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**STAFF REPORT**

**SUBJECT:** Congestion Management Program

**MEETING DATE:** April 5, 2007

**AGENDA ITEM:** 4

**STAFF CONTACT:** Andrew Orfila, Michael Powers

**RECOMMENDATIONS**

Recommend that the SBCAG board:

- A. Adopt a determination, pursuant to Section 65089.3 of the California Government Code that the Cities of Santa Maria, Solvang, Lompoc, Buellton, Santa Barbara, Goleta, and Carpinteria are conforming to the adopted Congestion Management Program.
- B. Adopt a determination, pursuant to Section 65089.3 of the California Government Code that in the absence of required submittals, the City of Guadalupe and the County of Santa Barbara are not conforming to the adopted Congestion Management Program.
- C. Add the Route 192-Foothill Road intersection at San Ysidro Road to the CMP network of intersections. This intersection is located in the unincorporated County area of Montecito.

**SUMMARY**

The voters of California passed Propositions 111 and 116 in 1990 recognizing the need for regional management strategies to address congestion issues. The Congestion Management Program (CMP) arose from these initiatives, and in 1991 SBCAG was designated as the Congestion Management Agency for Santa Barbara County. There are two key components of the CMP that have become an integral part of the process. One is the annual monitoring (through the collection of traffic counts) of the designated network of CMP intersections and roadways. Out of this process comes the preparation of deficiency plans, where necessary, which can include capacity-increasing capital improvements or broader system-wide improvements in the adjacent area. The other key component is the application of the CMP impact thresholds in the CEQA review process for development projects. This has been a significant achievement in addressing the link between transportation issues and land use

Member Agencies

Buellton ■ Carpinteria ■ Goleta ■ Guadalupe ■ Lompoc ■ Santa Barbara ■ Santa Maria ■ Solvang ■ Santa Barbara County

decisions. Local agencies have now “mainstreamed” reviews of potential regional traffic impacts into their planning processes.

Congestion Management Agencies are required to update their CMP biennially to show how each of the requirements are being fulfilled. The most recent comprehensive update of the CMP was completed in 2003. This is again scheduled to be updated next year. In addition to the comprehensive updates, SBCAG staff conducts supplemental annual updates that include general information on how the CMP network is functioning, identifies congested areas and projects and plans being pursued to address regional congestion issues. These annual updates are completed with the cooperative assistance of local agency Public Works and Planning staff through the submittal of traffic count data and land use development lists.

The following trends are outlined in the staff report below:

- Despite minor decreases in traffic volumes on the South Coast segment of U.S. 101, congestion remains heavy between Carpinteria and Santa Barbara during the morning and evening weekdays, and weekend afternoons.
- Traffic volumes have steadily increased on the north and south boundaries of the Santa Maria urbanized area over the last five years (16% between the Clark Avenue interchange and the Santa Maria Way interchange and 8% over the Santa Maria River bridge) which may indicate increased commute travel within the urbanized area and between the Santa Maria Urbanized area and southern San Luis Obispo County. P.M. peak hour volumes on the northbound segment of U.S. 101 over the Santa Maria River Bridge increased about 5%, resulting in a degradation in the level of service (LOS C in 2004 to LOS D in 2005).
- The segment of Route 192 between Hot Springs Road and Sheffield Drive in Montecito is operating at LOS D. In order to more accurately gauge operations of Route 192 in this area, it is recommended that the Route 192-Foothill Road/San Ysidro Road intersection be added to the network of CMP intersections.
- No deficiency plans are required for intersections monitored last year. Following completion of the drainage project, the City of Santa Barbara is obligated to complete the seasonal monitoring of the Castillo Street/Montecito Street intersection. A P.M. peak hour turning movement count needs to be completed at the Castillo Street/Montecito Street intersection in April or May of this year in order to fulfill the requirement.
- Construction is expected to begin this year on both the Carrillo Street/101 NB Ramps Improvements project and the Mission Street Bikeway Project. Both of these are remaining projects from adopted CMP deficiency plans.

## **DISCUSSION**

In 1990, California voters approved Propositions 111 and 116, resulting in the creation of the Congestion Management Program (CMP). One of the key goals of the CMP is to provide a regional link between transportation and land use decisions. This cannot be accomplished without participation from each of the local agencies in the County. Each year, the State

Department of Transportation and local agency public works staff submit traffic monitoring data, which is then evaluated by SBCAG staff. Additionally, local agency planning staff submits records of projects that have been approved by their local councils and boards. Table 1 summarizes the information that has been received by SBCAG staff.

**Table 1  
Traffic Monitoring and Land Use Data Received**

Agency	Traffic Counts Received	Land Use Data Received
County of Santa Barbara	No	No
City of Buellton	Yes	Yes
City of Carpinteria	Yes	Yes
City of Goleta	Yes	Yes
City of Guadalupe	n/a	No
City of Lompoc	Yes	Yes
City of Santa Barbara	Yes	Yes
City of Santa Maria	Yes	Yes
City of Solvang	n/a	Yes

As shown, the following agencies are found to be conforming to the requirements of the CMP:

- City of Buellton
- City of Carpinteria
- City of Goleta
- City of Lompoc
- City of Santa Maria
- City of Santa Barbara

In the absence of the required submittals, the following agencies are not conforming to the requirements of the CMP:

- County of Santa Barbara (traffic count and land use data)
- City of Guadalupe (land use data)

Those not conforming to the requirements are encouraged to submit their required data by noon on April 9.

## **CMP Network Performance**

The County network of CMP facilities includes U.S. 101 and all of the State Routes (with the exception of Route 166 east of U.S. 101) as well as major arterials within urban areas, such as Betteravia Road in Santa Maria, Hollister Avenue in Goleta, and State Street in Santa Barbara. These facilities are monitored through the collection of average annual daily traffic (AADT) and P.M. peak hour intersection counts. The count data is then used to calculate level of service (LOS), which is the performance measure the CMP utilizes to determine the severity of congestion.

### *State Highways*

The State Highway system accommodates 65% of the County's total daily vehicle miles traveled. As such, monitoring of the State Highway network is a major component of the CMP. To assess the current level of service (LOS) on the state highway system for average weekday peak "rush hour" conditions, SBCAG applied the most recent traffic volume data (Caltrans 2005 average annual daily traffic volumes) to the Highway Capacity Manual (HCM) Operational Analysis methodology for freeways, multi-lane highways and 2-lane highways.<sup>1</sup> Worksheets illustrating the LOS calculations for the freeway segments on the CMP network (U.S. Highway 101, portions of State Route 135, and State Route 217) are contained in Attachment 1. Worksheets illustrating the LOS calculations for the multi-lane and 2-lane highway segments on the CMP network are contained in Attachment 2.

### U.S. Highway 101

U.S. Highway 101 is the most heavily-traveled facility in the County and serves as a vital north-south connection between Northern and Southern California.



*Typical weekday commute on U.S. 101.*

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<sup>1</sup> Highway Capacity Manual, Transportation Research Board, National Research Council, 1997, 2000.

### *Year 2005 Operations – South Coast*

The South Coast portion of U.S. 101 is characterized by heavy congestion during the morning and evening weekdays and on weekend afternoons, particularly on the four-lane segment between Mussel Shoals (in Ventura County) and the Milpas Street interchange.

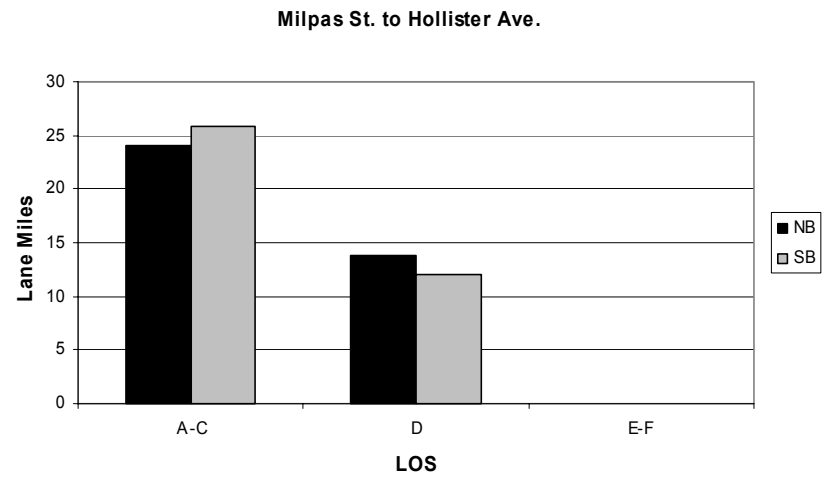
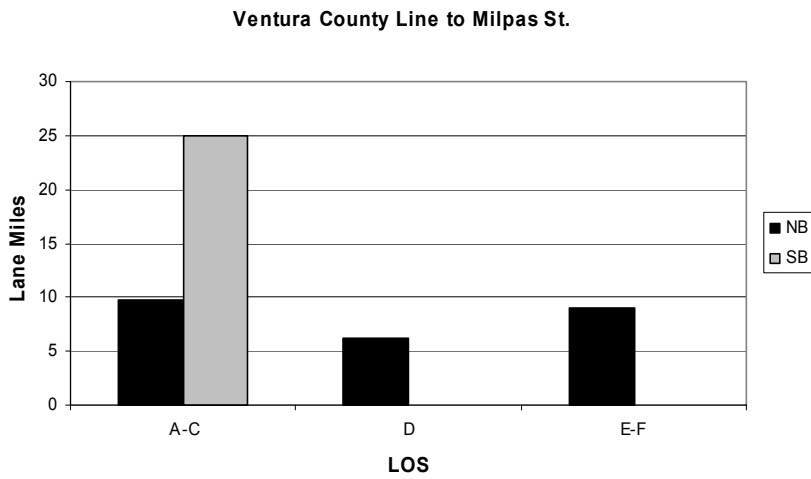
The following trends have emerged on this South Coast segment:

- In 2005, average annual daily trips (AADT) ranged from 65,000 AADT near the Ventura County border to 144,000 AADT near the Las Positas Road interchange in Santa Barbara.
- Since 2001, AADT volumes have been declining slightly (2-10%) within the South Coast corridor except for the segment between Patterson Road and Los Carneros Road in Goleta (AADT has increased on this segment approximately 11% over the last five years). Factors contributing to this decline most likely include increased travel on parallel surface streets (such as Carpinteria Avenue, Via Real, Ortega Hill Road, N. Jameson Lane and Coast Village Road), higher fuel prices, increased utilization of alternative modes, and increased telecommuting.
- Despite these decreases, the heavy congestion and significant travel delays during the morning and evening commute times and weekend afternoons remain on the four-lane segment. The segments of U.S. 101 south of San Ysidro Road continue to operate mid-LOS D range, with the exception of the segment between the two Padaro Lane interchanges which went from LOS D in 2004 to LOS C in 2005. Those areas which show the higher decreases in AADT (such as in the Carpinteria area and the Summerland area) also have parallel surface streets, such as Via Real and Carpinteria Avenue, which would suggest that motorists may be exiting the freeway and using surface streets to avoid congestion.

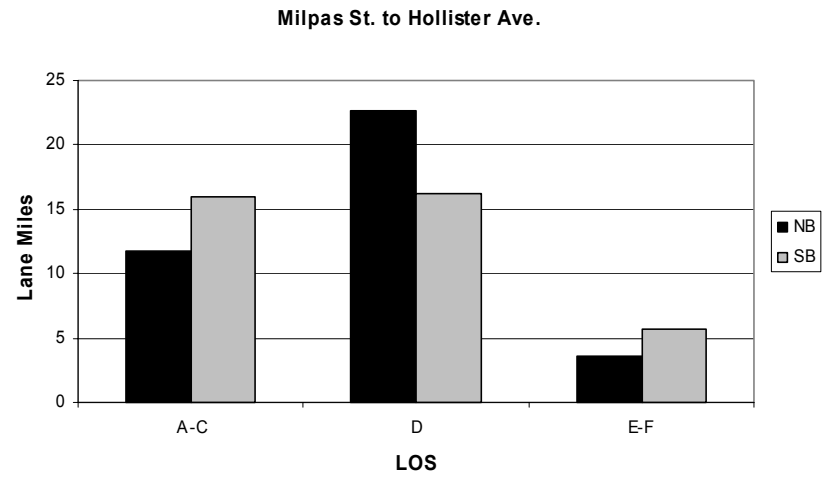
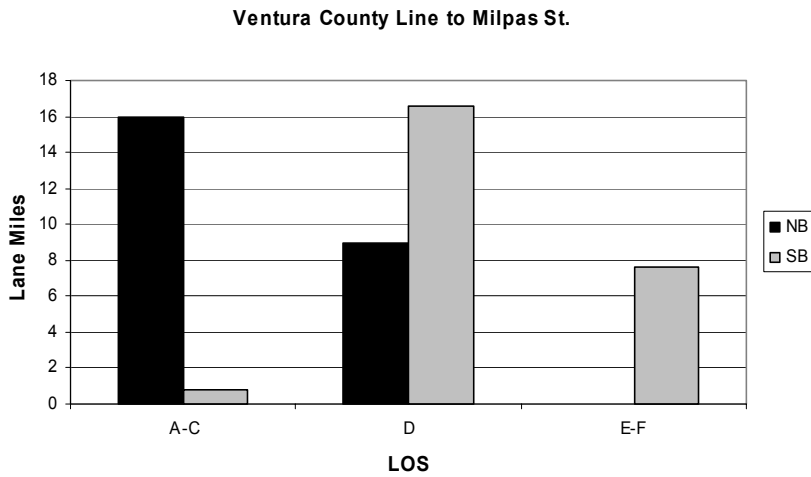
Figures 1 and 2 summarize the amount of lane miles operating at specific LOS, by direction, for the following two segments between:

- 1) The Ventura County line and the Milpas Street interchange and;
- 2) The Milpas Street interchange and the Hollister Avenue interchange in Goleta

**Figure 1**  
**A.M. Peak Hour Operations on South Coast U.S. 101**

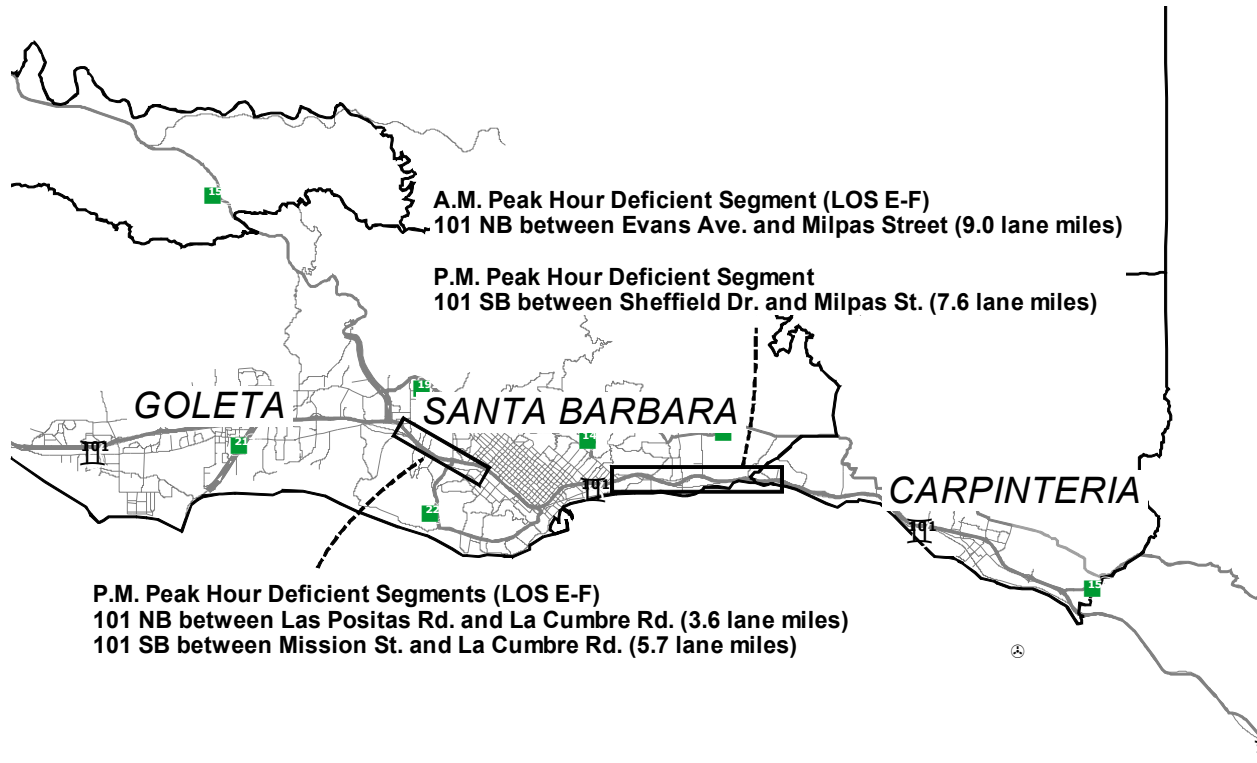


**Figure 2**  
**P.M. Peak Hour Operations on South Coast U.S. 101**



Segments of U.S. 101 for which there are deficient segments are illustrated in Figure 3 and listed in Table 2.

**Figure 3**  
**Deficient Congested “Hot Spots” on U.S. 101 – South Coast**



**Table 2**  
**Year 2005 Deficiencies on U.S. 101 – South Coast**

Time Period	Segment	Length
A.M. Peak Hour	<u>Northbound</u>	
	• Evans Avenue to Milpas Street	9.0 lane miles
P.M. Peak Hour	<u>Northbound</u>	
	• Las Positas Road to La Cumbre Road-Hope Avenue	3.6 lane miles
	<u>Southbound</u>	
	• Milpas Street to Sheffield Drive	7.6 lane miles
	• La Cumbre Road to Mission Street	5.7 lane miles
		<i>Total = 16.9 lane miles</i>

As shown, there are 11.4 lane miles operating at LOS E or worse during the A.M. peak hour and 16.9 lane miles operating at LOS E or worse during the P.M. peak hour on the South Coast segment of U.S. 101.

*U.S. 101 Deficiency Plan / 101-In-Motion Plan*

In 2002, SBCAG joined with other local agencies to prepare the Highway 101 Deficiency Plan to address the growing congestion on the facility in the South Coast area. The plan, which was adopted by local agencies and SBCAG, included short-term congestion relief improvements and committed adopting agencies to complete the 101-In-Motion Plan. The status of some of the major programmed congestion relief improvements that were outlined in the 2002 Deficiency Plan are summarized in Table 3.

**Table 3  
Status of Congestion Relief Projects on the South Coast U.S. 101**

<b>Project / Description</b>	<b>Lead Agency</b>	<b>Funding</b>	<b>Schedule</b>
<p><b><u>Milpas to Cabrillo-Hot Springs</u></b></p> <p>Add third SB lane between Milpas St. and Cabrillo Blvd. interchanges.</p> <p>Add third NB lane between Milpas St. interchange and Salinas St. on-ramp.</p> <p>Add a NB auxiliary lane between Cabrillo Blvd. interchange and Salinas St. off-ramp.</p> <p>Re-configure Cabrillo Blvd. interchange and modify ramp intersections.</p>	Caltrans	STIP Measure D	<p>Design complete by mid-2007.</p> <p>Construction to begin in 2008, with completion by 2011.</p>
<p><b><u>Ortega Hill Auxiliary Lane</u></b></p> <p>Add a NB auxiliary lane and Class I bike lane between Evans Ave. on-ramp and the Sheffield Dr. interchange.</p>	Caltrans	STIP Measure D	Completed in February 2007.
<p><b><u>Linden-Casitas Pass Interchange Improvements</u></b></p> <p>Reconstruct Linden and Casitas Pass interchanges in Carpinteria to accommodate widening on U.S. 101 and improve circulation at ramp intersections.</p> <p>Via Real extension</p>	Caltrans	STIP Measure D	<p>Environmental and engineering complete in 2009.</p> <p>Design and right-of-way complete in 2011.</p> <p>Construction complete by 2016.</p>
<p><b><u>Express Transit Service – 101 Corridor</u></b></p> <p>Santa Barbara-Goleta Santa Barbara-Carpinteria Santa Barbara-Ventura Santa Barbara-Lompoc-Santa Maria Santa Barbara-Buellton</p>	MTD MTD VCTC/SBCAG SBCAG MTD	-	On-going
<p><b><u>ITS Projects</u></b></p> <p>Regional Traffic Management Center Loop Detectors CCTV Side Fire Radar Speed Sensors</p>	Caltrans/CHP Caltrans Caltrans VCTC	- SHOPP SHOPP SAFE (Ventura)	<p>On-going Programmed Programmed Planned</p>

The goal of the 101-In-Motion Plan was to develop long-term solutions for addressing congestion on 101 through a process that would include a broad range of public members. A Stakeholder Advisory Committee was formed to include major employers, representatives from the business community, commuters, environmental interests, automobile advocates, alternative transportation advocates, non-profit community organizations, and neighborhood/homeowner associations. Members of the public were invited to community meetings and many proposed solutions and provided information on what was most important to them regarding possible solutions. A “package” of solutions was identified through this extensive public outreach process and was formally approved by the SBCAG board in October 2005. The 101-In-Motion Plan was completed in July 2006, and incorporates the recommendations made through the public outreach process. The major components of the Implementation Plan include:

- Widening U.S. 101 between the Ventura County line and Milpas Street to provide HOV lanes on both sides of the freeway
- Commuter rail service between Ventura County and Goleta, with connecting bus and shuttle services
- Expanded transportation demand management programs
- Expanding express transit service to North County
- Adding capacity and installing meters at selected ramps
- ITS improvements such as a 511 info line and changeable message signs
- Phased improvements as needed (such widening or auxiliary lanes) for the segments of U.S. 101 between Milpas Street and Winchester Canyon

Progress on widening 101 is evident as recently SBCAG, VCTC, and Caltrans were awarded CMIA funding by the California Transportation Commission for widening a segment of Highway 101 between Mussel Shoals and Carpinteria Creek to six lanes.

In addition SBCAG, in conjunction with Caltrans Districts 5 and 7, local agencies, CHP, and others, is preparing a South Coast 101 corridor ITS Strategic Plan. SBCAG also has federal congressional earmark funding to initiate some ITS projects.

The renewal of Measure D is crucial to the delivery of the Implementation Plan projects. In the absence of Measure D funding, commuter rail, interregional bus service, and TDM programs outlined above will not likely be implemented and the timing on the delivery of the widening project would be significantly affected.

#### *Year 2005 Operations – Gaviota Coast/North County*



West of Goleta, U.S. 101 traverses through the rural areas of Gaviota, Buellton, and the urbanized area of Santa Maria to the San Luis Obispo County line. The following trends have emerged on this segment of U.S. 101:

- There was very little growth in AADT volumes from 2004 to 2005 on the segment of U.S. 101 between Goleta and the southern area of the Santa Maria Valley.
- Traffic volumes have steadily increased on the north and south boundaries of the Santa Maria urbanized area over the last five years (16% between the Clark Avenue interchange and the Santa Maria Way interchange and 8% over the Santa Maria River bridge) which may indicate increased commute travel to and from Orcutt and San Luis Obispo County.
- Traffic volumes have only marginally increased on U.S. 101 in the central urbanized area of Santa Maria (2-3%) between the Betteravia Road interchange and the Donovan Road interchange.
- Through Gaviota, Buellton, and Santa Maria, U.S. 101 is operating at LOS C or better, with the exception of the northbound segment over the Santa Maria River bridge. Traffic volumes increased about 5% from 2004 to 2005 at this location. The segment is now classified as LOS D.

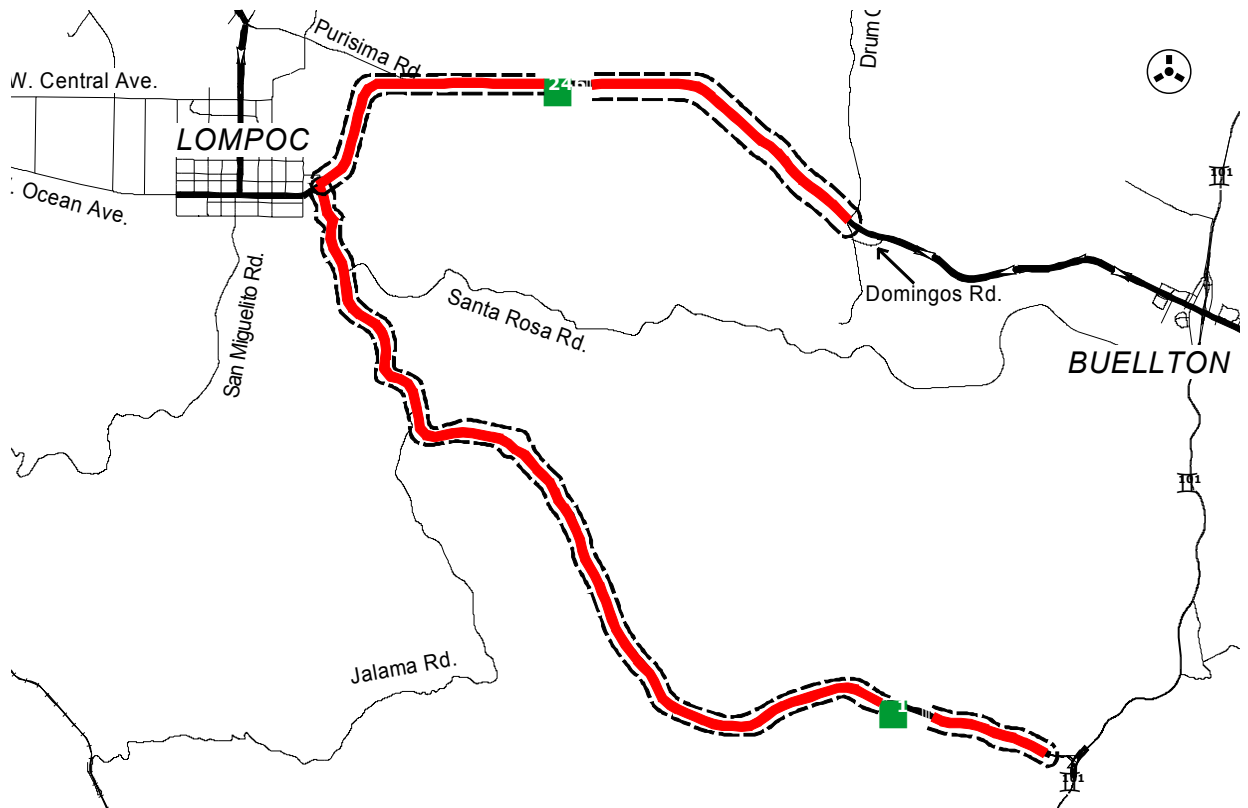
#### Other State Highways – Year 2005 Operations

Major state highways segments such as Route 135 in Santa Maria and Route 1 in Lompoc traverse urbanized areas. Operations on these major, multi-lane facilities are measured using intersection LOS methods, which will be discussed below. However, the majority of the lane miles on state highways in the County are in rural areas. Congestion on these facilities is largely related to inter-regional commuting during peak hours, such as Route 1 between Lompoc and U.S. 101, Route 246 between the Lompoc and Santa Ynez Valleys, Route 154, and Route 166 between Santa Maria and Guadalupe.

Operations on these facilities are gauged using the HCM LOS methodology for two-lane facilities. State highway segments that are currently experiencing LOS D level congestion and are, therefore, close to exceeding the CMP LOS standard are outlined in Figures 4a through 4e.



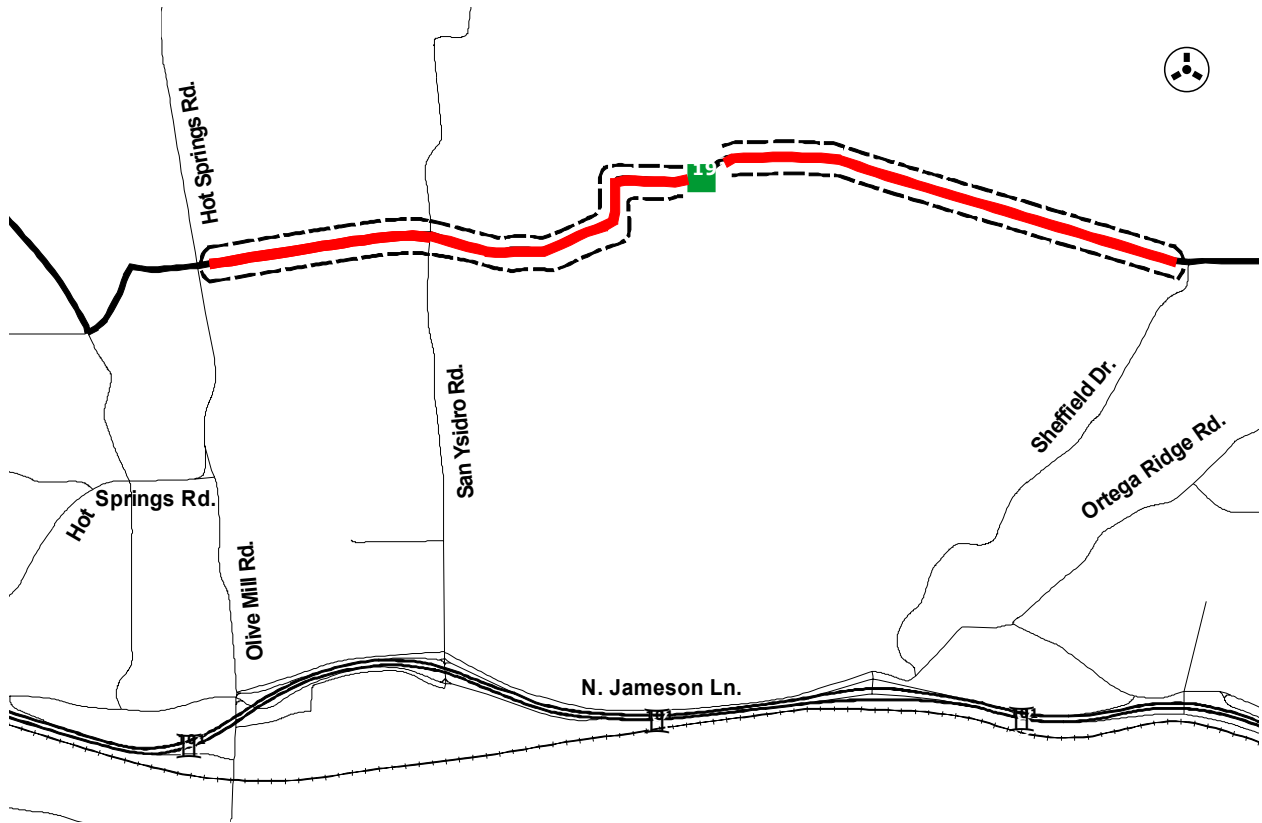
**Figure 4a**  
**CMP State Highway Segments at LOS D – Routes 1 and 246 in the Lompoc Valley**



Facility	Location/Segment	Issue
Route 1	U.S. 101 Juncture near Gaviota to Route 246 in Lompoc	Two-lane, rolling terrain segment heavily utilized by commuters returning to Lompoc from the South Coast in the evening. Limited opportunities to pass slower moving vehicles.
Route 246	Route 1 in Lompoc to Domingos Road (west of Buellton)	This 11-mile, rural segment is used by motorists traveling between Santa Ynez and Lompoc during the P.M. peak hour. There are limited passing opportunities for motorists to maneuver around slower-moving trucks and agricultural vehicles.

As noted, these segments of Routes 1 and 246 in the Lompoc Valley are currently operating at LOS D during the P.M. peak hour. Traffic volumes on Route 1 have increased about 19% since 2001, most likely related to increased commuters from homes in Lompoc to jobs in the South Coast area. Surprisingly, traffic volumes on Route 246 have not increased since 2001. Given the higher volume of truck traffic on these two highways (10-11% of the traffic stream on Route 1 and 8% on Route 246) motorists spend more time following slower moving vehicles, which results in the poor LOS. Implementation of additional passing opportunities would improve travel times on these facilities. SBCAG's draft Vision 2030 Regional Transportation Plan contains planned operational improvement projects on each of these facilities. On Route 1, effective transit service is also proving to be a viable solution to alleviate congestion and provide an alternative to solo commute trips. Ridership on the Clean Air Express from Lompoc to the South Coast has increased about 43% from January 2005 (294 riders per day) to January 2007 (419 riders per day).

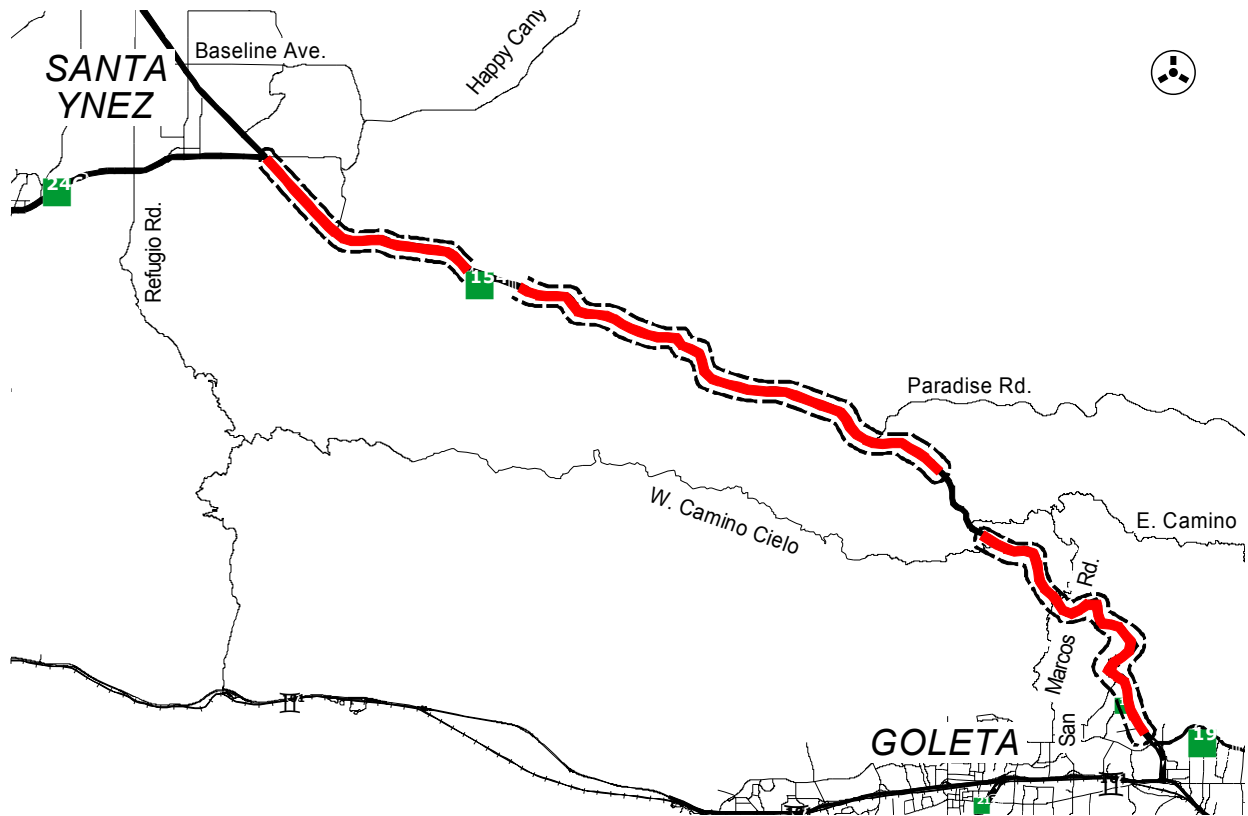
**Figure 4b**  
**CMP State Highway Segments at LOS D – Route 192 in the County Area of Montecito**



Facility	Location/Segment	Issue
Route 192	Hot Springs Rd. to Sheffield Dr.	The unavailability of turnouts and passing lanes contribute to poor LOS on this segment (LOS D). This segment experiences higher traffic volumes (when compared with other segments further to the west and east) due to local residents accessing the commercial areas adjacent to the San Ysidro Rd./Route 192-Foothill Rd. intersection.

As shown, the 2.5-mile segment of Route 192-Foothill Road between Hot Springs Road and Sheffield Drive is currently operating at LOS D. In this area, a more appropriate measure of operations would be to measure LOS at the signalized intersection of Route 192-Foothill Road/San Ysidro Road. It is therefore recommended that the intersection be added to the CMP network of intersections and that the County complete P.M. peak hour traffic count monitoring at this location. This intersection is centrally located on the segment, and would provide a better gauge of operations on this segment of Route 192.

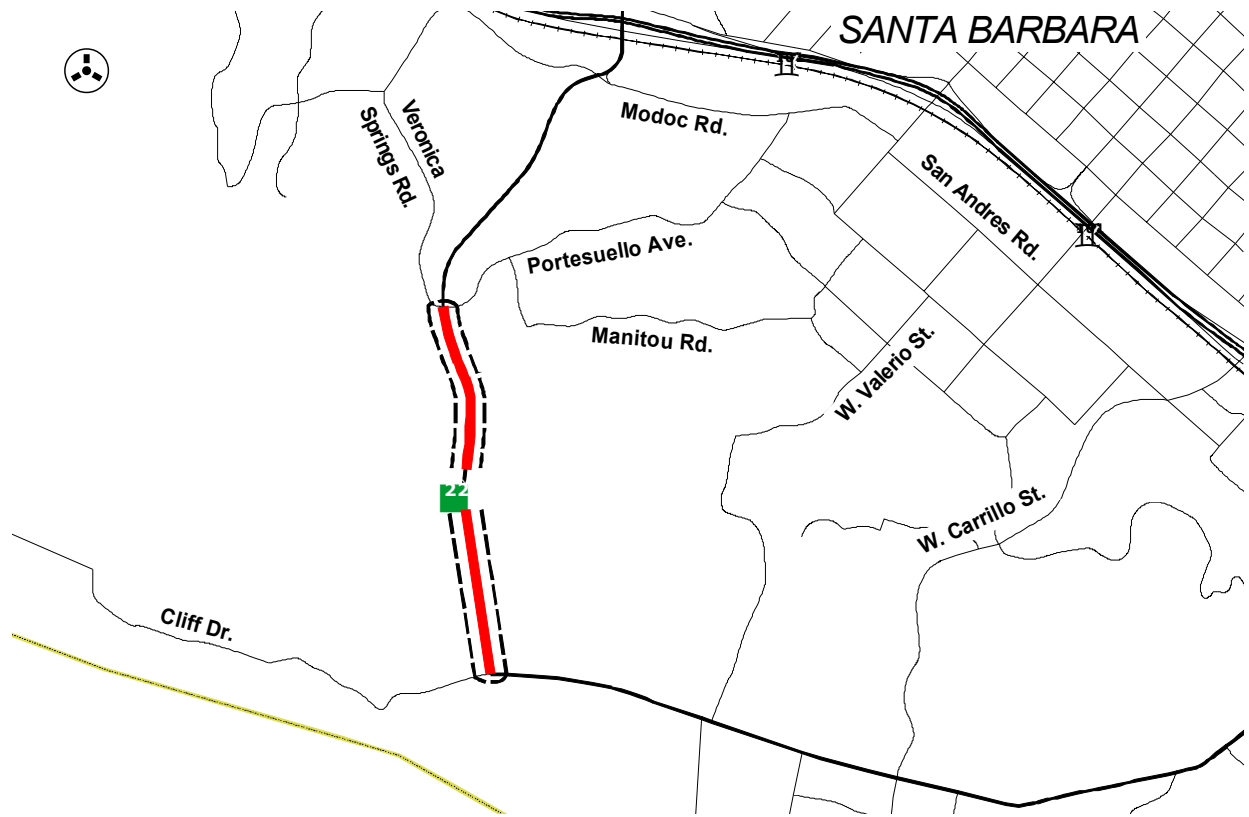
**Figure 4c**  
**CMP State Highway Segments at LOS D-E – Route 154 Between**  
**Santa Ynez and the South Coast**



Facility	Location/Segment	Issue
Route 154	North U.S. 101 Juncture to Route 246	This 8-mile segment contains few passing lanes/turnouts. Approximately 10% of the traffic stream consists of trucks and RVs. This segment is operating at LOS E with the Year 2005 traffic volumes.

As shown, the Route 154 corridor between Route 246 and Route 192 is currently operating at LOS E. The primary determinant of operations on this area of Route 154 is the amount of time spent following slower-moving vehicles. Given the mountainous terrain, there are limited opportunities for operational improvements, such as turnouts and passing lanes. SBCAG and Caltrans have worked together in developing operational improvements on Route 154 (the Group I and Group II operational improvements). Implementation of the Group I project has marginally improved LOS, but most areas continue to operate at LOS E-F. However, the project has created additional passing opportunities for motorists to maneuver around slower-moving vehicles, resulting in improved travel times. Given the physical constraints, implementation of the Group I improvements, and the scheduled implementation of the Group II improvements, a CMP deficiency plan will not be required for this segment. It should also be noted that the segment of Route 154 north of this area is currently operating at LOS D. Route 154 will continue to be closely monitored through the CMP.

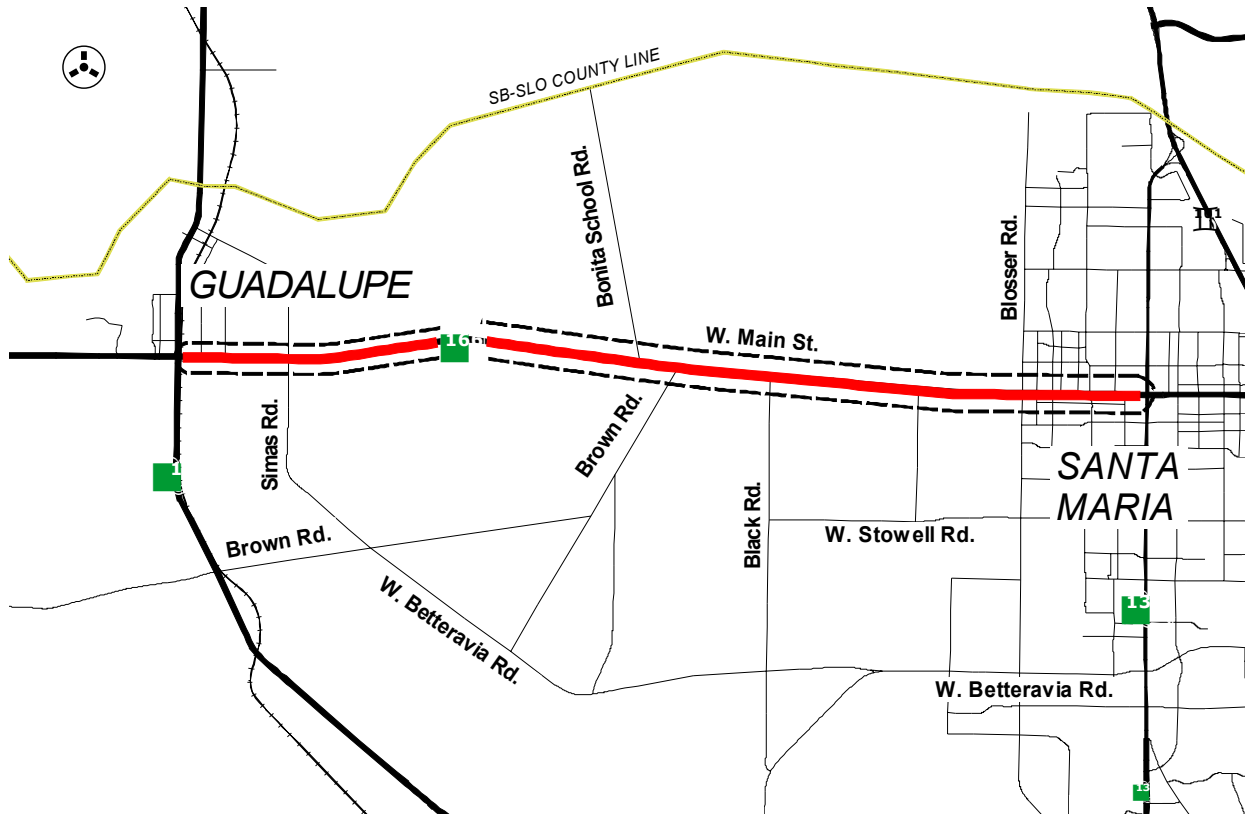
**Figure 4d**  
**CMP State Highway Segments at LOS D – Route 225 in Santa Barbara**



Facility	Location/Segment	Issue
Route 225	Veronica Springs Road to Cliff Drive	Segment is characterized by heavy southbound volumes originating from U.S. 101 destined towards the Hope Ranch and Mesa residential areas during the P.M. peak hour, resulting in long queues from the all-way stop-sign controlled intersection at Cliff Drive.

As shown, this segment of Route 225 is operating at LOS D during the P.M. peak hour. Funds for the construction of a roundabout at the Cliff Drive/Las Positas Road intersection have been programmed, with construction expected in fiscal year 2009-10. The roundabout would improve traffic flow and circulation and increase the average speeds on this section.

**Figure 4e**  
**CMP State Highway Segments at LOS D – Route 166 in the Santa Maria Valley**



Facility	Location/Segment	Issue
Route 166	Route 1 in Guadalupe to Blosser Road in Santa Maria	P.M. peak hour volumes on this segment of Route 166 have increased 14-17% since 2001. Combined with limited passing opportunities and heavy truck traffic, average speeds during the P.M. peak hour are declining on this segment of Route 166.

On this segment of Route 166, traffic volumes and related congestion have been increasing over the last five years. Caltrans has programmed SHOPP improvements to address safety concerns, but funding for passing lanes or widening to four lanes is dependent on supplemental funding.

### *CMP Network Intersections*

The CMP is required to monitor operations on the County's major interregional urban arterials. The performance measure used to gauge operations on these facilities is intersection LOS during the P.M. peak hour, using the Intersection Capacity Utilization (ICU) method. The CMP network of intersections includes all signalized state highway interchange intersections, as well as intersections on major urban streets such as Betteravia Road in Santa Maria, Hollister Avenue in Goleta, and State Street in Santa Barbara. There are currently 115 intersections on the CMP network.

### Year 2006 Intersection Monitoring Results

In 2006, there were 58 intersections for which traffic count data was collected. Tables 4 through 7 summarize the results of the 2006 intersection monitoring, by region. It should be noted that, the County and City of Buellton intersections are included as placeholders until the count data is submitted.

**Table 4  
Year 2006 CMP Intersection LOS – Santa Maria Valley**

Intersection	V/C Ratio / LOS
<b>County of Santa Barbara</b>	
Route 135 (Orcutt Expwy.) / Lakeview Ave.	
Route 135 (Orcutt Expwy.) NB Ramps / Clark Ave.	
Route 135 (Orcutt Expwy.) SB Ramps / Clark Ave.	
<b>City of Santa Maria</b>	
Route 135 (N. Broadway) / Donovan Rd.	0.76 / LOS C
Route 135 (N. Broadway) / Route 166 (Main St.)	0.69 / LOS B
Miller St. / Route 166 (E. Main St.)	0.63 / LOS B
Blosser Rd. / Stowell Rd.	0.81 / LOS D
College Dr. / Stowell Rd.	0.58 / LOS A
Bradley Rd. / Stowell Rd.	0.49 / LOS A
Blosser Rd.-Skyway Dr. / Betteravia Rd.	0.65 / LOS B
Miller St. / Santa Maria Way	0.46 / LOS A
Route 135 (S. Broadway) / Miller St.	0.51 / LOS A

**Table 5**  
**Year 2006 CMP Intersection LOS – Lompoc Valley**

Intersection	V/C Ratio / LOS
<b>County of Santa Barbara</b>	
Route 1 / Purisima Rd.	
<b>City of Lompoc</b>	
Route 1 (H St.) / Central Ave.	0.81 / LOS D
Route 1 (H St. / College Ave.	0.62 / LOS B
Rte. 246 (Ocean Ave.) / I St.	0.36 / LOS A
H St. / Ocean Ave.	0.49 / LOS A
A St. / Ocean Ave.	0.58 / LOS A
Rte. 1 / Rte. 246 (Ocean Ave.)	0.50 / LOS A

**Table 6**  
**Year 2006 CMP Intersection LOS – Santa Ynez Valley**

Intersection	V/C Ratio / LOS
<b>County of Santa Barbara</b>	
Route 246 / Refugio Rd.	
<b>City of Solvang</b>	
Route 246 / Alamo Pintado Rd.	0.80 / LOS C *
<b>City of Buellton</b>	
U.S. 101 NB Ramps / Route 246	0.60 / LOS A
U.S. 101 SB Ramps / Route 246	0.46 / LOS A

\* Erroneously reported at LOS D in 2005 CMP report. This is the corrected LOS calc for the Year 2005 traffic volumes.

**Table 7  
Year 2006 CMP Intersection LOS – South Coast**

<b>Intersection</b>	<b>V/C Ratio / LOS</b>
<b>County of Santa Barbara</b>	
Patterson Ave. / Cathedral Oaks Rd.	
Turnpike Rd. / Cathedral Oaks Rd.	
Turnpike Rd. / Calle Real	
Modoc Rd. / Hollister Ave.	
U.S. 101 SB Off-Ramp / State St.	
<b>City of Goleta</b>	
Storke Rd. / Hollister Ave.	0.77 / LOS C
Fairview Ave. / Calle Real	0.77 / LOS C
Fairview Ave. / Hollister Ave.	0.65 / LOS B
Route 217 SB Ramps / Hollister Ave.	0.72 / LOS C
Patterson Ave. / U.S. 101 NB Ramps	0.78 / LOS C
Patterson Ave. / U.S. 101 SB Ramps	0.87 / LOS D
<b>City of Santa Barbara</b>	
La Cumbre Rd. / State St.	0.70 / LOS B
La Cumbre Rd. / La Cumbre Ln.	0.46 / LOS A
Plaza St. / State St.	0.54 / LOS A
Hope Ave. / U.S. 101 NB Ramps	0.56 / LOS A
Ontare Rd. / Route 192 (Foothill Rd.)	0.53 / LOS A
San Roque Rd. / Route 192 (Foothill Rd.)	0.64 / LOS B
Las Positas Rd. / State St.	0.69 / LOS B
Las Positas Rd. / Calle Real-U.S. 101 NB Off-Ramp	0.74 / LOS C
Alamar Ave. / Route 192 (Foothill Rd.)	0.63 / LOS B
Mission St. / Chapala St.	0.51 / LOS A
Mission St. / U.S. 101 SB Ramps	<b>1.13 / LOS F</b>
Carrillo St. / Anacapa St.	0.68 / LOS B
Carrillo St. / State St.	0.48 / LOS A
Carrillo St. / Chapala St.	0.69 / LOS B
Meigs Rd. / Cliff Dr.	0.58 / LOS A
Castillo St. / Montecito St.	0.79 / LOS C
Castillo St. / Cabrillo Blvd.	0.45 / LOS A
State St. / Cabrillo Blvd.	0.52 / LOS A
Garden St. / U.S. 101 NB Ramps	0.71 / LOS C
Milpas St. / Cabrillo Blvd.	0.35 / LOS A
<b>City of Carpinteria</b>	
Carpinteria Ave. / Linden Ave.	0.65 / LOS B
Carpinteria Ave. / Casitas Pass Rd.	0.68 / LOS B

As noted in Table 6, the LOS changed from LOS D to LOS C at the Route 246/Alamo Pintado Road intersection, due to a miscalculation in last year's CMP report. The Mission Street/101 SB Ramps is operating at LOS during the P.M. peak hour. This deficiency was identified back in 1998 and a deficiency plan was adopted in 1999. Details of the deficiency plan and status are discussed below.

### Intersection Deficiency Plans

The CMP requires member agencies to prepare deficiency plans for intersections located within their jurisdictions that exceed the CMP LOS standard. In Santa Barbara County, any facility operating at LOS E or worse triggers the need for the preparation of a deficiency plan. The legislation requires that deficiency plans either mitigate the deficiency at its location through capital improvements or alternatively, implement system-wide improvements which benefit circulation and air quality. If a CMP facility exceeds the LOS standard and does not have a Congestion Management Agency approved deficiency plan, then the local jurisdiction in which the facility is located is at risk of losing new gas tax revenues provided under Proposition 111.

There were no deficiency plans required in 2006. However, over the last two years, staff has recommended that more intensive monitoring be done at the Castillo Street/Montecito Street intersection, specifically a count to be completed in April or May. The recommendation was made in response to a measured LOS E at this location back in 2003. SBCAG staff recommended that the City complete a series of seasonal counts to determine if the deficiency was related to seasonal fluctuations or was a more permanent condition. However, due to construction activities related to a Caltrans project to repair water damage underneath U.S. 101 at the Castillo Street interchange over the last two years, opportunities for traffic counts have been limited at this location. SBCAG has not yet received the data for this location, so the recommendation remains. Caltrans recently completed their work at the interchange, so conducting the count this month or next would be recommended. City staff has assured that there will be a count completed at this intersection within the next two months.

There are two improvements that have been recommended in past intersection deficiency plans that have not been fully constructed, both within the City of Santa Barbara. The status of each of these projects is summarized below:

- Carrillo Street / Highway 101 NB Ramps Intersection: The Carrillo Street / Highway 101 NB Ramps Intersection Deficiency Plan was adopted in 1998 and programmed in the STIP that same year. The project scope entails widening the northbound on-ramp at Carrillo Street for a distance of 280 meters (919 feet) to accommodate two travel lanes, the merge point with Highway 101, a pullout area for California Highway Patrol/Maintenance purposes, a ramp meter with closed circuit TV, and a retaining wall between the ramp and Mission Creek. The signal phasing at the ramp intersection will be modified to allow for simultaneous left and right turns onto the northbound ramp and a pedestrian-protected phase for pedestrians crossing the northbound ramp entrance. Analysis of these improvements indicates that the level of service at this intersection will improve to LOS C. Staff expects that funds for construction of this project will be allocated by the CTC this year, with construction slated to begin shortly thereafter.

- Mission Street / Highway 101 SB Ramps Intersection: The City of Santa Barbara adopted the Mission Street / Highway 101 SB-Ramp Deficiency Plan on January 6, 1999 and the plan was approved by SBCAG on February 18, 1999. The plan identified two system-wide improvements: the Crosstown Shuttle Service and a Class II bikeway connecting Modoc Road and Castillo Street – a missing link on the regional bikeway system. The Crosstown Shuttle Service was implemented in 2000. Similar to the Carrillo Street/101 NB Ramps Project outlined above, staff expects that funding for construction of this project will be rewarded this year, with construction to commence shortly thereafter.

## **Land Use Analysis Program**

The goal of the CMP Land Use Analysis Program is to link land use decisions with impacts to the regional transportation system. This is accomplished in a number of ways, but the two most effective elements to the land use analysis program are the CMP impact thresholds, which are used in the CEQA review process, and the local agency planning staff submittal of development activity. Also, SBCAG periodically reviews traffic models utilized by local agencies in order to ensure consistency with SBCAG's regional traffic model.

### *CEQA Review Process*

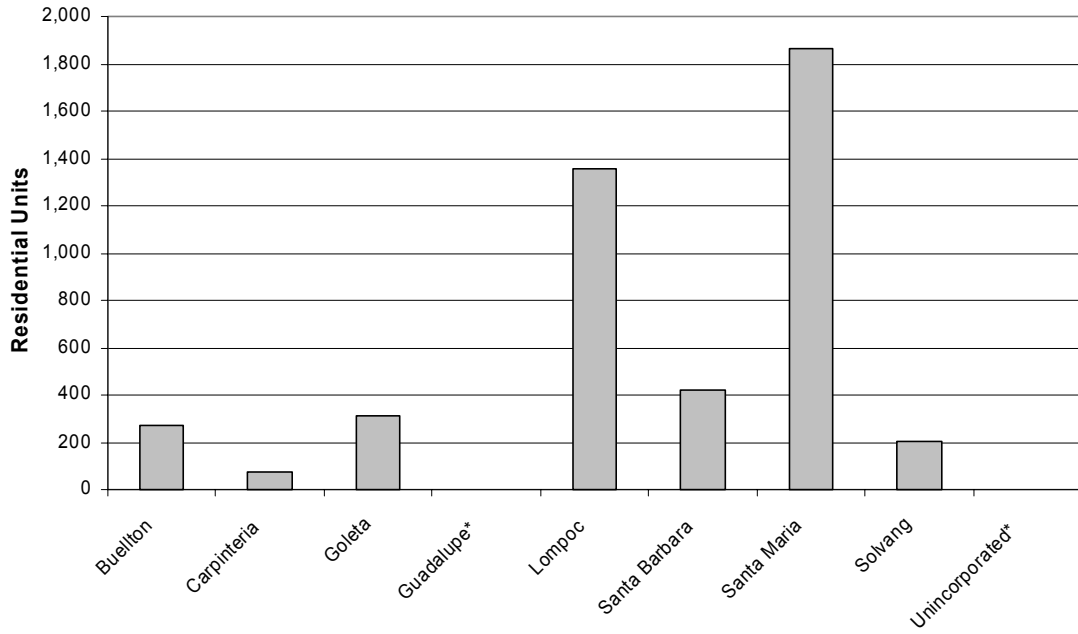
Potential impacts to CMP network facilities are assessed through the CEQA review process and continue to be incorporated into traffic impact studies and EIRs. Local agencies have done an excellent job of incorporating CMP analyses into their planning processes and are encouraged to continue to do so.

### *Development Activity Submittals*

The CMP requires local agency planning staff to submit development activity information (i.e. approved projects, building permits issued) annually to SBCAG and neighboring jurisdictions. This process ensures that regional impacts are being considered through the CEQA review process and that bordering cities and unincorporated areas are not adversely affected by larger development projects.

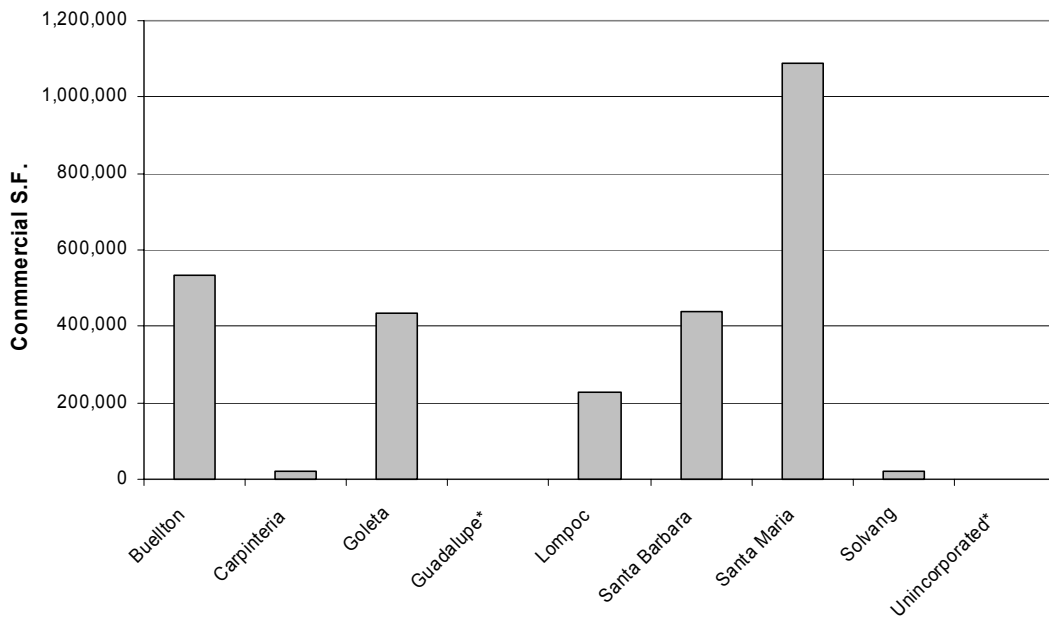
To date, SBCAG has received land use data from all jurisdictions, except for Guadalupe and the County of Santa Barbara, in the required format. This information has also been forwarded on to neighboring jurisdictions. Figures 5 and 6 summarize residential and commercial development projects that have been approved, but for which occupancy certificates have not been issued.

**Figure 5**  
**Residential Projects Approved and Not Occupied as of December 2006**



\* Land use data not available.

**Figure 6**  
**Commercial Projects Approved and Not Occupied as of December 2006**



\* Land use data not available.

# **ATTACHMENT 1**

## **FREEWAY LEVEL OF SERVICE CALCULATIONS**

**A.M. PEAK HOUR – U.S. HIGHWAY 101 SOUTH COAST SEGMENTS**

**P.M. PEAK HOUR – U.S. HIGHWAY 101, STATE ROUTES 217 & 135**

**FREEWAY LEVEL OF SERVICE ANALYSIS  
YEAR 2005 WEEKDAY A.M. (MORNING) PEAK HOUR**

**U.S. 101 CORRIDOR BETWEEN THE VENTURA COUNTY LINE AND EL CAPITAN BEACH (SOUTH COAST)**

Distance (Miles)	# Lanes	Terrain	AADT	K Factor	% Heavy Vehicles			Directional Split		Peak Hour Volume			Heavy Vehicle Factor		Max. Flow Rate	Service Flow Rate		VIC		LOS	
					Truck	Bus	RV	% NB	% SB	Total	NB	SB	NB	SB		NB	SB	NB	SB	NB	SB
<b>VENTURA COUNTY LINE</b>																					
1.1	4	F	65,000	0.061	0.081	0.01	0.01	0.70	0.30	3,965	2,776	1,190	0.954653938	0.954653938	4,600	6,491	4,391	0.43	0.27	<b>B</b>	<b>A</b>
<b>STATE ROUTE 150</b>																					
0.4	4	F	63,000	0.061	0.077	0.01	0.01	0.70	0.30	3,843	2,690	1,153	0.956480153	0.956480153	4,600	6,505	4,400	0.41	0.26	<b>B</b>	<b>A</b>
<b>BAILARD AVE. (EL RINCON)</b>																					
1	4	F	67,000	0.061	0.073	0.01	0.01	0.70	0.30	4,087	2,861	1,226	0.958313368	0.958313368	4,600	4,408	4,408	0.65	0.28	<b>C</b>	<b>A</b>
<b>CASITAS PASS ROAD</b>																					
0.4	4	F	67,000	0.061	0.073	0.01	0.01	0.70	0.30	4,087	2,861	1,226	0.958313368	0.958313368	4,600	4,408	4,408	0.65	0.28	<b>C</b>	<b>A</b>
<b>LINDEN AVENUE</b>																					
0.7	4	F	72,000	0.061	0.073	0.01	0.01	0.70	0.30	4,392	3,074	1,318	0.958313368	0.958313368	4,600	4,408	4,408	0.70	0.30	<b>D</b>	<b>A</b>
<b>SANTA MONICA ROAD</b>																					
1.4	4	F	73,000	0.061	0.073	0.01	0.01	0.70	0.30	4,453	3,117	1,336	0.958313368	0.958313368	4,600	4,408	4,408	0.71	0.30	<b>D</b>	<b>A</b>
<b>PADARO LANE (NORTH)</b>																					
2	4	F	76,000	0.061	0.073	0.01	0.01	0.65	0.35	4,636	3,013	1,623	0.958313368	0.958313368	4,600	4,408	4,408	0.68	0.37	<b>C</b>	<b>B</b>
<b>PADARO LANE (SOUTH)</b>																					
1	4	F	77,000	0.075	0.073	0.01	0.01	0.65	0.35	5,775	3,754	2,021	0.958313368	0.958313368	4,600	4,408	4,408	0.85	0.46	<b>D</b>	<b>B</b>
<b>EVANS AVENUE (a)</b>																					
0.7	4	R*	81,000	0.075	0.073	0.01	0.01	0.65	0.35	6,075	3,949	2,126	0.794281176	0.958313368	4,600	3,654	4,408	1.08	0.48	<b>F</b>	<b>B</b>
<b>SHEFFIELD DRIVE</b>																					
1	4	R*	85,000	0.075	0.074	0.01	0.01	0.65	0.35	6,375	4,144	2,231	0.957854406	0.792393027	4,600	4,406	3,645	0.94	0.61	<b>E</b>	<b>C</b>
<b>SAN YSIDRO ROAD</b>																					
0.5	4	F	90,000	0.075	0.073	0.01	0.01	0.65	0.35	6,750	4,388	2,363	0.958313368	0.958313368	4,600	4,408	4,408	1.00	0.54	<b>E</b>	<b>C</b>
<b>OLIVE MILL ROAD</b>																					
0.9	4	F	86,000	0.075	0.073	0.01	0.01	0.65	0.35	6,450	4,193	2,258	0.958313368	0.958313368	4,600	4,408	4,408	0.95	0.51	<b>E</b>	<b>C</b>
<b>CABRILLO BOULEVARD</b>																					
1.4	4	F	94,000	0.075	0.073	0.01	0.01	0.56	0.44	7,050	3,948	3,102	0.958313368	0.958313368	4,600	4,408	4,408	0.90	0.70	<b>E</b>	<b>C</b>
<b>MILPAS STREET</b>																					
1.4	6	F	106,000	0.075	0.073	0.01	0.01	0.56	0.44	7,950	4,452	3,498	0.958313368	0.958313368	7,050	6,756	6,756	0.66	0.52	<b>C</b>	<b>C</b>
<b>CASTILLO STREET (b)</b>																					
0.6	6	F	114,000	0.075	0.067	0.01	0.01	0.53	0.47	8,550	4,532	4,019	0.961076406	0.961076406	7,050	6,776	6,776	0.67	0.59	<b>C</b>	<b>C</b>
<b>CARRILLO STREET (b)</b>																					
1	6	F	130,000	0.075	0.068	0.01	0.01	0.53	0.47	9,750	5,168	4,583	0.960614793	0.960614793	7,050	6,772	6,772	0.76	0.68	<b>D</b>	<b>C</b>
<b>MISSION STREET (b)</b>																					
0.7	6	F	144,000	0.075	0.068	0.01	0.01	0.52	0.48	10,800	5,616	5,184	0.960614793	0.960614793	7,050	6,772	6,772	0.83	0.77	<b>D</b>	<b>D</b>
<b>LAS POSITAS ROAD (b)</b>																					
1.2	6	F	142,000	0.075	0.068	0.01	0.01	0.52	0.48	10,650	5,538	5,112	0.960614793	0.960614793	7,050	6,772	6,772	0.82	0.75	<b>D</b>	<b>D</b>
<b>LA CUMBRE ROAD (b) (c)</b>																					
0.7	6	F	138,000	0.075	0.064	0.01	0.01	0.52	0.48	10,350	5,382	4,968	0.962463908	0.962463908	7,050	7,535	7,535	0.71	0.66	<b>C</b>	<b>C</b>
<b>STATE ROUTE 154 (b) (c)</b>																					
1.7	6	F	126,000	0.076	0.067	0.01	0.01	0.52	0.48	9,576	4,980	4,596	0.961076406	0.961076406	7,050	6,776	6,776	0.73	0.68	<b>D</b>	<b>C</b>
<b>TURNPIKE ROAD</b>																					
1.3	6	F	119,000	0.076	0.075	0.01	0.01	0.43	0.57	9,044	3,889	5,155	0.957395883	0.957395883	7,050	6,750	6,750	0.58	0.76	<b>C</b>	<b>D</b>
<b>STATE ROUTE 217</b>																					
1.1	6	F	93,000	0.076	0.082	0.01	0.01	0.40	0.60	7,068	2,827	4,241	0.954198473	0.954198473	7,050	6,727	6,727	0.42	0.63	<b>B</b>	<b>C</b>
<b>FAIRVIEW ROAD</b>																					
1.2	4	F	82,000	0.065	0.102	0.01	0.01	0.34	0.66	5,330	1,812	3,518	0.945179584	0.945179584	4,600	5,098	4,348	0.36	0.81	<b>B</b>	<b>D</b>
<b>LOS CARNEROS ROAD (b) (d)</b>																					
1.1	4	F	68,000	0.065	0.102	0.01	0.01	0.34	0.66	4,420	1,503	2,917	0.945179584	0.945179584	4,600	4,348	5,098	0.35	0.57	<b>B</b>	<b>C</b>
<b>GLEN ANNIE ROAD/STORKE ROAD (b) (e)</b>																					
2.1	4	F	35,000	0.065	0.102	0.01	0.01	0.34	0.66	2,275	774	1,502	0.945179584	0.945179584	4,600	4,348	4,348	0.18	0.35	<b>A</b>	<b>B</b>
<b>HOLLISTER AVENUE (b)</b>																					
6.9	4	R	32,000	0.065	0.102	0.01	0.01	0.34	0.66	2,080	707	1,373	0.742942051	0.742942051	4,600	3,418	3,418	0.21	0.40	<b>A</b>	<b>B</b>
<b>EL CAPITAN BEACH (b)</b>																					

(a) Reflects impact of Ortega Hill grade on medium and heavy duty trucks

(b) Peak hour factors updated based on Year 2005/2006 Caltrans peak hour count data.

(c) NB & SB Auxiliary Lanes: +750 pcplph in each direction

(d) NB Auxiliary Lane: +750 pcplph

(e) SB Auxiliary Lane + 750 pcplph

Based on HCM 2000 - Basic Freeway Segments - Assumes Lane Width and Driver Population Factors = 1.0

**FREEWAY LEVEL OF SERVICE ANALYSIS  
YEAR 2005 WEEKDAY P.M. (EVENING) PEAK HOUR**

**U.S. 101 CORRIDOR BETWEEN THE VENTURA COUNTY LINE AND EL CAPITAN BEACH (SOUTH COAST)**

Distance (Miles)	# Lanes	Terrain	AADT	K Factor	% Heavy Vehicles			Directional Split		Peak Hour Volume			Heavy Vehicle Factor		Max. Flow Rate	Service Flow Rate		V/C		LOS	
					Truck	Bus	RV	% NB	% SB	Total	NB	SB	NB	SB		NB	SB	NB	SB	NB	SB
<b>VENTURA COUNTY LINE</b>																					
1.1	4	F	65,000	0.082	0.081	0.01	0.01	0.36	0.64	5,330	1,919	3,411	0.954653938	0.954653938	4,600	6,491	4,391	0.30	0.78	<b>B</b>	<b>D</b>
<b>STATE ROUTE 150</b>																					
0.4	4	F	63,000	0.082	0.077	0.01	0.01	0.36	0.64	5,166	1,860	3,306	0.956480153	0.956480153	4,600	6,505	4,400	0.29	0.75	<b>A</b>	<b>D</b>
<b>BAILARD AVE. (EL RINCON)</b>																					
1	4	F	67,000	0.082	0.073	0.01	0.01	0.39	0.61	5,494	2,143	3,351	0.958313368	0.958313368	4,600	4,408	4,408	0.49	0.76	<b>C</b>	<b>D</b>
<b>CASITAS PASS ROAD</b>																					
0.4	4	F	67,000	0.081	0.073	0.01	0.01	0.42	0.58	5,427	2,279	3,148	0.958313368	0.958313368	4,600	4,408	4,408	0.52	0.71	<b>C</b>	<b>C</b>
<b>LINDEN AVENUE</b>																					
0.7	4	F	72,000	0.081	0.073	0.01	0.01	0.42	0.58	5,832	2,449	3,383	0.958313368	0.958313368	4,600	4,408	4,408	0.56	0.77	<b>C</b>	<b>D</b>
<b>SANTA MONICA ROAD</b>																					
1.4	4	F	73,000	0.081	0.073	0.01	0.01	0.42	0.58	5,913	2,483	3,430	0.958313368	0.958313368	4,600	4,408	4,408	0.56	0.78	<b>C</b>	<b>D</b>
<b>PADARO LANE (NORTH)</b>																					
2	4	F	76,000	0.081	0.073	0.01	0.01	0.42	0.58	6,156	2,586	3,570	0.958313368	0.958313368	4,600	4,408	4,408	0.59	0.81	<b>C</b>	<b>D</b>
<b>PADARO LANE (SOUTH)</b>																					
1	4	F	77,000	0.085	0.073	0.01	0.01	0.44	0.56	6,545	2,880	3,665	0.958313368	0.958313368	4,600	4,408	4,408	0.65	0.83	<b>C</b>	<b>D</b>
<b>EVANS AVENUE (a)</b>																					
0.7	4	R*	81,000	0.085	0.073	0.01	0.01	0.44	0.56	6,885	3,029	3,856	0.794281176	0.958313368	4,600	3,654	4,408	0.83	0.87	<b>D</b>	<b>D</b>
<b>SHEFFIELD DRIVE</b>																					
1	4	R*	85,000	0.087	0.074	0.01	0.01	0.44	0.56	7,395	3,254	4,141	0.957854406	0.792393027	4,600	4,406	3,645	0.74	1.14	<b>D</b>	<b>F</b>
<b>SAN YSIDRO ROAD</b>																					
0.5	4	F	90,000	0.087	0.073	0.01	0.01	0.44	0.56	7,830	3,445	4,385	0.958313368	0.958313368	4,600	4,408	4,408	0.78	0.99	<b>D</b>	<b>E</b>
<b>OLIVE MILL ROAD</b>																					
0.9	4	F	86,000	0.087	0.073	0.01	0.01	0.44	0.56	7,482	3,292	4,190	0.958313368	0.958313368	4,600	4,408	4,408	0.75	0.95	<b>D</b>	<b>E</b>
<b>CABRILLO BOULEVARD</b>																					
1.4	4	F	94,000	0.089	0.073	0.01	0.01	0.46	0.54	8,366	3,848	4,518	0.958313368	0.958313368	4,600	4,408	4,408	0.87	1.02	<b>D</b>	<b>F</b>
<b>MILPAS STREET</b>																					
1.4	6	F	106,000	0.091	0.073	0.01	0.01	0.46	0.54	9,646	4,437	5,209	0.958313368	0.958313368	7,050	6,756	6,756	0.86	0.77	<b>C</b>	<b>D</b>
<b>CASTILLO STREET</b>																					
0.6	6	F	114,000	0.093	0.067	0.01	0.01	0.46	0.54	10,602	4,877	5,725	0.961076406	0.961076406	7,050	6,776	6,776	0.72	0.84	<b>D</b>	<b>D</b>
<b>CARRILLO STREET</b>																					
1	6	F	130,000	0.084	0.068	0.01	0.01	0.46	0.54	10,920	5,023	5,897	0.960614793	0.960614793	7,050	6,772	6,772	0.74	0.87	<b>D</b>	<b>D</b>
<b>MISSION STREET (b)</b>																					
0.7	6	F	144,000	0.084	0.068	0.01	0.01	0.48	0.52	12,096	5,806	6,290	0.960614793	0.960614793	7,050	6,772	6,772	0.86	0.93	<b>D</b>	<b>E</b>
<b>LAS POSITAS ROAD (b)</b>																					
1.2	6	F	142,000	0.087	0.068	0.01	0.01	0.50	0.50	12,354	6,177	6,177	0.960614793	0.960614793	7,050	6,772	6,772	0.91	0.91	<b>E</b>	<b>E</b>
<b>LA CUMBRE ROAD (b) (c)</b>																					
0.7	6	F	138,000	0.087	0.064	0.01	0.01	0.50	0.50	12,006	6,003	6,003	0.962463908	0.962463908	7,050	7,535	7,535	0.80	0.80	<b>D</b>	<b>D</b>
<b>STATE ROUTE 154 (c)</b>																					
1.7	6	F	126,000	0.082	0.067	0.01	0.01	0.51	0.49	10,332	5,269	5,063	0.961076406	0.961076406	7,050	6,776	6,776	0.78	0.75	<b>D</b>	<b>D</b>
<b>TURNPIKE ROAD</b>																					
1.3	6	F	119,000	0.082	0.075	0.01	0.01	0.51	0.49	9,758	4,977	4,781	0.957395883	0.957395883	7,050	6,750	6,750	0.74	0.71	<b>D</b>	<b>C</b>
<b>STATE ROUTE 217</b>																					
1.1	6	F	93,000	0.082	0.082	0.01	0.01	0.53	0.47	7,626	4,042	3,584	0.954198473	0.954198473	7,050	6,727	6,727	0.60	0.53	<b>C</b>	<b>C</b>
<b>FAIRVIEW ROAD (b)</b>																					
1.2	4	F	82,000	0.079	0.102	0.01	0.01	0.59	0.41	6,478	3,822	2,656	0.945179584	0.945179584	4,600	5,098	4,348	0.75	0.61	<b>D</b>	<b>C</b>
<b>LOS CARNEROS ROAD (b) (d)</b>																					
1.1	4	F	68,000	0.079	0.102	0.01	0.01	0.59	0.41	5,372	3,169	2,203	0.945179584	0.945179584	4,600	4,348	5,098	0.73	0.43	<b>D</b>	<b>B</b>
<b>GLEN ANNIE ROAD/STORKE ROAD (b) (e)</b>																					
2.1	4	F	35,000	0.079	0.102	0.01	0.01	0.59	0.41	2,765	1,631	1,134	0.945179584	0.945179584	4,600	4,348	4,348	0.38	0.26	<b>B</b>	<b>A</b>
<b>HOLLISTER AVENUE (b)</b>																					
6.9	4	R	32,000	0.079	0.102	0.01	0.01	0.59	0.41	2,528	1,492	1,036	0.742942051	0.742942051	4,600	3,418	3,418	0.44	0.30	<b>B</b>	<b>A</b>
<b>EL CAPITAN BEACH (b)</b>																					

(a) Reflects impact of Ortega Hill grade on medium and heavy duty trucks

(b) Peak hour factors updated based on Year 2005/2006 Caltrans peak hour count data.

(c) NB & SB Auxiliary Lanes: +750 pcplph in each direction

(d) NB Auxiliary Lane: +750 pcplph

(e) SB Auxiliary Lane + 750 pcplph

Based on HCM 2000 - Basic Freeway Segments - Assumes Lane Width and Driver Population Factors = 1.0



## **ATTACHMENT 2**

### **MULTI-LANE AND RURAL 2-LANE HIGHWAY LEVEL OF SERVICE CALCULATIONS**



**MULTI-LANE HIGHWAY LEVEL OF SERVICE ANALYSIS**  
**WEEKDAY EVENING PEAK HOUR -- 2005 TRAFFIC VOLUMES (continued)**

Route 246 Between	Mi	Lns	Terrain	FFS	ADT	K Factor	% Truck	% BUS	% RV	% EB	% WB	Pk Hr Vol	Pk Hr EB Vol	Pk Hr WB Vol	f_w Adj	f_p Adj	f_hv EB Adj	f_hv WB Adj	MFR	SFR EB	SFR WB	V/C EB	V/C WB	LOS EB	LOS WB
Lompoc, West City Limit	1.25	4	F	45	14400	0.149	0.040	0.001	0.02	0.66	0.34	2146	1416	730	0.88	1.00	0.90744	0.90744	3800	3448	3448			N/A - Signalized Segment	
Lompoc, West Rte. 1	0.01	4	F	45	14400	0.113	0.038	0.001	0.02	0.5	0.5	1117	559	559	1.00	1.00	0.91075	0.91075	3800	3461	3461			N/A - Signalized Segment	
Lompoc, East Rte. 1 2-Lane Section Domingos Rd.	5.38	4	F	55	18900	0.113	0.085	0.001	0.02	0.50	0.50	2136	1068	1068	1.00	1.00	0.95511	0.95511	4200	4011	4011	0.27	0.27	A	A
Buellton, McMurray Rd.																									
Route 225 Between	Mi	Lns	Terrain	FFS	ADT	K Factor	% Truck	% BUS	% RV	% NB/WB	% SB/EB	Pk Hr Vol	Pk Hr NB/WB Vol	Pk Hr SB/EB Vol	f_w Adj	f_p Adj	f_hv NB Adj	f_hv WB Adj	MFR	SFR NB/WB	SFR SB/EB	V/C NB/WB	V/C SB/EB	LOS NB/WB	LOS SB/EB
Jct. Rte. 101	0.18	4	R	45	23000	0.1	0.019	0.001	0.02	0.62	0.38	2300	1426	874	1.00	0.94	0.87997	0.87997	3800	3344	3344			N/A - Signalized Segment	
Modoc Rd. 2-Lane Section Cliff Dr	0.54	4	F	45	12000	0.1	0.019	0.001	0.02	0.62	0.38	1200	744	456	1.00	1.00	0.9434	0.9434	3800	3585	3585			N/A - Signalized Segment	
Mesa Lane	0.91	4	F	45	15200	0.1	0.019	0.001	0.02	0.62	0.38	1520	942	578	1.00	1.00	0.9434	0.9434	3800	3585	3585			N/A - Signalized Segment	
Santa Cruz Ave.	0.72	4	F	45	12000	0.1	0.019	0.001	0.02	0.62	0.38	1200	744	456	1.00	1.00	0.9434	0.9434	3800	3585	3585			N/A - Signalized Segment	
Loma Alta Dr.	0.31	4	F	45	15200	0.1	0.012	0.001	0.02	0.62	0.38	1520	942	578	0.97	1.00	0.95602	0.95602	3800	3633	3633			N/A - Signalized Segment	
Rancheria St.	0.10	4	F	45	24700	0.1	0.012	0.001	0.02	0.62	0.38	2470	1531	939	0.97	1.00	0.95602	0.95602	3800	3633	3633			N/A - Signalized Segment	
Castillo St.	0.26	4	F	45	28000	0.1	0.012	0.001	0.02	0.62	0.38	2800	1736	1064	0.97	1.00	0.95602	0.95602	3800	3633	3633			N/A - Signalized Segment	
South Jct. Rte. 101																									

**PARAMETER DEFINITIONS**

<b>Mi</b>	miles of segment	<b>Pk Hr NB Vol</b>	peak hour northbound volume (%NB * Pk Hr Vol)
<b>Terrain</b>	F-flat; R-rolling; M-mountainous	<b>Pk Hr SB Vol</b>	peak hour southbound volume (%SB * Pk Hr Vol)
<b>FFS</b>	free flow speed	<b>f_w Adj</b>	capacity adjustment for lane width (HCM)
<b>ADT</b>	average daily travel	<b>f_p Adj</b>	capacity adjustment for driver population (HCM)
<b>K Factor</b>	peak hour factor	<b>f_hv NB Adj</b>	capacity adjustment for heavy duty vehicles NB (HCM)
<b>% Truck</b>	percent of heavy duty trucks	<b>f_hv SB Adj</b>	capacity adjustment for heavy duty vehicles SB (HCM)
<b>% Bus</b>	percent of buses	<b>MFR</b>	maximum flow rate (ideal lane capacity * # of lanes)
<b>% RV</b>	percent of recreation vehicles	<b>SFR NB</b>	service flow rate NB (MSR * capacity adjustments)
<b>% NB</b>	percent of northbound traffic	<b>SFR SB</b>	service flow rate SB (MSR * capacity adjustments)
<b>% SB</b>	percent of southbound traffic	<b>V/C NB</b>	volume to capacity ratio NB (SFR / MFR)
		<b>V/C SB</b>	volume to capacity ratio SB (SFR / MFR)



**TWO-LANE HIGHWAY LEVEL OF SERVICE ANALYSIS 2005  
WEEKDAY EVENING PEAK HOUR (continued)**

Route 154 Between	Mi	Terrain	ADT	K Factor	% Truck	% BUS	% RV	% Dir Split	Pk Hr Vol	Shouder Width (ft.)	Lane Width	Class	PHF	Access Pts/mi	% Time Spent Following	V/C Ratio	LOS
Zaca, Rte. 101	2.63	R	11000	0.095	0.075	0.001	0.02	66/34	1050	6	12	1	0.88	3	0.75	0.39	D
Los Olivos, Calkins Rd.	5.46	R	9300	0.1	0.072	0.001	0.02	66/34	930	6	12	1	0.88	2	0.74	0.35	D
Jct. Rte. 246 West	6.66	R	16000	0.1	0.051	0.001	0.02	66/34	1600	6	12	1	0.88	1	0.85	0.59	E
Lake Cachuma Park	8.61	M	16000	0.1	0.040	0.001	0.02	66/34	1600	6	12	1	0.88	1	0.85	0.58	E
Stagecoach Rd. 4-Lane Section																	
San Marcos Pass Summit	7.15	M	16200	0.1	0.033	0.001	0.02	66/34	1620	6	12	1	0.88	1	0.85	0.59	E
Jct. Rte. 192	0.74	R	18000	0.09	0.027	0.001	0.02	66/34	1620	N/A - Signalized Segment							
Jct. Rte. 101																	
Route 225 Between	Mi	Terrain	ADT	K Factor	% Truck	% BUS	% RV	% Dir Split	Pk Hr Vol	Shouder Width (ft.)	Lane Width	Class	PHF	Access Pts/mi	% Time Spent Following	V/C Ratio	LOS
Modoc Rd.																	
Veronica Springs	0.68	R	17000	0.09	0.019	0.001	0.02	62/38	1530	N/A - Signalized Segment							
Cliff Dr	0.9	F	12000	0.1	0.019	0.001	0.02	62/38	1200	2	12	2	0.92	5	0.77	0.41	D
Route 150 Between	Mi	Terrain	ADT	K Factor	% Truck	% BUS	% RV	% Dir Split	Pk Hr Vol	Shouder Width (ft.)	Lane Width	Class	PHF	Access Pts/mi	% Time Spent Following	V/C Ratio	LOS
Jct. Rte. 101	1.67	R	3100	0.117	0.085	0.001	0.02	54/46	360	6	12	1	0.88	1	0.54	0.14	C
Jct. Rte. 192																	
Route 135 Between	Mi	Terrain	ADT	K Factor	% Truck	% BUS	% RV	% Dir Split	Pk Hr Vol	Shouder Width (ft.)	Lane Width	Class	PHF	Access Pts/mi	% Time Spent Following	V/C Ratio	LOS
Los Alamos, Rte. 101	1	F	5500	0.09	0.055	0.001	0.02	70/30	500	10.00	12.00	2	0.92	9	0.60	0.18	C
Old State Highway	8.1	F	2350	0.1	0.102	0.001	0.02	70/30	240	6.00	12.00	1	0.88	1	0.39	0.09	B
Junction Old Route 1	0.51	M	2700	0.11	0.102	0.001	0.02	70/30	300	6.00	12.00	1	0.88	2	0.55	0.17	C
San Antonio Rd.																	
Route 166 Between	Mi	Terrain	ADT	K Factor	% Truck	% BUS	% RV	% Dir Split	Pk Hr Vol	Shouder Width (ft.)	Lane Width	Class	PHF	Access Pts/mi	% Time Spent Following	V/C Ratio	LOS
Guadalupe, Rte. 1	3.75	F	9000	0.103	0.073	0.001	0.02	54/46	930	10.00	12.00	1	0.88	1	0.72	0.33	D
Bonita School Rd.	1.07	F	10500	0.103	0.073	0.001	0.02	54/46	1080	10.00	12.00	1	0.88	1	0.75	0.38	D
Black Rd.	2.05	F	12000	0.103	0.073	0.001	0.02	54/46	1240	10.00	12.00	1	0.88	2	0.78	0.44	D
Santa Maria, Blosser Rd.																	

**PARAMETER DEFINITIONS**

<b>Mi</b>	miles of segment	<b>% RV</b>	percent of recreation vehicles
<b>Terrain</b>	F-flat; R-rolling; M-mountainous	<b>% Dir Split</b>	peak hour percent directional split (2-lane HWYs only)
<b>ADT</b>	average daily travel	<b>Pk Hr Vol</b>	peak hour northbound volume (%NB * Pk Hr Vol)
<b>K Factor</b>	peak hour factor	<b>Class</b>	1 = rural, 2 = urban
<b>% Truck</b>	percent of heavy duty trucks	<b>PHF</b>	peak hour factor
<b>% Bus</b>	percent of buses	<b>V/C Ratio</b>	volume to capacity ratio