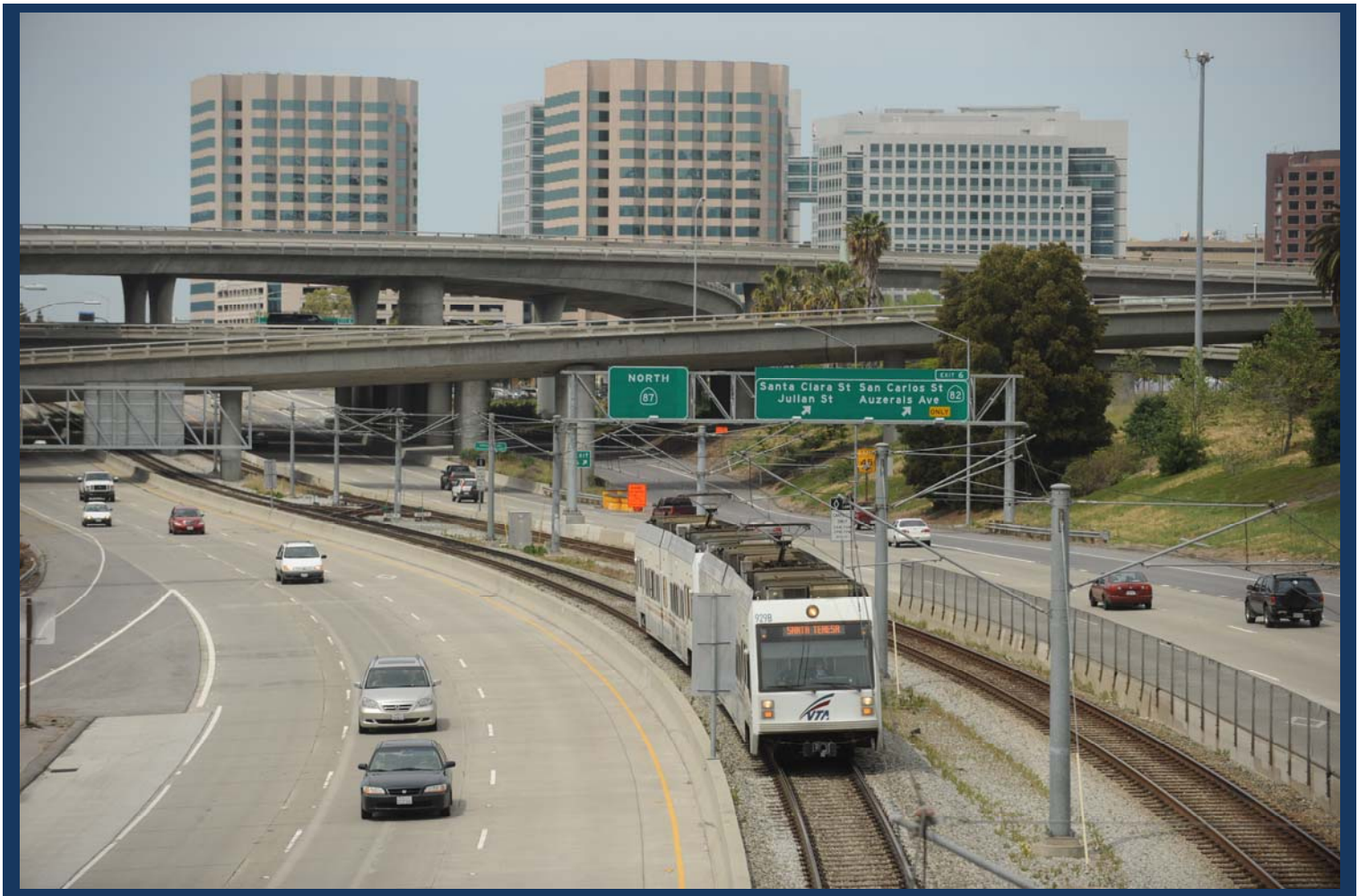

SANTA CLARA COUNTY

ANNUAL MONITORING AND CONFORMANCE REPORT

2014

SANTA CLARA
Valley Transportation Authority

Acknowledgements

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INTRODUCTION

State Statute 65089 requires Congestion Management Agencies (CMAs) to conduct analysis of all Congestion Management Program (CMP) roadways every two years to ensure Member Agencies – the cities, towns and county – are developing in a manner consistent with the CMP level of service standard of LOS E. As the responsible CMA for Santa Clara County, the Valley Transportation Authority (VTA) undertakes this analysis on an annual basis. VTA prepares the annual Monitoring and Conformance Report which documents the CMP conformance findings.

The scope of data collection is reduced every other year during odd-numbered years to minimize the costs of analyzing the CMP network annually. During the "off-years," the reduced scope of work includes only land use and freeway level of service data, and Deficiency Plan Status Reports. All other CMP elements are collected biennially as part of the full scope.

The 2014 Monitoring and Conformance Report feature the full scope of data collection and analysis of each CMP element. The following summarizes the results of the 2014 Monitoring Program.

LAND USE

VTA's Member Agencies, the cities, towns and County of Santa Clara, submit land use data to VTA in the form of residential and commercial/industrial project approvals for the prior fiscal year. The data reflects changes in residential dwelling units for approvals as well as estimate changes in commercial/industrial job approvals. Job change estimates are determined by applying job density values to square footage and land use type of commercial/industrial projects in order to estimate how many jobs are likely created or lost as a result of the land use approval.

In 2014, 7,325 dwelling units were approved, an increase of 83 percent from 2013. The estimated number of jobs created by commercial and industrial approvals totaled 31,047, a large increase compared to 2013.

FREEWAY

Aerial photography is used to collect traffic data to document congestion on all 313 directional miles of Santa Clara County's freeway system. The photographs are analyzed to determine the peak period of vehicle density which is used to determine level of service. Mixed-flow lanes are treated as separate facilities from HOV lanes and their levels of service are calculated separately.

In 2014, there were 84 AM freeway segments (86 directional miles) and 77 PM freeway segments (70 directional miles) that operated at LOS F. These numbers are identified as a continuing growth trend in freeway traffic.

Segments that operated at LOS F when monitoring began in 1991 are exempt from CMP level of service standards. Of the freeway segments operating at LOS F, 62 AM and 45 PM freeway segments are considered deficient due to 1991 baseline exemption. Member Agencies with non-conforming facilities within their jurisdiction are encouraged to implement strategies listed in the Immediate Implementation Action List found in VTA's Requirements for Local Deficiency Plans.

CMP INTERSECTIONS

VTA collected intersection level of service data and conducted LOS analyses for all CMP intersections except for City of Campbell and City of Cupertino who performed their own LOS analysis. This year, six of the 252 intersections operated at LOS F. Page Mill/Oregon Expressway at Foothill Expressway, San Tomas Expressway at Campbell Avenue, Capitol Expressway at Aborn Road, Montague Expressway at Main Street/Old Oakland Road, Montague Expressway at McCarthy Blvd/O'Toole Avenue are exempt from meeting the level of service requirements due to 1991 baseline exemption. De La Cruz and Central Expressway is a deficient intersection but has been operating at LOS F since 1996.

RURAL HIGHWAYS

VTA recorded 24-hour counts at 12 rural highway locations in Santa Clara County. All count locations operated at or above the CMP standard of LOS E. Segments increasing traffic volume by 10% or more include (#7) State Route 152 west of Santa Teresa and (#11) State Route 152 east of State Route 156, while (#2) State Route 35 south of SR 9, (#3) SR 9 west of Sanborn Road, and (#10) State Route 156 south of SR 152 all had decreasing traffic volumes by 10%.

EXPRESSWAYS

The Santa Clara County Roads and Airport Department conducts a travel time survey of the expressway every other year and provides the data to VTA as part of the full scope year of the Monitoring Report. Travel time data are collected using floating cars equipped with GPS technology to track travel speeds. Generally, two to five travel runs are made for each direction during the AM and PM commute periods and the average speeds, stops and travel times are determined.

The 2014 data is a mix bag of some expressways experiencing increases in travel speed and some expressways experiencing decreases. While it is a mixed bag, the trend in time spent is

going up for many expressways. Chapter 6 provides more detailed information on each expressway.

BICYCLE AND PEDESTRIAN

Bicycle and pedestrian single-day counts are collected each year at 10 locations throughout the county. For the 2014 Monitoring Report, 20 new locations were chosen to better highlight the usage of bicyclists and pedestrians in the Santa Clara County.

DEFICIENCY PLANS

The CMP legislation requires Member Agencies to prepare Deficiency Plans when CMP facilities located within their jurisdiction exceed the CMP traffic LOS standard, or when a project's Transportation Impact Analysis indicates that the LOS standard is expected to be exceeded. Deficiency Plans identify offsetting measures to mitigate transportation conditions on the CMP system in lieu of making physical traffic capacity improvements such as widening an intersection or roadway.

Cities of San Jose and Sunnyvale are two Member Agencies with adopted Deficiency Plans. Both cities submitted Deficiency Plan Implementation Status Reports, which provided a summary of the city's progress on the implementation of the actions in their Deficiency Plans. VTA staff reviewed these reports and found Sunnyvale and San Jose in conformance with this requirement.

CONFORMANCE FINDINGS

The 2014 Monitoring and Conformance Report find all Member Agencies in compliance with the CMP monitoring requirements.

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1 INTRODUCTION

INTRODUCTION

California State Government Code 65089 mandates the creation of a Congestion Management Program (CMP) for each county to manage the effects of transportation and land use. It requires that all elements of the CMP be monitored at least biennially by the designated Congestion Management Agency (CMA) to determine if the county and city governments, known collectively as Member Agencies, are conforming to the level of service standard set by the CMA.

The Santa Clara Valley Transportation Authority (VTA) is the designated CMA for Santa Clara County and is charged with monitoring the CMP network. VTA exceeds the state requirement by collecting data each year and producing an annual Monitoring and Conformance Report.

The high cost of data collection each year has resulted in reduced monitoring scope in the "off-years" or odd-numbered years while still meeting the requirements of the CMP statute. The 2014 report covers the full-scope year and includes all CMP elements for monitoring.

LEVEL OF SERVICE

Traffic congestion is monitored on the CMP roadway network which is comprised of freeways, state highways, expressways and principal arterials. Congestion is monitored in terms of level of service (LOS), a sliding scale from A though F where LOS A represents best traffic flow and LOS F represent significant traffic delay. Santa Clara County's LOS standard is LOS E. Table 1.1 provides a description of LOS standards.

TABLE 1.1 | LEVEL OF SERVICE (LOS) STANDARDS

Level of Service	Description
A | B | C	Traffic can move relatively freely without significant delay
D	Delay become more noticeable
E	Traffic volumes are at or close to capacity, resulting in significant delays and average speeds that are no more than about one-third the uncongested speed
F	Traffic demand exceeds available capacity. Very slow speeds (stop-and-go), long delays (over one minute) and standing queues at signalized intersections.

CONFORMANCE STANDARD

To comply with the CMP standard, Member Agencies must demonstrate that all CMP roadways (excluding freeways) within their jurisdictions are operating at or above the CMP traffic level of

service standard of LOS E. Member Agencies that do not maintain the CMP LOS standard risk having their Proposition 111 (1991) gas tax subvention withheld. If the LOS standard cannot be met, a deficiency plan must be approved by VTA. Freeway segments and CMP intersections that operated at LOS F when monitoring began in 1991 are exempt from meeting the LOS E standard. Freeway LOS thresholds are taken from the Highway Capacity Manual with the exception of D/E and E/F thresholds which are selected by VTA for Santa Clara County conditions.

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2 LAND USE

INTRODUCTION

California State CMA legislation requires Congestion Management Agencies to monitor land use changes within its jurisdiction. Each year, VTA monitors land use changes within Santa Clara County by requesting land use data from Member Agencies in terms of residential and commercial/industrial projects that have been approved.

METHODOLOGY

VTA collects land use data from Member Agencies each year to track decisions jurisdictions are making about land use. Member Agencies submit land use data for the prior fiscal year in the form of changes in dwelling units for residential approvals and changes in square footage for commercial and industrial approvals. This data is limited to tracking approvals only even if those approvals do not result in construction during the reporting year or at all.

For commercial and industrial approvals, changes in square footage are used to estimate the number of jobs created or lost. Jobs are estimated by applying a job density value (measured in jobs per 1,000 sq. ft.) to the size of the site. Job density values vary depending on the specific land use type. The appropriate job density is multiplied by the square footage of each site to determine the number of estimated jobs. Table 2.1 shows the job density values per type of land use.

TABLE 2.1 | COMMERCIAL AND INDUSTRIAL JOB DENSITIES (JOBS PER 1,000 SQ. FT.)

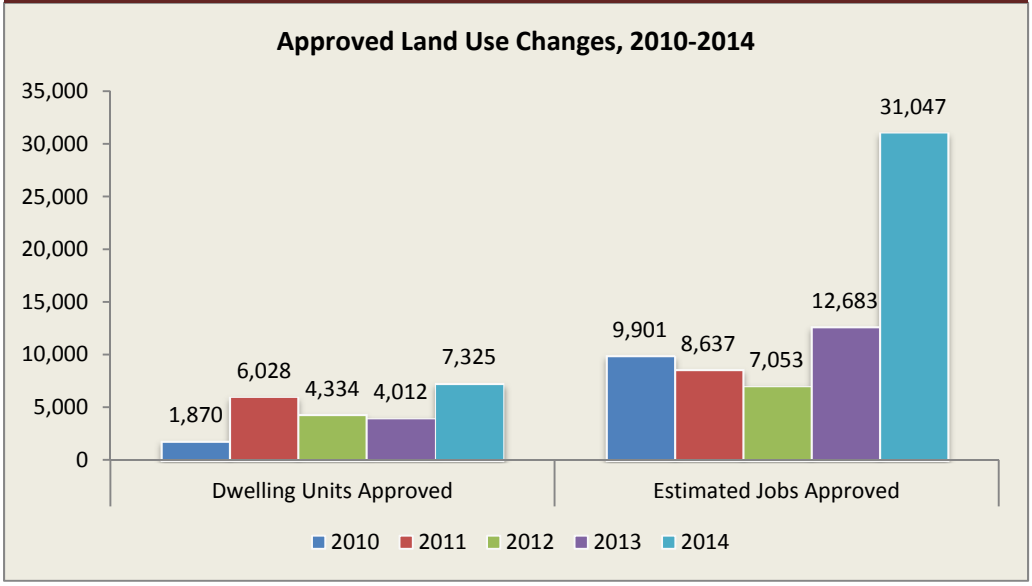
Density	Land Use
3.4	Office/Educational/Institutional/Hospital
3.1	Transportation
2.5	R&D Office
2.0	Hotel/Motel
1.75	Retail/Manufacturing
0.75	Non-Manufacturing
0	Park/Recreation/Agriculture/Cemetery/Urban Reserve

The focus of VTA's land use analysis is development approvals that provide the capacity to accommodate population and employment growth. The data is not a reflection in actual changes in residents or job creation. Rather, it is a measure of the trend in allocation of land for different purposes. In addition to the analyses included in this report, the data can be used to understand the current and projected demand in housing and employment. To better understand the employment data it is helpful to understand limitations that affect the data quality but are beyond the control of VTA and the Member Agencies:

- It is assumed commercial and industrial sites were fully occupied for employment uses
- It is assumed that all jobs that can be accommodated on the existing site are lost when a commercial or industrial site is converted to a different type of land use. Under this methodology, commercial/industrial sites that are either underutilized or unoccupied assume a full reduction in employment even if few or any jobs are actually lost. To compensate for this, VTA requests Member Agencies to indicate in their land use data submittal whether jobs were lost during conversions to a different use. Since not all Member Agencies provided this data, our methodology assumes full employment for commercial/ industrial conversions, which may negatively impact the job change estimate for 2014.

Despite these limitations, the analysis provides valuable information to illustrate the trend of land use development and where housing and employment growth is likely to occur, and where Member Agencies are actually targeting growth.

Figure 2.1 Approved Land Use Changes, 2010-2014



LAND USE ANALYSIS

As shown in Table 2.2, Member Agencies approved 7,325 residential units in 2014, an 83% increase from the previous year when 4,012 units were approved. Notably, the City of San Jose saw a large increase in approvals from 729 units in 2013 to 3,182 units this year. Santa Clara and Sunnyvale continued to see approvals of several large mixed-use developments and approved the greatest number of units overall in 2014.

TABLE 2.2 | APPROVED RESIDENTIAL UNITS, 2009-2014

Member Agency	2009	2010	2011	2012	2013	2014
Campbell	109	1	27	195	12	21
Cupertino	161	0	1	0	-30	15
Gilroy	244	59	35	101	278	350
Los Altos	4	2	69	204	20	0
Los Altos Hills	5	0	5	1	7	0
Los Gatos	24	17	31	116	20	23
Milpitas	1,013	54	2,531	2,243	793	466
Monte Sereno	0	0	0	0	0	0
Morgan Hill	46	24	96	268	544	103
Mountain View	1,542	256	273	298	537	399
Palo Alto	36	86	47	1	2	311
San Jose	1,467	598	2,496	536	729	3,182
Santa Clara	3	766	102	48	140	1,363
Santa Clara County	29	2	0	0	369	0
Saratoga	0	3	0	2	8	0
Sunnyvale	471	2	315	321	583	1,144
Total	5,154	1,870	6,028	4,334	4,012	7,325

As shown in Table 2.3, commercial and industrial approvals in 2014 resulted in an estimated net increase of 31,047. Compared to the previous year, job change estimates have increased by twofold when 12,683 jobs were estimated in 2013. This increase is partly explained by an increase in commercial development within the City of Santa Clara. Additionally, that Sunnyvale, Gilroy, Mountain View and Cupertino saw a large increase in available commercial land in 2014 due to mixed-use approvals on former industrial sites near downtown Gilroy and the Apple Campus development in Cupertino. However, Palo Alto did see a decrease in commercial development.

TABLE 2.3 | JOB CHANGE ESTIMATES BASED ON COMMERCIAL/INDUSTRIAL APPROVALS, 2009-2014

Member Agency	2009	2010	2011	2012	2013	2014
Campbell	23	7	-179	-140	0	9
Cupertino	465	89	-3	432	277	700
Gilroy	6	227	56	0	39	639
Los Altos	0	0	-40	50	211	0
Los Altos Hills	0	0	0	0	0	0
Los Gatos	203	260	264	70	555	23
Milpitas	1,536	81	706	-1,176	-399	0
Monte Sereno	0	0	0	0	0	0
Morgan Hill	-16	8	10	0	57	0
Mountain View	-1,102	581	598	798	1,151	2,304
Palo Alto	-58	656	4,584	585	924	-993
San Jose	861	733	853	1,247	4,211	7,913
Santa Clara	9,199	6,603	460	2,583	3,407	13,700
Santa Clara County	0	0	693	80	1,071	318
Saratoga	1,034	11	0	0	0	0
Sunnyvale	256	645	635	2,524	1,179	4,031
Total	12,407	9,902	8,636	7,053	12,683	31,047

PROXIMITY TO CORES, CORRIDORS AND STATION AREAS

In 2003, VTA in partnership with Member Agencies developed the Community Design & Transportation (CDT) program to craft best practices for land use and transportation. The CDT program established a framework of Cores, Corridors and Station Areas as priority areas identified by VTA and Member Agencies for targeting future growth and transportation investments. These areas are most likely to benefit from concentrated development due to its location near major transit corridors.

Spatial analysis was conducted on the land use data submitted by Member Agencies to determine the proximity of approved developments to the Cores, Corridors and Station Areas. Proximity is defined as a 1/3 mile within major transit stations and ¼ mile buffer from the cores, and future Bus Rapid Transit (BRT) corridors. The purpose of the spatial analysis is to illustrate where housing and employment growth is likely to occur and trend over time.

As shown in Table 2.4 and Figure 2.2, there were 7,325 total residential units approved in 2014. Of these, 3,667 residential approvals, or 50 percent were located within the Cores, Corridors and Station Areas. This is a slight increase from 2013 when 49 percent of the potential growth in housing was planned near the targeted areas for development.

Of the 31,047 estimated increased jobs due to commercial/industrial development, 12,929 jobs or 42 percent were located within the Cores, Corridors and Station Areas. This is a decrease from 2013 when 55 percent of the commercial/industrial approvals were within the Cores,

Corridors and Station Areas (see Figure 2.3). However, it is worth noting that there was an overall increase in total estimated jobs in 2014.

TABLE 2.4 | LAND USE APPROVALS NEAR CORES, CORRIDORS AND STATION AREAS, 2010-2014

	2014	2013	2012	2011	2010
Residential Unit Approvals within CCSAs	3,667	1,982	2,855	3,480	792
Total Units	7,325	4,012	4,334	6,028	1,870
% near CCSAs	50%	49%	66%	58%	42%
Job Change Estimates within CCSAs	12,929	6,966	2,610	4,850	7,282
Total Estimated Jobs	31,047	12,683	7,053	8,636	9,902
% near CCSAs	42%	55%	37%	56%	74%

Figure 2.2 Land Use Approvals within CCSAs, 2010-2014

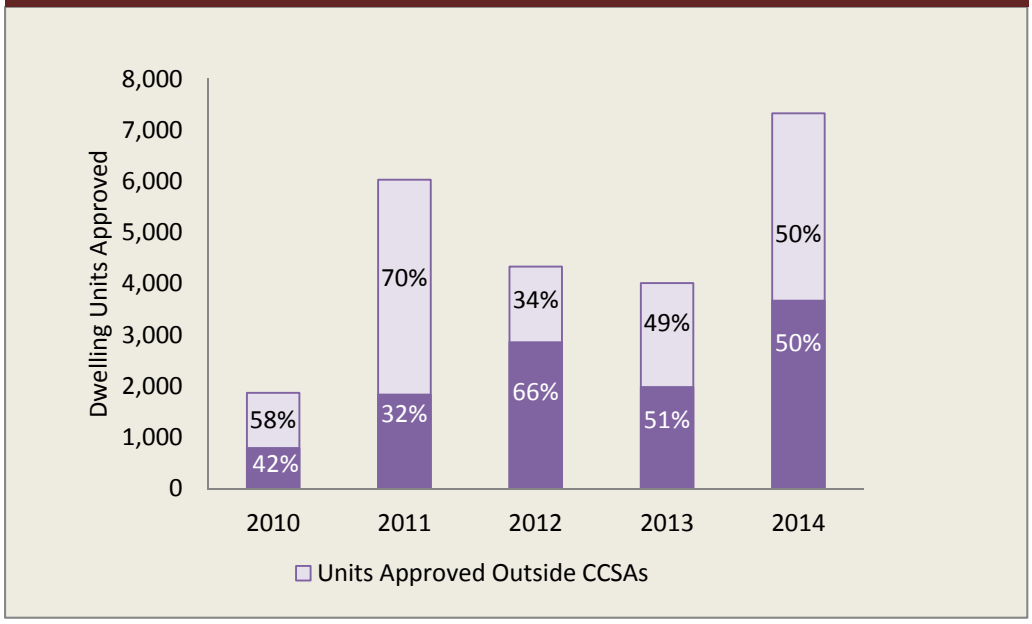


Figure 2.3 Job Change Estimates within CCSAs, 2010-2014

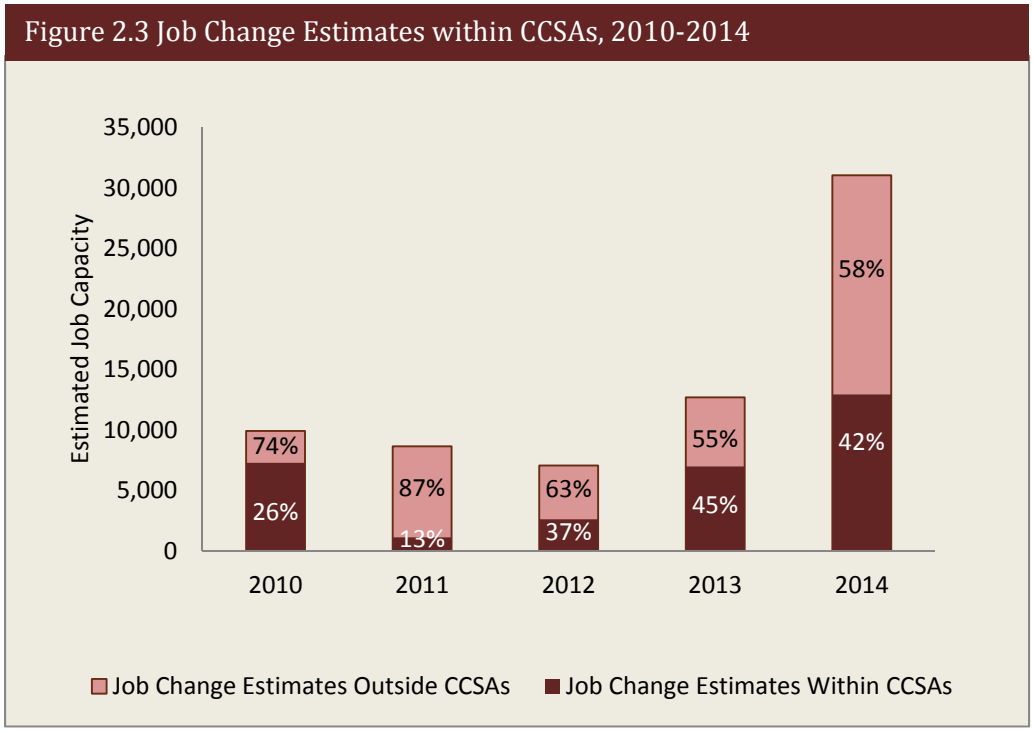


FIGURE 2.4 | APPROVED RESIDENTIAL UNITS NEAR VTA'S CORES, CORRIDORS AND STATION AREAS (2014 NET CHANGE)

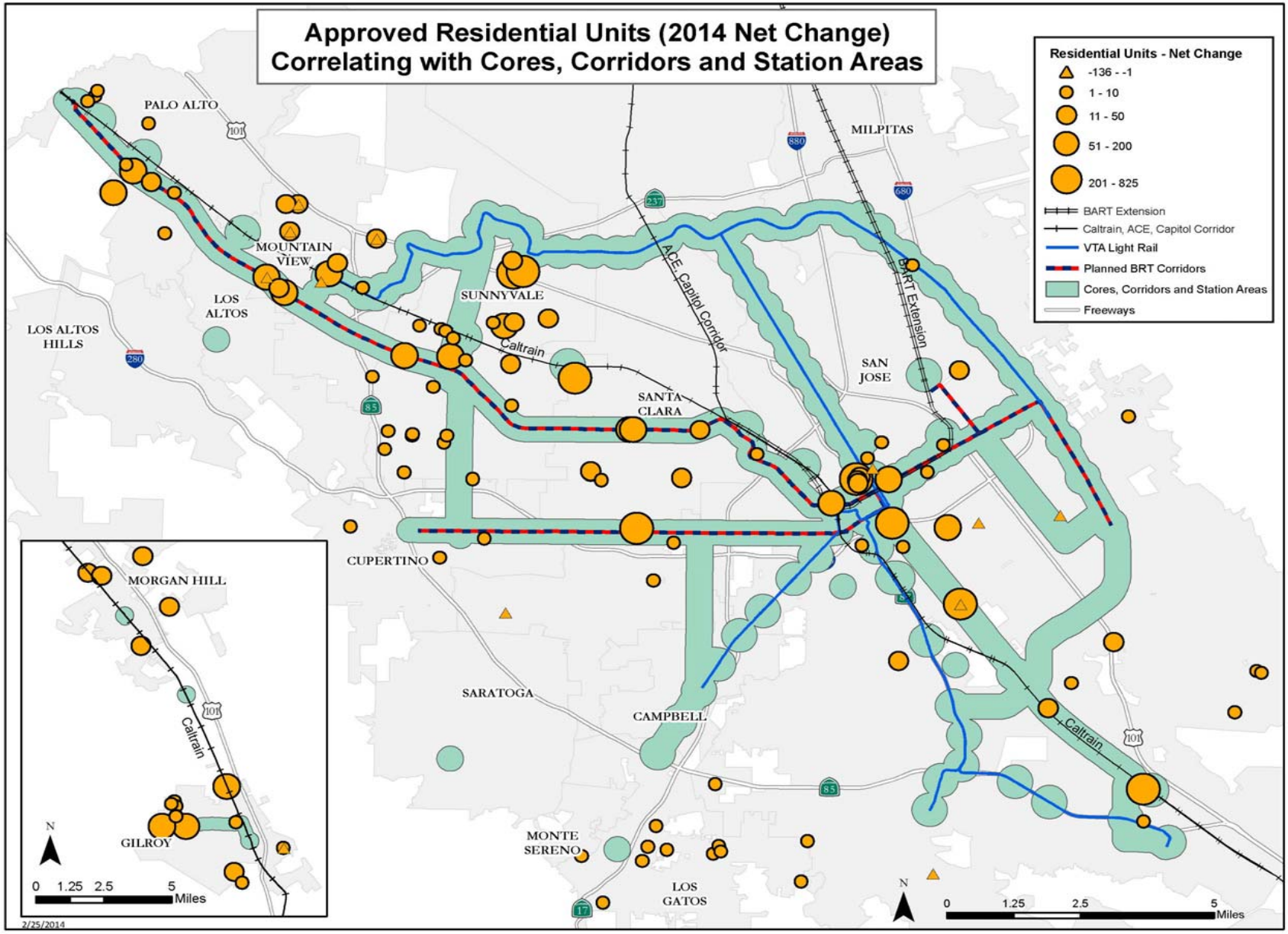


FIGURE 2.5 | JOB CHANGE ESTIMATES NEAR VTA'S CORES, CORRIDORS AND STATION AREAS (2014 NET CHANGE)

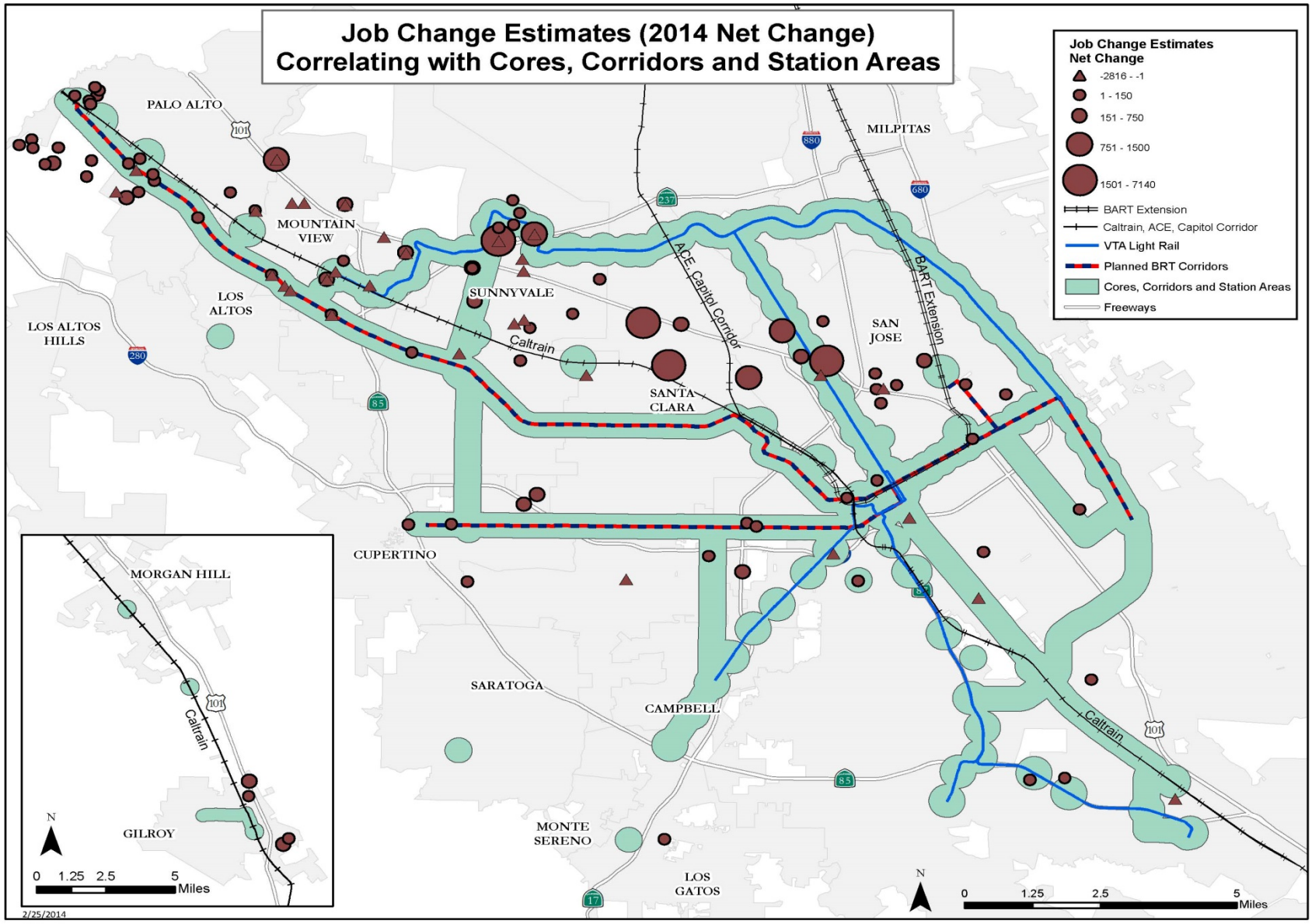


FIGURE 2.5 | RESIDENTIAL APPROVALS NEAR VTA'S CORES, CORRIDORS, AND STATION AREAS (2010-2014)

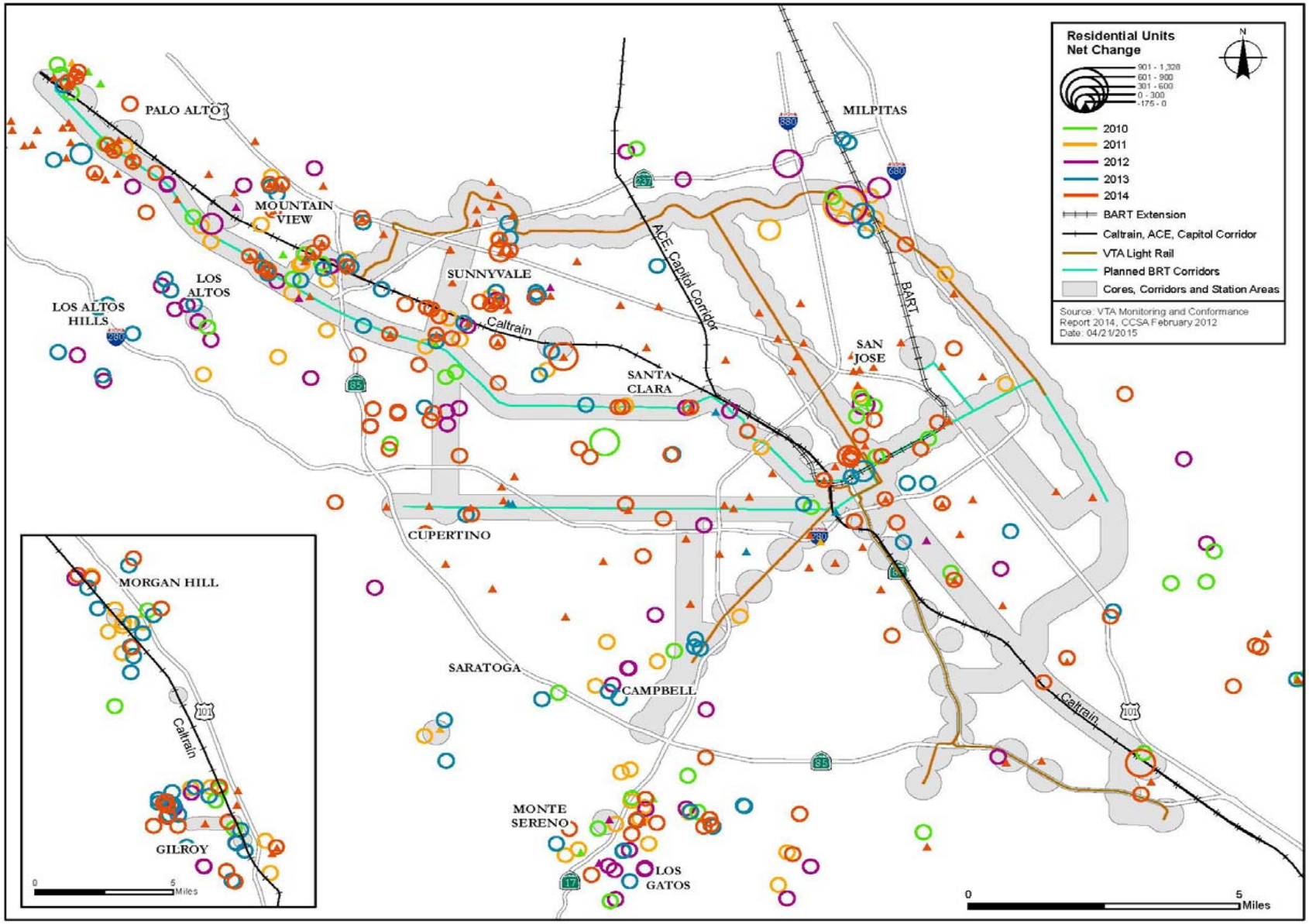
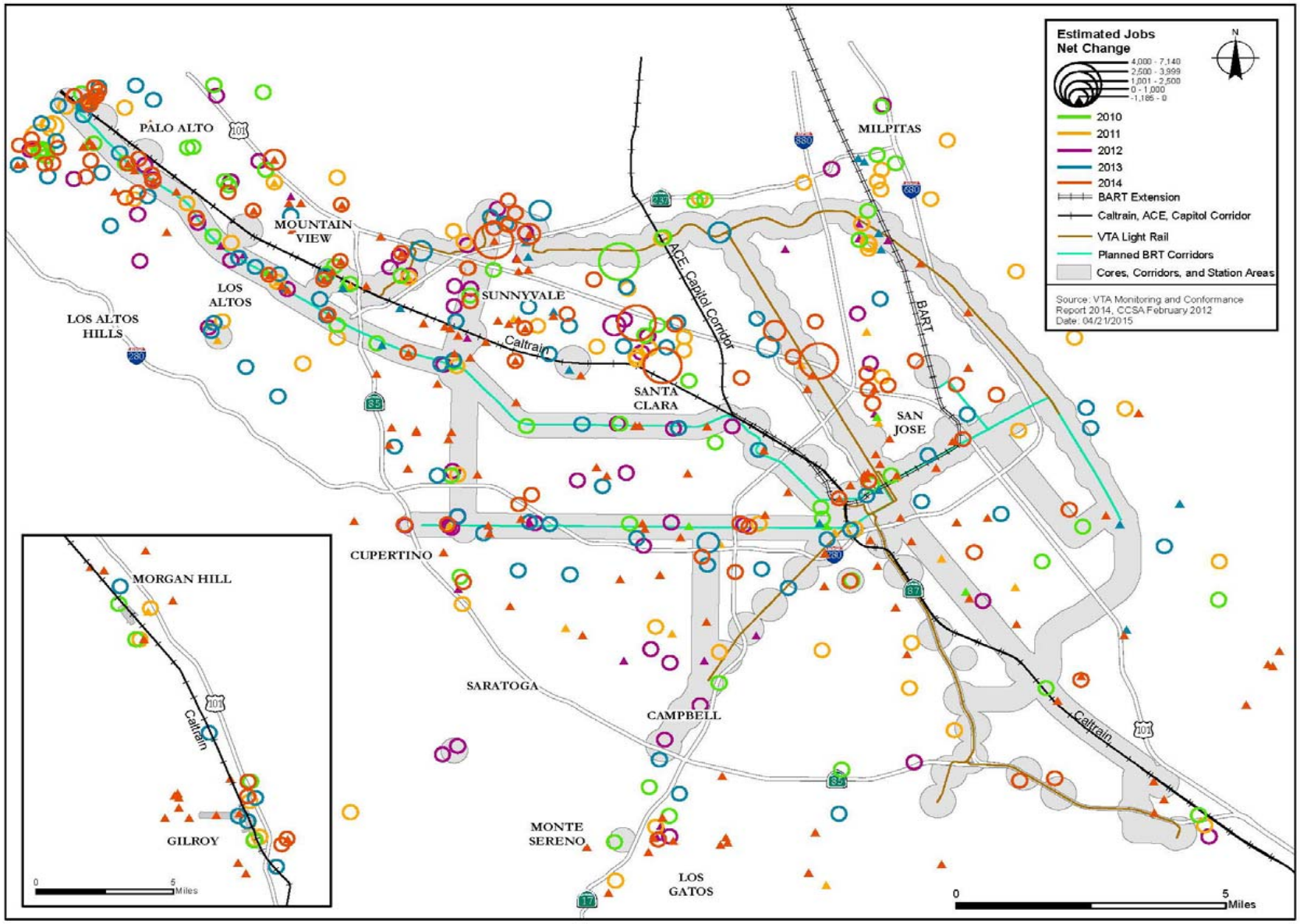


FIGURE 2.5 | JOB CHANGE ESTIMATES NEAR VTA'S CORES, CORRIDORS, AND STATION AREAS (2010-2014)



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3 CMP INTERSECTIONS

INTRODUCTION

The CMP arterial system encompasses the county's major arterials. VTA monitors 252 major intersections in Santa Clara County for traffic level-of-service (LOS). CMP intersection LOS data is collected and evaluated every two years. Intersection counts were last collected in 2012.

CMP intersections which operated at LOS F since level of service began in 1991 are exempt from meeting the level of service standard of LOS E. All other intersections that degrade to LOS F since 1991 are considered non-conforming. Non-conforming intersections place the responsible jurisdictions at risk for losing their gas tax subventions under Proposition 111 (1991).

METHODOLOGY

The methodology used to determine the level of service for each intersection is consistent with the thresholds outlined in VTA's *Traffic Level of Service Guidelines*, which are based on average control per delay per the 2000 *Highway Capacity Manual*. The average control delay thresholds with their corresponding LOS grades for CMP signalized intersections are presented in Table 3.1.

DATA COLLECTION

Similar to the 2012 study, all intersection turn movement counts were collected by Kittelson & Associates (KAI) by using the data collection subconsultants, Wiltec and Quality Counts. Additionally, all intersections, except those within the City of Campbell and the City of Cupertino, were analyzed by KAI. The Cities of Campbell and Cupertino have opted to perform their own analysis of intersection LOS for their respective intersections based on intersection turn movement counts supplied by KAI.

The data collected for this analysis included PM peak period vehicle, pedestrian, and bicycle counts at 251 of the 252 intersections that are part of the CMP network. The intersection at the Interstate 880 Southbound off-ramp to Steven Creek Boulevard (#3056) was under construction in 2014, therefore, data were not collected this year. The peak period collected was either 4:00-6:00PM or 4:30-6:30PM depending on the preference of the local agency. Table presents the local agencies' preferred time period for collecting counts at CMP intersections as well as the number of intersections within their jurisdiction.

Table 3.1 - Level of Service Thresholds for Signalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	Description
A	≤ 10	Progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.
B+	10 < delay ≤ 12	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher average delays.
B	12 < delay ≤ 18	
B-	18 < delay ≤ 20	
C+	20 < delay ≤ 23	Higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
C	23 < delay ≤ 32	
C-	32 < delay ≤ 35	
D+	35 < delay ≤ 39	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
D	39 < delay ≤ 51	
D-	51 < delay ≤ 55	
E+	55 < delay ≤ 60	This is considered to be the limit of capacity. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.
E	60 < delay ≤ 75	
E-	75 < delay ≤ 80	
F	> 80	This is considered to be unacceptable to most drivers. This condition occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Table 3.2 - Peak Period Data Collection by VTA Member Agency

Agency	Peak Period	Number of Intersections
City of Campbell	4:30-6:30pm	5
City of Cupertino	4:30-6:30pm	14
City of Gilroy	4:00-6:00pm	1
City of Los Gatos	4:00-6:00pm	3
City of Milpitas	4:00-6:00pm	2
City of Mountain View	4:30-6:30pm	6
City of Palo Alto	4:00-6:00pm	8

Agency	Peak Period	Number of Intersections
City of San Jose	4:00-6:00pm	117
City of Santa Clara	4:00-6:00pm	15
Santa Clara County	4:30-6:30pm	72
City of Saratoga	4:00-6:00pm	1
City of Sunnyvale	4:30-6:30pm	8

DATA COLLECTION QUALITY ASSURANCE

Manual counts for each turn movement were performed in a video reduction center where counters review video of each intersection. It was determined that the use of video data offers a cost-effective and accurate approach to data collection as it allows counters to collect counts in a controlled setting, and return to the video to verify numbers and perform re-counts as necessary without having to return to the field. The counts collected were then reviewed for aspects of quality control which include, but are not limited to accuracy of lane configurations, consistent count volumes between adjacent intersections, accuracy of count details (times, dates, etc), and data integrity. Most sites are then subjected to test counts, which consist of recounting 15-minute segments of a location to verify accuracy.

LEVEL OF SERVICE ANALYSIS

In previous years, VTA member agencies were responsible for inputting all data into a TRAFFIX™ database and running the LOS analysis in TRAFFIX™. This information was then forwarded to the chosen consultant to consolidate the data into one master file. Since 2012, member agencies have the option to have KAI perform the analysis on intersections located within their jurisdiction. Agencies selecting this option were asked to provide any signal timing updates they wanted to include since the 2012 monitoring cycle, while the rest of the data input and analysis was performed by KAI. TABLE 3.3 presents a list of member agencies, the party responsible for the intersection analysis, and whether signal timing updates were provided to KAI for the 2014 Monitoring Study.

TABLE 3.3 - TRAFFIX™ IMPLEMENTATION ANALYSIS

Member Agency	Number of Intersections	Int. Analysis Performed by:	Signal Timing Changes from 2010
City of Campbell	5	Campbell	N/A
City of Cupertino	14	Cupertino	N/A
City of Gilroy	1	VTA/Consultant	No
City of Los Gatos	3	VTA/Consultant	No
City of Milpitas	2	VTA/Consultant	No
City of Mountain View	6	VTA/Consultant	No
City of Palo Alto	8	VTA/Consultant	No
City of San Jose	117	VTA/Consultant	Yes
City of Santa Clara	15	VTA/Consultant	No
Santa Clara County	72	VTA/Consultant	Yes
City of Saratoga	1	VTA/Consultant	No
City of Sunnyvale	8	VTA/Consultant	Yes

LOS ANALYSIS QUALITY ASSURANCE

A quality assurance process was employed to check the accuracy and reasonableness of the intersection LOS evaluations conducted for the 2014 Monitoring Program. The first step in this process was to check that all intersection counts had been entered into the TRAFFIX™ file correctly. This was done by comparing the TRAFFIX™ volume output file to an excel spreadsheet that contained all the counts collected for this monitoring cycle.

Once all of the monitored intersections' volumes were checked, a 'triage' approach was used to identify intersections requiring more detailed review, using the following criteria:

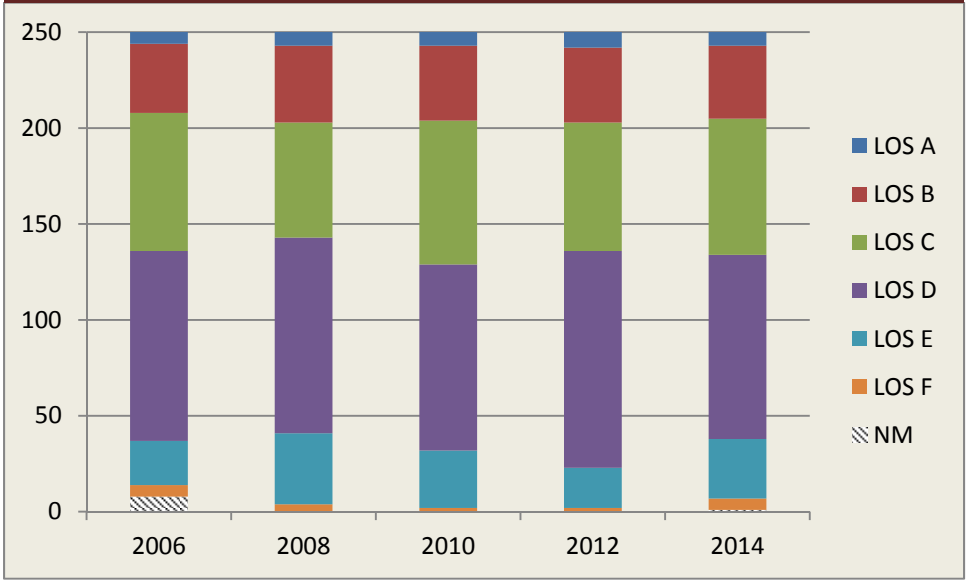
- Intersections at LOS F in 2014 that were at LOS E or better in 2012.
- Intersections at LOS E in 2014 that were at LOS F in 2012.
- Intersections that jumped two levels of service, either up or down, between 2012 and 2014.
- Other intersections identified by local agency staff familiar with local conditions where the computed LOS does not match prevailing field conditions.

Identified triage intersections were then reviewed to determine whether the resultant 2014 levels of service were reasonable.

OVERALL INTERSECTION OPERATIONS

Figure 3.1 presents the LOS results for the past four monitoring cycles. As the graph shows, the number of intersections at LOS A, LOS B, and LOS F have stayed consistent while intersections in the LOS C, LOS D and LOS E range experienced the most change over the four cycles. The 2014 data show that the number of intersections operating at LOS E increased the most. However, more than half of these intersections are intersections improving from LOS E in 2012 rather than LOS C intersections degrading in 2014.

Figure 3.1 Number of Intersections at each LOS, 2006-2014



LOS-EXEMPT INTERSECTIONS AT LOS F

Table 3.4 lists the intersections that operated at LOS F this year but are exempt from the CMP LOS standard. Intersections are defined as exempt if they operated at LOS F under the 1991 baseline conditions. The intersection of Montague Expressway and Main Street was at LOS D in 2010 and 2012, but had primarily operated at LOS F before then. The change in 2014 from LOS D to LOS F at this intersection was primarily the result of adjustments made to the signal timing used in the TRAFFIX™ file by Santa Clara County to better match field conditions.

TABLE 3.4 | LOS EXEMPT INTERSECTIONS AT LOS F

ID	CMP System Roadway	Cross-Street	Location	Jurisdiction
5205	Page Mill/Oregon Exp.	Foothill Exp.	Palo Alto	SC County
5430	San Tomas Exp.	Campbell Av.	Campbell	SC County
5724	Capitol Exp.	Aborn Rd.	San Jose	SC County
5801	Montague Exp.	Main St./Old Oakland Rd.	Milpitas	SC County
5809	Montague Exp.	McCarthy Blvd./O'Toole Av.	Milpitas	SC County

DEFICIENT INTERSECTIONS

Central Expressway & De La Cruz Boulevard and Foothill Expressway and El Monte Avenue are the only intersections that are deficient in 2014 (see Table 3.5). Central & De La Cruz has been deficient since 1996. Prior to 1996, this intersection was operating at LOS E. Altogether, The intersection of Montague Expressway and Main Street was at LOS D in 2010 and 2012, but had primarily operated at LOS F before then. The change in 2014 from LOS D to LOS F at this intersection was primarily the result of adjustments made to the signal timing used in the TRAFFIX™ file by Santa Clara County to better match field conditions.

While VTA and County staff will take a close look to determine the cause of the LOS F result at Foothill and El Monte, the preliminary findings indicate that the change in LOS may be in part due to changes in signal operations at the intersection. The County will work with VTA and the City of Los Altos to improve the LOS to an acceptable level while optimizing Expressway operations, or identify other offsetting measures.

TABLE 3.5 | DEFICIENT INTERSECTIONS

ID	CMP System Roadway	Cross-Street	Location	Jurisdiction
5335	Central Expressway	De la Cruz Blvd.	Santa Clara	SC County
5215	Foothill Expressway	El Monte Ave.	Los Altos	SC County

Thirty-one (31) intersections operating at LOS E are nearing capacity in 2014. In 2012, twelve (12) of these intersections were at LOS E and are shown in Table 3.6. Nineteen (19) intersections operated at LOS D or better in 2012 and are shown in Table 3.7.

TABLE 3.6 | INTERSECTIONS OPERATING AT LOS E IN 2012 & 2014

ID	CMP System Roadway	Cross-Street	Location	Jurisdiction
701	Calaveras Blvd. (Rte. 237)	Abel St.	Milpitas	Milpitas
5108	Page Mill/Oregon Exp.	Middlefield Rd.	Palo Alto	SC County
5405	San Tomas Exp.	Stevens Creek Blvd.	Santa Clara	SC County
5416	San Tomas Exp.	El Camino Real (Rte 82)	Santa Clara	SC County
5419	San Tomas Exp.	Homestead Rd.	Santa Clara	SC County
5432	Hwy 17 (SB)	San Tomas Exp./Camden Av.	Campbell	SC County
5513	Almaden Exp.	Blossom Hill Rd.	San Jose	SC County
5611	Lawrence Exp.	Arques Av.	Sunnyvale	SC County
5723	Capitol Exp.	Silver Creek Rd.	San Jose	SC County
5732	Capitol Exp.	Story Rd.	San Jose	SC County
5802	Montague Exp.	Trade Zone Blvd./McCandless	Milpitas	SC County
5807	Montague Exp.	First St.	San Jose	SC County

TABLE 3.7 | INTERSECTIONS OPERATING AT LOS E IN 2014 AND D OR BETTER IN 2012

ID	CMP System Roadway	Cross-Street	Location	Jurisdiction
5012	S. Bascom Avenue	Moorpark Av.	San Jose	SC County
5214	Foothill Exp.	San Antonio Rd.	Los Altos	SC County
5215	Foothill Exp.	El Monte Av.	Los Altos	SC County
5220	Foothill Exp.	Magdalena Av./Springer Rd.	Los Altos	SC County
5305	Central Exp.	Rengstorff Av.	Mountain View	SC County
5308	Central Exp.	Castro St./Moffett Blvd.	Mountain View	SC County
5320	Central Exp.	Mary Av.	Sunnyvale	SC County
5329	Central Exp.	Bowers Av.	Santa Clara	SC County
5332	Central Exp.	Scott Blvd.	Santa Clara	SC County
5334	Central Exp.	Lafayette St.	Santa Clara	SC County
5422	San Tomas Exp.	Saratoga Av.	Santa Clara	SC County
5429	San Tomas Exp.	Hamilton Av.	Campbell	SC County
5603	Lawrence Exp.	Tasman Dr.	Sunnyvale	SC County
5613	Lawrence Exp.	Reed Av.	Sunnyvale	SC County
5625	Lawrence Exp.	Homestead Rd.	Sunnyvale	SC County
5633	Lawrence Exp.	Bollinger Rd./Moorpark Av.	San Jose	SC County
5721	Capitol Exp.	McLaughlin Av.	San Jose	SC County
5803	Montague Exp.	Capitol Av.	Milpitas	SC County
5805	Montague Exp.	Mission College Blvd.	Santa Clara	SC County

INTERSECTIONS IMPROVING FROM LOS F

During the 2014 monitoring cycle, two intersections were identified as operating at LOS F. Both of these intersections remained at LOS F on 2014, so there were no intersections improving from LOS F.

INTERSECTIONS THAT CHANGED TWO LEVELS OF SERVICE

A total of three intersections were identified as changing by two LOS grades or more between 2012 and 2014 and are shown in Table 3.8. The reasons for these large changes in LOS include:

- Foothill Expressway and San Antonio Road – The saturation flow rate for the southbound through movement used in the analysis was reduced between 2012 and 2014 by the County to better reflect field conditions. Additionally, minimum green times were adjusted to match better match field signal timings.
- Central Expressway and Whisman Road – The cycle length for the intersection was reduced, which resulted in the change to LOS.

- Montague Expressway and Main Street/Old Oakland Road – Intersection signal timing was adjusted in the analysis file to better match field conditions. This resulted in the change to LOS F. However, this intersection is exempt from meeting the LOS standard because it was operating at LOS F in 1991.

TABLE 3.8 | INTERSECTIONS THAT CHANGED TWO LEVELS OF SERVICE BETWEEN 2012 AND 2014

ID	CMP System Roadway	Cross-Street	Location	2012 LOS	2014 LOS
5214	Foothill Exp.	San Antonio Rd.	Los Altos	B	E-
5313	Central Exp.	Whisman Rd.	Mountain View	B-	D+
5801	Montague Exp.	Main St./Old Oakland Rd.	Milpitas/San Jose	D-	F

LOS RESULTS

Table 3.9 displays the LOS results for each monitored intersection from the 1991 baseline year through 2014. The "Location" column describes the agency responsible for maintaining the LOS standard, whereas the "Jurisdiction" column is the agency that operates the intersection; occasionally, these agencies are not the same.

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
101	S. Bascom Avenue	Campbell Av.	Campbell	Campbell	E	C	NM	B	B	D-	C	C	C	C	C	C-	C-	C	C	C
102	Hamilton Avenue	Winchester Blvd.	Campbell	Campbell	E	D	NM	D	E	E	D-	D-	D	D	D	D	E+	E+	D	D
103	Hwy 17 (NB)	Hamilton Av.	Campbell	State	A	A	NM	C	C	B	C+	C+	C	B-	B-	C	C	C+	C	C+
104	Hwy 17 (SB)	Hamilton Av.	Campbell	State	F	F	E	E	E	E	E	E	E	E-	E	E	E	E	E	D
105	Hamilton Avenue	Bascom Av.	Campbell	Campbell	D	D	NM	E	E	E	E	E-	E	E	D	D-	E+	E+	D-	D
202	Hwy 280 NB Ramps	Wolfe Rd.	Cupertino	Cupertino					NM	B-	B	B+	B	B	A	B+	B	B	B	B+
203	Hwy 280 SB Ramps	Wolfe Rd.	Cupertino	Cupertino					NM	B	B+	A	A	B+	A	B+	A	A	A	A
204	Stevens Creek Blvd.	Wolfe Rd./Miller Av.	Cupertino	Cupertino	D	D	D	C	D	C	D+	D+	D+	C	C	D+	D+	D+	D+	D
206	Sara-Sunny Rd/De Anza Blvd.	Prospect Rd.	Cupertino	Cupertino	NM	NM	NM	D	D	C-	C	C	D+	D	C	D	C	B-	C	C
208	Hwy 85 SB Ramps	Sara-Sunny Rd/De Anza Blvd.	Cupertino	Cupertino	NM	NM	NM	D	D	C+	C	C	C	C-	C-	C	C-	C	C	B
209	Hwy 85 NB Ramps	Sara-Sunny Rd/De Anza Blvd.	Cupertino	Cupertino	NM	NM	NM	C	C	C+	C	C+	C+	C-	B	C	D	B	B	B+
210	De Anza Blvd. (Rte. 85)	Bollinger Rd.	Cupertino	Cupertino	E	D	D	D	C	C	C	C	C	C	B-	C	C	C	C	C
211	De Anza Blvd. (Rte. 85)	Stevens Creek Blvd.	Cupertino	Cupertino	E	D	D	D	D	D	D	D	E	D	C-	D	D-	D	D	D
212	Hwy 280 SB Ramps	De Anza Blvd.	Cupertino	Cupertino	D	C	C	C	C	C	D	C	C	C-	B	C	B-	B	B-	C+
213	Hwy 280 NB Ramps	De Anza Blvd.	Cupertino	Cupertino	F	E	D	C	D	C	D+	C-	C	D+	C	C	C+	C+	C-	C
214	De Anza Blvd. (Rte. 85)	Homestead Rd.	Cupertino	Cupertino	E	D	D	D	D	D-	D	D	E+	D+	C-	D+	D+	D+	D+	D+
217	Stevens Creek Blvd.	Stelling Rd.	Cupertino	Cupertino	D	D	D	D	D	D	C	D+	D	D+	D	D	D	D	C-	D
219	Stevens Creek Blvd.	Hwy 85 SB Ramp	Cupertino	Cupertino	C	C	B	C	C	C	B	B-	C+	C+	C	C	C	C	C	C+
220	Stevens Creek Blvd.	Hwy 85 NB Ramp	Cupertino	Cupertino	B	B	B	C	D	B-	B-	C+	B-	C	C	C-	C-	C	B-	C+
301	Monterey Hwy. (Rte. 152)	Leavesley Rd.	Gilroy	State	C	C	NM	D	D	C	C	C	C	C	C	C	C	C	C	C

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
601	Saratoga-Los Gatos (Hwy. 9)	University Av.	Los Gatos	State	C	C	NM	C	C	D	D	C	C-	D	C-	C	C	C	C	C
602	Saratoga-Los Gatos (Hwy. 9)	Santa Cruz Av.	Los Gatos	State	D	D	NM	D	D	D	D	D	E+	D	D	D	D	D+	D+	D+
603	Los Gatos Blvd.	Lark Av.	Los Gatos	Los Gatos	C	NM	NM	B	C	C-	D	C-	D	D	D+	C-	E+	D+	D+	C-
701	Calaveras Blvd. (Rte. 237)	Abel St.	Milpitas	Milpitas	E	F	D	E	D	D	D-	D-	D-	D	D	D	D	E+	E	E
702	Calaveras Blvd. (Rte. 237)	Milpitas Blvd.	Milpitas	Milpitas	F	F	D	D	D	E+	E+	E	D	D	D+	E+	D	E	D	D
1001	El Camino Real (Rte. 82)	Castro St.	Mountain View	State	D	D	D	D	D	E	E+	D	D	D	D	C	D	D+	D	D
1002	El Camino Real (Rte. 82)	El Monte Av.	Mountain View	State	C	B	B	B	C	C	D	C-	D+	C-	D+	C	C	C	C-	D
1003	El Camino Real (Rte. 82)	Hwy 237/Grant Rd.	Mountain View	State	E	D	D	D	D	F	F	D-	D-	D-	D	D	D-	D-	E+	D
1004	El Camino Real (Rte. 82)	Miramonte Av./Shoreline Blvd.	Mountain View	State	D	D	D	D	C	E	E-	D	D	D	D	D	D-	D	D	D
1005	El Camino Real (Rte. 82)	Rengstorff Av.	Mountain View	State	C	D	D	C	C	D-	C-	C	C	C	C	C+	C	C+	C	C
1006	El Camino Real (Rte. 82)	San Antonio Rd.	Mountain View	State	E	D	D	D	D	D-	E	D-	D-	D	D	D	D	D	D	D
1100	El Camino Real (Rte. 82)	Alma Av.	Palo Alto	State	B	B	NM	B	B	B	B	C	D	D+	D	D	D+	D+	D+	C-
1102	El Camino Real (Rte. 82)	Embarcadero Rd./Galvez	Palo Alto	State	D	D	NM	D	D	D	D	D	E	D-	D	D+	D	D	D+	D+
1104	El Camino Real (Rte. 82)	Page Mill Rd./Oregon Expwy.	Palo Alto	State	E	D	NM	E	D	E	E	E+	E+	E+	D	D	D	D	D	D
1106	El Camino Real (Rte. 82)	Charleston Rd./Arastradero	Palo Alto	State	D	D	NM	D	D	E+	E+	D-	D	D	D	D	D	D	D	D
1108	San Antonio Rd.	Charleston Rd.	Palo Alto	Palo Alto	D	D	NM	D	D	D	D	D	D	D	D	D+	D	D	D	D

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
1110	San Antonio Rd.	Middlefield Rd.	Palo Alto	Palo Alto	D	D	NM	E	E	E	E+	E	E	D-	D	D+	D	E	D+	D+
1112	El Camino Real (Rte. 82)	Palm Dr. (San Mateo Co.)	Palo Alto	Palo Alto	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	C	C	C	C	C
1114	El Camino Real (Rte. 82)	University Av. (San Mateo Co.)	Palo Alto	Palo Alto	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	C	C+	C	C-	C
1200	Bowers Avenue	Scott Blvd.	Santa Clara	Santa Clara	D	D	D	C	C	D+	D	E+	D	D	C-	C	C	C	C	C
1201	El Camino Real (Rte. 82)	Kiely Blvd./Bowers Av.	Santa Clara	State	D	D	NM	D	D	D	D	D	D	D	D	C-	D	C-	C	C-
1202	El Camino Real (Rte. 82)	Lafayette St.	Santa Clara	Santa Clara	D	D	D	C	D	D	D+	D+	D	D	D+	D	D+	D+	D	D
1203	El Camino Real (Rte. 82)	Lincoln Av.	Santa Clara	Santa Clara	B	B	NM	B	B	C+	C+	C+	C+	C+	C+	C	C+	C+	C	C
1204	El Camino Real (Rte. 82)	Monroe St.	Santa Clara	Santa Clara	B	C	NM	B	C	C	D+	C	D+	D+	C	C-	C-	C-	C	C-
1205	El Camino Real (Rte. 82)	Scott Blvd.	Santa Clara	Santa Clara	D	C	NM	C	C	C-	C-	D+	D	D	D	D+	D	D+	D+	D+
1206	Great America Parkway	Mission College Blvd.	Santa Clara	Santa Clara	E	D	D	E	E	E	E	F	E	E-	D-	D-	D-	D	D	D
1207	Great America Parkway	Tasman Dr.	Santa Clara	Santa Clara	B	B	NM	B	C	C	C	C-	D+	D	C	C	C-	C	C	C
1208	Hwy 101 (SB)	Bowers Av.	Santa Clara	State	B	A	NM	A	A	B+	B	B	B-	B	B	B+	A	A	A	A
1209	Hwy 101 (NB)	Great America Pkwy.	Santa Clara	State	C	B	NM	B	C	B	B	B	C+	C	B-	A	A	A	A	A
1210	Hwy 280 (SB)	Stevens Creek Blvd.	Santa Clara	State	E	D	D	E	D	C	C	C	C-	D	D+	D+	E+	C	C	C
1211	Stevens Creek Blvd.	Lawrence Expwy. (E side)	Santa Clara	Santa Clara	B	B	NM	C	B	C+	C	C	D+	D+	D+	C-	C	C	C	C
1212	Stevens Creek Blvd.	Lawrence Expwy. (SB ramp)	Santa Clara	Santa Clara	B	A	NM	B	C	C	C	C+	D+	B	C	C	C	C	C	C
1213	The Alameda (Rte 82)	El Camino Real (Rte 82)	Santa Clara	State	A	B	NM	B	B	B	C	C+	B-	B	C+	B	C	B	B	B
1214	Lawrence Exp.	El Camino Real (Rte 82)	Santa Clara	State	NM	NM	NM	NM	NM	B	C-	D	D+	D	C-	C	C	C	C	C

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
1301	Big Basin Way (Hwy 9)	Saratoga-Los Gatos Rd.	Saratoga	State	E	D	NM	C	D	D	D+	D	D	D	C-	D	D+	D+	D+	D+
1401	Saratoga-Sunnyvale Rd.	Fremont Av.	Sunnyvale	Sunnyvale	D	D	NM	D	D	D	D	D	D-	D	D	NM	D	D	D	D
1402	Saratoga-Sunnyvale Rd.	Remington Dr.	Sunnyvale	Sunnyvale	E	C	NM	D	D	D	D	D	D	D	D	NM	D	C-	D	D
1404	El Camino Real (Rte. 82)	Fair Oaks Av.	Sunnyvale	State	D	E	D	E	D	E+	D-	D	D	D	D	D	D+	D	D	D
1405	El Camino Real (Rte. 82)	Wolfe Rd.	Sunnyvale	State	E	E	E	E	E	E	E	E	E	D	D	D-	E-	D	D	D
1406	El Camino Real (Rte. 82)	Mary Av.	Sunnyvale	State	D	D	NM	D	D	D	D	D	D	D	D+	D+	D	D	D	D+
1407	El Camino Real (Rte. 82)	Mathilda Av.	Sunnyvale	State	D	E	E	D	E	E+	E	F	E+	E+	C-	D	D	D	D	D
1412	Mathilda Avenue	Java Dr.	Sunnyvale	Sunnyvale	B	B	NM	C	C	C+	NM	C-	C	C	C+	C	C-	C	C	C
1413	Mathilda Avenue	Maude Av.	Sunnyvale	Sunnyvale	D	D	NM	C	D	D	D	D	D	D+	C	D+	D+	C-	D+	D+
2001	Saratoga-Los Gatos (Hwy. 9)	Quito Rd.	SC County	State	A	A	NM	A	B	B	B	B	B	B	B+	B+	B+	B+	B+	B+
3001	Hwy 85	Bascom Av.(North)	San Jose	San Jose	NM	NM	NM	C	B	B	B	B	B	B-	B	C+	C+	C+	C+	C+
3002	Hwy 85	Bascom Av.(South)	San Jose	San Jose	NM	NM	NM	C	B	B	B	B	B	B	B	C+	C+	C	C	C
3003	Hwy 85	Bernal Rd.	San Jose	San Jose	NM	NM	NM	C	C	C	D	D-	D+	D+	C	C	C	C	B	B-
3004	Hwy 85	Blossom Hill Rd. (North)	San Jose	San Jose	NM	NM	NM	C	C	C+	C	D	D+	C-	C	C	C	C	C	C-
3005	Hwy 85	Blossom Hill Rd. (South)	San Jose	San Jose	NM	NM	NM	D	E	F	E+	D-	D-	D-	D	F	D-	E+	E+	D
3006	Hwy 85	Camden Av. (North)	San Jose	San Jose	E	NM	C	D	D	D+	C	C	C	C	C	C	C	C	C	C
3007	Hwy 85	Camden Av. (South)	San Jose	San Jose	NM	NM	NM	D	D	E	E+	E	D-	E+	D-	D-	E+	E+	D	D
3008	Hwy 85	Cottle Rd. (North)	San Jose	San Jose	NM	NM	NM	B	C	C+	B	B-	B	B	B+	B	B	A	B	B+
3009	Hwy 85	Cottle Rd. (South)	San Jose	San Jose	NM	NM	NM	C	D	C-	C	C	C	C	C	C	C-	C-	D	C-

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
3010	Hwy 85	Santa Teresa Blvd. (North)	San Jose	San Jose	NM	NM	NM	C	C	D	D	D	D	NM	NM	C	C	C	C	C
3011	Hwy 85	Santa Teresa Blvd. (South)	San Jose	San Jose	NM	NM	NM	C	C	C+	C	C	C	C	B	B	B	C+	B-	B-
3012	Hwy 87	Coleman Av.	San Jose	San Jose	C	B	NM	B	B	B	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3013	Hwy 87	Julian St. (East)	San Jose	San Jose	D	D	NM	D	D	E	D-	D	D+	D	D+	NM	D	D	D	D
3014	Hwy 87	Julian St. (West)	San Jose	San Jose	B	B	NM	C	C	B	B	B-	B	B	B	B	B	B	B	B-
3015	Hwy 87	E. Santa Clara St. (NB Off)	San Jose	San Jose	NM	NM	NM	C	C	B	B	B	B	B	B	NM	B	B	B	B
3016	Hwy 101	Santa Clara (East)	San Jose	State	B	NM	B	C	C	B	B	B	B	B	B	B	B	B	B	B
3017	Hwy 101	Bernal Rd.	San Jose	State	A	A	NM	A	B	B	B	B	B	B	B+	B+	B+	B+	B	B
3018	Hwy 101	Blossom Hill Rd. (East)	San Jose	State	D	D	NM	D	D	D+	C-	D-	D	D	C-	C	C	C	C	C
3019	Hwy 101	Blossom Hill Rd. (West)	San Jose	State	B	B	NM	B	B	C+	B-	C+	C	C	C+	B	B	C	B	B
3020	Hwy 101	Brokaw Rd.	San Jose	San Jose	B	NM	B	B	C	C	C-	C-	C	C	C	C+	C	C+	C+	B-
3021	Hwy 101	Oakland Rd. (North)	San Jose	State	B	NM	B	C	C	C	C	C	C	C	C+	C+	C	C+	C+	C
3022	Hwy 101	Oakland Rd. (South)	San Jose	State	C	NM	C	C	C	D+	D+	D+	D+	D	C	C-	C	C	C	C-
3023	Hwy 101	Santa Clara St. (West)	San Jose	State	C	NM	C	D	C	B	B	B	B	B	B	B	B	B	B	B
3024	Hwy 101	Yerba Buena Rd.(East)	San Jose	State	B	C	NM	C	B	B-	B	C+	C+	C+	C+	B	B	C+	C+	C+
3025	Hwy 101	Yerba Buena Rd.(West)	San Jose	State	C	D	NM	C	C	C	C	C	C	C	C	C+	C	C+	C+	C
3026	Hwy 237	First St. (North)	San Jose	State	F	D	NM	NM	C	B-	C+	B	B	B	B	B	B-	B-	B-	B-
3027	Hwy 237	First St. (South)	San Jose	State	F	D	NM	NM	C	C	D+	C	C	C+	C+	C+	C+	B-	C+	C+
3028	Hwy 237	Great America Pkwy. (N.)	San Jose	State	F	F	C	NM	B	C	C	C	C	C	C	B	B	B	B	B
3029	Hwy 237	Great America Pkwy. (South)	San Jose	State	F	F	C	NM	A	B	B	B	B-	C+	B	B	B+	A	B+	B+
3030	Hwy 237	Zanker Rd. (North)	San Jose	State	F	F	NM	NM	B	B	C+	B	B	B	B+	B+	B+	B	B	B+
3031	Hwy 237	Zanker Rd. (South)	San Jose	State	F	F	NM	NM	B	B	C+	B	B	B	B+	B	B+	B	B	B
3032	Hwy 280	Bird Av. North	San Jose	San Jose	C	C	NM	C	C	C	C-	C	C	C-	C	C-	C	C	C	C

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
3033	Hwy 280	Bird Av. South	San Jose	San Jose	B	B	NM	B	C	B	C+	C	C	C	C-	C-	C	C	C	C+
3034	Hwy 280	11th St. North	San Jose	San Jose	B	B	NM	B	B	B	B	B	B	B	B	B	B	B	B	B
3035	Hwy 280	11th St. South	San Jose	San Jose	B	B	NM	A	B	B	B	B	B	B	B	B	B	B	B	B
3036	Hwy 280	McLaughlin Av.	San Jose	San Jose	B	B	NM	B	B	B-	B	B	B	B	B	B	B	B	B	B
3037	Hwy 280	Moorpark Av.	San Jose	San Jose	B	B	NM	C	C	C	C	C	C	C	C	C	B+	B	B	B
3038	Hwy 280	Saratoga Av. North	San Jose	San Jose	B	C	NM	B	C	C+	E	B	B-	C+	B-	C	B-	B-	C+	C+
3039	Hwy 280	Saratoga Av. South	San Jose	San Jose	B	B	NM	C	E	F	F	C-	D+	D	D+	D	D	D	C-	C
3040	Hwy 280	10th St. North	San Jose	San Jose	B	B	NM	B	B	B	B	B	B	B	B	B	B	B	B	B
3041	Hwy 280	10th St. South	San Jose	San Jose	B	B	NM	B	B	B	B-	B	B	B	B	B	B	B	B-	B
3042	Hwy 680	Alum Rock Av. (East)	San Jose	State	B	B	NM	B	B	C	B-	C	C	C	C+	C	C-	C	C	C
3043	Hwy 680	Alum Rock Av. (West)	San Jose	State	B	B	NM	B	B	C+	C+	C	C	C+	C+	C	C	C	C	C
3044	Hwy 680	King Rd. N	San Jose	San Jose	C	C	NM	C	C	C	C-	D+	D+	D+	C-	C-	C	C-	C-	C
3045	Hwy 680	King Rd. S	San Jose	San Jose	A	B	NM	B	B	C	C+	D+	D+	C	C-	C	C	C	C	C
3046	Hwy 880	The Alameda N	San Jose	San Jose	A	A	NM	B	A	B+	B+	B+	B+	B+	A	B	B	B	B	B
3047	Hwy 880	The Alameda S	San Jose	San Jose	A	A	NM	B	B	B+	B	B	B	B+	A	B-	B	C+	B-	C+
3048	Hwy 880	Bascom Av. N	San Jose	San Jose	B	B	NM	B	B	B	B	B	B	B	A	A	A	B+	A	B+
3049	Hwy 880	Bascom Av. S	San Jose	San Jose	B	C	NM	B	C	B+	C	A	B	B	B+	A	B+	B+	A	A
3050	Hwy 880	Brokaw Rd. E	San Jose	San Jose	B	B	NM	C	C	C+	C+	B-	B	B	C	C-	D+	C	C	C
3051	Hwy 880	Brokaw Rd. W	San Jose	San Jose	D	D	NM	D	D	C-	C-	C	C	C-	D	D	D	D+	D	C-
3052	Hwy 880	Coleman Av. N	San Jose	San Jose	B	B	NM	B	B	B	B	B	B	B	B+	NM	A	B+	B+	B+
3053	Hwy 880	Coleman Av. S	San Jose	San Jose	B	B	NM	B	D	B	B-	B	B	B	B	NM	B-	C+	C+	C
3054	Hwy 880	N. First St. N	San Jose	San Jose	A	A	NM	A	A	B+	B+	B	B	B	B	B	B-	B	C	C
3055	Hwy 880	N. First St. S	San Jose	San Jose	C	B	NM	B	B	B	B	B	B	B	B	B	B	B	B	B
3056	Hwy 880	Stevens Creek Blvd.	San Jose	San Jose	C	B	NM	C	C	C+	C	C+	B-	C+	C+	C+	C+	C+	B	NM
3057	The Alameda (Rte 82)	Hedding St.	San Jose	San Jose	D	C	NM	C	C	D	D	D	C-	C-	C	C-	C-	C-	D+	D+

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
3058	The Alameda (Rte 82)	Naglee Av.	San Jose	San Jose	D	C	NM	C	C	D	C	D	D+	D+	D+	D	D	D	D	D
3059	The Alameda (Rte 82)	Race St.	San Jose	San Jose	C	C	NM	C	C	D	C	C	C	C	C	C-	D+	C	C-	D
3060	Monterey Hwy/First St. (SR 82)	Alma Av.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D	D	D+	D	D	D	D	D
3061	E. San Carlos St. (Rte 82)	Almaden Blvd.	San Jose	San Jose	D	D	NM	D	D	E	D	D	D+	D+	C-	C-	D	D+	D+	C-
3062	Alum Rock Avenue (Rte. 130)	Capitol Av.	San Jose	State	D	D	NM	D	E	D+	D	D+	D+	NM	NM	D+	D	C-	C-	C
3063	Alum Rock Avenue (Rte. 130)	Jackson Av.	San Jose	State	D	E	D	D	E	D	D	D+	D+	D	D+	D	D-	D	D	D
3064	Alum Rock Avenue (Rte. 130)	King Rd.	San Jose	State	C	C	NM	D	D	D+	D+	D+	D+	D+	C-	C-	D	C-	C-	C-
3065	Alum Rock Avenue (Rte. 130)	White Rd.	San Jose	State	D	D	NM	D	D	E+	E+	D	D	D	D	D	D	D	D	D
3066	Autumn Street	Santa Clara St.	San Jose	San Jose	B	B	NM	B	B	B-	B-	B-	B-	B-	B	C	C+	B-	C+	C+
3067	S. Bascom Avenue	Camden Av.	San Jose	San Jose	D	D	NM	D	D	E	D-	D-	D	D-	D	D	D	D	D	D
3068	S. Bascom Avenue	Curtner Av.	San Jose	San Jose	C	C	NM	C	B	C	C+	C	D+	C	C-	D+	D	D	D+	D+
3069	S. Bascom Avenue	Samaritan Dr.	San Jose	San Jose	D	NM	C	D	D	D	D	D+	C	C+	C	C	D+	C-	D+	D
3070	S. Bascom Avenue	Stokes St.	San Jose	San Jose	D	D	NM	D	D	C-	C	C	C	C	C	C	C-	C	C	C
3071	S. Bascom Avenue	Union Av.	San Jose	San Jose	E	D	NM	D	D	C	D+	C-	D	D	D	C-	D+	D+	D	D
3072	Monterey Hwy. E	Bernal Rd.	San Jose	San Jose	B	B	NM	A	B	E	B	B	B	B-	B	B	B	A	B	B
3073	Monterey Hwy. N	Bernal Rd.	San Jose	San Jose	C	C	NM	B	C	D+	C-	C-	C-	C	C	C	C	C	C	C
3074	Monterey Hwy. S	Bernal Rd.	San Jose	San Jose	A	A	NM	A	A	A	A	B	A	A	A	A	A	A	A	A
3075	Santa Teresa Blvd.	Bernal Rd.	San Jose	San Jose	E	D	NM	D	D	D+	D	D	D	D+	C-	D+	D	D	D	D

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3076	Berryessa Rd.	Lundy Av.	San Jose	San Jose	E	E	E	D	D	D	D	D	D-	D	D	D	D	D	D	D
3077	Bird Avenue (Rte 82)	E. San Carlos St. (Rte 82)	San Jose	San Jose	C	C	NM	D	D	D+	D	D+	D	D	D+	D	D+	D+	D	D
3078	Monterey Hwy. (Rte. 82) N	Blossom Hill Rd.	San Jose	San Jose	C	NM	B	B	C	B	B	B	C+	B	B-	B-	B-	B	C+	C
3079	Monterey Hwy. (Rte. 82) S	Blossom Hill Rd.	San Jose	San Jose	D	D	NM	C	C	C	C+	C+	C	B	C	C+	C	C+	C	C
3080	Blossom Hill Rd.	Santa Teresa Blvd.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D	D	D+	D+	D	D	D	D
3081	Blossom Hill Rd.	Snell Avenue	San Jose	San Jose	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
3082	Monterey Hwy. (Rte. 82)	Branham Ln.	San Jose	San Jose	D	NM	D	D	C	D	C-	C	C-	C-	C-	C-	D+	D+	D+	C-
3083	Brokaw Rd.	First St.	San Jose	San Jose	F	NM	D	D	E	D	E+	D	D	D	D	D	D-	D-	D	D
3084	Brokaw Rd.	Old Oakland Rd.	San Jose	San Jose	D	D	NM	C	D	D	D	D	D	D	D	NM	D	D	D	D
3085	Brokaw Rd.	Zanker Rd.	San Jose	San Jose	D	D	NM	D	D	E	E+	E+	D	NM	NM	D+	D	D	D	D
3086	Hillsdale Av.	Camden Av.	San Jose	San Jose	D	C	NM	C	C	C	C-	C+	C	D+	C+	C+	C	C	C	B-
3087	Camden Avenue	Leigh Av.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D	D-	E+	D	D	D	D	D
3088	Camden Avenue	Union Av.	San Jose	San Jose	E	E	E	D	D	D-	D-	D-	E	E	D	E	E	E	E+	D
3089	Hamilton Avenue	Campbell Av.	San Jose	San Jose	D	C	NM	C	C	C	C	C	B-	C	C	B-	B	B	B	C+
3090	Campbell Avenue	Saratoga Av.	San Jose	San Jose	F	F	D	D	D	D	D	D	D	D	D	D-	D-	D-	D-	D
3091	Monterey Hwy. (Rte. 82)	Capitol Expwy. N	San Jose	San Jose	B	NM	B	B	B	B	B	B	B	B	B	B	B-	B	B	B
3092	Monterey Hwy. (Rte. 82)	Capitol Expwy. S	San Jose	San Jose	B	NM	A	A	A	B	B	B	B	B	B	B	B	B	B	B
3093	Santa Teresa Blvd.	Coleman Rd.	San Jose	San Jose	D	C	NM	C	C	B	C	C	C	C	C	C	C	C	C	C
3094	Santa Teresa Blvd.	Cottle Rd.	San Jose	San Jose	E	E	D	D	D	D	D	D	D+	D+	D+	D	D+	D+	D+	D+

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3095	Monterey Hwy. (Rte. 82)	Curtner Av.	San Jose	San Jose	F	NM	D	D	D	D	D	D	D	D	D	D	E	E+	E	D-
3096	Trimble Rd.	De la Cruz Blvd.	San Jose	San Jose	E	E	E	F	F	D+	E	D-	D	D	D	D	D	C-	C	C-
3097	S. First Street (Rte 82)	Keyes St./Goodyear	San Jose	San Jose	C	C	NM	C	C	D	C	C-	C-	C	C	C	C	C	C	C
3098	Trimble Rd.	First St.	San Jose	San Jose	F	E	E	E	E	E	E+	D-	D	D	D	D	D	D	D	D
3099	S. First Street (Rte 82)	Willow St.	San Jose	San Jose	A	A	NM	A	A	A	A	B+	A	B+	A	A	A	A	A	A
3100	Guadalupe Parkway	Hedding St.	San Jose	San Jose	E	E	D	D	D	C-	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3101	Guadalupe Parkway	Taylor St.	San Jose	San Jose	F	F	E	F	F	F	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3102	Hillsdale Av.	Meridian Av.	San Jose	San Jose	E	E	D	D	D	D-	D	D-	D-	D-	D	D	D	D	D-	D
3103	Saratoga Avenue	Kiely Blvd.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D	D	D	D	E	D	D	D+
3104	Stevens Creek Blvd.	Kiely Blvd.	San Jose	San Jose	E	E	E	E	D	E	D-	D-	D-	D-	D	D	D	D	D+	D+
3105	Tully Rd.	King Rd.	San Jose	San Jose	D	D	NM	D	D	E+	D	D-	D-	D-	D	D	D-	D	D	D
3106	Murphy Avenue	Lundy Av.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D	D	D	D	D	D	D	C-
3107	E. San Carlos St. (Rte 82)	Market St.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D+	D	C-	C-	D+	C-	D+	D+
3108	Tully Rd.	McLaughlin Av.	San Jose	San Jose	F	D	NM	D	E	D	E	E	D-	D-	D-	D	D	D-	D	D
3109	Monterey Hwy. (Rte. 82)	Senter Rd.	San Jose	San Jose	C	NM	C	C	B	C	C	C	C	C	C	C	C	C	C	C
3110	Monterey Hwy. (Rte. 82)	Skyway Dr.	San Jose	San Jose	B	NM	B	B	B	B	B	B	B-	C	C	C	C	C	C	C
3111	Monterey Hwy. (Rte. 82)	Tully Rd.	San Jose	San Jose	B	NM	B	B	B	B-	B	C+	B	B-	C+	C	C+	C	C	C+
3112	Santa Clara Street (Rte 82)	Montgomery St.	San Jose	San Jose	B	A	NM	B	B	A	B-	C+	B-	B-	B	B-	B	B	A	A
3113	Saratoga Avenue	Moorpark Av.	San Jose	San Jose	D	D	NM	D	D	D	D	D	D	D	D	D	D	D	D	D

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3114	Tully Rd.	Quimby Rd.	San Jose	San Jose	D	D	NM	D	D	D	D+	D	D	D	D	D	D	D+	D+	D+
3115	Santa Teresa Blvd.	Snell Av.	San Jose	San Jose	E	D	NM	D	D	D	D	C-	C-	C-	C-	C	C	C-	D+	D+
3116	Stevens Creek Blvd.	Saratoga Av.	San Jose	San Jose	E	E	D	D	D	D	D	D	D	D	D+	D	D+	D+	D+	D+
3117	Tully Rd.	Senter Rd.	San Jose	San Jose	D	D	NM	D	D	NM	D-	D-	D-	D	D	D	D-	D	D	D
3118	Stevens Creek Blvd.	Winchester Blvd.	San Jose	San Jose	E	E	D	D	D	D	D	D-	D	D	D	D	D	D	D-	D
3119	Trimble Rd.	Zanker Rd.	San Jose	San Jose	D	D	NM	C	D	D	D	E+	NM	NM	NM	C-	C-	C-	D+	D+
3120	Capitol Exp.	Pearl Av.	San Jose	San Jose	D	D	NM	D	D	D	NM	D+	D+	D	C-	D+	C-	C-	D+	C-
5009	S. Bascom Avenue	Fruitvale Av.	San Jose	SC County	B	C	NM	C	C	D	D-	D	D	D+	D+	D+	D+	D	D	D+
5012	S. Bascom Avenue	Moorpark Av.	San Jose	SC County	C	D	NM	D	E	E+	D	D	E	E+	D	D	D	D-	D	E
5108	Page Mill/Oregon Exp.	Middlefield Rd.	Palo Alto	SC County	E	E	E	E	E	E	E	E-	E	E	E	E	E	E+	E+	E+
5120	Page Mill/Oregon Exp.	Hanover St.	Palo Alto	SC County	D	D	NM	D	D	E	E	E	E+	E+	D	D	D+	D	D	D
5205	Page Mill/Oregon Exp.	Foothill Expwy.	Palo Alto	SC County	F	F	F	F	F	F	F	NM	F	F	F	F	F	F	E-	F
5207	Foothill Exp.	Arastradero Rd.	Palo Alto	SC County	E	E	E	E	E	E	E	E	E	E	D-	D-	D	D-	D	D
5213	Foothill Exp.	Main St./Burke Rd.	Los Altos	SC County	C	C	NM	C	B	C-	C	C	C	C+	C+	C	C+	C+	C+	B-
5214	Foothill Exp.	San Antonio Rd.	Los Altos	SC County	B	B	NM	B	C	C+	B-	B	B-	C+	B	B	B	B	B	E-
5215	Foothill Exp.	El Monte Av.	Los Altos	SC County	D	D	NM	D	E	E	E	F	F	E	E	E+	E+	E+	D-	F
5220	Foothill Exp.	Magdalena Av./Springer Rd.	Los Altos	SC County	D	E	D	D	E	E	E	E+	E+	E+	D	D	D	D	D	E
5223	Foothill Exp.	Grant Rd./St. Joseph Av.	Los Altos	SC County	C	D	NM	D	D	D-	D-	D-	E	D	D	D	D	D	D	D
5225	Foothill Exp.	Homestead Rd.	Los Altos	SC County	C	C	NM	C	D	D	D	D	D	D	D	D+	D+	D+	C-	C
5305	Central Exp.	Rengstorff Av.	Mountain View	SC County	E	E	E	E	E	E	D-	E	E	E+	D	E+	E+	D-	D	E
5308	Central Exp.	Castro St./Moffet Blvd.	Mountain View	SC County	D	D	NM	D	D	D-	D	D	D	D	D	D	D	D	D	E

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5310	Central Exp.	Shoreline Blvd. East	Mountain View	SC County	B	B	NM	B	B	D	D	D-	D-	B	A	A	B+	B+	A	A
5311	Central Exp.	Shoreline Blvd. West	Mountain View	SC County	B	B	NM	B	B	B	B	B	B	B	A	B+	B+	B	B+	A
5313	Central Exp.	Whisman Rd.	Mountain View	SC County	B	B	NM	B	B	B	B	B	B	B	B	B	B	C+	B-	D+
5315	Central Exp.	Hwy 237	Mountain View	SC County	B	B	NM	B	B	B	B	B	B	B	B+	A	A	B	B+	B
5320	Central Exp.	Mary Av.	Sunnyvale	SC County	E	E	D	D	D	D-	D	E+	D	D	D	D	D	D	D	E
5325	Central Exp.	Corvin Dr./Oakmead Pkwy.	Santa Clara	SC County	C	C	NM	C	D	D	E+	D-	D-	C-	C	C	C+	C+	C	D-
5329	Central Exp.	Bowers Av.	Santa Clara	SC County	D	D	NM	E	E	F	F	F	F	E	E+	E	E	E	D	E
5332	Central Exp.	Scott Blvd.	Santa Clara	SC County	E	D	NM	D	E	E+	E+	E-	E	D	D+	D	D	D-	D	E
5334	Central Exp.	Lafayette St.	Santa Clara	SC County	D	D	NM	E	F	F	F	F	F	E	E+	D-	E	E	D-	E
5335	Central Exp.	De la Cruz Blvd.	Santa Clara	SC County	E	E	E	E	F	F	F	F	F	F	F	F	F	F	F	F
5405	San Tomas Exp.	Stevens Creek Blvd.	Santa Clara	SC County	F	F	F	F	F	F	F	F	F	F	F	F	F	E	E	E
5406	San Tomas Exp.	Moorpark Av.	San Jose	SC County	E	D	NM	D	D	E+	D-	F	E+	E+	D	D	D	D	D-	D
5408	San Tomas Exp.	Scott Blvd.	Santa Clara	SC County	F	F	F	F	NM	F	F	E-	E	E	D	D	D-	D	D	D-
5414	San Tomas Exp.	Monroe St.	Santa Clara	SC County	E	D	NM	D	D	E	E	D-	E+	E+	D	D	D+	D+	D+	D+
5416	San Tomas Exp.	El Camino Real (Rte 82)	Santa Clara	SC County	F	F	F	F	F	F	F	F	F	F	E	E	E	E+	E+	E-
5419	San Tomas Exp.	Homestead Rd.	Santa Clara	SC County	F	E	E	E	E	E-	F	E	F	E+	E	E	E	E+	E+	E
5422	San Tomas Exp.	Saratoga Av.	Santa Clara	SC County	E	E	E	E	F	F	F	F	F	F	E+	E	E+	E+	D	E+
5429	San Tomas Exp.	Hamilton Av.	Campbell	SC County	E	E	E	E	E	F	F	F	F	F	E	E	E+	D	D	E
5430	San Tomas Exp.	Campbell Av.	Campbell	SC County	F	F	E	F	F	F	F	E-	E-	E	E+	E-	E-	E	E	F
5432	Hwy 17 (SB)	San Tomas Expwy./Camden Av.	Campbell	SC County	F	D	NM	E	E	E-	F	F	E	D+	D+	D	E	E+	E	E-
5433	Hwy 17 (NB)	San Tomas Expwy./Camden Av.	Campbell	SC County	C	C	NM	C	D	E	D	F	E+	D	D	D	E+	D	D	D

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5505	Almaden Exp.	Koch Ln.	San Jose	SC County	B	B	NM	B	B	B+	B	B+	B	B	A	A	A	A	A	B-
5512	Almaden Exp.	Branham Ln.	San Jose	SC County	F	E	E	D	D	E+	D-	E+	D-	D-	D	D	D	D	D	D-
5513	Almaden Exp.	Blossom Hill Rd.	San Jose	SC County	F	E	E	E	E	E	E	F	F	F	E	E-	E	E	E+	E+
5516	Almaden Exp.	Coleman Rd.	San Jose	SC County	F	F	F	D	E	E	D-	D-	E+	E	D	D-	D	D	D	D
5520	Almaden Exp.	Camden Av.	San Jose	SC County	E	D	NM	D	E	E+	E	D-	E	E	D	D	D	D	D	D
5522	Almaden Exp.	Hwy 85 N. ramp	San Jose	SC County	NM	NM	NM	C	B	C+	C	C+	C	D-	E	D	E	D	D	D
5523	Almaden Exp.	Hwy 85 S. ramp	San Jose	SC County	NM	NM	NM	B	C	C	F	D-	C-	D	C	C	C	C	C	B-
5603	Lawrence Exp.	Tasman Dr.	Sunnyvale	SC County	D	D	NM	D	NM	E+	NM	F	D-	D	D	D-	E+	D-	D-	E+
5611	Lawrence Exp.	Arques Av.	Sunnyvale	SC County	E	D	NM	E	NM	D-	E+	F	F	F	E	D	D-	E+	E+	E
5613	Lawrence Exp.	Reed Av.	Sunnyvale	SC County	E	E	E	D	NM	E	E-	E	F	F	D	D	D-	D+	D	E
5625	Lawrence Exp.	Homestead Rd.	Sunnyvale	SC County	F	F	F	E	NM	E+	E+	E+	E+	E	D	D-	D	D	D	E
5633	Lawrence Exp.	Bollinger Rd./Moorpark Av.	San Jose	SC County	D	D	NM	D	D	D	E+	E	E	E+	E+	E+	E+	D	D	E
5635	Lawrence Exp.	Prospect Rd.	San Jose	SC County	E	E	E	D	D	D-	D-	D-	E+	E+	D	D-	D	D	D	D
5636	Lawrence Exp.	Calvert Dr. (I-280 on-ramp)	San Jose	SC County	NM	NM	NM	C	NM	C	D+	C	D	D	D	D	D+	C-	C-	C
5640	Lawrence Exp.	Saratoga Av.	San Jose	SC County	F	F	F	E	E	E+	F	E+	E	E+	D	D	D	D	D	D-
5711	Capitol Exp.	Narvaez Av.	San Jose	SC County	NM	NM	NM	D	D	D	D+	D	D+	D+	C-	D	D	D	D	D
5713	Capitol Exp.	Hwy 87 on/off ramp	San Jose	SC County	NM	NM	NM	D	D	D-	D	E-	D-	D	C-	D	D-	D	D	D
5715	Capitol Exp.	Snell Rd.	San Jose	SC County	D	D	NM	D	D	D	D	D	D	D	D+	D+	D+	D	D	D
5720	Capitol Exp.	Senter Rd.	San Jose	SC County	F	F	E	E	E	E	E	E	E+	E+	D	D-	D	D	D	D-
5721	Capitol Exp.	McLaughlin Av.	San Jose	SC County	D	D	NM	D	E	E	E	D	D	D	D	D	D-	D	D	E+
5723	Capitol Exp.	Silver Creek Rd.	San Jose	SC County	F	D	NM	D	E	D	F	F	F	F	F	E	E+	E	E+	E+
5724	Capitol Exp.	Aborn Rd.	San Jose	SC County	F	F	F	E	E	D	E	D	E	E+	D	E	E-	E	E	F
5725	Capitol Exp.	Quimby Rd.	San Jose	SC County	E	E	E	E	E	D-	D	E	E+	E-	D-	E-	E-	E	E	D-

Table 3.9 - Intersection LOS, 1991 – 2014

ID	CMP System Roadway	Cross Street	Location	Jurisdiction	1991	1992	1993	1994/5	1996	1997	1998	2000	2001	2002	2004	2006	2008	2010	2012	2014
5727	Capitol Exp.	Tully Rd.	San Jose	SC County	D	E	D	E	E	D	D	E+	D	D-	D	D	D-	D	D	D
5732	Capitol Exp.	Story Rd.	San Jose	SC County	F	F	E	E	F	F	F	F	F	F	E+	E	E	E	E+	E
5734	Capitol Exp.	Excalibur Dr. (Capitol Av.)	San Jose	SC County	F	D	NM	D	D	F	D-	F	E+	E	F	E+	E+	E+	D-	D
5801	Montague Exp.	Main St./Old Oakland Rd.	Milpitas	SC County	F	F	E	E	E	F	F	F	F	E	F	NM	E+	D	D-	F
5802	Montague Exp.	Trade Zone Blvd./McCandless	Milpitas	SC County	F	F	F	F	F	F	F	F	F	F	F	F	F	F	E-	E+
5803	Montague Exp.	Capitol Av.	Milpitas	SC County	F	E	E	E	F	F	F	F	F	E	E	E+	E+	D-	D-	E+
5804	Montague Exp.	Milpitas Blvd.	Milpitas	SC County	F	E	E	E	F	F	F	F	F	F	D+	D	D+	D	D+	C-
5805	Montague Exp.	Mission College Blvd.	Santa Clara	SC County	F	D	NM	D	D	D	D+	D	D	D	D	D+	D+	D	D	E
5806	Montague Exp.	De la Cruz Blvd.	Santa Clara	SC County	C	C	NM	C	D	C-	C	C	C	D	D	D+	D	D+	D	D-
5807	Montague Exp.	First St.	San Jose	SC County	F	E	E	E	F	F	F	F	F	F	E	F	F	E+	E	E+
5808	Montague Exp.	Trimble Rd.	San Jose	SC County	F	F	F	F	F	F	F	F	F	E+	D	E+	E+	D	D	D-
5809	Montague Exp.	McCarthy Blvd./O'Toole Av.	Milpitas	SC County	F	F	F	F	F	F	F	F	F	F	E	E	E	E	F	F
5812	Montague Exp.	Zanker Rd.	San Jose	SC County	E	D	NM	D	E	D-	D-	E	E+	E	D-	E+	E	D	D-	D-

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4 FREEWAYS

INTRODUCTION

Level of service data is collected each year for all freeway segments in Santa Clara County. Two travel directions for each freeway produce approximately 310 directional miles and multiple travel lanes in each direction yield 859 mixed-flow and 190 HOV lane miles.

Since 1991, level of service data has been collected for freeway segments in the County to identify those segments that are operating below the CMP standard of LOS E. This chapter features an analysis of traffic conditions during the AM and PM peak periods for the freeway system in Santa Clara County. For the purpose of this analysis, mixed-flow and HOV lanes are treated as separate facilities. In addition to collecting freeway level of service data, traffic counts were collected at six freeway "gateway" locations at or near the county line to measure traffic flows in and out of Santa Clara County.

METHODOLOGY

Prior to the 1997 CMP Monitoring and Conformance Report, floating vehicle techniques were used to collect the travel speed data needed to monitor freeway operations. Since 1997, VTA has used aerial photography to collect traffic data for freeway segments. This approach allows for the collection of a more comprehensive set of data that could be used to determine density, travel speed and flow rate for each freeway segment in both the AM and PM peak periods. From the aerial photographs, density is directly measured by counting vehicles in the freeway segments. Travel speeds and flow rate, or traffic volumes, are estimated using classic speed-density-volume equations calibrated for Santa Clara County conditions.

LEVEL OF SERVICE DEFINITIONS

Table 4.1 defines the level of service thresholds used for freeway segments. Level of service is determined based on density in terms of passenger cars per mile per lane. The LOS density thresholds are based on VTA's Level of Service Analysis Guidelines (June 2003), which adopts the Highway Capacity Manual's (2000) values for LOS A/B, B/C and C/D. The D/E and E/F thresholds are calibrated for Santa Clara County conditions.

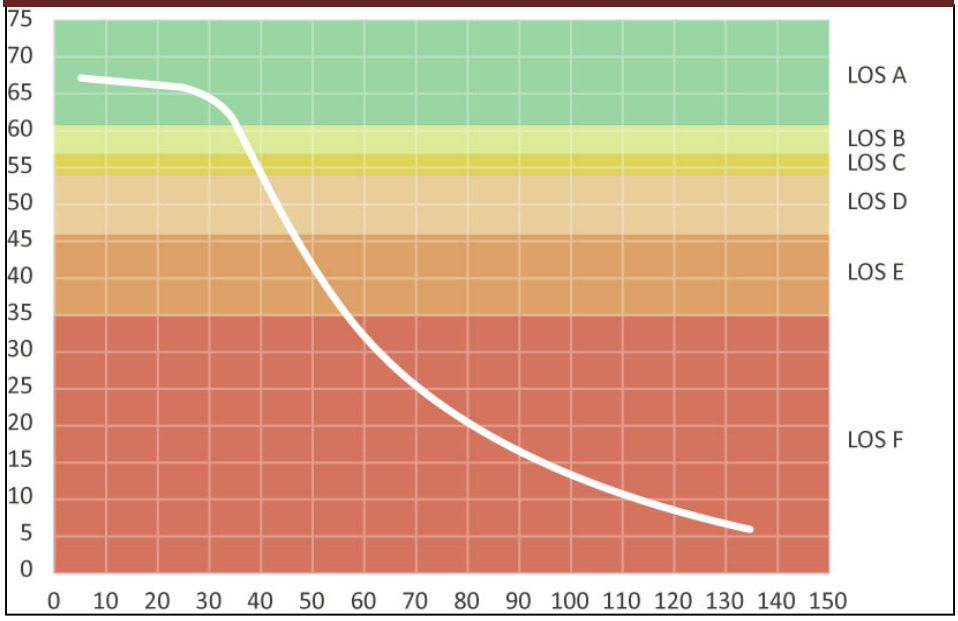
TABLE 4.1 | FREEWAY LEVEL OF SERVICE DEFINITIONS

Level of Service	Density (passenger cars/mile/lane)	Travel Speed (MPH)	Description
A	≤ 11	60 – 65	Free Flow. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. The effects of minor incidents are easily absorbed.
B	11 < density ≤ 18	57 – 60	Reasonably Free Flow. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents are easily absorbed.
C	18 < density ≤ 26	54 – 57	Stable Flow. Flows are approaching the range where small increases in traffic flows will cause substantial deterioration in service. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require additional care and vigilance by the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.
D	26 < density ≤ 46	46 – 54	Unstable Flow. Small increases in traffic flows cause substantial deterioration in service. Freedom to maneuver within the traffic stream is severely limited, and the driver experiences drastically reduced physical and psychological comfort levels. Even minor incidents can be expected to create substantial queuing because the traffic stream has little space to absorb disruptions.
E	46 < density ≤ 58	35 – 46	Capacity Flow. Operations are extremely unstable, because there are virtually no usable gaps in the traffic stream. Any incident can be expected to produce a serious breakdown with extensive queuing.
F	> 58	< 35	Forced Flow. Level of service F describes forced or breakdown flow. Such conditions generally exist within queues forming behind breakdown points. Such breakdowns occur for a number of reasons: a temporary reduction in capacity caused by a traffic incident, or a recurring point of congestion caused by a merge, a weave segment, or lane drop.

SPEED MODEL CALIBRATION

While research shows that there is a direct relationship between speed and density, this relationship is less straightforward than the relationship between density and speed and volume when two of the three are known. The speed density curve was re-calibrated in 2001 to account for possible travel condition differences between 2001 and 1997, when the previous curve was calibrated. Research and review of several speed-density curves resulted in a new, single regime curve based on the Van Aerde equation which is shown in Figure 4.1.

Figure 4.1 Speed Density Curve



DATA COLLECTION

Two flight patterns are used to photograph Santa Clara County's freeway system. These patterns were defined such that each freeway segment could be photographed at a frequency of approximately one sample every 40 minute, or four times each flight. The morning surveys were conducted approximately from 6:15 AM to 9:45 AM and the evening surveys were conducted from approximately 3:15 PM to 6:45 PM. Two morning and two evening flights were scheduled of each roadway, providing a total of 16 photographs – 8 morning and 8 evening – of each freeway segment.

Aerial photography is traditionally scheduled for September but on occasion, can extend into October depending on the weather. This year, weather difficulties related to fog resulted in data collection extending into October. Table 4.2 shows the data collection dates for the morning and evening flights.

TABLE 4.2 | AERIAL PHOTOGRAPHY DATA COLLECTION SCHEDULE

AM Flights	PM Flights
Thursday, September 11	Tuesday, September 9
Tuesday, September 16	Wednesday, September 10
Wednesday, October 8	Tuesday, September 16

The density of traffic between each pair of interchanges was estimated by counting the number of vehicles between each interchange in each photo. The photo that displayed the greatest vehicle density for each freeway segment was considered to represent the peak period and was selected for analysis in the chapter. The corresponding lengths and the number of lanes were also verified from the photos. Vehicle counts were performed using four different categories: cars, buses,

trucks and tractor-trailers. The buses, trucks and tractor-trailers were assigned passenger car equivalents (PCE) by applying a 1.5 PCE for trucks and buses, and 2.0 PCE for tractor-trailers.

The AM and PM peak period densities were compared to identify the most congested time for each segment. Then, using the speed-density curve described previously, the peak density is converted to speed, level of service and volume for each freeway segment. The LOS was determined directly from the density value using the thresholds listed in Table 4.1.

DEFICIENT FREEWAY SEGMENTS

Directional miles represent the number of miles of freeway for the two travel directions. For the 2014 Monitoring Program, 84 segments, with a combined length of 86 miles, are operating at LOS F in the AM peak hour and 77 segments, with a combined length of 70 miles, are at LOS F in the PM peak hour. In total, 161 out of 313 directional miles of freeway segments were found to be operating at LOS F in at least one of the peak periods. This is about 12 more lane-miles than the 2013 results.

Of these miles, 24 miles during the AM and 25 miles during the PM were at LOS F in the baseline 1991 year and therefore considered LOS-exempt. The remaining 62 directional miles during the AM and 46 directional miles during the PM are considered deficient.

Table 4.3 presents the mixed-flow freeway segments that were operating at LOS F in 2014 and operated at LOS F under the 1991 baseline conditions making them exempt from CMP conformance requirements. The duration of congestion, in hours, is shown in parentheses in each of these tables. Duration of congestion was determined by reviewing the data to see how long congestion lasted for each segment.

TABLE 4.3 EXEMPT MIXED-FLOW SEGMENTS OPERATING AT LOS F IN 2014

Exempt Segments at LOS F in 2014							
#	Fwy	Dir	AM/PM	Segment	Length	2014	
125	I-280	WB	AM	Meridian Av. to SR 17 (I-880)	1.40	F	(3.0)
124	I-280	WB	AM	SR 17 (I-880) to Winchester Blvd.	0.55	F	(2.0)
123	I-280	WB	AM	Winchester Bl. to Saratoga Av.	1.37	F	(1.5)
122	I-280	WB	AM	Saratoga Av. to Lawrence Expwy	1.19	F	(1.5)
121	I-280	WB	AM	Lawrence Expwy to Wolfe Rd.	1.24	F	(1.5)
45	I-680	SB	AM	Capitol Expwy to King Rd	1.00	F	(0.5)
39	I-680	SB	AM	King Rd to US 101	0.40	F	(0.5)
12	I-880	NB	AM	I-280 to Stevens Creek Blvd.	0.41	F	(0.5)
11	I-880	NB	AM	Stevens Creek Blvd. to Bascom	0.84	F	(0.5)
10	I-880	NB	AM	Bascom to The Alameda	0.82	F	(0.5)
9	I-880	NB	AM	The Alameda to Coleman Av.	0.59	F	(0.5)
8	I-880	NB	AM	Coleman Av. to SR 87	0.51	F	(1.0)
17	I-880	SB	AM	Brokaw Rd. to US 101	1.29	F	(0.5)
30	SR 17	NB	AM	Bear Creek to Saratoga-Los Gatos Rd.	2.90	F	(1.0)
89	SR 237	WB	AM	I-880 to McCarthy Blvd.	0.40	F	(2.5)
90	SR 237	WB	AM	McCarthy Blvd. to Zanker Rd.	0.94	F	(2.5)
23	SR 85	NB	AM	I-280 to Homestead Rd.	0.34	F	(2.0)

Exempt Segments at LOS F in 2014							
#	Fwy	Dir	AM/PM	Segment	Length	2014	
24	SR 85	NB	AM	Homestead Rd. to Fremont Rd.	1.00	F	(1.0)
289	US 101	NB	AM	I-280 to Santa Clara St.	0.88	F	(2.0)
290	US 101	NB	AM	Santa Clara St. to McKee Rd.	0.39	F	(3.0)
291	US 101	NB	AM	McKee Rd. to Old Oakland Rd.	1.58	F	(3.0)
292	US 101	NB	AM	Old Oakland Rd. to I-880	0.57	F	(1.0)
293	US 101	NB	AM	I-880 to Old Bayshore Rd.	0.50	F	(3.0)
294	US 101	NB	AM	Old Bayshore Rd. to N. First	0.49	F	(3.0)
295	US 101	NB	AM	N. First to Guadalupe (SR 87)	0.64	F	(2.5)
305	US 101	NB	AM	SR 85 to Shoreline Blvd.	0.28	F	(0.5)
306	US 101	NB	AM	Shoreline Blvd. To Rengstorff Av.	1.01	F	(0.5)
136	I-280	EB	PM	SR 85 to DeAnza Blvd.	1.31	F	(2.0)
137	I-280	EB	PM	DeAnza Blvd. to Wolfe Rd.	1.06	F	(1.5)
138	I-280	EB	PM	Wolfe Rd. to Lawrence Expwy.	1.24	F	(1.0)
139	I-280	EB	PM	Lawrence Expwy. to Saratoga Rd.	1.19	F	(0.5)
140	I-280	EB	PM	Saratoga Rd. to Winchester Blvd.	1.37	F	(0.5)
1	I-880	NB	PM	SR 237 to Dixon Landing Rd.	1.99	F	(1.5)
16	I-880	SB	PM	Montague Expwy to Brokaw Rd.	1.35	F	(0.5)
17	I-880	SB	PM	Brokaw Rd. to US 101	1.29	F	(1.5)
18	I-880	SB	PM	US 101 to N First St.	0.49	F	(1.0)
19	I-880	SB	PM	N. First St. to SR 87	0.40	F	(1.0)
20	I-880	SB	PM	SR 87 to Coleman Rd.	0.51	F	(0.5)
81	SR 237	EB	PM	Lawrence Exp to Great America	1.27	F	(3.0)
79	SR 237	EB	PM	First St. to Zanker Rd.	1.61	F	(1.0)
77	SR 237	EB	PM	McCarthy Blvd. To I-880	0.40	F	(3.0)
187	SR 85	SB	PM	SR 237 to El Camino Real	0.41	F	(3.0)
188	SR 85	SB	PM	El Camino Real to Fremont Rd.	1.89	F	(3.0)
274	US 101	SB	PM	Oregon Expwy to San Antonio Rd.	1.85	F	(2.0)
273	US 101	SB	PM	S Antonio Rd. to Rengstorff Av.	0.71	F	(3.0)
264	US 101	SB	PM	Great America Pkwy to Montague Exp	0.75	F	(3.5)
263	US 101	SB	PM	Montague Expy to De La Cruz Blvd.	1.28	F	(3.5)
262	US 101	SB	PM	De La Cruz Blvd. to SR 87	0.77	F	(0.5)
261	US 101	SB	PM	SR 87 to N. First St.	0.64	F	(1.5)
260	US 101	SB	PM	N. First St. to Old Bayshore Rd.	0.49	F	(3.0)
259	US 101	SB	PM	Old Bayshore Rd. to I-880	0.50	F	(3.5)
258	US 101	SB	PM	I-880 to Old Oakland Rd.	0.57	F	(3.5)

TABLE 4.4 NON-EXEMPT MIXED-FLOW SEGMENTS OPERATING AT LOS F IN 2014

Non-Exempt Segments at LOS F in 2014							
#	Fwy	Dir	AM/PM	Segment	Length	2012	
130	I-280	WB	AM	US 101 to McLaughlin	0.37	F	(3.0)
129	I-280	WB	AM	McLaughlin to 10th St.	0.92	F	(2.0)
128	I-280	WB	AM	10th St. to SR 87	1.20	F	(0.5)
127	I-280	WB	AM	SR 87 to Bird Av.	0.35	F	(0.5)
126	I-280	WB	AM	Bird Av. to Meridian Av.	1.07	F	(1.0)
120	I-280	WB	AM	Wolfe Rd. to DeAnza Blvd.	1.06	F	(0.5)
119	I-280	WB	AM	De Anza Blvd. To SR 85	1.31	F	(0.5)
118	I-280	WB	AM	SR 85 to Foothill Expwy	0.70	F	(1.5)
51	I-680	NB	AM	US 101 to King Rd.	0.40	F	(0.5)
52	I-680	NB	AM	King Rd. to Capitol Expwy.	1.00	F	(1.5)
53	I-680	NB	AM	Capitol Expwy to Alum Rock Av	0.31	F	(1.5)

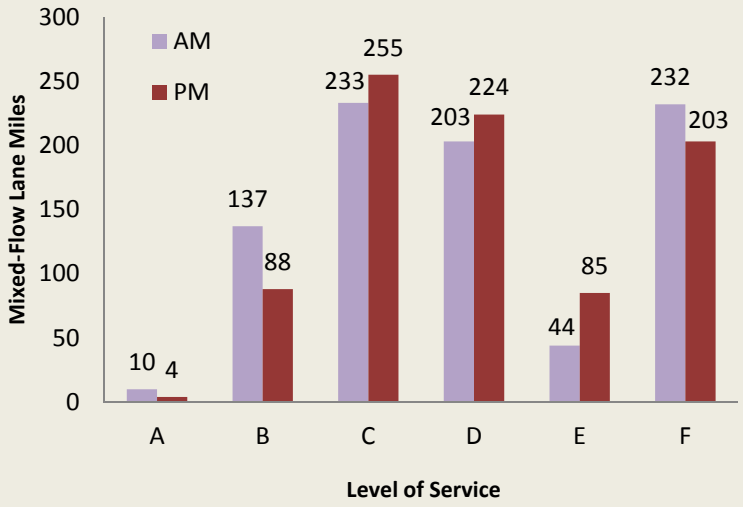
Non-Exempt Segments at LOS F in 2014							
#	Fwy	Dir	AM/PM	Segment	Length	2012	
54	I-680	NB	AM	Alum Rock Av. to McKee Rd.	0.64	F	(1.0)
41	I-680	SB	AM	Alum Rock Av. to Capitol Expwy.	0.31	F	(0.5)
18	I-880	SB	AM	US 101 to N. First St.	0.49	F	(1.0)
19	I-880	SB	AM	N. First St. to SR 87	0.40	F	(0.5)
31	SR 17	NB	AM	Summit Rd. to Bear Creek Rd.	4.06	F	(1.0)
27	SR 17	NB	AM	SR 85 to San Tomas Expwy.	1.17	F	(0.5)
26	SR 17	NB	AM	San Tomas/Camden to Hamilton Ave.	1.82	F	(0.5)
25	SR 17	NB	AM	Hamilton to I-280	1.61	F	(1.0)
100	SR 237	WB	AM	SR 85 to El Camino Real	0.40	F	(0.5)
183	SR 85	NB	AM	Cottle Rd. to Blossom Hill Rd.	1.96	F	(0.5)
182	SR 85	NB	AM	Blossom Hill Rd. to SR 87	1.27	F	(0.5)
181	SR 85	NB	AM	SR 87 to Almaden Expwy.	0.94	F	(2.5)
180	SR 85	NB	AM	Almaden Expwy. to Camden	1.97	F	(2.5)
179	SR 85	NB	AM	Camden Ave. to Union Ave.	1.17	F	(1.0)
178	SR 85	NB	AM	Union Ave. to Bascom Ave.	1.13	F	(1.0)
177	SR 85	NB	AM	Bascom Ave. to SR 17	0.27	F	(1.0)
176	SR 85	NB	AM	SR 17 to Winchester Blvd.	0.50	F	(1.5)
175	SR 85	NB	AM	Winchester Blvd. to Saratoga Ave.	2.68	F	(0.5)
173	SR 85	NB	AM	De Anza Blvd. to Stevens Creek Blvd.	1.83	F	(0.5)
172	SB 85	NB	AM	Stevens Creek Blvd. to I-280	0.75	F	(1.5)
169	SR 85	NB	AM	Fremont Ave. to El Camino Real	1.89	F	(1.0)
70	SR 87	NB	AM	SR 85 to Capitol Expwy.	1.09	F	(2.0)
71	SR 87	NB	AM	Capitol Expwy. to Curtner Ave.	1.49	F	(2.0)
72	SR 87	NB	AM	Curtner Ave. to Almaden Expwy.	0.73	F	(3.0)
73	SR 87	NB	AM	Almaden Expwy to Alma Ave.	0.69	F	(1.0)
74	SR 87	NB	AM	Alma Ave. to I-280	0.90	F	(0.5)
75	SR 87	NB	AM	I-280 to Julian St.	0.96	F	(2.5)
76	SR 87	NB	AM	Julian St. to Coleman St.	0.38	F	(3.0)
414	SR 87	NB	AM	Coleman St. to Taylor St.	0.41	F	(0.5)
416	SR 87	NB	AM	Taylor St. to Airport Pkwy.	1.87	F	(0.5)
418	SR 87	NB	AM	Airport Pkwy. to US 101	0.67	F	(2.0)
309	US 101	NB	AM	San Martin Ave. to Tennant Ave.	3.55	F	(0.5)
310	US 101	NB	AM	Tennant Ave. to E. Dunne Ave.	0.96	F	(2.0)
283	US 101	NB	AM	Silver Creek Valley Rd. to Hellyer Ave.	1.84	F	(1.5)
284	US 101	NB	AM	Hellyer Ave. to Yerba Buena Rd	0.90	F	(1.5)
285	US 101	NB	AM	Yerba Buena Rd. to Capitol Expwy.	0.80	F	(1.5)
286	US 101	NB	AM	Capitol Expwy. to Tully Rd.	1.33	F	(2.0)
287	US 101	NB	AM	Tully Rd. to Story Rd.	1.46	F	(0.5)
288	US 101	NB	AM	Story Rd. to I-280	0.38	F	(0.5)
296	US 101	NB	AM	SR 87 (Guadalupe) to De La Cruz Blvd.	0.77	F	(3.0)
297	US 101	NB	AM	De La Cruz Bld. to Montague	1.28	F	(1.0)
298	US 101	NB	AM	Montague to Bowers / Great American Pkwy.	0.75	F	(0.5)
299	US 101	NB	AM	Bowers Ave / Great American Pkwy to Lawrence Expwy.	1.12	F	(1.0)
300	US 101	NB	AM	Lawrence Expwy. to N. Fair Oaks Ave.	0.98	F	(1.5)
301	US 101	NB	AM	N. Fair Oaks Ave. to N. Mathilda Ave.	0.85	F	(0.5)
304	US 101	NB	AM	Moffett Blvd. to SR 85	0.33	F	(2.5)
131	I-280	EB	PM	Page Mill Rd. to La Barranca	1.73	F	(0.5)
132	I-280	EB	PM	La Barranca to El Monte Ave.	1.60	F	(1.0)

Non-Exempt Segments at LOS F in 2014							
#	Fwy	Dir	AM/PM	Segment	Length	2012	
133	I-280	EB	PM	El Monte Ave. to Magdalena Ave.	0.95	F	(1.0)
141	I-280	EB	PM	Winchester Blvd. to I-880	0.55	F	(1.0)
142	I-280	EB	PM	I-880 to Meridian Ave.	1.40	F	(2.5)
143	I-280	EB	PM	Meridian Ave. to Bird Ave.	1.07	F	(2.0)
144	I-280	EB	PM	Bird Ave. to SR 87	0.35	F	(2.0)
145	I-280	EB	PM	SR 87 to 10th St.	1.20	F	(1.0)
124	I-280	WB	PM	I-880 to Winchester Blvd.	0.55	F	(0.5)
48	I-680	SB	PM	SR 237 to Yosemite Dr.	0.69	F	(1.0)
47	I-680	SB	PM	Yosemite Dr. to Montague Expwy.	0.77	F	(1.0)
46	I-680	SB	PM	Montague Expwy. to Capitol Ave.	1.00	F	(1.0)
45	I-680	SB	PM	Capitol Ave. to Hostetter Rd.	0.31	F	(1.0)
44	I-680	SB	PM	Hostetter Rd. to Berryessa Rd.	0.94	F	(1.0)
11	I-880	NB	PM	Stevens Creek Blvd. to N. Bascom Ave.	0.84	F	(1.0)
10	I-880	NB	PM	N. Bascom Ave. to The Alameda	0.82	F	(0.5)
9	I-880	NB	PM	The Alameda to Coleman Ave.	0.59	F	(1.0)
8	I-880	NB	PM	Coleman Ave. to SR 87	0.51	F	(1.5)
7	I-880	NB	PM	SR 87 to N. First St.	0.40	F	(0.5)
21	I-880	SB	PM	Coleman Ave. to The Alameda	0.59	F	(0.5)
22	I-880	SB	PM	The Alameda to Bascom Ave.	0.82	F	(0.5)
35	SR 17	SB	PM	SR 85 to Lark Ave.	0.46	F	(1.5)
36	SR 17	SB	PM	Lark Ave. to Saratoga Ave.	1.81	F	(0.5)
84	SR 237	EB	PM	US 101 to Mathilda Ave.	0.53	F	(1.5)
83	SR 237	EB	PM	Mathilda Ave. to N. Fair Oaks Ave.	0.96	F	(1.5)
82	SR 237	EB	PM	N. Fair Oaks Ave. to Lawrence Expwy.	0.63	F	(2.5)
80	SR 237	EB	PM	Great America Pkwy. to N. First St.	1.00	F	(3.0)
95	SR 237	WB	PM	N. Fair Oaks Ave. to Mathilda Ave.	0.96	F	(1.0)
98	SR 237	WB	PM	Maude Ave. to Central Expwy.	0.53	F	(1.0)
99	SR 237	WB	PM	Central to SR 85	0.63	F	(1.0)
100	SR 237	WB	PM	SR 85 to El Camino Real	0.40	F	(1.0)
185	SR 85	SB	PM	US 101 to Central Expwy.	1.24	F	(0.5)
186	SR 85	SB	PM	Central Expwy. to SR 237	0.47	F	(1.0)
192	SR 85	SB	PM	Stevens Creek Blvd. to Saratga-Snnvl	1.83	F	(3.0)
193	SR 85	SB	PM	Saratoga-Sunny to Saratoga Ave.	1.83	F	(1.0)
196	SR 85	SB	PM	SR 17 to Bascom Ave.	0.27	F	(0.5)
197	SR 85	SB	PM	Bascom Ave. to Union Ave.	1.13	F	(2.0)
419	SR 87	SB	PM	US 101 to Airport Pkwy.	0.67	F	(0.5)
417	SR 87	SB	PM	Airport Pkwy. to Taylor St.	1.87	F	(2.0)
415	SR 87	SB	PM	Taylor St. to Coleman Ave.	0.41	F	(2.5)
69	SR 87	SB	PM	Coleman Ave. to Julian St.	0.38	F	(0.5)
67	SR 87	SB	PM	I-280 to Alma Ave.	0.90	F	(2.5)
66	SR 87	SB	PM	Alma Ave. to Almaden Expwy.	0.69	F	(0.5)
306	US 101	NB	PM	Shoreline Blvd. to Rengstorff Ave.	1.01	F	(0.5)
307	US 101	NB	PM	Rengstorff Ave. to San Antonio Rd.	0.71	F	(0.5)
309	US 101	NB	PM	Oregon Expwy. to Embarcadero Rd.	0.15	F	(0.5)
243	US 101	SB	PM	Burnett Ave (Lane Drop) to Cochrane Rd.	0.87	F	(0.5)
265	US 101	SB	PM	Lawrence Expwy. to Gr America Pkwy	1.12	F	(2.0)
266	US 101	SB	PM	N. Fair Oaks Ave. to Lawrence Expwy.	0.98	F	(0.5)
269	US 101	SB	PM	Moffett Blvd. to SR 237	1.68	F	(1.5)
270	US 101	SB	PM	SR 85 to Moffett Blvd.	0.33	F	(1.0)
275	US 101	SB	PM	Embarcadero to Oregon Expwy	0.15	F	(1.5)

MIXED-FLOW LEVEL OF SERVICE ANALYSIS

In 2012, there were 859 mixed-flow lane-miles of freeway in Santa Clara County. Figure 4.2 summarizes the overall operation of the freeway system, including lane miles operating at each LOS, regardless of CMP exemption. These values are based on the most congested time recorded for each segment during the aerial data collection.

Figure 4.2 2014 Freeway Mixed-Flow Lane Mile Operation



In total, 232 (27%) and 203 (24%) lane-miles operated at LOS F in the AM and PM time periods, respectively, in 2014. This represents an increase of 29 lane-miles in the AM period and a decrease of 15 lane-miles in the PM period from 2013. For the AM time period, LOS C increased by 5% while both LOS D and E decreased by 4% in lane-miles. The number of lane-miles operating at each LOS for the observed PM period remained within 3% of 2013 levels for all levels of service.

Figures 4.3 and 4.4 detail the percent of mixed flow lane-miles operating at each LOS over the last five (5) years for the AM and PM peak periods, respectively. Comparing 2014 AM results to the previous years, the number of lane-miles operating at LOS D, E, or F has remained in the range of 55% to 60% of all mixed flow lane-miles. The 2014 AM monitoring shows the number of mixed flow lane-miles at LOS D decreased by 41 lane-miles, LOS E decreased by 32 lane-miles, and LOS F increased by 30 lane-miles from 2013 monitoring.

During the PM peak over the last five (5) years, the number of lane-miles operating at LOS D, E, or F has remained at in the range of 60% to 65% of all mixed flow lane-miles. The 2014 PM monitoring shows the number of mixed flow lane-miles at LOS D decreased by 19 lane-miles, LOS E increased by 1 lane-mile, and LOS F decreased by 15 lane-miles from 2013 monitoring.

Figure 4.3 Mixed Flow Lane Miles at Each LOS, 2010-2014 (AM Peak)

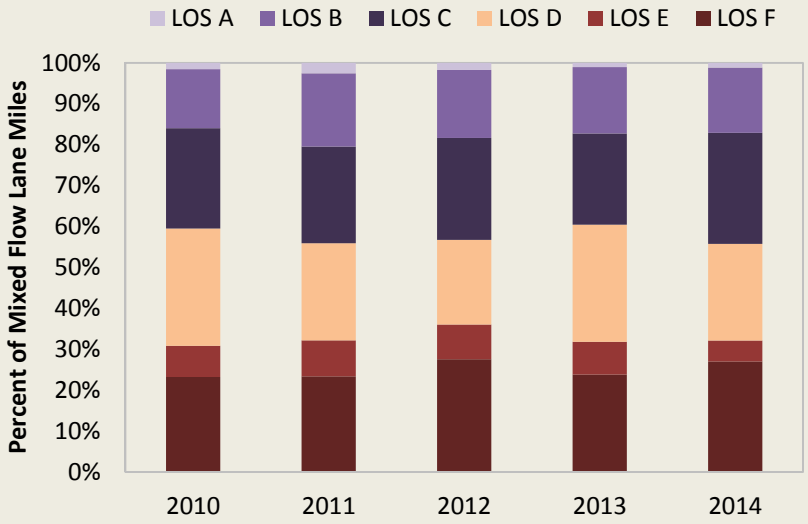


Figure 4.4 Mixed Flow Lane Miles at Each LOS, 2010-2014 (PM Peak)

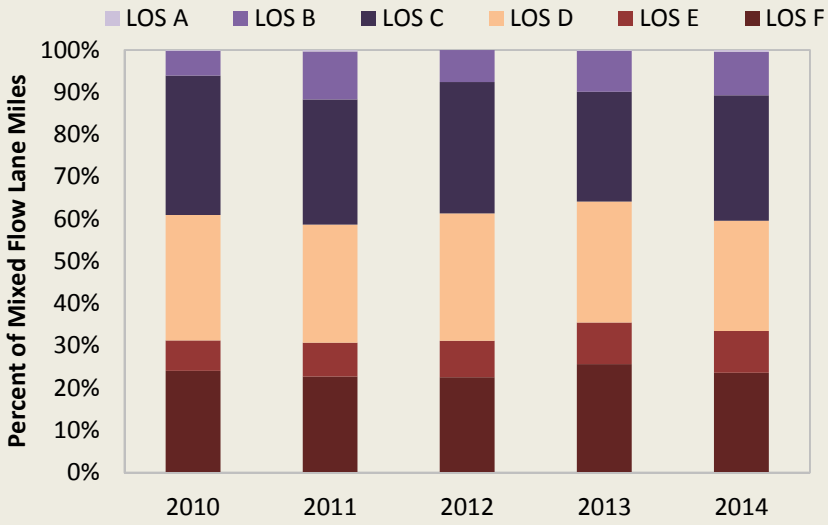


Figure 4.5 Mixed Flow Level of Service in the AM Peak Period

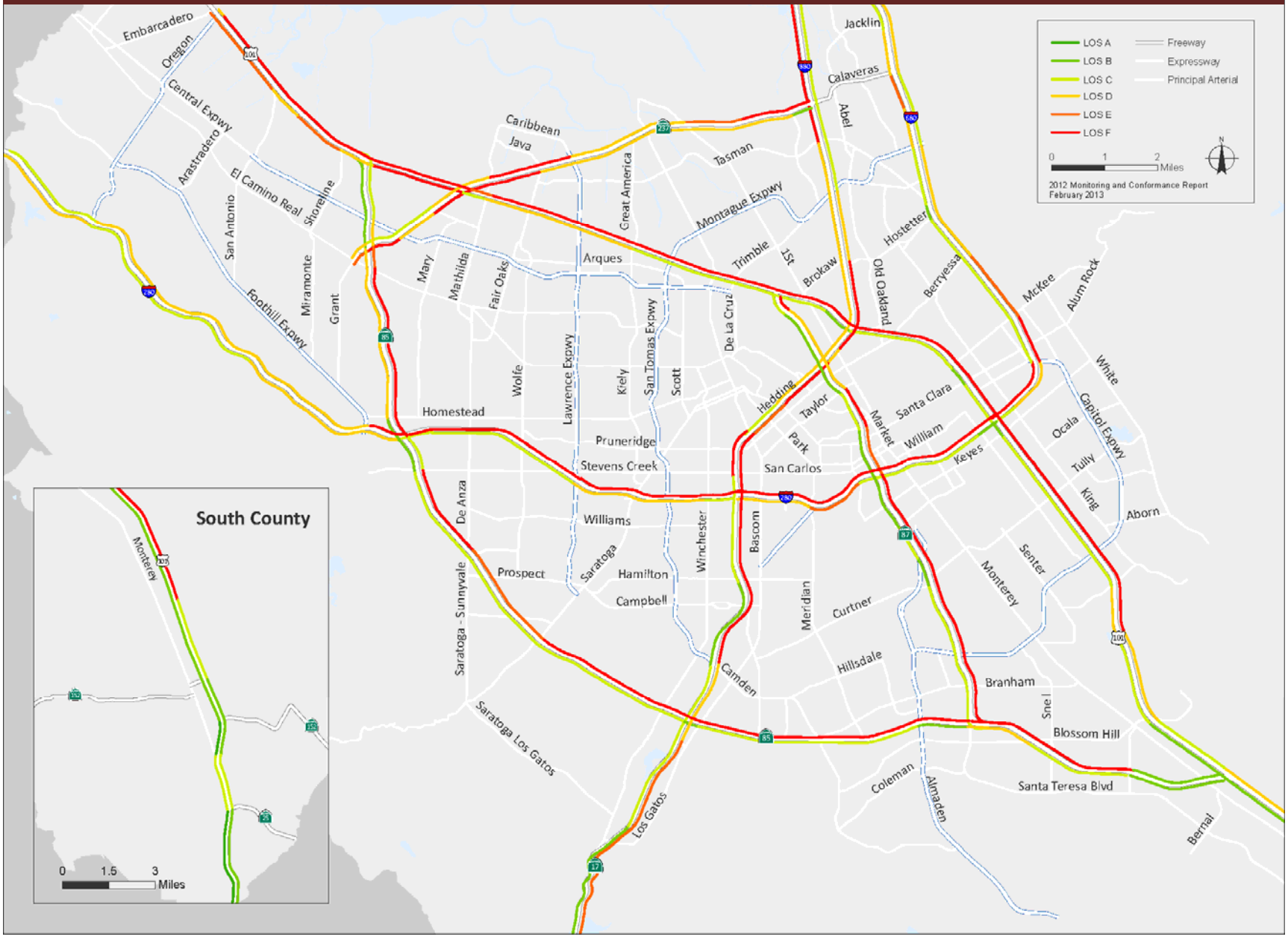
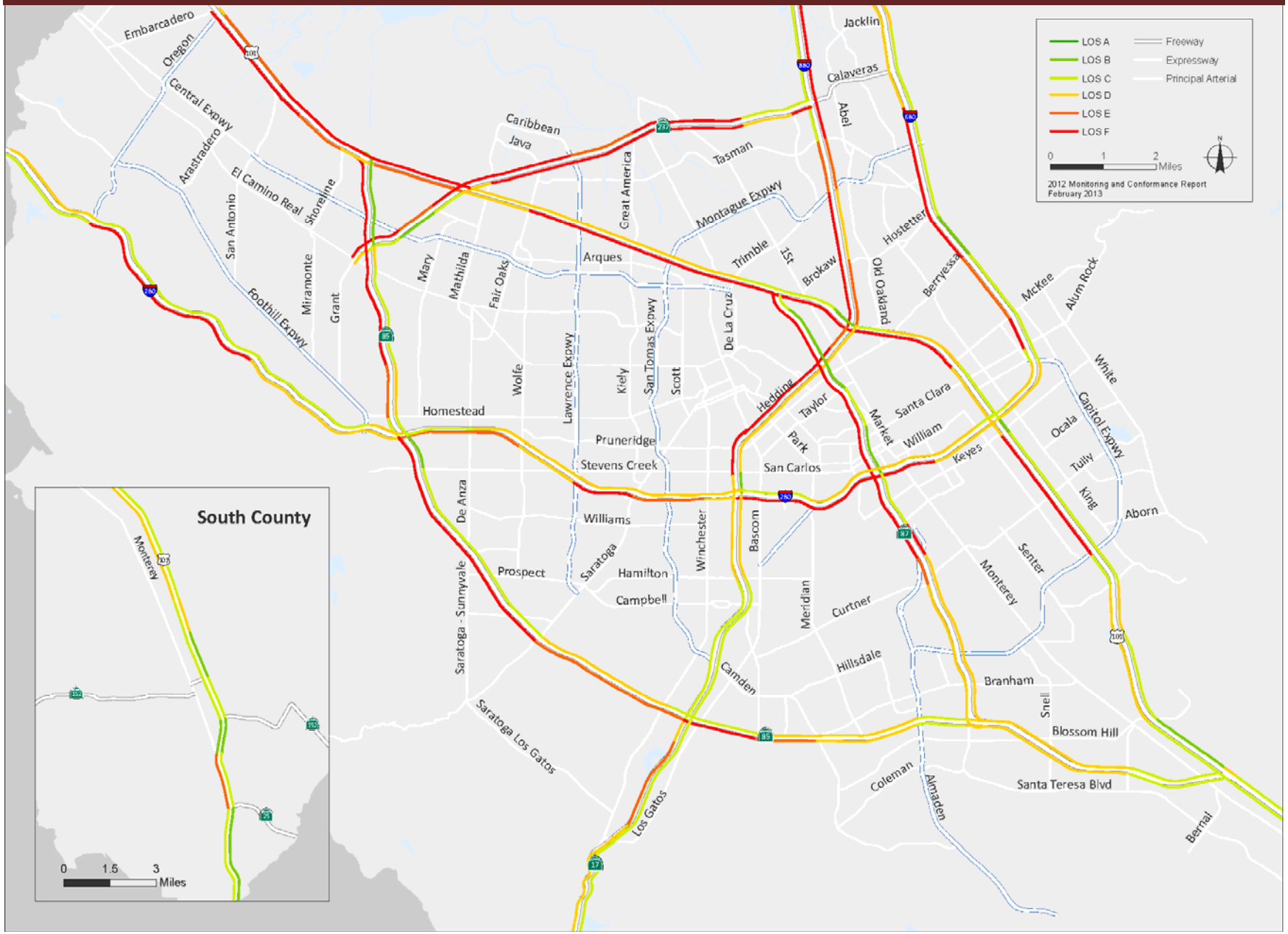


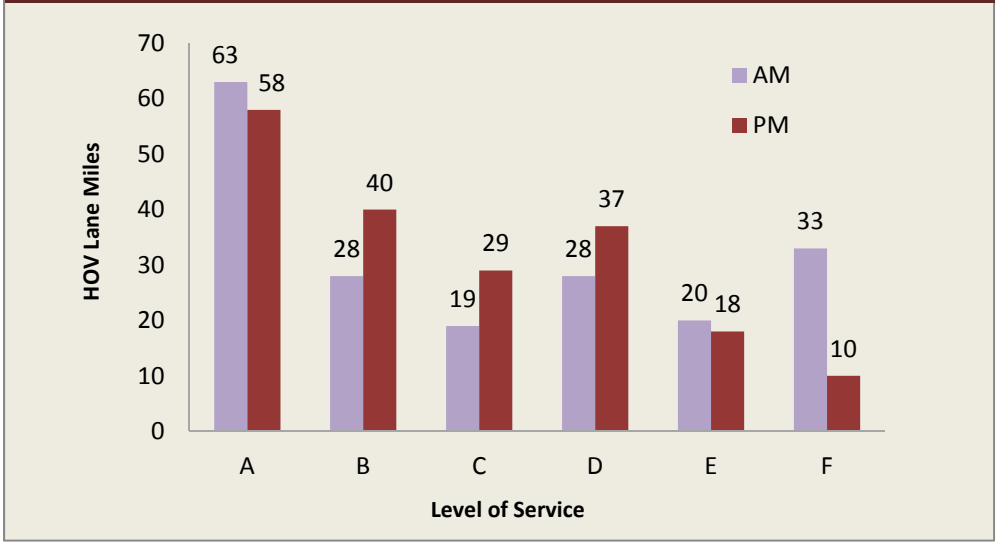
Figure 4.6 Mixed Flow Level of Service in the PM Peak Period



HOV LEVEL OF SERVICE ANALYSIS

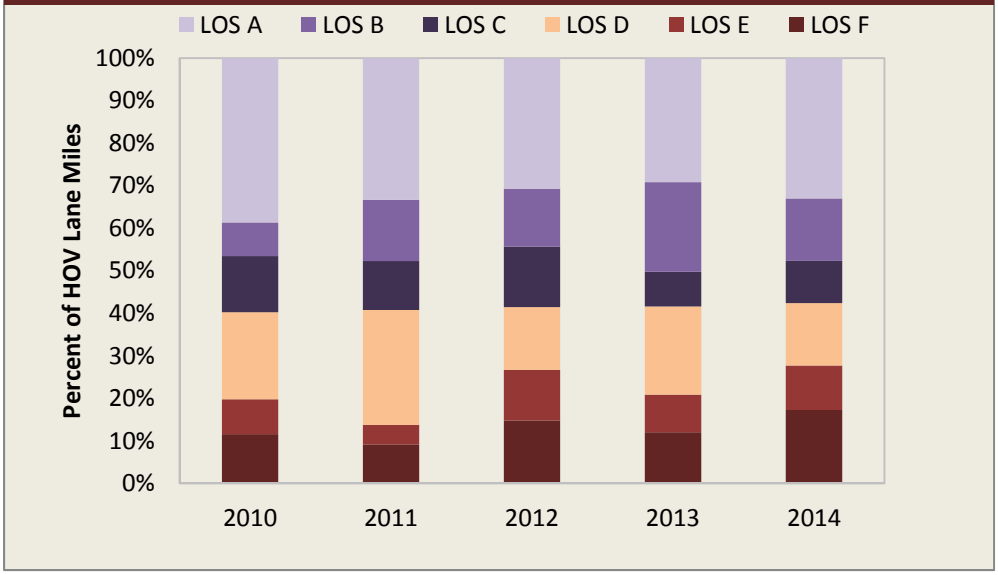
There are 185 directional miles of HOV lanes throughout the freeway network in Santa Clara County. Figure 4.7 shows the results of the HOV lane LOS analysis for 2014. About 72% of the HOV lanes operate at LOS D or better in the AM peak while 86% operate at LOS D or better in the PM peak hour. Fewer segments operating at LOS E and LOS F in the PM peak suggests that HOV lane use is more concentrated in the AM peak resulting in slower speeds and a worse LOS.

Figure 4.7 2014 Freeway HOV Lane Mile Operation



HOV operates at a much higher level of service compared to mixed-flow lanes. However, the HOV system does include segments that operate at LOS F. These 46 deficient segments (10 more than in 2013) account for 33 directional miles (10 more than in 2013) during the AM peak and 9 directional miles (1 more than in 2013) during the PM peak. This is approximately 19% of the HOV system in the AM peak and 5% of the HOV system in the PM peak.

Figure 4.8 HOV Lane Miles at Each LOS, 2010-2014 (AM Peak)



In addition to the results for 2013, Figure 4.8 and 4.9 detail the percent of HOV lane miles operating at each LOS over the last five years for the AM and PM peak period, respectively. Comparing 2013 AM results to the previous years, the number of segments operating at LOS D, LOS E, or LOS F has remained at roughly 40% of all HOV lane miles. The 2013 AM monitoring has the fewest number of miles at LOS D, but it has the most HOV lane miles operating at LOS E and LOS F compared to previous years.

Figure 4.9 HOV Lane Miles at Each LOS, 2010-2014 (PM Peak)

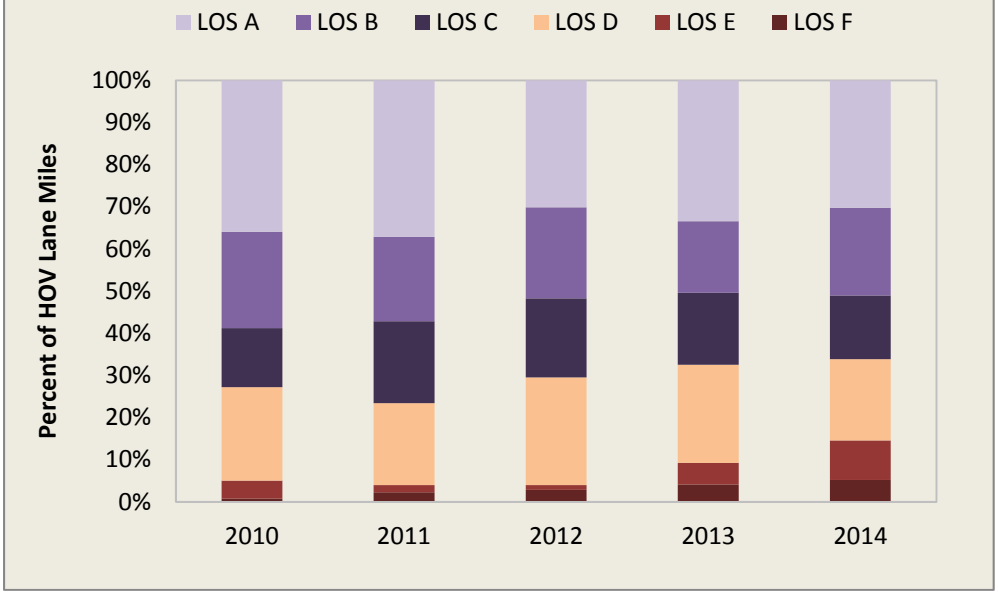


Table 4.5 and Table 4.6 present the complete list of all HOV segments operating at LOS F in the AM and PM peak, respectively. All segments in which the HOV lane operated at LOS F also had mixed-flow operations at LOS F for 2014. HOV lanes experience two types of weaving movements: one in

which vehicles wishing to use the HOV lane merge from the adjacent mixed-flow lanes; and one in which HOVs wishing to exit the freeway merge into adjacent mixed-flow lanes. When adjacent mixed-flow lanes are congested, these merge movements can slow down vehicles in the HOV lane. The LOS F results in the HOV lanes are therefore probably caused not by demand exceeding capacity, but by weaving movements.

Figure 4.10 HOV Level of Service in the AM Peak Period

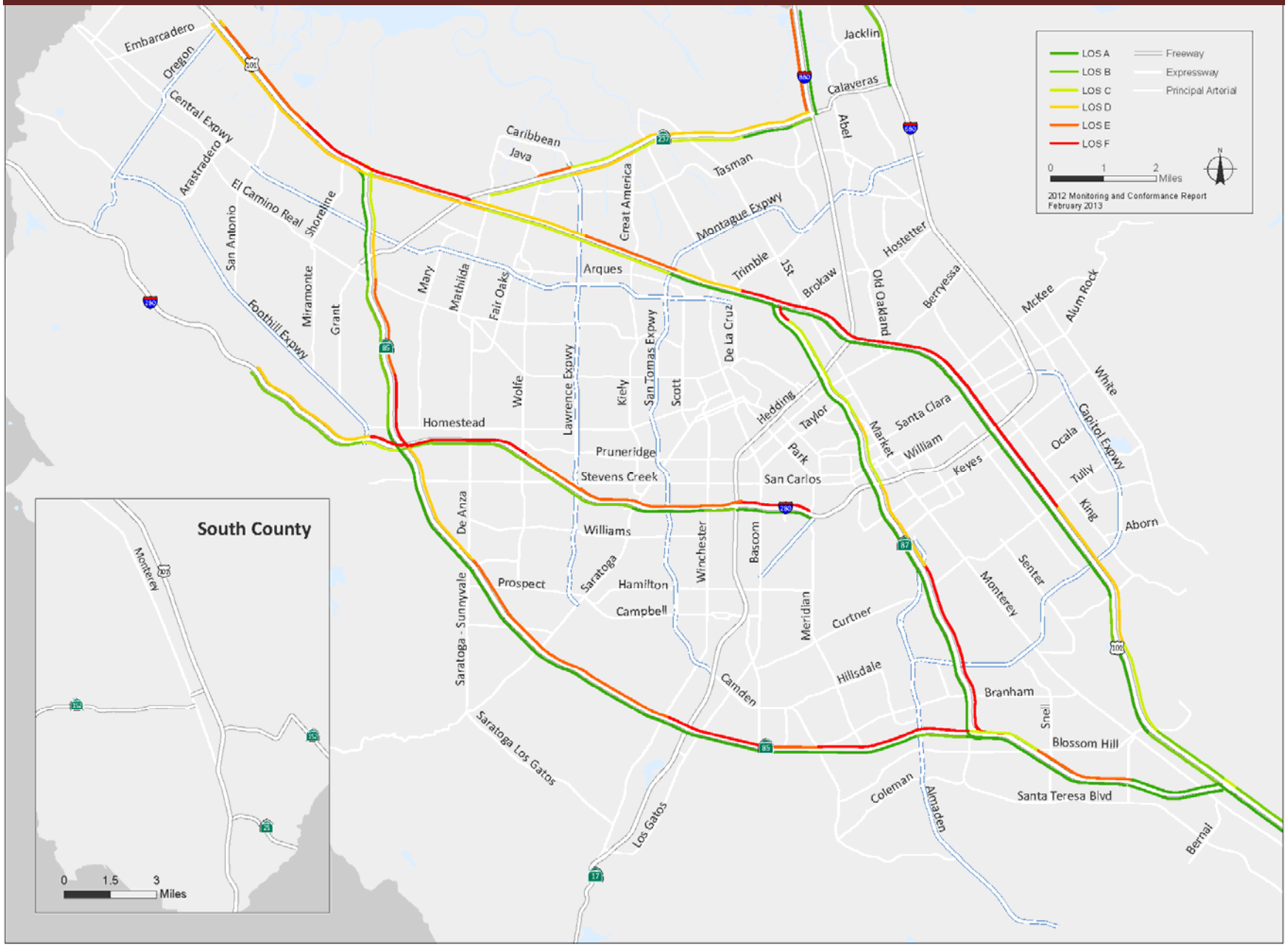


Figure 4.11 HOV Level of Service in the PM Peak Period

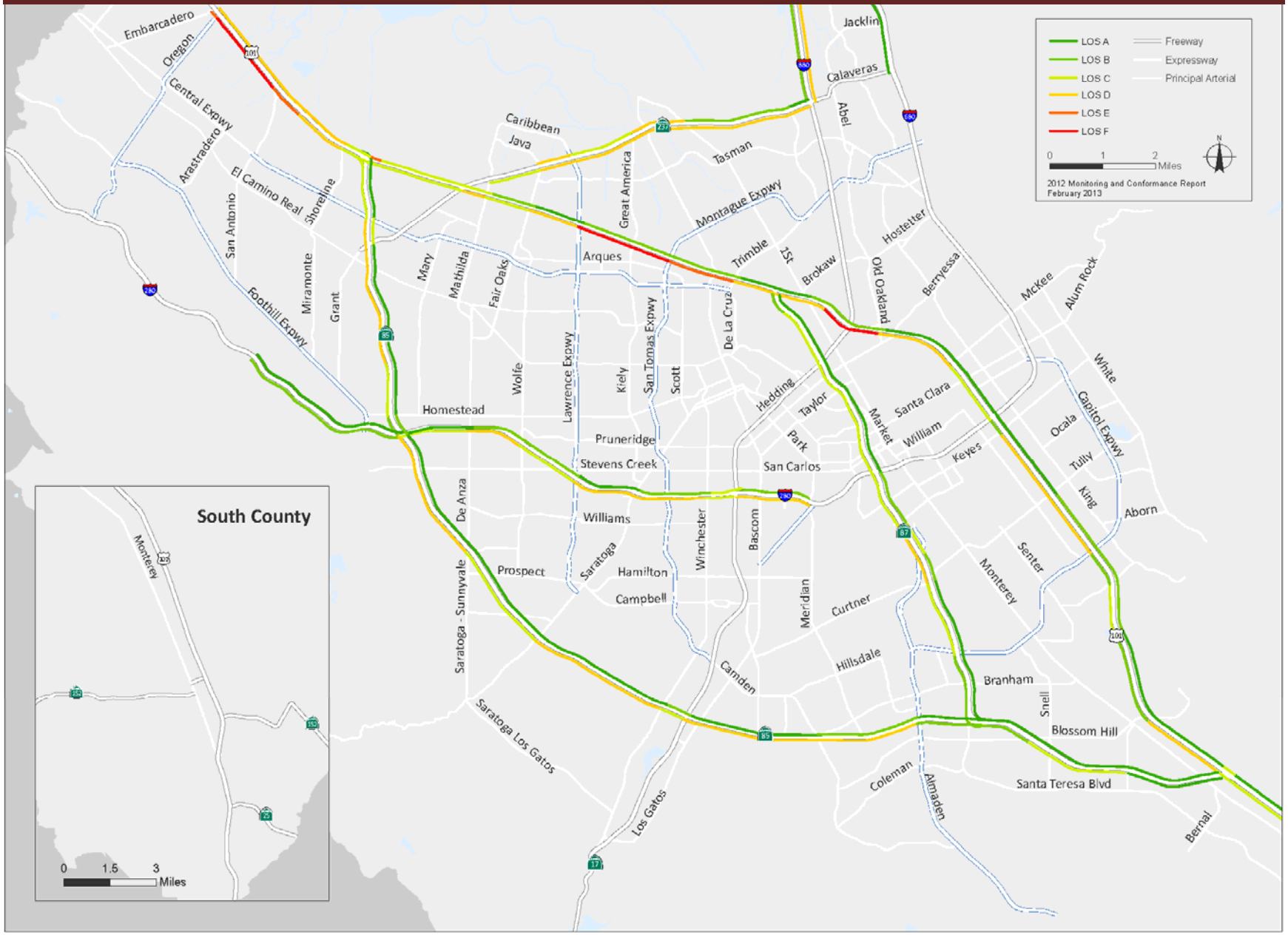


TABLE 4.5 HOV SEGMENTS AT LOS F – AM PEAK PERIOD

ID	Freeway	Dir	From	To	Length
13	I-880	SB	Dixon Landing Rd.	SR 237	2.0
70	SR 87	NB	SR 85	Capitol Expwy.	1.1
71	SR 87	NB	Capitol Expwy.	Curtner Ave.	1.5
72	SR 87	NB	Curtner Ave.	Almaden Rd.	0.7
75	SR 87	NB	I-280	Julian St.	1.0
76	SR 87	NB	Julian St.	Coleman Ave.	0.4
414	SR 87	NB	Coleman Ave.	Taylor St.	0.4
89	SR 237	WB	I-880	McCarthy Blvd.	0.4
122	I-280	WB	Saratoga Ave.	Lawrence Expwy.	1.2
124	I-280	WB	I-880	Winchester Blvd.	0.6
125	I-280	WB	Meridian Ave.	I-880	1.4
169	SR 85	NB	W. Fremont Ave.	El Camino Real	1.9
170	SR 85	NB	W. Homestead Rd.	W. Fremont Ave.	1.0
171	SR 85	NB	I-280	W. Homestead Rd	0.3
172	SR 85	NB	Stevens Creek Blvd.	I-280	0.8
173	SR 85	NB	Saratoga-Sunnyvale Rd.	Stevens Creek Blvd.	1.8
176	SR 85	NB	SR 17	Winchester Blvd.	0.5
177	SR 85	NB	S. Bascom Ave.	SR 17	0.3
178	SR 85	NB	Union Ave.	S. Bascom Ave.	1.1
180	SR 85	NB	Almaden Expwy.	Camden Ave.	2.0
181	SR 85	NB	SR 87	Almaden Expwy.	0.9
182	SR 85	NB	Blossom Hill Rd.	SR 87	1.3
283	US 101	NB	Silver Creek Valley Rd.	Hellyer Ave.	1.8
287	US 101	NB	Tully Rd.	Story Rd.	1.5
288	US 101	NB	Story Rd.	I-280	0.4
289	US 101	NB	I-280	Santa Clara St	0.9
290	US 101	NB	Santa Clara St	McKee Rd	0.4
291	US 101	NB	McKee Rd	Oakland Rd	1.6
292	US 101	NB	Oakland Rd	I-880	0.6
293	US 101	NB	I-880	Old Bayshore Hwy	0.5
294	US 101	NB	Old Bayshore Hwy	N. First St	0.5
295	US 101	NB	N. First St	Guadalupe Pkwy	0.6
296	US 101	NB	Guadalupe Pkwy	De La Cruz Blvd	0.8
299	US 101	NB	Bowers Ave./Great America	Lawrence Expwy.	1.1
Total Congested Miles on I-280					2.0
Total Congested Miles on SR-87					5.1
Total Congested Miles on SR 237					0.4
Total Congested Miles on I-280					3.1
Total Congested Miles on SR-85					11.9
Total Congested Miles on US-101					10.6

TABLE 4.6 HOV SEGMENTS AT LOS F – PM PEAK PERIOD

ID	Freeway	Dir	From	To	Length
274	US 101	SB	Oregon Expwy	San Antonio Ave	1.85
265	US 101	SB	Lawrence Expwy	Bower Ave / Great American Pkwy	1.12
264	US 101	SB	Bower Ave / Great American Pkwy	Montaque Expwy / Santa Tomas Expwy	0.75
259	US 101	SB	Old Bayshore Hwy	I-880	0.5
258	US 101	SB	I-880	Oakland Rd	0.57
				Total Congested Miles on US-101	4.79

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
31	SR 17	NB	Summit Rd	Bear Creek	4.06	2	2	0	08:20 - 08:40	119	0	F		9		2150	
30	SR 17	NB	Bear Creek	Saratoga	2.90	2	2	0	08:20 - 08:40	63	0	F		31		3910	
29	SR 17	NB	Saratoga	Lark Ave	1.81	2	2	0	08:00 - 08:20	54	0	E		38		4110	
28	SR 17	NB	Lark Ave	SR 85	0.46	2	2	0	08:40 - 09:00	46	0	D		47		4330	
27	SR 17	NB	SR 85	San Tomas / Camden	1.17	3	3	0	08:40 - 09:00	74	0	F		24		5330	
26	SR 17	NB	San Tomas / Camden	Hamilton	1.82	3	3	0	08:20 - 08:40	80	0	F		21		5040	
25	SR 17	NB	Hamilton	I-280	1.61	3	3	0	08:40 - 09:00	81	0	F		21		5110	
184	SR 85	NB	US 101	Cottle Rd	1.79	3	2	1	08:00 - 08:20	20	16	C	B	66	67	2640	1080
183	SR 85	NB	Cottle Rd	Blossom Hill Rd	1.96	3	2	1	08:00 - 08:20	76	52	F	E	23	40	3500	2080
182	SR 85	NB	Blossom Hill Rd	SR 87	1.27	3	2	1	08:00 - 08:20	93	70	F	F	16	26	2980	1820
181	SR 85	NB	SR 87	Almaden Expwy	0.94	3	2	1	08:40 - 09:00	111	106	F	F	11	12	2450	1280
180	SR 85	NB	Almaden Expwy	Camden Ave	1.97	3	2	1	07:20 - 07:40	104	82	F	F	13	20	2710	1640
179	SR 85	NB	Camden Ave	Union Ave	1.17	3	2	1	07:20 - 07:40	92	58	F	E	16	35	2950	2030
178	SR 85	NB	Union Ave	S. Bascom Ave	1.13	3	2	1	07:20 - 07:40	80	67	F	F	21	28	3360	1880
177	SR 85	NB	S. Bascom Ave	SR 17	0.27	3	2	1	08:00 - 08:20	96	111	F	F	15	11	2880	1230
176	SR 85	NB	SR 17	Winchester Blvd	0.50	3	2	1	07:20 - 07:40	82	96	F	F	20	15	3280	1440
175	SR 85	NB	Winchester Blvd	Saratoga Ave	2.68	3	2	1	07:20 - 07:40	59	49	F	E	34	43	4020	2110
174	SR 85	NB	Saratoga Ave	Saratoga-Sunnyvale Rd	2.19	3	2	1	07:40 - 08:00	52	36	E	D	40	61	4160	2200
173	SR 85	NB	Saratoga-Sunnyvale Rd	Stevens Creek Blvd	1.83	3	2	1	08:40 - 09:00	65	64	F	F	29	30	3770	1920
172	SR 85	NB	Stevens Creek Blvd	I-280	0.75	3	2	1	08:40 - 09:00	124	108	F	F	8	12	1990	1330
171	SR 85	NB	I-280	W. Homestead Rd	0.34	3	2	1	08:00 - 08:20	148	118	F	F	6	10	2140	1180
170	SR 85	NB	W. Homestead Rd	W. Fremont Ave	1.00	3	2	1	08:40 - 09:00	99	88	F	F	14	18	2780	1590
169	SR 85	NB	W. Fremont Ave	EL Camino Real	1.89	3	2	1	08:00 - 08:20	69	61	F	F	27	32	3730	1960
168	SR 85	NB	EL Camino Real	SR 237	0.41	3	2	1	08:00 - 08:20	42	36	D	D	52	61	4370	2200
167	SR 85	NB	SR 237	Central Expwy	0.47	3	2	1	08:20 - 08:40	30	28	D	D	65	66	3900	1850
166	SR 85	NB	Central Expwy	US 101	1.24	3	2	1	08:40 - 09:00	46	21	D	C	47	66	4330	1390
70	SR 87	NB	SR 85	Capitol Expwy	1.09	3	2	1	08:40 - 09:00	106	93	F	F	12	16	2550	1490

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
71	SR 87	NB	Capitol Expwy	Curtner	1.49	3	2	1	08:40 - 09:00	108	84	F	F	12	19	2600	1600
72	SR 87	NB	Curtner	Almaden Rd	0.73	3	2	1	08:40 - 09:00	102	78	F	F	13	22	2660	1720
73	SR 87	NB	ALMADEN RD	Alma Ave	0.69	3	2	1	07:20 - 07:40	65	49	F	E	29	43	3770	2110
74	SR 87	NB	Alma Ave	I-280	0.90	3	2	1	08:00 - 08:20	60	36	F	D	33	61	3960	2200
75	SR 87	NB	I-280	Julian St	0.96	3	2	1	08:40 - 09:00	93	64	F	F	16	30	2980	1920
76	SR 87	NB	Julian St	Coleman AVE	0.38	3	2	1	07:20 - 07:40	100	61	F	F	14	32	2800	1960
414	SR 87	NB	Coleman St	Taylor St	0.41	3	2	1	08:40 - 09:00	79	62	F	F	22	32	3480	1990
416	SR 87	NB	Taylor St	Skyport Dr	1.87	3	2	1	08:40 - 09:00	69	32	F	D	27	64	3730	2050
418	SR 87	NB	Skyport Dr	US 101	0.67	3	2	1	07:00 - 07:20	142	51	F	F	6	41	1710	2100
309.11	US 101	NB	SR 156	SR 129	1.78	2	2	0	07:40 - 08:00	13	0	B		67		1730	
309.1	US 101	NB	SR 129	Betabel Rd	1.61	2	2	0	09:20 - 09:40	14	0	B		67		1870	
309.09	US 101	NB	Betabel Rd	Bloomfield Ave	4.15	2	2	0	08:40 - 09:00	15	0	B		67		2000	
309.08	US 101	NB	Bloomfield Ave	Monterey Rd	1.85	2	2	0	07:40 - 08:00	30	0	D		65		3900	
309.07	US 101	NB	Monterey Rd	Pacheco Pass Hwy	1.11	3	3	0	09:00 - 09:20	15	0	B		67		3000	
309.06	US 101	NB	Pacheco Pass Hwy	LEAVESLEY RD	1.46	3	3	0	06:20 - 06:40	25	0	C		66		4950	
309.05	US 101	NB	LEAVESLEY RD	Buena Vista Ave	1.60	3	3	0	07:20 - 07:40	23	0	C		66		4560	
309.04	US 101	NB	Buena Vista Ave	Masten Ave	1.16	3	3	0	06:20 - 06:40	22	0	C		66		4360	
309.03	US 101	NB	Masten Ave	San Martin Ave	2.17	3	3	0	07:00 - 07:20	31	0	D		65		6050	
309.02	US 101	NB	San Martin Ave	Tennant Ave	3.55	3	3	0	06:20 - 06:40	64	0	F		30		5760	
309.01	US 101	NB	Tennant Ave	East Dunne Ave	0.96	3	3	0	07:20 - 07:40	70	0	F		26		5460	
276	US 101	NB	East Dunne Ave	Cochrane Rd	1.82	3	3	0	07:20 - 07:40	46	0	D		47		6490	
277	US 101	NB	Cochrane Rd	Burnett Ave (Lane Drop)	0.87	4	3	1	07:00 - 07:20	28	20	D	C	66	66	5510	1320
278	US 101	NB	Burnett Ave (Lane Drop)	Sheller Ave	2.57	4	3	1	07:40 - 08:00	24	30	C	D	66	65	4760	1960
279	US 101	NB	Sheller Ave	Lane Drop (SB)	4.32	4	3	1	06:20 - 06:40	26	30	C	D	66	65	5150	1590
280	US 101	NB	Lane Drop (SB)	SR 85	1.00	4	3	1	07:00 - 07:20	29	23	D	C	65	66	5660	1520

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
281	US 101	NB	SR 85	Bernal Rd	0.20	4	3	1	07:00 - 07:20	34	30	D	D	63	65	6430	1950
282	US 101	NB	Bernal Rd	Silver Creek Valley Rd	1.48	4	3	1	07:00 - 07:20	26	24	C	C	66	66	5150	1590
283	US 101	NB	Silver Creek Valley Rd	Hellyer Ave	1.84	4	3	1	07:20 - 07:40	76	69	F	F	23	27	5250	1870
284	US 101	NB	Hellyer Ave	Yerba Buena Rd	0.90	4	3	1	09:20 - 09:40	98	56	F	E	15	36	4410	2020
285	US 101	NB	Yerba Buena Rd	Capitol Expwy	0.80	4	3	1	07:20 - 07:40	92	56	F	E	16	36	4420	2020
286	US 101	NB	Capitol Expwy	Tully Rd	1.33	4	3	1	07:40 - 08:00	77	57	F	E	23	36	5320	2060
287	US 101	NB	Tully Rd	Story Rd	1.46	4	3	1	07:00 - 07:20	72	95	F	F	25	15	5400	1430
288	US 101	NB	Story Rd	I-280	0.38	4	3	1	09:20 - 09:40	79	86	F	F	22	19	5220	1640
289	US 101	NB	I-280	Santa Clara St	0.88	4	3	1	07:00 - 07:20	103	102	F	F	13	13	4020	1330
290	US 101	NB	Santa Clara St	McKee Rd	0.39	4	3	1	09:00 - 09:20	112	92	F	F	11	16	3700	1480
291	US 101	NB	McKee Rd	Oakland Rd	1.58	4	3	1	08:40 - 09:00	89	83	F	F	18	20	4810	1660
292	US 101	NB	Oakland Rd	I-880	0.57	4	3	1	09:20 - 09:40	96	75	F	F	15	24	4320	1800
293	US 101	NB	I-880	Old Bayshore Hwy	0.50	4	3	1	09:20 - 09:40	100	84	F	F	14	19	4200	1600
294	US 101	NB	Old Bayshore Hwy	N. First St	0.49	4	3	1	07:40 – 08:20	109	104	F	F	12	13	3930	1360
295	US 101	NB	N. First St	Guadalupe Pkwy	0.64	4	3	1	08:40 - 09:00	85	84	F	F	19	19	4850	1600
296	US 101	NB	Guadalupe Pkwy	De La Cruz Blvd	0.77	4	3	1	09:20 - 09:40	107	100	F	F	12	14	3860	1400
297	US 101	NB	De La Cruz Blvd	Montaque Expwy / Santa Tomas Expwy	1.28	4	3	1	08:00 - 08:20	70	53	F	E	26	39	5460	2070
298	US 101	NB	Montaque Expwy / Santa Tomas Expwy	Bower Ave / Great America Pkwy	0.75	4	3	1	07:00 - 07:20	81	51	F	E	21	41	5110	2100
299	US 101	NB	Bower Ave / Great American Pkwy	Lawrence Expwy	1.12	4	3	1	07:40 - 08:00	83	60	F	F	20	33	4980	1980
300	US 101	NB	Lawrence Expwy	N. Fair Oaks Ave	0.98	4	3	1	07:00 - 07:20	90	55	F	E	17	37	4590	2040
301	US 101	NB	N. Fair Oaks Ave	N. Mathilda Ave	0.85	4	3	1	07:00 - 07:20	59	37	F	D	34	59	6020	2190
302	US 101	NB	N. Mathilda Ave	SR 237	0.35	4	3	1	08:00 - 08:20	40	42	D	D	55	52	6600	2190
303	US 101	NB	SR 237	Moffett Blvd	1.68	4	3	1	07:40 - 08:00	49	35	E	D	43	62	6330	2170
304	US 101	NB	MOFFETT BLVD	SR 85	0.33	4	3	1	07:40 - 08:00	66	33	F	D	29	64	5750	2120
305	US 101	NB	SR 85	N. Shoreline Blvd	0.38	5	4	1	07:40 - 08:00	79	34	F	D	22	63	6960	2150
306	US 101	NB	N. Shoreline Blvd	RENGSTORFF AVE	1.01	4	3	1	07:40 - 08:00	76	25	F	C	23	66	5250	3300
307	US 101	NB	RENGSTORFF AVE	San Antonio Ave	0.71	4	3	1	07:40 - 08:00	42	20	D	C	52	66	6560	2640

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
308	US 101	NB	San Antonio Ave	Oregon Expwy	1.85	4	3	1	09:00 - 09:20	42	29	D	D	52	65	6560	3020
309	US 101	NB	Oregon Expwy	Embarcadero Rd	0.15	4	3	1	07:40 - 08:00	46	38	D	D	47	58	6490	2210
88	SR 237	EB	El Camino Real	SR 85	0.40	2	2	0	09:00 - 09:20	50	0	E		42		4200	
87	SR 237	EB	SR 85	Central Pkwy	0.63	2	2	0	08:40 - 09:00	51	0	E		41		4190	
86	SR 237	EB	Central Pkwy	Maude Ave	0.80	2	2	0	08:20 - 08:40	45	0	D		48		4320	
85	SR 237	EB	Maude Ave	US 101	0.71	2	2	0	08:40 - 09:00	29	0	D		65		3770	
84	SR 237	EB	US 101	Mathilda Ave	0.53	2	2	0	08:40 - 09:00	38	0	D		58		4410	
83	SR 237	EB	Mathilda Ave	N. Fair Oaks Ave	0.96	3	2	1	08:40 - 09:00	43	15	D	B	51	67	4390	1010
82	SR 237	EB	N. Fair Oaks Ave	Lawrence Expwy	0.63	3	2	1	08:40 - 09:20	32	12	D	B	64	67	4100	810
81	SR 237	EB	Lawrence Expwy	Great America Pkwy	1.27	3	2	1	08:00 - 08:20	35	16	D	B	62	67	4340	1080
80	SR 237	EB	GREAT AMERICA PKWY	N. First St	1.00	3	2	1	08:20 - 08:40	46	14	D	B	47	67	4330	940
79	SR 237	EB	N. First St	Zanker Rd	1.61	3	2	1	08:20 - 08:40	46	19	D	C	47	66	4330	1260
78	SR 237	EB	Zanker Rd	McCarthy Blvd	0.94	3	2	1	08:20 - 08:40	35	14	D	B	62	67	4340	940
77	SR 237	EB	McCarthy Blvd	I-880	0.40	3	2	1	07:40 - 08:00	19	11	C	A	66	67	2590	740
130.1	I-280	EB	Alpine Rd	Page Mill Rd	2.25	4	4	0	09:20 – 09:40	25	0	C		66		6600	
131	I-280	EB	Page Mill Rd	La Barranca Rd	1.73	4	4	0	08:00 - 08:20	21	0	C		66		5550	
132	I-280	EB	La Barranca Rd	El Monte Rd	1.60	4	4	0	08:40 - 09:00	20	0	C		66		5280	
133	I-280	EB	El Monte Rd	Magdalena Ave	0.95	4	4	0	09:20 - 09:40	20	0	C		66		5280	
134	I-280	EB	Magdalena Ave	Foothill Expwy	2.65	4	3	1	08:40 - 09:00	23	12	C	B	66	67	4560	810
135	I-280	EB	Foothill Expwy	SR 85	0.70	4	3	1	08:40 - 09:00	33	14	D	B	64	67	6340	940
136	I-280	EB	SR 85	De Anza Blvd	1.31	4	3	1	08:40 - 09:00	24	9	C	A	66	67	4760	610
137	I-280	EB	De Anza Blvd	Wolfe Rd	1.06	4	3	1	08:20 - 08:40	36	10	D	A	61	67	6590	670
138	I-280	EB	Wolfe Rd	Lawrence Expwy	1.24	4	3	1	08:40 - 09:00	35	16	D	B	62	67	6510	1080
139	I-280	EB	Lawrence Expwy	Saratoga Ave	1.19	4	3	1	08:00 - 08:20	37	10	D	A	59	67	6550	670
140	I-280	EB	Saratoga Ave	Winchester Blvd	1.37	4	3	1	08:40 - 09:00	32	10	D	B	64	67	6150	740
141	I-280	EB	Winchester Blvd	I-880	0.55	4	3	1	08:20 - 08:40	33	14	C	B	64	67	6340	940
142	I-280	EB	I-880	Meridian Ave	1.40	4	3	1	08:20 - 08:40	26	18	C	B	66	67	5150	670

Table 4.7 2014 Freeway LOS – AM Peak Period																	
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
143	I-280	EB	Meridian Ave	Bird Ave	1.07	4	4	0	08:00 - 08:20	36	0	D		61		8790	
144	I-280	EB	Bird Ave	SR 87	0.35	4	4	0	07:40 - 08:00	20	0	C		66		5280	
145	I-280	EB	SR 87	10th St	1.20	4	4	0	08:20 - 08:40	17	0	B		67		4530	
146	I-280	EB	10th St	McLaughlin Ave	0.92	4	4	0	09:40 - 09:20	19	0	C		66		5020	
147	I-280	EB	McLaughlin Ave	US 101	0.37	4	4	0	07:40 - 08:00	22	0	C		66		5810	
51	I-680	NB	US 101	King Rd	0.40	4	4	0	08:20 - 08:40	60	0	F		33		7920	
52	I-680	NB	King Rd	Capitol Expwy	1.00	4	4	0	08:20 - 08:40	82	0	F		20		6560	
53	I-680	NB	Capitol Expwy	Alum Rock Ave	0.31	4	4	0	07:20 - 07:40	87	0	F		18		6270	
54	I-680	NB	Alum Rock Ave	McKee Rd	0.64	4	4	0	07:40 - 08:00	68	0	F		27		7350	
55	I-680	NB	McKee Rd	Berryessa Rd	1.47	4	4	0	07:20 - 07:40	42	0	D		52		8740	
56	I-680	NB	Berryessa Rd	Hostetter Rd	0.94	4	4	0	08:20 - 08:40	33	0	D		64		8450	
57	I-680	NB	Hostetter Rd	Capitol Ave	0.31	4	4	0	08:20 - 08:40	38	0	D		58		8820	
58	I-680	NB	Capitol Ave	Montague Expwy	1.00	4	4	0	07:40 - 08:00	32	0	D		64		8200	
59	I-680	NB	Montague Expwy	Yosemite Dr	0.77	4	4	0	08:40 - 09:00	29	0	D		65		7540	
60	I-680	NB	Yosemite Dr	Calaveras Blvd / SR 237	0.69	4	4	0	09:00 - 09:20	24	0	C		66		6340	
61	I-680	NB	Calaveras Blvd / SR 237	Jacklin Rd	0.85	3	3	0	07:40 - 08:00	24	0	C		66		4760	
62	I-680	NB	Jacklin Rd	Scott Creek Rd	1.57	3	3	0	08:40 - 09:00	35	0	D		62		6510	
12	I-880	NB	I-280	Stevens Cr	0.41	3	3	0	08:40 - 09:00	97	0	F		15		4370	
11	I-880	NB	Stevens Cr	N. Bascom Ave	0.84	3	3	0	08:40 - 09:00	82	0	F		20		4920	
10	I-880	NB	N. Bascom Ave	The Alameda	0.82	3	3	0	07:40 - 08:00	69	0	E		27		5590	
9	I-880	NB	The Alameda	Coleman Ave	0.59	3	3	0	07:40 - 08:00	63	0	F		31		5860	
8	I-880	NB	Coleman Ave	SR 87	0.51	3	3	0	08:40 - 09:00	78	0	F		22		5150	
7	I-880	NB	SR 87	N. 1st St	0.40	3	3	0	08:40 - 09:00	45	0	D		48		6480	
6	I-880	NB	N. 1st St	US 101	0.49	3	3	0	09:00 - 09:20	57	0	E		36		6160	
5	I-880	NB	US 101	E. Brokaw Rd	1.29	3	3	0	09:00 - 09:20	46	15	D	B	47	67	6490	1010
4	I-880	NB	E. Brokaw Rd	Montague Expwy	1.35	3	3	0	06:20 - 06:40	29	10	D	A	65	67	5660	670
3	I-880	NB	Montague Expwy	Great Mall Pkwy	0.98	3	3	0	07:40 - 08:00	23	17	C	B	66	67	4560	1140

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
2	I-880	NB	Great Mall Pkwy	SR 237	0.72	3	3	0	07:00 - 07:20	22	20	C	C	66	66	4360	1320
1	I-880	NB	SR 237	Dixon Landing	1.99	4	3	1	07:40 - 08:00	20	9	C	A	66	67	4490	610
32	SR 17	SB	I-280	Hamilton	1.61	3	3	0	08:20 - 08:40	24	0	C		66		4760	
33	SR 17	SB	Hamilton	San Tomas / Camden	1.82	3	3	0	08:20 - 08:40	24	0	C		66		5390	
34	SR 17	SB	San Tomas / Camden	SR 85	1.17	3	3	0	07:40 - 08:00	20	0	C		66		3960	
35	SR 17	SB	SR 85	Lark Ave	0.46	2	2	0	08:20 - 08:40	18	0	B		67		2400	
36	SR 17	SB	Lark Ave	Saratoga	1.81	2	2	0	08:20 - 08:40	31	0	D		65		4030	
37	SR 17	SB	Saratoga	Bear Creek	2.90	2	2	0	08:20 - 08:40	24	0	C		66		3170	
38	SR 17	SB	Bear Creek	Summit Rd	4.06	2	2	0	08:20 - 08:40	29	0	D		65		3170	
185	SR 85	SB	US 101	Central Expwy	1.24	3	2	1	08:00 - 08:20	21	3	C	A	66	67	2780	210
186	SR 85	SB	Central Expwy	SR 237	0.47	3	2	1	08:00 - 08:20	20	3	C	A	66	67	2640	210
187	SR 85	SB	SR 237	EL Camino Real	0.41	4	3	1	08:40 - 09:00	24	4	C	A	66	67	3960	270
188	SR 85	SB	EL Camino Real	W. Fremont Ave	1.89	3	2	1	08:00 - 08:20	30	10	D	A	65	67	3900	670
189	SR 85	SB	W. Fremont Ave	W. Homestead Rd	1.00	3	2	1	08:00 - 08:20	26	8	C	A	66	67	3440	540
190	SR 85	SB	W. Homestead Rd	I-280	0.41	3	2	1	08:40 - 09:00	12	9	B	A	67	67	1600	610
191	SR 85	SB	I-280	Stevens Creek Blvd	0.75	3	2	1	08:40 - 09:00	21	5	C	A	66	67	3330	340
192	SR 85	SB	Stevens Creek Blvd	Saratoga-Sunnyvale Rd	1.83	3	2	1	08:40 - 09:00	18	5	B	A	67	67	2400	340
193	SR 85	SB	Saratoga-Sunnyvale Rd	Saratoga Ave	2.19	3	2	1	07:40 - 08:00	21	8	C	A	66	67	2780	540
194	SR 85	SB	Saratoga Ave	Winchester Blvd	2.68	3	2	1	07:40 - 08:00	27	7	D	A	66	67	3540	470
195	SR 85	SB	Winchester Blvd	SR 17	0.50	3	2	1	08:00 - 08:20	19	7	C	A	66	67	2510	470
196	SR 85	SB	SR 17	S. Bascom Ave	0.27	3	2	1	08:40 - 09:00	16	11	B	A	67	67	2130	740
197	SR 85	SB	S. Bascom Ave	Union Ave	1.13	3	2	1	08:00 - 08:20	24	7	C	A	66	67	3170	470
198	SR 85	SB	Union Ave	Camden Ave	1.17	3	2	1	07:40 - 08:00	20	8	C	A	66	67	2640	540
199	SR 85	SB	Camden Ave	Almaden Expwy	1.97	3	2	1	08:00 - 08:20	25	12	C	B	66	67	3300	810
200	SR 85	SB	ALMADEN EXPWY	SR 87	0.94	3	2	1	07:40 - 08:00	23	7	C	A	66	67	3040	470
201	SR 85	SB	SR 87	Blossom Hill Rd	1.27	3	2	1	08:00 - 08:20	22	4	C	A	66	67	2910	270
202	SR 85	SB	Blossom Hill Rd	Cottle Rd	1.96	3	2	1	08:00 - 08:20	24	6	C	A	66	67	3170	410

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
203	SR 85	SB	Cottle Rd	US 101	1.79	3	2	1	07:40 - 08:00	14	5	B	A	67	67	1870	340
419	SR 87	SB	US 101	Skyport Dr	0.67	3	2	1	08:40 - 09:00	26	6	C	A	66	67	3440	410
417	SR 87	SB	Skyport Dr	Taylor St	1.87	3	2	1	08:00 - 08:20	16	3	B	A	67	67	2130	210
415	SR 87	SB	Taylor St	Coleman St	0.41	3	2	1	08:00 - 08:20	18	9	B	A	67	67	2400	610
69	SR 87	SB	Coleman Ave	Julian St	0.38	3	2	1	09:20 - 09:40	27	10	D	A	66	67	3540	670
68	SR 87	SB	Julian St	I-280	0.96	3	2	1	07:00 - 07:20	14	6	B	A	67	67	1870	410
67	SR 87	SB	I-280	Alma Ave	0.90	3	2	1	08:00 - 08:20	14	3	B	A	67	67	1870	210
66	SR 87	SB	Alma Ave	ALMADEN RD	0.69	3	2	1	08:00 - 08:20	22	9	C	A	66	67	2910	610
65	SR 87	SB	ALMADEN RD	Curtner	0.73	3	2	1	08:00 - 08:20	20	6	C	A	66	67	2640	410
64	SR 87	SB	Curtner	Capitol Expwy	1.49	3	2	1	08:00 - 08:20	20	6	C	A	66	67	2640	410
63	SR 87	SB	Capitol Expwy	SR 85	1.09	3	2	1	08:40 - 09:00	29	8	D	A	65	67	3770	540
275	US 101	SB	Embarcadero Rd	Oregon Expwy	0.15	4	3	1	08:40 - 09:00	35	33	D	D	62	64	6510	2120
274	US 101	SB	Oregon Expwy	San Antonio Ave	1.85	4	3	1	07:40 - 08:00	34	19	D	C	63	66	6430	2010
273	US 101	SB	San Antonio Ave	RENGSTORFF AVE	0.71	4	3	1	09:00 - 09:20	48	18	E	B	45	67	6480	2420
272	US 101	SB	RengstoRff Ave	N. Shoreline Blvd	1.01	4	3	1	07:40 - 08:00	40	21	D	C	55	66	6600	2780
271	US 101	SB	N. Shoreline Blvd	SR 85	0.38	4	3	1	07:00 - 07:20	36	27	D	D	61	66	6590	1790
270	US 101	SB	SR 85	MOFFETT BLVD	0.33	4	3	1	07:20 - 07:40	31	28	D	D	65	66	6050	1850
269	US 101	SB	MOFFETT BLVD	SR 237	1.68	4	3	1	08:40 - 09:00	33	22	D	C	64	66	6340	1460
268	US 101	SB	SR 237	N. Mathilda Ave	0.35	4	3	1	08:40 - 09:00	23	22	C	C	66	66	4560	1460
267	US 101	SB	N. Mathilda Ave	N. Fair Oaks Ave	0.85	4	3	1	07:40 - 08:00	34	14	D	B	63	67	6430	940
266	US 101	SB	N. Fair Oaks Ave	Lawrence Expwy	0.98	4	3	1	08:40 - 09:00	38	16	D	B	58	67	6620	1080
265	US 101	SB	Lawrence Expwy	Bower Ave / Great American Pkwy	1.12	4	3	1	08:40 - 09:00	50	16	E	B	42	67	6300	1080
264	US 101	SB	Bower Ave / Great American Pkwy	Montaque Expwy / Santa Tomas Expwy	0.75	4	3	1	08:00 - 08:20	25	16	C	B	66	67	4950	1080
263	US 101	SB	Montaque Expwy / Santa Tomas Expwy	De La Cruz Blvd	1.28	4	3	1	08:40 - 09:00	27	14	D	B	66	67	5310	940
262	US 101	SB	De La Cruz Blvd	Guadalupe Pkwy	0.77	4	3	1	07:40 - 08:00	35	9	D	A	62	67	6510	610
261	US 101	SB	Guadalupe Pkwy	N. First St	0.64	4	3	1	07:00 - 07:20	13	6	B	A	67	67	2600	410

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
260	US 101	SB	N. First St	Old Bayshore Hwy	0.49	4	3	1	07:40 - 08:00	17	6	B	A	67	67	3400	410
259	US 101	SB	Old Bayshore Hwy	I-880	0.50	4	3	1	07:20 - 07:40	12	8	B	A	67	67	2400	540
258	US 101	SB	I-880	Oakland Rd	0.57	4	3	1	06:20 - 06:40	16	5	B	A	67	67	3200	340
257	US 101	SB	Oakland Rd	McKee Rd	1.58	4	3	1	08:00 - 08:20	19	6	C	A	66	67	3770	410
256	US 101	SB	McKee Rd	Santa Clara St	0.39	4	3	1	08:00 - 08:20	14	12	B	B	67	67	2800	810
255	US 101	SB	Santa Clara St	I-280	0.88	4	3	1	08:40 - 09:00	18	4	B	A	67	67	3600	270
254	US 101	SB	I-280	Story Rd	0.38	4	3	1	07:20 - 07:40	16	7	B	A	67	67	3200	470
253	US 101	SB	Story Rd	Tully Rd	1.46	4	3	1	08:00 - 08:20	20	7	C	A	66	67	3960	470
252	US 101	SB	Tully Rd	Capitol Expwy	1.33	4	3	1	08:40 - 09:00	18	8	B	A	67	67	3600	540
251	US 101	SB	Capitol Expwy	Yerba Buena Rd	0.80	4	3	1	07:40 - 08:00	19	6	C	A	66	67	3770	410
250	US 101	SB	Yerba Buena Rd	Hellyer Ave	0.90	4	3	1	08:40 - 09:00	23	5	C	A	66	67	4560	340
249	US 101	SB	Hellyer Ave	Silver Creek Valley Rd	1.84	4	3	1	08:00 - 08:20	20	6	C	A	66	67	3960	410
248	US 101	SB	Silver Creek Valley Rd	Bernal Rd	1.48	4	3	1	07:20 - 07:40	14	3	B	B	67	67	2800	210
247	US 101	SB	Bernal Rd	SR 85	0.20	4	3	1	07:00 - 07:20	19	15	C	B	66	67	3770	1010
246	US 101	SB	SR 85	Lane Drop (SB)	1.00	5	4	1	06:20 - 06:40	17	8	B	A	67	67	4530	540
245	US 101	SB	Lane Drop (SB)	Sheller Ave	4.32	4	3	1	07:40 - 08:00	16	11	B	A	67	67	3200	740
244	US 101	SB	Sheller Ave	Burnett Ave (Lane Drop)	2.57	4	3	1	07:00 - 07:20	14	10	B	A	67	67	2800	670
243	US 101	SB	Burnett Ave (Lane Drop)	Cochrane Rd	0.87	3	3	0	07:40 - 08:00	21	0	C		66		4160	
242	US 101	SB	Cochrane Rd	East Dunne Ave	1.82	3	3	0	07:40 - 08:00	14	0	B		67		2800	
275.01	US 101	SB	East Dunne Ave	Tennant Ave	0.96	3	3	0	09:20 - 09:40	15	0	B		67		3000	
275.02	US 101	SB	Tennant Ave	San Martin Ave	3.55	3	3	0	07:40 - 08:00	17	0	B		67		3400	
275.03	US 101	SB	San Martin Ave	Masten Ave	2.17	3	3	0	07:40 - 08:00	14	0	B		67		2800	
275.04	US 101	SB	Masten Ave	Buena Vista Ave	1.16	3	3	0	07:00 - 07:20	13	0	B		67		2600	
275.05	US 101	SB	Buena Vista Ave	LEAVESLEY RD	1.60	3	3	0	09:00 - 09:20	16	0	B		67		3200	
275.06	US 101	SB	LEAVESLEY RD	Pacheco Pass Hwy	1.46	3	3	0	07:20 - 07:40	12	0	B		67		2400	

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ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
275.07	US 101	SB	Pacheco Pass Hwy	Monterey Rd	1.11	3	3	0	07:40 - 08:00	11	0	A		67		2220	
275.08	US 101	SB	Monterey Rd	Bloomfield Ave	1.85	2	2	0	07:00 - 07:20	15	0	B		67		2000	
275.09	US 101	SB	Bloomfield Ave	Betabel Rd	4.15	2	2	0	07:20 - 07:40	13	0	B		67		1730	
275.1	US 101	SB	Betabel Rd	SR 129	1.61	2	2	0	09:20 - 09:40	11	0	A		67		1480	
275.11	US 101	SB	SR 129	SR 156	1.78	2	2	0	07:00 - 07:20	7	0	A		67		940	
89	SR 237	WB	I-880	McCarthy Blvd	0.40	3	2	1	08:20 - 08:40	132	68	F	F	7	27	1850	1840
90	SR 237	WB	McCarthy Blvd	Zanker Rd	0.94	3	2	1	07:20 - 07:40	117	52	F	E	10	40	2810	2080
91	SR 237	WB	Zanker Rd	N. First St	1.61	3	2	1	08:40 - 09:00	55	36	E	D	37	61	4070	2200
92	SR 237	WB	N. First St	GREAT AMERICA PKWY	1.00	3	2	1	07:40 - 08:00	48	32	E	D	45	64	4320	2050
93	SR 237	WB	GREAT AMERICA PKWY	Lawrence Expwy	1.27	3	2	1	08:00 - 08:20	40	22	D	C	55	66	4400	1460
94	SR 237	WB	Lawrence Expwy	N. Fair Oaks Ave	0.63	3	2	1	07:00 - 07:20	51	34	E	D	41	63	4190	2150
95	SR 237	WB	N. Fair Oaks Ave	Mathilda Ave	0.96	3	3	0	07:00 - 07:20	56	0	E		36		6050	
96	SR 237	WB	Mathilda Ave	US 101	0.53	2	2	0	07:00 - 07:20	45	0	D		48		4320	
97	SR 237	WB	US 101	Maude Ave	0.71	2	2	0	07:00 - 07:20	31	0	D		65		4030	
98	SR 237	WB	Maude Ave	Central Pkwy	0.80	2	2	0	07:20 - 07:40	30	0	D		65		3900	
99	SR 237	WB	Central Pkwy	SR 85	0.63	2	2	0	07:00 - 07:20	28	0	D		65		3670	
100	SR 237	WB	SR 85	El Camino Real	0.40	2	2	0	07:00 - 07:20	84	0	F		19		3200	
130	I-280	WB	US 101	McLaughlin Ave	0.37	4	4	0	06:40 - 07:00	101	0	F		14		5660	
129	I-280	WB	McLaughlin Ave	10th St	0.92	4	4	0	08:20 - 08:40	84	0	F		19		6390	
128	I-280	WB	10th St	SR 87	1.20	4	4	0	07:20 - 07:40	80	0	F		21		6720	
127	I-280	WB	SR 87	Bird Ave	0.35	4	4	0	07:20 - 07:40	83	0	F		20		6640	
126	I-280	WB	Bird Ave	Meridian Ave	1.07	4	4	0	07:40 - 08:00	89	0	F		18		6410	
125	I-280	WB	Meridian Ave	I-880	1.40	4	3	1	07:20 - 07:40	100	70	F	F	14	26	4760	1820
124	I-280	WB	I-880	Winchester Blvd	0.55	4	3	1	07:20 - 07:40	94	63	F	F	16	31	4520	1960
123	I-280	WB	Winchester Blvd	Saratoga Ave	1.37	4	3	1	08:00 - 08:20	78	48	F	E	22	45	5150	2160
122	I-280	WB	Saratoga Ave	Lawrence Expwy	1.19	4	3	1	08:40 - 09:00	89	78	F	F	18	22	4810	1720

Table 4.7 2014 Freeway LOS – AM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
121	I-280	WB	Lawrence Expwy	Wolfe Rd	1.24	4	3	1	08:40 - 09:00	81	46	F	D	21	47	5110	2170
120	I-280	WB	Wolfe Rd	De Anza Blvd	1.06	4	3	1	08:40 - 09:00	62	57	F	E	32	36	5960	2060
119	I-280	WB	De Anza Blvd	SR 85	1.31	4	3	1	08:00 - 08:20	73	45	F	D	25	48	5480	2160
118	I-280	WB	SR 85	Foothill Expwy	0.70	4	3	1	08:20 - 08:40	70	58	F	E	26	35	5460	2030
117	I-280	WB	Foothill Expwy	Magdalena Ave	2.65	4	3	1	08:40 - 09:00	37	53	D	E	59	39	6550	2070
116	I-280	WB	Magdalena Ave	El Monte Rd	0.95	4	4	0	09:20 - 09:40	48	0	E		45		8640	
115	I-280	WB	El Monte Rd	La Barranca Rd	1.60	4	4	0	09:20 - 09:40	39	0	D		57		8900	
114	I-280	WB	La Barranca Rd	Page Mill Rd	1.73	4	4	0	09:00 - 09:20	32	0	D		64		8200	
113.1	I-280	WB	Page Mill Rd	Alpine Rd	2.25	4	4	0	09:00 - 09:20	32	0	C		66		6080	
50	I-680	SB	Scott Creek Rd	Jacklin Rd	1.57	4	3	1	07:20 - 07:40	21	15	C	B	66	67	4160	1010
49	I-680	SB	Jacklin Rd	Calaveras Blvd / SR 237	0.85	4	3	1	08:20 - 08:40	26	12	C	B	66	67	5150	810
48	I-680	SB	Calaveras Blvd / SR 237	Yosemite Dr	0.69	4	4	0	07:40 - 08:00	21	0	C		66		5550	
47	I-680	SB	Yosemite Dr	Montague Expwy	0.77	4	4	0	08:20 - 08:40	30	0	D		65		7800	
46	I-680	SB	Montague Expwy	Capitol Ave	1.00	4	4	0	09:00 - 09:20	21	0	C		66		5550	
45	I-680	SB	Capitol Ave	Hostetter Rd	0.31	4	4	0	07:20 - 07:40	17	0	B		67		4530	
44	I-680	SB	Hostetter Rd	Berryessa Rd	0.94	4	4	0	09:20 - 09:40	21	0	C		66		5550	
43	I-680	SB	Berryessa Rd	McKee Rd	1.47	4	4	0	08:20 - 08:40	20	0	C		66		5280	
42	I-680	SB	McKee Rd	Alum Rock Ave	0.64	4	4	0	08:20 - 08:40	34	0	D		63		8570	
41	I-680	SB	Alum Rock Ave	Capitol Expwy	0.31	4	4	0	08:20 - 08:40	77	0	F		23		7090	
40	I-680	SB	Capitol Expwy	King Rd	1.00	4	4	0	08:20 - 08:40	81	0	F		21		7490	
39	I-680	SB	King Rd	US 101	0.40	4	4	0	08:40 - 09:00	107	0	F		12		5140	
13	I-880	SB	Dixon Landing	SR 237	1.99	4	3	1	09:00 - 09:20	47	60	E	F	46	33	7360	1980
14	I-880	SB	SR 237	Great Mall Pkwy	0.72	3	3	0	07:40 - 08:00	51	19	E	C	41	66	6280	1260
15	I-880	SB	Great Mall Pkwy	Montague Expwy	0.98	3	3	0	06:20 - 06:40	43	17	D	B	51	67	6580	1140
16	I-880	SB	Montague Expwy	E. Brokaw Rd	1.35	3	3	0	07:40 - 08:00	19	11	C	A	66	67	3770	740
17	I-880	SB	E. Brokaw Rd	US 101	1.29	3	3	0	07:40 - 08:00	60	43	F	D	33	51	5940	2200
18	I-880	SB	US 101	N. 1st ST	0.49	3	3	0	06:20 - 06:40	93	0	F		16		4470	

Table 4.7 2014 Freeway LOS – AM Peak Period																	
ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
19	I-880	SB	N. 1st ST	SR 87	0.40	3	3	0	07:40 - 08:00	73	0	F		25		5480	
20	I-880	SB	SR 87	Coleman Ave	0.51	3	3	0	07:40 - 08:00	30	0	D		65		5850	
21	I-880	SB	Coleman Ave	The Alameda	0.59	3	3	0	07:40 - 08:00	27	0	D		66		5310	
22	I-880	SB	The Alameda	N. Bascom Ave	0.82	3	3	0	07:00 - 07:20	25	0	C		66		4950	
23	I-880	SB	N. Bascom Ave	Stevens Cr	0.84	3	3	0	07:40 - 08:00	44	0	D		50		6600	
24	I-880	SB	Stevens Cr	I-280	0.41	3	3	0	07:40 - 08:00	20	0	C		66		3960	

Table 4.8 2014 Freeway LOS – PM Peak Period																	
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
31	SR 17	NB	Summit Rd	Bear Creek	4.06	2	2	0	15:40 - 16:00	25	0	C		66		3300	
30	SR 17	NB	Bear Creek	Saratoga	2.90	2	2	0	15:40 - 16:00	21	0	C		66		2780	
29	SR 17	NB	Saratoga	Lark Ave	1.81	2	2	0	15:40 - 16:00	23	0	C		66		3040	
28	SR 17	NB	Lark Ave	SR 85	0.46	2	2	0	16:40 - 17:00	22	0	C		66		2910	
27	SR 17	NB	SR 85	San Tomas / Camden	1.17	3	3	0	16:40 - 17:00	19	0	C		66		3770	
26	SR 17	NB	San Tomas / Camden	Hamilton	1.82	3	3	0	17:00 - 17:20	21	0	C		66		4160	
25	SR 17	NB	Hamilton	I-280	1.61	3	3	0	16:40 - 17:00	27	0	D		66		5310	
184	SR 85	NB	US 101	Cottle Rd	1.79	3	2	1	15:40 - 16:00	25	5	C	A	66	70	3300	350
183	SR 85	NB	Cottle Rd	Blossom Hill Rd	1.96	3	2	1	17:00 - 17:20	29	9	D	A	65	70	3770	630
182	SR 85	NB	Blossom Hill Rd	SR 87	1.27	3	2	1	17:00 - 17:20	31	10	D	A	65	70	4030	700
181	SR 85	NB	SR 87	Almaden Expwy	0.94	3	2	1	17:20 - 17:40	28	7	D	A	66	70	3670	490
180	SR 85	NB	Almaden Expwy	Camden Ave	1.97	3	2	1	17:00 - 17:20	28	10	D	A	66	70	3670	700
179	SR 85	NB	Camden Ave	Union Ave	1.17	3	2	1	18:00 - 18:20	25	10	C	A	66	70	3300	700
178	SR 85	NB	Union Ave	S. Bascom Ave	1.13	3	2	1	18:00 - 18:20	28	7	D	A	66	70	3670	490
177	SR 85	NB	S. Bascom Ave	SR 17	0.27	3	2	1	17:20 - 17:40	20	11	C	A	66	70	2640	770
176	SR 85	NB	SR 17	Winchester Blvd	0.50	3	2	1	15:20 - 15:40	14	10	B	A	67	70	1870	700
175	SR 85	NB	Winchester Blvd	Saratoga Ave	2.68	3	2	1	17:00 - 17:20	32	7	D	A	64	70	4100	490
174	SR 85	NB	Saratoga Ave	Saratoga-Sunnyvale Rd	2.19	3	2	1	17:00 - 17:20	21	8	C	A	66	70	2780	560
173	SR 85	NB	Saratoga-Sunnyvale Rd	Stevens Creek Blvd	1.83	3	2	1	17:20 - 17:40	22	9	C	A	66	70	2910	630
172	SR 85	NB	Stevens Creek Blvd	I-280	0.75	3	2	1	18:00 - 18:20	13	6	B	A	67	70	1730	420
171	SR 85	NB	I-280	W. Homestead Rd	0.34	3	2	1	17:40 - 18:00	23	7	C	A	66	70	3650	490
170	SR 85	NB	W. Homestead Rd	W. Fremont Ave	1.00	3	2	1	17:00 - 17:20	25	7	C	A	66	70	3300	490
169	SR 85	NB	W. Fremont Ave	EL Camino Real	1.89	3	2	1	18:00 - 18:20	26	8	C	A	66	70	3440	560
168	SR 85	NB	EL Camino Real	SR 237	0.41	3	2	1	15:40 - 16:00	18	10	B	A	67	70	2400	700
167	SR 85	NB	SR 237	Central Expwy	0.47	3	2	1	15:20 - 15:40	18	9	B	A	67	70	2400	630
166	SR 85	NB	Central Expwy	US 101	1.24	3	2	1	15:20 - 15:40	17	7	B	A	67	70	2270	490
70	SR 87	NB	SR 85	Capitol Expwy	1.09	3	2	1	15:40 - 16:00	29	8	D	A	65	70	3770	560

Table 4.8 2014 Freeway LOS – PM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
71	SR 87	NB	Capitol Expwy	Curtner	1.49	3	2	1	17:20 - 17:40	24	6	C	A	66	70	3170	420
72	SR 87	NB	Curtner	Almaden Rd	0.73	3	2	1	17:20 - 17:40	30	17	D	B	65	70	3900	1190
73	SR 87	NB	ALMADEN RD	Alma Ave	0.69	3	2	1	17:20 - 17:40	51	22	E	C	41	70	4190	1540
74	SR 87	NB	Alma Ave	I-280	0.90	3	2	1	17:40 - 18:00	26	6	C	A	66	70	3440	420
75	SR 87	NB	I-280	Julian St	0.96	3	2	1	17:20 - 17:40	18	9	B	A	67	70	2400	630
76	SR 87	NB	Julian St	Coleman AVE	0.38	3	2	1	16:20 - 16:40	16	7	B	A	67	70	2130	490
414	SR 87	NB	Coleman St	Taylor St	0.41	3	2	1	17:40 - 18:00	18	4	B	A	67	70	2400	280
416	SR 87	NB	Taylor St	Skyport Dr	1.87	3	2	1	17:20 - 17:40	22	6	C	A	66	70	2910	420
418	SR 87	NB	Skyport Dr	US 101	0.67	3	2	1	16:00 - 16:20	22	7	C	A	66	70	2910	490
309.11	US 101	NB	SR 156	SR 129	1.78	2	2	0	15:40 - 16:00	11	0	A		67		1480	
309.1	US 101	NB	SR 129	Betabel Rd	1.61	2	2	0	16:20 - 16:40	14	0	B		67		1870	
309.09	US 101	NB	Betabel Rd	Bloomfield Ave	4.15	2	2	0	15:40 - 16:00	14	0	B		67		1870	
309.08	US 101	NB	Bloomfield Ave	Monterey Rd	1.85	2	2	0	16:20 - 16:40	22	0	C		66		2910	
309.07	US 101	NB	Monterey Rd	Pacheco Pass Hwy	1.11	3	3	0	17:00 - 17:20	12	0	B		67		2400	
309.06	US 101	NB	Pacheco Pass Hwy	LEAVESLEY RD	1.46	3	3	0	17:40 - 18:00	13	0	B		67		2600	
309.05	US 101	NB	LEAVESLEY RD	Buena Vista Ave	1.60	3	3	0	15:40 - 16:00	20	0	C		66		3960	
309.04	US 101	NB	Buena Vista Ave	Masten Ave	1.16	3	3	0	16:40 - 17:00	18	0	B		67		3600	
309.03	US 101	NB	Masten Ave	San Martin Ave	2.17	3	3	0	16:00 - 16:20	17	0	B		67		3400	
309.02	US 101	NB	San Martin Ave	Tennant Ave	3.55	3	3	0	17:00 - 17:20	19	0	C		66		3770	
309.01	US 101	NB	Tennant Ave	East Dunne Ave	0.96	3	3	0	17:00 - 17:20	23	0	C		66		4560	
276	US 101	NB	East Dunne Ave	Cochrane Rd	1.82	3	3	0	17:20 - 17:40	23	0	C		66		4560	
277	US 101	NB	Cochrane Rd	Burnett Ave (Lane Drop)	0.87	4	3	1	15:40 - 16:00	28	9	D	A	66	70	5510	630
278	US 101	NB	Burnett Ave (Lane Drop)	Sheller Ave	2.57	4	3	1	15:40 - 16:00	18	8	B	A	67	70	3600	560
279	US 101	NB	Sheller Ave	Lane Drop (SB)	4.32	4	3	1	15:40 - 16:00	18	10	B	A	67	70	3600	700
280	US 101	NB	Lane Drop (SB)	SR 85	1.00	4	3	1	15:40 - 16:00	19	13	C	B	66	70	3770	910

Table 4.8 2014 Freeway LOS – PM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
281	US 101	NB	SR 85	Bernal Rd	0.20	4	3	1	16:20 - 16:40	11	10	A	A	67	70	2220	700
282	US 101	NB	Bernal Rd	Silver Creek Valley Rd	1.48	4	3	1	16:20 - 16:40	17	9	B	A	67	70	3400	630
283	US 101	NB	Silver Creek Valley Rd	Hellyer Ave	1.84	4	3	1	16:40 - 17:00	26	12	C	B	66	70	5150	840
284	US 101	NB	Hellyer Ave	Yerba Buena Rd	0.90	4	3	1	17:00 - 17:20	30	18	D	B	65	70	5850	1260
285	US 101	NB	Yerba Buena Rd	Capitol Expwy	0.80	4	3	1	17:00 - 17:20	21	13	C	B	66	70	4160	910
286	US 101	NB	Capitol Expwy	Tully Rd	1.33	4	3	1	15:40 - 16:00	30	13	D	B	65	70	5850	910
287	US 101	NB	Tully Rd	Story Rd	1.46	4	3	1	15:40 - 16:00	25	13	C	B	66	70	4950	910
288	US 101	NB	Story Rd	I-280	0.38	4	3	1	17:20 - 17:40	15	5	B	A	67	70	3000	350
289	US 101	NB	I-280	Santa Clara St	0.88	4	3	1	17:20 - 17:40	23	10	C	A	66	70	4560	700
290	US 101	NB	Santa Clara St	McKee Rd	0.39	4	3	1	17:20 - 17:40	20	15	C	B	66	70	3960	1050
291	US 101	NB	McKee Rd	Oakland Rd	1.58	4	3	1	15:40 - 16:00	24	11	C	A	66	70	4760	770
292	US 101	NB	Oakland Rd	I-880	0.57	4	3	1	15:40 - 16:00	23	10	C	A	66	70	4560	700
293	US 101	NB	I-880	Old Bayshore Hwy	0.50	4	3	1	18:40 - 19:00	18	6	B	A	67	70	3600	420
294	US 101	NB	Old Bayshore Hwy	N. First St	0.49	4	3	1	17:40 - 18:00	20	8	C	A	66	70	3960	560
295	US 101	NB	N. First St	Guadalupe Pkwy	0.64	4	3	1	18:40 - 19:00	17	9	B	A	67	70	3400	630
296	US 101	NB	Guadalupe Pkwy	De La Cruz Blvd	0.77	4	3	1	17:20 - 17:40	21	6	C	A	66	70	4160	420
297	US 101	NB	De La Cruz Blvd	Montaque Expwy / Santa Tomas Expwy	1.28	4	3	1	17:00 - 17:20	31	14	D	B	65	70	6050	980
298	US 101	NB	Montaque Expwy / Santa Tomas Expwy	Bower Ave / Great America Pkwy	0.75	4	3	1	17:20 - 17:40	38	26	D	C	58	70	6620	1820
299	US 101	NB	Bower Ave / Great American Pkwy	Lawrence Expwy	1.12	4	3	1	17:20 - 17:40	45	18	D	B	48	70	6480	1260
300	US 101	NB	Lawrence Expwy	N. Fair Oaks Ave	0.98	4	3	1	17:20 - 17:40	30	16	D	B	65	70	5850	1120
301	US 101	NB	N. Fair Oaks Ave	N. Mathilda Ave	0.85	4	3	1	17:00 - 17:20	28	24	D	C	66	70	5510	1680
302	US 101	NB	N. Mathilda Ave	SR 237	0.35	4	3	1	17:00 - 17:20	26	37	C	D	66	60	5150	2220
303	US 101	NB	SR 237	Moffett Blvd	1.68	4	3	1	18:40 - 19:00	36	22	D	C	61	70	6590	1540
304	US 101	NB	MOFFETT BLVD	SR 85	0.33	4	3	1	18:40 - 19:00	52	16	E	B	40	70	6240	1120
305	US 101	NB	SR 85	N. Shoreline Blvd	0.38	5	4	1	18:40 - 19:00	47	15	E	B	46	70	8650	1050
306	US 101	NB	N. Shoreline Blvd	RENGSTORFF AVE	1.01	4	3	1	17:00 - 17:20	74	13	F	B	24	70	5330	1820
307	US 101	NB	RENGSTORFF AVE	San Antonio Ave	0.71	4	3	1	17:00 - 17:20	62	11	F	A	32	70	5960	1540
308	US 101	NB	San Antonio Ave	Oregon Expwy	1.85	4	3	1	17:00 - 17:20	62	22	F	C	32	70	5960	2470

Table 4.8 2014 Freeway LOS – PM Peak Period																
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
309	US 101	NB	Oregon Expwy	Embarcadero Rd	0.15	4	3	1	17:20 - 17:40	62	36	F	D	32	70	5960	2520
88	SR 237	EB	El Camino Real	SR 85	0.40	2	2	0	18:00 - 18:20	43	0	D		51		4390	
87	SR 237	EB	SR 85	Central Pkwy	0.63	2	2	0	18:00 - 18:20	25	0	C		66		3300	
86	SR 237	EB	Central Pkwy	Maude Ave	0.80	2	2	0	17:40 - 18:00	23	0	C		66		3040	
85	SR 237	EB	Maude Ave	US 101	0.71	2	2	0	17:20 - 1740	38	0	D		58		4410	
84	SR 237	EB	US 101	Mathilda Ave	0.53	2	2	0	16:00 - 16:20	96	0	F		15		2880	
83	SR 237	EB	Mathilda Ave	N. Fair Oaks Ave	0.96	3	2	1	17:00 - 17:20	98	28	F	D	15	70	2940	1960
82	SR 237	EB	N. Fair Oaks Ave	Lawrence Expwy	0.63	3	2	1	17:20 - 17:40	96	33	F	D	15	70	2880	2310
81	SR 237	EB	Lawrence Expwy	Great America Pkwy	1.27	3	2	1	17:40 - 18:00	100	58	F	E	14	40	2800	2320
80	SR 237	EB	GREAT AMERICA PKWY	N. First St	1.00	3	2	1	17:40 - 18:00	88	55	F	E	18	40	3170	2200
79	SR 237	EB	N. First St	Zanker Rd	1.61	3	2	1	17:40 - 18:00	76	54	F	E	23	40	3500	2160
78	SR 237	EB	Zanker Rd	McCarthy Blvd	0.94	3	2	1	17:40 - 18:00	54	29	E	D	38	70	4110	2030
77	SR 237	EB	McCarthy Blvd	I-880	0.40	3	2	1	17:00 - 17:20	132	31	F	D	7	70	1910	2170
130.1	I-280	EB	Alpine Rd	Page Mill Rd	2.25	4	4	0	17:00 - 17:20	32	0	D		64		8200	
131	I-280	EB	Page Mill Rd	La Barranca Rd	1.73	4	4	0	17:00 - 17:20	68	0	F		27		7350	
132	I-280	EB	La Barranca Rd	El Monte Rd	1.60	4	4	0	17:40 - 18:00	67	0	F		28		7510	
133	I-280	EB	El Monte Rd	Magdalena Ave	0.95	4	4	0	17:40 - 18:00	81	0	F		21		6810	
134	I-280	EB	Magdalena Ave	Foothill Expwy	2.65	4	3	1	17:40 - 18:00	37	18	D	C	59	70	6550	1330
135	I-280	EB	Foothill Expwy	SR 85	0.70	4	3	1	16:40 - 17:00	40	14	D	B	55	70	6600	1260
136	I-280	EB	SR 85	De Anza Blvd	1.31	4	3	1	16:40 - 17:00	103	19	F	E	13	50	4020	2450
137	I-280	EB	De Anza Blvd	Wolfe Rd	1.06	4	3	1	17:40 - 18:00	77	30	F	E	23	50	5320	2550
138	I-280	EB	Wolfe Rd	Lawrence Expwy	1.24	4	3	1	17:40 - 18:00	81	19	F	E	21	40	5110	2200
139	I-280	EB	Lawrence Expwy	Saratoga Ave	1.19	4	3	1	17:40 - 18:00	85	37	F	D	19	60	4850	2520
140	I-280	EB	Saratoga Ave	Winchester Blvd	1.37	4	3	1	17:40 - 18:00	74	29	F	D	24	50	5330	2250
141	I-280	EB	Winchester Blvd	I-880	0.55	4	3	1	17:40 - 18:00	90	21	F	F	17	30	4590	2100
142	I-280	EB	I-880	Meridian Ave	1.40	4	3	1	17:00 - 17:20	90	30	F	F	17	20	4590	1740
143	I-280	EB	Meridian Ave	Bird Ave	1.07	4	4	0	17:00 - 17:20	81	0	F		21		6810	

Table 4.8 2014 Freeway LOS – PM Peak Period																	
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
144	I-280	EB	Bird Ave	SR 87	0.35	4	4	0	17:00 - 17:20	72	0	F		25		7200	
145	I-280	EB	SR 87	10th St	1.20	4	4	0	17:00 - 17:20	69	0	F		27		7460	
146	I-280	EB	10th St	McLaughlin Ave	0.92	4	4	0	16:20 - 16:40	41	0	D		54		8860	
147	I-280	EB	McLaughlin Ave	US 101	0.37	4	4	0	18:20 - 18:40	41	0	D		54		8860	
51	I-680	NB	US 101	King Rd	0.40	4	4	0	17:40 - 18:00	27	0	D		66		7080	
52	I-680	NB	King Rd	Capitol Expwy	1.00	4	4	0	18:20 - 18:40	46	0	D		47		8650	
53	I-680	NB	Capitol Expwy	Alum Rock Ave	0.31	4	4	0	18:00 - 18:20	30	0	D		65		7800	
54	I-680	NB	Alum Rock Ave	McKee Rd	0.64	4	4	0	18:00 - 18:20	22	0	C		66		5810	
55	I-680	NB	McKee Rd	Berryessa Rd	1.47	4	4	0	16:20 - 16:40	22	0	C		66		5810	
56	I-680	NB	Berryessa Rd	Hostetter Rd	0.94	4	4	0	17:00 - 17:20	21	0	C		66		5550	
57	I-680	NB	Hostetter Rd	Capitol Ave	0.31	4	4	0	17:00 - 1720	21	0	C		66		5550	
58	I-680	NB	Capitol Ave	Montague Expwy	1.00	4	4	0	15:40 - 16:00	19	0	C		66		5020	
59	I-680	NB	Montague Expwy	Yosemite Dr	0.77	4	4	0	17:40 - 18:00	25	0	C		66		6600	
60	I-680	NB	Yosemite Dr	Calaveras Blvd / SR 237	0.69	4	4	0	17:40 - 18:00	22	0	C		66		5810	
61	I-680	NB	Calaveras Blvd / SR 237	Jacklin Rd	0.85	3	3	0	17:40 - 18:00	25	0	C		66		4950	
62	I-680	NB	Jacklin Rd	Scott Creek Rd	1.57	3	3	0	18:20 - 18:40	27	0	D		66		5310	
12	I-880	NB	I-280	Stevens Cr	0.41	3	3	0	15:40 - 16:00	21	0	C		66		4160	
11	I-880	NB	Stevens Cr	N. Bascom Ave	0.84	3	3	0	17:20 - 17:40	92	0	F		16		4420	
10	I-880	NB	N. Bascom Ave	The Alameda	0.82	3	3	0	17:20 - 17:40	104	0	F		13		4060	
9	I-880	NB	The Alameda	Coleman Ave	0.59	3	3	0	17:00 - 17:20	96	0	F		15		4320	
8	I-880	NB	Coleman Ave	SR 87	0.51	3	3	0	17:00 - 17:20	74	0	F		24		5330	
7	I-880	NB	SR 87	N. 1st St	0.40	3	3	0	17:00 - 17:20	79	0	F		22		5220	
6	I-880	NB	N. 1st St	US 101	0.49	3	3	0	17:40 - 18:00	43	0	D		51		6580	
5	I-880	NB	US 101	E. Brokaw Rd	1.29	3	3	0	17:20 - 17:40	29	10	D	A	65	70	6050	700
4	I-880	NB	E. Brokaw Rd	Montague Expwy	1.35	3	3	0	16:20 - 16:40	27	23	D	C	66	70	6050	1610
3	I-880	NB	Montague Expwy	Great Mall Pkwy	0.98	3	3	0	17:20 - 17:40	34	23	D	C	63	70	6300	1610
2	I-880	NB	Great Mall Pkwy	SR 237	0.72	3	3	0	17:20 - 17:40	33	13	D	B	64	70	5540	910

Table 4.8 2014 Freeway LOS – PM Peak Period																
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
1	I-880	NB	SR 237	Dixon Landing	1.99	4	3	1	17:20 - 17:40	82	58	F	E	20	40	5580	2320
32	SR 17	SB	I-280	Hamilton	1.61	3	3	0	17:20 - 17:40	34	0	D		63		6430	
33	SR 17	SB	Hamilton	San Tomas / Camden	1.82	3	3	0	15:40 - 16:00	25	0	C		66		5610	
34	SR 17	SB	San Tomas / Camden	SR 85	1.17	3	3	0	15:40 - 16:00	28	0	D		66		5510	
35	SR 17	SB	SR 85	Lark Ave	0.46	2	2	0	16:40 - 17:00	65	0	F		29		3770	
36	SR 17	SB	Lark Ave	Saratoga	1.81	2	2	0	16:40 - 17:00	67	0	F		28		3760	
37	SR 17	SB	Saratoga	Bear Creek	2.90	2	2	0	16:40 - 17:00	47	0	E		46		4330	
38	SR 17	SB	Bear Creek	Summit Rd	4.06	2	2	0	16:20 - 16:40	55	0	E		37		4070	
185	SR 85	SB	US 101	Central Expwy	1.24	3	2	1	17:40 - 18:00	89	27	F	D	18	70	3210	1890
186	SR 85	SB	Central Expwy	SR 237	0.47	3	2	1	17:40 - 18:00	116	56	F	E	10	40	2320	2240
187	SR 85	SB	SR 237	EL Camino Real	0.41	4	3	1	16:20 - 16:40	86	69	F	F	19	30	4090	2070
188	SR 85	SB	EL Camino Real	W. Fremont Ave	1.89	3	2	1	16:20 - 16:40	69	53	F	E	27	40	3730	2120
189	SR 85	SB	W. Fremont Ave	W. Homestead Rd	1.00	3	2	1	16:40 - 17:00	53	34	E	D	39	70	4140	2380
190	SR 85	SB	W. Homestead Rd	I-280	0.41	3	2	1	15:40 - 16:00	23	24	C	C	66	70	3040	1680
191	SR 85	SB	I-280	Stevens Creek Blvd	0.75	3	2	1	18:00 - 18:20	52	66	E	F	40	30	5000	1980
192	SR 85	SB	Stevens Creek Blvd	Saratoga-Sunnyvale Rd	1.83	3	2	1	17:40 - 18:00	90	47	F	E	17	50	3060	2350
193	SR 85	SB	Saratoga-Sunnyvale Rd	Saratoga Ave	2.19	3	2	1	18:00 - 18:20	62	52	F	E	32	40	3970	2080
194	SR 85	SB	Saratoga Ave	Winchester Blvd	2.68	3	2	1	17:00 - 17:20	53	35	E	D	39	70	4140	2450
195	SR 85	SB	Winchester Blvd	SR 17	0.50	3	2	1	17:20 - 17:40	48	46	E	D	45	50	4320	2300
196	SR 85	SB	SR 17	S. Bascom Ave	0.27	3	2	1	17:20 - 17:40	72	22	F	C	25	70	3600	1540
197	SR 85	SB	S. Bascom Ave	Union Ave	1.13	3	2	1	18:00 - 18:20	82	38	F	D	20	60	3280	2280
198	SR 85	SB	Union Ave	Camden Ave	1.17	3	2	1	17:00 - 17:20	50	34	E	D	42	70	4200	2380
199	SR 85	SB	Camden Ave	Almaden Expwy	1.97	3	2	1	17:20 - 17:40	42	34	D	D	52	70	4370	2380
200	SR 85	SB	ALMADEN EXPWY	SR 87	0.94	3	2	1	17:20 - 17:40	24	15	C	B	66	70	3170	1050
201	SR 85	SB	SR 87	Blossom Hill Rd	1.27	3	2	1	17:20 - 17:40	56	33	E	D	36	70	4040	2310
202	SR 85	SB	Blossom Hill Rd	Cottle Rd	1.96	3	2	1	15:20 - 15:40	30	17	D	B	65	70	3900	1190
203	SR 85	SB	Cottle Rd	US 101	1.79	3	2	1	16:20 - 16:40	23	12	C	B	66	70	3040	840

Table 4.8 2014 Freeway LOS – PM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
419	SR 87	SB	US 101	Skyport Dr	0.67	3	2	1	17:40 - 18:00	109	24	F	C	12	70	2620	1680
417	SR 87	SB	Skyport Dr	Taylor St	1.87	3	2	1	16:40 - 17:00	93	17	F	B	16	70	2980	1190
415	SR 87	SB	Taylor St	Coleman St	0.41	3	2	1	17:20 - 17:40	81	31	F	D	21	70	3410	2170
69	SR 87	SB	Coleman Ave	Julian St	0.38	3	2	1	17:40 - 18:00	61	44	F	D	32	50	3910	2200
68	SR 87	SB	Julian St	I-280	0.96	3	2	1	16:40 - 17:00	56	29	E	D	36	70	4040	2030
67	SR 87	SB	I-280	Alma Ave	0.90	3	2	1	16:40 - 17:00	95	41	F	D	15	60	3900	1190
66	SR 87	SB	Alma Ave	ALMADEN RD	0.69	3	2	1	16:00 - 16:20	69	38	F	D	27	60	3040	840
65	SR 87	SB	ALMADEN RD	Curtner	0.73	3	2	1	17:40 - 18:00	56	28	E	D	36	70	4040	1960
64	SR 87	SB	Curtner	Capitol Expwy	1.49	3	2	1	17:40 - 18:00	51	27	E	D	41	70	2850	2460
63	SR 87	SB	Capitol Expwy	SR 85	1.09	3	2	1	15:40 - 16:00	27	16	D	B	66	70	3540	1120
275	US 101	SB	Embarcadero Rd	Oregon Expwy	0.15	4	3	1	17:20 - 17:40	104	83	F	F	13	20	4060	1660
274	US 101	SB	Oregon Expwy	San Antonio Ave	1.85	4	3	1	17:00 - 17:20	89	26	F	C	18	70	4810	2920
273	US 101	SB	San Antonio Ave	RENGSTORFF AVE	0.71	4	3	1	17:20 - 17:40	85	19	F	C	19	70	4850	2660
272	US 101	SB	RengstoRff Ave	N. Shoreline Blvd	1.01	4	3	1	16:20 - 16:40	49	20	E	C	43	70	6330	2800
271	US 101	SB	N. Shoreline Blvd	SR 85	0.38	4	3	1	17:20 - 17:40	47	32	E	D	46	70	6490	2240
270	US 101	SB	SR 85	MOFFETT BLVD	0.33	4	3	1	17:20 - 17:40	103	35	F	D	13	70	4020	2450
269	US 101	SB	MOFFETT BLVD	SR 237	1.68	4	3	1	17:00 - 17:20	70	36	F	D	26	70	5460	2520
268	US 101	SB	SR 237	N. Mathilda Ave	0.35	4	3	1	18:40 - 19:00	31	31	D	D	65	70	6050	2170
267	US 101	SB	N. Mathilda Ave	N. Fair Oaks Ave	0.85	4	3	1	18:40 - 19:00	43	31	D	D	51	70	6580	2170
266	US 101	SB	N. Fair Oaks Ave	Lawrence Expwy	0.98	4	3	1	16:00 - 16:20	71	75	F	F	26	30	5540	2250
265	US 101	SB	Lawrence Expwy	Bower Ave / Great American Pkwy	1.12	4	3	1	16:40 - 17:00	97	93	F	F	15	20	4370	1860
264	US 101	SB	Bower Ave / Great American Pkwy	Montaque Expwy / Santa Tomas Expwy	0.75	4	3	1	15:40 - 16:00	99	91	F	F	14	20	4160	1820
263	US 101	SB	Montaque Expwy / Santa Tomas Expwy	De La Cruz Blvd	1.28	4	3	1	18:40 - 19:00	104	63	F	F	13	40	4060	2520
262	US 101	SB	De La Cruz Blvd	Guadalupe Pkwy	0.77	4	3	1	17:20 - 17:40	87	48	F	E	18	50	4700	2400
261	US 101	SB	Guadalupe Pkwy	N. First St	0.64	4	3	1	17:20 - 17:40	94	78	F	F	16	30	4520	2340
260	US 101	SB	N. First St	Old Bayshore Hwy	0.49	4	3	1	17:20 - 17:40	147	91	F	F	6	20	2650	1820
259	US 101	SB	Old Bayshore Hwy	I-880	0.50	4	3	1	17:40 - 18:00	126	72	F	F	8	30	3030	2160

Table 4.8 2014 Freeway LOS – PM Peak Period																
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
258	US 101	SB	I-880	Oakland Rd	0.57	4	3	1	17:20 - 17:40	107	84	F	F	12	20	3860	1680
257	US 101	SB	Oakland Rd	McKee Rd	1.58	4	3	1	16:20 - 16:40	53	33	E	D	39	70	6210	2310
256	US 101	SB	McKee Rd	Santa Clara St	0.39	4	3	1	15:40 - 16:00	35	20	D	C	62	70	6510	1400
255	US 101	SB	Santa Clara St	I-280	0.88	4	3	1	17:40 - 18:00	34	28	D	D	63	70	6430	1960
254	US 101	SB	I-280	Story Rd	0.38	4	3	1	18:40 - 19:00	41	21	D	C	54	70	6650	1470
253	US 101	SB	Story Rd	Tully Rd	1.46	4	3	1	16:20 - 16:40	48	26	E	C	45	70	6480	1820
252	US 101	SB	Tully Rd	Capitol Expwy	1.33	4	3	1	17:40 - 18:00	29	23	D	C	65	70	5660	1610
251	US 101	SB	Capitol Expwy	Yerba Buena Rd	0.80	4	3	1	17:20 - 17:40	25	12	C	B	66	70	4950	840
250	US 101	SB	Yerba Buena Rd	Hellyer Ave	0.90	4	3	1	17:40 - 18:00	38	18	D	B	58	70	6620	1260
249	US 101	SB	Hellyer Ave	Silver Creek Valley Rd	1.84	4	3	1	17:40 - 18:00	26	15	C	B	66	70	5150	1050
248	US 101	SB	Silver Creek Valley Rd	Bernal Rd	1.48	4	3	1	15:40 - 16:00	19	17	C	B	66	70	3770	1190
247	US 101	SB	Bernal Rd	SR 85	0.20	4	3	1	16:40 - 17:00	20	25	C	C	66	70	3960	1750
246	US 101	SB	SR 85	Lane Drop (SB)	1.00	5	4	1	15:40 - 16:00	22	15	C	B	66	70	5810	1050
245	US 101	SB	Lane Drop (SB)	Sheller Ave	4.32	4	3	1	16:00 - 16:20	36	32	D	D	61	70	6590	2240
244	US 101	SB	Sheller Ave	Burnett Ave (Lane Drop)	2.57	4	3	1	16:20 - 16:40	47	46	E	D	46	50	6490	2300
243	US 101	SB	Burnett Ave (Lane Drop)	Cochrane Rd	0.87	3	3	0	16:20 - 16:40	61	0	F		32		5860	
242	US 101	SB	Cochrane Rd	East Dunne Ave	1.82	3	3	0	17:20 - 17:40	39	0	D		57		6670	
275.01	US 101	SB	East Dunne Ave	Tennant Ave	0.96	3	3	0	16:40 - 17:00	40	0	D		55		6600	
275.02	US 101	SB	Tennant Ave	San Martin Ave	3.55	3	3	0	16:40 - 17:00	39	0	D		57		6670	
275.03	US 101	SB	San Martin Ave	Masten Ave	2.17	3	3	0	15:40 - 16:00	26	0	C		66		5150	
275.04	US 101	SB	Masten Ave	Buena Vista Ave	1.16	3	3	0	16:00 - 16:20	23	0	C		66		4560	
275.05	US 101	SB	Buena Vista Ave	LEAVESLEY RD	1.60	3	3	0	17:20 - 17:40	26	0	C		66		5150	
275.06	US 101	SB	LEAVESLEY RD	Pacheco Pass Hwy	1.46	3	3	0	17:20 - 17:40	20	0	C		66		3960	
275.07	US 101	SB	Pacheco Pass Hwy	Monterey Rd	1.11	3	3	0	16:20 - 16:40	13	0	B		67		2600	
275.08	US 101	SB	Monterey Rd	Bloomfield Ave	1.85	2	2	0	16:40 - 17:00	58	0	E		35		4060	

Table 4.8 2014 Freeway LOS – PM Peak Period																	
						Number of Lanes				Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To	Miles	Total	Mixed	HOV	Peak Photo Time	Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
275.09	US 101	SB	Bloomfield Ave	Betabel Rd	4.15	2	2	0	15:40 - 16:00	17	0	B		67		2270	
275.1	US 101	SB	Betabel Rd	SR 129	1.61	2	2	0	16:00 - 16:20	17	0	B		67		2270	
275.11	US 101	SB	SR 129	SR 156	1.78	2	2	0	16:20 - 16:40	14	0	B		67		1870	
89	SR 237	WB	I-880	McCarthy Blvd	0.40	3	2	1	17:40 - 18:00	25	7	C	A	66	70	3300	490
90	SR 237	WB	McCarthy Blvd	Zanker Rd	0.94	3	2	1	17:20 - 17:40	49	7	E	A	43	70	5060	490
91	SR 237	WB	Zanker Rd	N. First St	1.61	3	2	1	17:20 - 17:40	49	22	E	C	43	70	4220	1540
92	SR 237	WB	N. First St	GREAT AMERICA PKWY	1.00	3	2	1	17:40 - 18:00	44	14	D	B	50	70	4400	980
93	SR 237	WB	GREAT AMERICA PKWY	Lawrence Expwy	1.27	3	2	1	17:00 - 17:20	32	16	D	B	64	70	4100	1120
94	SR 237	WB	Lawrence Expwy	N. Fair Oaks Ave	0.63	3	2	1	17:20 - 17:40	30	19	D	C	65	70	3900	1330
95	SR 237	WB	N. Fair Oaks Ave	Mathilda Ave	0.96	3	3	0	17:40 - 18:00	83	0	F		20		4980	
96	SR 237	WB	Mathilda Ave	US 101	0.53	2	2	0	17:40 - 18:00	33	0	D		64		4230	
97	SR 237	WB	US 101	Maude Ave	0.71	2	2	0	17:20 - 17:40	56	0	E		36		4040	
98	SR 237	WB	Maude Ave	Central Pkwy	0.80	2	2	0	17:20 - 17:40	77	0	F		23		3550	
99	SR 237	WB	Central Pkwy	SR 85	0.63	2	2	0	17:20 - 17:40	76	0	F		23		3500	
100	SR 237	WB	SR 85	El Camino Real	0.40	2	2	0	18:00 - 18:20	97	0	F		15		2910	
130	I-280	WB	US 101	McLaughlin Ave	0.37	4	4	0	16:40 - 17:00	24	0	C		66		6340	
129	I-280	WB	McLaughlin Ave	10th St	0.92	4	4	0	17:00 - 17:20	29	0	D		65		7540	
128	I-280	WB	10th St	SR 87	1.20	4	4	0	17:00 - 17:20	30	0	D		65		7800	
127	I-280	WB	SR 87	Bird Ave	0.35	4	4	0	17:00 - 17:20	35	0	D		62		8680	
126	I-280	WB	Bird Ave	Meridian Ave	1.07	4	4	0	17:00 - 17:20	38	0	D		58		8820	
125	I-280	WB	Meridian Ave	I-880	1.40	4	3	1	16:40 - 17:00	21	19	C	C	66	70	4720	1330
124	I-280	WB	I-880	Winchester Blvd	0.55	4	3	1	17:40 - 18:00	70	20	F	C	26	70	5460	1400
123	I-280	WB	Winchester Blvd	Saratoga Ave	1.37	4	3	1	17:40 - 18:00	53	16	E	B	39	70	6210	1120
122	I-280	WB	Saratoga Ave	Lawrence Expwy	1.19	4	3	1	17:00 - 17:20	37	15	D	B	59	70	6550	1050
121	I-280	WB	Lawrence Expwy	Wolfe Rd	1.24	4	3	1	16:00 - 16:20	23	10	C	A	66	70	4560	700
120	I-280	WB	Wolfe Rd	De Anza Blvd	1.06	4	3	1	17:40 - 18:00	25	7	C	A	65	70	4950	490

Table 4.8 2014 Freeway LOS – PM Peak Period

ID	Facility	Dir	From/To	From/To	Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
						Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
119	I-280	WB	De Anza Blvd	SR 85	1.31	4	3	1	17:40 - 18:00	23	7	C	A	66	70	4560	490
118	I-280	WB	SR 85	Foothill Expwy	0.70	4	3	1	15:20 - 15:40	22	8	C	A	66	70	4360	560
117	I-280	WB	Foothill Expwy	Magdalena Ave	2.65	4	3	1	16:20 - 16:40	22	13	C	B	66	70	4360	910
116	I-280	WB	Magdalena Ave	El Monte Rd	0.95	4	4	0	17:40 - 18:00	25	0	C		66		6600	
115	I-280	WB	El Monte Rd	La Barranca Rd	1.60	4	4	0	16:40 - 17:00	21	0	C		66		5550	
114	I-280	WB	La Barranca Rd	Page Mill Rd	1.73	4	4	0	17:00 - 17:20	25	0	C		66		6600	
113.1	I-280	WB	Page Mill Rd	Alpine Rd	2.25	4	4	0	17:40 - 18:00	36	0	D		61		8790	
50	I-680	SB	Scott Creek Rd	Jacklin Rd	1.57	4	3	1	17:00 - 17:20	22	5	C	A	66	70	4360	350
49	I-680	SB	Jacklin Rd	Calaveras Blvd / SR 237	0.85	4	3	1	17:00 - 17:20	27	8	D	A	66	70	5310	560
48	I-680	SB	Calaveras Blvd / SR 237	Yosemite Dr	0.69	4	4	0	18:00 - 18:20	75	0	D		24		7200	
47	I-680	SB	Yosemite Dr	Montague Expwy	0.77	4	4	0	17:40 - 18:00	80	0	F		21		6720	
46	I-680	SB	Montague Expwy	Capitol Ave	1.00	4	4	0	18:00 - 18:20	83	0	F		20		6640	
45	I-680	SB	Capitol Ave	Hostetter Rd	0.31	4	4	0	17:00 - 17:20	89	0	F		18		6410	
44	I-680	SB	Hostetter Rd	Berryessa Rd	0.94	4	4	0	17:00 - 17:20	64	0	F		30		7680	
43	I-680	SB	Berryessa Rd	McKee Rd	1.47	4	4	0	17:40 - 18:00	48	0	E		45		8640	
42	I-680	SB	McKee Rd	Alum Rock Ave	0.64	4	4	0	18:00 - 18:20	46	0	D		47		8650	
41	I-680	SB	Alum Rock Ave	Capitol Expwy	0.31	4	4	0	17:00 - 17:20	29	0	D		65		7540	
40	I-680	SB	Capitol Expwy	King Rd	1.00	4	4	0	16:00 - 16:20	27	0	D		66		7790	
39	I-680	SB	King Rd	US 101	0.40	4	4	0	18:20 - 18:40	21	0	C		66		5550	
13	I-880	SB	Dixon Landing	SR 237	1.99	4	3	1	17:00 - 17:20	26	18	C	B	66	70	5840	1260
14	I-880	SB	SR 237	Great Mall Pkwy	0.72	3	3	0	17:40 - 18:00	22	13	C	B	66	70	4360	910
15	I-880	SB	Great Mall Pkwy	Montague Expwy	0.98	3	3	0	18:00 - 18:20	29	21	D	C	65	70	5660	1470
16	I-880	SB	Montague Expwy	E. Brokaw Rd	1.35	3	3	0	17:20 - 17:40	75	42	F	D	24	60	5400	2520
17	I-880	SB	E. Brokaw Rd	US 101	1.29	3	3	0	17:40 - 18:00	78	50	F	E	22	50	5150	2500
18	I-880	SB	US 101	N. 1st ST	0.49	3	3	0	18:00 - 18:20	101	0	F		14		4250	
19	I-880	SB	N. 1st ST	SR 87	0.40	3	3	0	18:00 - 18:20	99	0	F		14		4160	
20	I-880	SB	SR 87	Coleman Ave	0.51	3	3	0	18:00 - 18:20	76	0	F		23		5250	

Table 4.8 2014 Freeway LOS – PM Peak Period																
					Miles	Number of Lanes			Peak Photo Time	Max Density		LOS (Density)		Speed		Flow	
ID	Facility	Dir	From/To	From/To		Total	Mixed	HOV		Mixed	HOV	Mixed	HOV	Mixed	HOV	Mixed	HOV
21	I-880	SB	Coleman Ave	The Alameda	0.59	3	3	0	17:40 - 18:00	76	0	F		23		5250	
22	I-880	SB	The Alameda	N. Bascom Ave	0.82	3	3	0	17:40 - 18:00	73	0	F		25		5480	
23	I-880	SB	N. Bascom Ave	Stevens Cr	0.84	3	3	0	17:40 - 18:00	64	0	F		30		5760	
24	I-880	SB	Stevens Cr	I-280	0.41	3	3	0	17:20 - 17:40	30	0	D		65		5850	

FREEWAY GATEWAY COUNTS

Santa Clara County has four main "gateways" through which traffic flows in and out of the County from other parts of the region. Vehicle counts are collected along these gateways during the AM and PM peak periods. The data is analyzed to determine freeway demand in terms of inflows and outflows. Inflows refer to vehicles entering Santa Clara County and outflows refer to vehicles leaving Santa Clara County.

The four main gateways are served by six freeways and they are grouped as follows:

Santa Cruz Gateway: The gateway to the southwest connects Santa Clara County with Santa Cruz County. SR 17 is the primary freeway connection.

Southern Gateway: The gateway connects Santa Clara County to the southern counties of San Benito, Monterey and Merced Counties. This connection is primarily served by US 101.

Peninsula Gateway: The gateway to the northwest connects Santa Clara County to destinations on the peninsula including San Mateo, San Francisco and Marin Counties. The freeways serving this gateway are US 101 and I-280.

East Bay Gateway: The gateway to the northeast connects Santa Clara County to the East Bay Counties of Alameda, Contra Costa, San Joaquin and Stanislaus. This connection is primarily served by I-680 and I-880.

METHODOLOGY

Direct ground traffic counts are collected each year at these six freeway gateway locations at or near the county line. Vehicle counts are recorded in 15-minute intervals from 6:30 AM to 9:30 AM and 3:30 PM to 6:30 PM in each direction on a Tuesday, Wednesday or Thursday during the month of September. The one-hour period with the greatest vehicle volume recorded is considered the peak hour. The following figures and analyses in this section are based on peak hour volumes.

Gateway counts were collected at the freeway locations specified. To determine total gateway flow, a comprehensive count is needed to include urban arterials and rural roads that also carry vehicles across the countyline.

SPEED-THROUGHPUT RELATIONSHIP

Traffic engineering theory states that freeways carry the highest volumes of traffic, or achieve close to optimal flow when traffic speeds are around 30 to 35 miles per hour. At this speed, a combination of moderate speed and high vehicle density results in more vehicles passing given a count location. Above 35 miles per hour, the increasing gap between speeding vehicles decreases vehicle density and therefore, the flow rate. Below this speed, traffic is denser but the slower

speeds mean fewer vehicles are passing the count location. This results in increased vehicle density despite lower vehicle counts.

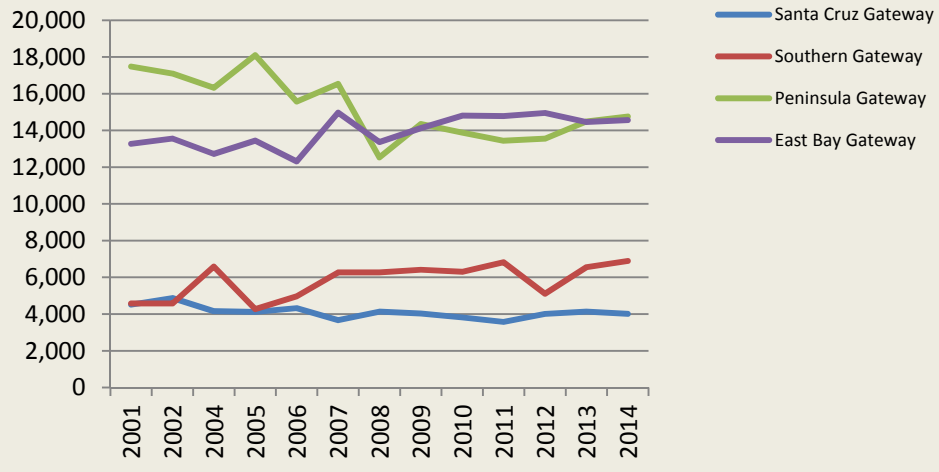
When considering the relationship between vehicle speed and vehicle volume, it should be noted that vehicle volume alone is not indicative of a change in roadway operations. Rather, increased vehicle volumes may reflect travel speeds that are approaching optimal flow, or speeds around 30-35 miles per hour.

AM PEAK HOUR INFLOW

In 2014, AM gateway inflows have increased at all gateways except for the Santa Cruz Gateway which experienced a 3 percent decrease compared to 2013. Vehicle volumes at Southern Gateway increased by 5 percent and increased by 3 percent and 1 percent for the Peninsula and East Bay Gateways, respectively. The total AM gateway inflow count is 40,220 vehicles compared to 39,624 vehicles recorded in 2013.

Figure 4.12 shows how AM inflows have varied over the last 13 years of data collection. As this figure shows, the Peninsula and the East Bay gateways have remained fairly consistent in recent years compared to findings before about 2008. The Santa Cruz and Southern gateways have also been fairly consistent but had unusual drops in 2010 and 2012, respectively.

Figure 4.12 AM Peak Hour Gateway Inflows, 2001-2014

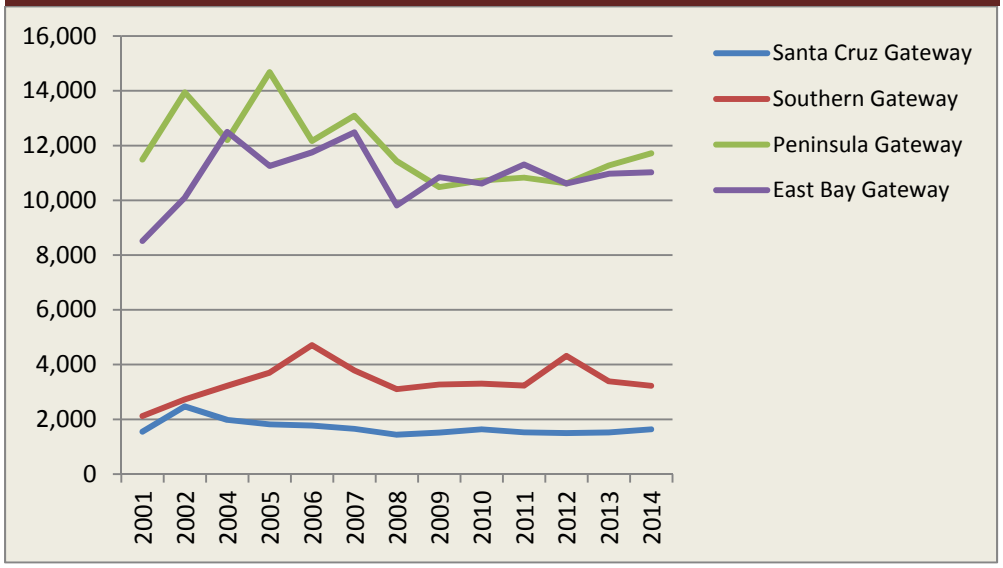


AM PEAK HOUR OUTFLOW

The trend for the outflows over the last 14 years is shown in Figure 4.13 for each of the four gateways. AM gateway outflow counts have been consistent over the last 5 years except for the Southern Gateway, which had an unusual increase in 2012. As the figure shows, results from the

2012 are relatively similar to AM outflows from the past four years with the exception of exiting volumes to the South which slightly decreased in 2012.

Figure 4.13 AM Peak Hour Gateway Outflows, 2001-2014

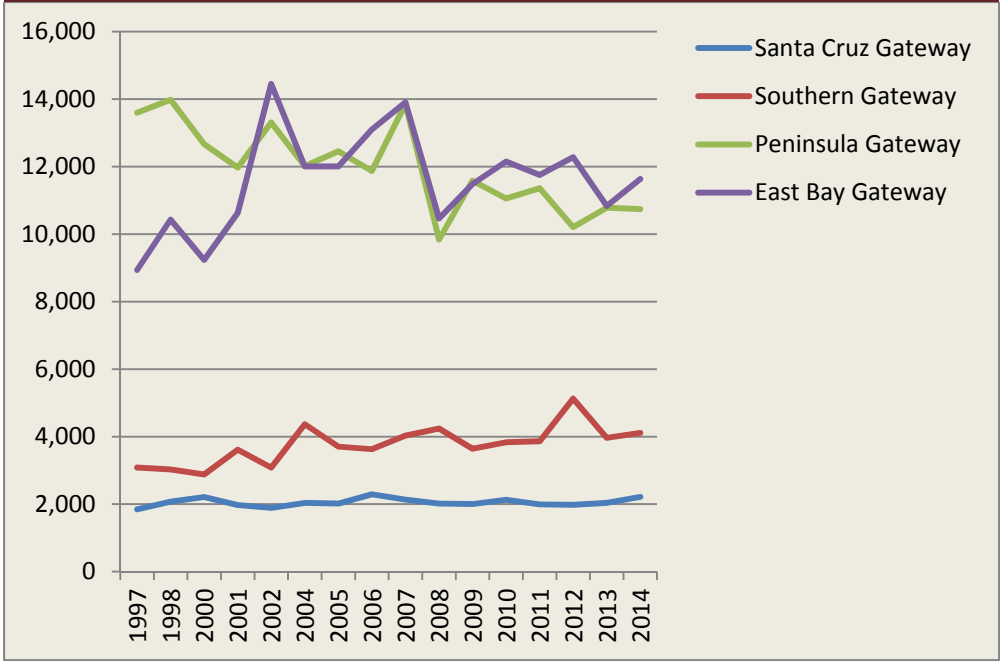


PM PEAK HOUR INFLOW

The total inflow gateway volumes during the PM peak hour increased by 3.9% over 2013 volumes. Total outflow volumes showed the opposite with a slight 0.5% decrease in volume for vehicles leaving Santa Clara County via the six freeways. This has resulted in a change from about 0.75 entering vehicles for every exiting vehicle in 2013 to 0.78 in 2014. These numbers account only for the volumes on freeways at each gateway, and are not intended as total gateway flows.

As Figure 4.14 shows, results from 2014 generally fall somewhere in the middle compared to the previous 18 years of data collection. While there is variation from year to year, inflow from the Peninsula has been trending down, while inflow from the East Bay and the South has been increasing. Entering volume from the Santa Cruz gateway has remained flat. For the Peninsula Gateway, inflow volumes also decreased by less than 1 percent. Gateway volumes for the East Bay, Santa Cruz and Southern increased during the PM peak hour by 7, 9, and 4 percent, respectively. In 2014, the total PM inflow volume is 28,699 volumes, an increase of 4 percent compared to total 2013 volumes.

Figure 4.14 PM Peak Hour Gateway Inflows, 1997-2014

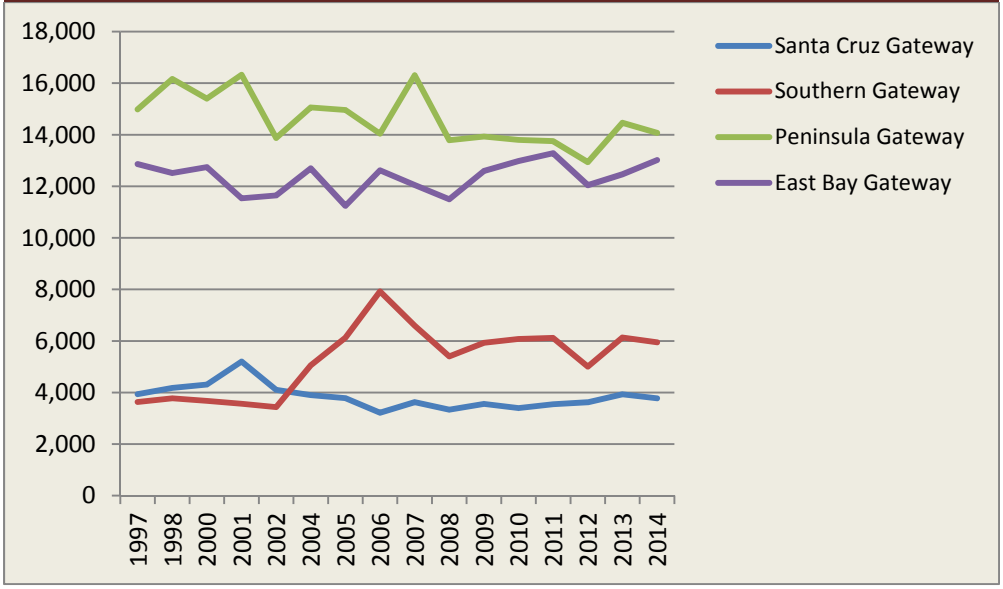


PM PEAK HOUR OUTFLOW

Outflow volume during the PM peak period decreased for all gateways except for the East Bay Gateway which increased by 4 percent. Vehicle volumes were down by 3, 4 and 3 percent for Peninsula, Santa Cruz and Southern Gateways. The 2014 PM outflow volume is 36,816, a decrease of 1 percent from 2013's total volume of 36,696.

The trend for the outflows over the last 19 years is shown in Figure 4.15 for each of the four gateways. The Southern gateway experienced significant growth between 2001 and 2006 but has remained relatively level since 2008 with an outlier dip in 2012. The Santa Cruz gateway experienced growth until 2001. In 2005, its volume dropped to roughly 1996 levels, and it has remained constant since then. Exiting volumes to the Peninsula showed large variation until 2008 and have been relatively consistent since then other than a notable drop in 2012. The 2014 exiting volumes to the Peninsula show a slight decrease of 2.7% from 2013 volumes. East Bay gateway volumes have fluctuated over the years data has been collected, and they generally account for about 12,500 vehicles in the PM peak with higher values before 2000 and some growth between 2008 and 2014.

Figure 4.15 PM Peak Hour Gateway Outflows, 1997-2014



INFLOWS VS. OUTFLOWS

In the AM peak period, traffic flowing into Santa Clara County exceeded outflows for all four gateways as shown in Figure 4.16. Nearly 75 percent of vehicles entering Santa Clara County are from the Peninsula and East Bay Gateways, with inflow volumes of 14,756 and 14,561, respectively.

As shown in Figure 4.17, the traffic flow is reverse for the PM peak period, with the exception of the Southern and East Bay Gateways which experienced slightly higher inflows than outflows.

Figure 4.16 2014 AM Gateway Inflow vs. Outflow

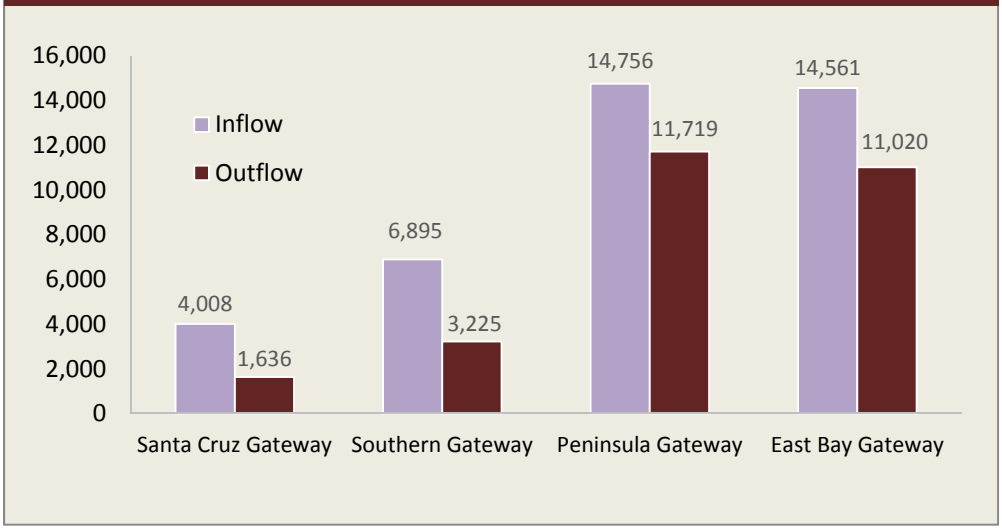
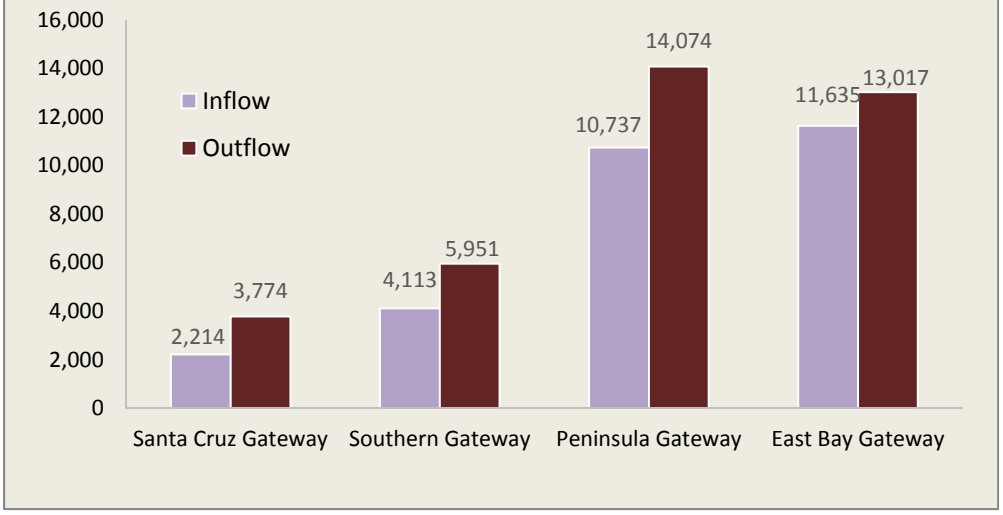


Figure 4.17 2014 PM Gateway Inflow vs. Outflow



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5 RURAL HIGHWAY

INTRODUCTION

There are seven state-operated rural highways in Santa Clara County (Table 5.1). VTA monitors level of service (LOS) on these routes by measuring traffic volumes along one or more segments.

TABLE 5.1 | RURAL HIGHWAY COUNT LOCATIONS

#	Roadway	Location
1	SR 35	North of SR 9
2	SR 35	South of SR 9
3	SR 9	West of Sanborn Rd.
4	SR 9	South of Big Basin Rd.
5	Saratoga/Sunnyvale Rd*	North of Big Basin Rd.
6	SR 130 (Mt. Hamilton Rd.)	East of Clayton Rd.
7	SR 152	West of Santa Teresa Bl.
8	SR 152*	West of Holsclaw Rd.
9	SR 25	South of Bloomfield Av.
10	SR 156	South of SR 152
11	SR 152*	East of SR 156
12	SR 9	East of SR 35

*Multilane roadways

LEVEL OF SERVICE DEFINITIONS

LOS procedures outlined in the 2000 HCM use the measures of percent time-spent following and average travel speed. These are determined using appropriate inputs for peak-hour and peak-15-minute traffic volumes, the percentage split between the two directions of traffic, the percentage of trucks in the traffic flow, and the type of terrain. LOS definitions are shown in Table 5.2. Class I highways are those on which motorists expect to travel at relatively high speeds, and include those that are primary arterials and daily commuter routes. Class II are facilities where lower speeds are expected and serve shorter routes. Additionally there are three multilane highways and LOS is based on density and derived from inputs such as number of lanes, volume, and percent trucks.

TABLE 5.2 | RURAL HIGHWAY LEVEL OF SERVICE DEFINITIONS (CLASS I)

Level of Service	Percent Time-Spent Following	Average Travel Speed (mph)	Description
A	<=35	>55	Highest quality of traffic service, when motorists are able to travel at their desired speed. The passing frequency required to maintain these speeds has not reached a demanding level, so that passing demand is well below passing capacity, and platoons of three or more vehicles are rare.
B	>35 – 50	>50 – 55	The demand for passing to maintain desired speeds becomes significant and approximates the passing capacity at the lower boundary of LOS B. Drivers are delayed in platoons up to 50 percent of the time.
C	>50 – 65	>45 – 50	Further increases in flow exist, resulting in noticeable increases in platoon formation, platoon size, and frequency of passing impediments. Unrestricted passing demand exceeds passing capacity. At higher volumes the chaining of platoons and significant reductions in passing capacity occur. Although traffic flow is stable, it is susceptible to congestion due to turning traffic and slow-moving vehicles.
D	> 65 - 80	> 40 – 45	Unstable traffic flow. The two opposing traffic streams begin to operate separately at higher volume levels, as passing becomes extremely difficult. Passing demand is high, but passing capacity approaches zero. Mean platoon sizes of 5 to 10 vehicles are common.
E	>80	<= 40	Passing is virtually impossible, and platooning becomes intense, as slower vehicles or other interruptions are encountered.
F	Whenever flow rate exceeds capacity		Heavily congested flow with traffic demand exceeding capacity. Volumes are below capacity, and speeds are below capacity as well.

METHODOLOGY

Traffic counts were conducted at the 12 rural highway locations during September and October of 2014. Two-lane highway traffic counts used automatic hose counters which recorded directional traffic classification volumes by 15-minute increments. Multilane highways were too large to use tube counters, therefore, these counts were conducted using video recordings. At each location, the traffic counters recorded data on three consecutive days, Tuesday through Thursday. The one-hour period that recorded the greatest total vehicle volume is considered the peak period and is used for this analysis.

Automatic hose counters are used to measure vehicle counts by the number of times the hose is depressed by traveling vehicles. Since hose counters cannot measure the direction of a vehicle

or distinguish the difference between a four-axle truck and two cars, the LOS procedure in the 2000 *Highway Capacity Manual (HCM)* is used to produce a more accurate count. Specifically, the 2000 HCM LOS procedure is used to measure the percent time-spent following and average travel speed, with appropriate inputs for peak hour and peak 15 minute traffic volumes, the percentage split between the two directions of traffic, the percentage of trucks in the traffic flow, and the type of terrain. Table 5.3 summarizes the LOS analysis inputs used for the 12 rural highway segments.

TABLE 5.3 | RURAL HIGHWAY ASSUMPTIONS

No.	Location	# of Lanes	Type of Terrain	Start of Peak Hour	Peak Direction[1]	Direction Split[1]	PHF[1]	Percent Trucks[2]
1	SR 35 N. of SR 9	2	Rolling	5:30 PM	SB	84/16	0.78	6
2	SR 35 S. of SR 9	2	Rolling	4:00 PM	SB	57/43	0.88	7
3	SR 9 W. of Sanborn	2	Rolling	5:00 PM	WB	68/32	0.88	6
4	SR 9 S. of Big Basin	2	Level	7:30 AM	NB	76/24	0.90	7
5	Saratoga-Sunnyvale Road N. of Big Basin Way	4	Level	7:30 AM	NB	69/31	0.75	2
6	SR 130 E. of Clayton	2	Level	5:15 PM	EB	51/49	0.63	7
7	SR 152 W. of S. Teresa Bl.	2	Level	3:45 PM	EB	53/47	0.87	16
8	SR 152 W. of Holsclaw Rd.	4	Level	4:45 PM	EB	72/28	0.87	13
9	SR 25 S. of Bloomfield Av.	2	Level	4:15 PM	SB	66/34	0.98	13
10	SR 156 S. of SR 152	2	Level	5:45 PM	SB	83/17	0.83	34
11	SR 152 E. of SR 156	4	Level	4:30 PM	EB	62/38	0.95	17
12	SR 9 E. of SR 35	2	Rolling	6:45 AM	EB	88/12	0.86	4

[1]These factors were calculated for the peak hour of the day with highest ADT.
[2]Percent of buses and trucks obtained from 3-day classification counts.

DATA ANALYSIS

The traffic volumes in Table 5.4 reflect the peak hour volume of the surveyed day with the highest daily volume. Consistent with previous monitoring reports, the 2014 results are compared to volumes in previous years.

Overall, volumes on the 12 rural highway segments are lower than they were in 2012 and have been decreasing since about 2009. Segments with traffic volumes decreases of more than 10% since 2012 include:

- #2 State Route 35 south of SR 9 – from 83 in 2012 to 70 in 2014, a decrease of 16%.
- #3 SR 9 west of Sanborn Road – from 246 in 2012 to 212 in 2014, a decrease of 14%.
- #10 State Route 156 south of SR 152 – from 1,134 in 2012 to 891 in 2014, a decrease of 21%.

Segments increasing traffic volume by 10% or more include:

- #7 State Route 152 west of Santa Teresa from 607 in 2012 to 680 in 2014, an increase of 12%.
- #11 State Route 152 east of State Route 156 - from 2,529 in 2012 to 2,853 in 2014, an increase of 13%.

The remaining segments only had minimal changes (<10%) in traffic volumes since 2012. None of the segments experienced volumes that were outside of the range observed in traffic volumes since 1991.

The following segments had a change in LOS between 2012 and 2014:

- Saratoga-Sunnyvale Road north of Big Basin (#5) went from LOS A to LOS B – an increase in volumes in the peak direction (decrease in off-peak) and a change in the free-flow speed to better match field conditions in 2014 resulted in this LOS change.
- State Route 152 West of Holsclaw (#8) went from LOS E to LOS B – Facility was analyzed this year as a multilane highway rather than a two-lane highway to better match field conditions in 2014 resulting in the LOS change. State Route 152 does not become a two-lane rural highway until east of Holsclaw Road.
- State Route 9 East of State Route 35 (#12) went from LOS B to LOS C – a change in the directional distribution of traffic with a higher proportion heading in the peak direction in addition to some adjustments to free flow speed and geometry to better match field conditions in 2014 resulted in this change in LOS.

TABLE 5.4 | RURAL HIGHWAYS LEVEL OF SERVICE

#	Location	2000	2001	2002	2004	2005	2006	2007	2008	2009	2010	2012	2014
1	State Route 35	288	160	156	143	131	134	145	129	127	121	154	169
	N. of SR 9	B	B	A	B	B	B	B	B	A	A	B	B
2	State Route 35	111	62	69	86	85	125	101	91	96	66	83	70
	S. of SR 9	A	A	A	A	A	A	A	A	A	A	A	A
3	State Route 9	362	367	332	286	259	305	278	226	291	306	246	212
	W. of Sanborn	C	C	B	B	B	B	B	B	B	B	B	B
4	State Route 9	1,986	1,528	1,499	1,441	1,432	1,720	1,588	1,397	1,539	1,537	1,342	1, 255
	S. of Big Basin	E	E	E	D	E	E	E	E	E	E	D	D
5*	Saratoga-Sunnyvale	1,302	2,006	2,316	1,579	1,539	1,544	1,842	1,464	1,528	1,527	1,451	1,408
	N. of Big Basin	D	E	F	E	E	E	E	E	E	E	A	A
6	Hamilton Rd. (SR 130)	70	59	59	55	50	60	54	54	72	44	45	45
	E. of Clayton	A	A	A	A	A	A	A	A	A	A	A	A
7	State Route 152	664	754	802	707	536	831	779	748	769	699	607	680
	W. of Santa Teresa	C	C	C	C	C	D	D	D	C	C	C	C
8**	State Route 152	2,017	1,904	2,883	1,979	1,890	1,554	2,032	1,839	1,865	1,617	1,712	1,608
	W. of Holsclaw	F	E	F	E	E	E	E	E	E	E	E	B
9	State Route 25	2,122	2,662	3,882	1,964	1,997	1,959	2,078	2,044	1,974	1,958	2,213	1,918
	S. of Bloomfield	E	F	F	E	E	E	E	E	F	E	E	E
10	State Route 156	1,005	715	1,565	1,137	1,171	964	1,360	1,006	1,080	1,143	1,134	891
	S. of SR 152	D	D	E	D	D	D	D	D	D	D	D	D
11***	State Route 152	2,341	2,697	3,916	2,856	2,812	2,157	2,750	2,656	2,722	2,692	2,554	2,853
	E. of SR 156	B	B	C	C	C	B	B	C	C	B	B	B
12	State Route 9	406	479	446	274	273	352	296	286	288	269	260	241
	E. of SR 35	B	B	B	B	B	C	B	B	B	B	B	C

Volume is the peak hour two-way volume and 1991 is the baseline year.
*Saratoga-Sunnyvale Road north of Big Basin Way was evaluated as a two-lane highway until 2012 and as a four-lane divided highway starting in 2012.
**State Route 152 West of Holsclaw was evaluated as a two-lane highway until 2012 and as a four-lane divided highway starting in 2014.
***State Route 152 east of SR 156 was evaluated as a two-lane highway in 1991 and as a four-lane divided highway after 1991.

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6 EXPRESSWAY STUDY

INTRODUCTION

The expressway study analyzes travel times collected by the Santa Clara County Roads and Airports Department. The study measures travel time, average travel speed and the number of vehicle stops for each of the eight expressways in Santa Clara County.

METHODOLOGY

Santa Clara County Roads and Airports Department staff measured travel time and speed using floating vehicles outfitted with global positioning satellite (GPS) equipment. Times were collected for both directions of travel during the morning (6:30 AM to 9:30 AM) and evening (3:30 PM to 6:30 PM) peak periods. Staff drives the length of the expressway to collect between two and five data samples. The data collected is averaged, providing four data sets for each expressway: AM Northbound/Eastbound, AM Southbound/Westbound, PM Northbound/Eastbound, and PM Southbound/Westbound.

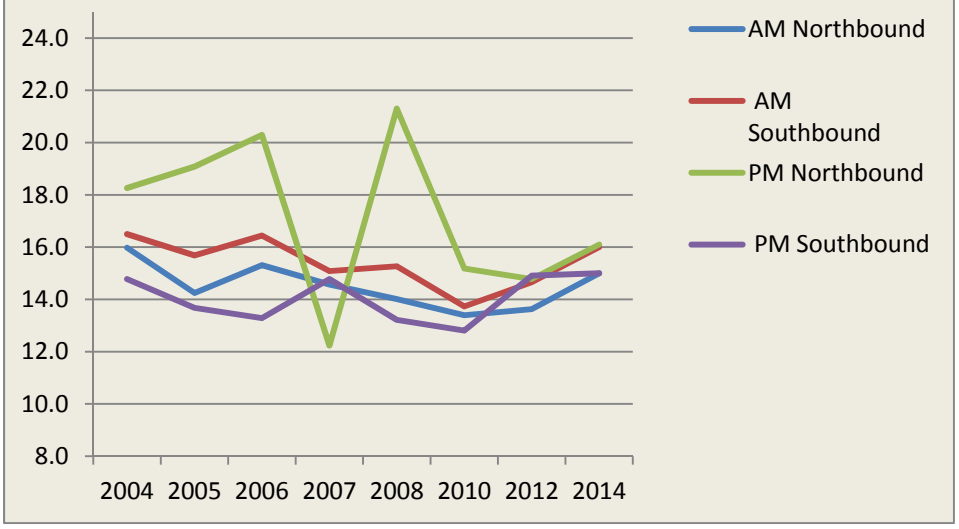
The following figures show the average travel speeds for each expressway from 2002 to 2012 (expressway data was not collected in 2003, 2009, 2011 and 2013). Table 6.1 shows the overall average travel time and average number of stops (number of times traffic came to zero miles per hour during the expressway run) for the years 2006 to 2014.

It is important to note that this analysis is based on a relatively small set of samples. As such, a healthy margin of error should be applied with analyzing the data.

ALMADEN EXPRESSWAY

As shown in Figure 6.1, travel times for Almaden Expressway increased for both directions in the AM and PM peak period. The AM northbound direction experienced a ten percent growth in travel time, from 13.6 minutes in 2012 to 15.0 minutes in 2014.

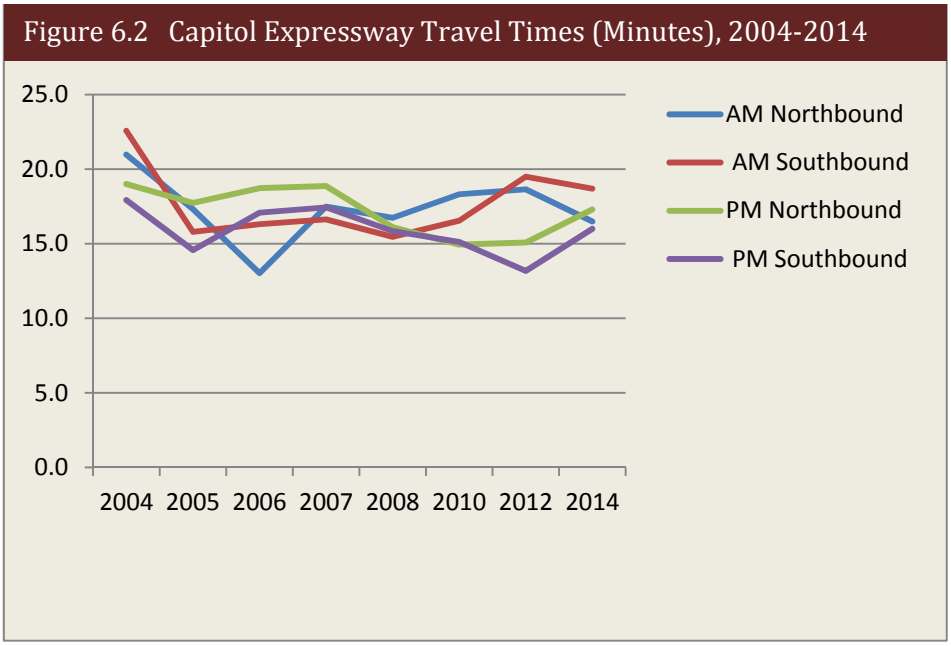
Figure 6.1 Almaden Expressway Travel Times (Minutes), 2004-2014



CAPITOL EXPRESSWAY

As shown in Figure 6.2, both PM travel directions showed moderate increases in travel times. Both AM travel direction recorded a slight improvement in travel time, with the AM northbound direction decreasing from 18.7 minutes to 16.5 minutes in the northbound direction in 2014. The PM peak periods saw increases of 15.6 percent in the northbound direction and 21% percent in the southbound direction.

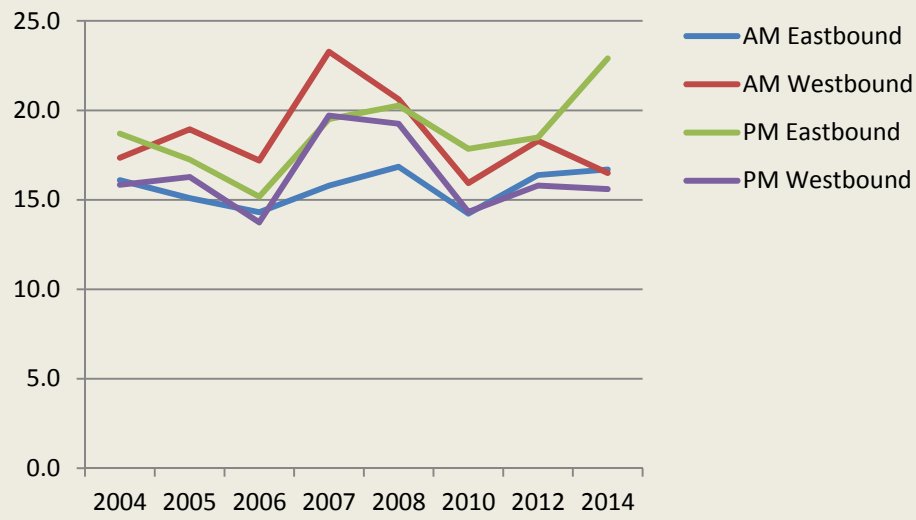
Figure 6.2 Capitol Expressway Travel Times (Minutes), 2004-2014



CENTRAL EXPRESSWAY

Travel times on Central Expressway in 2014 decreased in the westbound directions in the AM and PM peak periods. As shown in Figure 6.3, travel times during the AM peak increased slightly in the AM peak period, from 16.4 to 16.7 minutes in the eastbound direction. The PM travel times increased by 24 percent in the eastbound direction.

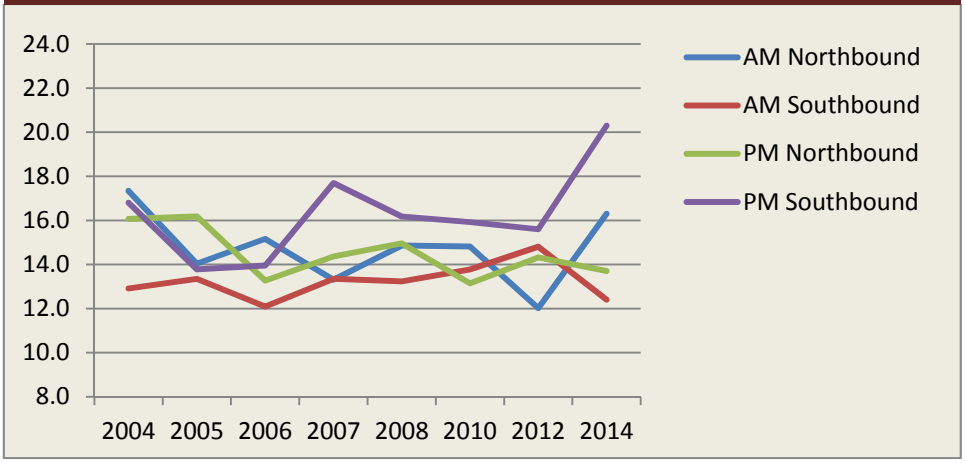
Figure 6.3 Central Expressway Travel Times (Minutes), 2004-2014



FOOTHILL EXPRESSWAY

As shown in Figure 6.4, travel times for Foothill Expressway decreased in the AM southbound and PM northbound direction while the AM northbound and PM southbound directions recorded large increases in travel time. The most noticeable increases in travel time were experienced in the AM northbound direction and PM southbound direction which increased from 36 percent and 30 percent, respectively, in 2014.

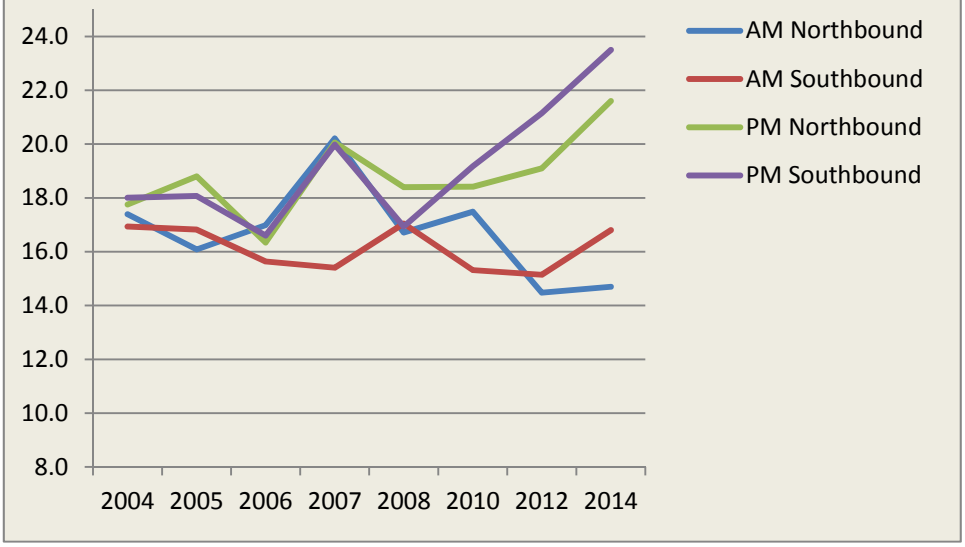
Figure 6.4 Foothill Expressway Travel Times (Minutes), 2004-2014



LAWRENCE EXPRESSWAY

As shown in Figure 6.5, all travel directions along Lawrence Expressway recorded increases in travel times with the southbound direction in the PM peak period increasing from 21.2 minutes to 23.5 minutes in 2014. Travel times during the AM and PM peak in both directions increased slightly by 2 and 13 percent in the northbound and southbound directions, respectively. With the exception of the PM southbound direction, the number of stops recorded increased in number.

Figure 6.5 Lawrence Expressway Travel Times (Minutes), 2004-2014

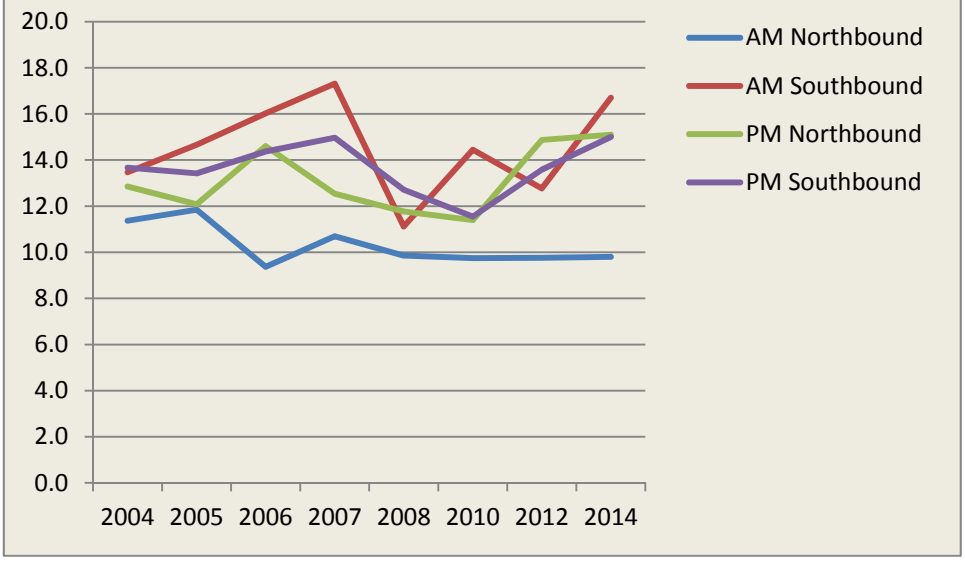


MONTAGUE EXPRESSWAY

As shown in Figure 6.6, travel times increased for both southbound directions in the AM and PM peak period. The AM southbound direction increased by 31 percent while the PM southbound

direction increased by 10 percent. Only the AM northbound direction experienced travel times at the same level as 2012. Travel time in the PM northbound direction increased slightly between travel times in 2012 and 2014.

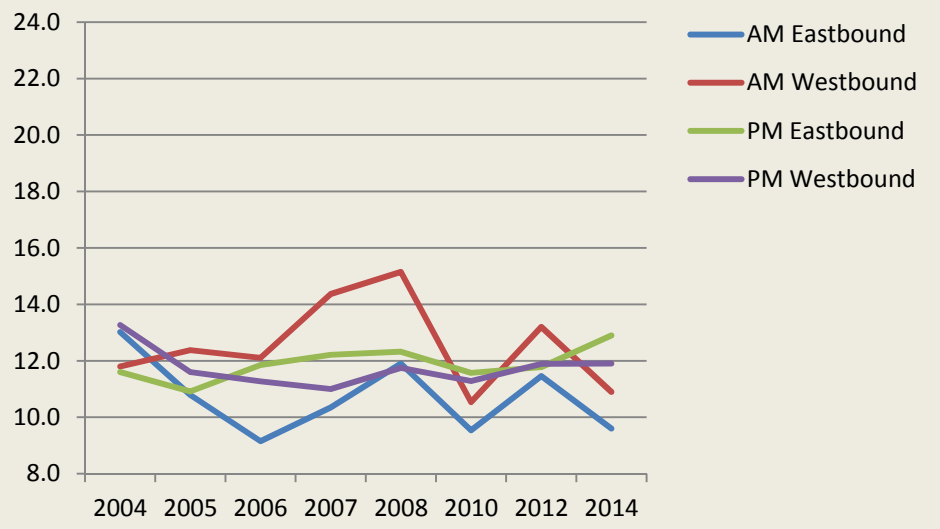
Figure 6.6 Montague Expressway Travel Times (Minutes), 2004-2014



PAGE MILL/OREGON EXPRESSWAY

Travel times on Page Mill/Oregon Expressway in 2014 increased for the eastbound travel direction in the PM peak periods. However, the other travel directions remained the same or decreased. As shown in Figure 6.7, travel times for the eastbound and westbound directions in the AM peak decreased by 16 and 17 percent, respectively. In the PM peak, the eastbound direction increased by 10 percent, while the westbound direction remained relatively the same.

Figure 6.7 Page Mill/Oregon Expressway Travel Times (Minutes), 2004-2014



SAN TOMAS EXPRESSWAY

As shown in Figure 6.8, travel times for San Tomas Expressway increased for all directions in both AM and PM peak periods. The AM northbound direction recorded a slight increase in travel time from 21.1 to 23.8 minutes while the PM peak increased from six percent to sixteen percent in 2014.

Figure 6.8 San Tomas Expressway Travel Times (Minutes), 2004-2014

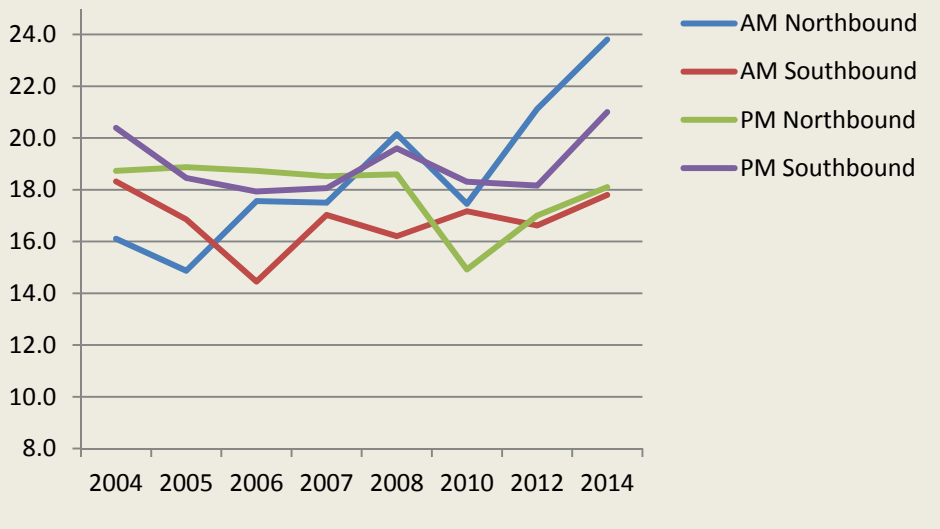


TABLE 6.1 | EXPRESSWAY TRAVEL SPEEDS, TRAVEL TIMES, AND STOPS, 2007-2014

		2007			2008			2010			2012			2014		
Expressway	Direction	Speed (mph)	Travel Time (min)	Stops	Speed (mph)	Travel Time (min)	Stops	Speed (mph)	Travel Time (min)	Stops	Speed (mph)	Travel Time (min)	Stops	Speed (mph)	Travel Time (min)	Stops
Almaden Expressway	AM NB*	35.1	14.6	5.3	36.5	14.0	3.3	36.5	13.4	3.8	37.5	13.6	3.8	34.2	15.0	4.8
	AM SB	33.9	15.1	6.3	33.5	15.3	7	33.5	13.7	4.8	34.9	14.7	6.3	32.0	16.0	7.3
	PM NB	41.8	12.2	2.3	24	21.3	8	24	15.2	6.3	34.6	14.8	4.3	31.9	16.1	6.3
	PM SB*	34.6	14.8	6.3	38.7	13.2	1.3	38.7	12.8	2.8	34.3	14.9	4.5	34.1	15.0	5.3
Capitol Expressway	AM NB*	28.9	17.5	7.7	30.2	16.7	5.3	30.2	18.3	7.7	27.1	18.7	7	30.6	16.5	6.7
	AM SB	30.4	16.6	5.7	32.7	15.5	3.6	32.7	16.6	7.3	25.9	19.5	8	27.0	18.7	7
	PM NB	26.8	18.9	7.5	31.4	16.1	3	31.4	14.9	5.3	33.5	15.1	5.3	29.2	17.3	5.7
	PM SB*	29	17.4	6.7	31.9	15.9	2.8	31.9	15.1	5.6	38.4	13.2	3.7	31.5	16.0	5.6
Central Expressway	AM EB*	36.7	15.8	4.7	34.4	16.8	3.5	34.4	14.2	5	35.4	16.4	4.3	34.7	16.7	7
	AM WB	24.9	23.3	12.7	28.1	20.6	6.3	28.1	15.9	5	31.7	18.3	6	35.1	16.5	4.7
	PM EB*	29.7	19.5	10	28.6	20.3	9.3	28.6	17.8	8.3	31.4	18.5	7	25.3	22.9	7.3
	PM WB	29.4	19.7	9.3	30.1	19.3	7.7	30.1	14.3	5.7	36.7	15.8	4.3	37.2	15.6	6.3
Foothill Expressway	AM NB*	32.7	13.3	4.7	29.3	14.9	5	29.3	14.8	5.8	36.2	12.0	5.3	26.7	16.3	7.8
	AM SB	32.6	13.4	5.7	32.9	13.2	4.7	32.9	13.8	6	29.4	14.8	6.5	35.1	12.4	6
	PM NB	30.3	14.4	6.3	29.1	15.0	7.7	29.1	13.1	5.3	30.4	14.3	5.3	31.7	13.7	5.8
	PM SB*	24.6	17.7	11.3	26.9	16.2	7.7	26.9	15.9	8	27.9	15.6	7.3	21.4	20.3	11
Lawrence Expressway	AM NB*	25.3	20.2	10.7	30.6	16.7	6.4	30.6	17.5	8.8	35.3	14.5	4.8	34.9	14.7	5.7
	AM SB	33.2	15.4	6	30	17.0	7.3	30	15.3	5	33.8	15.1	6	30.5	16.8	6.7
	PM NB	25.5	20.1	11.5	27.8	18.4	7.9	27.8	18.4	9	26.8	19.1	8.7	23.6	21.6	10.7
	PM SB*	25.6	20.0	8.7	30.2	16.9	4.5	30.2	19.2	9.5	24.2	21.2	10	21.8	23.5	7.7
Montague Expressway	AM NB*	34	10.7	3.5	36.9	9.9	3	36.9	9.7	4.3	37.3	9.8	3.3	37.1	9.8	3.3
	AM SB	21	17.3	9.3	32.7	11.1	3.2	32.7	14.5	7	28.5	12.8	6.8	21.7	16.7	10
	PM NB*	29	12.5	4.7	30.9	11.8	3	30.9	11.4	4.2	24.5	14.9	7.2	24.1	15.1	7.8
	PM SB	24.3	15.0	7.3	28.6	12.7	4	28.6	11.6	4.5	26.8	13.6	6.5	24.2	15.0	7.5
Page Mill Road/Oregon Expressway	AM EB*	26.8	10.3	5.5	26.8	11.9	6	23.3	9.5	4	24.2	11.5	7	28.9	9.6	4
	AM WB	19.3	14.4	9.8	19.3	15.2	9.3	18.3	10.5	5	21.0	13.2	7.5	25.5	10.9	5.6
	PM EB	22.7	12.2	6.5	22.7	12.3	6.3	22.5	11.6	5.6	23.5	11.8	5.5	21.6	12.9	8.2
	PM WB*	25.2	11.0	5.6	25.2	11.7	7.6	23.6	11.3	5.8	23.3	11.9	5.8	23.3	11.9	7
San Tomas Expressway	AM NB*	28.9	17.5	7.7	28.9	20.1	9.7	25.1	17.5	7.8	23.9	21.1	10	21.2	23.8	10
	AM SB	29.7	17.0	7.5	29.7	16.2	6	31.2	17.2	9.5	30.4	16.6	8	28.4	17.8	7
	PM NB	27.3	18.5	7.5	27.3	18.6	7	27.2	14.9	5	29.7	17.0	8	27.9	18.1	11
	PM SB*	28	18.1	7.3	28	19.6	8	25.8	18.3	8.4	27.8	18.2	7.3	24.0	21.0	10

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7 Bicycle and Pedestrian Counts

INTRODUCTION

For the 2014 Monitoring Report, VTA collected p.m. peak bicycle and pedestrian counts at 251 CMP intersections. The same effort was done for the first time for the 2012 Monitoring and Conformance Report. Due to lack of baseline data for analysis, the bicycle and pedestrian counts at CMP intersections were not reported in 2012 Monitoring and Conformance report. In 2014, VTA also selected twenty new intersections for 12-hour bicycle and pedestrian counts.

BICYCLE COUNT ANALYSIS

Since 2006, every two years the CMP Monitoring & Conformance Reports have published bicycle and pedestrian counts at ten locations that were selected based on expected high-volume of usage, locations where land use is planned to be intensified and pedestrian activity increased, locations on the cross-country bicycle corridors network and locations of future bicycle corridor gap closures. However, the data that collected in these ten locations had limited use in countywide planning efforts.

In 2014, VTA replaced these ten locations with twenty new locations for 12-hour counts. The twenty new locations were selected based on land use typology, and will assist VTA in identifying the bicyclist and pedestrian travel behavior and peak travel time in these different land use typologies. Over time, data from these locations can support countywide planning efforts and VTA's Travel Demand Model by providing a more accurate understanding of pedestrian and bicycle activity. The twenty count locations represent the following land use typologies:

- Downtown
- Suburban residential
- Rural residential
- Office parks
- Commercial/commercial-industrial corridors

Table 7.1 identifies these 20 new count locations and their associated land use typology.

BICYCLE/PEDESTRIAN COUNT METHODOLOGY

Bicyclists and pedestrians were counted per standard traffic data collection methods. All bicycle turning movements were recorded; therefore bicycle counts represent the true number of bicyclists traversing an intersection during the data collection period. Pedestrians were counted as they crossed each leg of the intersection. This methodology is useful when estimating pedestrian risk at an intersection, but it does not reflect the true number of pedestrians at an

intersection. Pedestrians that do not cross the street are not included in the count, and pedestrians that cross more than one leg of an intersection are counted more than once. Therefore, the count data may either under- or overestimate the number of pedestrians at an intersection. In the future, VTA will develop correction factors for selected intersections to provide a better estimate of pedestrian activity levels at specific locations. The bicycle and pedestrian count data were collected at the 251 CMP intersections during the peak afternoon time on a weekday on September or October 2014. The peak afternoon commute period was defined as either 4-6 or 4:30-6:30 p.m.

TABLE 7.1 | 2014 BICYCLE AND PEDESTRIAN COUNT LOCATIONS

Land Use Typology	New 12-Hour Bicycle/Pedestrian Count Locations (20)				
Downtown	San Jose – Santa Clara St. & Third St.	Palo Alto – University Av. & Bryant St.	Campbell – Campbell Av. & First St.	Gilroy – Monterey St. & Fifth St.	Los Altos – Main St. & Second St.
Suburban Residential	Sunnyvale – Wolfe Rd. & Inverness Wy.	San Jose – Mabury Rd. & White Rd.	San Jose – Crossgates Ln. & McAbee Rd.	Cupertino – Blaney Av. & Rodrigues Av.	
Rural Residential	Morgan Hill – Main St. & Hill Rd.	Los Altos Hills – Concepcion Rd. & Purissima Rd.	Saratoga – Pierce Rd. & Comer Dr.		
Office Parks	San Jose – North First St. & Skyport Dr.	Santa Clara – Scott Blvd. & Bowers Av.	Sunnyvale – Maude Av. & Mary Av.	Sunnyvale – Borregas Av. & Java Dr.	
Commercial, Commercial/Industrial Corridors	San Jose – San Carlos St. & Leland Av.	Santa Clara – El Camino Real & Halford Av.	San Jose – 7th Ave. & Phelan Av.	Los Gatos – Los Gatos Blvd. & Blossom Hill Rd.	

BICYCLE COUNTS

Counts were collected at the twenty new intersections from 7 a.m. to 7 p.m. on one weekday in September, October, or November 2014. During the 12-hour count period a total of 3,998 bicycles were counted at the twenty selected intersections. The highest counts were generally in downtown areas and the lowest counts were generally in rural residential areas. The highest 12-hour count location was 794 in Palo Alto, at the intersection of Bryant Street and University Avenue.

PEDESTRIAN COUNTS

The counts have been tabulated for the maximum peak-hour within each four-hour count period (7-11 a.m., 11 a.m. to 3 p.m., and 3-7 p.m.) and are shown in Table 7.3. During the 12-hour count period a total of 28,482 pedestrian street crossings were counted at these twenty intersections. The highest counts were generally in downtown areas and the lowest counts were generally in rural residential areas. The highest 12-hour count location was 9,904 in Palo Alto, at the intersection of Bryant Street and University Avenue.

TABLE 7.2 | BICYCLE COUNTS

Location	Primary Road	Secondary Road	AM Peak Time	AM Peak Hour Counts	Midday Peak Time	Midday Peak Hour Counts	PM Peak Time	PM Peak Hour Counts	Total 12-Hours Counts
San Jose	3rd St.	Santa Clara St.	800-900	45	1245-145	73	430-530	79	596
Palo Alto	Bryant St.	University Av.	730-830	111	1115-1215	56	545-645	113	794
Campbell	First St.	Campbell Av.	915-1015	17	1245-145	11	545-645	26	123
Gilroy	Monterey St.	5th St.	700-800	7	1130-1230	10	530-630	13	93
Los Altos	2nd St.	Main St.	800-900	22	1145-1245	24	515-615	11	115
Sunnyvale	Wolfe Rd.	Inverness Wy.	1000-1100	26	145-245	15	600-700	20	166
San Jose	White Rd.	Mabury Rd.	700-800	24	200-300	10	430-530	17	128
San Jose	McAbee Rd.	Crossgates Ln.	715-815	4	145-245	8	500-600	11	53
Cupertino	Blaney Av.	Rodrigues Av.	830-930	51	1200-100	16	300-400	57	279
Morgan Hill	Hill Rd.	Main St.	700-800	2	1145-1245	15	300-400	3	35
Los Altos Hills	Purissima Rd.	Concepcion Rd.	845-945	25	1100-1200	21	530-630	27	179
Saratoga	Pierce Rd.	Comer Dr.	945-1045	15	1130-1230	14	545-645	17	92
San Jose	N. First St.	Skyport Dr.	900-1000	13	1200-100	12	415-515	14	109
Santa Clara	Bowers Av.	Scott Blvd.	915-1015	35	1100-1200	10	400-500	19	156
Sunnyvale	Mary Av.	Maude Av.	830-930	37	1145-1245	11	500-600	22	176
Sunnyvale	Borregas Av.	Java Dr.	900-1000	28	1200-100	13	600-700	19	142
San Jose	Leland Av.	San Carlos St.	830-930	20	115-215	19	545-645	37	210
Santa Clara	Halford Av.	El Camino Real	715-815	15	145-245	25	300-400	26	149
San Jose	7th St.	Phelan Av.	900-1000	22	1145-1245	13	400-500	19	136
Los Gatos	Los Gatos Blvd.	Blossom Hill Rd.	745-845	44	1115-1215	34	430-530	28	267

TABLE 7.3 | PEDESTRIAN COUNTS

Location	Primary Road	Secondary Road	AM AM Peak Time	AM Peak Hour Counts	Midday Midday Peak Time	Midday Peak Hour Counts	PM PM Peak Time	PM Peak Hour Counts	Total 12-Hours Counts
San Jose	3rd St.	Santa Clara St.	930-1030	371	1215-115	729	400-500	464	4885
Palo Alto	Bryant St.	University Av.	1000-1100	604	1200-100	1364	600-700	979	9904
Campbell	1st St.	Campbell Av.	930-1030	249	1215-115	471	600-700	509	3467
Gilroy	Monterey St.	5th St.	830-930	110	1215-115	133	330-430	109	1061
Los Altos	2nd St.	Main St.	1000-1100	349	1130-1230	548	300-400	345	3879
Sunnyvale	Wolfe Rd.	Inverness Wy.	945-1045	31	145-245	20	345-445	22	190
San Jose	White Rd.	Mabury Rd.	715-815	12	145-245	16	300-400	10	108
San Jose	McAbee Rd.	Crossgates Ln.	830-930	8	100-200	3	600-700	10	33
Cupertino	Blaney Av.	Rodrigues Av.	830-930	79	200-300	28	315-415	79	425
Morgan Hill	Hill Rd.	Main St.	915-1015	1	100-200	1	300-400	0	2
Los Altos Hills	Purissima Rd.	Concepcion Rd.	845-945	17	1130-1230	9	445-545	6	68
Saratoga	Pierce Rd.	Comer Dr.	815-915	17	145-245	2	300-400	0	22
San Jose	N. 1st St.	Skyport Dr.	1000-1100	72	1230-130	110	530-630	46	588
Santa Clara	Bowers Av.	Scott Blvd.	830-930	20	1145-1245	28	500-600	10	134
Sunnyvale	Mary Av.	Maude Av.	800-900	13	1200-100	92	330-430	30	307
Sunnyvale	Borregas Av.	Java Dr.	830-930	49	1215-115	253	515-615	83	833
San Jose	Leland Av.	San Carlos St.	715-815	277	1130-1230	130	530-630	147	993
Santa Clara	Halford Av.	El Camino Real	1000-1100	102	1115-1215	115	315-415	107	1048
San Jose	7th St.	Phelan Av.	915-1015	21	1145-1245	10	445-545	15	109
Los Gatos	Los Gatos Blvd.	Blossom Hill Rd.	745-845	371	200-300	46	300-400	44	426

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8 Multimodal Improvement Plan

BACKGROUND

The CMP legislation requires Member Agencies to prepare Deficiency Plans when CMP facilities located within their jurisdiction exceed the CMP traffic LOS standard, or when a project's Transportation Impact Analysis indicates that a violation of the LOS standard is expected to occur. In the 2013 Congestion Management Program, VTA adopted the term "Multimodal Improvement Plan (MIP)" for "Deficiency Plan" as defined in state statutes. Prior to August 2013, VTA used the term "Deficiency Plan," so this term still occurs in the Board-adopted VTA Deficiency Plan Requirements as well as two Deficiency Plans that have been prepared by cities in Santa Clara County.

Multimodal Improvement Plans identify offsetting measures to improve transportation conditions on the CMP system in lieu of making physical traffic capacity improvements such as widening an intersection or roadway. Per CMP legislation, each Multimodal Improvement Plan must include implementation of all feasible and applicable actions in the "Deficiency Action Item List," which is found in VTA's Deficiency Plan Requirements. Two Member Agencies in Santa Clara County currently have adopted Deficiency Plans: Sunnyvale has a citywide Deficiency Plan, and San José has a Deficiency Plan for North San José.

IMPLEMENTATION STATUS REPORTS

VTA's *Deficiency Plan Requirements* specify that Member Agencies with Deficiency Plans must submit a Deficiency Plan Implementation Status Report as part of the monitoring and conformance process for the CMP. These reports are intended to describe the progress on the implementation of all the improvements and actions in a Deficiency Plan. The status reports are to be based on the Implementation Monitoring Program contained in the Deficiency Plan. In addition to the status report provided for each action, the Member Agency must include a financial report on Deficiency Plan implementation.

While the Sunnyvale and North San José Deficiency Plans were adopted in 2005 and 2006, respectively, this is only the second year in which VTA enforced the requirement for these cities to submit Implementation Status Reports (the first year was 2011). Part of the impetus to request reports were that the economic climate has improved recently and new development is now occurring in both Deficiency Plan areas. VTA worked with Sunnyvale and San José staff to try to make the Status Reports as useful as possible, while minimizing Member Agency staff time requirements. The intent of the reporting process is to provide

current information to VTA as well as neighboring cities and other stakeholders on actions that are being implemented through existing Deficiency Plans in Santa Clara County.

Both Sunnyvale and San José submitted reports during this monitoring cycle, which provide a summary of the city's progress on the implementation of the actions in their Deficiency Plans. These reports cover progress during the period from adoption (2005/2006) through the 2014 Monitoring cycle; Sunnyvale's status report includes activities through February 2015, while San José's status report extends to June 2014. Future status reports will include a brief section at the start highlighting what is new since the previous year's report. A copy of the two Deficiency Plan Implementation Status Reports is included in an appendix to this Monitoring and Conformance Report.

Sunnyvale Citywide Deficiency Plan - 2014 Implementation Status Report Highlights:

The following are key highlights of the 2014 Implementation Status Report for the City of Sunnyvale's citywide Deficiency Plan:

- This Deficiency Plan covers the entire City of Sunnyvale, an area that contains 14 CMP intersections. Anticipated development in Sunnyvale (noted in the original Deficiency Plan document) includes build-out of the Sunnyvale General Plan; development of the Moffett Park Specific Plan; residential intensification in the Fair Oaks area; and residential intensification in Downtown. According to the Deficiency Plan document, combined this development will result in 12,763 new residential units, approximately 2.5 million square feet of retail space, 621,000 square feet of industrial space, and 14.8 million square feet of research and development space.
- The Implementation Status Report notes that a traffic impact fee was implemented in Sunnyvale in 2004. (This fee predated the Deficiency Plan and covers more items than just the Deficiency Plan improvements). The traffic impact fee has been reviewed and updated annually since then. The Status Report lists the funding sources for the Deficiency Plan actions and shows that a variety of sources have been used to fund actions to date, including traffic impact fees, gas tax revenues, the City's General Fund, developer contributions, and several grant funding sources.
- The City reports progress in making improvements to several CMP intersections that were identified in the Deficiency Plan as having potential future deficiencies. The actions include acquisition of right-of-way for improvements to the El Camino/Mary Avenue and Sunnyvale-Saratoga/Remington intersections; completion of the Mathilda Avenue Adaptive Traffic Control project and the Sunnyvale/Saratoga Road Adaptive Signal Control project.
- The Implementation Status Report notes that the City has made significant progress on implementation of non-auto off-setting actions. Accomplishments include addition of

bike lanes on many roadways between 2005 and 2014 (including Borregas Avenue, Caribbean Drive, Maude Avenue, Wolfe Road, a portion of Java Drive, and others); completion of conceptual design for bike lanes on other roadways (including Mary Avenue and Java Drive); completion of pedestrian and bicycle enhancements in the Fair Oaks/Tasman area; completion of Sunnyvale Caltrain North Side Access Improvements; completion of the Calabazas Creek Trail and the Borregas Avenue Bicycle/Pedestrian Bridges; 95% completion of a conceptual design study for Moffett Park Area Water District Trails; and completion of sidewalks on various streets in the Moffett Industrial Park.

- The City reports progress in implementing a number of policies and actions called for in the Deficiency Plan to improve transportation & land use integration, and manage travel demand from new development. These include City membership and participation in the Moffett Park Business Group; policies in the Downtown Specific Plan, Precise Plan for El Camino Real, Futures Study, and Fair Oaks/Tasman General Plan Amendment promoting mixed use and higher intensities near transit; approval & construction of new development in the Moffett Park Specific Plan area that is near the light rail line and includes specific auto trip reduction targets; implementation of a Sense of Place developer fee that pays for a portion of bicycle and pedestrian improvements in the Futures Study; and updated sidewalk standards.

<u>North San José Deficiency Plan - 2014 Implementation Status Report Highlights</u>:

The following are key highlights of the 2014 Implementation Status Report for the North San José Deficiency Plan:

- This Deficiency Plan accompanies the North San José Development Policy, which provides for development of up to 26.7 million square feet of industrial use, 1.7 million square feet of retail use, and 32,000 residential units. The planned development is broken into four phases, with one-fourth of the development accommodated in each phase. The North San José area is currently in Phase 1 of development.
- The Implementation Status Report notes that since Fiscal Year 2008, approximately $35.48 million in traffic impact fees has been collected for development in the North San José area; $16. 56 million of this was collected in Fiscal Years 2013-14. The report states that the main expenditure from the fees collected to date has been on CMP Intersection Improvements – in particular, improvements to Montague Expressway at North First Street. During this reporting period, the project was listed as being completed. Other projects in the Deficiency Plan have been completed or are underway, using other funding sources such as City of San José Local funds; Federal, state, or regional grant funds; or City of San José staff time.

- The City reports significant progress on implementation of non-auto off-setting actions identified in the Deficiency Plan, primarily bicycle/pedestrian trails and other bicycle improvements. These include the completion of the Lower Guadalupe River Trail (Gold to 880, 6.4 miles), completion of the Highway 237 bikeway (north side, Zanker to Coyote, 0.6 miles), completion of the North San Jose Bike Master Plan, construction of the River Oaks Separated Bike Lanes, 95% design completion for the Coyote Creek Trail (SR 237 to Tasman), and progress on environmental and engineering work for several other bicycle projects.
- The Implementation Status Report notes that the City has implemented a number of the policies called for in the Deficiency Plan to improve transportation & land use integration, and manage travel demand from new development. These adopted policies include requiring new development to construct, replace or repair sidewalks; requiring bicycle parking in all new development; maintaining priority for light rail vehicles at traffic signals; identifying Transit-Oriented Development corridors along the light rail corridor; implementation of two new land use designations in the General Plan, and implementation of a new Corporate Industrial Core Area along North First Street light rail corridor.

VTA staff reviewed the Implementation Status Reports submitted by the cities of Sunnyvale and San José during this reporting cycle, and found them to be in conformance with the CMP Deficiency Plan reporting requirement.

UPCOMING EFFORTS

As noted above, the cities of Sunnyvale and San José have made substantial progress in implementing the actions and improvements called for in their respective Multimodal Improvement Plans/Deficiency Plans. However, a number of actions in each Plan have not yet been addressed. This may be due to funding constraints, competing city priorities, or the fact that development has not progressed enough to warrant certain improvements. As the Congestion Management Agency for Santa Clara County, VTA remains committed to working with these cities to monitor progress and support the implementation of the actions in their Multimodal Improvement Plans/Deficiency Plans.

It is expected that over the next few years, several additional Member Agencies in Santa Clara County will need to prepare Multimodal Improvement Plans due to growth that is projected to impact CMP facilities. These include the following:

- City of Mountain View: In July 2012, the City adopted a new General Plan through the year 2030. The EIR transportation analysis for the General Plan found that the amount of growth under the Plan would cause Significant and Unavoidable congestion impacts on a number of CMP facilities in the City, including portions of El Camino Real and San

Antonio Road and a number of freeway segments. The General Plan includes a narrative stating that the City does not intend to widen streets or add traffic lanes as a means of improving traffic congestion, and that the City will place significant focus on strategies that manage roadway demand such as Complete Streets policies, Transit-Oriented Development, and TDM programs. VTA supports this approach, but notes that the City will likely need to prepare one or more Multimodal Improvement Plans to address the projected deficiencies identified in the EIR. In the Environmental Impact Report for the North Bayshore Precise Plan, which was adopted by the City Council in November 2014 and which lays the foundation for several million square feet of additional office/research & development space north of US 101, the City committed to preparing a "citywide multi-modal master plan, which would also serve as a deficiency plan for congestion management program (CMP) designated intersections within Mountain View." City and VTA staff is now in the process of discussing the scope and timing of this Multimodal Improvement Plan.

- City of Santa Clara: The City adopted an updated General Plan through the year 2035 in November 2010. The transportation analysis that accompanied the draft General Plan found that future development will generate additional traffic volumes that will cause congestion impacts on a number of CMP facilities in the City. The 2010-2035 General Plan includes policies to encourage travel via alternative modes by improving the efficiency of the existing transportation system, while minimizing addition of new roadways and widening of existing streets and intersections, as well as specific alternative mode supportive policies. The 2010-2035 General Plan policies identified the need for Area Development Policies and coordination with VTA to address CMP impacts. The General Plan called for several of these Area Development Policies to be adopted by 2015; however, it is VTA staff's understanding that these policies have not yet been developed. VTA will work with the City to help ensure that when they are developed, these Area Development Policies serve the purpose of a Multimodal Improvement Plan and include multimodal transportation improvements to help offset impacts on the CMP roadway system.

VTA is prepared to assist these cities, as well as all Member Agencies, in developing Multimodal Improvement Plans that meet the requirements of state law and help manage congestion and air quality and provide additional transportation options in Santa Clara County. The development of a Multimodal Improvement Plan can be an opportunity to identify multimodal transportation improvements that can help meet both city and VTA CMP goals. It is also worth noting that due to recent state legislation including SB 375 in 2009 and SB 743 CEQA reform in 2013, the emphasis of Multimodal Improvement Plans in coming years may shift towards reducing Vehicle-Miles-Traveled and auto trip generation in addition to managing congestion. VTA is actively involved in discussions regarding the

implementation of these laws, and is working to educate and assist Member Agencies as they are implemented.

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9 CONFORMANCE FINDINGS

The conformance findings for the 2014 Monitoring Program is presented below.

LAND USE SUBMISSION

All Member Agencies have complied with the CMP land use data requirement.

CMP INTERSECTIONS

VTA monitored 251 CMP intersections for level of service. Two intersections, Page Mill/Oregon Expressway at Foothill Expressway, San Tomas Expressway at Campbell Avenue, Capitol Expressway at Aborn Road, Montague Expressway at McCarthy Blvd/O'Toole Avenue and Central Expressway at De La Cruz Boulevard operated at LOS F. The former intersection operated at LOS F under the 1991 baseline conditions and is exempt from the LOS standard. The latter has been deficient since 1996.

RURAL HIGHWAYS

All rural highway segments operated at LOS E or better in 2014.

FREEWAY SEGMENTS

85 freeway segments (85 miles) operated at LOS F during the AM peak period and 74 freeway segments (70 miles) operated at LOS F in the PM peak period. Of these, 28 AM and 26 PM segments operated at LOS F in the 1991 baseline year and therefore, LOS-exempt. This results in 57 deficient AM segments and 48 deficient PM miles.

Member Agencies with deficient freeway segments located within their jurisdiction are not penalized due to the regional nature of freeway congestion. However, they are encouraged to implement strategies listed in the Immediate Implementation Action List found in the *CMP Deficiency Plan Guidelines.*

DEFICIENCY PLANS

City of Sunnyvale and City of San Jose have complied with the reporting requirement for the Deficiency Plans by submitting an updated Deficiency Plan Implementation Status Report for 2014.