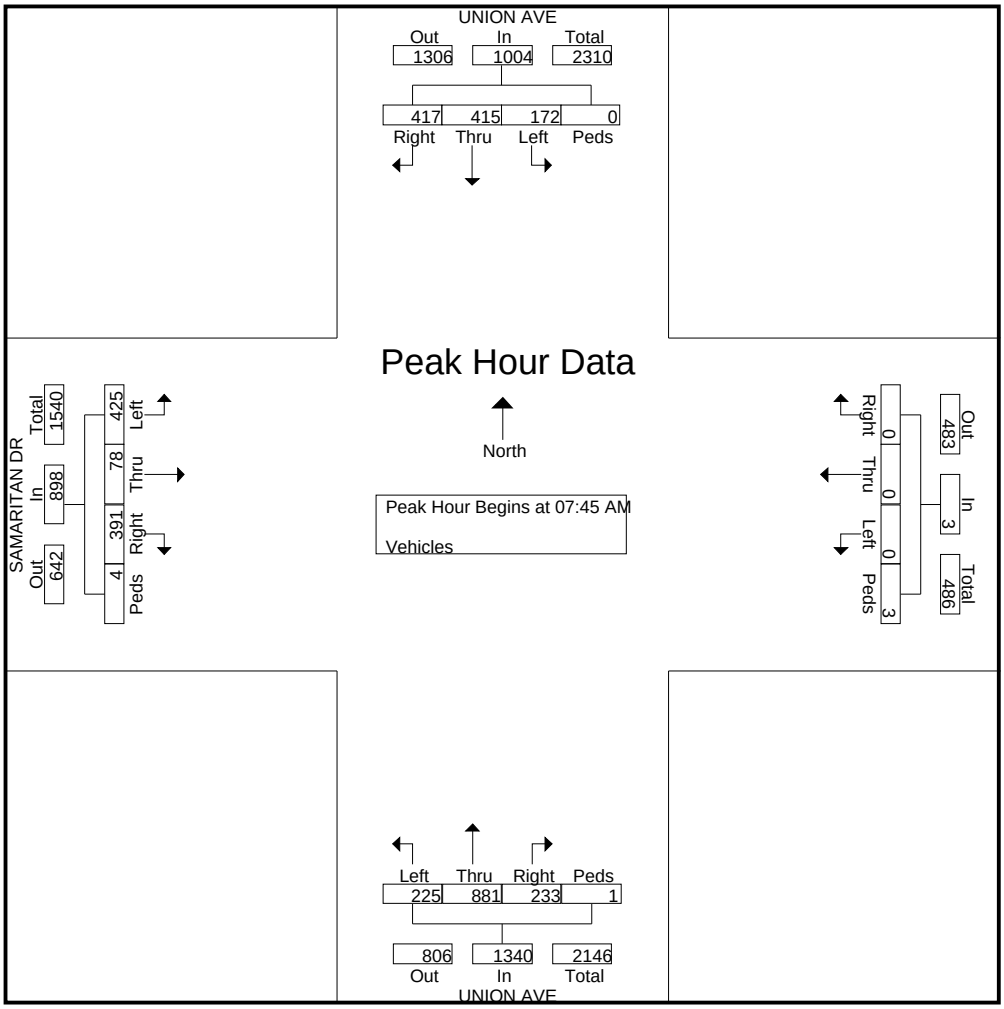

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Groups Printed- Vehicles

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	27	162	51	0	240	0	0	0	1	1	31	143	3	0	177	102	35	103	0	240	658
04:15 PM	34	161	57	0	252	0	0	0	0	0	33	146	4	2	185	126	35	113	0	274	711
04:30 PM	31	176	59	0	266	0	0	0	0	0	25	158	14	0	197	97	40	103	0	240	703
04:45 PM	21	171	51	0	243	0	0	0	2	2	33	157	7	2	199	109	36	118	0	263	707
Total	113	670	218	0	1001	0	0	0	3	3	122	604	28	4	758	434	146	437	0	1017	2779
05:00 PM	34	192	66	0	292	0	0	0	4	4	30	146	8	0	184	128	23	134	0	285	765
05:15 PM	27	189	63	0	279	0	0	0	0	0	34	129	4	0	167	151	29	127	1	308	754
05:30 PM	27	203	62	0	292	0	0	0	0	0	16	133	5	0	154	128	19	135	2	284	730
05:45 PM	30	165	68	0	263	0	0	0	0	0	27	139	3	0	169	148	25	99	0	272	704
Total	118	749	259	0	1126	0	0	0	4	4	107	547	20	0	674	555	96	495	3	1149	2953
Grand Total	231	1419	477	0	2127	0	0	0	7	7	229	1151	48	4	1432	989	242	932	3	2166	5732
Apprch %	10.9	66.7	22.4	0		0	0	0	100		16	80.4	3.4	0.3		45.7	11.2	43	0.1		
Total %	4	24.8	8.3	0	37.1	0	0	0	0.1	0.1	4	20.1	0.8	0.1	25	17.3	4.2	16.3	0.1	37.8	

	UNION AVE Southbound					Westbound					UNION AVE Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	21	171	51	0	243	0	0	0	2	2	33	**157**	7	**2**	**199**	109	**36**	118	0	263	707
05:00 PM	**34**	192	**66**	0	**292**	0	0	0	**4**	**4**	30	146	**8**	0	184	128	23	134	0	285	**765**
05:15 PM	27	189	63	0	279	0	0	0	0	0	**34**	129	4	0	167	**151**	29	127	1	**308**	754
05:30 PM	27	**203**	62	0	292	0	0	0	0	0	16	133	5	0	154	128	19	**135**	**2**	284	730
Total Volume	109	755	242	0	1106	0	0	0	6	6	113	565	24	2	704	516	107	514	3	1140	2956
% App. Total	9.9	68.3	21.9	0		0	0	0	100		16.1	80.3	3.4	0.3		45.3	9.4	45.1	0.3		
PHF	.801	.930	.917	.000	.947	.000	.000	.000	.375	.375	.831	.900	.750	.250	.884	.854	.743	.952	.375	.925	.966

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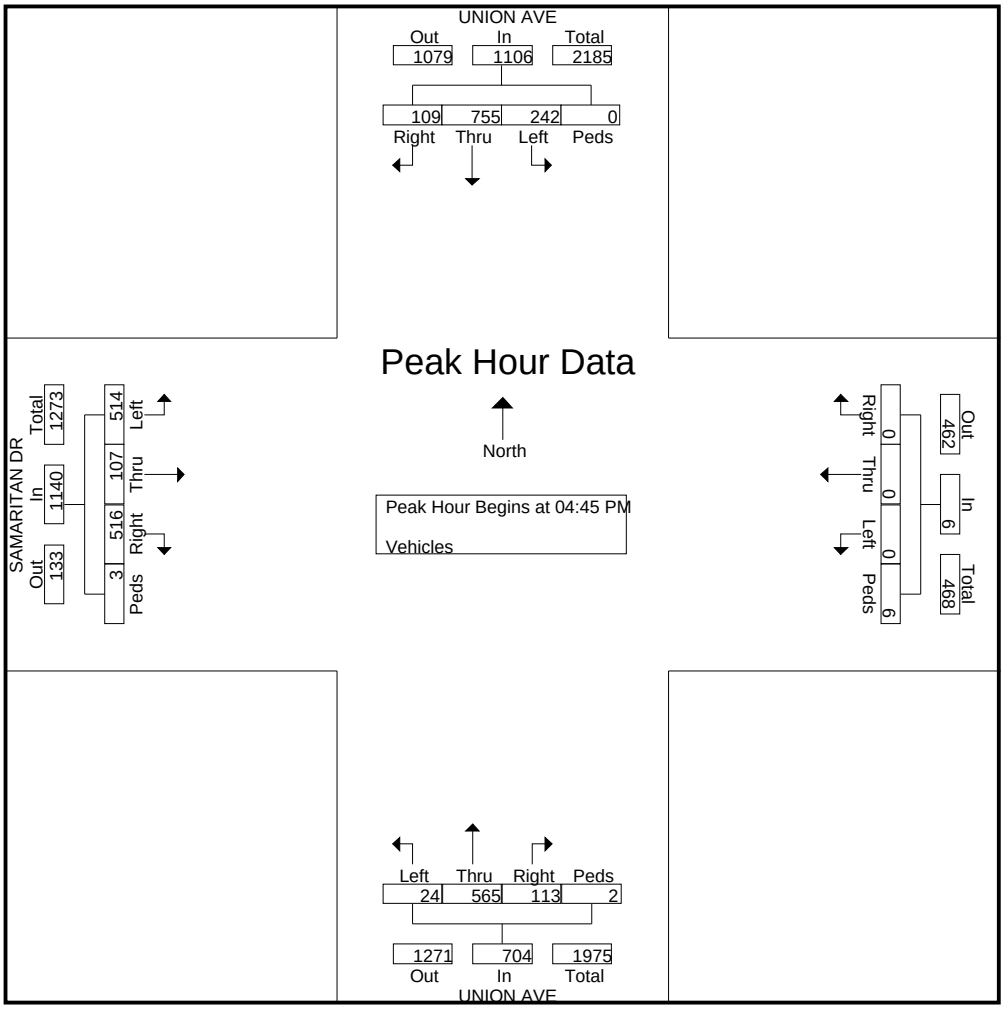

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Start Date : 6/6/2012
Page No : 1

Groups Printed- Vehicles

	SR-85 SB RAMP Southbound					SAMARITAN DR Westbound					Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	11	0	53	0	64	0	46	0	0	46	0	0	0	0	0	0	19	0	0	19	129
07:15 AM	19	0	78	0	97	0	67	0	0	67	0	0	0	0	0	0	29	0	0	29	193
07:30 AM	21	0	119	0	140	0	101	0	0	101	0	0	0	0	0	0	48	0	0	48	289
07:45 AM	36	0	199	0	235	0	132	0	0	132	0	0	0	0	0	0	56	0	0	56	423
Total	87	0	449	0	536	0	346	0	0	346	0	0	0	0	0	0	152	0	0	152	1034
08:00 AM	34	0	180	0	214	0	178	0	0	178	0	0	0	0	0	0	30	0	0	30	422
08:15 AM	28	0	140	0	168	0	161	0	0	161	0	0	0	0	0	0	54	0	0	54	383
08:30 AM	16	0	164	0	180	0	101	0	0	101	0	0	0	0	0	0	50	0	0	50	331
08:45 AM	26	0	179	0	205	0	131	0	0	131	0	0	0	0	0	0	48	0	0	48	384
Total	104	0	663	0	767	0	571	0	0	571	0	0	0	0	0	0	182	0	0	182	1520
Grand Total	191	0	1112	0	1303	0	917	0	0	917	0	0	0	0	0	0	334	0	0	334	2554
Apprch %	14.7	0	85.3	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	7.5	0	43.5	0	51	0	35.9	0	0	35.9	0	0	0	0	0	0	13.1	0	0	13.1	

	SR-85 SB RAMP Southbound					SAMARITAN DR Westbound					Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**36**	0	**199**	0	**235**	0	132	0	0	132	0	0	0	0	0	0	**56**	0	0	**56**	**423**
08:00 AM	34	0	180	0	214	0	**178**	0	0	**178**	0	0	0	0	0	0	30	0	0	30	422
08:15 AM	28	0	140	0	168	0	161	0	0	161	0	0	0	0	0	0	54	0	0	54	383
08:30 AM	16	0	164	0	180	0	101	0	0	101	0	0	0	0	0	0	50	0	0	50	331
Total Volume	114	0	683	0	797	0	572	0	0	572	0	0	0	0	0	0	190	0	0	190	1559
% App. Total	14.3	0	85.7	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.792	.000	.858	.000	.848	.000	.803	.000	.000	.803	.000	.000	.000	.000	.000	.000	.848	.000	.000	.848	.921

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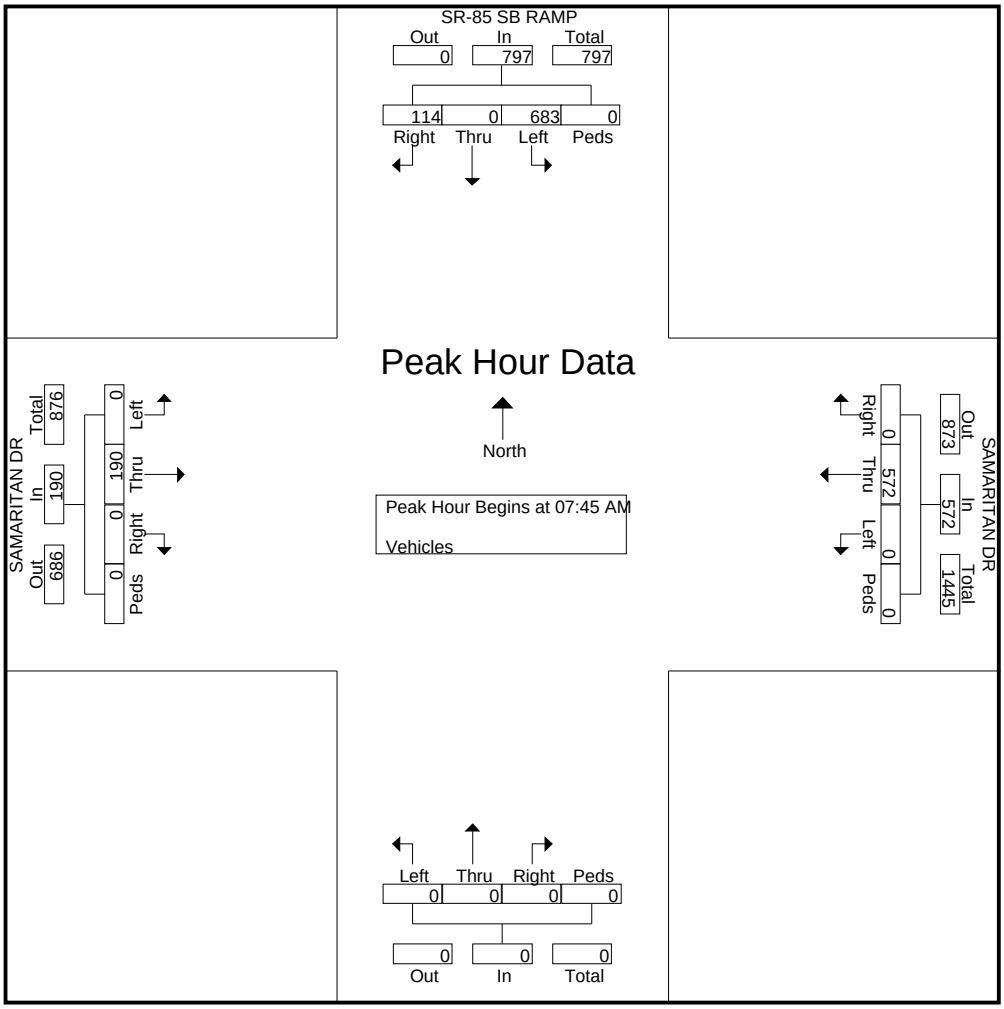

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Groups Printed- Vehicles

	SR-85 SB RAMP Southbound					SAMARITAN DR Westbound					Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	21	0	137	0	158	0	31	0	0	31	0	0	0	0	0	0	98	0	0	98	287
04:15 PM	14	0	163	0	177	0	37	0	0	37	0	0	0	0	0	0	93	0	0	93	307
04:30 PM	19	0	152	0	171	0	39	0	0	39	0	0	0	0	0	0	98	0	0	98	308
04:45 PM	17	0	143	0	160	0	32	0	0	32	0	0	0	0	0	0	108	0	0	108	300
Total	71	0	595	0	666	0	139	0	0	139	0	0	0	0	0	0	397	0	0	397	1202
05:00 PM	17	0	157	0	174	0	47	0	0	47	0	0	0	0	0	0	140	0	0	140	361
05:15 PM	16	0	168	0	184	0	35	0	0	35	0	0	0	0	0	0	128	0	0	128	347
05:30 PM	14	0	177	0	191	0	32	0	0	32	0	0	0	0	0	0	103	0	0	103	326
05:45 PM	17	0	167	0	184	0	34	0	0	34	0	0	0	0	0	0	97	0	0	97	315
Total	64	0	669	0	733	0	148	0	0	148	0	0	0	0	0	0	468	0	0	468	1349
Grand Total	135	0	1264	0	1399	0	287	0	0	287	0	0	0	0	0	0	865	0	0	865	2551
Apprch %	9.6	0	90.4	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	5.3	0	49.5	0	54.8	0	11.3	0	0	11.3	0	0	0	0	0	0	33.9	0	0	33.9	

	SR-85 SB RAMP Southbound					SAMARITAN DR Westbound					Northbound					SAMARITAN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**17**	0	157	0	174	0	**47**	0	0	**47**	0	0	0	0	0	0	**140**	0	0	**140**	**361**
05:15 PM	16	0	168	0	184	0	35	0	0	35	0	0	0	0	0	0	128	0	0	128	347
05:30 PM	14	0	**177**	0	**191**	0	32	0	0	32	0	0	0	0	0	0	103	0	0	103	326
05:45 PM	17	0	167	0	184	0	34	0	0	34	0	0	0	0	0	0	97	0	0	97	315
Total Volume	64	0	669	0	733	0	148	0	0	148	0	0	0	0	0	0	468	0	0	468	1349
% App. Total	8.7	0	91.3	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.941	.000	.945	.000	.959	.000	.787	.000	.000	.787	.000	.000	.000	.000	.000	.000	.836	.000	.000	.836	.934

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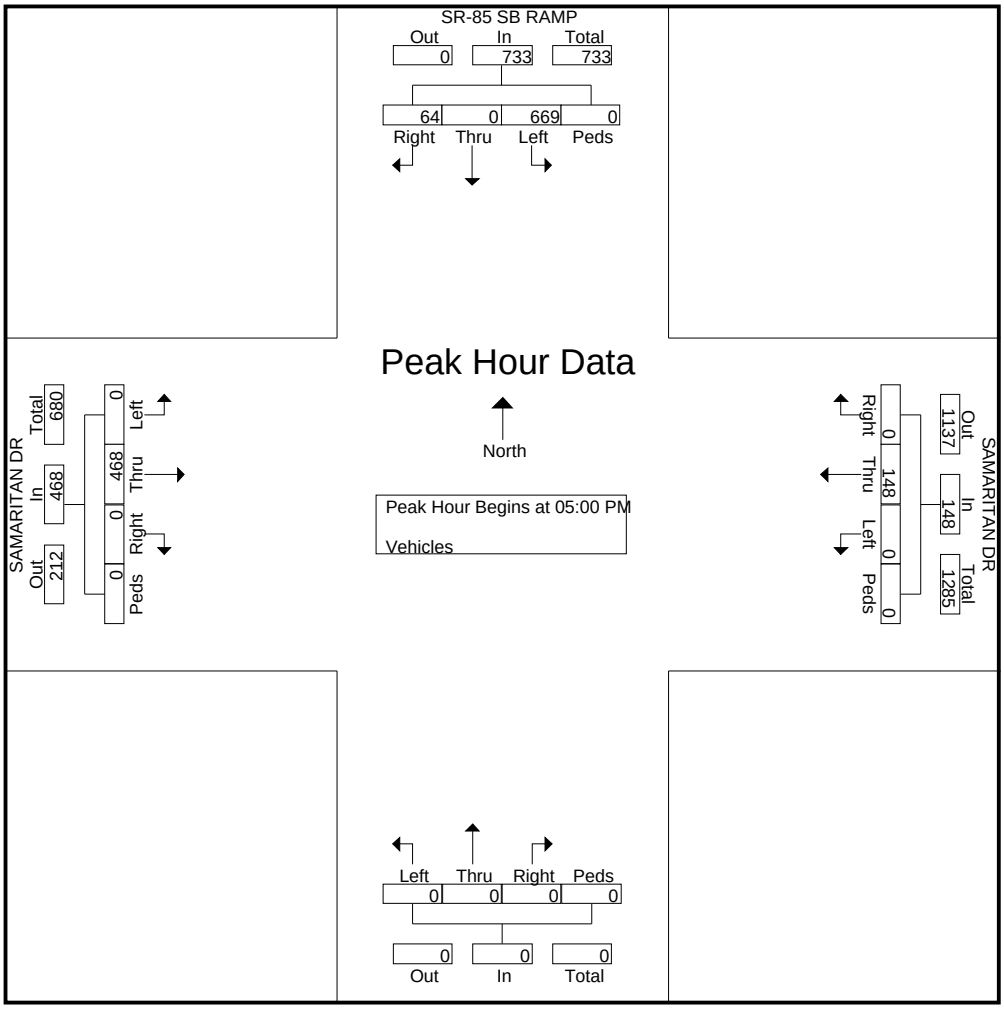

APPENDIX B: LOS CALCULATIONS

Harker Elementary School
SJ12-1362

Summary Scenario Comparison Report (With Average Critical Delay)
Future Volume Alternative

Intersection		???				Ex_AM				Ex+P_AM						???			
		LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Crit V/C Change	Avg Crit Del (sec)	Avg Crit Del Change	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	Union Ave / Camden Ave	?	xx.x	x.xxx	xx.x	D-	51.0	0.809	45.3	D-	53.7	0.840	+ 0.031	49.4	+ 4.1	?	xx.x	x.xxx	xx.x
#2	Union Ave / Woodard Rd	?	xx.x	x.xxx	xx.x	B-	19.9	0.339	17.7	B-	19.3	0.360	+ 0.021	17.3	- 0.4	?	xx.x	x.xxx	xx.x
#3	Union Ave / Charmeran Ave	?	xx.x	x.xxx	xx.x	B	13.6	0.338	12.2	B	13.2	0.361	+ 0.023	11.9	- 0.2	?	xx.x	x.xxx	xx.x
#4	Union Ave / Logic Dr - Cole Dr	?	xx.x	x.xxx	xx.x	C	24.9	0.691	30.3	C	24.7	0.746	+ 0.054	31.2	+ 0.9	?	xx.x	x.xxx	xx.x
#5	Union Ave / NB SR 85 Ramps	?	xx.x	x.xxx	xx.x	B-	18.5	0.502	24.7	C+	21.2	0.534	+ 0.032	12.0	- 12.7	?	xx.x	x.xxx	xx.x
#6	Union Ave / Samaritan Dr - SB SR 85 On-Ramp	?	xx.x	x.xxx	xx.x	C+	22.4	0.666	27.1	C+	22.7	0.666	+ 0.000	27.1	+ 0.0	?	xx.x	x.xxx	xx.x
#7	Samaritan Dr / SB SR 85 Off-Ramp	?	xx.x	x.xxx	xx.x	B+	11.0	0.588	11.7	B+	11.7	0.647	+ 0.059	12.5	+ 0.8	?	xx.x	x.xxx	xx.x

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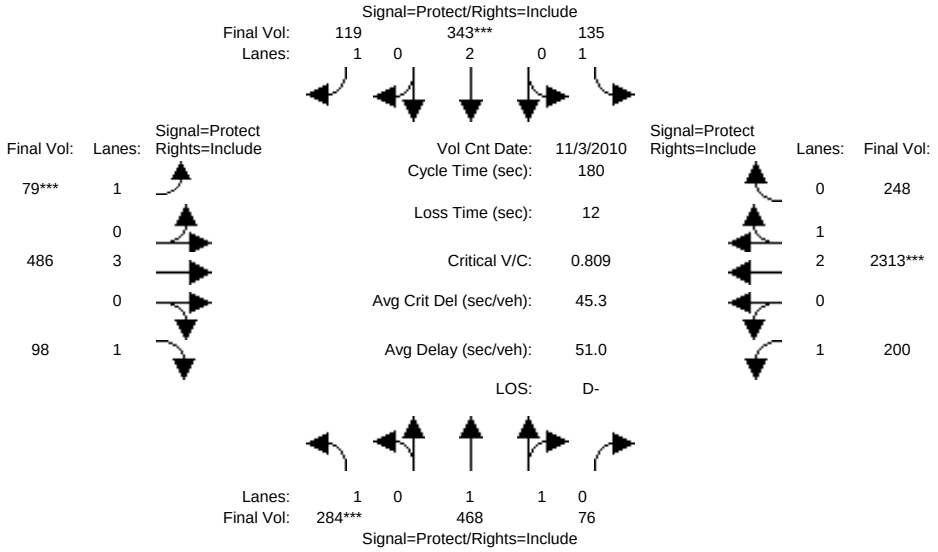
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 7:30 AM												
Base Vol:	284	468	76	135	343	119	79	486	98	200	2313	248
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	468	76	135	343	119	79	486	98	200	2313	248
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	284	468	76	135	343	119	79	486	98	200	2313	248
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	284	468	76	135	343	119	79	486	98	200	2313	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	284	468	76	135	343	119	79	486	98	200	2313	248
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	284	468	76	135	343	119	79	486	98	200	2313	248
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.71	0.29	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.70	0.30
Final Sat.:	1750	3183	517	1750	3800	1750	1750	5700	1750	1750	5057	542
Capacity Analysis Module:												
Vol/Sat:	0.16	0.15	0.15	0.08	0.09	0.07	0.05	0.09	0.06	0.11	0.46	0.46
Crit Moves:	****				****		****				****	
Green Time:	36.1	36.9	36.9	19.3	20.1	20.1	10.0	47.8	47.8	64.0	102	101.8
Volume/Cap:	0.81	0.72	0.72	0.72	0.81	0.61	0.81	0.32	0.21	0.32	0.81	0.81
Delay/Veh:	81.7	70.1	70.1	90.3	89.1	81.7	121.7	53.2	51.7	42.5	33.0	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.7	70.1	70.1	90.3	89.1	81.7	121.7	53.2	51.7	42.5	33.0	33.0
LOS by Move:	F	E	E	F	F	F	F	D-	D-	D	C-	C-
HCM2kAvgQ:	17	14	14	9	11	8	6	7	4	8	39	39

Note: Queue reported is the number of cars per lane.

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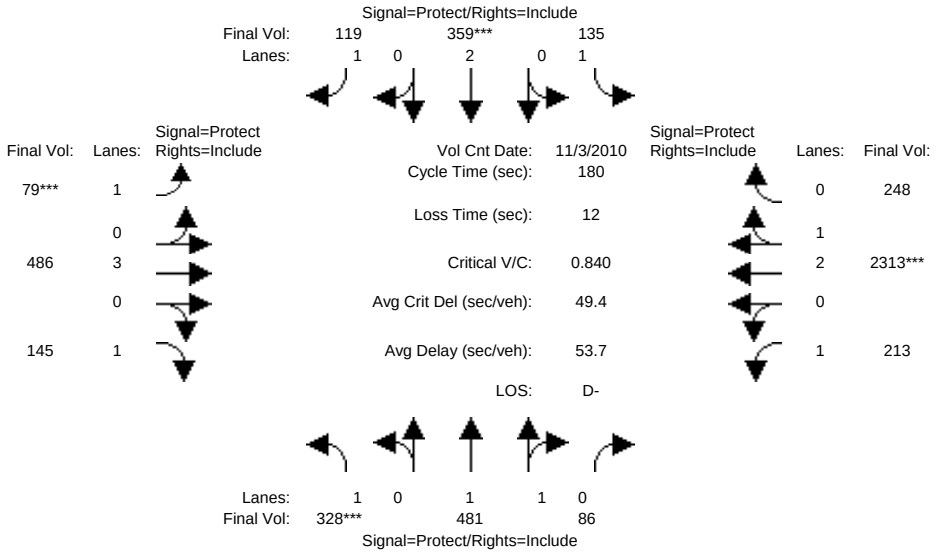
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 7:30 AM												
Base Vol:	284	468	76	135	343	119	79	486	98	200	2313	248
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	468	76	135	343	119	79	486	98	200	2313	248
Added Vol:	44	13	10	0	16	0	0	0	47	13	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	328	481	86	135	359	119	79	486	145	213	2313	248
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	328	481	86	135	359	119	79	486	145	213	2313	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	328	481	86	135	359	119	79	486	145	213	2313	248
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	328	481	86	135	359	119	79	486	145	213	2313	248
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.69	0.31	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.70	0.30
Final Sat.:	1750	3138	561	1750	3800	1750	1750	5700	1750	1750	5057	542
Capacity Analysis Module:												
Vol/Sat:	0.19	0.15	0.15	0.08	0.09	0.07	0.05	0.09	0.08	0.12	0.46	0.46
Crit Moves:	****				****		****				****	
Green Time:	40.1	40.2	40.2	20.2	20.2	20.2	9.7	44.3	44.3	63.3	98.0	98.0
Volume/Cap:	0.84	0.69	0.69	0.69	0.84	0.60	0.84	0.35	0.34	0.35	0.84	0.84
Delay/Veh:	81.8	66.6	66.6	86.6	92.2	81.4	130.3	56.0	56.2	43.4	36.7	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.8	66.6	66.6	86.6	92.2	81.4	130.3	56.0	56.2	43.4	36.7	36.7
LOS by Move:	F	E	E	F	F	F	F	E+	E+	D	D+	D+
HCM2kAvgQ:	19	15	15	9	12	8	7	7	7	9	41	41

Note: Queue reported is the number of cars per lane.

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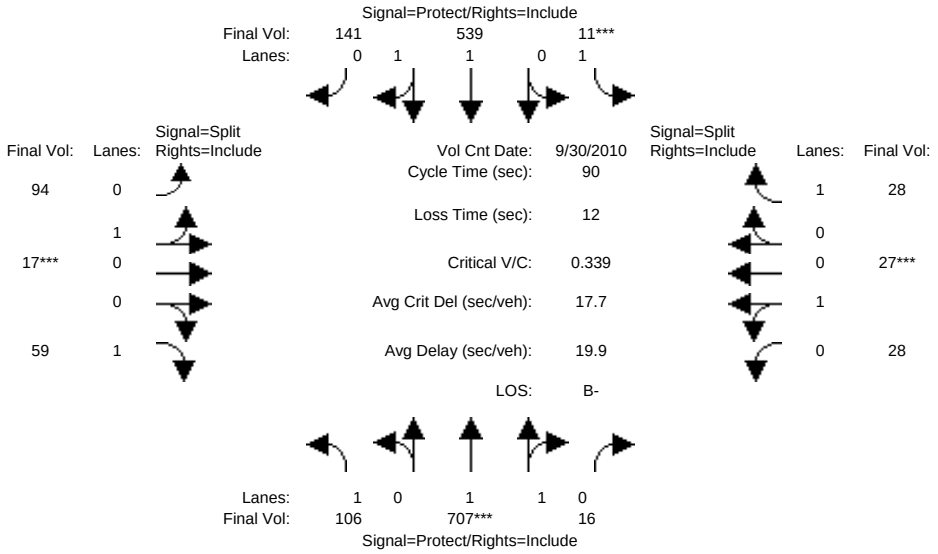
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 7:30:00 AM												
Base Vol:	106	707	16	11	539	141	94	17	59	28	27	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	707	16	11	539	141	94	17	59	28	27	28
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	707	16	11	539	141	94	17	59	28	27	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	707	16	11	539	141	94	17	59	28	27	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	707	16	11	539	141	94	17	59	28	27	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	707	16	11	539	141	94	17	59	28	27	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.95	0.05	1.00	1.57	0.43	0.85	0.15	1.00	0.51	0.49	1.00
Final Sat.:	1750	3618	82	1750	2932	767	1524	276	1750	916	884	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.20	0.01	0.18	0.18	0.06	0.06	0.03	0.03	0.03	0.02
Crit Moves:		****		****				****			****	
Green Time:	15.9	46.4	46.4	7.0	37.5	37.5	14.6	14.6	14.6	10.0	10.0	10.0
Volume/Cap:	0.34	0.38	0.38	0.08	0.44	0.44	0.38	0.38	0.21	0.28	0.28	0.14
Delay/Veh:	33.2	13.3	13.3	38.8	19.0	19.0	34.5	34.5	33.0	37.4	37.4	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.2	13.3	13.3	38.8	19.0	19.0	34.5	34.5	33.0	37.4	37.4	36.5
LOS by Move:	C-	B	B	D+	B-	B-	C-	C-	C-	D+	D+	D+
HCM2kAvgQ:	3	6	6	0	6	6	3	3	2	2	2	1

Note: Queue reported is the number of cars per lane.

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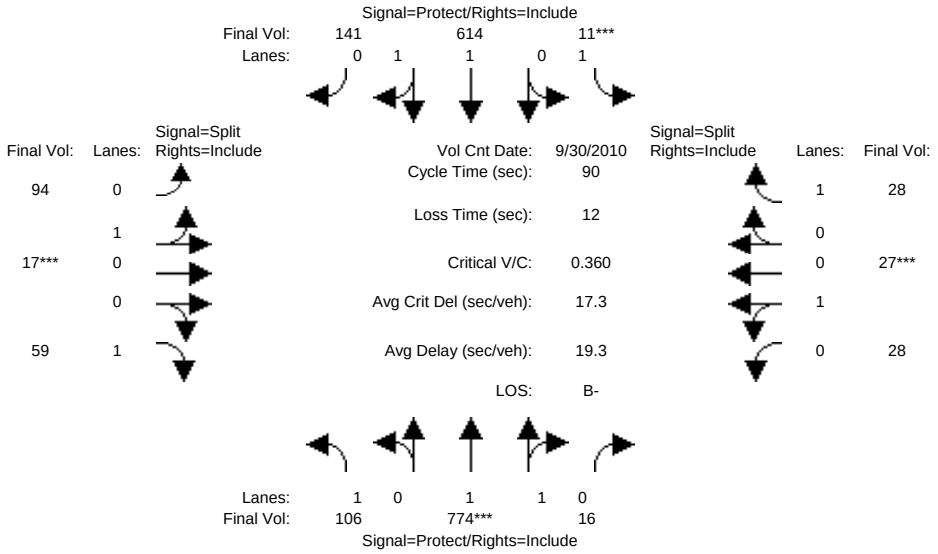
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 7:30:00 AM												
Base Vol:	106	707	16	11	539	141	94	17	59	28	27	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	707	16	11	539	141	94	17	59	28	27	28
Added Vol:	0	67	0	0	75	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	774	16	11	614	141	94	17	59	28	27	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	774	16	11	614	141	94	17	59	28	27	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	774	16	11	614	141	94	17	59	28	27	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	774	16	11	614	141	94	17	59	28	27	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.96	0.04	1.00	1.62	0.38	0.85	0.15	1.00	0.51	0.49	1.00
Final Sat.:	1750	3625	75	1750	3008	691	1524	276	1750	916	884	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.21	0.01	0.20	0.20	0.06	0.06	0.03	0.03	0.03	0.02
Crit Moves:		****		****				****			****	
Green Time:	15.0	47.3	47.3	7.0	39.3	39.3	13.7	13.7	13.7	10.0	10.0	10.0
Volume/Cap:	0.36	0.41	0.41	0.08	0.47	0.47	0.41	0.41	0.22	0.28	0.28	0.14
Delay/Veh:	34.0	13.0	13.0	38.8	18.1	18.1	35.5	35.5	33.9	37.4	37.4	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	13.0	13.0	38.8	18.1	18.1	35.5	35.5	33.9	37.4	37.4	36.5
LOS by Move:	C-	B	B	D+	B-	B-	D+	D+	C-	D+	D+	D+
HCM2kAvgQ:	3	7	7	0	7	7	3	3	2	2	2	1

Note: Queue reported is the number of cars per lane.

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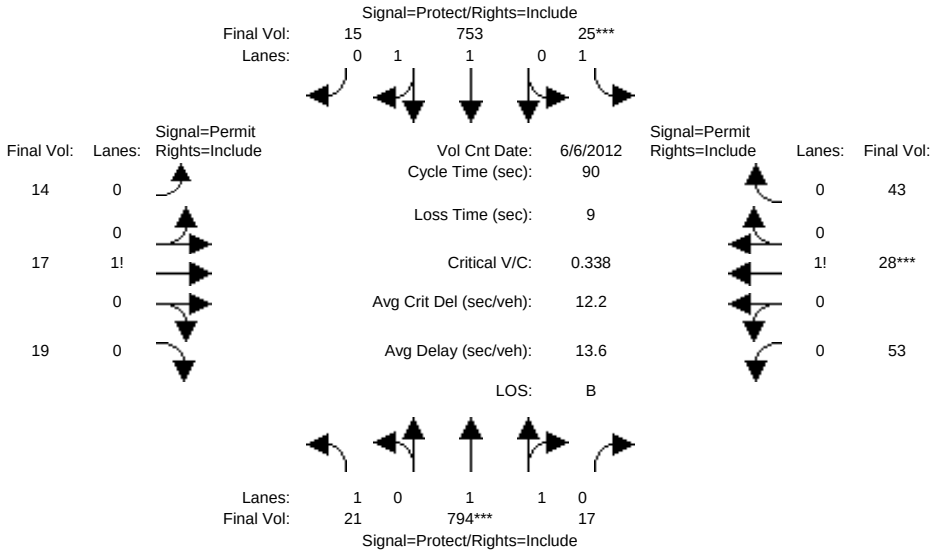
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 8:00:00 AM												
Base Vol:	21	794	17	25	753	15	14	17	19	53	28	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	794	17	25	753	15	14	17	19	53	28	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	21	794	17	25	753	15	14	17	19	53	28	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	794	17	25	753	15	14	17	19	53	28	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	794	17	25	753	15	14	17	19	53	28	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	794	17	25	753	15	14	17	19	53	28	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.96	0.04	1.00	1.96	0.04	0.28	0.34	0.38	0.43	0.22	0.35
Final Sat.:	1750	3622	78	1750	3628	72	490	595	665	748	395	607
Capacity Analysis Module:												
Vol/Sat:	0.01	0.22	0.22	0.01	0.21	0.21	0.03	0.03	0.03	0.07	0.07	0.07
Crit Moves:		****		****							****	
Green Time:	17.2	55.9	55.9	7.0	45.8	45.8	18.1	18.1	18.1	18.1	18.1	18.1
Volume/Cap:	0.06	0.35	0.35	0.18	0.41	0.41	0.14	0.14	0.14	0.35	0.35	0.35
Delay/Veh:	29.9	8.4	8.4	39.5	13.9	13.9	29.8	29.8	29.8	31.5	31.5	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.9	8.4	8.4	39.5	13.9	13.9	29.8	29.8	29.8	31.5	31.5	31.5
LOS by Move:	C	A	A	D	B	B	C	C	C	C	C	C
HCM2kAvgQ:	0	5	5	1	7	7	1	1	1	3	3	3

Note: Queue reported is the number of cars per lane.

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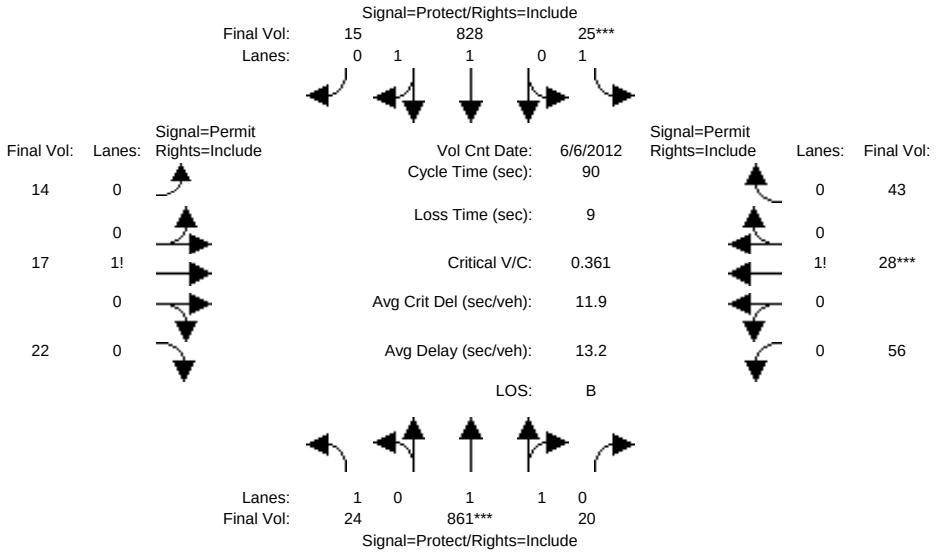
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 8:00:00 AM												
Base Vol:	21	794	17	25	753	15	14	17	19	53	28	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	794	17	25	753	15	14	17	19	53	28	43
Added Vol:	3	67	3	0	75	0	0	0	3	3	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	861	20	25	828	15	14	17	22	56	28	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	861	20	25	828	15	14	17	22	56	28	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	861	20	25	828	15	14	17	22	56	28	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	861	20	25	828	15	14	17	22	56	28	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.95	0.05	1.00	1.96	0.04	0.26	0.32	0.42	0.44	0.22	0.34
Final Sat.:	1750	3616	84	1750	3634	66	462	561	726	772	386	593
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.24	0.01	0.23	0.23	0.03	0.03	0.03	0.07	0.07	0.07
Crit Moves:		****		****							****	
Green Time:	16.2	56.7	56.7	7.0	47.5	47.5	17.3	17.3	17.3	17.3	17.3	17.3
Volume/Cap:	0.08	0.38	0.38	0.18	0.43	0.43	0.16	0.16	0.16	0.38	0.38	0.38
Delay/Veh:	30.8	8.2	8.2	39.5	13.1	13.1	30.5	30.5	30.5	32.4	32.4	32.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	8.2	8.2	39.5	13.1	13.1	30.5	30.5	30.5	32.4	32.4	32.4
LOS by Move:	C	A	A	D	B	B	C	C	C	C-	C-	C-
HCM2kAvgQ:	1	6	6	1	7	7	1	1	1	4	4	4

Note: Queue reported is the number of cars per lane.

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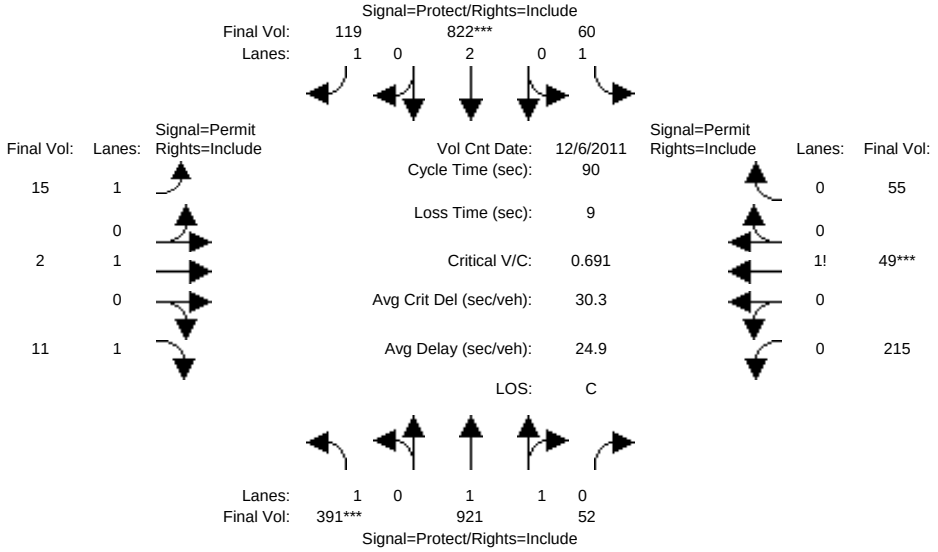
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #4: Union Ave / Logic Dr - Cole Dr



Street Name:	Union Ave						Logic Dr - Cole Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	391	921	52	60	822	119	15	2	11	215	49	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	391	921	52	60	822	119	15	2	11	215	49	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	391	921	52	60	822	119	15	2	11	215	49	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	391	921	52	60	822	119	15	2	11	215	49	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	391	921	52	60	822	119	15	2	11	215	49	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	391	921	52	60	822	119	15	2	11	215	49	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	1.89	0.11	1.00	2.00	1.00	1.00	1.00	1.00	0.68	0.15	0.17
Final Sat.:	1750	3502	198	1750	3800	1750	1750	1900	1750	1179	269	302
Capacity Analysis Module:												
Vol/Sat:	0.22	0.26	0.26	0.03	0.22	0.07	0.01	0.00	0.01	0.18	0.18	0.18
Crit Moves:	****				****						****	
Green Time:	29.1	44.2	44.2	13.1	28.2	28.2	23.7	23.7	23.7	23.7	23.7	23.7
Volume/Cap:	0.69	0.54	0.54	0.24	0.69	0.22	0.03	0.00	0.02	0.69	0.69	0.69
Delay/Veh:	30.2	16.1	16.1	34.5	28.9	23.0	24.6	24.4	24.6	34.3	34.3	34.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	16.1	16.1	34.5	28.9	23.0	24.6	24.4	24.6	34.3	34.3	34.3
LOS by Move:	C	B	B	C-	C	C+	C	C	C	C-	C-	C-
HCM2kAvgQ:	10	9	9	2	10	3	0	0	0	10	10	10

Note: Queue reported is the number of cars per lane.

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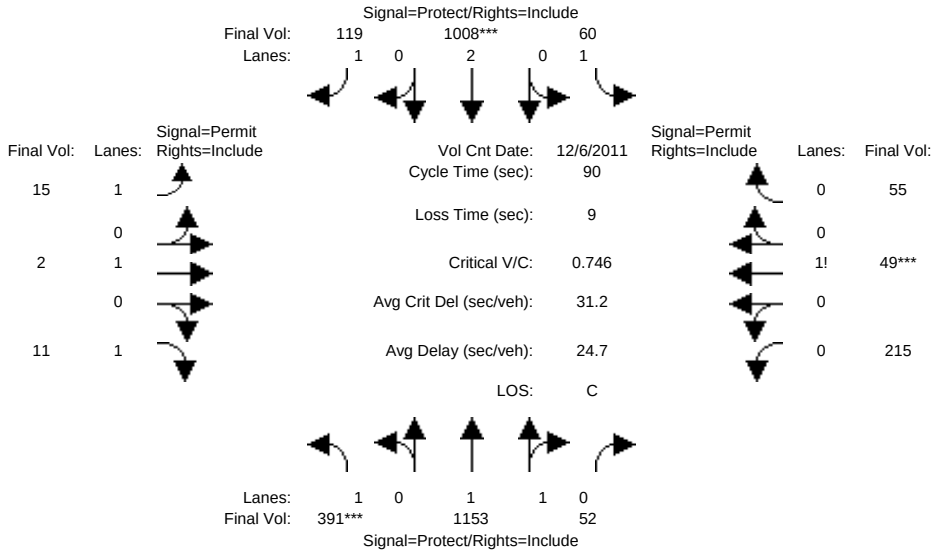
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #4: Union Ave / Logic Dr - Cole Dr



Street Name:	Union Ave						Logic Dr - Cole Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	391	921	52	60	822	119	15	2	11	215	49	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	391	921	52	60	822	119	15	2	11	215	49	55
Added Vol:	0	232	0	0	186	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	391	1153	52	60	1008	119	15	2	11	215	49	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	391	1153	52	60	1008	119	15	2	11	215	49	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	391	1153	52	60	1008	119	15	2	11	215	49	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	391	1153	52	60	1008	119	15	2	11	215	49	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	1.91	0.09	1.00	2.00	1.00	1.00	1.00	1.00	0.68	0.15	0.17
Final Sat.:	1750	3540	160	1750	3800	1750	1750	1900	1750	1179	269	302
Capacity Analysis Module:												
Vol/Sat:	0.22	0.33	0.33	0.03	0.27	0.07	0.01	0.00	0.01	0.18	0.18	0.18
Crit Moves:	****				****						****	
Green Time:	27.0	47.6	47.6	11.4	32.0	32.0	22.0	22.0	22.0	22.0	22.0	22.0
Volume/Cap:	0.75	0.62	0.62	0.27	0.75	0.19	0.04	0.00	0.03	0.75	0.75	0.75
Delay/Veh:	34.2	15.4	15.4	36.2	27.7	20.2	25.9	25.7	25.9	38.4	38.4	38.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	15.4	15.4	36.2	27.7	20.2	25.9	25.7	25.9	38.4	38.4	38.4
LOS by Move:	C-	B	B	D+	C	C+	C	C	C	D+	D+	D+
HCM2kAvgQ:	11	12	12	2	12	2	0	0	0	11	11	11

Note: Queue reported is the number of cars per lane.

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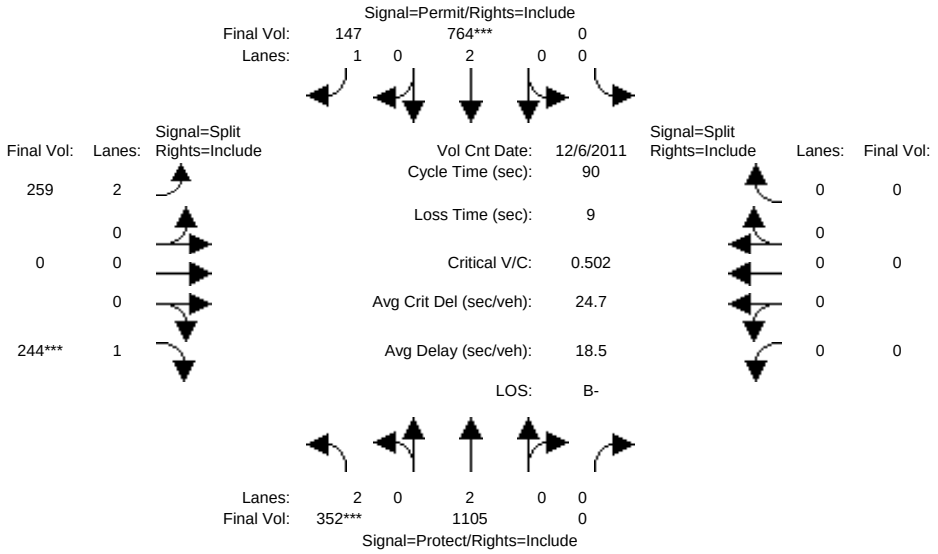
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	352	1105	0	0	764	147	259	0	244	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	352	1105	0	0	764	147	259	0	244	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	352	1105	0	0	764	147	259	0	244	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	352	1105	0	0	764	147	259	0	244	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	352	1105	0	0	764	147	259	0	244	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	352	1105	0	0	764	147	259	0	244	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.29	0.00	0.00	0.20	0.08	0.08	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	20.0	56.0	0.0	0.0	36.0	36.0	25.0	0.0	25.0	0.0	0.0	0.0
Volume/Cap:	0.50	0.47	0.00	0.00	0.50	0.21	0.30	0.00	0.50	0.00	0.00	0.00
Delay/Veh:	31.2	9.2	0.0	0.0	20.5	17.8	25.8	0.0	28.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.2	9.2	0.0	0.0	20.5	17.8	25.8	0.0	28.1	0.0	0.0	0.0
LOS by Move:	C	A	A	A	C+	B	C	A	C	A	A	A
HCM2kAvgQ:	5	8	0	0	8	3	3	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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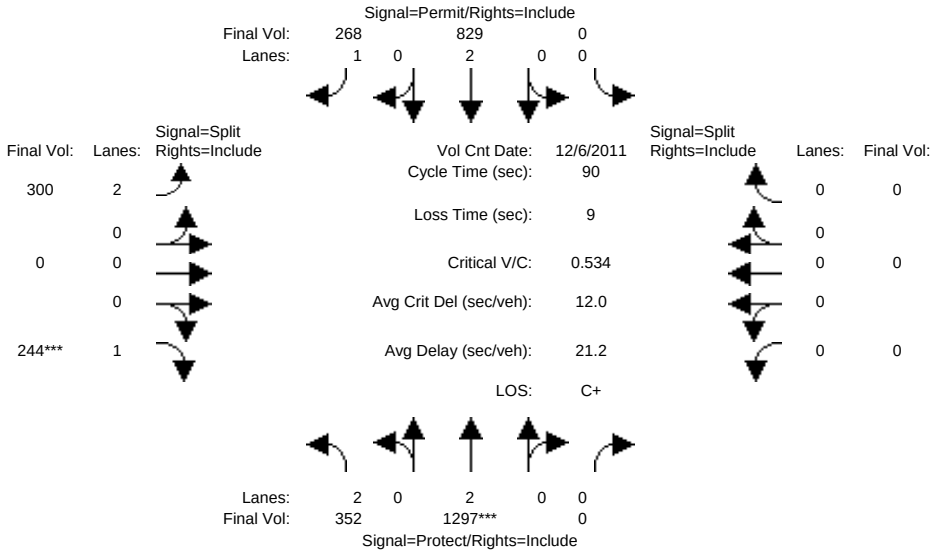
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	352	1105	0	0	764	147	259	0	244	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	352	1105	0	0	764	147	259	0	244	0	0	0
Added Vol:	0	192	0	0	65	121	41	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	352	1297	0	0	829	268	300	0	244	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	352	1297	0	0	829	268	300	0	244	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	352	1297	0	0	829	268	300	0	244	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	352	1297	0	0	829	268	300	0	244	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.34	0.00	0.00	0.22	0.15	0.10	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	39.6	64.8	0.0	0.0	25.3	25.3	16.2	0.0	16.2	0.0	0.0	0.0
Volume/Cap:	0.25	0.47	0.00	0.00	0.78	0.55	0.53	0.00	0.78	0.00	0.00	0.00
Delay/Veh:	16.0	5.5	0.0	0.0	33.4	28.7	34.4	0.0	46.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.0	5.5	0.0	0.0	33.4	28.7	34.4	0.0	46.8	0.0	0.0	0.0
LOS by Move:	B	A	A	A	C-	C	C-	A	D	A	A	A
HCM2kAvgQ:	4	7	0	0	10	7	5	0	9	0	0	0

Note: Queue reported is the number of cars per lane.

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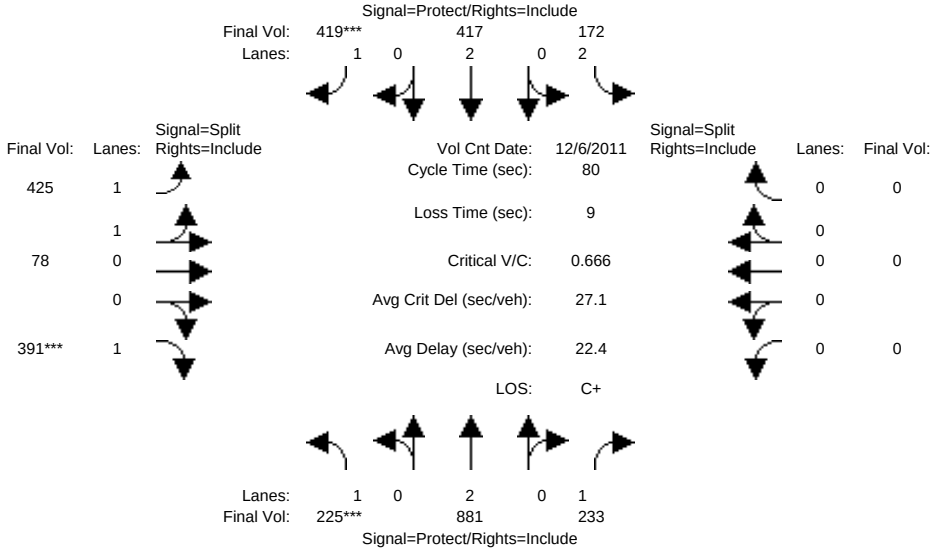
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	225	881	233	172	417	419	425	78	391	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	881	233	172	417	419	425	78	391	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	881	233	172	417	419	425	78	391	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	225	881	233	172	417	419	425	78	391	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	881	233	172	417	419	425	78	391	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	881	233	172	417	419	425	78	391	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.69	0.31	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	2999	550	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.23	0.13	0.05	0.11	0.24	0.14	0.14	0.22	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	15.4	32.1	32.1	12.1	28.7	28.7	26.8	26.8	26.8	0.0	0.0	0.0
Volume/Cap:	0.67	0.58	0.33	0.36	0.31	0.67	0.42	0.42	0.67	0.00	0.00	0.00
Delay/Veh:	34.9	19.2	16.8	30.9	18.6	24.3	20.8	20.8	25.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	19.2	16.8	30.9	18.6	24.3	20.8	20.8	25.7	0.0	0.0	0.0
LOS by Move:	C-	B-	B	C	B-	C	C+	C+	C	A	A	A
HCM2kAvgQ:	7	9	4	2	4	9	5	5	9	0	0	0

Note: Queue reported is the number of cars per lane.

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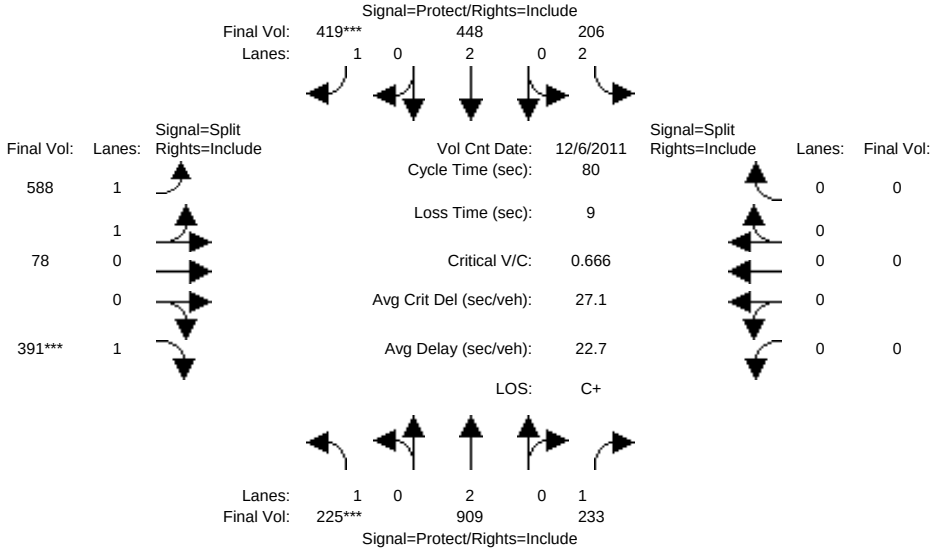
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	225	881	233	172	417	419	425	78	391	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	881	233	172	417	419	425	78	391	0	0	0
Added Vol:	0	28	0	34	31	0	163	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	909	233	206	448	419	588	78	391	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	225	909	233	206	448	419	588	78	391	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	909	233	206	448	419	588	78	391	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	909	233	206	448	419	588	78	391	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.77	0.23	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	3134	416	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.24	0.13	0.07	0.12	0.24	0.19	0.19	0.22	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	15.4	32.3	32.3	11.8	28.7	28.7	26.8	26.8	26.8	0.0	0.0	0.0
Volume/Cap:	0.67	0.59	0.33	0.44	0.33	0.67	0.56	0.56	0.67	0.00	0.00	0.00
Delay/Veh:	34.9	19.3	16.6	31.7	18.8	24.3	22.4	22.4	25.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.9	19.3	16.6	31.7	18.8	24.3	22.4	22.4	25.7	0.0	0.0	0.0
LOS by Move:	C-	B-	B	C	B-	C	C+	C+	C	A	A	A
HCM2kAvgQ:	7	9	4	3	4	9	7	7	9	0	0	0

Note: Queue reported is the number of cars per lane.

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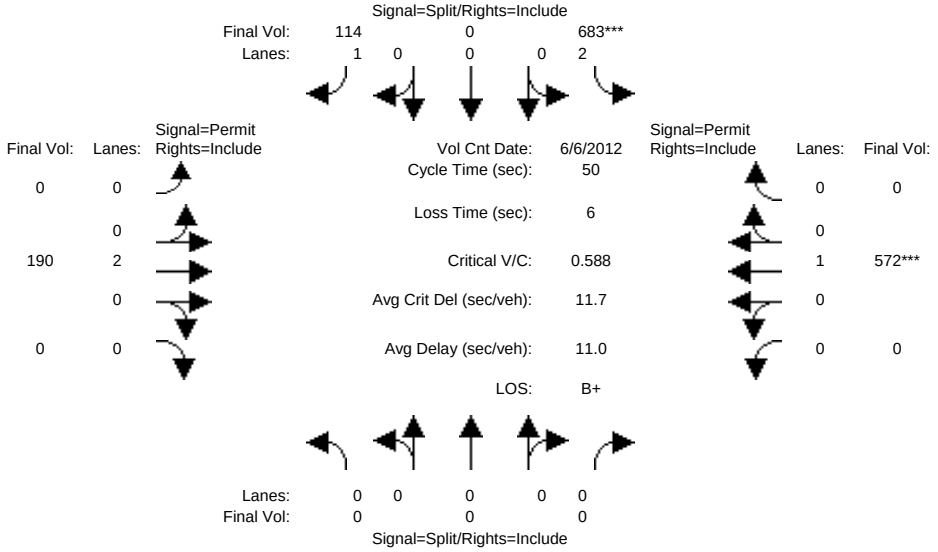
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_AM

Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp

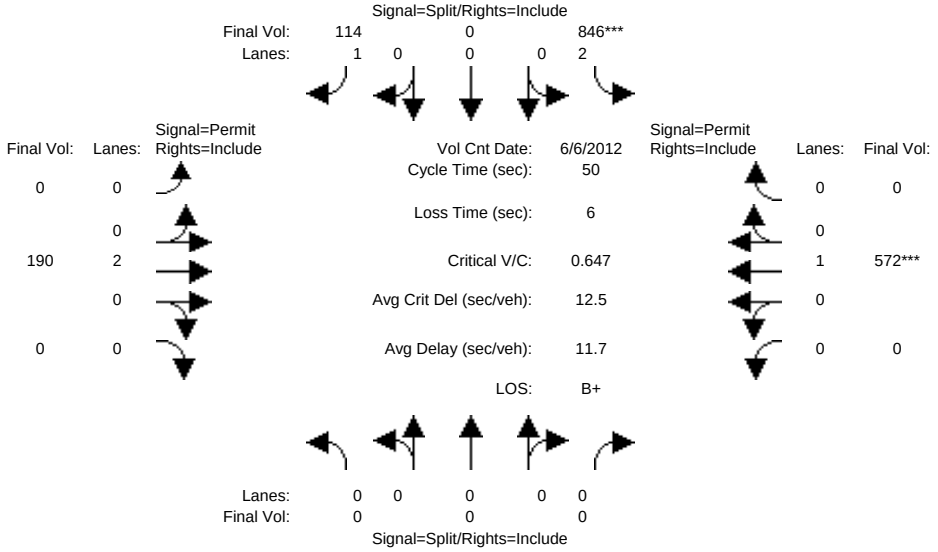



```
Street Name:        SB SR 85 Off-Ramp                    Samaritan Dr
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    10   10    10    10   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Jun 2012 << 7:45:00 AM
Base Vol:       0    0     0   683    0   114     0  190     0     0  572     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   683    0   114     0  190     0     0  572     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0   683    0   114     0  190     0     0  572     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   683    0   114     0  190     0     0  572     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   683    0   114     0  190     0     0  572     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   683    0   114     0  190     0     0  572     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 1.00  0.92  0.83 1.00  0.92  0.92 1.00  0.92  0.92 1.00  0.92
Lanes:       0.00 0.00  0.00  2.00 0.00  1.00  0.00 2.00  0.00  0.00 1.00  0.00
Final Sat.:     0    0     0  3150    0  1750     0 3800     0     0 1900     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.22 0.00  0.07  0.00 0.05  0.00  0.00 0.30  0.00
Crit Moves:                   ****                                     ****
Green Time:   0.0  0.0   0.0  18.4  0.0  18.4   0.0 25.6   0.0   0.0 25.6   0.0
Volume/Cap:  0.00 0.00  0.00  0.59 0.00  0.18  0.00 0.10  0.00  0.00 0.59  0.00
Delay/Veh:    0.0  0.0   0.0  13.5  0.0  10.8   0.0  6.3   0.0   0.0  9.5   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  13.5  0.0  10.8   0.0  6.3   0.0   0.0  9.5   0.0
LOS by Move:    A    A     A     B    A    B+     A    A     A     A    A     A
HCM2kAvgQ:      0    0     0     6    0     1     0    1     0     0    6     0
Note: Queue reported is the number of cars per lane.
```

Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_AM

Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 7:45:00 AM												
Base Vol:	0	0	0	683	0	114	0	190	0	0	572	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	683	0	114	0	190	0	0	572	0
Added Vol:	0	0	0	163	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	846	0	114	0	190	0	0	572	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	846	0	114	0	190	0	0	572	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	846	0	114	0	190	0	0	572	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	846	0	114	0	190	0	0	572	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.27	0.00	0.07	0.00	0.05	0.00	0.00	0.30	0.00
Crit Moves:				****							****	
Green Time:	0.0	0.0	0.0	20.7	0.0	20.7	0.0	23.3	0.0	0.0	23.3	0.0
Volume/Cap:	0.00	0.00	0.00	0.65	0.00	0.16	0.00	0.11	0.00	0.00	0.65	0.00
Delay/Veh:	0.0	0.0	0.0	12.8	0.0	9.3	0.0	7.6	0.0	0.0	11.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	12.8	0.0	9.3	0.0	7.6	0.0	0.0	11.9	0.0
LOS by Move:	A	A	A	B	A	A	A	A	A	A	B+	A
HCM2kAvgQ:	0	0	0	7	0	1	0	1	0	0	7	0

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
SJ12-1362

Summary Scenario Comparison Report (With Average Critical Delay)
Future Volume Alternative

Intersection		???				Ex_PM				Ex+P_PM						???			
		LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Crit V/C Change	Avg Crit Del (sec)	Avg Crit Del Change	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	Union Ave / Camden Ave	?	xx.x	x.xxx	xx.x	E	60.1	0.855	65.6	E	61.3	0.865	+ 0.010	66.9	+ 1.2	?	xx.x	x.xxx	xx.x
#2	Union Ave / Woodard Rd	?	xx.x	x.xxx	xx.x	C	24.1	0.488	22.9	C	23.7	0.505	+ 0.016	22.5	- 0.3	?	xx.x	x.xxx	xx.x
#3	Union Ave / Charmeran Ave	?	xx.x	x.xxx	xx.x	B	17.5	0.514	18.2	B	17.3	0.532	+ 0.017	18.1	- 0.0	?	xx.x	x.xxx	xx.x
#4	Union Ave / Logic Dr - Cole Dr	?	xx.x	x.xxx	xx.x	B	14.2	0.440	11.5	B	13.4	0.484	+ 0.044	11.0	- 0.5	?	xx.x	x.xxx	xx.x
#5	Union Ave / NB SR 85 Ramps	?	xx.x	x.xxx	xx.x	B-	19.4	0.557	26.7	B-	18.6	0.625	+ 0.068	27.2	+ 0.4	?	xx.x	x.xxx	xx.x
#6	Union Ave / Samaritan Dr - SB SR 85 On-Ramp	?	xx.x	x.xxx	xx.x	C+	21.6	0.573	21.3	C+	21.7	0.579	+ 0.006	21.4	+ 0.1	?	xx.x	x.xxx	xx.x
#7	Samaritan Dr / SB SR 85 Off-Ramp	?	xx.x	x.xxx	xx.x	A	9.4	0.381	9.2	A	9.4	0.415	+ 0.034	9.1	- 0.1	?	xx.x	x.xxx	xx.x

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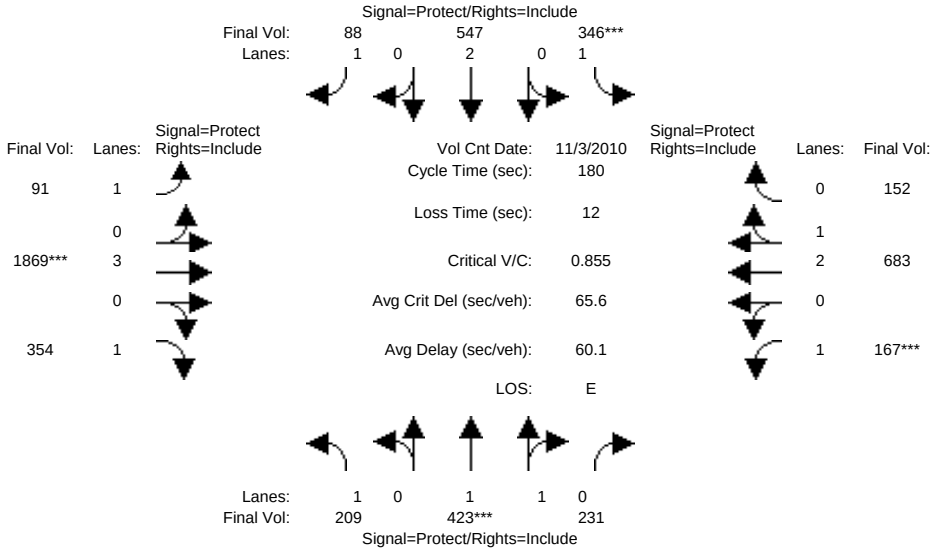
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 4:45:00 PM												
Base Vol:	209	423	231	346	547	88	91	1869	354	167	683	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	209	423	231	346	547	88	91	1869	354	167	683	152
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	209	423	231	346	547	88	91	1869	354	167	683	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	209	423	231	346	547	88	91	1869	354	167	683	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	209	423	231	346	547	88	91	1869	354	167	683	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	209	423	231	346	547	88	91	1869	354	167	683	152
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.27	0.73	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.43	0.57
Final Sat.:	1750	2392	1306	1750	3800	1750	1750	5700	1750	1750	4579	1019
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.18	0.20	0.14	0.05	0.05	0.33	0.20	0.10	0.15	0.15
Crit Moves:		****		****				****		****		
Green Time:	35.8	37.2	37.2	41.6	43.1	43.1	23.0	69.0	69.0	20.1	66.1	66.1
Volume/Cap:	0.60	0.85	0.85	0.85	0.60	0.21	0.41	0.85	0.53	0.85	0.41	0.41
Delay/Veh:	68.6	78.1	78.1	82.4	61.9	55.1	73.4	54.4	43.7	107.4	42.5	42.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.6	78.1	78.1	82.4	61.9	55.1	73.4	54.4	43.7	107.4	42.5	42.5
LOS by Move:	E	E-	E-	F	E	E+	E	D-	D	F	D	D
HCM2kAvgQ:	11	18	18	22	14	4	5	33	16	12	11	11

Note: Queue reported is the number of cars per lane.

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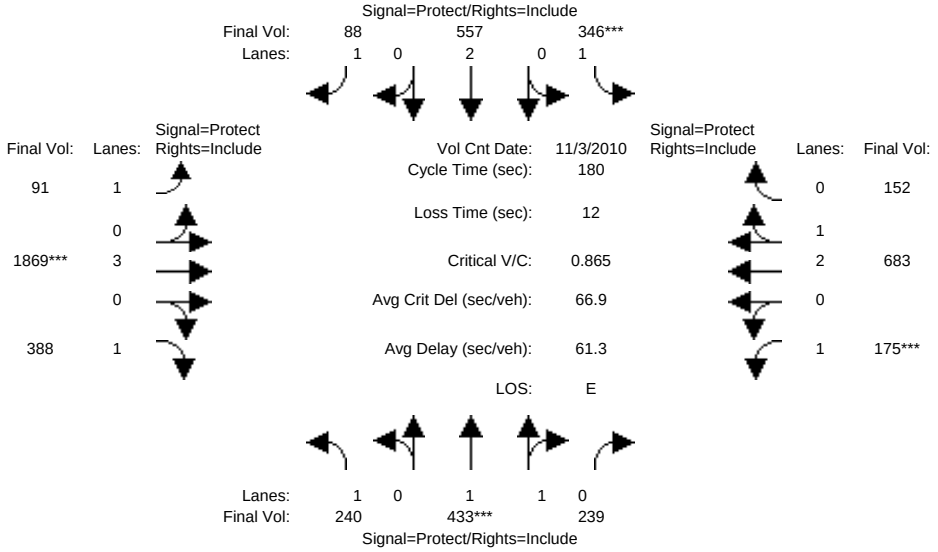
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 4:45:00 PM												
Base Vol:	209	423	231	346	547	88	91	1869	354	167	683	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	209	423	231	346	547	88	91	1869	354	167	683	152
Added Vol:	31	10	8	0	10	0	0	0	34	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	240	433	239	346	557	88	91	1869	388	175	683	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	240	433	239	346	557	88	91	1869	388	175	683	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	433	239	346	557	88	91	1869	388	175	683	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	240	433	239	346	557	88	91	1869	388	175	683	152
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.27	0.73	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.43	0.57
Final Sat.:	1750	2383	1315	1750	3800	1750	1750	5700	1750	1750	4579	1019
Capacity Analysis Module:												
Vol/Sat:	0.14	0.18	0.18	0.20	0.15	0.05	0.05	0.33	0.22	0.10	0.15	0.15
Crit Moves:		****		****				****		****		
Green Time:	38.2	37.8	37.8	41.1	40.8	40.8	23.0	68.2	68.2	20.8	66.0	66.0
Volume/Cap:	0.65	0.86	0.86	0.86	0.65	0.22	0.41	0.86	0.58	0.86	0.41	0.41
Delay/Veh:	68.7	78.6	78.6	84.3	64.8	57.0	73.4	55.6	45.9	108.1	42.5	42.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.7	78.6	78.6	84.3	64.8	57.0	73.4	55.6	45.9	108.1	42.5	42.5
LOS by Move:	E	E-	E-	F	E	E+	E	E+	D	F	D	D
HCM2kAvgQ:	13	19	19	22	14	4	5	33	18	13	11	11

Note: Queue reported is the number of cars per lane.

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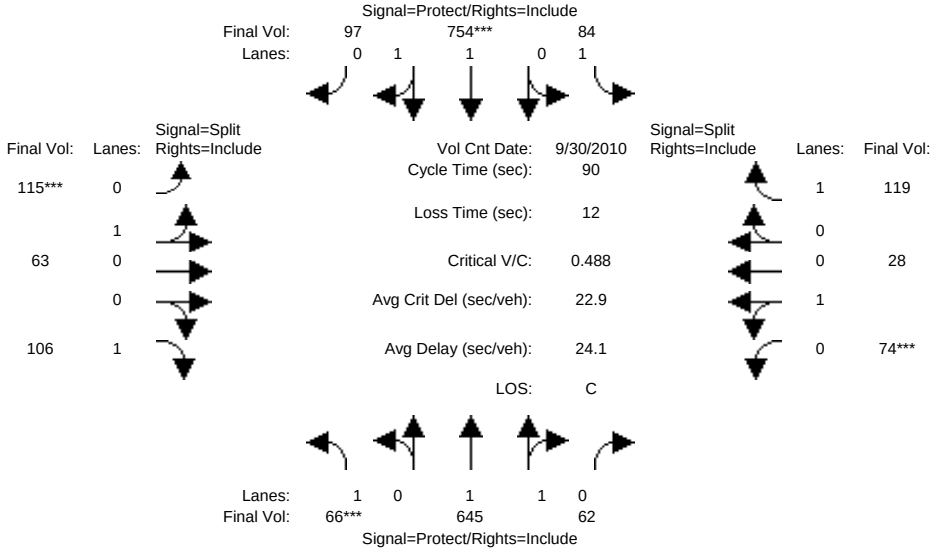
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 4:45:00 PM												
Base Vol:	66	645	62	84	754	97	115	63	106	74	28	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	645	62	84	754	97	115	63	106	74	28	119
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	645	62	84	754	97	115	63	106	74	28	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	645	62	84	754	97	115	63	106	74	28	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	645	62	84	754	97	115	63	106	74	28	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	645	62	84	754	97	115	63	106	74	28	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.82	0.18	1.00	1.77	0.23	0.65	0.35	1.00	0.73	0.27	1.00
Final Sat.:	1750	3375	324	1750	3278	422	1163	637	1750	1306	494	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.19	0.05	0.23	0.23	0.10	0.10	0.06	0.06	0.06	0.07
Crit Moves:	****				****		****			****		
Green Time:	7.0	34.2	34.2	13.9	41.1	41.1	17.7	17.7	17.7	12.2	12.2	12.2
Volume/Cap:	0.48	0.50	0.50	0.31	0.50	0.50	0.50	0.50	0.31	0.42	0.42	0.50
Delay/Veh:	42.5	21.7	21.7	34.4	17.5	17.5	33.4	33.4	31.4	36.8	36.8	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	21.7	21.7	34.4	17.5	17.5	33.4	33.4	31.4	36.8	36.8	37.8
LOS by Move:	D	C+	C+	C-	B	B	C-	C-	C	D+	D+	D+
HCM2kAvgQ:	2	7	7	2	8	8	5	5	3	3	3	4

Note: Queue reported is the number of cars per lane.

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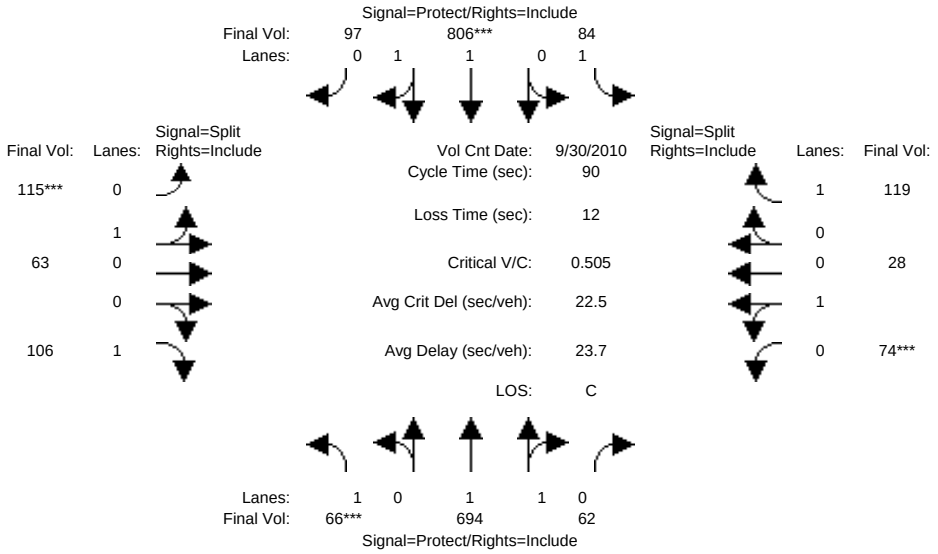
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #2: Union Ave / Woodard Rd

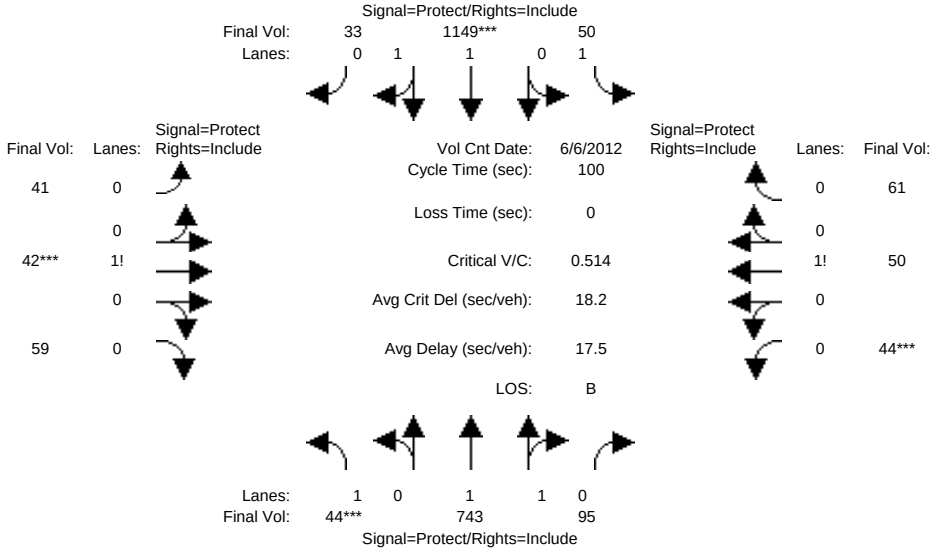



```
Street Name:            Union Ave                          Woodard Rd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 30 Sep 2010 << 4:45:00 PM
Base Vol:      66  645    62    84  754    97   115   63   106    74   28   119
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   66  645    62    84  754    97   115   63   106    74   28   119
Added Vol:      0   49     0     0   52     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   66  694    62    84  806    97   115   63   106    74   28   119
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    66  694    62    84  806    97   115   63   106    74   28   119
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   66  694    62    84  806    97   115   63   106    74   28   119
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   66  694    62    84  806    97   115   63   106    74   28   119
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 0.98  0.95  0.95 0.95  0.92  0.95 0.95  0.92
Lanes:       1.00 1.83  0.17  1.00 1.78  0.22  0.65 0.35  1.00  0.73 0.27  1.00
Final Sat.:  1750 3396   303  1750 3302   397  1163  637  1750  1306  494  1750
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.20  0.20  0.05 0.24  0.24  0.10 0.10  0.06  0.06 0.06  0.07
Crit Moves:  ****                 ****        ****              ****
Green Time:   7.0 35.6  35.6  13.6 42.2  42.2  17.1 17.1  17.1  11.7 11.7  11.7
Volume/Cap:  0.48 0.52  0.52  0.32 0.52  0.52  0.52 0.52  0.32  0.43 0.43  0.52
Delay/Veh:   42.5 21.0  21.0  34.8 17.1  17.1  34.2 34.2  32.0  37.3 37.3  38.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  42.5 21.0  21.0  34.8 17.1  17.1  34.2 34.2  32.0  37.3 37.3  38.7
LOS by Move:    D   C+    C+    C-    B     B    C-   C-     C    D+   D+    D+
HCM2kAvgQ:      2    8     8     2    9     9     5    5     3     3    3     4
Note: Queue reported is the number of cars per lane.
```

Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	44	743	95	50	1149	33	41	42	59	44	50	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	743	95	50	1149	33	41	42	59	44	50	61
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	743	95	50	1149	33	41	42	59	44	50	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	743	95	50	1149	33	41	42	59	44	50	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	743	95	50	1149	33	41	42	59	44	50	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	743	95	50	1149	33	41	42	59	44	50	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.77	0.23	1.00	1.94	0.06	0.29	0.30	0.41	0.28	0.32	0.40
Final Sat.:	1750	3280	419	1750	3597	103	505	518	727	497	565	689
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.23	0.03	0.32	0.32	0.08	0.08	0.08	0.09	0.09	0.09
Crit Moves:	****				****			****		****		
Green Time:	7.0	51.7	51.7	16.0	60.7	60.7	14.5	15.4	15.4	16.8	17.8	17.8
Volume/Cap:	0.36	0.44	0.44	0.18	0.53	0.53	0.56	0.53	0.53	0.53	0.50	0.50
Delay/Veh:	46.2	15.2	15.2	36.6	11.6	11.6	42.7	40.8	40.8	39.7	38.3	38.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	15.2	15.2	36.6	11.6	11.6	42.7	40.8	40.8	39.7	38.3	38.3
LOS by Move:	D	B	B	D+	B+	B+	D	D	D	D	D+	D+
HCM2kAvgQ:	1	8	8	1	10	10	5	5	5	5	5	5

Note: Queue reported is the number of cars per lane.

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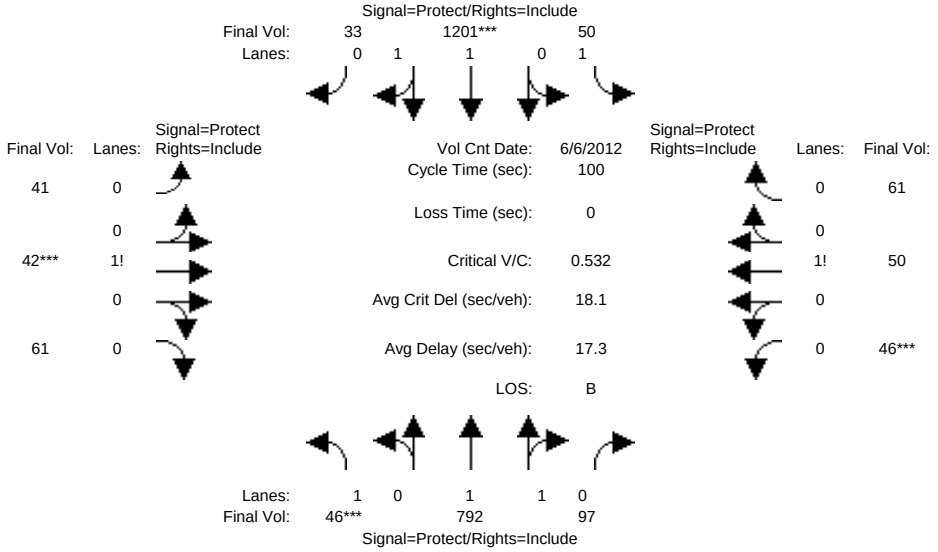
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #3: Union Ave / Charmeran Ave




```
Street Name:            Union Ave                       Charmeran Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     7   10    10     7   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM
Base Vol:      44  743    95    50 1149    33    41   42    59    44   50    61
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   44  743    95    50 1149    33    41   42    59    44   50    61
Added Vol:      2   49     2     0   52     0     0    0     2     2    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   46  792    97    50 1201    33    41   42    61    46   50    61
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    46  792    97    50 1201    33    41   42    61    46   50    61
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   46  792    97    50 1201    33    41   42    61    46   50    61
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   46  792    97    50 1201    33    41   42    61    46   50    61
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 0.97  0.95  0.92 0.92  0.92  0.92 0.92  0.92
Lanes:       1.00 1.78  0.22  1.00 1.95  0.05  0.28 0.29  0.43  0.29 0.32  0.39
Final Sat.:  1750 3296   404  1750 3601    99   498  510   741   513  557   680
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.24  0.24  0.03 0.33  0.33  0.08 0.08  0.08  0.09 0.09  0.09
Crit Moves:  ****                 ****             ****        ****
Green Time:   7.0 52.9  52.9  15.4 61.4  61.4  14.3 15.1  15.1  16.5 17.4  17.4
Volume/Cap:  0.38 0.45  0.45  0.19 0.54  0.54  0.58 0.54  0.54  0.54 0.52  0.52
Delay/Veh:   46.3 14.7  14.7  37.2 11.5  11.5  43.3 41.6  41.6  40.4 39.1  39.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  46.3 14.7  14.7  37.2 11.5  11.5  43.3 41.6  41.6  40.4 39.1  39.1
LOS by Move:    D    B     B    D+   B+    B+     D    D     D     D    D     D
HCM2kAvgQ:      1    8     8     1   11    11     5    5     5     5    5     5
Note: Queue reported is the number of cars per lane.
```

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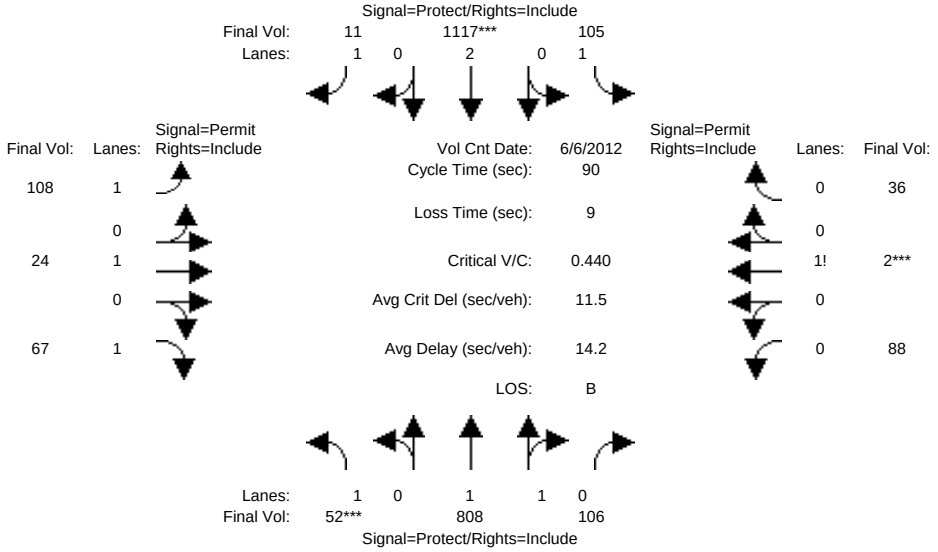
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #4: Union Ave / Logic Dr - Cole Dr




```
Street Name:            Union Ave                     Logic Dr - Cole Dr
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM
Base Vol:      52  808   106   105 1117    11   108   24    67    88    2    36
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52  808   106   105 1117    11   108   24    67    88    2    36
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   52  808   106   105 1117    11   108   24    67    88    2    36
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    52  808   106   105 1117    11   108   24    67    88    2    36
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   52  808   106   105 1117    11   108   24    67    88    2    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   52  808   106   105 1117    11   108   24    67    88    2    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 1.00  0.92  0.92 1.00  0.92  0.92 0.92  0.92
Lanes:       1.00 1.76  0.24  1.00 2.00  1.00  1.00 1.00  1.00  0.70 0.02  0.28
Final Sat.:  1750 3271   429  1750 3800  1750  1750 1900  1750  1222   28   500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.25  0.25  0.06 0.29  0.01  0.06 0.01  0.04  0.07 0.07  0.07
Crit Moves:  ****                 ****                                ****
Green Time:   7.0 50.5  50.5  15.9 59.4  59.4  14.6 14.6  14.6  14.6 14.6  14.6
Volume/Cap:  0.38 0.44  0.44  0.34 0.45  0.01  0.38 0.08  0.24  0.45 0.45  0.45
Delay/Veh:   41.2 11.6  11.6  33.1  7.5   5.2  34.6 32.1  33.3  35.2 35.2  35.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  41.2 11.6  11.6  33.1  7.5   5.2  34.6 32.1  33.3  35.2 35.2  35.2
LOS by Move:    D   B+     B+    C-    A     A    C-   C-    C-    D+   D+    D+
HCM2kAvgQ:      1    7      7     3    7     0     3    1     2     4    4     4
Note: Queue reported is the number of cars per lane.
```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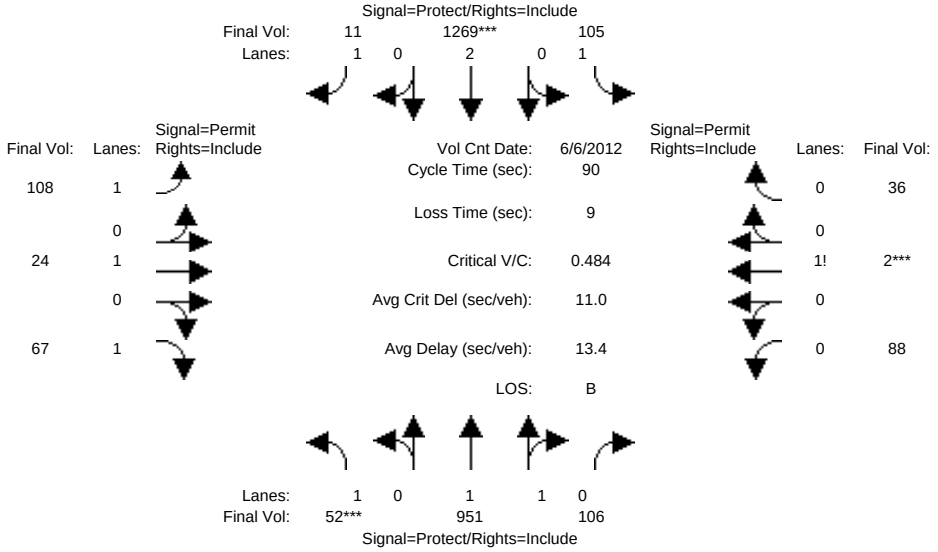
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #4: Union Ave / Logic Dr - Cole Dr




```
Street Name:            Union Ave                     Logic Dr - Cole Dr
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM
Base Vol:      52  808   106   105 1117    11   108   24    67    88    2    36
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52  808   106   105 1117    11   108   24    67    88    2    36
Added Vol:      0  143     0     0  152     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   52  951   106   105 1269    11   108   24    67    88    2    36
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    52  951   106   105 1269    11   108   24    67    88    2    36
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   52  951   106   105 1269    11   108   24    67    88    2    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   52  951   106   105 1269    11   108   24    67    88    2    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 1.00  0.92  0.92 1.00  0.92  0.92 0.92  0.92
Lanes:       1.00 1.79  0.21  1.00 2.00  1.00  1.00 1.00  1.00  0.70 0.02  0.28
Final Sat.:  1750 3329   371  1750 3800  1750  1750 1900  1750  1222   28   500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.29  0.29  0.06 0.33  0.01  0.06 0.01  0.04  0.07 0.07  0.07
Crit Moves:  ****                 ****                              ****
Green Time:   7.0 53.4  53.4  14.5 60.9  60.9  13.1 13.1  13.1  13.1 13.1  13.1
Volume/Cap:  0.38 0.48  0.48  0.37 0.49  0.01  0.42 0.09  0.26  0.49 0.49  0.49
Delay/Veh:   41.2 10.6  10.6  34.5  7.2   4.7  36.1 33.4  34.7  36.9 36.9  36.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  41.2 10.6  10.6  34.5  7.2   4.7  36.1 33.4  34.7  36.9 36.9  36.9
LOS by Move:    D   B+    B+    C-    A     A    D+   C-    C-    D+   D+    D+
HCM2kAvgQ:      1    8     8     3    8     0     3    1     2     4    4     4
Note: Queue reported is the number of cars per lane.
```

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Harker Elementary School
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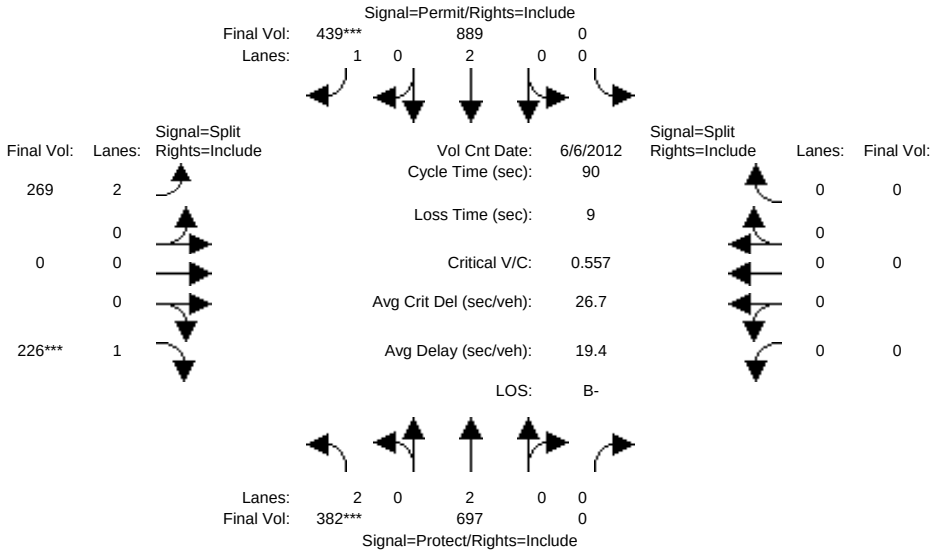
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	382	697	0	0	889	439	269	0	226	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	697	0	0	889	439	269	0	226	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	382	697	0	0	889	439	269	0	226	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	382	697	0	0	889	439	269	0	226	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	382	697	0	0	889	439	269	0	226	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	382	697	0	0	889	439	269	0	226	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.00	0.00	0.23	0.25	0.09	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	19.6	60.1	0.0	0.0	40.5	40.5	20.9	0.0	20.9	0.0	0.0	0.0
Volume/Cap:	0.56	0.27	0.00	0.00	0.52	0.56	0.37	0.00	0.56	0.00	0.00	0.00
Delay/Veh:	32.4	6.1	0.0	0.0	18.0	19.0	29.3	0.0	32.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.4	6.1	0.0	0.0	18.0	19.0	29.3	0.0	32.2	0.0	0.0	0.0
LOS by Move:	C-	A	A	A	B-	B-	C	A	C-	A	A	A
HCM2kAvgQ:	6	4	0	0	9	9	4	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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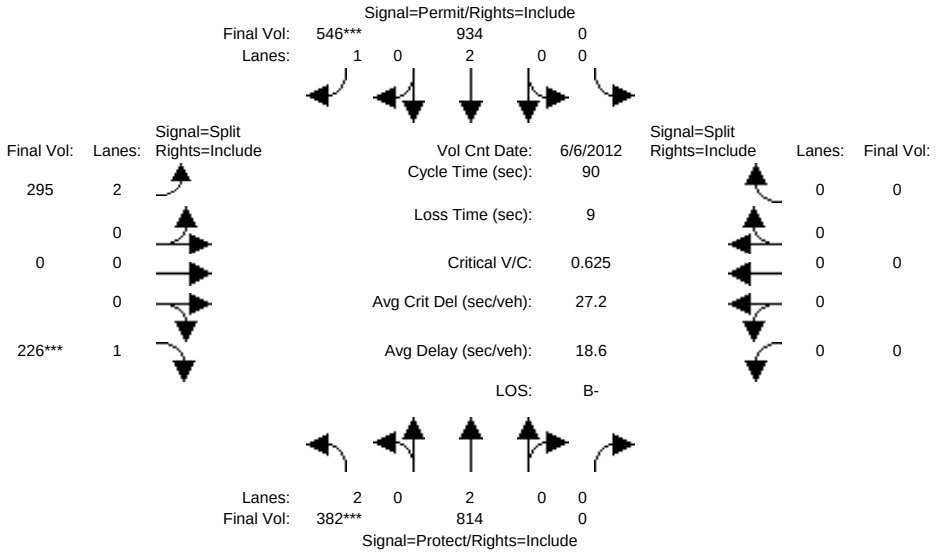
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	382	697	0	0	889	439	269	0	226	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	697	0	0	889	439	269	0	226	0	0	0
Added Vol:	0	117	0	0	45	107	26	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	382	814	0	0	934	546	295	0	226	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	382	814	0	0	934	546	295	0	226	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	382	814	0	0	934	546	295	0	226	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	382	814	0	0	934	546	295	0	226	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.21	0.00	0.00	0.25	0.31	0.09	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	17.5	62.4	0.0	0.0	44.9	44.9	18.6	0.0	18.6	0.0	0.0	0.0
Volume/Cap:	0.62	0.31	0.00	0.00	0.49	0.62	0.45	0.00	0.62	0.00	0.00	0.00
Delay/Veh:	35.3	5.5	0.0	0.0	15.2	17.8	31.8	0.0	35.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.3	5.5	0.0	0.0	15.2	17.8	31.8	0.0	35.9	0.0	0.0	0.0
LOS by Move:	D+	A	A	A	B	B	C	A	D+	A	A	A
HCM2kAvgQ:	6	4	0	0	8	12	5	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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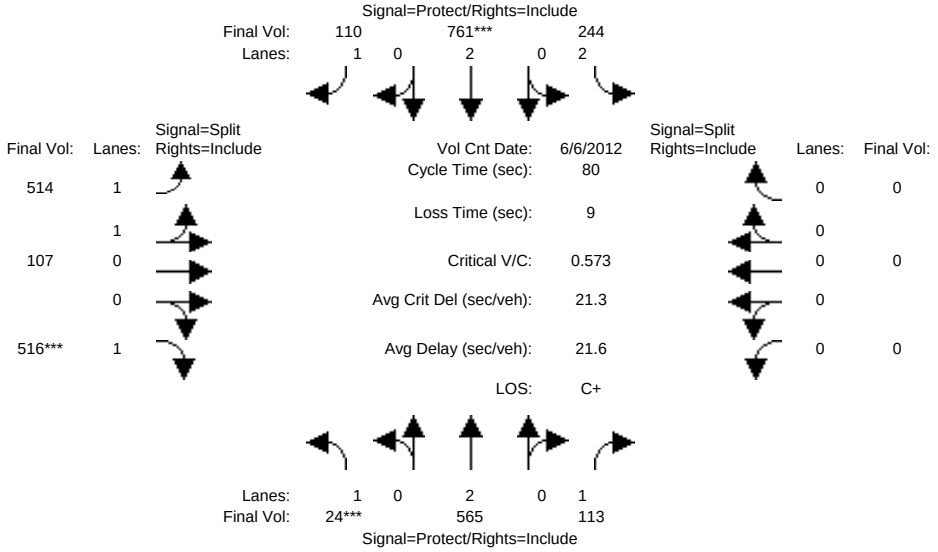
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	24	565	113	244	761	110	514	107	516	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	565	113	244	761	110	514	107	516	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	565	113	244	761	110	514	107	516	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	565	113	244	761	110	514	107	516	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	565	113	244	761	110	514	107	516	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	565	113	244	761	110	514	107	516	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.66	0.34	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	2938	612	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.06	0.08	0.20	0.06	0.17	0.17	0.29	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	7.0	20.7	20.7	12.2	25.9	25.9	38.1	38.1	38.1	0.0	0.0	0.0
Volume/Cap:	0.16	0.57	0.25	0.51	0.62	0.19	0.37	0.37	0.62	0.00	0.00	0.00
Delay/Veh:	34.2	26.6	23.8	32.1	23.9	19.7	13.4	13.4	17.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	26.6	23.8	32.1	23.9	19.7	13.4	13.4	17.0	0.0	0.0	0.0
LOS by Move:	C-	C	C	C-	C	B-	B	B	B	A	A	A
HCM2kAvgQ:	1	7	2	3	8	2	5	5	10	0	0	0

Note: Queue reported is the number of cars per lane.

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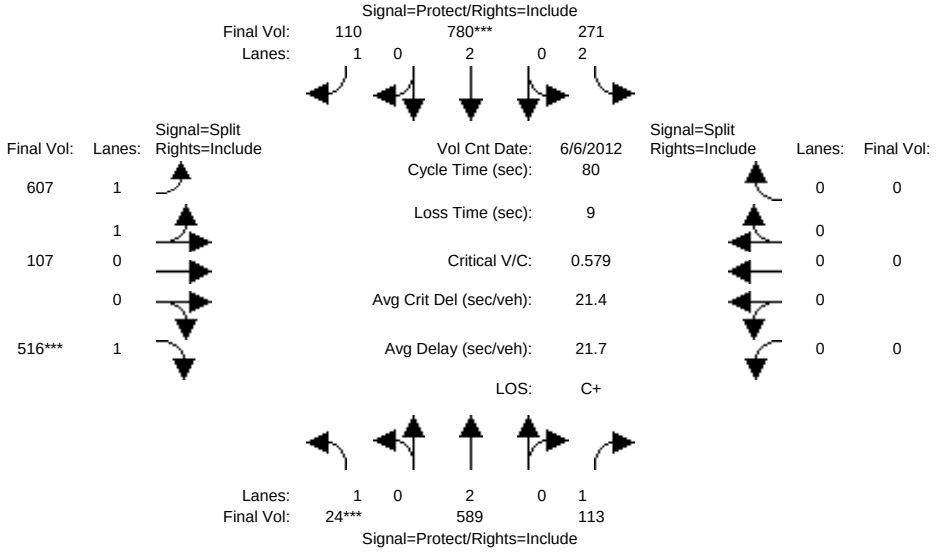
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	24	565	113	244	761	110	514	107	516	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	565	113	244	761	110	514	107	516	0	0	0
Added Vol:	0	24	0	27	19	0	93	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	589	113	271	780	110	607	107	516	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	589	113	271	780	110	607	107	516	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	589	113	271	780	110	607	107	516	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	589	113	271	780	110	607	107	516	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.70	0.30	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	3018	532	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.06	0.09	0.21	0.06	0.20	0.20	0.29	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	7.0	21.3	21.3	12.0	26.3	26.3	37.7	37.7	37.7	0.0	0.0	0.0
Volume/Cap:	0.16	0.58	0.24	0.57	0.63	0.19	0.43	0.43	0.63	0.00	0.00	0.00
Delay/Veh:	34.2	26.4	23.3	33.3	23.7	19.4	14.2	14.2	17.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	26.4	23.3	33.3	23.7	19.4	14.2	14.2	17.3	0.0	0.0	0.0
LOS by Move:	C-	C	C	C-	C	B-	B	B	B	A	A	A
HCM2kAvgQ:	1	7	2	4	8	2	6	6	10	0	0	0

Note: Queue reported is the number of cars per lane.

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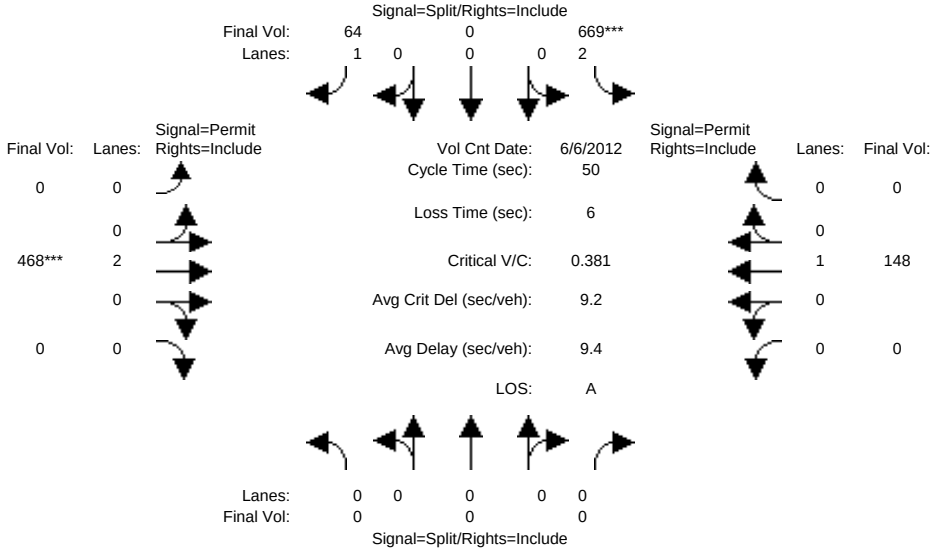
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex_PM

Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	0	0	0	669	0	64	0	468	0	0	148	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	669	0	64	0	468	0	0	148	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	669	0	64	0	468	0	0	148	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	669	0	64	0	468	0	0	148	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	669	0	64	0	468	0	0	148	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	669	0	64	0	468	0	0	148	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.21	0.00	0.04	0.00	0.12	0.00	0.00	0.08	0.00
Crit Moves:				****				****				
Green Time:	0.0	0.0	0.0	27.9	0.0	27.9	0.0	16.1	0.0	0.0	16.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.07	0.00	0.38	0.00	0.00	0.24	0.00
Delay/Veh:	0.0	0.0	0.0	6.4	0.0	5.1	0.0	13.3	0.0	0.0	12.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.4	0.0	5.1	0.0	13.3	0.0	0.0	12.6	0.0
LOS by Move:	A	A	A	A	A	A	A	B	A	A	B	A
HCM2kAvgQ:	0	0	0	4	0	1	0	3	0	0	2	0

Note: Queue reported is the number of cars per lane.

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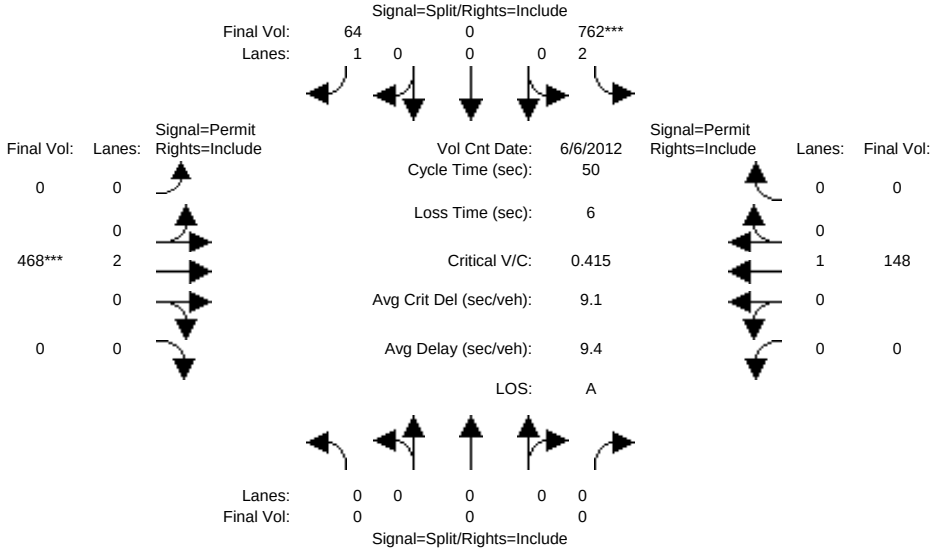
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+P_PM

Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	0	0	0	669	0	64	0	468	0	0	148	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	669	0	64	0	468	0	0	148	0
Added Vol:	0	0	0	93	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	762	0	64	0	468	0	0	148	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	762	0	64	0	468	0	0	148	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	762	0	64	0	468	0	0	148	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	762	0	64	0	468	0	0	148	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.24	0.00	0.04	0.00	0.12	0.00	0.00	0.08	0.00
Crit Moves:				****				****				
Green Time:	0.0	0.0	0.0	29.2	0.0	29.2	0.0	14.8	0.0	0.0	14.8	0.0
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.06	0.00	0.41	0.00	0.00	0.26	0.00
Delay/Veh:	0.0	0.0	0.0	5.9	0.0	4.5	0.0	14.3	0.0	0.0	13.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	5.9	0.0	4.5	0.0	14.3	0.0	0.0	13.7	0.0
LOS by Move:	A	A	A	A	A	A	A	B	A	A	B	A
HCM2kAvgQ:	0	0	0	4	0	0	0	3	0	0	2	0

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
SJ12-1362

Summary Scenario Comparison Report (With Average Critical Delay)
Future Volume Alternative

Intersection		???				Bg_AM				Bg+P_AM						???			
		LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Crit V/C Change	Avg Crit Del (sec)	Avg Crit Del Change	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	Union Ave / Camden Ave	?	xx.x	x.xxx	xx.x	D-	51.9	0.821	46.8	D-	54.5	0.850	+ 0.029	50.6	+ 3.8	?	xx.x	x.xxx	xx.x
#2	Union Ave / Woodard Rd	?	xx.x	x.xxx	xx.x	B-	19.8	0.343	17.6	B-	19.3	0.362	+ 0.020	17.2	- 0.4	?	xx.x	x.xxx	xx.x
#3	Union Ave / Charmeran Ave	?	xx.x	x.xxx	xx.x	B	13.6	0.332	12.1	B	13.1	0.363	+ 0.031	11.9	- 0.2	?	xx.x	x.xxx	xx.x
#4	Union Ave / Logic Dr - Cole Dr	?	xx.x	x.xxx	xx.x	C	25.8	0.741	32.1	C	26.0	0.791	+ 0.051	33.6	+ 1.5	?	xx.x	x.xxx	xx.x
#5	Union Ave / NB SR 85 Ramps	?	xx.x	x.xxx	xx.x	B-	18.5	0.515	24.8	C+	21.8	0.559	+ 0.044	12.5	- 12.3	?	xx.x	x.xxx	xx.x
#6	Union Ave / Samaritan Dr - SB SR 85 On-Ramp	?	xx.x	x.xxx	xx.x	C+	22.6	0.683	27.7	C+	22.9	0.683	+ 0.000	27.7	+ 0.0	?	xx.x	x.xxx	xx.x
#7	Samaritan Dr / SB SR 85 Off-Ramp	?	xx.x	x.xxx	xx.x	B+	11.4	0.621	12.1	B	12.1	0.672	+ 0.052	12.9	+ 0.8	?	xx.x	x.xxx	xx.x

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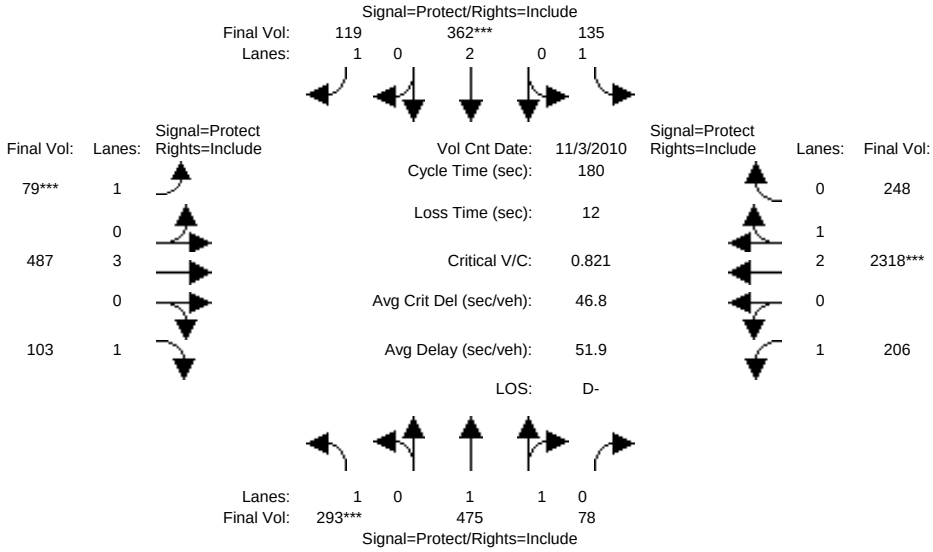
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg_AM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 7:30:00 AM												
Base Vol:	284	468	76	135	343	119	79	486	98	200	2313	248
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	468	76	135	343	119	79	486	98	200	2313	248
Added Vol:	3	1	1	0	2	0	0	0	5	1	0	0
ATI:	6	6	1	0	17	0	0	1	0	5	5	0
Initial Fut:	293	475	78	135	362	119	79	487	103	206	2318	248
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	293	475	78	135	362	119	79	487	103	206	2318	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	293	475	78	135	362	119	79	487	103	206	2318	248
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	293	475	78	135	362	119	79	487	103	206	2318	248
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.71	0.29	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.70	0.30
Final Sat.:	1750	3178	522	1750	3800	1750	1750	5700	1750	1750	5058	541
Capacity Analysis Module:												
Vol/Sat:	0.17	0.15	0.15	0.08	0.10	0.07	0.05	0.09	0.06	0.12	0.46	0.46
Crit Moves:	****				****		****				****	
Green Time:	36.7	38.0	38.0	19.6	20.9	20.9	9.9	46.4	46.4	64.0	100	100.5
Volume/Cap:	0.82	0.71	0.71	0.71	0.82	0.59	0.82	0.33	0.23	0.33	0.82	0.82
Delay/Veh:	82.5	68.9	68.9	89.0	89.4	79.8	124.8	54.3	52.9	42.7	34.3	34.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.5	68.9	68.9	89.0	89.4	79.8	124.8	54.3	52.9	42.7	34.3	34.3
LOS by Move:	F	E	E	F	F	E-	F	D-	D-	D	C-	C-
HCM2kAvgQ:	17	14	14	9	12	7	7	7	5	9	39	39

Note: Queue reported is the number of cars per lane.

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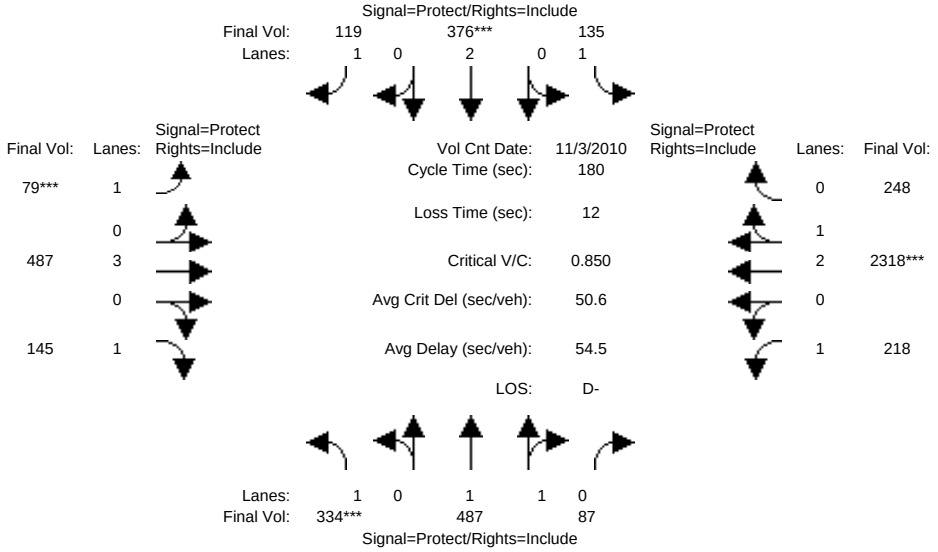
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg+P_AM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 7:30:00 AM												
Base Vol:	284	468	76	135	343	119	79	486	98	200	2313	248
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	284	468	76	135	343	119	79	486	98	200	2313	248
Added Vol:	44	13	10	0	16	0	0	0	47	13	0	0
ATI:	6	6	1	0	17	0	0	1	0	5	5	0
Initial Fut:	334	487	87	135	376	119	79	487	145	218	2318	248
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	334	487	87	135	376	119	79	487	145	218	2318	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	334	487	87	135	376	119	79	487	145	218	2318	248
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	334	487	87	135	376	119	79	487	145	218	2318	248
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.69	0.31	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.70	0.30
Final Sat.:	1750	3139	561	1750	3800	1750	1750	5700	1750	1750	5058	541
Capacity Analysis Module:												
Vol/Sat:	0.19	0.16	0.16	0.08	0.10	0.07	0.05	0.09	0.08	0.12	0.46	0.46
Crit Moves:	****				****		****				****	
Green Time:	40.4	41.0	41.0	20.4	21.0	21.0	9.6	43.4	43.4	63.2	97.1	97.1
Volume/Cap:	0.85	0.68	0.68	0.68	0.85	0.58	0.85	0.35	0.34	0.35	0.85	0.85
Delay/Veh:	82.8	65.8	65.8	86.0	92.4	79.7	133.0	56.9	57.0	43.6	37.7	37.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.8	65.8	65.8	86.0	92.4	79.7	133.0	56.9	57.0	43.6	37.7	37.7
LOS by Move:	F	E	E	F	F	E-	F	E+	E+	D	D+	D+
HCM2kAvgQ:	20	15	15	9	12	7	7	7	7	9	42	42

Note: Queue reported is the number of cars per lane.

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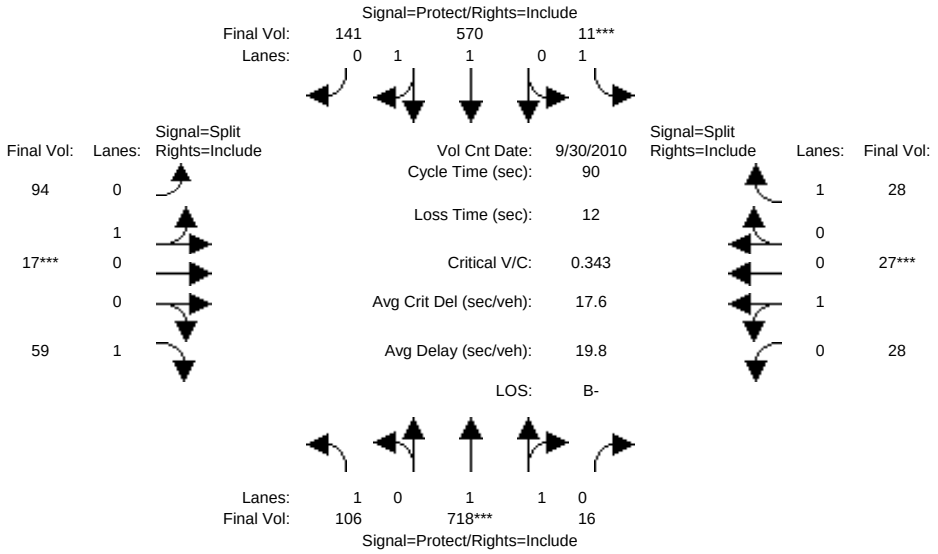
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg_AM

Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 7:30:00 AM												
Base Vol:	106	707	16	11	539	141	94	17	59	28	27	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	707	16	11	539	141	94	17	59	28	27	28
Added Vol:	0	4	0	0	9	0	0	0	0	0	0	0
ATI:	0	7	0	0	22	0	0	0	0	0	0	0
Initial Fut:	106	718	16	11	570	141	94	17	59	28	27	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	718	16	11	570	141	94	17	59	28	27	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	718	16	11	570	141	94	17	59	28	27	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	718	16	11	570	141	94	17	59	28	27	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.96	0.04	1.00	1.59	0.41	0.85	0.15	1.00	0.51	0.49	1.00
Final Sat.:	1750	3619	81	1750	2966	734	1524	276	1750	916	884	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.20	0.01	0.19	0.19	0.06	0.06	0.03	0.03	0.03	0.02
Crit Moves:		****		****				****			****	
Green Time:	15.4	46.5	46.5	7.0	38.1	38.1	14.5	14.5	14.5	10.0	10.0	10.0
Volume/Cap:	0.35	0.38	0.38	0.08	0.45	0.45	0.38	0.38	0.21	0.28	0.28	0.14
Delay/Veh:	33.6	13.2	13.2	38.8	18.7	18.7	34.6	34.6	33.2	37.4	37.4	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.6	13.2	13.2	38.8	18.7	18.7	34.6	34.6	33.2	37.4	37.4	36.5
LOS by Move:	C-	B	B	D+	B-	B-	C-	C-	C-	D+	D+	D+
HCM2kAvgQ:	3	6	6	0	7	7	3	3	2	2	2	1

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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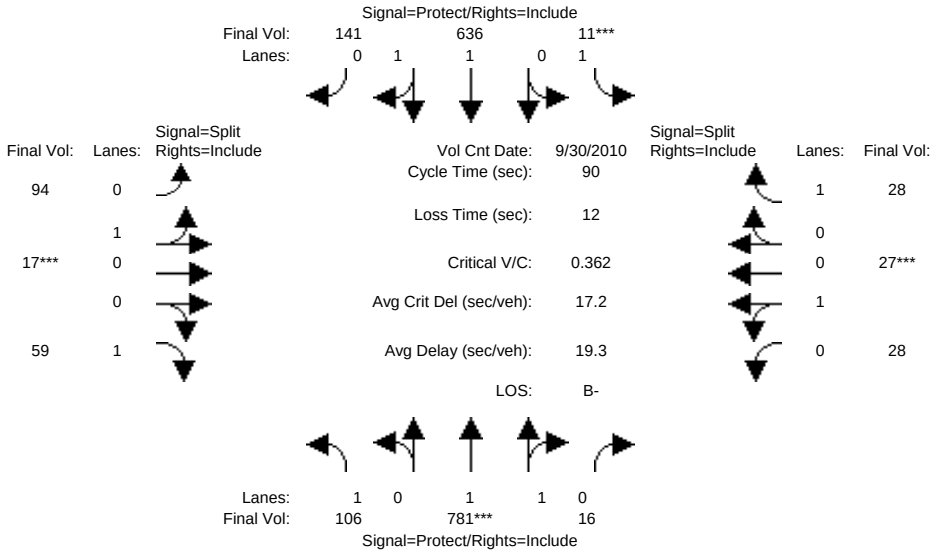
Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 7:30:00 AM												
Base Vol:	106	707	16	11	539	141	94	17	59	28	27	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	707	16	11	539	141	94	17	59	28	27	28
Added Vol:	0	67	0	0	75	0	0	0	0	0	0	0
ATI:	0	7	0	0	22	0	0	0	0	0	0	0
Initial Fut:	106	781	16	11	636	141	94	17	59	28	27	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	781	16	11	636	141	94	17	59	28	27	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	781	16	11	636	141	94	17	59	28	27	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	781	16	11	636	141	94	17	59	28	27	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.96	0.04	1.00	1.63	0.37	0.85	0.15	1.00	0.51	0.49	1.00
Final Sat.:	1750	3626	74	1750	3028	671	1524	276	1750	916	884	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.22	0.22	0.01	0.21	0.21	0.06	0.06	0.03	0.03	0.03	0.02
Crit Moves:		****		****				****			****	
Green Time:	14.7	47.4	47.4	7.0	39.7	39.7	13.6	13.6	13.6	10.0	10.0	10.0
Volume/Cap:	0.37	0.41	0.41	0.08	0.48	0.48	0.41	0.41	0.22	0.28	0.28	0.14
Delay/Veh:	34.3	13.0	13.0	38.8	18.0	18.0	35.6	35.6	34.0	37.4	37.4	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.3	13.0	13.0	38.8	18.0	18.0	35.6	35.6	34.0	37.4	37.4	36.5
LOS by Move:	C-	B	B	D+	B-	B-	D+	D+	C-	D+	D+	D+
HCM2kAvgQ:	3	7	7	0	7	7	3	3	2	2	2	1

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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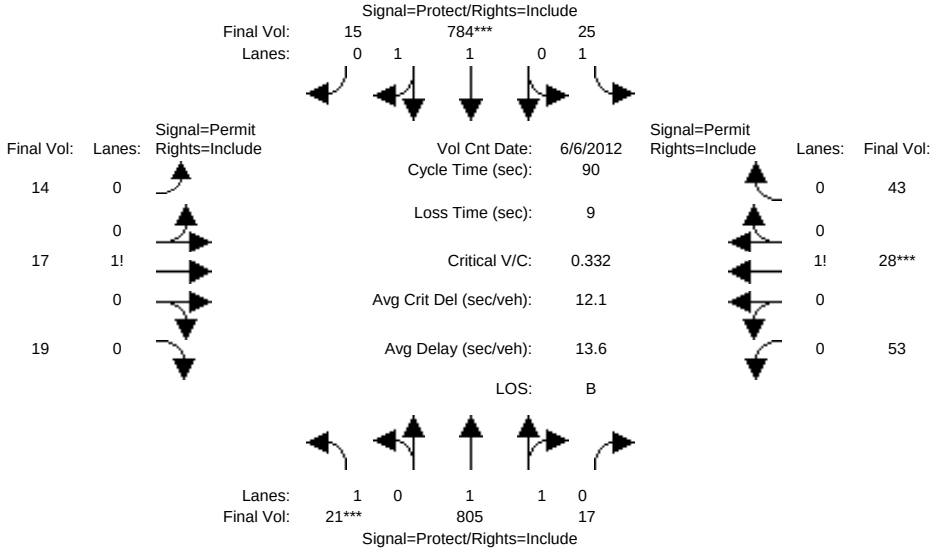
Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 8:00:00 AM												
Base Vol:	21	794	17	25	753	15	14	17	19	53	28	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	794	17	25	753	15	14	17	19	53	28	43
Added Vol:	0	4	0	0	9	0	0	0	0	0	0	0
ATI:	0	7	0	0	22	0	0	0	0	0	0	0
Initial Fut:	21	805	17	25	784	15	14	17	19	53	28	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	805	17	25	784	15	14	17	19	53	28	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	805	17	25	784	15	14	17	19	53	28	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	805	17	25	784	15	14	17	19	53	28	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.96	0.04	1.00	1.96	0.04	0.28	0.34	0.38	0.43	0.22	0.35
Final Sat.:	1750	3623	77	1750	3630	69	490	595	665	748	395	607
Capacity Analysis Module:												
Vol/Sat:	0.01	0.22	0.22	0.01	0.22	0.22	0.03	0.03	0.03	0.07	0.07	0.07
Crit Moves:	****				****						****	
Green Time:	7.0	46.5	46.5	16.3	55.7	55.7	18.3	18.3	18.3	18.3	18.3	18.3
Volume/Cap:	0.15	0.43	0.43	0.08	0.35	0.35	0.14	0.14	0.14	0.35	0.35	0.35
Delay/Veh:	39.3	13.7	13.7	30.8	8.4	8.4	29.6	29.6	29.6	31.3	31.3	31.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.3	13.7	13.7	30.8	8.4	8.4	29.6	29.6	29.6	31.3	31.3	31.3
LOS by Move:	D	B	B	C	A	A	C	C	C	C	C	C
HCM2kAvgQ:	1	7	7	1	5	5	1	1	1	3	3	3

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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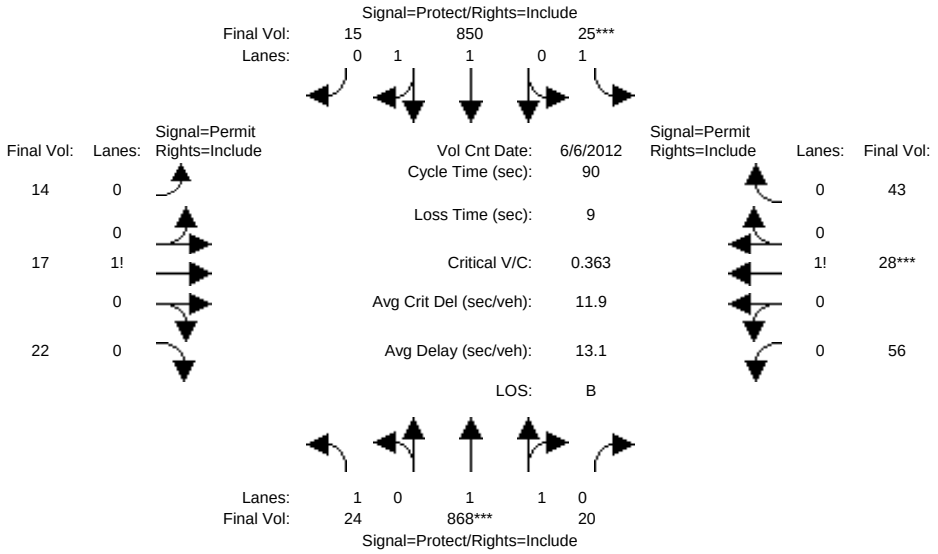
Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 8:00:00 AM												
Base Vol:	21	794	17	25	753	15	14	17	19	53	28	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	794	17	25	753	15	14	17	19	53	28	43
Added Vol:	3	67	3	0	75	0	0	0	3	3	0	0
ATI:	0	7	0	0	22	0	0	0	0	0	0	0
Initial Fut:	24	868	20	25	850	15	14	17	22	56	28	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	868	20	25	850	15	14	17	22	56	28	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	868	20	25	850	15	14	17	22	56	28	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	868	20	25	850	15	14	17	22	56	28	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.95	0.05	1.00	1.96	0.04	0.26	0.32	0.42	0.44	0.22	0.34
Final Sat.:	1750	3617	83	1750	3636	64	462	561	726	772	386	593
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.24	0.01	0.23	0.23	0.03	0.03	0.03	0.07	0.07	0.07
Crit Moves:		****		****							****	
Green Time:	15.9	56.8	56.8	7.0	47.9	47.9	17.2	17.2	17.2	17.2	17.2	17.2
Volume/Cap:	0.08	0.38	0.38	0.18	0.44	0.44	0.16	0.16	0.16	0.38	0.38	0.38
Delay/Veh:	31.0	8.2	8.2	39.5	13.0	13.0	30.6	30.6	30.6	32.5	32.5	32.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.0	8.2	8.2	39.5	13.0	13.0	30.6	30.6	30.6	32.5	32.5	32.5
LOS by Move:	C	A	A	D	B	B	C	C	C	C-	C-	C-
HCM2kAvgQ:	1	6	6	1	7	7	1	1	1	4	4	4

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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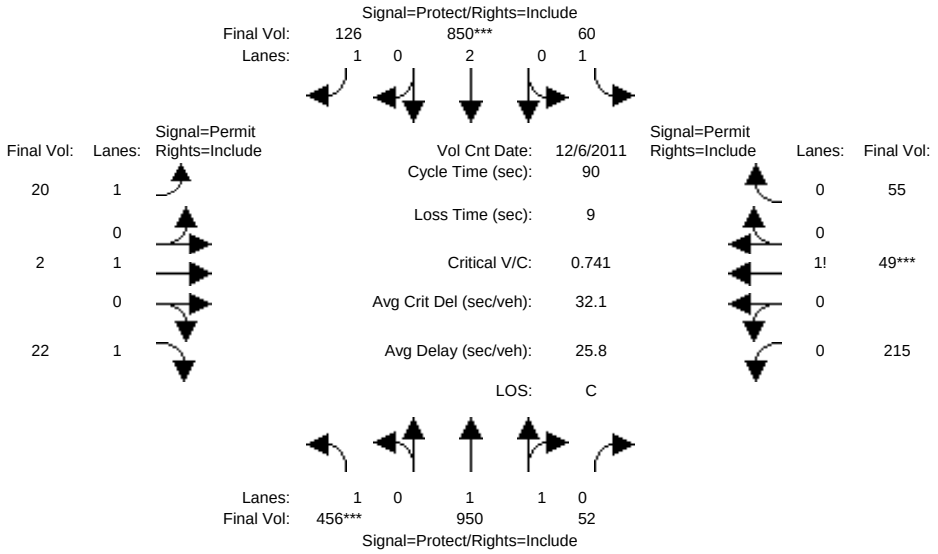
Intersection #4: Union Ave / Logic Dr - Cole Dr



Street Name:	Union Ave						Logic Dr - Cole Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	391	921	52	60	822	119	15	2	11	215	49	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	391	921	52	60	822	119	15	2	11	215	49	55
Added Vol:	0	27	0	0	13	0	0	0	0	0	0	0
ATI:	65	2	0	0	15	7	5	0	11	0	0	0
Initial Fut:	456	950	52	60	850	126	20	2	22	215	49	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	456	950	52	60	850	126	20	2	22	215	49	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	950	52	60	850	126	20	2	22	215	49	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	950	52	60	850	126	20	2	22	215	49	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	1.89	0.11	1.00	2.00	1.00	1.00	1.00	1.00	0.68	0.15	0.17
Final Sat.:	1750	3508	192	1750	3800	1750	1750	1900	1750	1179	269	302
Capacity Analysis Module:												
Vol/Sat:	0.26	0.27	0.27	0.03	0.22	0.07	0.01	0.00	0.01	0.18	0.18	0.18
Crit Moves:	****				****						****	
Green Time:	31.7	45.7	45.7	13.1	27.2	27.2	22.2	22.2	22.2	22.2	22.2	22.2
Volume/Cap:	0.74	0.53	0.53	0.24	0.74	0.24	0.05	0.00	0.05	0.74	0.74	0.74
Delay/Veh:	30.4	15.2	15.2	34.5	30.9	23.9	25.9	25.6	25.9	38.0	38.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.4	15.2	15.2	34.5	30.9	23.9	25.9	25.6	25.9	38.0	38.0	38.0
LOS by Move:	C	B	B	C-	C	C	C	C	C	D+	D+	D+
HCM2kAvgQ:	12	9	9	2	11	3	0	0	1	10	10	10

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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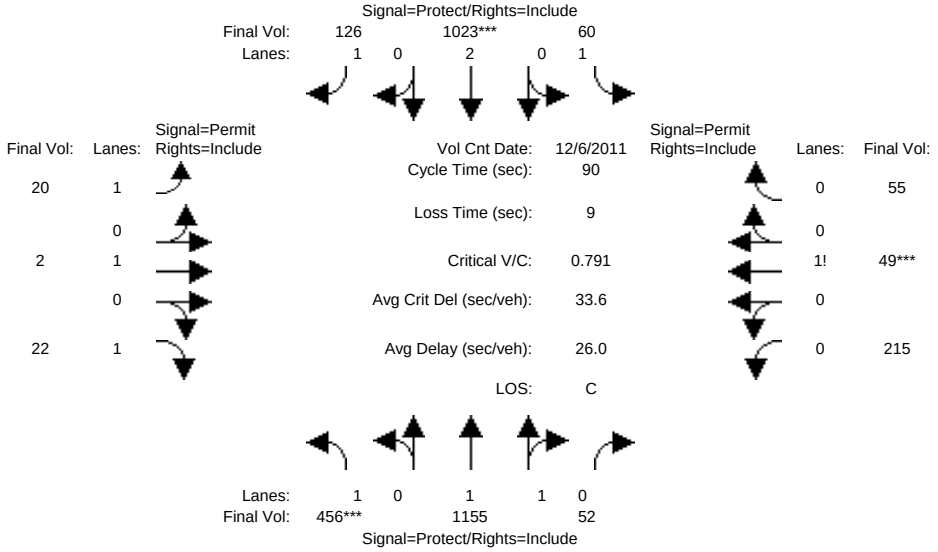
Intersection #4: Union Ave / Logic Dr - Cole Dr



Street Name:	Union Ave						Logic Dr - Cole Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	391	921	52	60	822	119	15	2	11	215	49	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	391	921	52	60	822	119	15	2	11	215	49	55
Added Vol:	0	232	0	0	186	0	0	0	0	0	0	0
ATI:	65	2	0	0	15	7	5	0	11	0	0	0
Initial Fut:	456	1155	52	60	1023	126	20	2	22	215	49	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	456	1155	52	60	1023	126	20	2	22	215	49	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	1155	52	60	1023	126	20	2	22	215	49	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	456	1155	52	60	1023	126	20	2	22	215	49	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	1.91	0.09	1.00	2.00	1.00	1.00	1.00	1.00	0.68	0.15	0.17
Final Sat.:	1750	3540	159	1750	3800	1750	1750	1900	1750	1179	269	302
Capacity Analysis Module:												
Vol/Sat:	0.26	0.33	0.33	0.03	0.27	0.07	0.01	0.00	0.01	0.18	0.18	0.18
Crit Moves:	****				****						****	
Green Time:	29.6	48.7	48.7	11.6	30.6	30.6	20.7	20.7	20.7	20.7	20.7	20.7
Volume/Cap:	0.79	0.60	0.60	0.27	0.79	0.21	0.05	0.00	0.05	0.79	0.79	0.79
Delay/Veh:	34.7	14.6	14.6	36.0	30.2	21.3	27.0	26.7	27.0	42.8	42.8	42.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.7	14.6	14.6	36.0	30.2	21.3	27.0	26.7	27.0	42.8	42.8	42.8
LOS by Move:	C-	B	B	D+	C	C+	C	C	C	D	D	D
HCM2kAvgQ:	13	11	11	2	13	3	0	0	1	11	11	11

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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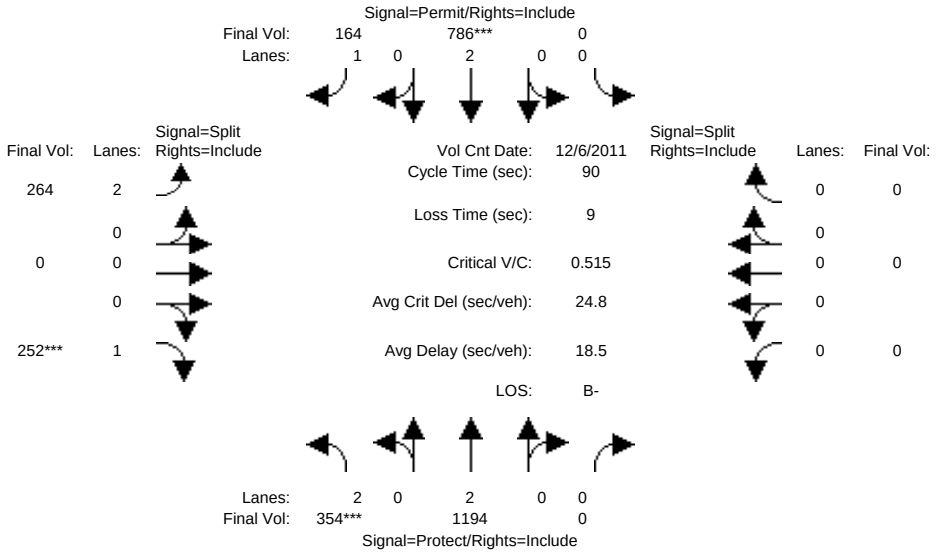
Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	352	1105	0	0	764	147	259	0	244	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	352	1105	0	0	764	147	259	0	244	0	0	0
Added Vol:	0	22	0	0	4	9	5	0	0	0	0	0
ATI:	2	67	0	0	18	8	0	0	8	0	0	0
Initial Fut:	354	1194	0	0	786	164	264	0	252	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	354	1194	0	0	786	164	264	0	252	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	354	1194	0	0	786	164	264	0	252	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	354	1194	0	0	786	164	264	0	252	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.00	0.00	0.21	0.09	0.08	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	19.7	55.8	0.0	0.0	36.2	36.2	25.2	0.0	25.2	0.0	0.0	0.0
Volume/Cap:	0.51	0.51	0.00	0.00	0.51	0.23	0.30	0.00	0.51	0.00	0.00	0.00
Delay/Veh:	31.6	9.6	0.0	0.0	20.6	17.9	25.7	0.0	28.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.6	9.6	0.0	0.0	20.6	17.9	25.7	0.0	28.2	0.0	0.0	0.0
LOS by Move:	C	A	A	A	C+	B	C	A	C	A	A	A
HCM2kAvgQ:	5	9	0	0	8	3	4	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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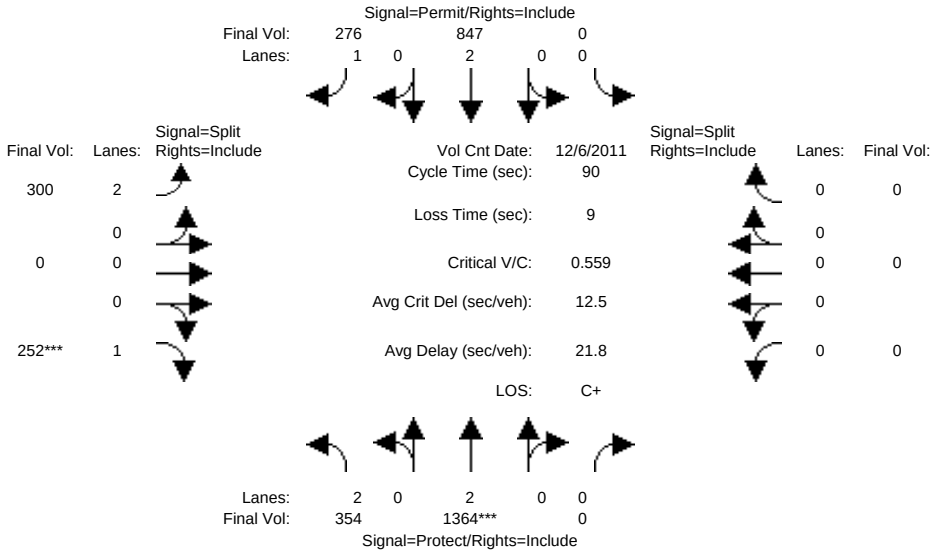
Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	352	1105	0	0	764	147	259	0	244	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	352	1105	0	0	764	147	259	0	244	0	0	0
Added Vol:	0	192	0	0	65	121	41	0	0	0	0	0
ATI:	2	67	0	0	18	8	0	0	8	0	0	0
Initial Fut:	354	1364	0	0	847	276	300	0	252	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	354	1364	0	0	847	276	300	0	252	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	354	1364	0	0	847	276	300	0	252	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	354	1364	0	0	847	276	300	0	252	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.36	0.00	0.00	0.22	0.16	0.10	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****							****			
Green Time:	40.1	64.9	0.0	0.0	24.9	24.9	16.1	0.0	16.1	0.0	0.0	0.0
Volume/Cap:	0.25	0.50	0.00	0.00	0.81	0.57	0.53	0.00	0.81	0.00	0.00	0.00
Delay/Veh:	15.7	5.6	0.0	0.0	35.0	29.6	34.6	0.0	49.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.7	5.6	0.0	0.0	35.0	29.6	34.6	0.0	49.7	0.0	0.0	0.0
LOS by Move:	B	A	A	A	D+	C	C-	A	D	A	A	A
HCM2kAvgQ:	4	8	0	0	11	7	5	0	10	0	0	0

Note: Queue reported is the number of cars per lane.

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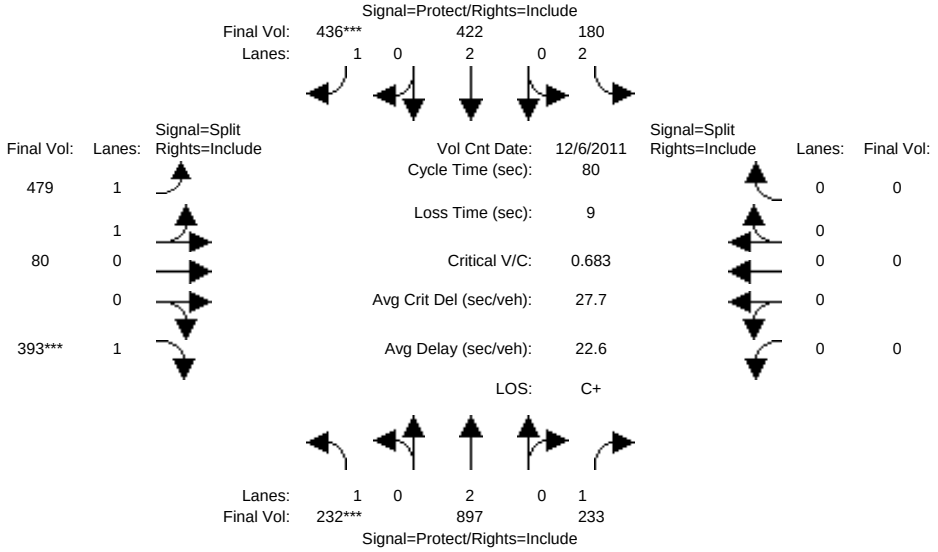
Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	225	881	233	172	417	419	425	78	391	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	881	233	172	417	419	425	78	391	0	0	0
Added Vol:	0	3	0	2	2	0	19	0	0	0	0	0
ATI:	7	13	0	6	3	17	35	2	2	0	0	0
Initial Fut:	232	897	233	180	422	436	479	80	393	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	232	897	233	180	422	436	479	80	393	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	232	897	233	180	422	436	479	80	393	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	232	897	233	180	422	436	479	80	393	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.72	0.28	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	3042	508	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.24	0.13	0.06	0.11	0.25	0.16	0.16	0.22	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	15.5	32.6	32.6	12.1	29.2	29.2	26.3	26.3	26.3	0.0	0.0	0.0
Volume/Cap:	0.68	0.58	0.33	0.38	0.30	0.68	0.48	0.48	0.68	0.00	0.00	0.00
Delay/Veh:	35.6	18.9	16.5	31.1	18.3	24.6	21.7	21.7	26.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.6	18.9	16.5	31.1	18.3	24.6	21.7	21.7	26.6	0.0	0.0	0.0
LOS by Move:	D+	B-	B	C	B-	C	C+	C+	C	A	A	A
HCM2kAvgQ:	7	9	4	2	4	10	6	6	9	0	0	0

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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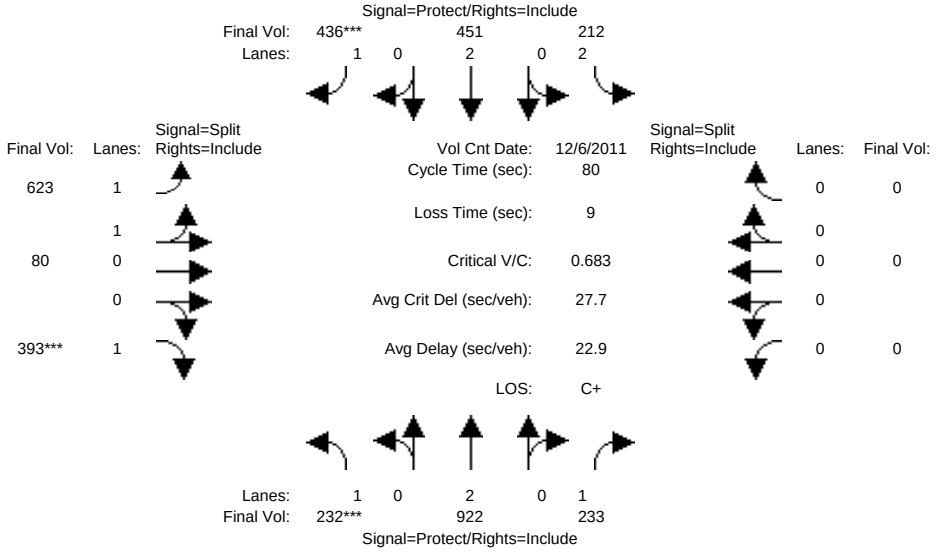
Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Dec 2011 << 7:45:00 AM												
Base Vol:	225	881	233	172	417	419	425	78	391	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	881	233	172	417	419	425	78	391	0	0	0
Added Vol:	0	28	0	34	31	0	163	0	0	0	0	0
ATI:	7	13	0	6	3	17	35	2	2	0	0	0
Initial Fut:	232	922	233	212	451	436	623	80	393	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	232	922	233	212	451	436	623	80	393	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	232	922	233	212	451	436	623	80	393	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	232	922	233	212	451	436	623	80	393	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.78	0.22	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	3146	404	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.24	0.13	0.07	0.12	0.25	0.20	0.20	0.22	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	15.5	32.9	32.9	11.8	29.2	29.2	26.3	26.3	26.3	0.0	0.0	0.0
Volume/Cap:	0.68	0.59	0.32	0.45	0.33	0.68	0.60	0.60	0.68	0.00	0.00	0.00
Delay/Veh:	35.6	18.9	16.3	31.8	18.5	24.6	23.4	23.4	26.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.6	18.9	16.3	31.8	18.5	24.6	23.4	23.4	26.6	0.0	0.0	0.0
LOS by Move:	D+	B-	B	C	B-	C	C	C	C	A	A	A
HCM2kAvgQ:	7	9	4	3	4	9	8	8	9	0	0	0

Note: Queue reported is the number of cars per lane.

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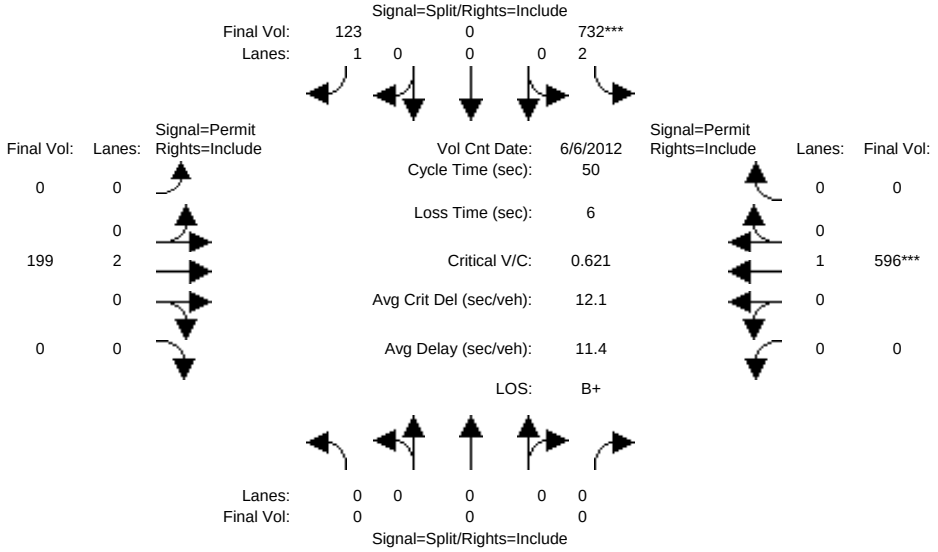
Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 7:45:00 AM												
Base Vol:	0	0	0	683	0	114	0	190	0	0	572	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	683	0	114	0	190	0	0	572	0
Added Vol:	0	0	0	19	0	0	0	0	0	0	0	0
ATI:	0	0	0	30	0	9	0	9	0	0	24	0
Initial Fut:	0	0	0	732	0	123	0	199	0	0	596	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	732	0	123	0	199	0	0	596	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	732	0	123	0	199	0	0	596	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	732	0	123	0	199	0	0	596	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.07	0.00	0.05	0.00	0.00	0.31	0.00
Crit Moves:				****							****	
Green Time:	0.0	0.0	0.0	18.7	0.0	18.7	0.0	25.3	0.0	0.0	25.3	0.0
Volume/Cap:	0.00	0.00	0.00	0.62	0.00	0.19	0.00	0.10	0.00	0.00	0.62	0.00
Delay/Veh:	0.0	0.0	0.0	13.8	0.0	10.7	0.0	6.5	0.0	0.0	10.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	13.8	0.0	10.7	0.0	6.5	0.0	0.0	10.2	0.0
LOS by Move:	A	A	A	B	A	B+	A	A	A	A	B+	A
HCM2kAvgQ:	0	0	0	7	0	1	0	1	0	0	7	0

Note: Queue reported is the number of cars per lane.

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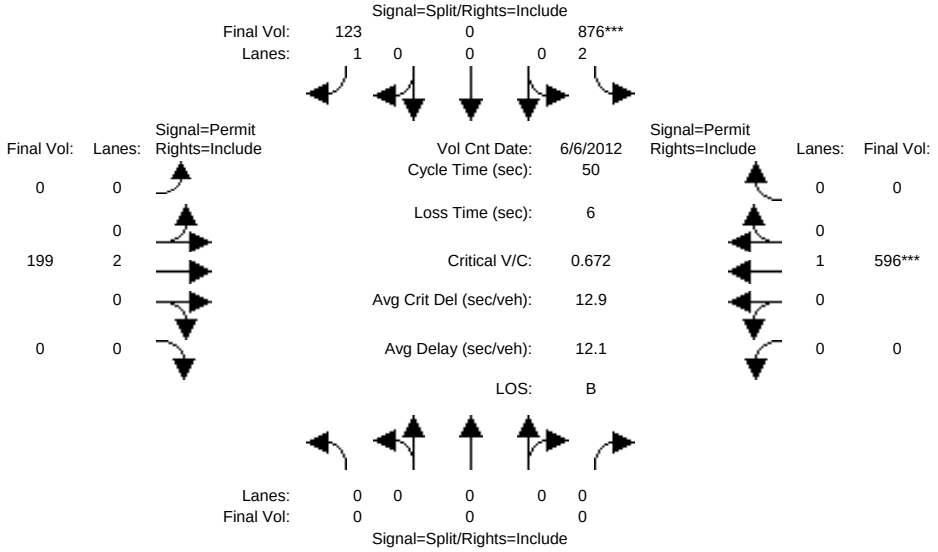
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg+P_AM

Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 7:45:00 AM												
Base Vol:	0	0	0	683	0	114	0	190	0	0	572	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	683	0	114	0	190	0	0	572	0
Added Vol:	0	0	0	163	0	0	0	0	0	0	0	0
ATI:	0	0	0	30	0	9	0	9	0	0	24	0
Initial Fut:	0	0	0	876	0	123	0	199	0	0	596	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	876	0	123	0	199	0	0	596	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	876	0	123	0	199	0	0	596	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	876	0	123	0	199	0	0	596	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.28	0.00	0.07	0.00	0.05	0.00	0.00	0.31	0.00
Crit Moves:				****							****	
Green Time:	0.0	0.0	0.0	20.7	0.0	20.7	0.0	23.3	0.0	0.0	23.3	0.0
Volume/Cap:	0.00	0.00	0.00	0.67	0.00	0.17	0.00	0.11	0.00	0.00	0.67	0.00
Delay/Veh:	0.0	0.0	0.0	13.3	0.0	9.4	0.0	7.5	0.0	0.0	12.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	13.3	0.0	9.4	0.0	7.5	0.0	0.0	12.4	0.0
LOS by Move:	A	A	A	B	A	A	A	A	A	A	B	A
HCM2kAvgQ:	0	0	0	8	0	1	0	1	0	0	7	0

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
SJ12-1362

Summary Scenario Comparison Report (With Average Critical Delay)
Future Volume Alternative

Intersection		???				Bg_PM				Bg+P_PM						???			
		LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Crit V/C Change	Avg Crit Del (sec)	Avg Crit Del Change	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	Union Ave / Camden Ave	?	xx.x	x.xxx	xx.x	E	61.0	0.867	67.0	E	62.0	0.876	+ 0.009	68.1	+ 1.1	?	xx.x	x.xxx	xx.x
#2	Union Ave / Woodard Rd	?	xx.x	x.xxx	xx.x	C	23.4	0.493	22.2	C	23.7	0.508	+ 0.015	22.6	+ 0.4	?	xx.x	x.xxx	xx.x
#3	Union Ave / Charmeran Ave	?	xx.x	x.xxx	xx.x	B	17.4	0.516	18.1	B	17.2	0.533	+ 0.016	18.1	- 0.0	?	xx.x	x.xxx	xx.x
#4	Union Ave / Logic Dr - Cole Dr	?	xx.x	x.xxx	xx.x	B	15.1	0.456	12.0	B	14.3	0.494	+ 0.038	11.5	- 0.6	?	xx.x	x.xxx	xx.x
#5	Union Ave / NB SR 85 Ramps	?	xx.x	x.xxx	xx.x	B-	19.3	0.592	27.2	B-	18.7	0.650	+ 0.058	27.7	+ 0.5	?	xx.x	x.xxx	xx.x
#6	Union Ave / Samaritan Dr - SB SR 85 On-Ramp	?	xx.x	x.xxx	xx.x	C+	21.8	0.586	21.6	C+	22.0	0.591	+ 0.005	21.7	+ 0.1	?	xx.x	x.xxx	xx.x
#7	Samaritan Dr / SB SR 85 Off-Ramp	?	xx.x	x.xxx	xx.x	A	9.6	0.401	9.4	A	9.6	0.432	+ 0.030	9.4	- 0.0	?	xx.x	x.xxx	xx.x

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Harker Elementary School
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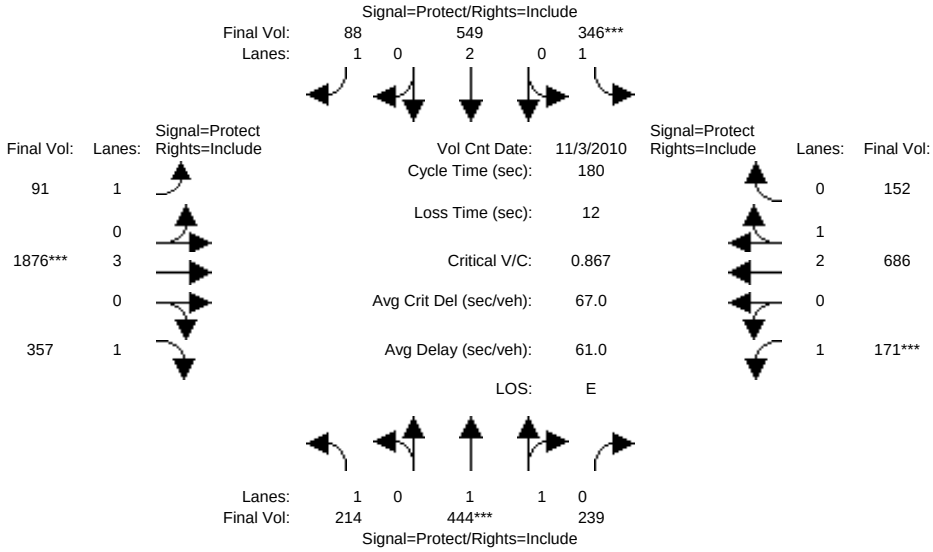
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg_PM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 4:45:00 PM												
Base Vol:	209	423	231	346	547	88	91	1869	354	167	683	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	209	423	231	346	547	88	91	1869	354	167	683	152
Added Vol:	5	2	1	0	1	0	0	0	3	1	0	0
ATI:	0	19	7	0	1	0	0	7	0	3	3	0
Initial Fut:	214	444	239	346	549	88	91	1876	357	171	686	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	214	444	239	346	549	88	91	1876	357	171	686	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	444	239	346	549	88	91	1876	357	171	686	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	444	239	346	549	88	91	1876	357	171	686	152
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.28	0.72	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.44	0.56
Final Sat.:	1750	2404	1294	1750	3800	1750	1750	5700	1750	1750	4583	1015
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.18	0.20	0.14	0.05	0.05	0.33	0.20	0.10	0.15	0.15
Crit Moves:		****		****				****		****		
Green Time:	36.4	38.3	38.3	41.0	43.0	43.0	22.8	68.3	68.3	20.3	65.8	65.8
Volume/Cap:	0.60	0.87	0.87	0.87	0.60	0.21	0.41	0.87	0.54	0.87	0.41	0.41
Delay/Veh:	68.2	78.4	78.4	84.7	62.1	55.2	73.6	55.6	44.4	109.4	42.8	42.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.2	78.4	78.4	84.7	62.1	55.2	73.6	55.6	44.4	109.4	42.8	42.8
LOS by Move:	E	E-	E-	F	E	E+	E	E+	D	F	D	D
HCM2kAvgQ:	11	19	19	22	14	4	5	34	16	12	11	11

Note: Queue reported is the number of cars per lane.

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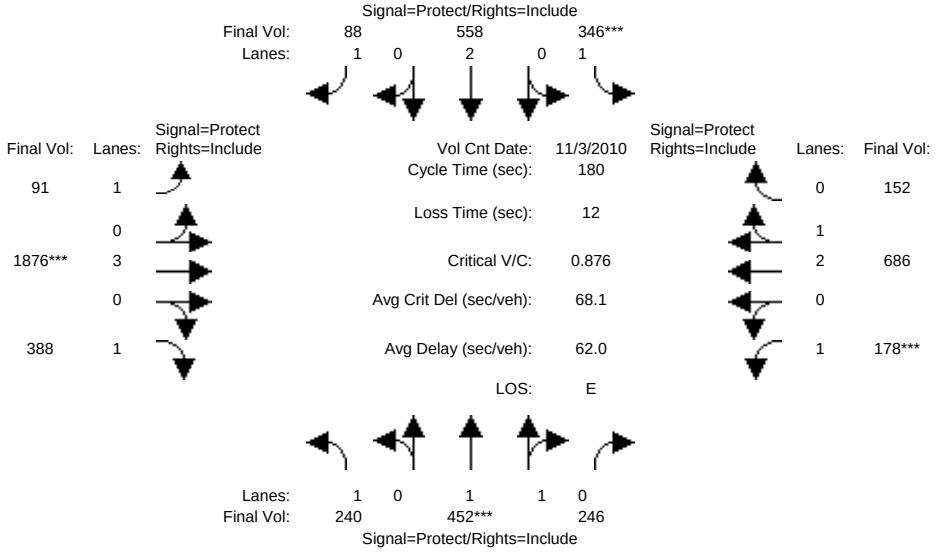
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg+P_PM

Intersection #1: Union Ave / Camden Ave



Street Name:	Union Ave						Camden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 3 Nov 2010 << 4:45:00 PM												
Base Vol:	209	423	231	346	547	88	91	1869	354	167	683	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	209	423	231	346	547	88	91	1869	354	167	683	152
Added Vol:	31	10	8	0	10	0	0	0	34	8	0	0
ATI:	0	19	7	0	1	0	0	7	0	3	3	0
Initial Fut:	240	452	246	346	558	88	91	1876	388	178	686	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	240	452	246	346	558	88	91	1876	388	178	686	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	452	246	346	558	88	91	1876	388	178	686	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	240	452	246	346	558	88	91	1876	388	178	686	152
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	1.28	0.72	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.44	0.56
Final Sat.:	1750	2395	1303	1750	3800	1750	1750	5700	1750	1750	4583	1015
Capacity Analysis Module:												
Vol/Sat:	0.14	0.19	0.19	0.20	0.15	0.05	0.05	0.33	0.22	0.10	0.15	0.15
Crit Moves:		****		****				****		****		
Green Time:	38.4	38.8	38.8	40.6	41.1	41.1	22.8	67.7	67.7	20.9	65.7	65.7
Volume/Cap:	0.64	0.88	0.88	0.88	0.64	0.22	0.41	0.88	0.59	0.88	0.41	0.41
Delay/Veh:	68.4	79.0	79.0	86.4	64.5	56.7	73.6	56.7	46.5	110.1	42.8	42.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.4	79.0	79.0	86.4	64.5	56.7	73.6	56.7	46.5	110.1	42.8	42.8
LOS by Move:	E	E-	E-	F	E	E+	E	E+	D	F	D	D
HCM2kAvgQ:	13	20	20	22	14	4	5	34	18	13	11	11

Note: Queue reported is the number of cars per lane.

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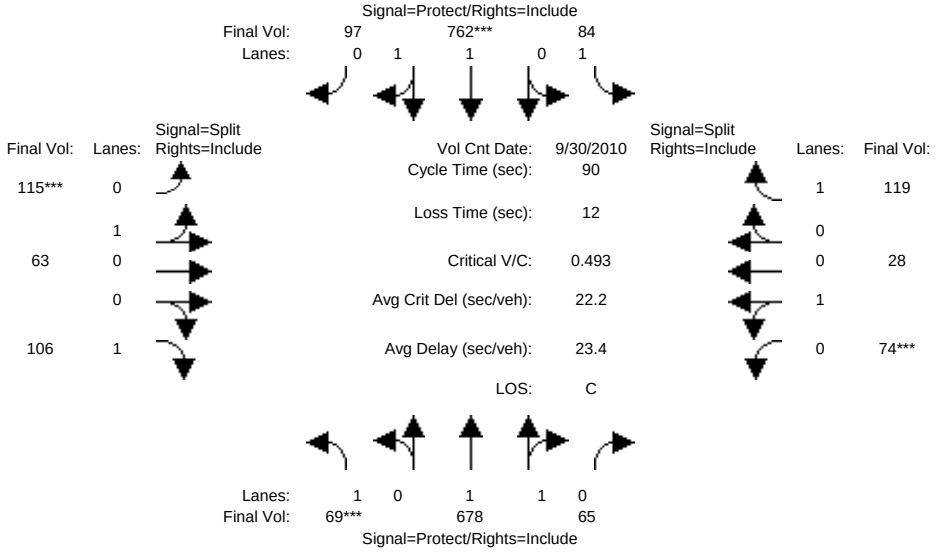
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg_PM

Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 4:45:00 PM												
Base Vol:	66	645	62	84	754	97	115	63	106	74	28	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	645	62	84	754	97	115	63	106	74	28	119
Added Vol:	0	7	0	0	4	0	0	0	0	0	0	0
ATI:	3	26	3	0	4	0	0	0	0	0	0	0
Initial Fut:	69	678	65	84	762	97	115	63	106	74	28	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	678	65	84	762	97	115	63	106	74	28	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	678	65	84	762	97	115	63	106	74	28	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	678	65	84	762	97	115	63	106	74	28	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.82	0.18	1.00	1.77	0.23	0.65	0.35	1.00	0.73	0.27	1.00
Final Sat.:	1750	3376	324	1750	3282	418	1163	637	1750	1306	494	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.20	0.05	0.23	0.23	0.10	0.10	0.06	0.06	0.06	0.07
Crit Moves:	****				****		****			****		
Green Time:	7.2	35.8	35.8	13.8	42.4	42.4	18.1	18.1	18.1	12.4	12.4	12.4
Volume/Cap:	0.49	0.51	0.51	0.31	0.49	0.49	0.49	0.49	0.30	0.41	0.41	0.49
Delay/Veh:	42.4	20.7	20.7	34.5	16.6	16.6	33.0	33.0	31.1	36.6	36.6	37.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	20.7	20.7	34.5	16.6	16.6	33.0	33.0	31.1	36.6	36.6	37.5
LOS by Move:	D	C+	C+	C-	B	B	C-	C-	C	D+	D+	D+
HCM2kAvgQ:	2	8	8	2	8	8	5	5	3	3	3	4

Note: Queue reported is the number of cars per lane.

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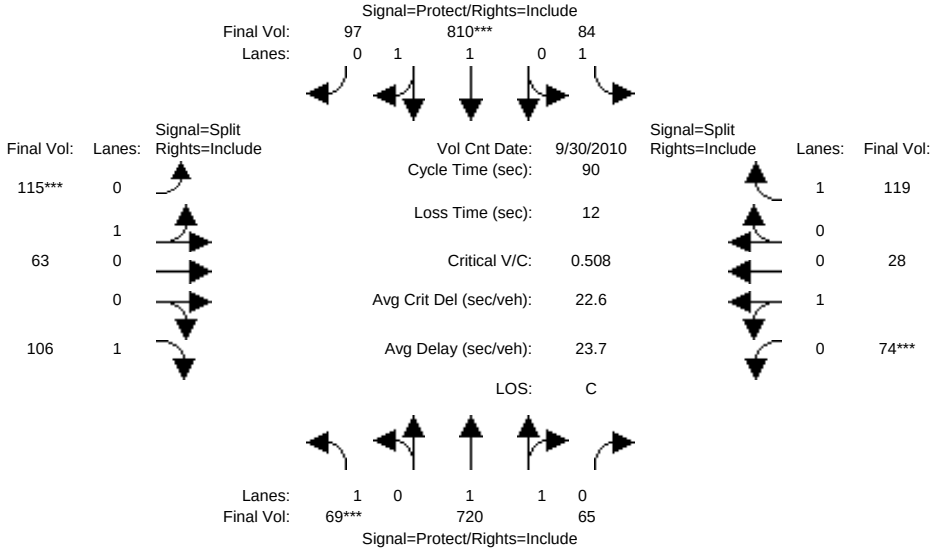
Harker Elementary School
SJ12-1362

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg+P_PM

Intersection #2: Union Ave / Woodard Rd



Street Name:	Union Ave						Woodard Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 30 Sep 2010 << 4:45:00 PM												
Base Vol:	66	645	62	84	754	97	115	63	106	74	28	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	645	62	84	754	97	115	63	106	74	28	119
Added Vol:	0	49	0	0	52	0	0	0	0	0	0	0
ATI:	3	26	3	0	4	0	0	0	0	0	0	0
Initial Fut:	69	720	65	84	810	97	115	63	106	74	28	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	720	65	84	810	97	115	63	106	74	28	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	720	65	84	810	97	115	63	106	74	28	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	720	65	84	810	97	115	63	106	74	28	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	1.83	0.17	1.00	1.78	0.22	0.65	0.35	1.00	0.73	0.27	1.00
Final Sat.:	1750	3393	306	1750	3304	396	1163	637	1750	1306	494	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.21	0.21	0.05	0.25	0.25	0.10	0.10	0.06	0.06	0.06	0.07
Crit Moves:	****				****		****			****		
Green Time:	7.0	36.0	36.0	13.2	42.2	42.2	17.0	17.0	17.0	11.7	11.7	11.7
Volume/Cap:	0.51	0.53	0.53	0.33	0.52	0.52	0.52	0.52	0.32	0.44	0.44	0.52
Delay/Veh:	42.9	20.9	20.9	35.2	17.1	17.1	34.3	34.3	32.0	37.4	37.4	38.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.9	20.9	20.9	35.2	17.1	17.1	34.3	34.3	32.0	37.4	37.4	38.7
LOS by Move:	D	C+	C+	D+	B	B	C-	C-	C-	D+	D+	D+
HCM2kAvgQ:	2	8	8	2	9	9	5	5	3	3	3	4

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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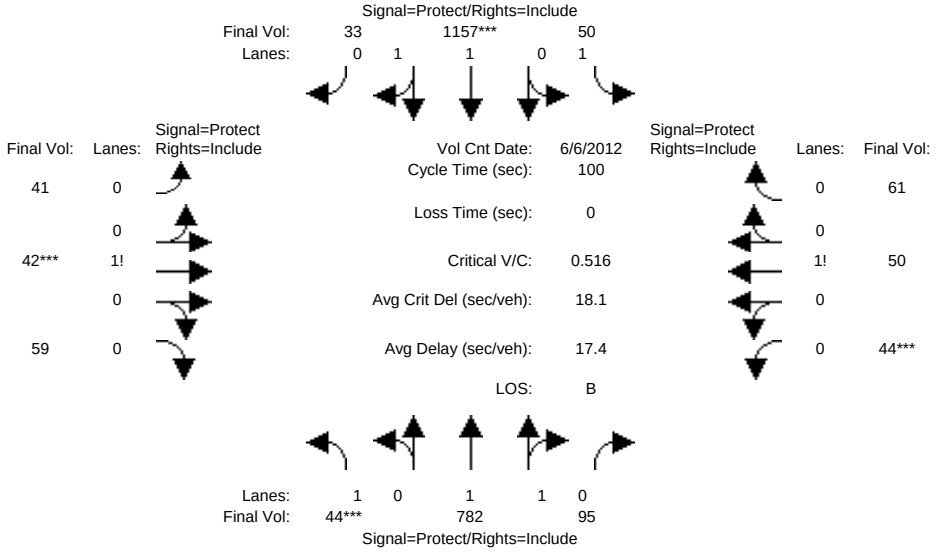
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg_PM

Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	44	743	95	50	1149	33	41	42	59	44	50	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	743	95	50	1149	33	41	42	59	44	50	61
Added Vol:	0	7	0	0	4	0	0	0	0	0	0	0
ATI:	0	32	0	0	4	0	0	0	0	0	0	0
Initial Fut:	44	782	95	50	1157	33	41	42	59	44	50	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	782	95	50	1157	33	41	42	59	44	50	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	782	95	50	1157	33	41	42	59	44	50	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	782	95	50	1157	33	41	42	59	44	50	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.78	0.22	1.00	1.94	0.06	0.29	0.30	0.41	0.28	0.32	0.40
Final Sat.:	1750	3299	401	1750	3597	103	505	518	727	497	565	689
Capacity Analysis Module:												
Vol/Sat:	0.03	0.24	0.24	0.03	0.32	0.32	0.08	0.08	0.08	0.09	0.09	0.09
Crit Moves:	****				****			****		****		
Green Time:	7.0	52.4	52.4	15.5	60.9	60.9	14.4	15.4	15.4	16.8	17.7	17.7
Volume/Cap:	0.36	0.45	0.45	0.18	0.53	0.53	0.56	0.53	0.53	0.53	0.50	0.50
Delay/Veh:	46.2	15.0	15.0	37.1	11.5	11.5	42.8	41.0	41.0	39.8	38.4	38.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	15.0	15.0	37.1	11.5	11.5	42.8	41.0	41.0	39.8	38.4	38.4
LOS by Move:	D	B	B	D+	B+	B+	D	D	D	D	D+	D+
HCM2kAvgQ:	1	8	8	1	11	11	5	5	5	5	5	5

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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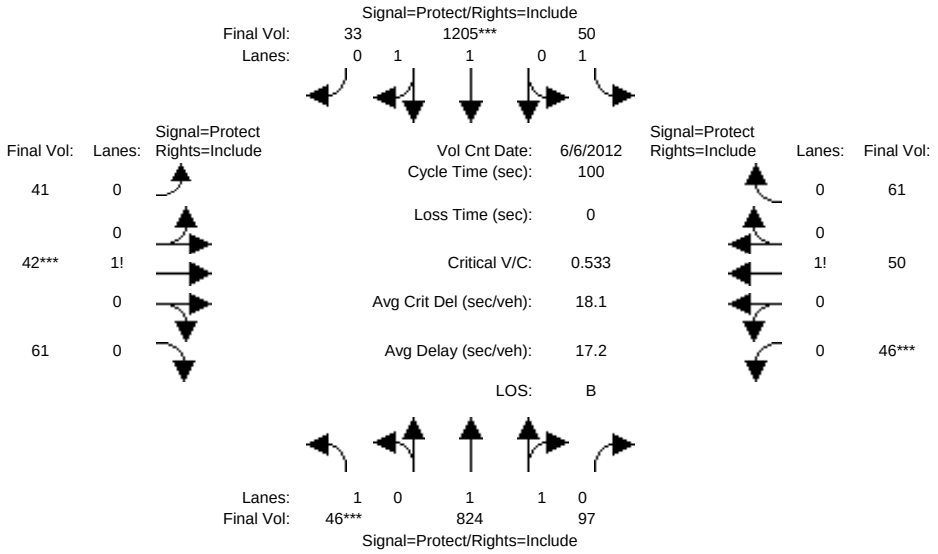
Intersection #3: Union Ave / Charmeran Ave



Street Name:	Union Ave						Charmeran Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	44	743	95	50	1149	33	41	42	59	44	50	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	743	95	50	1149	33	41	42	59	44	50	61
Added Vol:	2	49	2	0	52	0	0	0	2	2	0	0
ATI:	0	32	0	0	4	0	0	0	0	0	0	0
Initial Fut:	46	824	97	50	1205	33	41	42	61	46	50	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	824	97	50	1205	33	41	42	61	46	50	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	824	97	50	1205	33	41	42	61	46	50	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	824	97	50	1205	33	41	42	61	46	50	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.97	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	1.78	0.22	1.00	1.95	0.05	0.28	0.29	0.43	0.29	0.32	0.39
Final Sat.:	1750	3310	390	1750	3601	99	498	510	741	513	557	680
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.25	0.03	0.33	0.33	0.08	0.08	0.08	0.09	0.09	0.09
Crit Moves:	****				****			****		****		
Green Time:	7.0	53.4	53.4	15.0	61.4	61.4	14.3	15.1	15.1	16.5	17.3	17.3
Volume/Cap:	0.38	0.47	0.47	0.19	0.54	0.54	0.58	0.54	0.54	0.54	0.52	0.52
Delay/Veh:	46.3	14.6	14.6	37.5	11.5	11.5	43.4	41.6	41.6	40.5	39.1	39.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.3	14.6	14.6	37.5	11.5	11.5	43.4	41.6	41.6	40.5	39.1	39.1
LOS by Move:	D	B	B	D+	B+	B+	D	D	D	D	D	D
HCM2kAvgQ:	1	9	9	1	11	11	5	5	5	5	5	5

Note: Queue reported is the number of cars per lane.

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Harker Elementary School
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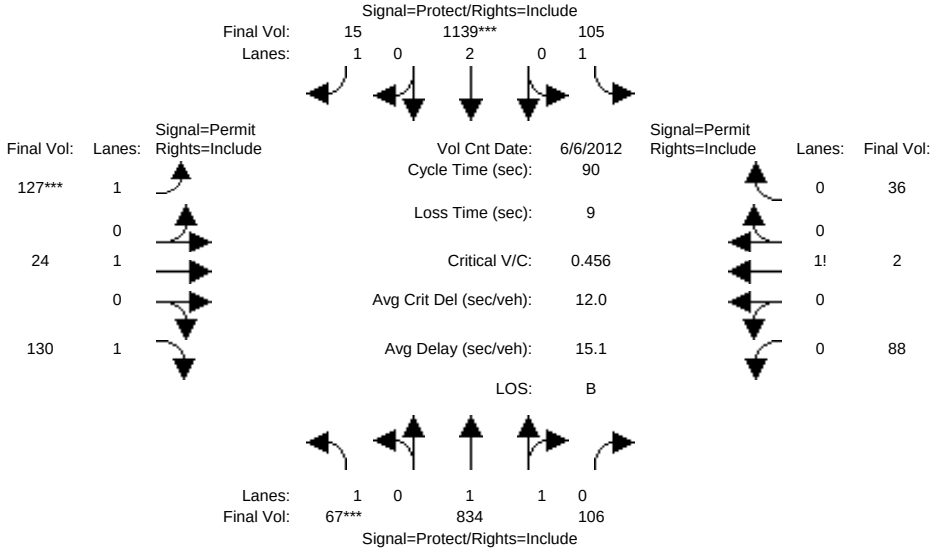
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bg_PM

Intersection #4: Union Ave / Logic Dr - Cole Dr




```
Street Name:            Union Ave                     Logic Dr - Cole Dr
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM
Base Vol:      52  808   106   105 1117    11   108   24    67    88    2    36
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52  808   106   105 1117    11   108   24    67    88    2    36
Added Vol:      0   13     0     0   22     0     0    0     0     0    0     0
ATI:           15   13     0     0    0     4    19    0    63     0    0     0
Initial Fut:   67  834   106   105 1139    15   127   24   130    88    2    36
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    67  834   106   105 1139    15   127   24   130    88    2    36
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   67  834   106   105 1139    15   127   24   130    88    2    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   67  834   106   105 1139    15   127   24   130    88    2    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 1.00  0.92  0.92 1.00  0.92  0.92 0.92  0.92
Lanes:       1.00 1.77  0.23  1.00 2.00  1.00  1.00 1.00  1.00  0.70 0.02  0.28
Final Sat.:  1750 3282   417  1750 3800  1750  1750 1900  1750  1222   28   500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.25  0.25  0.06 0.30  0.01  0.07 0.01  0.07  0.07 0.07  0.07
Crit Moves:  ****                 ****        ****
Green Time:   7.6 51.1  51.1  15.6 59.1  59.1  14.3 14.3  14.3  14.3 14.3  14.3
Volume/Cap:  0.46 0.45  0.45  0.35 0.46  0.01  0.46 0.08  0.47  0.45 0.45  0.45
Delay/Veh:   41.5 11.4  11.4  33.4  7.7   5.3  35.5 32.3  35.6  35.5 35.5  35.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  41.5 11.4  11.4  33.4  7.7   5.3  35.5 32.3  35.6  35.5 35.5  35.5
LOS by Move:    D   B+     B+    C-    A     A    D+   C-    D+    D+   D+    D+
HCM2kAvgQ:      2    8      8     3    8     0     4    1     4     4    4     4
Note: Queue reported is the number of cars per lane.
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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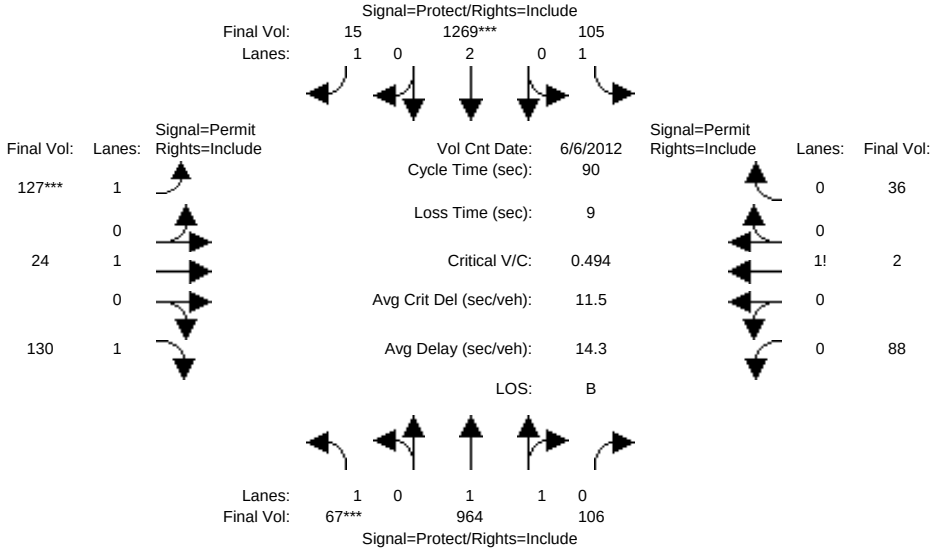
Intersection #4: Union Ave / Logic Dr - Cole Dr




```
Street Name:            Union Ave                     Logic Dr - Cole Dr
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM
Base Vol:      52  808   106   105 1117    11   108   24    67    88    2    36
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   52  808   106   105 1117    11   108   24    67    88    2    36
Added Vol:      0  143     0     0  152     0     0    0     0     0    0     0
ATI:           15   13     0     0    0     4    19    0    63     0    0     0
Initial Fut:   67  964   106   105 1269    15   127   24   130    88    2    36
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    67  964   106   105 1269    15   127   24   130    88    2    36
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   67  964   106   105 1269    15   127   24   130    88    2    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   67  964   106   105 1269    15   127   24   130    88    2    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.92 0.98  0.95  0.92 1.00  0.92  0.92 1.00  0.92  0.92 0.92  0.92
Lanes:       1.00 1.80  0.20  1.00 2.00  1.00  1.00 1.00  1.00  0.70 0.02  0.28
Final Sat.:  1750 3333   367  1750 3800  1750  1750 1900  1750  1222   28   500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.29  0.29  0.06 0.33  0.01  0.07 0.01  0.07  0.07 0.07  0.07
Crit Moves:  ****                 ****        ****
Green Time:   7.0 53.4  53.4  14.4 60.8  60.8  13.2 13.2  13.2  13.2 13.2  13.2
Volume/Cap:  0.49 0.49  0.49  0.38 0.49  0.01  0.49 0.09  0.51  0.49 0.49  0.49
Delay/Veh:   42.6 10.6  10.6  34.7  7.3   4.8  36.8 33.3  37.0  36.8 36.8  36.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  42.6 10.6  10.6  34.7  7.3   4.8  36.8 33.3  37.0  36.8 36.8  36.8
LOS by Move:    D   B+    B+    C-    A     A    D+   C-    D+    D+   D+    D+
HCM2kAvgQ:      2    9     9     3    8     0     4    1     4     4    4     4
Note: Queue reported is the number of cars per lane.
```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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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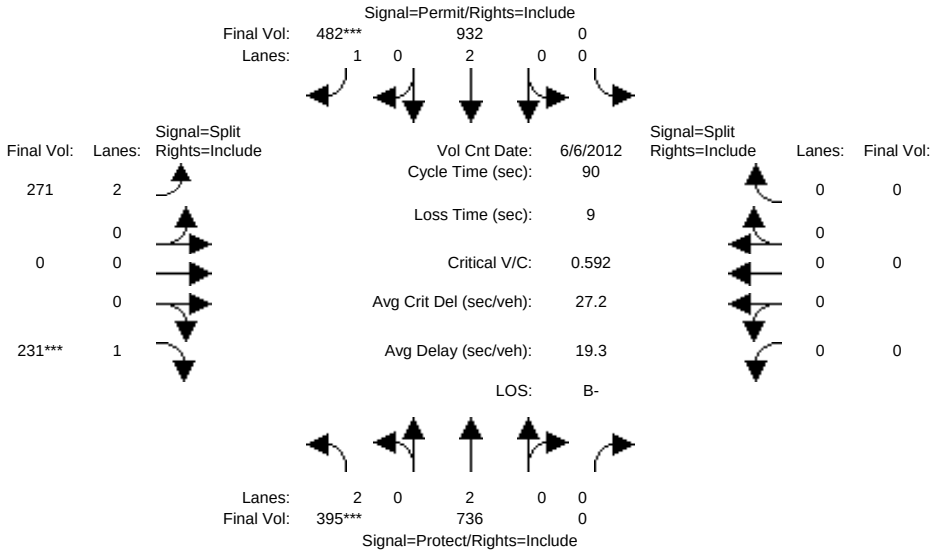
Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	382	697	0	0	889	439	269	0	226	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	697	0	0	889	439	269	0	226	0	0	0
Added Vol:	0	11	0	0	7	16	2	0	0	0	0	0
ATI:	13	28	0	0	36	27	0	0	5	0	0	0
Initial Fut:	395	736	0	0	932	482	271	0	231	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	395	736	0	0	932	482	271	0	231	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	395	736	0	0	932	482	271	0	231	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	395	736	0	0	932	482	271	0	231	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.19	0.00	0.00	0.25	0.28	0.09	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	19.1	60.9	0.0	0.0	41.9	41.9	20.1	0.0	20.1	0.0	0.0	0.0
Volume/Cap:	0.59	0.29	0.00	0.00	0.53	0.59	0.39	0.00	0.59	0.00	0.00	0.00
Delay/Veh:	33.4	5.9	0.0	0.0	17.3	18.9	30.1	0.0	33.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.4	5.9	0.0	0.0	17.3	18.9	30.1	0.0	33.7	0.0	0.0	0.0
LOS by Move:	C-	A	A	A	B	B-	C	A	C-	A	A	A
HCM2kAvgQ:	6	4	0	0	9	10	4	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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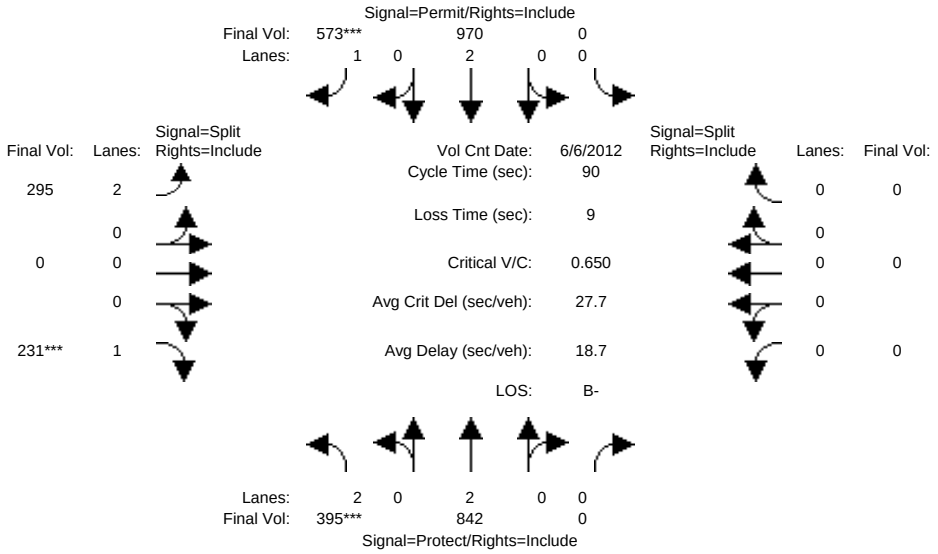
2000 HCM Operations (Future Volume Alternative)
Bg+P_PM

Intersection #5: Union Ave / NB SR 85 Ramps



Street Name:	Union Ave						NB SR 85 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	382	697	0	0	889	439	269	0	226	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	697	0	0	889	439	269	0	226	0	0	0
Added Vol:	0	117	0	0	45	107	26	0	0	0	0	0
ATI:	13	28	0	0	36	27	0	0	5	0	0	0
Initial Fut:	395	842	0	0	970	573	295	0	231	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	395	842	0	0	970	573	295	0	231	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	395	842	0	0	970	573	295	0	231	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	395	842	0	0	970	573	295	0	231	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	3800	0	0	3800	1750	3150	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.22	0.00	0.00	0.26	0.33	0.09	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****					****			****			
Green Time:	17.4	62.7	0.0	0.0	45.3	45.3	18.3	0.0	18.3	0.0	0.0	0.0
Volume/Cap:	0.65	0.32	0.00	0.00	0.51	0.65	0.46	0.00	0.65	0.00	0.00	0.00
Delay/Veh:	36.0	5.4	0.0	0.0	15.1	18.2	32.1	0.0	37.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	5.4	0.0	0.0	15.1	18.2	32.1	0.0	37.1	0.0	0.0	0.0
LOS by Move:	D+	A	A	A	B	B-	C-	A	D+	A	A	A
HCM2kAvgQ:	6	4	0	0	9	13	5	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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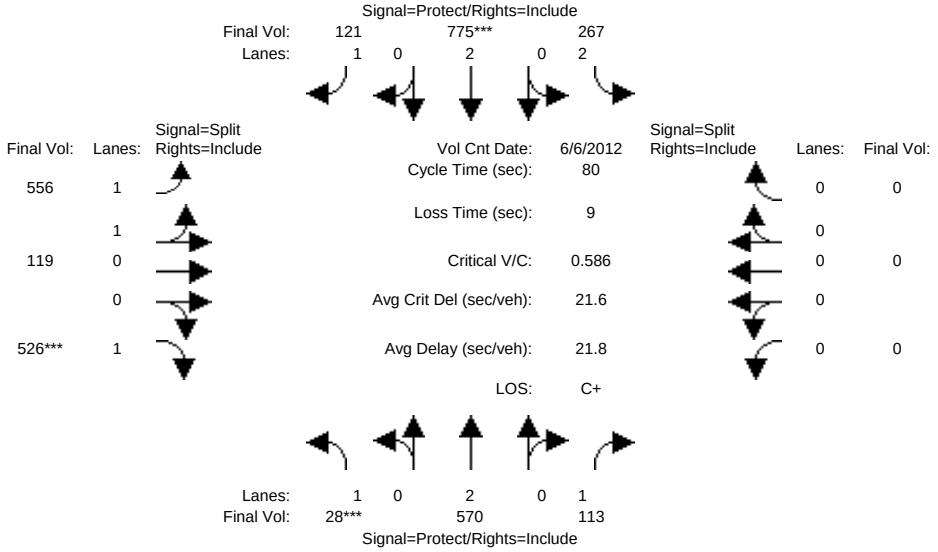
Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	24	565	113	244	761	110	514	107	516	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	565	113	244	761	110	514	107	516	0	0	0
Added Vol:	0	2	0	4	3	0	9	0	0	0	0	0
ATI:	4	3	0	19	11	11	33	12	10	0	0	0
Initial Fut:	28	570	113	267	775	121	556	119	526	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	570	113	267	775	121	556	119	526	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	570	113	267	775	121	556	119	526	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	570	113	267	775	121	556	119	526	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.65	0.35	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	2924	626	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.15	0.06	0.08	0.20	0.07	0.19	0.19	0.30	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	7.0	20.8	20.8	12.1	25.9	25.9	38.1	38.1	38.1	0.0	0.0	0.0
Volume/Cap:	0.18	0.58	0.25	0.56	0.63	0.21	0.40	0.40	0.63	0.00	0.00	0.00
Delay/Veh:	34.4	26.7	23.7	33.0	24.1	19.9	13.7	13.7	17.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	26.7	23.7	33.0	24.1	19.9	13.7	13.7	17.2	0.0	0.0	0.0
LOS by Move:	C-	C	C	C-	C	B-	B	B	B	A	A	A
HCM2kAvgQ:	1	7	2	4	8	2	6	6	10	0	0	0

Note: Queue reported is the number of cars per lane.

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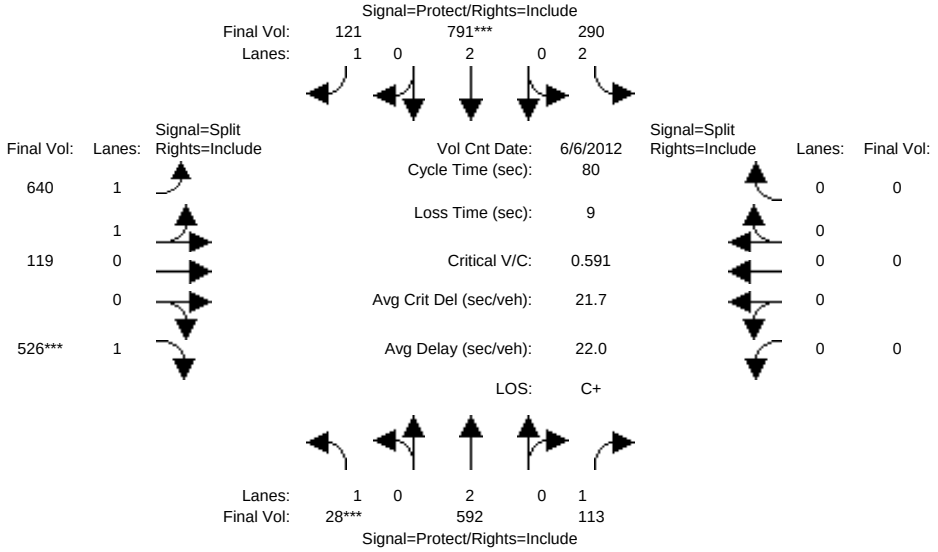
Intersection #6: Union Ave / Samaritan Dr - SB SR 85 On-Ramp



Street Name:	Union Ave						Samaritan Dr - SB SR 85 On-Ramp					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 4:45:00 PM												
Base Vol:	24	565	113	244	761	110	514	107	516	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	565	113	244	761	110	514	107	516	0	0	0
Added Vol:	0	24	0	27	19	0	93	0	0	0	0	0
ATI:	4	3	0	19	11	11	33	12	10	0	0	0
Initial Fut:	28	592	113	290	791	121	640	119	526	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	592	113	290	791	121	640	119	526	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	592	113	290	791	121	640	119	526	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	592	113	290	791	121	640	119	526	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.69	0.31	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	1750	3150	3800	1750	2993	557	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.16	0.06	0.09	0.21	0.07	0.21	0.21	0.30	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	7.0	20.9	20.9	12.3	26.2	26.2	37.8	37.8	37.8	0.0	0.0	0.0
Volume/Cap:	0.18	0.60	0.25	0.60	0.64	0.21	0.45	0.45	0.64	0.00	0.00	0.00
Delay/Veh:	34.4	26.9	23.7	33.6	24.0	19.6	14.3	14.3	17.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	26.9	23.7	33.6	24.0	19.6	14.3	14.3	17.5	0.0	0.0	0.0
LOS by Move:	C-	C	C	C-	C	B-	B	B	B	A	A	A
HCM2kAvgQ:	1	7	2	4	8	2	7	7	10	0	0	0

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
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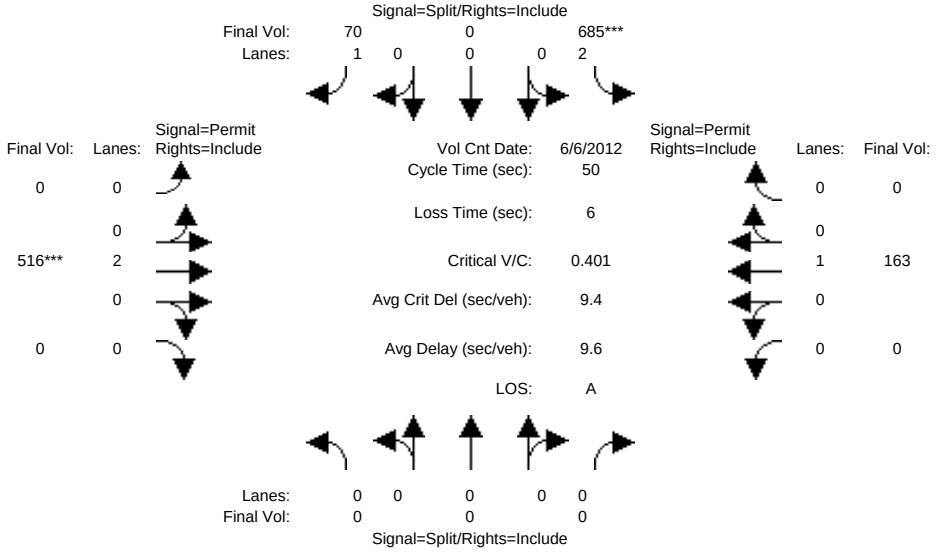
Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	0	0	0	669	0	64	0	468	0	0	148	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	669	0	64	0	468	0	0	148	0
Added Vol:	0	0	0	9	0	0	0	0	0	0	0	0
ATI:	0	0	0	7	0	6	0	48	0	0	15	0
Initial Fut:	0	0	0	685	0	70	0	516	0	0	163	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	685	0	70	0	516	0	0	163	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	685	0	70	0	516	0	0	163	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	685	0	70	0	516	0	0	163	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.04	0.00	0.14	0.00	0.00	0.09	0.00
Crit Moves:				****				****				
Green Time:	0.0	0.0	0.0	27.1	0.0	27.1	0.0	16.9	0.0	0.0	16.9	0.0
Volume/Cap:	0.00	0.00	0.00	0.40	0.00	0.07	0.00	0.40	0.00	0.00	0.25	0.00
Delay/Veh:	0.0	0.0	0.0	6.9	0.0	5.5	0.0	12.9	0.0	0.0	12.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.9	0.0	5.5	0.0	12.9	0.0	0.0	12.2	0.0
LOS by Move:	A	A	A	A	A	A	A	B	A	A	B	A
HCM2kAvgQ:	0	0	0	4	0	1	0	3	0	0	2	0

Note: Queue reported is the number of cars per lane.

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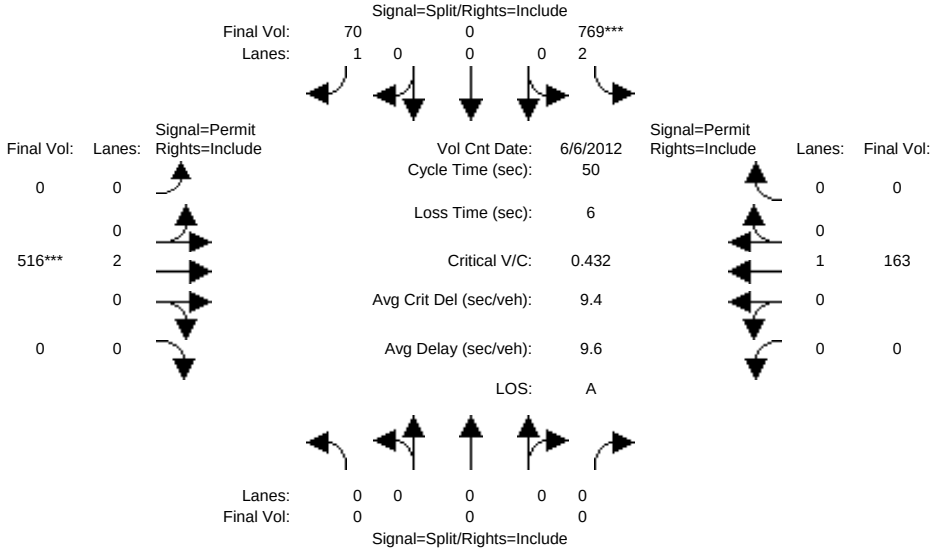
Intersection #7: Samaritan Dr / SB SR 85 Off-Ramp



Street Name:	SB SR 85 Off-Ramp						Samaritan Dr					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 6 Jun 2012 << 5:00:00 PM												
Base Vol:	0	0	0	669	0	64	0	468	0	0	148	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	669	0	64	0	468	0	0	148	0
Added Vol:	0	0	0	93	0	0	0	0	0	0	0	0
ATI:	0	0	0	7	0	6	0	48	0	0	15	0
Initial Fut:	0	0	0	769	0	70	0	516	0	0	163	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	769	0	70	0	516	0	0	163	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	769	0	70	0	516	0	0	163	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	769	0	70	0	516	0	0	163	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	1.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.24	0.00	0.04	0.00	0.14	0.00	0.00	0.09	0.00
Crit Moves:				****				****				
Green Time:	0.0	0.0	0.0	28.3	0.0	28.3	0.0	15.7	0.0	0.0	15.7	0.0
Volume/Cap:	0.00	0.00	0.00	0.43	0.00	0.07	0.00	0.43	0.00	0.00	0.27	0.00
Delay/Veh:	0.0	0.0	0.0	6.4	0.0	4.9	0.0	13.8	0.0	0.0	13.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.4	0.0	4.9	0.0	13.8	0.0	0.0	13.1	0.0
LOS by Move:	A	A	A	A	A	A	A	B	A	A	B	A
HCM2kAvgQ:	0	0	0	4	0	1	0	4	0	0	2	0

Note: Queue reported is the number of cars per lane.

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APPENDIX C: ATIS

Intersection of: CAMDEN/UNION

Traffix Node Number: 3088

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	0	0	1	0	0	0	0	1	0	5	5	0
TOTAL:	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**5**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	5	5	0
SOUTH	0	0	1
WEST	0	1	0

Intersection of: CAMDEN/UNION

Traffix Node Number: 3088

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	0	0	7	0	0	0	0	7	0	3	3	0
TOTAL:	0	0	7	0	0	0	0	7	0	3	3	0

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	3	3	0
SOUTH	0	0	7
WEST	0	7	0

AM APPROVED TRIPS

07/03/2012

Intersection of: UNION/WOODARD

Traffix Node Number: 3833

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	0	5	0	0	22	0	0	0	0	0	0	0
TOTAL:	**0**	**5**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	22	0
EAST	0	0	0
SOUTH	0	5	0
WEST	0	0	0

Intersection of: UNION/WOODARD

Traffix Node Number: 3833

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	0	19	0	0	4	0	0	0	0	0	0	0
TOTAL:	**0**	**19**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	4	0
EAST	0	0	0
SOUTH	0	19	0
WEST	0	0	0

AM APPROVED TRIPS

07/03/2012

Intersection of: COLE/UNION

Traffix Node Number: 3410

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	65	0	0	0	0	7	5	0	11	0	0	0
TOTAL:	**65**	**0**	**0**	**0**	**0**	**7**	**5**	**0**	**11**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	7
EAST	0	0	0
SOUTH	65	0	0
WEST	5	0	11

Intersection of: COLE/UNION

Traffix Node Number: 3410

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	15	0	0	0	0	1	19	0	38	0	0	0
TOTAL:	**15**	**0**	**0**	**0**	**0**	**1**	**19**	**0**	**38**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	1
EAST	0	0	0
SOUTH	15	0	0
WEST	19	0	38

AM APPROVED TRIPS

07/03/2012

Intersection of: 85/UNION (N)

Traffix Node Number: 3204

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	0	65	0	0	0	8	0	0	0	0	0	0
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	2	2	0	0	9	0	0	0	8	0	0	0
TOTAL:	2	67	0	0	9	8	0	0	8	0	0	0

	LEFT	THRU	RIGHT
NORTH	0	9	8
EAST	0	0	0
SOUTH	2	67	0
WEST	0	0	8

Intersection of: 85/UNION (N)

Traffix Node Number: 3204

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	0	15	0	0	0	27	0	0	0	0	0	0
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	13	13	0	0	6	0	0	0	5	0	0	0
TOTAL:	**13**	**28**	**0**	**0**	**6**	**27**	**0**	**0**	**5**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	6	27
EAST	0	0	0
SOUTH	13	28	0
WEST	0	0	5

AM APPROVED TRIPS

07/03/2012

Intersection of: 85/UNION (S)

Traffix Node Number: 3205

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	0	13	0	6	3	0	30	0	0	0	0	0
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	7	0	0	0	0	17	5	2	2	0	0	0
TOTAL:	**7**	**13**	**0**	**6**	**3**	**17**	**35**	**2**	**2**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	6	3	17
EAST	0	0	0
SOUTH	7	13	0
WEST	35	2	2

Intersection of: 85/UNION (S)

Traffix Node Number: 3205

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC01-01-009 XILINX UNION AND SR85 (NW/C)	0	3	0	19	11	0	7	0	0	0	0	0
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	4	0	0	0	0	11	26	12	10	0	0	0
TOTAL:	**4**	**3**	**0**	**19**	**11**	**11**	**33**	**12**	**10**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	19	11	11
EAST	0	0	0
SOUTH	4	3	0
WEST	33	12	10

AM APPROVED TRIPS

07/03/2012

Intersection of: 85/SAMARITAN

Traffix Node Number: 3203

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	0	0	0	0	0	9	0	8	0	0	24	0
TOTAL:	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**8**	**0**	**0**	**24**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	9
EAST	0	24	0
SOUTH	0	0	0
WEST	0	8	0

Intersection of: 85/SAMARITAN

Traffix Node Number: 3203

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC08-014 SAMARITAN MEDICAL OFFICE NE CORNER OF SAMARITAN DRIVE AND BASCOM AVENUE	0	0	0	0	0	6	0	48	0	0	15	0
TOTAL:	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**48**	**0**	**0**	**15**	**0**

	LEFT	THRU	RIGHT
NORTH	0	0	6
EAST	0	15	0
SOUTH	0	0	0
WEST	0	48	0

APPENDIX D: TDM PLAN

THE HARKER SCHOOL

MEMO TO: Fehr & Peers
FROM: Mike Bassoni, Facilities Manager, The Harker School
DATE: August 14, 2012
RE: Transportation Demand Management on Harker campuses

The Harker School is committed to reducing traffic on all of its campuses – not just to be a good neighbor and to protect the environment, but because it is important and beneficial to our parents and students.

The plans for the Union Avenue campus extend and expand our existing efforts to reduce traffic, and we are very excited about their potential.

Profile of Families

Families from throughout the region choose to send their children to Harker, even though it means a longer drive for them during the morning commute rush than the public school in their neighborhood. The majority of our families are dual income households, so getting their children to school on time every morning puts stress and strain on their busy family lives. Our families are eager and enthusiastic to support alternatives that reduce their time on the road and congestion at drop-off time on the campus.

Harker elementary grade students come from throughout the Valley

Atherton/Menlo Park/Portola Valley	4
Campbell	19
Cupertino	51
Fremont/Hayward	29
Los Altos/Los Altos Hills	41
Los Gatos/Monte Sereno	35
Milpitas	9
Mountain View	7
Pacifica	1
Palo Alto	8
Pleasanton/Livermore/San Ramon	4
Redwood City	4
San Jose	
Cambrian (95124)	11
Evergreen (95138/95135)	35
West San Jose (95117/95129)	28
Willow Glen (95125)	16
Other neighborhoods	54
Santa Clara	22
Santa Cruz	1
Saratoga	87
Sunnyvale	25

Carpools

- Currently 437 of 1,773 families (25%) are carpooling in our parent-managed program. Parent carpools are effective for both morning drop-off and afternoon pick-up times because parents can match up their students' after-school activity schedules in selecting their carpool partner(s).

- 27% of Harker families have more than one student enrolled at Harker, and the children usually arrive in the same vehicle. If they are in grades that begin school at a different time, we provide childcare to cover the gap. If the children attend schools on different campuses, an inter-campus shuttle allows the parents to drop off all the children at one site rather than visiting multiple campuses in the morning.

- We have an incentive program for employees who carpool that includes preferred parking locations and a paid quarterly bonus. During the 2011-12 school year, approximately 50 teachers and staff participated.

- The parent and employee carpool programs will continue at the Union Avenue campus.

Shuttles

Shuttles offer the greatest opportunity for traffic reduction at the Union Avenue campus, and they are a huge benefit to our families who live farther away from school.
We have one shuttle route already established and are adding an additional shuttle during the 2012-13 school year. We are researching potential shuttle service routes to serve other outlying areas with large concentrations of Harker families.

Harker will commit to provide the quantity of shuttle service needed to reduce the trip count to the campus during morning and afternoon peak hours. We are confident of making this commitment because of the convenience and time-savings shuttle services provides our families. We have received permission from VTA to use the bus stop on Union Avenue in front of the campus as our shuttle stop. We will coordinate drop-off times so as to not interfere with the regular bus schedule.

- The existing Fremont shuttle is highly popular and has a current ridership of 25 students.

- A second shuttle to serve students in the Palo Alto/Los Altos area begins this fall. We already have 35 students signed up to take advantage of this service. We will be using Foothill College Transit Center as our Peninsula Shuttle Stop.

- A third shuttle route is being researched for the cities where 137 of our current lower school students reside -- Cupertino and Saratoga. We are looking at the De Anza and West Valley college campus transit centers as the pick-up locations.

By the time the elementary grades move to the Union Avenue campus – 5-10 years from now – we will have well-established shuttle services in place that, with assistance from the carpooling program, will meet the targeted number of trip count reductions for morning and afternoon peak hours identified in the traffic mitigation plan. Harker will

conduct an annual traffic count, using an outside professional firm, to confirm that trip reduction numbers are being achieved.

Bicycles
For our students and employees who live close enough to one of our campuses to bicycle to school, we provide sufficient bicycle racks and lockers and showers for teachers and staff.

Methods of Communication
Harker disseminates carpool, shuttle and traffic information to our parents through annual back-to-school materials, online carpool and shuttle registration and regular posts in our parent portal, emails and at back-to-school orientations. Employees are notified and updated of incentives upon hiring, in the employee portal, and in faculty and staff meeting throughout the year.

TDM Coordination
Our Asst. Head of School for Student Affairs, Greg Lawson, has overall responsibility for transportation demand management at Harker.

APPENDIX E: TDM MONITORING PLAN

FEHR PEERS

MEMORANDUM

Date:	August 20, 2012
To:	Leianne Humble, Denise Duffy & Associates
Copy To:	Mike Bassoni, The Harker School
From:	Jane Bierstedt Kevin Chen
Subject:	**Transportation Demand Management Program Monitoring Plan for the Harker Elementary School on Union Avenue, San Jose, California**

SJ12-1362

This memorandum presents the Transportation Demand Management (TDM) program monitoring plan for the proposed Harker Elementary School located at 4525 Union Avenue in San Jose, California. The purpose of the TDM program is to reduce the number of vehicle trips generated by the school and their associated impacts on nearby streets. The TDM program will focus on shuttle service. It should be flexible and allow for modifications to best address the changing needs of Harker's students and staff.

PROGRAM GOAL

The goal of the program is to reduce the number of vehicle trips generated by the school. Based on information in the Transportation Impact Analysis, the goal of the program is for the school to generate 350 (or fewer) vehicle trips during the AM peak hour of the surrounding roadways.

TDM PROGRAM OVERVIEW

The TDM program will be overseen by the Assistant Head of School for Student Affairs, Greg Lawson. The TDM coordinator will be responsible for updating information regarding the TDM program on the school's website, enhancing the carpool program, and developing the shuttle bus program.

SHUTTLE BUS PROGRAM

Harker will provide shuttle buses as necessary to serve the Evergreen/Silver Creek area in San Jose, Fremont, Palo Alto, Los Altos, Mountain View, Cupertino, Saratoga, and Sunnyvale. Centralized pick-up/drop-off locations will be identified for these service areas and the school will secure use agreements if needed. There will be one or two pick-up times in the morning for each location depending on the mix of upper and lower students.

TDM PROGRAM MONITORING

The TDM Program will be monitored by conducting driveway traffic counts on an annual basis to ensure TDM Program effectiveness. The driveway counts shall be collected by an independent vendor for the AM peak period between 7 AM - 9 AM with inbound and outbound volumes reported in 15-minute intervals. Driveway counts shall be collected for three days (Tuesday - Thursday) during the period from four to eight weeks after the start of the school's fall session. The data shall be collected on days when there are no special events or school holidays (that could bias the traffic volumes).

MONITORING REPORT

A memorandum shall be submitted to the City of San Jose Department of Transportation Planning Division Environmental Review Section to document the effectiveness of the TDM Program to meet the trip goal cited above. This memorandum shall include the following:

1. descriptions of the TDM Program elements currently in place, and
2. trip generation for the school based on the driveway counts.

NON-COMPLIANCE

The project proponent would be considered non-compliant if the trip generation goal is not achieved. If found to be out of compliance, the project proponent must implement one of the three options below:

1. increase the TDM activities (such as modifying existing shuttle routes to serve areas with higher concentrations of students, adding new shuttle routes or stops, making the use of the shuttle bus mandatory for the required number of students, and increasing the proportion of three and four-person carpools) and attain compliance within four months, which would be demonstrated by new monitoring efforts, or
2. reduce enrollment in the next academic year, or
3. mitigate all traffic impacts in conformance with the City's Transportation Policies.

MONITORING PLAN IMPLEMENTATION AND TERM

The monitoring plan would start the first year the elementary school is in operation. This TDM program, the associated monitoring program, and any modifications to the program shall be subject to review by the City of San Jose Department of Public Works and Department of Transportation. The annual monitoring can be suspended after five years of compliance with the school at its projected enrollment of 600 students. The City may require that the monitoring plan be re-instituted at a later date if there are concerns that the goals are not being met.