

MARIN CONGESTION MANAGEMENT PROGRAM

2011 Update

ADOPTED BY



PREPARED BY

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TRANSPORTATION SOLUTIONS

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2011 CMP Update



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HIGHLIGHTS FROM THE 2011 CMP

Chapter 1: Designated Roadway System

As required by law, the designated roadway system has not changed. In the 2011 CMP, the CMP network enumeration system has been redefined into corridors and segments. This will make it easier to reference roadway performance tables in the future.

Chapter 2: Roadway System Level of Service (LOS)

The monitoring of various roadway segments has not shown considerable variation since the prior CMP in 2008. There was a temporary reduction in delay created with the opening of the 101 Gap Closure project, which provided a new northbound high occupancy vehicle (HOV) lane through San Rafael (as documented in the 2009 CMP). However, the capacity of the roadway through Central San Rafael has renewed spillback onto northbound US 101 that can reach beyond Tiburon Boulevard (SR 131) during some P.M. peak hours.

Other segments of US 101 as well as Sir Francis Drake Boulevard continue to be either deficient or barely operating above a deficient LOS. These segments are generally grandfathered and have been historically congested since the first CMP was adopted in 1991. For most of the grandfathered segments, an HOV lane is now available to bypass P.M. peak hour congestion for vehicles containing at least two persons.

Chapter 3: System Performance

The transit system in Marin County continues to carry many residents. The overall demand for Golden Gate Transit basic and commuter services into San Francisco continues to show a gradual decrease, while the addition of new shuttles sponsored by Marin Transit shows a significant increase in the number of trips carried on them. Finally, there continues to be growing demand for paratransit services in Marin County (Whistlestop Wheels), as demonstrated by an increase in their usage.

Bicycle and pedestrian improvements are important in many jurisdictions. These improvements are catalogued in detail according to information received from staff at each local jurisdiction. Many are associated with Safe Routes to Schools programs.

The performance measures presented in this chapter show that multi-modal demand is not showing significant change in recent years. Overall traffic flow on major corridors was generally better in 2010 than it was in 2008 (noting that the Gap Closure project opened between monitoring cycles). However, regional forecasts indicate that Marin County will increasingly import its work force. The difference between the number of jobs and working residents is projected to grow from about 13,000 workers today to 29,000 by 2035, with the greatest growth expected to occur after 2020).

Chapter 4: Travel Demand Management

The passage of Measure A in 2004 expanded travel demand management programs in Marin County, and these programs are successfully operating today. School programs include Safe Routes to Schools and SchoolPool programs. TAM also promotes proactive development strategies, such as providing the Transit-Oriented Design Toolkit and encouraging SMART Station Area Planning efforts. As Marin County and the Bay Area develop Sustainable Communities Strategies, future programs will continue to be honed to offer alternative approaches to living with congestion.

Chapter 5: Land Use Analysis Program

The CMP has presented two key elements of the Land Use Analysis Program since the first program was adopted in 1991. In this CMP, the language explaining these programs has been rewritten to make them easier to understand.

Chapter 6: Travel Demand Model

CMP requirements include maintaining and utilizing a travel demand model that is consistent with the regional model and available for use in corridor and development studies. The active status of this model is summarized for 2011.

Chapter 7: Capital Improvements Program

Much of Measure A funding is now allocated to operating existing programs, and other funding sources are more limited this year because revenue collection has not been as robust as in years past. Further, many projects in Marin County have received major funding from other sources in the past several years, so that there are not many improvements that can be identified. The most significant investment to the roadway system, the Marin-Sonoma Narrows project, is discussed in detail; Phase 1 projects are now beginning, although the entire project remains unfunded. Other projects whose funding is provided and tracked by regional and state agencies are identified.

Chapter 8: Monitoring, Deficiency Plans and Conformance

Local jurisdictions must meet the CMP conformance requirements to receive funding in several state programs. The process of conformity has not substantively changed in the 2011 CMP. LOS monitoring did not report any new deficiencies and local jurisdictions that conform to the land use analysis program requirements are expected to remain in conformance.

1.0 DESIGNATED ROADWAY SYSTEM

1.1 Purpose and Intent of Legislation

The Congestion Management Program (CMP) roadway system is a network that allows monitoring of performance with respect to established level-of-service (LOS) standards. The network must be created at a level whereby impacts can be identified, and a connection can be made between proposed projects and their specific impacts on the network. The network cannot be too small, as impacts would not be identifiable, and at the same time, the network cannot be too large, as logistical problems would arise in monitoring performance. The CMP was established as part of the legislated Transportation Blueprint of 1990, and became a requirement for the Congestion Management Agencies across California (now designated as TAM for Marin County) to fulfill.

The designated roadway system includes all state highways and principal arterial roadways in Marin County. The Marin CMA initially established the CMP roadway network in 1991. Once a highway or roadway has been designated as part of the system, it cannot be removed, as defined in California Government Code Section 65089(b)(1)(A). Furthermore, the regional transportation system is to be part of the required land-use program, as defined in California Government Code Section 60589(b)(4).

1.2 Relationship to Regional Plans

The Congestion Management Program is a short-range document containing elements which further the goals of the Regional Transportation Plan (RTP) maintained by the Metropolitan Transportation Commission (MTC). MTC has determined that the Marin CMP roadway system is consistent with the RTP, last adopted in April, 2009. This RTP includes goals that address environment, equity and economic goals, including safety, reliability, access, livable communities, clean air and efficient freight travel.

The designated roadway system is included within the RTP's Metropolitan Transportation System. This facilitates regional consistency between the Marin CMP and CMPs of adjoining Contra Costa, San Francisco, and Sonoma counties.

1.3 Designated CMP System

State highways and other principal arterial roadways in this CMP were defined in prior CMPs. MTC has provided a framework that allows for flexibility in defining the principal arterial system. The following criteria were used to establish the designated CMP roadway network:

State Highways. All State highways must be included in the CMP roadway network according to the CMP legislation. If a route is to be removed from the State Highway System, it is to be evaluated according to the principal arterial criteria to determine whether it should remain in the CMP network.

Principal Arterial Roadways. The original CMP, created in 1991, designated principal arterial roadways in addition to State facilities as the CMP roadway network. Non-State CMP roadways were included based upon criteria listed below:

- Purpose and function of the roadway
- Land use adjacent to the roadway and proximity to activity centers
- Average Daily Traffic (ADT) volume, generally over 25,000 vehicles a day
- Connectivity to other facilities

1.4 The CMP Designated Network

The following routes, shown on Figure 1 on page 3, are designated as the State Highway portion of the Marin CMP roadway network:

1. **State Route 1** –Sonoma County line to U.S. 101
2. **State Route 37** – from U.S. 101 to Sonoma County line
3. **State Route 131** – from U.S. 101 to Main Street in Tiburon
4. **U.S. 101** – from Sonoma County Line to San Francisco County Line
5. **Interstate 580** – from U.S. 101 to Contra Costa County line

As noted above, additional CMP roadways were designated in 1991. The following routes (also shown on (Figure 1) have been officially designated as the principal arterial portion of the Marin CMP roadway network:

6. **Novato Boulevard/South Novato Boulevard** in Novato – from Sutro Avenue/San Marin Drive to U. S. 101
7. **Bel Marin Keys Boulevard** – from U.S. 101 southbound ramps to Arroyo San Jose
8. **Sir Francis Drake Boulevard** in unincorporated Marin County, Fairfax, San Anselmo, Ross, Kentfield, Larkspur – from State Route 1 to Interstate 580
9. **Red Hill Avenue/Fourth Street** in San Anselmo and San Rafael – from Sir Francis Drake Boulevard to Marquard Avenue; and **Second Street/Third Street** in San Rafael – from Marquard Avenue to U.S. 101
10. **Bridgeway/Richardson Street/Second Street/Alexander Avenue in Sausalito** – from U.S. 101 to U.S. 101

A detailed description of the roadway network segments and monitored network is shown in Table 1. In total, the 123-mile CMP designated roadway network contains 91 miles of state highways and 32 miles of principal arterial roadways.

FIGURE 1. MARIN CMP ROADWAY NETWORK

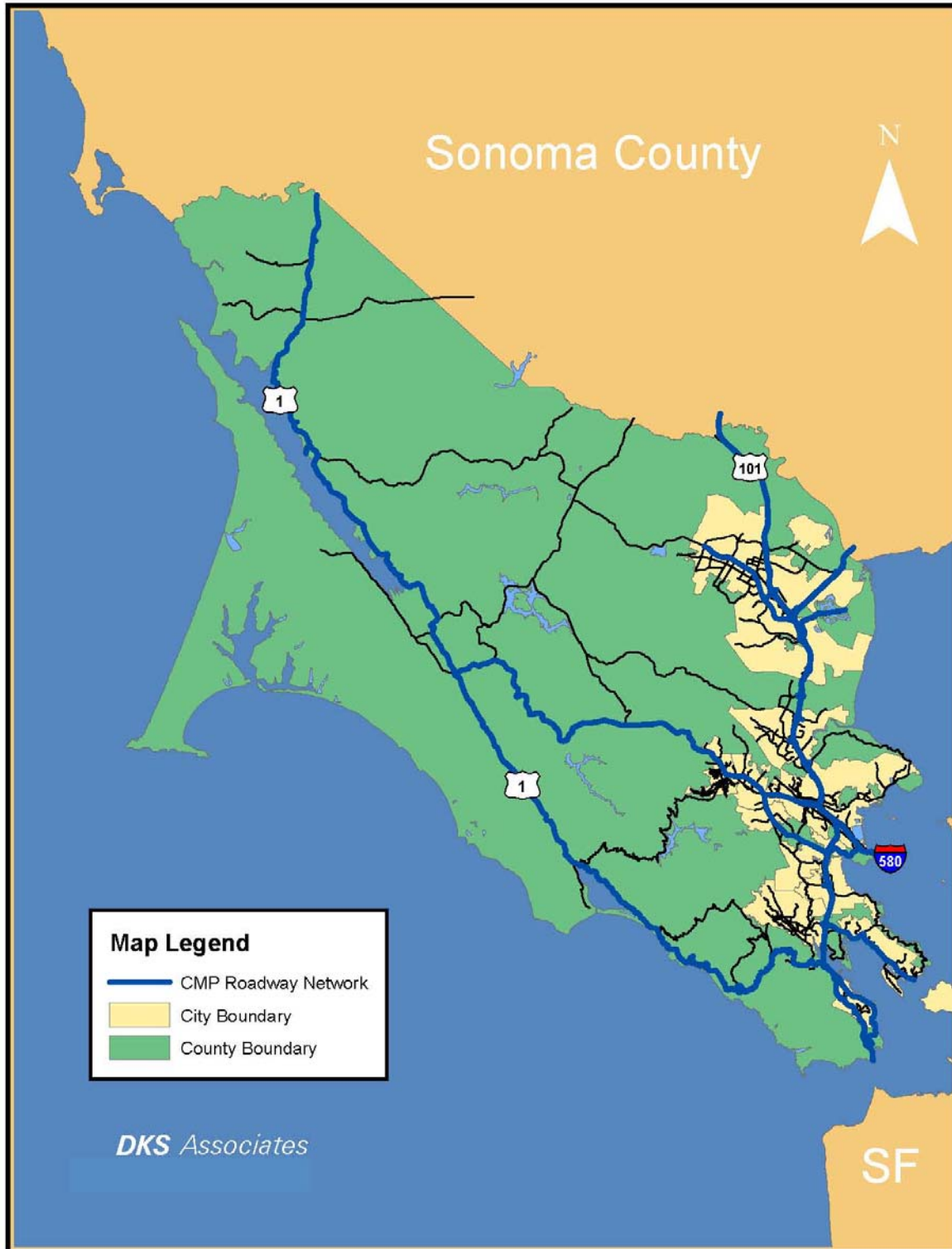


TABLE 1. ROADWAY SEGMENTATION DESCRIPTION

Corridor			Segment Description				
No	Name	Type	Old Seg No	No	Street Name	From	To
1	State Route 1	Arterial	25	1A	Shoreline Hwy (SR 1)	US 101	Almonte Blvd
			19	1B	Shoreline Hwy (SR 1)	Almonte Blvd	Sir Francis Drake Blvd
			1	1C	Shoreline Hwy (SR 1)	Sir Francis Drake Blvd	Sonoma County Line
2	State Route 37	Freeway	5	2A	State Route 37	US 101	Sonoma County Line
3	U.S. 101	Freeway	21	3A	US 101	San Francisco County Line	Shoreline Hwy (SR 1)
			17	3B	US 101	Tiburon Blvd (SR 131)	Sir Francis Drake Blvd
			13	3C	US 101	Sir Francis Drake Blvd.	I-580
			11	3D	US 101	I-580	Mission Avenue
			8	3E	US 101	Mission Avenue	N. San Pedro Road
			7	3F	US 101	N. San Pedro Road	SR 37
			2	3G	US 101	SR 37	Sonoma County Line
4	State Route 131	Arterial	18	4A	Tiburon Blvd (SR 131)	US 101	Main St (Tiburon)
5	Interstate 580	Freeway	15	5A	I-580	Contra Costa Co Line	Sir Francis Drake Blvd
			14	5B	I-580	Sir Francis Drake Blvd	U.S. 101
6	Novato Blvd/South Novato Blvd	Arterial	3	6A	Novato Blvd	San Marin Drive	Wilson Ave
			24	6B	Novato Blvd	Wilson Ave	Diablo Ave
			4	6C	South Novato Blvd	Diablo Ave	US 101
7	Bel Marin Keys Blvd	Arterial	6	7A	Bel Marin Keys Blvd	US 101	Commercial Blvd
8	Sir Francis Drake Blvd	Arterial	22	8A	Sir Francis Drake Blvd	Shoreline Hwy (SR 1)	Butterfield Road
			9	8B	Sir Francis Drake Blvd	Butterfield Road	Red Hill Avenue
			23	8C	Sir Francis Drake Blvd	Red Hill Avenue	College Avenue
			12	8D	Sir Francis Drake Blvd	College Avenue	US 101
			16	8E	Sir Francis Drake Blvd	US 101	I-580
9	Red Hill Ave/2nd St/3rd St	Arterial	10	9A	Red Hill Avenue	Sir Francis Drake Blvd	Marquard Ave/4th St
			26	9B	2nd Street	Marquard Avenue/4th St	US 101
			27	9C	3rd Street	US 101	Marquard Ave/4th St
10	Bridgeway/ Second St/ Alexander Ave	Arterial	20	10A	Bridgeway/ Second St/ Alexander Ave	U.S. 101	U.S. 101

2.0 ROADWAY SYSTEM LEVEL-OF-SERVICE

2.1 Purpose and Intent of Legislation

Level-of-service (LOS) standards are to be established as part of the CMP, and are to be specified by the Transportation Research Board’s *Highway Capacity Manual* or an accepted alternative. This is required by California Government Code 65089(b)(1)(A).

Traffic LOS definitions describe conditions in terms of speed and travel time, volume, capacity, ease of maneuverability, traffic interruptions, comfort, convenience, and safety. Table 2 defines the roadway segment LOS criteria used in monitoring the Marin County CMP roadway network. There are six gradations of LOS; from A to F. LOS A reflects free flow conditions, with vehicles traveling at the maximum posted speed. LOS F reflects congested conditions, with vehicles traveling “bumper-to-bumper”.

TABLE 2. ROADWAY SEGMENT LEVEL OF SERVICE (LOS) CRITERIA

Level of Service	Basic Freeway Segment Travel Speed* (mph)	Major Arterial Segment Travel Speed* (mph)	Basic** Freeway (v/c)	Major** Arterial (v/c)
A	>60	>25	0.35	0.60
B	57-60	20-25	0.54	0.70
C	54-56	13-19	0.77	0.80
D	47-53	10-13	0.93	0.90
E	30-46	7-9	1.00	1.00
F	<30	<7	>1.00	>1.00

Source: 1985 Highway Capacity Manual Special Report 209, 2000 Highway Capacity Manual

**Speeds rounded to nearest integer.*

***LOS criteria used in Transportation System Performance Monitoring Report – 2008. Traffic volumes were collected at one point along the roadway segment then divided by a predetermined roadway capacity to arrive at a v/c ratio.*

The LOS designation provides a quantitative tool that can be used to analyze the impacts of land use changes on the CMP network. Traffic LOS also is used as a measure of system performance (e.g., congestion). Every two years TAM (as the CMA) is required to determine whether local governments have been conforming to the CMP, including attainment of LOS standards. This is achieved through a self-certification process whereby monitoring and reporting of LOS conditions is conducted by TAM. The CMA can also consider local monitoring reports to aid in determining whether the local government is in conformance with the CMP. Additional detail on monitoring requirements is included in Chapter 8.

Local governments must consider the impacts that land-use decisions have on LOS on the designated CMP network. TAM (as the CMA) works with the local government entity to determine if a change in land use affects LOS negatively, and how to mitigate any anticipated deficiencies. A systems approach may have to be examined when considering LOS on the entire system. Cities and counties may be responsible for improvements and funding of programs that affect the system as a whole.

2.2 Highway Level of Service Standards

2.2.1 Goals and Objectives

The LOS technique should allow for measurement of traffic growth trends through changes in volumes, capacity, and delay. The enabling CMP guidance identifies several issues that affect the determination of LOS and the application of a standard. The Marin County CMP has developed an approach that is consistent, easy to use, non-duplicative, and compatible with local government data and travel demand models. Table 3 summarizes the approach used to address each issue identified in the guidance.

The CMP legislation allows trips not originating in a county, trips passing through a county, or trips generated by low- and very low-income housing to be excluded from the determination of conformance with LOS standards following consultation with MTC, Caltrans, and the Bay Area Air Quality Management District. TAM decided to include these trips, however, when determining conformance with LOS standards for local planning purposes, as exclusion of these trips would present a misleading picture of the traffic conditions in the county and could artificially skew the inclusion and/or ranking of projects in the seven-year Capital Improvement Program.

In September 2002, the California legislature passed SB 1636, intending to “remove regulatory barriers around the development of infill housing, transit-oriented development, and mixed use commercial development” by enabling local jurisdictions to designate “infill opportunity zones” or IOZs. (Note: the legislation was adopted prior to development of concepts such as Priority Development Areas.) These zones are defined as areas designated for compact, transit-oriented housing and mixed use within 1/3 mile of major transit stops. The CMP network segments within an IOZ are required to be exempt from CMP traffic LOS standards. In their place, a city must include these streets under an alternative area wide LOS standard or multimodal composite or personal LOS standard, or approve a list of flexible mitigation options that includes investments in alternative modes of transportation.

TABLE 3. APPROACHES TO MARIN CMP ISSUES

Issue	Approach
Inter-County Trips	In accordance with California statutory requirements, trips with no end in Marin County (through trips) are not to be included for deficiency plan determination. These trips are included for performance reporting.
LOS Standards	D for Urban and Suburban Arterial Roadways, E for Freeways and Rural Expressways (U.S. 101, Interstate 580, and State Route 37)
Method of Analysis: Freeway and Rural Expressway Segments	The analysis technique for freeway segments, based on segment weekday P.M. peak-hour volume to capacity ratios is from Chapter 23 and 24 of the <i>Highway Capacity Manual</i> . (The P.M. peak hour is the highest consecutive 60 minutes of traffic in the afternoon, typically between 5 P.M. and 6 P.M.)
Method of Analysis: Urban and Suburban Arterial Segments	Volume-to-capacity ratios are the analysis technique for arterial sequences, utilizing capacities provided in Chapter 15 and 16 of the <i>Highway Capacity Manual</i> , and based on weekday P.M. peak-hour traffic volumes. (The P.M. peak hour is the highest consecutive 60 minutes of traffic in the afternoon, typically between 5 P.M. and 6 P.M.)
Method of Analysis: Rural Arterial Roadways	Chapter 20 of the <i>Highway Capacity Manual</i> is the analysis technique to be applied for rural roadways, based on weekday P.M. peak-hour traffic volumes. (The P.M. peak hour is the highest consecutive 60 minutes of traffic in the afternoon, typically between 5 P.M. and 6 P.M.)
Monitoring	The local agency (e.g., city and county) or TAM performs the LOS monitoring. Monitoring frequency is to be biennial (with certain exceptions outlined in Chapter 8), recognizing that more frequent counting could be done as part of development impact study requirements.
Deficiency Analysis	More refined analyses may be required when determining if a roadway segment is deficient. If appropriate, the operational analysis methodology described in the <i>Highway Capacity Manual</i> may be used to determine LOS.

2.2.2 Facility Classifications

The *Highway Capacity Manual* provides methods for determining LOS on several types of facilities. These facilities are grouped into interrupted- and uninterrupted-flow facilities. Interrupted- flow facilities include city streets and surface highways (like State Route 1) that are part of the State Highway System. For purposes of LOS analysis, the CMP network is classified into two functional types of facilities:

- **Basic Freeway and Rural Expressway Segments.** These are designed as uninterrupted-flow facilities with multiple lanes available in each direction, with traffic only stopping when traffic is heavy enough to create slow speeds or when breakdowns occur.
- **Suburban and Rural Arterial Roadways.** These are suburban streets that have more than one lane in each direction, with have traffic signals less than two miles apart on average; or are rural roadways with a single lane in each direction but designed at lower speeds than expressways and have occasional interrupted flow from traffic signals, stop signs or turning vehicles.

2.2.3 Definition of Roadway Segments

The segments of the CMP network that are analyzed are listed in Chapter 1. Each segment is assigned a “responsible jurisdiction”, which is the jurisdiction named is the one with the greatest segment mileage. This jurisdiction is responsible for preparing any deficiency plans that may be required, as well as complying with all other requirements of the CMP legislation related to that segment. Other jurisdictions through which the segment travels are expected to work in a cooperative fashion with the responsible jurisdiction, and bear a *pro rata* share of the cost of any improvement to the facility based on the approximate cost of improvements in their jurisdiction. In the event that funding is needed for a program, each jurisdiction would contribute its fair share of the cost based on segment mileage within the jurisdiction.

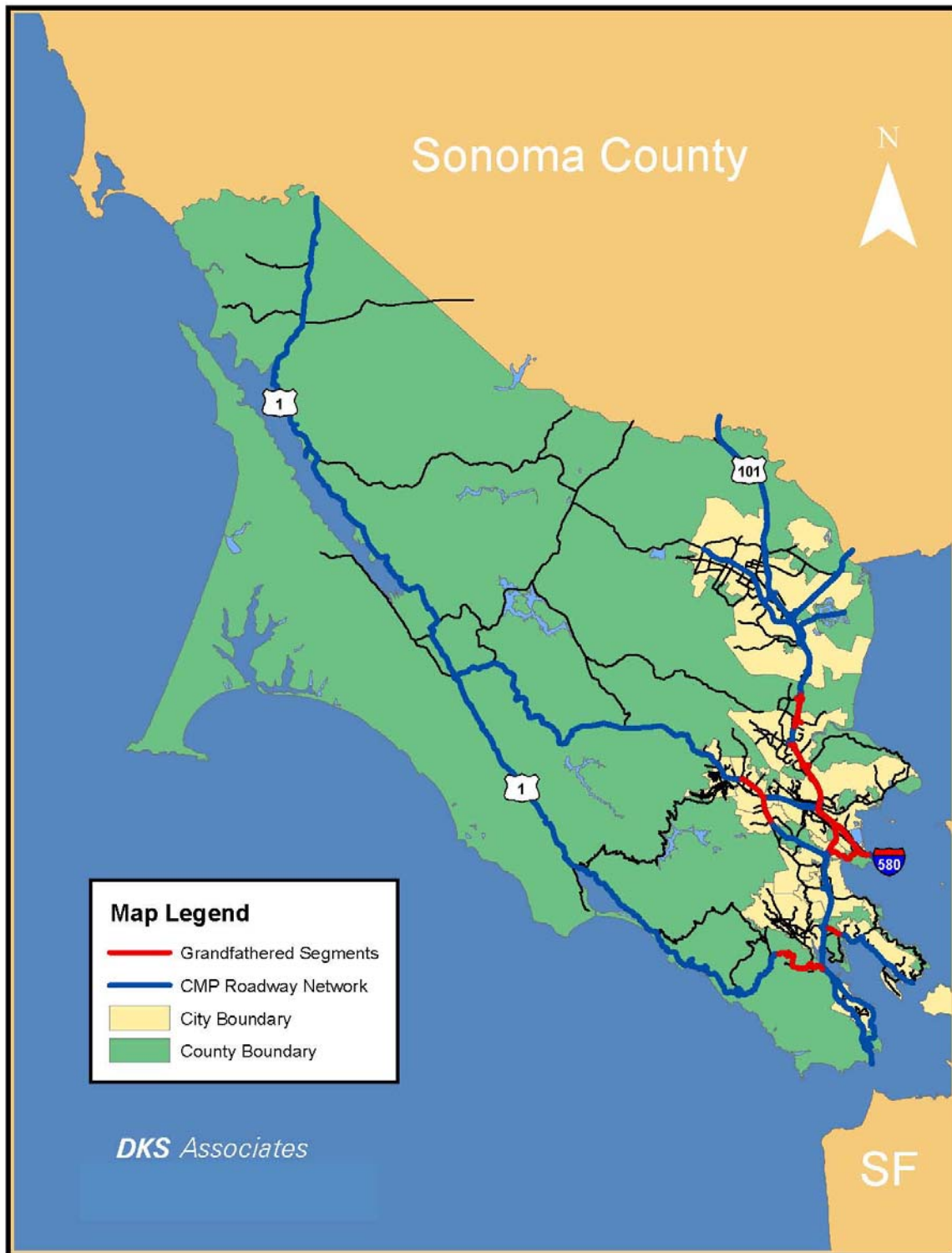
2.2.4 Identification of “Grandfathered” Roadway Segments

Roadway segments that operated at a lower LOS than the standard which was established in 1991 are “grandfathered” and allowed to continue to operate at a lower LOS standard level until such time as they are improved or the traffic load is diverted. Freeway segments that operated LOS F or arterial segments that operate at LOS E or F in the 1991 CMP qualify as “grandfathered” segments. The monitoring locations for each CMP facility in Marin County are listed in Table 4. The grandfathered segments of those facilities are illustrated in Figure 2.

TABLE 4. GRANDFATHERED FACILITIES

Corridor		Segment Description				Monitoring Location				Grandfathered		
No	Name	Type	Old Seg No	No	Street Name	From	To	From	To	Status		
1	State Route 1	Arterial	25	1A	Shoreline Hwy (SR 1)	US 101	Almonte Blvd	US 101	Tennessee Valley	No		
					19	1B	Shoreline Hwy (SR 1)	Almonte Blvd	Sir Francis Drake Blvd	Northern Avenue	Almonte Blvd	Yes
					1	1C	Shoreline Hwy (SR 1)	Sir Francis Drake Blvd	Sonoma County Line	Sir Francis Drake Blvd	Pt. Reyes	No
2	State Route 37	Freeway	5	2A	State Route 37	US 101	Sonoma County Line	US 101	Atherton Avenue	No		
					3	3A	US 101	San Francisco County Line	Shoreline Hwy (SR 1)	North of Golden Gate Br	Spencer Avenue	No
3	U.S. 101	Freeway	17	3B	Tiburon Blvd (SR 131)	Tiburon Blvd (SR 131)	Sir Francis Drake Blvd	Tiburon Blvd (SR 131)	Tamalpais Dr	Yes		
					13	3C	US 101	Sir Francis Drake Blvd.	I-580	Sir Francis Drake Blvd	I-580	Yes
					11	3D	US 101	I-580	Mission Avenue	I-580	Mission Avenue	Yes
7	State Route 37	Arterial	8	3E	Mission Avenue	Mission Avenue	N. San Pedro Road	Mission Avenue	N. San Pedro Road	Yes		
					7	3F	US 101	N. San Pedro Road	SR 37	Frietas Parkway	Lucas Valley Road	Yes
2	State Route 131	Arterial	18	4A	Tiburon Blvd (SR 131)	US 101	Sonoma County Line	Atherton Ave	Sonoma County Line	Yes		
					4	4B	US 101	Main St (Tiburon)	Redwood Frontage Road	Strawberry Drive	No	
5	Interstate 580	Freeway	15	5A	I-580	Contra Costa Co Line	Sir Francis Drake Blvd	End of R-SR Bridge	Sir Francis Drake Blvd	No		
					14	5B	I-580	Sir Francis Drake Blvd	U.S. 101	Sir Francis Drake Blvd	Bellam Blvd	Yes
6	Novato Blvd/South Novato Blvd	Arterial	24	6A	Novato Blvd	San Marin Drive	Wilson Ave	San Marin Drive	Eucalyptus Ave	No		
					4	6B	Novato Blvd	Wilson Ave	Diablo Ave	Grant Avenue	Diablo Ave	no
7	Bel Marin Keys Blvd	Arterial	6	7A	South Novato Blvd	Diablo Ave	US 101	Sunset Parkway	US 101	No		
					22	7B	Bel Marin Keys Blvd	US 101	Commercial Blvd	US 101	Commercial Blvd	Yes
8	Sir Francis Drake Blvd	Arterial	9	8A	Sir Francis Drake Blvd	Shoreline Hwy (SR 1)	Butterfield Road	Willow Ave	Butterfield Road	Yes		
					23	8B	Sir Francis Drake Blvd	Butterfield Road	Red Hill Avenue	San Anselmo Avenue	Red Hill Avenue	Yes
					12	8C	Sir Francis Drake Blvd	Red Hill Avenue	College Avenue	Toussin Ave	College Avenue	Yes
9	Red Hill Ave/2nd St/3rd St	Arterial	16	8D	Sir Francis Drake Blvd	College Avenue	US 101	College Avenue	Wolfe Grade	Yes		
					10	8E	Sir Francis Drake Blvd	US 101	I-580	US 101	Larkspur Landing Cir	Yes
					26	8F	Red Hill Avenue	Sir Francis Drake Blvd	Marquard Ave/4th St	Sir Francis Drake Blvd	Hilldale Drive	No
10	Bridgeway/ Second St/ Alexander Ave	Arterial	27	9A	2nd Street	Marquard Avenue/4th St	US 101	Marquard Ave/4th St	US 101	No		
					20	9B	3rd Street	US 101	Marquard Ave/4th St	US 101	Marquard Ave/4th St	No
10	Bridgeway/ Second St/ Alexander Ave	Arterial	20	A	Bridgeway/ Second St/ Alexander Ave	U.S. 101	U.S. 101	Gate 5	Gate 6	No		

FIGURE 2. GRANDFATHERED ROADWAY NETWORK.



At the time that the Congestion Management Program was created, there was an agreement that some segments would operate at deficient levels of service and should be excluded from local government requirements to maintain the adopted level of service standard as part of any new development approval process. These segments were “grandfathered” from having to meet the level of service standard. In Marin County, the segments that qualify as grandfathered are:

- Segment 1B: Shoreline Hwy (SR 1) between Northern Avenue and Almonte Blvd
- Segment 3B: US 101 between Tiburon Blvd (SR 131) and Tamalpais Dr (HOV lane available)
- Segment 3C: US 101 between Sir Francis Drake Blvd and I-580 (HOV lane available)
- Segment 3D: US 101 between I-580 and Mission Avenue (HOV lane available)
- Segment 3E: US 101 between Mission Avenue and N. San Pedro Road (HOV lane available)
- Segment 3F: US 101 between Frietas Parkway and Lucas Valley Road (HOV lane available)
- Segment 3G: US 101 between Atherton Avenue and Sonoma County Line
- Segment 5B: I-580 between Sir Francis Drake Blvd and Bellam Blvd
- Segment 7A: Bel Marin Keys Blvd between US 101 and Commercial Blvd
- Segment 8A: Sir Francis Drake Boulevard between Willow Avenue and Butterfield Road
- Segment 8B: Sir Francis Drake Blvd between San Anselmo Avenue and Red Hill Avenue
- Segment 8C: Sir Francis Drake Blvd between Toussin Avenue and College Avenue
- Segment 8D: Sir Francis Drake Boulevard between College Avenue and Wolfe Grade
- Segment 8E: Sir Francis Drake Boulevard between US 101 and Larkspur Landing Circle

In the future, TAM may wish to develop an improvement plan to address congestion as appropriate for these remaining grandfathered facilities. An improvement plan would consist of a description of the actions required to improve the LOS on the facility, either by increasing capacity or managing the demand for travel in a manner that effectively improves LOS.

2.2.5 2010 Monitoring Results

The monitoring for the 2011 CMP has been conducted by Jacobs Engineering for TAM. The results of monitoring, documented in the *Transportation System Performance Monitoring Report – 2010*, provide detailed results, which are summarized in Table 5 and Table 6. Table 5 contains speed survey results for the P.M. peak period. Table 6 contains a historic trend for LOS of monitored segments in the peak direction.

TABLE 5. STUDY ROADWAY SEGMENT MONITORING RESULTS 2011 (PM LOS)

Old Seg No	Street Name	From	To	Length	Direction	Northbound/Eastbound			Southbound/Westbound			LOS Result	LOS Standard	Grandfathered Status		
						Avg Time (sec)	Avg Time (min)	Avg Speed (mph)	Directio n	Avg Time (sec)	Avg Time (min)				Avg Speed (mph)	
25	1A Shoreline Hwy (SR1)	US 101	Tennessee Valley	0.3	NB	36	0.6	30.0	A	SB	44	0.7	24.5	B	D	No
19	1B Shoreline Hwy (SR1)	Northern Avenue	Almonte Blvd	0.8	NB	105	1.8	27.4	A	SB	102	1.7	28.2	A	D	Yes
1	1C Shoreline Hwy (SR1)	Sir Francis Drake Blvd	Pt. Reyes	2.1	NB	200	3.3	37.8	A	SB	195	3.3	38.8	A	D	No
5	2A SR 37	US 101	Atherton Avenue	2.3	EB	136	2.3	60.9	A	WB	122	2.0	67.9	A	E	No
21	3A US 101	North of Golden Gate Br	Spencer Avenue	2	NB	142	2.4	50.7	D	SB	130	2.2	55.4	C	E	No
17	3B US 101	Tiburon Blvd (SR 131)	Tamalpais Dr	1.7	NB	310	5.2	19.7	F	SB	92	1.5	66.5	A	E	Yes
13	3C US 101	Sir Francis Drake Blvd	I-580	1.3	NB HOV	127	2.1	48.2	D	SB	77	1.3	60.8	A	E	Yes
11	3D US 101	I-580	Mission Avenue	1.1	NB	86	1.4	46.0	E	SB	57	1.0	69.5	A	E	Yes
8	3E US 101	Mission Avenue	N. San Pedro Road	1.6	NB HOV	60	1.0	66.0	A	SB	92	1.5	62.6	A	E	Yes
7	3F US 101	Frietas Parkway	Lucas Valley Road	1.0	NB HOV	85	1.4	67.8	A	SB	61	1.0	59.0	B	E	Yes
2	3G US 101	Atherton Ave	Sonoma County Line	5.3	NB	605	10.1	31.5	E	SB	298	5.0	64.0	A	E	Yes
18	4A Tiburon Blvd (SR 131)	Redwood Frontage Road	Strawberry Drive	0.5	EB	52	0.9	34.6	A	WB	76	1.3	23.7	B	D	No
15	5A I-580	End of R-SR Bridge	Sir Francis Drake Blvd	0.7	EB	53	0.9	47.5	D	WB	46	0.8	54.8	C	E	No
14	5B I-580	Sir Francis Drake Blvd	Bellam Blvd	1.4	EB	73	1.2	69.0	A	WB	70	1.2	72.0	A	E	Yes
3	6A Novato Blvd	San Marin Drive	Eucalyptus	0.4	NB	50	0.8	28.8	A	SB	46	0.8	31.3	A	D	No
24	6B Novato Blvd	Wilson Ave	Diablo Ave	0.7	NB	128	2.1	19.7	B	SB	159	2.7	15.8	C	D	No
4	6C South Novato Blvd	Sunset Parkway	US 101	1.1	NB	126	2.1	31.4	A	SB	120	2.0	33.0	A	D	No
6	7A Bel Marin Keys Blvd	US 101	Commercial Blvd	0.3	EB	55	0.9	19.6	B	WB	33	0.6	32.7	A	D	Yes
22	8A Sir Francis Drake Blvd	Willow Ave	Butterfield Road	0.2	EB	47	0.8	15.3	C	WB	63	1.1	11.4	D	D	Yes
9	8B Sir Francis Drake Blvd	San Anselmo Avenue	Red Hill Avenue	1.1	EB	269	4.5	14.7	C	WB	201	3.4	19.7	B	D	Yes
23	8C Sir Francis Drake Blvd	Toussin Ave	College Avenue	0.3	EB	85	1.4	12.7	D	WB	48	0.8	22.5	B	D	Yes
12	8D Sir Francis Drake Blvd	College Avenue	Wolfe Grade	0.6	EB	90	1.5	24.0	B	WB	71	1.2	30.4	A	D	Yes
16	8E Sir Francis Drake Blvd	US 101	Larkspur Landing Cir	0.4	EB	81	1.4	17.8	C	WB	125	2.1	11.5	D	D	Yes
10	9A Red Hill Avenue	Sir Francis Drake Blvd	Hilldale Drive	0.4	EB	45	0.8	32.0	A	WB	150	2.5	9.6	D	D	No
26	9B 2nd Street	Marquard Ave/4th St	US 101	0.8	EB	180	3.0	16.0	C	one-way street				D	D	No
27	9C 3rd Street	US 101	Marquard Ave/4th St	0.8	EB	178	3.0	16.2	C	WB	178	3.0	16.2	C	D	No
20	10A Bridgeway	Gate 5	Gate 6	0.2	NB	67	1.1	10.7	D	SB	27	0.5	26.7	A	D	No

Source: Jacobs Engineering Consultants, September 2011.

TABLE 6. HISTORIC TREND OF LEVEL OF SERVICE – PM PEAK DIRECTION

Old Seg No	Segment Description		2003 (Old Method)		2005 (Old Method)		2006		2008		2010		LOS Standard		Grandfathered?
	No	Street Name	From	To	Method	Method	2006	2006	2008	2008	2010	2010	Standard	Grandfathered?	
25	1A	Shoreline Hwy (SR 1)	US 101	Tennessee Valley	NA	NA	NA	NA	B	B	B	B	D		
19	1B	Shoreline Hwy (SR 1)	Northern Avenue	Almonte Blvd	C	F	B	A	A	A	A	A	D		Yes
1	1C	Shoreline Hwy (SR 1)	Sir Francis Drake Blvd	Pt. Reyes	A	A	A	A	A	A	A	A	D		
5	2A	SR 37	US 101	Atherton Avenue	C	C	A	A	B	A	A	A	E		
21	3A	US 101	North of Golden Gate Br	Spencer Avenue	C	C	A	A	A	A	A	D	E		
17	3B	US 101	Tiburon Blvd (SR 131)	Tamalpais Dr	C	F	F	F	F	F	F	F	E		Yes
13	3C	US 101	Sir Francis Drake Blvd	I-580	F	F	F	F	E	E	D	D	E		Yes
11	3D	US 101	I-580	Mission Avenue	F	F	F	F	E	E	E	E	E		Yes
8	3E	US 101	Mission Avenue	N. San Pedro Road	F	F	C	F	F	F	E	E	E		Yes
7	3F	US 101	Frietas Parkway	Lucas Valley Road	C	E	A	A	A	A	D	D	E		Yes
2	3G	US 101	Atherton Ave	Sonoma County Line	F	D	E	F	F	F	E	E	E		Yes
18	4A	Tiburon Blvd (SR 131)	Redwood Frontage Road	Strawberry Drive	C	C	A	A	A	A	B	B	D		
15	5A	I-580	End of R-SR Bridge	Sir Francis Drake Blvd	E	C	F	F	E	E	A	A	E		
14	5B	I-580	Sir Francis Drake Blvd	Bellam Blvd	B	F	E	E	E	E	D	D	E		Yes
3	6A	Novato Blvd	San Marin Drive	Eucalyptus	A	A	B	C	C	A	A	A	D		
24	6B	Novato Blvd	Wilson Ave	Diablo Ave	C	E	C	B	B	C	C	C	D		
4	6C	South Novato Blvd	Sunset Parkway	US 101	A	A	A	A	A	A	A	A	D		
6	7A	Bel Marin Keys Blvd	US 101	Commercial Blvd	C	C	C	B	C	C	B	B	D		Yes
22	8A	Sir Francis Drake Blvd	Willow Ave	Butterfield Road	F	F	D	D	F	F	D	D	D		Yes
9	8B	Sir Francis Drake Blvd	San Anselmo Avenue	Red Hill Avenue	E	E	C	C	C	C	C	C	D		Yes
23	8C	Sir Francis Drake Blvd	Toussin Ave	College Avenue	F	F	C	D	D	D	D	D	D		Yes
12	8D	Sir Francis Drake Blvd	College Avenue	Wolfe Grade	C	B	C	A	A	A	B	B	D		Yes
16	8E	Sir Francis Drake Blvd	US 101	Larkspur Landing Cir	F	C	F	E	E	C	C	C	D		Yes
10	9A	Red Hill Avenue	Sir Francis Drake Blvd	Hilldale Drive	D	C	C	B	D	D	D	D	D		
26	9B	2nd Street	Marquard Ave/4th St	US 101	NA	NA	NA	NA	NA	NA	C	C	D		
27	9C	3rd Street	US 101	Marquard Ave/4th St	NA	NA	NA	NA	NA	NA	C	C	D		
20	10A	Bridgeway	Gate 5	Gate 6	C	B	B	B	C	C	D	D	D		

Source: Jacobs Engineering Consultants, September 2011.

It is important to note that prior to the 2007 CMP, the methodology for monitoring LOS was conducted by using the volume to capacity (V/C ratio), as described in Table 2. Since 2006, the methodology shifted from the use of traffic volumes to measuring the amount of time traveled through a segment, reflecting newer LOS calculation method now recommended and performed by the *Highway Capacity Manual* printed in 2003. Table 6 indicates the years that the old method of calculating LOS by travel time runs were reported.

Table 7 illustrates actions that should be taken on each segment, based on monitoring results.

The first category includes non-grandfathered roadway segments with satisfactory status for now and for which no action is needed. There are 13 of these segments.

The second category includes roadway segments that operate at acceptable levels of service but were originally included in the grandfathered segments in the CMP. These roadway segments should continue to be monitored and made subject to the requirements of the CMP. Improvement plans may not be necessary at this time but may be required in the future. Thirteen roadway segments also fall under this category.

The third category includes one location that is a grandfathered roadway segments in the CMP and has been found to currently operate worse than the LOS standard would be if the facilities were not grandfathered. This segment is northbound U.S. 101 from Tiburon Boulevard. The causes of the delay are somewhat related to upstream traffic weaving conflicts between Tamalpais Avenue and Sir Francis Drake Boulevard. The Greenbrae Corridor Improvement Project implementation would alleviate these conflicts. Larkspur and Interstate 580 in San Rafael. The segment contains an HOV lane that offers drivers an alternative to mixed-flow congestion created by single-occupant drivers. While no action is required, TAM may wish to monitor the congestion and determine if operational strategies such as ramp metering may be needed to remedy the condition.

A fourth and final category includes those roadways that currently operate worse than the LOS standards but were not grandfathered in the CMP. Any roadway segments in this category should be highlighted for future evaluation, and then the CMA should decide whether deficiency plans or improvement plans are required. No segments fall into this category.

As no segments are in the fourth category, no local jurisdiction is considered out of conformance at this time.

TABLE 7. ACTIONS RECOMMENDED BY SEGMENT

Segment Description				2010 Results	LOS Standard	Action
No	Street Name	From	To			
Non-Grandfathered, LOS Standard Met						
1A	Shoreline Hwy (SR 1)	US 101	Tennessee Valley	B	D	Within LOS Standard; No Action
1C	Shoreline Hwy (SR 1)	Sir Francis Drake Blvd	Pt. Reyes	A	D	Within LOS Standard; No Action
2A	SR 37	US 101	Atherton Avenue	A	E	Within LOS Standard; No Action
3A	US 101	North of Golden Gate Br	Spencer Avenue	D	E	Within LOS Standard; No Action
4A	Tiburon Blvd (SR 131)	Redwood Frontage Road	Strawberry Drive	B	D	Within LOS Standard; No Action
5A	I-580	End of R-SR Bridge	Sir Francis Drake Blvd	A	E	Within LOS Standard; No Action
6A	Novato Blvd	San Marin Drive	Eucalyptus	A	D	Within LOS Standard; No Action
6B	Novato Blvd	Wilson Ave	Diablo Ave	C	D	Within LOS Standard; No Action
6C	South Novato Blvd	Sunset Parkway	US 101	A	D	Within LOS Standard; No Action
9A	Red Hill Avenue	Sir Francis Drake Blvd	Hilldale Drive	D	D	Within LOS Standard; No Action
9B	2nd Street	Marquard Ave/4th St	US 101	C	D	Within LOS Standard; No Action
9C	3rd Street	US 101	Marquard Ave/4th St	C	D	Within LOS Standard; No Action
10A	Bridgeway	Gate 5	Gate 6	D	D	Within LOS Standard; No Action
Grandfathered, LOS Standard Met						
1B	Shoreline Hwy (SR 1)	Northern Avenue	Almonte Blvd	A	D	Within LOS Standard; No Action
3C	US 101	Sir Francis Drake Blvd	I-580	D	E	Within LOS Standard; No Action
3D	US 101	I-580	Mission Avenue	E	E	Within LOS Standard; No Action
3E	US 101	Mission Avenue	N. San Pedro Road	E	E	Within LOS Standard; No Action
3F	US 101	Frietas Parkway	Lucas Valley Road	D	E	Within LOS Standard; No Action
3G	US 101	Atherton Ave	Sonoma County Line	E	E	Within LOS Standard; No Action
5B	I-580	Sir Francis Drake Blvd	Bellam Blvd	D	E	Within LOS Standard; No Action
7A	Bel Marin Keys Blvd	US 101	Commercial Blvd	B	D	Within LOS Standard; No Action
8A	Sir Francis Drake Blvd	Willow Ave	Butterfield Road	D	D	Within LOS Standard; No Action
8B	Sir Francis Drake Blvd	San Anselmo Avenue	Red Hill Avenue	C	D	Within LOS Standard; No Action
8C	Sir Francis Drake Blvd	Toussin Ave	College Avenue	D	D	Within LOS Standard; No Action
8D	Sir Francis Drake Blvd	College Avenue	Wolfe Grade	B	D	Within LOS Standard; No Action
8E	Sir Francis Drake Blvd	US 101	Larkspur Landing Cir	C	D	Within LOS Standard; No Action
Grandfathered, LOS Standard Not Met (No Deficiency Plan required)						
3B	US 101	Tiburon Blvd (SR 131)	Tamalpais Dr	F	E	Problem after HOV Lanes Completed; Consider Next Steps

2011 CMP Update



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3.0 SYSTEM PERFORMANCE

3.1 Purpose and Intent of Legislation

The California Government Code Section 65089(b)(2) requires the Congestion Management Agency to establish performance measures to evaluate current and future multimodal system performance (in addition to the level of service presented in Chapter 2) for the movement of people and goods. Consistent with past CMPs, performance measures are included in this CMP and described in this chapter. The measures should not be confused with “standards,” as no level of performance is required. Rather, a measure simply indicates the level of performance at a given time.

The first part of this section highlights the current transit system in Marin. The next section highlights bicycle and pedestrian programs. Then, six additional performance measures are provided (reported in this and prior CMPs):

1. Peak-Hour Travel Time
2. Person Throughput
3. Vehicle Miles Traveled on Congested Highways
4. Jobs/Housing Balance
5. Mode of Access to Work

The performance measures help determine whether the goals of the CMP are being met: supporting mobility, air quality, land-use, and economic objectives. The measures are also used in the development of any necessary Capital Improvement Program, deficiency plans, and the land-use analysis program. A draft *Transportation System Performance Monitoring Report* prepared by Jacobs Engineering for TAM in September 2011 contains detailed information on the transportation system, and is a key source in describing these measures.

3.2 Current Transit Operations in Marin County

The transit network is comprised of a variety of services within Marin County. These include:

- General public transit bus service for both inter- and intra-county trips;
- General public ferry service, serving trips between Marin County and San Francisco;
- Specialized transit services aimed at serving the needs of the elderly and disabled populations in the County; and
- Privately operated services, providing targeted service between specific locations, such as the service between Marin County and San Francisco International Airport.

The Sonoma-Marín Area Rail Transit (SMART) service will likely be added as a CMP transit service. The service is in development, but does not currently operate.

The following sections provide a brief description of the transit services provided for inter-county and intra-county transit travel. Following this discussion, bus route information and headways as well as overall transit ridership are summarized in each section.

3.2.1 Marin Transit

The Marin County Transit District (Marin Transit) is the agency responsible for local transit service within Marin County. Marin Transit has responsibility for local transit services and contracts with other operators for three types of fixed route services within the county: large bus fixed route, shuttle, and rural service. Contracted providers include Golden Gate Transit (GGT), MV Transportation and Marin Airporter. Marin Transit also contracts with Whistlestop Wheels to provide paratransit and dial-a-ride service within Marin County.

Table 8 summarizes the regularly scheduled Marin Transit services. Marin Transit also operates the Marin Access Mobility Management Center, which is a one-call, transportation information and referral service, focused on meeting the mobility needs of Marin's older adults, persons with disabilities and low-income residents.

Transit service provided within Marin County by Marin Transit via contractors includes:

- **Local Service.** Twelve routes operate entirely within Marin County on weekdays, with limited weekend service, contracted through Golden Gate Transit. An additional six routes are operated as school-focused service on school days only, as detailed below.
- **School Service.** Routes 113, 114, 117, 125, 126, 127, and 139 provide limited service on school days in Marin County, as well as select trips on routes 17,19, 23 and 51. These trips are also operated by GGT through a contract with Marin Transit.
- **Recreational Services.** A shuttle service, Route 66, operates between Muir Woods and Marin City and Sausalito. Schedules on the shuttle are adapted to the weekend and seasonal recreational travel demand. Marin Transit contracts with GGT to operate Route 66, in partnership with the National Park Service between May and December.
- **West Marin Stagecoach.** Marin Transit contracts with MV Transportation to operate the West Marin Stagecoach with three shuttle service routes (Route 61, 62 and 68) in West Marin. The Stagecoach provides weekday and weekend service to residents of this area.
- **Community Shuttle Service.** Marin Transit contracts with Marin Airporter to operate three shuttle bus routes providing limited service: Larkspur/Corte Madera (Route 222); San Rafael/Santa Venetia (Route 233); and Terra Linda/Marinwood (Route 259). (Marin Airporter also provides airport shuttle service between Marin County and San Francisco Airport as its primary business, separate from Marin Transit operation.)

TABLE 8. MARIN TRANSIT ROUTES/ PEAK HEADWAYS FOR FIXED-ROUTE SERVICE

As of August 2009			As of August 2011		
Route	Route Type: Description	Approx. Headway (minutes)	Route	Route Type: Description	Approx. Headway (minutes)
17	Local: Marin City to San Rafael	30-60	17	Local: Marin City to San Rafael	30-60
19	Local: Tiburon to Marin City	27-60	19	Local: Tiburon to Marin City	48-60
22	Local: San Rafael to Sausalito	8-51	22	Local: San Rafael to Sausalito	24-30
23	Local: San Rafael to Manor	4-30	23	Local: San Rafael to Manor	4-30
29	Local: San Rafael to San Anselmo	30-60	29	Local: San Rafael to San Anselmo	30-60
35	Local: San Rafael to Canal Area	4-31	35	Local: San Rafael to Canal Area	6-20
36	Local: San Rafael to Marin City	30-60	36	Local: San Rafael to Marin City	30
45	Local: San Rafael to Kaiser Hosp Ngate	4-60	45	San Rafael to Kaiser Hosp Ngate	30
49	Local: San Rafael to Ignacio	55-61	49	Local: San Rafael to Ignacio	60
51	Local: San Marin to Ignacio	8-61	51	Local: San Marin to Ignacio	60
52	Local: Novato to San Rafael	46-64	52	Local: Novato to San Rafael	60
61	West Marin Stagecoach: Manzanita (Mar City) to Bolinas	160	61	West Marin Stagecoach: Manzanita (Mar City) to Bolinas	160
62	West Marin Stagecoach: San Rafael to Stinson Beach	120 (Tues/ Thur/ Sat)	62	West Marin Stagecoach: San Rafael to Stinson Beach	120 (Tues/ Thur/ Sat)
66	Muir Woods Shuttle: Manzanita (Mar City) to Muir Woods	20-30	66	Muir Woods Shuttle: Manzanita (Mar City) to Muir Woods (weekends)	20-30
68	West Marin Stagecoach: Inverness to Fairfax	195	68	West Marin Stagecoach: Inverness to Fairfax	180
70	Basic: Santa Rosa to SF	3-60	70	No longer operating	3-60
71	Local: Novato to Marin City	30	71	Local: Novato to Marin City	30
75	Commute: Santa Rosa to San Rafael	30-46	75	Not a Marin Transit Route	
113	School: Paradise Cay to Redwood HS	1 am, 4 pm	113	School: Paradise Cay to Redwood HS	1 am, 4 pm
114	School: Redwood HS to S Rafael Transit Ctr (summer)	1 run	114	School: Redwood HS to S Rafael Transit Ctr (summer)	1 run
117	School: East Corte Madera to Hall MS	2 am, 4 pm	117	School: East Corte Madera to Hall MS	2 am, 2 pm
126	School: San Rafael to San Domenico Schl	1-5	126	School: San Rafael to San Domenico Schl	2 am; 4 pm
127	School: Sleepy Hollow to White Hill Schl	9-60	127	School: Sleepy Hollow to White Hill Schl	4 am; 2 pm
132	School: San Rafael HS to Peacock Gap	1 am, 1 pm	132	No longer operating	
139	School: Terra Linda HS to Lucas Valley	3 runs	139	School: Terra Linda HS to Lucas Valley	1 am; 1 pm
221	Larkspur Ferry Corte Madera	60	222	Marin City – Marin General	60
233	Santa Venetia - San Rafael	60	233	Santa Venetia - San Rafael	60
259	Shuttle: Marin Civic Center - Marinwood	60	259	Shuttle: Marin Civic Center - Marinwood	60

Source: Marin Transit Website, 2011.

- **Whistlestop Wheels.** Marin Transit contracts with Whistlestop Wheels to provide paratransit services described further in section 3.2.5. Whistlestop, Whistlestop Wheels operates the Novato Health Express, a medical-only shuttle service for elderly and disabled residents of the Novato area provided in cooperation with Novato Community Hospital, a Sutter Health affiliate and the Hamilton Shuttle (which is not managed by Marin Transit).

3.2.2 Golden Gate Transit Regional Bus Service

Golden Gate Transit (GGT) is the primary operator of public transit services in the county, serving both intra-county trips (via a contract with Marin Transit) and travel between Marin County and Sonoma, San Francisco, and Contra Costa Counties. GGT is one of three operating divisions of the Golden Gate Bridge, Highway and Transportation District.

Additional bus services provided directly by GGT connect Marin County to other parts of the region. The inter-county bus routes that operate partly inside Marin County are listed in Table 9, and include:

- **Transbay Basic Service.** Basic service routes operate all day, seven days per week, providing wheelchair accessible trunk-line service between the Transbay Terminal and Civic Center in San Francisco or Richmond BART, and various suburban centers within Marin and Sonoma Counties. They provide the “backbone” service both within Marin County and between Marin and neighboring counties. The six routes are Routes 10, 40/42, 70/71, 80, and 101.
- **Transbay Commute Service.** This service provides 19 routes that operate on weekdays except holidays. Most services connect residential neighborhoods within Marin County and the San Francisco Financial District and Civic Center employment centers during the A.M. and P.M. commute periods. Other service connects Sonoma County with Marin County and San Francisco. Commute service is generally operated in the peak direction during commute hours only, and is not run at all during the midday and off-peak periods.

3.2.3 Ferry Services

Three organizations provide Ferry service in Marin County:

- **Golden Gate Ferry Service.** The Golden Gate Bridge, Highway and Transportation District operates ferry services from Larkspur and Sausalito to San Francisco. The District has five ferry vehicles, two of which are higher-speed ferries acquired since 1998. Headways between the two destinations and San Francisco run between 25 and 60 minutes during weekdays.
- **Blue and Gold Fleet.** The Blue and Gold fleet operates both commuter and recreational ferry service between Tiburon and Sausalito to Fisherman’s Wharf in San Francisco. Headways are generally 60 to 90 minutes during weekdays. Blue and Gold also provides recreational service between Angel Island and San Francisco, Oakland and Vallejo.
- **Angel Island Tiburon Ferry.** The Angel Island Tiburon Ferry operates recreational service between Angel Island and Downtown Tiburon.

TABLE 9. REGIONAL GOLDEN GATE BUS TRANSIT ROUTES AND HEADWAYS

As of August 2009			As of August 2011		
Route	Route Type: Description	Approx. Headway (minutes)	Route	Route Type: Description	Approx. Headway (minutes)
2	Commute: SF to Marin Headlands	15-32	2	Commute: SF to Marin Headlands	15-30
4	Commute: Mill Valley to SF	5-45	4	Commute: Mill Valley to SF	9-10
8	Commute: Tiburon to SF	51	8	Commute: Tiburon to SF	2 am; 1 pm
10	Basic: Strawberry to SF	30-60	10	Basic: Strawberry to SF	30-60
18	Commute: College of Marin to SF	11-30	18	Commute: College of Marin to SF	11-30
24	Commute: Lagunitas to SF	8-76	24	Commute: Lagunitas to SF	8-30
26/27	Commute: Sleepy Hollow to SF	5-74	27	Commute: Sleepy Hollow to SF	14-30
38	Commute: Terra Linda to SF	27-31	38	Commute: Terra Linda to SF	30
40/42	Basic: San Rafael to Del Norte BART WD	13-60	40/42	Basic: San Rafael to Del Norte BART WD	30-60
42	Basic: San Rafael to Del Norte BART WE	60	42	Basic: San Rafael to Del Norte BART WE	60
44	Commute: Marinwood to SF	13-62	44	Commute: Marinwood to SF	2 am; 2 pm
54	Commute: San Marin to SF	17-52	54	Commute: San Marin to SF	9-30
56	Commute: Novato to SF	30	56	Commute: Novato to SF	30
58	Commute: SF to Novato	25-30	58	Commute: SF to Novato	30
60	No longer operates (see 70/71/80)		60	No longer operates (see 70/71/80)	
70	Basic: Santa Rosa to SF	3-60	70/71	Basic: Novato to SF	3-30
72/72X	Commute: Santa Rosa to SF	8-37	72/72X	Commute: Santa Rosa to SF	10-30
73	Commute: Santa Rosa to SF	49-60	73	Commute: Santa Rosa to SF	45-60
74	Commute: Santa Rosa to SF	30-50	74	Commute: Santa Rosa to SF	30
75	Commute: Santa Rosa to San Rafael	30-46	75	No longer operating	30-46
76	Commute: East Petaluma to SF	4-33	76	Commute: East Petaluma to SF	25-30
80	Basic: Santa Rosa to SF	3-60	80	Basic: Santa Rosa to SF (evening)	60
92	Commute: Marin City to SF	30-60	92	Commute: Marin City to SF	30-60
93	Commute: GG toll plaza to SF Civic Center	10-35	93	Commute: GG Toll Plaza to SF Civic Center	10-30
97	Commute: Larkspur Ferry to SF	1 run	97	Commute: Larkspur Ferry to SF	1 am
101	Basic: Santa Rosa to SF	3-60	101	Basic: Santa Rosa to SF	30-60

Source: Golden Gate Transit Website, 2011.

3.2.4 Summary of Fixed Route Service and Boardings

The routes sponsored by Marin Transit are routinely monitored for performance. The dedication of additional resources has led to an expansion of local transit service, which in turn has increased local boarding. These trends are demonstrated in Table 10, which also shows ridership trends in Golden Gate Transit Bus and Ferry operations.

As the table shows, demand on the basic and commuter bus service into and out of San Francisco has been declining, and Golden Gate Transit has been reducing these bus transit services to maintain productivity. Ferry service and local service have been maintaining generally similar ridership levels for several years. Finally, the addition of shuttle and West Marin service has resulted in more riders using these services.

TABLE 10. TRANSIT RIDERSHIP TRENDS IN MARIN

Fiscal Year	Annual Revenue Hours	Annual Boardings
Golden Gate Basic and Commuter Service		
2006-07	181,866	3,966,705
2007-08	186,959	4,050,191
2008-09	185,589	3,918,720
2009-10	181,915	3,382,098
2010-11	175,945	3,398,098
Golden Gate Ferry Service		
2006-07	9,503	2,024,935
2007-08	9,854	1,980,010
2008-09	9,632	1,949,035
2009-10	9,583	1,922,095
2010-11	9,488	2,031,219
Marin Transit Sponsored Local Service		
2006-07	110,608	3,216,243
2007-08	113,554	3,259,037
2008-09	122,907	3,189,321
2009-10	121,875	3,085,480
2010-11	115,236	3,113,544
Marin Transit Shuttles and West Marin Routes (including Novato Dial-A-Ride)		
2006-07	13,743	78,827
2007-08	17,828	120,541
2008-09	21,558	141,899
2009-10	22,989	142,004
2010-11	21,964	153,993

Source: Golden Gate Transit staff reports, August 2011; Marin Transit staff reports, August 2011

3.2.5 Specialized Transit Services

Paratransit Service. Marin Transit contracts with the Whistlestop Wheels to provide local paratransit services which are available between 6 A.M. to 1 A.M, seven days a week. Approximately 40 lift-equipped vehicles are used to provide service, which is a door-to-door ridesharing program. Approximately 118,000 annual passenger trips are provided on local Whistlestop Wheels paratransit service. Inter-county paratransit service is provided seven days a week, under an agreement between Golden Gate Transit and Marin Transit. The inter-county service area includes Sonoma, San Francisco, and Contra Costa counties in addition to Marin County. The statistics for this service are included in Table 11. The demand for paratransit service has grown in recent years as more medical providers and residents become aware of how the service operates, and because the population of Marin County is aging so that more residents become eligible for the service.

TABLE 11. WHISTLESTOP WHEELS PERFORMANCE STATISTICS, FY 2006 TO FY 2011

Fiscal Year	Annual Revenue Hours	Annual Passenger Trips
2006-07	43,982	96,157
2007-08	45,390	99,064
2008-09	46,968	99,808
2009-10	48,322	105,669
2010-11	61,656	118,097

Source: Marin Transit staff reports, August 2011

3.3 Bicycle and Pedestrian Programs

TAM and other jurisdictions have a commitment to non-motorized transportation programs. This commitment extends to all levels of planning and funding, including a portion of TAM-administered Measure A funds. Strategy 4 of the Measure A Strategic Plan specifically designates shares to help fund Safe Routes to Schools, Crossing Guards, and Safe Pathways to School programs. In addition, local transportation infrastructure projects funded by Strategy 3, make bicycles and pedestrians eligible for funding. The measure's Strategy 1 also funds Lincoln Hill Multi-Use Path as part of the US 101 HOV gap closure project.

Marin County also participates in a Federally-funded Non-Motorized Transportation Pilot Program as one of four demonstration locales spread throughout the nation. This project, funded by Section 1807 of the Federally-authorized SAFETEA-LU legislation, provides a way to measure the performance and results of investments in the bicycle/pedestrian system that has become a national model.

Highway projects in Marin County also consider bicycle and pedestrian needs in their design and construction. Active elements for bicycle and pedestrian needs are included in these recent projects:

- US 101 HOV Gap Closure Project through San Rafael
- US 101 Marin/Sonoma Narrows project
- 580/101 Interchange (Bellam Boulevard & E. Francisco Boulevard)

Marin County benefits from having several recent projects funded by Regional Measure 2. These projects include:

- Greenbrae Corridor Improvement Project
- Full funding of the Cal Park Hill Tunnel Project
- Design and Phase 1 construction of the Central Marin Ferry Connector Project across Sir Francis Drake Boulevard.
- Safe Routes to Transit grant to San Rafael for a multi-use connector between Lincoln Hill Path and Downtown Transit Center

Additional funding of bicycle and pedestrian improvements in Marin County are provided through targeted funding sources, including:

- Transportation Funds for Clean Air (TFCA)
- Transportation Development Act (TDA) Article 3
- Regional Bicycle Program Funds
- Measure A County ½ Cent Sales Tax

As part of these programs, local jurisdiction staff identified some of the significant contributions to local pedestrian and bicycle projects currently underway. Highlights are summarized below. These include several Measure A Safe Routes to School programs, such as Safe Pathway projects, education programs in schools, and crossing guards.

BICYCLE AND PEDESTRIAN PROGRAMS BY JURISDICTION

Belvedere

- Installed new bike racks in Tom Price Park and in front of City Hall. In process of renovating walk path along San Rafael Avenue from Tiburon Boulevard to West Shore Road.

Corte Madera

- Bayside Trail Improvements, which includes 18,400 sf 3" AC; 7,990 sf 4" Recycled Class II AB
- Tamalpais/Redwood/Corte Madera Ave Pavement Overlay and Street Improvements, which includes 19 ADA-accessibility ramps and 2,685 sf sidewalk; 511 sf driveway; 678 lf of curb & gutter
- Crosswalk at Paradise @ Golden Hind Passage, which includes 1 curb ramp and 80 sf 12" yellow crosswalk; 1 handicap stall
- Safe Routes to Schools, which includes 2 ADA- accessibility ramps, 1,470 sf sidewalk; 210 lf curb & gutter
- Tamalpais Drive Pedestrian/Bicycle Path to Low Canal Bridge Improvements, which includes 1,600 sf of asphalt paving and concrete installation of pedestrian/ bicycle pathway
- Paradise Drive Bikeway Extension (Safe Pathways to School), which includes 1,800 linear feet of Class I Bike Path: Design of this project will begin in early 2012, with construction in 2013.
- Mill Valley to Corte Madera Bicycle & Pedestrian Corridor Study: Participated in the development of bicycle and pedestrian corridor study that evaluated potential linkages between Mill Valley and Corte Madera.
- Sandra Marker Trail ADA Connection, which includes two ADA-accessible concrete ramps. The City of Larkspur is currently constructing two ADA-accessible ramps to the Sandra Marker Trail from William Avenue along the north side (Larkspur property) and Apache Road along the south side (Corte Madera property).
- Countywide Intersection Improvements for Bicycles (NTPP; Bicycle Detection): Installed bicycle detection devices at several traffic signals along primary routes through Town.

Fairfax

- Through June 30, 2011 Fairfax was able to complete plans and specifications for two major projects. One is a new sidewalk installation project on Pastori Ave (between Sir Francis Drake and Center Blvd). A new sidewalk will be installed on the west side of the street. This is significant because it will connect to existing sidewalk that was installed a few years ago on Center Blvd. and allow pedestrians continuous sidewalk down a large portion of Center Blvd. and around to connect with Sir Francis Drake Blvd. where a large grocery store (Good Earth Natural Foods) will be relocating to January 2012.

- The second project is a striping project on Sir Francis Drake Boulevard, with the addition a Class 2 bike lane on Sir Francis Drake Boulevard eastbound between Olema Road and Claus Drive. Drawings have been generated including the existing striping, proposed striping and areas of additional paving with stationing, dimensions and control points. Both projects will be out to bid for construction in September 2011.

Larkspur

- Sandra Marker Trail and ADA Pathway Project (funding: SR2; in progress)
- Multiuse Pathway between Doherty Dr. and Heatherwood Park (funding: TAM; completed)
- Elm Ave Stairway Project (funding: NTPP; completed)
- Post St Stairway Project (funding: NTPP; in progress)
- Citywide Signing & Striping (funding: Measure A; completed)

Mill Valley

- Completed construction of a Non-motorized Transportation Pilot Project, which rehabilitated stairs off Mirabel Lane, off Molino Lane, off Marion Lane, off Alcatraz Lane, and off Magee Lane. This project also constructed new stairs off Molino Lane and off Wainwright Lane. Also completed construction of the 2007 Street Rehabilitation Project which included five ADA ramps at various intersections and installed 19 "Share The Road" pavement markers on Ashford Avenue.
- Two volunteer groups (the In Step Volunteers and the Boy Scouts) have rehabilitated stairs off Eugene Way, off Mirabel Lane, off Bradford Lane, off Chaquita Lane, and off Creek Lane. They have also built pedestrian bridges off Marion Lane and along the Blithedale Park trail.
- Presently in construction for a Pedestrian Safety Project, which includes constructing sidewalk and ADA ramps on East Blithedale Ave. between East Ave. and Elm Ave., constructing sidewalk and ADA ramps on West Blithedale Ave. between Bigelow Ave. and Eldridge Ave., and constructing sidewalk "bulb-outs" and ADA ramps at the intersection of Lomita Dr. & Ashford Ave.
- Currently working on environmental review, funding and/or conceptual design for a Safe Routes To School Cycle 9 Project at various school sites, for a Safe Routes To School Project for a bike/pedestrian path on Camino Alto between Sycamore Ave. and Miller Ave. and intersection improvements at the Miller Ave./Almonte Blvd. intersection, and for a bike/pedestrian path on Sycamore Ave. between Camino Alto and the Marin County Class 1 bike trail.

Novato

- Multiple street rehabilitation/improvements projects and SR2S-Cycle 7 project completed since 2008 involved installation and/or replacement of 165 ADA compliant curb ramps, removal and replacement of about 20,000 sf of street-tree-damaged concrete sidewalks, and replacement of multiple bicycle loops.
- The Commuter Bike Connection project involving installation of 3,200 lf Class 1 multi-use path along the west side of US 101 from South Novato Boulevard to just north of Enfrente Road is currently under construction, to be completed October 2011.
- Also to be completed Fall 2011 is the Safe Pathways To School Project, which consists of construction of about 1,000 sf of new sidewalk, ADA compliant ramps and roadway widening for the Class II bike lane along Indian Valley Road between Hill Road and Arthur Street.

Ross

- A new 4-foot wide decomposed granite pathway was installed on Shady Lane to provide safe travel for pedestrians, who formerly used a dirt path or the street.
- A new paved pedestrian pathway was installed along Sir Francis Drake Boulevard and the repaved road was restriped to increase curb area for bicycles.

- The Town adopted an expanded Bicycle and Pedestrian Master Plan and adopted a Complete Streets Resolution.
- The Lagunitas Road bridge was reconstructed and now includes a wider pedestrian path that is separated from the roadway by a concrete railing. New sidewalk curb ramps were also installed in the area.
- “Narrow Bridge” warning signs were installed near the Shady Lane bridge and an ADA ramp was installed on the Shady Lane Bridge at Locust Avenue.
- An ADA ramp was installed at Ames Avenue to allow access to the Shady Lane pedestrian path, including a new crosswalk and pavement markings.
- A new guardrail and curb were installed on Sir Francis Drake Boulevard by the bridge.
- New curb ramps were installed and a new crossing painted at Bolinas Avenue and Shady Lane.
- The Town is working on plans for intersection improvements for the junction of Sir Francis Drake Boulevard and Lagunitas Road, right in front of Ross Town Hall and the Marin Art & Garden Center. The project will include a number of safety upgrades for an intersection frequently used by pedestrians.

San Anselmo

- Installed over 60 ADA curb ramps and installed/repairs sidewalks throughout San Anselmo on Saunders Avenue, Tamal Avenue, Park Drive, Yolanda Avenue, Alder Drive, Karl, Berlin, Brennfleck, Medway, Sir Francis Drake Boulevard, Scenic Road, San Anselmo Avenue, Tunestead, Ross, Bolinas, Crescent Road, Cedar, Woodland, Richmond, and Sunnyside.
- Class III bike improvements consisting of stencils and red curb.
- Installed sharrows on San Anselmo Avenue, Medway Road, Saunders Avenue, Park, Tamal, and Taylor.
- NTPP on Sir Francis Drake at Saunders and Madrone consisting of pedestrian warning systems in pavement and overhead lights.
- Currently working on bicycle and pedestrian improvements on Greenfield and Butterfield.

San Rafael

- Completed and adopted the Bicycle and Pedestrian Master Plan 2011 Update.
- Completed pedestrian improvements on Happy Lane near Sun Valley Elementary School, on Woodland Avenue near Laurel Dell Elementary School and at various intersections along Canal Street.
- Worked with property owner to install the Northgate Mall Promenade bike path along Las Gallinas Avenue and with Caltrans to install mixed use sidewalk along Bellam Boulevard and a portion of Francisco Boulevard East.
- Completed two Non-motorized Transportation Pilot program projects to install over 2 miles of Class II and III facilities in North San Rafael.
- Continued work on the design of the Non-motorized Transportation Pilot Program Projects the Puerto Suello Hill Path-Transit Center Connector and the Mahon Creek Path-Transit Center Connector Project.
- Obtained funding to design pedestrian improvements across the Grand Avenue Bridge.

Sausalito

- Designed, acquired environmental clearance for, and received authorization to construct the Bridgeway-to-Ferry Landing Non-motorized Transportation Pilot Program (NMTP) Project. Construction is expected to be completed within calendar 2012.
- Sausalito has also designed, acquired environmental clearance for, and is in right-of-way acquisition for the Filbert Steps NMTP Project.

- The City Council adopted the NMTP-funded Ferry Landing to Gate 6 Road Path Feasibility Study. The City also received STP/CMAQ funding for a Gate 6 Road/Bridgeway Intersection Improvements Project to more safely and efficiently accommodate bicycle and pedestrian movements.
- Finally, the City Council adopted a Resolution of Support for proposals to the County of Marin for candidate NMTP projects to improve bicycle and pedestrian safety and operations on the south City limits to Ferry Landing segment, and for replacement of existing steps, stairs and paths with priority being given to designated disaster access/egress routes.

Tiburon

- Completed Del mar School Safe Route to School project, and a Non-motorized Pilot Program project to rehabilitate 3 pedestrian access ways.

Marin County

- Completed Bicycle and Pedestrian Master Plan and received Caltrans certification. Constructed Cal Park tunnel and pathway (Class I facility and tunnel reconstruction).
- Constructed Class II bike lanes on Ranchitos Road (Los Ranchitos), Atherton Avenue between Alexander and Bugeia and between School Road and Hwy. 37 (Novato/Green Point), Alameda del Prado (Novato/Loma Verde), Almonte Blvd between Shoreline Highway and Miller Avenue (Almonte), Miller Creek Road between Las Gallinas and Lucas Valley (Marinwood); Lucas Valley Road between Los Gamos and Westgate (Marinwood/Lucas Valley), Bel Marin Keys Blvd from Montego Key to the eastern end (Novato/Bel Marin Keys).
- Completed countywide numbered route signage program.
- Widened shoulders on several West Marin roads, including Pt. Reyes-Petaluma Road.
- Conducted design work on the Tennessee Valley pathway, Corte Madera Creek path widening, and Sir Francis Drake/Taylor Park road improvements.
- Began construction on Marin Avenue sidewalk project.
- Installed path-of-travel accessibility improvements, including 104 curb ramps.

Strategy 4 of the Measure A Strategic Plan includes a suite of Safe Routes to Schools (SR2S) programs. The Marin SR2S program, one of the most successful in the country, is designed to reduce local congestion around schools by increasing the number of children walking and bicycling to school, taking transit or carpooling. TAM's SR2S strategy includes:

- **Education and Encouragement programs**, offering events, contests and promotional materials to encourage children to walk and bicycle to school. Programs to support carpooling and transit use are also provided to the schools.
- **A Crossing Guard program** providing trained crossing guards at key intersections throughout Marin County. Use of crossing guards can reduce the reluctance parents may have in allowing their children to walk or bicycle to school.
- **Safe Pathways** -- the capital improvement element of the SR2S program -- provides funding for the engineering, environmental clearance, and construction of pathway, street crossing and sidewalk improvements for better and safer access to schools

3.4 Performance Measures

Five additional performance measures described below allow TAM to further measure transportation system performance in Marin County.

3.4.1 Aggregate Peak Hour Travel Time

This performance measure describes the time required to travel through selected corridors on a variety of modes. Because single-occupant, high-occupant, and transit vehicles travel at different speeds, aggregate travel time between two points for all modes effectively describes the system's performance. To determine peak-hour travel times by single-occupant and high-occupant vehicles, travel time runs would be required for two given days at the peak hour in the peak direction. Transit schedules have been used to determine travel times via buses. For the Marin CMP, aggregate travel times have been developed for four segments:

1. U.S. 101 between the Sonoma County line and San Rafael Transit Center
2. U.S. 101 between San Rafael Transit Center and the Golden Gate Bridge
3. Sir Francis Drake Boulevard between Butterfield Road and U.S. 101
4. Red Hill Avenue, Second and Third streets between Sir Francis Drake Boulevard and San Rafael Transit Center

Table 12 lists the results of the peak hour travel time monitoring. The samples for the AM peak hour began between 7:30 and 8:30 AM, and the samples for the PM peak hour began between 4:30 and 5:30 PM. A number of locations saw reductions in travel time, primarily attributable to the opening of the gap closure HOV lanes and other improvements in San Rafael in 2009.

3.4.2 Person Throughput

This performance measure identifies the number of people, not vehicles, who are able to move over a given facility in the peak period. As a combination of vehicle occupancy and level of service, this measure recognizes that transit service and HOV lanes can benefit corridor capacity. Roadway capacity is defined in terms of vehicles per hour. Well-utilized HOV lanes can contribute to roadway capacity, as they can carry more persons per lane than a mixed-flow lane. Finally, buses are defined as additional roadway capacity.

TABLE 12. CORRIDOR PEAK HOUR TRAVEL TIME MONITORING RESULTS

Study Corridor	2008 (minutes)			2010 (minutes)				
	Auto	HOV	Bus	Auto	HOV	Bus		
U.S. 101 from San Rafael Transit Center to Sonoma County Line	AM	NB SB	17	N/A	46 (A)	15	N/A	44 (A)
			47	24	68 (A)	21	18	66 (A)
	PM	NB SB	26	24	63 (A)	23	23	43 (A)
			22	N/A	59 (A)	15	N/A	61 (A)
U.S. 101 from San Rafael Transit Center to Golden Gate Bridge	AM	NB SB	12	N/A	43 (A)	11	N/A	45 (B)
			12	11	36 (A)	12	11	45 (E)
	PM	NB SB	25	17	48 (A)	20	14	88 (B)
			12	N/A	50 (A)	11	N/A	50 (E)
Sir Francis Drake Boulevard from Butterfield Rd. to U.S. 101	AM	NWB	11	N/A	N/A	11	N/A	N/A
		SEB	18	N/A	33	9	N/A	24 (C)
	PM	NWB	17	N/A	21	16	N/A	18 (F)
		SEB	13	N/A	N/A	18	N/A	N/A
Red Hill Avenue from Sir Francis Drake Boulevard to San Rafael Transit Center)	AM	NWB	6	N/A	13 (D)	5	N/A	13 (D)
		SEB	7	N/A	N/A	5	N/A	13 (D)
	PM	NWB	8	N/A	13 (D)	9	N/A	13 (D)
		SEB	7	N/A	N/A	6	N/A	13 (D)

Source - 2008: PHA Consultants. Travel time runs were conducted three times in each direction during the commute periods. Transit travel times were estimated based on bus schedules. (A) Estimated based on commute bus Route 70 & 80 between San Rafael Transit Center – Petaluma Depot; (B) Estimated based on commute bus route 70 & 80 from San Rafael Transit Center and Golden Gate Bridge Toll Plaza; (C) Estimated based on commute bus Route 24 between San Anselmo Transit Hub and US 101/Lucky Drive Bus Pad; (D) Estimated based on commute bus Route 24 between San Rafael Transit Center and SFD/Butterfield intersection. 2008 travel times shown were collected prior to the Gap Closure lane additions in 2009

Source – 2010: Jacobs Engineering traffic survey (AM travel times are from Inrix and PM are from GPS travel time runs). Transit travel times were estimated based on bus schedules. Transit travel times were estimated based on bus schedules. (A) Estimated based on commute bus Route 70 & 80 between San Rafael Transit Center - Petaluma Depot; (B) Estimated based on commute bus Route 70 & 80 from San Rafael Transit Center and Golden Gate Bridge Toll Plaza; (C) Estimated based on commute bus Route 24 between Bank and US 101/Lucky Drive Bus Pad; (D) Estimated based on commute bus Route 23 between San Rafael Transit Center and SFD/Center Street Hub instead of the Butterfield Intersection in 2006; (E) Estimated based on commute bus Route 70 & 80 from San Rafael Transit Center and SF Civic Center (GG time is not published); (F) Estimated based on commute bus Route 24 between Center and US 101/Lucky Drive Bus Pad (Bank not a stop in NB PM)

Existing conditions for this measure are obtained through a regular monitoring process. Monitoring of this measure requires that the number of riders and the seats on buses in a peak hour in each direction be defined. It requires observing travel volumes, as well as the average vehicle occupancy on a given mixed-flow or HOV lane. These locations are on CMP facilities that are representative congestion points, including:

- U.S. 101 between Interstate 580 and Central San Rafael
- U.S. 101 between Paradise Drive and the Tiburon Boulevard
- U.S. 101 north of Atherton Avenue
- Sir Francis Drake Boulevard west of U.S. 101
- Sir Francis Drake Boulevard north of Red Hill Avenue
- Red Hill Avenue east of Sir Francis Drake Boulevard

Table 13 lists the results of the person throughput monitoring for the P.M. peak hour period for six designated roadway segments. The 2010 monitoring results have included HOV lane utilization for the two locations where HOV lanes exist.

TABLE 13. PERSON THROUGHPUT MONITORING RESULTS – PM PEAK HOUR

Segment	2008				2010				
	Transit Person	Auto Person	Van Pool Person	Total Person	Transit Person	Auto Person: General	Auto Person: HOV Lane	Van Pool Person	Total Person
US 101- NB (I-580 – Central San Rafael)	880	11,721	135	11,976	320	7,896 ¹	1,506 ¹	47	9,769 ¹
US 101 - NB (SR 131 – Paradise Dr.)	1,100	8,895	72	9,607	1,400	6,397	2,226	47	10,070
US 101 - NB (North of Atherton)	520	4,099	135	4,754	320	3,290	-	93	3,703
Sir Francis Drake Boulevard – NWB (East of Wolf Grade)	190	2,017	24	2,231	266	1,395	-	93	1,754
Sir Francis Drake Blvd – NWB (North of Red Hill Rd)	646	1,845	47	2,082	304	2,285	-	0	2,589
Red Hill Avenue – NWB (East of SDF Boulevard)	190 ¹	2,103	23	2,354	228	2,094	-	0	2,322

Sources: PHA 2008 traffic survey. Jacobs Engineering 2010 Survey. The above analysis is for the commute direction only, i.e. leaving San Francisco and/or US 101. 511.org Vanpool staff provided vanpool data.

¹Survey location shifted in 2010.

3.4.3 Jobs/Housing (Employed Residents) Balance

This performance measure considers the balance between projected employed residents and projected jobs within different planning areas of the county. Achieving a balance between jobs and housing within a community or area can help the regional transportation system by reducing the length of trips and traffic congestion. Table 14 lists the results of Bay Area jobs-housing balance projections.

In *Projections 2009*, ABAG forecasters dampened the rate of job creation in the Bay Area through 2020 when compared to 2005 because of the effects of the recessionary period that began in 2007. In 2020, both Marin County and the Bay Area as a whole are projected to have a more reasonable jobs-housing balance. Marin was forecast to have over 11,000 more jobs than working residents in 2020, compared to over 13,000 today. It is also noted that Sonoma also becomes a net importer of over 2,000 workers by 2020 where today it is a net exporter of over 17,000 workers.

After 2020, the combined effect of increased numbers of retirees combined with renewed economic vitalization, the overall jobs-housing imbalance is expected to increase again. In Marin County, that increase is projected to grow to over 29,000 by 2005. These jobs will likely not be filled easily by Sonoma County residents who work, as Sonoma County is forecast to have over 37,000 more jobs than residents who work by 2035. The effect of the various projections by county suggests that more and more workers will come from Contra Costa and Solano Counties in the future.

TABLE 14. BAY AREA JOBS / HOUSING BALANCE PROJECTIONS

Category/County	2005	2020	% Change	2035	% Change
Employed Residents					
San Francisco	388,097	458,301	18.09%	543,596	40.07%
San Mateo	318,599	379,300	19.05%	467,201	46.64%
Santa Clara	733,989	985,407	34.25%	1,252,505	70.64%
Alameda	705,906	868,803	23.08%	1,098,611	55.63%
Contra Costa	459,606	586,204	27.54%	718,704	56.37%
Solano	194,903	229,202	17.60%	264,697	35.81%
Napa	64,102	70,200	9.51%	76,200	18.87%
Sonoma	237,700	255,501	7.49%	287,196	20.82%
Marin	122,204	132,229	8.20%	128,926	5.50%
Regional Total	3,225,106	3,965,147	22.95%	4,837,636	50.00%
Total Jobs					
San Francisco	553,091	647,147	17.01%	806,838	45.88%
San Mateo	337,312	404,389	19.89%	505,854	49.97%
Santa Clara	872,869	1,071,972	22.81%	1,412,621	61.84%
Alameda	730,296	825,089	12.98%	1,039,669	42.36%
Contra Costa	379,019	445,550	17.55%	555,650	46.60%
Solano	150,521	167,055	10.98%	211,892	40.77%
Napa	70,687	77,925	10.24%	91,483	29.42%
Sonoma	220,456	257,732	16.91%	325,103	47.47%
Marin	135,370	143,690	6.15%	158,271	16.92%
Regional Total	3,449,621	4,040,549	17.13%	5,107,381	48.06%
Jobs/Residents Ratio					
San Francisco	1.43	1.41	-0.92%	1.48	4.15%
San Mateo	1.06	1.07	0.70%	1.08	2.27%
Santa Clara	1.19	1.09	-8.52%	1.13	-5.16%
Alameda	1.03	0.95	-8.20%	0.95	-8.53%
Contra Costa	0.82	0.76	-7.83%	0.77	-6.25%
Solano	0.77	0.73	-5.62%	0.80	3.65%
Napa	1.10	1.11	0.66%	1.20	8.87%
Sonoma	0.93	1.01	8.76%	1.13	22.05%
Marin	1.11	1.09	-1.90%	1.23	10.82%
Regional Total	1.07	1.02	-4.73%	1.06	-1.30%
Import (Export) of Workers					
San Francisco	164,994	188,846		263,242	
San Mateo	18,713	25,089		38,653	
Santa Clara	138,880	86,565		160,116	
Alameda	24,390	-43,714		-58,942	
Contra Costa	-80,587	-140,654		-163,054	
Solano	-44,382	-62,147		-52,805	
Napa	6,585	7,725		15,283	
Sonoma	-17,244	2,231		37,907	
Marin	13,166	11,461		29,345	
Regional Total	224,515	75,402		269,745	

Source: Metropolitan Transportation Commission Summary of ABAG Projections 2009.

3.4.4 Mode Shares for Work Travel

For information purposes, data regarding the mode of travel for work trips of Marin residents is included in this CMP. The percentage of modes chosen for traveling to work is sampled as part of the research performed by the U.S. Bureau of the Census. In 2000, the decennial Census sampled for journey-to-work data through the long form, received by about every twelfth household. After 2000, the Census Bureau replaced the long form data program with the American Community Survey, which samples about one percent of all households annually and publishes the result in one-year, three-year and five-year rolling averages. The mode share between these two surveys for Marin is detailed in Table 15. To allow for comparability, the taxi trips in the 2000 Census were allocated into the “other” category in this table, although the raw data presented taxi trips as public transportation trips in that 2000 sample.

The result shows a general stable share of modes reported by the Census Bureau between 2000 and the more recent American Community Survey sampling. While some modes showed changes of over 0.5 percent, the variation in shares may be somewhat attributable to sampling methods. (A one-tenth of one percent response in three-year rolling average for Marin County amounts to only three households.)

TABLE 15. JOURNEY-TO-WORK MODE OF ACCESS FOR MARIN COUNTY

Mode	2000 Census		2007-2009 American Community Survey	
	Number	Percent	Number	Percent
Drive	81,169	67.0%	83,135	67.9%
Carpool	12,109	10.0%	10,285	8.4%
Public Transportation	9,044	7.5%	10,407	8.5%
Bicycle	1,640	1.4%	1,592	1.3%
Walk	4,017	3.3%	3,551	2.9%
Other	969	0.8%	1,714	1.4%
Work at Home	12,250	10.1%	11,754	9.6%

Source: U.S. Bureau of the Census

4.0 TRAVEL DEMAND MANAGEMENT

4.1 Purpose and Intent of Legislation

California Government Code section 65089(b)(3) requires that a Travel Demand Management (TDM) element be a part of every CMP. Assembly Bill 2419, which became effective January 1, 1997, eliminated the requirement for a “trip reduction” component to this element, leaving only the “travel demand” component. According to the revised CMP legislation, the TDM element should promote:

- Alternatives to the single-occupant automobile, e.g., carpools, vanpools, transit, and bicycles
- Increased use of park-and-ride lots
- Improvements in the balance between jobs and housing
- Other strategies for reducing vehicle trips, including flexible work hours, telecommuting, and parking management programs

The agency must also consider parking cash-out programs during the development and update of the travel demand element.

Responsibility for planning future land use and zoning patterns and for reviewing proposed development plans rests with local government. Both long-range planning and development-review phases of local planning offer local governments’ opportunities to ensure that TDM measures are implemented. Although not required, local governments may choose to support (by resolution or other means) regional TDM measures, such as carpool lanes and ridesharing facilities and programs that could be implemented by other agencies (such as MTC).

Peak-period travel speeds are forecast to deteriorate on freeways and arterials in Marin County as new development occurs on a roadway system that has little opportunity or funding available for major expansion. Along with improving roadway operations and improving local transit service in response to this growing traffic, it is also important to improve the operating efficiency of the existing transportation system through TDM measures. The TDM element of the CMP encourages an on-going process that promotes local and regional planning to reduce traffic congestion.

4.2 Travel Demand Management in Marin County

The intent of this element is to summarize the widest possible range of choices to the County and its eleven cities in implementing the overall goal of reduced peak-hour usage of single-occupant vehicles. The TDM measures proposed fall into four broad categories:

- **Traffic operation improvements** that improve traffic flow. These improvements could come through such diverse sources as increased ridesharing or minor modifications to the highway system.
- **Transit improvements** that attract more riders to transit systems.
- **Traffic mitigation measures** that are intended to reduce traffic generated by a development or planning area and are applied through employers or developers.
- **Land-use planning and regulation** that seek to limit demand for transportation or to mandate implementation of traffic mitigation techniques through the land-use planning or approval processes.

These classifications overlap to some extent. For example, development permit approval may require traffic mitigation measures, and traffic mitigation may include greater use of public transit. The classification system focuses primarily on the entity responsible for implementation.

In general, traffic operational improvements are implemented by state and local highway departments; transit improvements are sponsored by transit agencies; traffic mitigation measures are implemented by employers or developers; and planning and regulatory techniques fall under the jurisdiction of local planning agencies. Effective traffic mitigation requires coordinated and systematic action by both the public and the private sectors.

TAM has significantly expanded its TDM and commute alternative efforts over the last two years. A Vanpool Incentive Program has been established with substantial financial support from the Bay Area Air Quality Management District's Transportation Fund for Clean Air (TFCA). With the completion of the U.S. 101 Gap Closure Project, this and other rideshare marketing programs continue to promote the use of new, uninterrupted HOV lanes through Marin County.

An Emergency Ride Home Program has been developed—also with TFCA support, and will be marketed to employers throughout Marin County. This program will be available to all Marin employees whose employers have registered to participate. The program will promote and support various alternatives to driving alone, including transit and all forms of ridesharing, as well as biking and walking. Those who use commute alternatives will have access to free transportation home (via taxi or rental car) in the event of an emergency.

SchoolPool and Safe Routes to Schools continue to address school-related congestion and both programs serve as national models for trip reduction programs. And with funding support from MTC's Climate Initiative Grant Program, TAM is part of a three-county collaboration to pilot Dynamic (or "real-time") Rideshare Programs in Marin. Staff intends to focus efforts on supporting senior mobility options and addressing college-related vehicle trips.

Finally, TAM continues to coordinate rideshare outreach marketing activities with MTC's Regional 511 Rideshare Program. And with local funding support from Measure B (Marin County's Vehicle Registration Fees, adopted in 2010), TAM plans to launch new efforts to reduce vehicle trips and congestion, which could include the following:

- Transit information and promotion, including financial incentives;
- Driving management programs to support telework/telecommuting;
- Establishment of a car-sharing pod model in Marin;
- Additional employer support, with emphasis on small and medium size employers, leveraging 511.org Regional Ride Share resources, that continue to provide quality services to employers;
- General employer support for a strengthened transportation component within Marin County's Green Business Certification Program; and
- Pre-tax employer/employee incentive encouragement, such as programs that automatically fund monthly transit passes such as Clipper.

4.3 Consistency with Pertinent Air Quality Plans, as Incorporated in the RTP

The Bay Area's RTP incorporates Transportation Control Measures (TCMs) contained in federal and state air quality plans to achieve and maintain standards for ozone and carbon monoxide. The statutes require that the Capital Improvement Program (CIP) of the CMP conform to transportation-related vehicle emission air quality mitigation measures. CMPs should promote the region's adopted TCMs for the federal and state clean air plans.

The Marin CMP includes numerous project types and programs that are identified in the TCM plan.

Table 16 lists chapters of the Marin CMP that provide opportunities to address these TCMs. Currently, there are no unmet TCMs in the Bay Area's implementation plans for air quality.

The Bay Area Air Quality Management District adopted the latest Clean Air Plan in September, 2010. These are refined from prior TCMs to better define the actions, as well as expanded to include green house gas emission mitigation actions.

TABLE 16. 2010 BAY AREA CLEAN AIR PLAN TRANSPORTATION CONTROL MEASURES (TCMS) IN CMP

TCM	Description	CMP Reference
A-1 Improve Local and Areawide Bus Service	Improve transit by providing new Express Bus or Bus Rapid Transit on major travel corridors, funding the replacement of older and dirtier buses, and implementing Transit Priority Measures on key transit routes.	Chapter 7, Capital Improvement Program
A-2 Improve Local and Regional Rail Service	Improve rail service by sustaining and expanding local and regional rail services and by providing funds to maintain rail-cars, stations, and other rail capital assets.	Chapter 7, Capital Improvement Program
B-1 Implement Freeway Performance Initiative	Improve the performance and efficiency of freeway and arterial systems through operational improvements, including the Freeway Performance Initiative, the Arterial Management Program, and the Freeway Service Patrol.	Chapter 7, Capital Improvement Program
B-2 Improve Transit Efficiency and Use	Improve transit efficiency and use through continued operation of 511 Transit, and full implementation of TransLink® payment system and the Transit Hub Signage Program.	Chapter 3, Performance Measures
B-3 Bay Area Express Lane Network	Introduce roadway pricing on Bay Area highways through the implementation of an express lane network, also known as a High Occupancy Toll (HOT) lane network.	Chapter 7, Capital Improvement Program
B-4 Goods Movement Improvements and Emission Reduction Strategies	Improve goods movement and reduce emissions from diesel equipment through implementation of the Bay Area’s Trade Corridors Improvement Fund (TCIF) projects and various funding programs to replace or retrofit diesel equipment.	Chapter 7, Capital Improvement Program
C-1 Support Voluntary Employer-Based Trip Reduction Program	Support voluntary employer trip-reduction programs through the implementation of the 511 Regional Rideshare Program and Congestion Management Agency rideshare programs, the Spare the Air Program, encouraging cities to adopt transit benefit ordinances, and supporting Bay Area shuttle service providers.	Chapter 4, Travel Demand Management
C-2 Implement Safe Routes to Schools and Safe Routes to Transit	Facilitate safe routes to schools and transit by providing funds and working with transportation agencies, local governments, schools, and communities to implement safe access for pedestrians and cyclists.	Chapter 7, Capital Improvement Program
C-3 Promote Rideshare Services and Incentives	Promote rideshare services and incentives through the implementation of the 511 Regional Rideshare Program and Congestion Management Agency rideshare programs including marketing rideshare services, operating rideshare information call center and website, and providing vanpool support services.	Chapter 4, Travel Demand Management
C-4 Conduct Public Outreach and Education	Educate the public about the air quality, environmental, and social benefits of carpooling, vanpooling, taking public transit, biking, walking, and telecommuting, through the Spare the Air and Climate Action Campaigns.	Chapter 3, Performance Measures
C-5 Promote Smart Driving/Speed Moderation	Educate the public about the air quality and climate protection benefits of reducing high-speed driving and observing posted speed limits.	Chapter 3, Performance Measures
D-1 Improve Bicycle Access and Facilities	Expand bicycle facilities serving transit hubs employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers.	Chapter 7, Capital Improvement Program
D-2 Improve Pedestrian Access and Facilities	Provide funding for projects to improve pedestrian access to transit hubs, employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers.	Chapter 7, Capital Improvement Program
D-3 Support Local Land Use Strategies	Promote land use patterns, policies, and infrastructure investments that support mixed-use, transit-oriented development that reduce motor vehicle dependence and facilitate walking, bicycling and transit use.	Chapter 4, Travel Demand Management
E-1 Value Pricing Strategies	Implement value pricing (congestion pricing) on Bay Bridge; consider expanding value pricing to other Bay Area toll bridges to manage travel demand during congested periods.	Not applicable to Marin County
E-2 Parking Pricing and Management Strategies	Promote policies to implement market-rate pricing of parking facilities, reduce parking requirements for new development projects, parking “cash-out”, unbundling of parking in leases, shared parking at mixed-use facilities, etc.	Chapter 4, Travel Demand Management
E-3 Implement Transportation Pricing Reform	Develop a regional transportation pricing strategy that includes policy evaluation and implementation. Pricing policies to be evaluated include gasoline taxes, bridge tolls, congestion pricing, parking pricing, HOT lanes, VMT or carbon fees, pay-as-you-drive insurance, etc.	Chapter 3, Performance Measures

Source: Bay Area Air Quality Management District

4.4 Additional Transportation Demand Management Activity

4.4.1 Station Area Planning

TAM has provided funding and been an active participant in the development of a station area plan for the future Downtown San Rafael SMART station, a station area plan for a future Civic Center SMART station, and a collaborative effort to create a station area plan for Larkspur, in the vicinity of the future SMART station and the Larkspur Ferry Terminal.

4.4.2 Pedestrian and Transit-Oriented Design Toolkit

In May 2007, the Transportation Authority of Marin distributed the TPLUS Pedestrian and Transit-Oriented Design Toolkit. This document contains a number of development strategies which can be applied to achieve trip reduction. These include concepts on land use (density, intensity and mixed-use), urban design (site plans, building orientation and parking), improved connectivity (for local traffic, bicycles, pedestrian and transit), traffic management (traffic calming), street design (including paved roadways, sidewalks, landscaping and transit facilities), specific mobility needs for seniors and persons with disabilities, access to schools (transit, bicycle and pedestrian), educational programs, and parking guidance. The report contains “best practices” concepts that are most appropriate for application in Marin County. Toolkit concepts are being considered as station area planning and pedestrian-oriented projects begin in the County.

4.4.3 Reducing Vehicles Miles Traveled and Greenhouse Gas Emissions

In its role as the Congestion Management Agency, TAM seeks opportunities for achieving congestion relief. These include highway improvements, such as the carpool lane on U.S. 101; providing transit through the commitment of the ½ cent local sales tax for transportation; and supporting investments in bicycle and pedestrian facility improvements, such as the Puerto Suello Hill/Lincoln Multi-use path and the Cal-Park Hill Tunnel facility. In its role as the Congestion Management Agency, TAM can look to other opportunities for congestion relief which serve to meet air quality goals. These can include the following:

- **Coordinate and/or support** grant opportunities for alternative fuel development or electric vehicle purchase and its associated infrastructure,
- **Coordinate bicycle/pedestrian facility development** in Marin County that crosses local jurisdictional boundaries to achieve a greater benefit than a single jurisdictional facility may provide, and
- **Expand coordination opportunities** with employers and employees to rideshare, telecommute, or implement other options to driving alone.

These efforts reduce traffic congestion, as well as greenhouse gas (GHG) emissions from auto travel and overall vehicle miles traveled (VMT), which the California Air Resources Board (CARB) completed in late 2010. Senate Bill 375 links land use and transportation through the adoption of regional plans to reduce emissions throughout the state. These reductions are incorporated into a Sustainable Communities Strategy, which is integrated into the Regional Transportation Plan.

TAM staff continues to work with the regional agencies and local jurisdictions to share information and coordinate efforts of the Sustainable Communities Strategy.

4.4.2 School Rideshare Outreach

TAM anticipates further decrease in school-related auto trips with continued implementation of the SchoolPool, Greenways to School and other campaigns under the Safe Routes To Schools program. Under the SchoolPool program, TAM has implemented a GIS-oriented website to connect interested rideshare and carpool participants, with the focus on linking both students and commuters with common destinations.

5.0 LAND USE ANALYSIS

5.1 Purpose and Intent of Legislation

California Government Code Section 65089(b)(4) requires that a CMP contain a program to analyze the impacts of land-use decisions made by local jurisdictions on the regional transportation system (both highways and transit).

The Land-Use Analysis Program must include an estimate of the costs to mitigate impacts of development on the highway and transit systems. The legislation allows the cost of mitigating interregional travel (trips that do not begin in Marin County or trips that travel entirely through Marin County) to be excluded from the mitigation cost estimate. Public and private (developer) contributions to regional transportation improvements may be credited.

The law does not change the role of local jurisdictions in making land-use decisions and in determining the responsibilities of project proponents to mitigate those impacts. However, TAM has the authority to withhold gas tax subventions to local governments provided by Proposition 111 if a local jurisdiction fails to meet the requirements outlined in the Monitoring and Conformance chapter of the CMP (Chapter 8). Further guidance on the Land-Use Analysis Program is found in the *Congestion Management Resource Handbook* (Caltrans, November 1990, pages 35-37).

The Land-Use Analysis Program is particularly important because it affects, or is affected by:

- The CMP Designated Transportation System and Roadway Level of Service Standards (see Chapters 1 and 2);
- Performance Measures (see Chapter 3);
- The Marin Travel Model, which is capable of analyzing land-use impacts on both highways and transit (see Chapter 6); and
- The Capital Improvement Program (see Chapter 7).

The intent of the Land-Use Analysis Program is to improve the linkage between local land-use decisions and regional transportation facility decisions; to better assess the impacts of development in one community on another; and to promote information sharing between local governments when the decisions made by one jurisdiction have an impact on another.

The Land-Use Analysis Program for the Marin CMP is a process designed to improve upon decisions about land-use and the spending of funds on highway and transit improvements in the county. The process is intended to work in a positive, cooperative fashion that supports the needs of local, county, regional and state governments.

TAM acts as a resource to local governments in performing transportation analyses of land use changes on the CMP designated transportation network. The Marin Travel Model is used to analyze local general plan updates and amendments and other major development decisions. The California Environmental Quality Act (CEQA) provides a framework for such assessment. To avoid duplication, the Land-Use Analysis Program is intended to make maximum use of the CEQA process.

Cities can develop and maintain their own transportation models for use in local forecasting or impact analysis. However, their models should be approved by TAM for consistency with countywide and regional transportation models. No cities in Marin have their own multi-modal model for local forecasting.

Two separate information and analysis processes of local land-use impacts are established by the Marin CMP. Under Part A, local governments forward information on proposed major developments, major general plan updates or other amendments to TAM during the period when the local jurisdiction is reviewing the application; this approach is discussed in Section 5.2. Part B requires participation in a biennial tracking update of projected land uses to be used for modeling both traffic and transit impacts; this approach is discussed in Section 5.3.

5.2 The Land-Use Analysis Program Part A: Major Development Projects and General Plan Updates

In Part A, local governments participate in informing TAM about any general plan updates or amendments, or major developments concurrent with the local governments' approval process. By analyzing general plan updates or amendments or major development proposals rather than by each individual permit, cities and TAM can proactively take into account regional transportation impacts and provide ways to finance transportation costs in advance of development proposals.

5.2.1 Threshold for Part A Analysis

If a general plan update or amendment, or major development proposal is projected to generate a net increase of 100 vehicle trips during the P.M. (afternoon) peak hour, the proposal is to be forwarded to TAM for comment, and is subject to a CMP analysis. Local jurisdictions are responsible for determining which projects meet these criteria. The P.M. peak hour is most appropriate because for most roadway segments, traffic levels of service are worse during the P.M. peak hour than in the A.M. peak hour. Examples of projects that typically meet the 100-trip threshold include 100 single-family homes, 150 apartment units, 5,000 square feet of retail space, or 40,000 square feet of office space.

5.2.2 Procedures for the Part A Analysis

The local jurisdiction receiving the land use development or proposing a change to their general plan should notify TAM of the impending action and preparation of a traffic impact study (either a stand-alone study or part of an Environmental Impact Report) through a Notice of Preparation or similar process. In addition to proposed land use change, the sponsor should submit information on potential highway network and transit system changes in their jurisdiction that could result from its

implementation through project or ordinance approvals, or changes to the circulation element maps or policies in their general plan.

Once a project notice is received by TAM, TAM staff will prepare a response directing the applicant on what is appropriate to fulfill an analysis as required in the CMP. TAM staff should include a response on the best way to apply the travel model for use in the study. TAM usually recommends applications using the travel model in these specific situations:

1. General plan updates and amendments are normally processed well before any construction takes place. This provides more time for transportation impacts to be analyzed and mitigation measures developed than would occur if the analysis took place closer to actual project construction.
2. Existing general plans have already been incorporated into the Year 2035 land-uses for the countywide model, as well as for the MTC regional travel model. Thus, any land development project that conforms to the general plan should not materially alter the forecast results generated by computer analysis already completed for the CMP. Only *changes* in (or amendments to) existing general plans could cause significant change in the Year 2035 model forecasts.
3. A city or the county may consider general plan updates or amendments no more than four times during any year according to state law. This reduces the possible model runs that would be required.
4. Most (but not all) general plan updates or amendments are for developments of significant size.

Future levels of service are based on the land use assumptions and corresponding travel demand forecasts based on current general plans. The information on noticing that should be forwarded to TAM includes:

- Precise location of the project(s), mapped, including street access location;
- Project land use(s) and number of dwelling units or square footage of development;
- Any available traffic studies, including trip generation rates assumed in determining whether the general plan update or amendment met the 100-trip threshold; and
- Expected occupancy of each land-use in Year 2035, with completion date and phasing.

The Marin Travel Model is available to be incorporated into the local development review process where appropriate. The local jurisdiction is responsible for determining future baseline traffic volumes, but may use the Marin Travel Model for background or cumulative conditions analyses. The local jurisdiction remains responsible for identifying mitigations and funding any costs associated with a Negative Declaration or Environmental Impact Report for any project. (Note: The Marin Travel Model is managed directly by TAM; any use must be coordinated and managed by TAM.)

It may be appropriate for TAM to participate in the Part A analysis, especially if it involves use of the Marin Travel Model. If TAM participates in a Part A analysis, TAM would make modifications to its land-use database used in the Marin Travel Model. The model would be run, including all highway and transit improvements (not just those on CMP designated facilities) for which funds seem reasonably secure, and also any improvements the applicant is willing to pay for as a condition of development approval. TAM would forward this information to the local agency, which would consider any reduction in level of service in making their decision to approve or not to approve the general plan amendment. In developing conditions for project approval, the local jurisdiction would then have the option of:

- Requiring additional mitigations from the developer, such as TDM measures (e.g., transit service, flex time, etc.), roadway improvements that would improve the LOS to the adopted standard, or other system improvements that would improve air quality as allowed by the CMP legislation;
- Delaying the project until a certain highway or transit project is constructed;
- Working closely with the TAM staff on development of a Deficiency Plan if it appears that a CMP system segment does not meet the adopted LOS standard; or
- Choosing not to implement any of the above measures and risk having the LOS not meet the adopted standard on certain roadway segments in a future year. In this case, the local government would risk losing the increment of gasoline taxes provided by Proposition 111.

Once a study of the transportation impacts is completed, the local jurisdiction should transmit a draft copy to TAM for referral and comment. If the draft is prepared as part of an Environmental Impact Report, TAM concerns should be addressed in a final certification.

Once any remaining concerns expressed by TAM have been addressed and final documentation is completed, the local jurisdiction sends final project information and documentation to TAM as part of the Part compliance.

5.3 The Land-Use Analysis Program Part B: Biennial Development Tracking

Marin County maintains an inventory of proposed development projects, known as "PROPDEV." PROPDEV includes all projects with at least five residential units or at least 5,000 square feet of non-residential use. The PROPDEV database file covers 40 items of information including location, project sponsor, acreage, zoning, square feet of building area, and status of development application.

Many projects are generally too small to effectively analyze using the Marin Travel Model on an individual basis. (As described in Part A, large projects requiring a city or county general plan update or amendment should be analyzed using the model.) Participation in this tracking is simple and useful for three principal reasons:

- Local jurisdictions already are responsible for reporting information for all land use development;
- Compliance with Part B of the Land-Use Analysis Program is easily attained by biennially submitting a complete account of all residential and commercial projects approved in the preceding submittal and reviewing the PROPDEV inventory for that jurisdiction; and
- Adjacent jurisdictions are able to account for nearby cumulative development more easily.

Once an update on land use changes have been received from the planning departments of each local government in Marin County, TAM then should biennially update the Marin Travel Model with updated land-use information.

In addition to land use changes, local governments are also responsible for advising TAM of planned changes to the transportation network and transit system based on their knowledge of developer mitigations, ordinance approvals, or changes to the circulation element of their general plan.

5.4 Additional Periodic Compliance

In addition to these two program elements that demonstrate biennial compliance, local governments should report when periodic changes occur in two other special instances:

- Each jurisdiction should report changes to local traffic LOS standards, and confirm that they are consistent with or more restrictive than the LOS standards in the CMP.
- Each jurisdiction should inform TAM when any other changes to the transportation network have occurred or changed, or are programmed to occur or change within their local capital improvements program or budget, or in any administrative directives.

5.5 Relationship of the Land-Use Analysis Program to CEQA

Local governments continue to have lead agency responsibility for performing Environmental Impact Reports and Negative Declarations and conducting transportation analyses as part of these documents. Local government should continue to propose and analyze mitigation strategies. TAM may comment through the CEQA process, keeping local governments informed as to the adequacy of the analysis and approving any transportation models that are used for the analysis. TAM may also provide local governments with information on cumulative impacts.

5.6 Impacts of Non-Compliance

In the future, if any Marin County jurisdiction does not comply with each of these CMP requirements by December 2011 (when the CMA makes any necessary non-conformance determination for each jurisdiction), that jurisdiction is found in non-conformance and may risk:

- Losing an increment in its gasoline tax subvention funds; and/or
- Not having projects programmed in the Regional Transportation Improvement Program (RTIP)

A more formalized tracking and compliance process may be implemented as part of the SB 375's Sustainable Communities Strategy, which links land use planning and transportation. The regional agencies (MTC and ABAG) are developing web-based applications to aid local jurisdictions in tracking land use. It is anticipated that these tools will be available in 2012 or 2013. The role of the new requirements to reduce state greenhouse gas emissions is part of this discussion. Failure to participate in this new process may result in a finding of non-compliance for a local jurisdiction.

6.0 TRAVEL FORECAST MODEL

6.1 Purpose and Intent of Legislation

California Government Code Section 65089(c) requires that every CMA, in consultation with the regional transportation planning agency (MTC), cities, and the county, develop a uniform database on traffic impacts for use in a countywide travel demand model. It also requires that the countywide model be the basis for transportation models used for county sub-areas and cities, and that all models are consistent with the modeling methodology and databases used by the regional transportation planning agency. The CMA also approves sub-county area transportation models, and models used by local jurisdictions for land-use impact analysis, if local jurisdictions decide to perform this work on their own.

The purpose of this requirement is to guide the CMA decision making process in identifying the most effective balance of transportation programs and projects that maintain LOS standards. The purpose includes consideration of the benefits of transit service and TDM programs, as well as the need for projects that improve congestion on the CMP designated network. The modeling requirement is also intended to assist local agencies in assessing the impact of new development on the transportation system.

6.2 Local Agency Requirements

At this time, there are no specific requirements of local agencies, other than supplying the base year land-use information that is noted in the land-use analysis chapter (Chapter 5). TAM expects to continue to operate its own countywide model, although cities may also create and use their own model, subject to the legislative requirements above.

TAM staff continually refines and updates the Marin Travel Model. This includes meeting with MTC regularly to review model consistency procedures and participating in the regional Modeling Coordination Subcommittee of the Bay Area Partnership. It also includes periodically reviewing network and land-use assumptions for base and future years for every model run performed for the Land-Use Analysis Program.

6.3 Travel Demand Forecast Overview

A distinct and measurable relationship between travel demand, land-use patterns, and transportation systems is the basis for modern transportation planning practice. Transportation models have been developed as the best tools available to quantify this, but the relationship is complex, and research on more effective transportation modeling is still evolving.

CMP legislation requires consistency with the regional travel model. This section of the CMP summarizes the Marin Travel Model (hereinafter referred to as MTM) performance and its consistency with the MTC Travel Demand Model guidelines for CMPs.

6.4 Existing and Past Programs

Bay Area modeling has been characterized by extensive travel behavior studies and model development by the Metropolitan Transportation Commission (MTC), the recognized Metropolitan Planning Organization for the Bay Area, in cooperation with the Association of Bay Area Governments (ABAG). MTC has had the charge and the funding at the federal level to develop models of travel behavior since the early 1970's. Marin County, in developing its own travel demand model, has built on information and logic from the MTC model.

MTC is required to review any sub-regional model for consistency with the MTC model. TAM staff assists with any revisions to the model. The remainder of this chapter contains the MTC checklist and responses for model consistency. Items from the MTC checklist are provided in boxed quotes in Section 6.5 below.

MTC's goal is to establish a regionally consistent model "set" for application by MTC and the Bay Area CMAs. The Bay Area Partnership finalized a report on modeling consistency issues which recommended that MTC develop and the CMAs incorporate a consistent set of model components on desktop computers (termed BAYCAST). For immediate use for this CMP, the study recommended that the current MTC checklist format be used, with specific tolerances. This current MTC checklist incorporates results of testing those tolerances, as well as additional analyses. Perhaps most important to TAM, the report found that, "...the Marin and San Mateo CMA model systems are the closest to the MTC model system. They use the same trip generation, mode split and assignment algorithms." Differences have been cited in Marin's use of "...finer network and zonal detail..." and "...locally calibrated friction factor curves..." and the need to use its "...own equations to derive additional demographic detail not provided in ...ABAG forecasts." But these differences did not detract from the consistency assessment.

Land use forecasts for Marin County jurisdictions have been updated to ABAG's *Projections 2009*. In such measures as households, population, jobs and employed residents, the changes are one percent or less, well within the criteria applied by MTC to determine model consistency. Thus, Marin will fall within the model consistency checklist. A separate letter demonstrating this finding includes additional information regarding the negligible differences between MTC's model and the Marin Travel Model (MTM).

6.5 MTC Modeling Consistency

MTC requires local CMAs to submit a checklist for model consistency. This Checklist guides Congestion Management Agencies through their model development and consistency review process by providing an inventory of specific products to be developed and submitted to MTC, and

by describing standard practices and assumptions to be followed. The Checklist items are highlighted in the green boxes in this chapter.

Because of the complexity of the topic, the MTC checklist may need additional detailed information to explain differences in methodological approach or data. If significant differences occur, they would need to be resolved between MTC and the CMA, taking advantage of The Partnership's Modeling Coordination Working Group standard formats for model comparisons that have been developed. In the case of the MTM, no difference in data occurs that requires resolution.

6.5.1 Update Process

Congestion Management Agency forecasts must be updated every two years to be consistent with MTC's forecasts. Alternative approaches to fully rerunning the entire model are available, including incremental approaches through the application of factors to demographic inputs or to trip tables. Similarly, the horizon year must be the same as the TIP horizon year; however, interpolation and extrapolation approaches are acceptable, with appropriate attention to network changes. These alternatives to full re-running of the model should be reviewed with MTC. The MTM is routinely updated to reflect new development and transportation projects within Marin County.

6.5.2 MTM Conformity to MTC Model Data

The MTM conforms to the MTC consistency guidelines. The conformity between the MTM and the MTC forecasting was established in 2010.

Requirement: Unless otherwise specified, the MTC model sets referred to below will be defined as those in use on October 1st of the year preceding the CMP update. The model data sets used by MTC in October 2010 have been those associated with the adopted RTP at that time. The MTC model trip tables are developed by factoring up the 2005 base year from ABAG's *Projections 2007* to a 2009 base year. In addition, major completed projects that affect travel in Marin County are included in both MTC and MTM travel models.

6.5.2.1 APPROACH TO TRAVEL DEMAND MODELING IN MARIN COUNTY

Requirement: Describe the model, and its relationship to the MTC model. If the model is based on MTC's model, describe any adjustments to model constants, coefficients, k-factor or friction factor re-estimation, market segmentation, trip purposes, etc. TAM operates and updates its own countywide travel demand model using information and logic from the MTC model. For the CMP, the Marin Travel Model (MTM) contains 117 traffic analysis zones (TAZs) within the county, 83 TAZs for San Francisco, 69 TAZs for Sonoma, and 24 TAZs corresponding with MTC "super-districts" for other Bay Area counties. Each of these zones and districts is connected to the others with a network of road and transit lines. Travel models use specialized software to predict P.M. and A.M. peak hour travel between these zones, and estimate Average Daily Traffic.

The MTM is a "focused" model, meaning that the network contains different structures inside and outside the focus area. The inside or focused counties for the MTM are San Francisco, Marin, and Sonoma Counties. Other Bay Area counties are outside the focused area. The primary difference is

that the more detailed MTC network structure is included in focused areas, while a skeleton roadway network is structured outside. Because the network outside the focused areas is reduced, the speeds on the skeleton roadway network in other Bay Area counties are fixed (not variable depending on capacity). Therefore, traffic volumes do not represent actual traffic volumes on these “unfocused” roadway links.

To further ensure regional consistency, the MTM uses a technique referred to as “balancing.” This is done to guarantee that trip-end estimates and forecasts and trip flows between counties are roughly equal, whether provided by the MTC regional model or the MTM.

The MTM mode-choice procedure occurs after the person-trip generation and trip-distribution steps. It includes a detailed mode-choice analysis that predicts transit-person trips, 2-person vehicle-person trips, 3+ person vehicle-person trips, or drive alone vehicle-person trips for home-based-work trips. Simpler formulas are used to predict all other trip purposes and modes, including home-based shopping trips, home-based social-recreational trips, home-based school trips, and non-home-based trips as well as walk and bicycle trips.

6.5.2.2 DEMOGRAPHIC/ECONOMIC/LAND-USE FORECASTS

Requirement: Use exact Association of Bay Area Governments (ABAG) data for other Bay Area counties, and control totals (within one percent) for the county for population, households, jobs, and employed residents. Congestion Management Agencies may reallocate growth forecasts within their own county in consultation with cities, MTC, and ABAG. The latest set of ABAG’s Projections must be used for all new demographic databases developed for baseline travel demand forecasting purposes after August 1 of the year preceding the CMP update. Future year forecasts should address the latest available ABAG Projection series. MTC, in consultation with the Modeling Coordination Working Group, will develop factors that may be used to achieve consistency with the most recent ABAG demographics. Congestion Management Agencies may also, of course, analyze alternative land-use scenarios in addition to these forecasts. If a land use based model is utilized, production and attraction comparisons will be made with the MTC model.

The MTM has been updated to be consistent with the most recent MTC data sets available, which are originally based on ABAG *Projections 2007* land use data and adjusted to reflect ABAG *Projections 2009*. Land use data is sometimes unavailable from local jurisdictions, forcing estimates based on past data or overall growth in the area. This requires TAM to adjust its input as better data is acquired. The overall land-use attributes for Marin County as a whole are consistent with ABAG. The difference between the MTM and ABAG 2009 is one percent or less for all the land-use categories. Land-use data outside of Marin is based on land use forecast assumptions as provided by MTC.

Future-year allocations by census tract provided by ABAG have been similarly refined. For this reason, individual census tracts do not contain land-use attributes identical to MTC and ABAG, but the overall county total for 2035 is consistent with the agencies.

6.5.2.3 PRICING ASSUMPTIONS

Requirement: *Use MTC's auto operating costs, transit fares, and bridge tolls.* The MTM has made adjustments for these regional pricing assumptions which are consistent with MTC requirements:

- **Bridge Tolls.** This assumes the \$6.00 Golden Gate Bridge toll and \$5.00 Richmond-San Rafael Bridge peak hour toll, adjusted to 1979 dollars. These tolls reflect the 2009 base year amounts.
- **Auto Parking Costs.** Auto parking costs have been adjusted to the 1979 cost of living index as published by MTC.
- **Auto Operating Costs.** An auto operating cost that conforms to the MTC guidance (which is measured in 1979 dollars as 13.12 cents per mile).

6.5.2.4 NETWORK ASSUMPTIONS

Requirement: *Use MTC's regional highway and transit network assumptions for other Bay Area counties. Congestion Management Agencies should include more detailed network definition relevant to their own county in addition to the regional highway and transit networks. For the CMP horizon year, to be compared with the TIP interim year, regionally significant network changes in the base case scenario shall be limited to the current Transportation Improvement Program (TIP) for projects subject to inclusion in the TIP.* The MTM was first developed in 1987 and was revalidated for 2005. The MTM uses the MTC model structure facility types and numbers of lanes for Marin County. Some additional detail in the roadway network has been added where appropriate within Marin County. The MTM includes representations of these major roadway gateways into and out of Marin County:

- Highway 101 – (Golden Gate Bridge) San Francisco
- Interstate 580 – (Richmond/San Rafael Bridge) Contra Costa County
- Highway 37 – Sonoma County
- Highway 101 – Sonoma County
- Highway 1 – Sonoma County

In addition, ferry connections from Larkspur, Tiburon, and Sausalito to San Francisco are also assumed in the MTM. Finally, the Sonoma-Marin Area Rail Transit (SMART) project is now included in the future year model networks. Because this is a focused model, the East Bay and South Bay highway network are much less detailed than in the MTC model. A skeleton network in these locations significantly reduces run time for the model, and enables the model to be small enough to be operated on desktop computers. The impact of this network reduction is considered negligible to congestion in Marin County.

6.5.2.5 AUTO OWNERSHIP ASSUMPTIONS

Requirement: *Use MTC auto-ownership models or forecasts, or submits alternative models to MTC for review and comment.* The MTM uses MTC and ABAG information on auto ownership to establish mode split.

6.5.2.6 TRIP GENERATION

Requirement: *Use the BAYCAST person trip generation models for home-based work and non-work, and non-home based trips, or submit alternative models to MTC for review and comment. Results may be adjusted sub-regionally through calibration or modal constant adjustments.* The MTM uses household size and income quartile cross-classification modeling. The MTM then revises the results using adjustment factors designed to replicate actual MTC trip generation patterns between counties into the model. In this way, aggregate trip generation by county is also consistent with the MTC model. The difference in trip productions or attractions (by type of trip) between the MTM and MTC model is never greater than one percent.

6.5.2.7 TRIP DISTRIBUTION

Requirement: *Work trip distribution models must be calibrated to the 2000 Census Journey-to-Work commuter matrices. Trip distribution results must be balanced to productions, and attraction-balancing problems should be discussed with MTC.* The MTM uses MTC trip distribution patterns between counties. In this way, aggregate trip distribution by county is completely consistent with the MTC model. With this technique, the MTM has achieved a closer trip distribution match with the MTC model than is normally expected with a focused model structure. The difference between the two models is less than one percent for all interpolated county-to-county trips projected for the 2009 and 2035 model years.

6.5.2.8 MODE CHOICE

Requirement: *If a logit mode choice model is to be used, MTC's BAYCAST should be used, or submit alternative methodology for MTC review.* The MTM mode choice analysis is consistent with MTC methodology. For home-based work trips, the MTM contains a Home-Based Work Mode Choice Model that predicts work trips, dividing them into drive alone, 2-person, 3+ person and transit trips. Non-work trips are assigned to auto and transit with auto occupancies inputted at this stage.

6.5.2.9 TRAFFIC ASSIGNMENT

Requirement: *Use capacity restraint assignment for peak-hour (or period) traffic assignments, or submit alternative methodology for MTC review.* The MTM provides A.M. peak, P.M. peak, non-peak, Average Daily Traffic, traffic and transit assignments similar to MTC's methodology, with the same A.M. and P.M. time-of-day properties the MTC uses.

6.6 Relationship to the Capital Improvement Program

The 2035 model run for the MTM includes all relevant projects listed in the State Transportation Improvement Program. These projects are incorporated into the 2035 base network in the MTM.

The MTM is used for assessing the impacts of capital improvements. CMP statutes stipulate three criteria for projects selected for the Capital Improvement Program (CIP):

- **Projects must maintain or improve the traffic level-of-service and transit performance standards,**
- **Project land-use impacts must be mitigated, and**
- **Projects must conform to vehicle emissions and air quality mitigation measures.**

Toward that end, the model results are typically used in evaluating relevant projects in the CIP chapter (Chapter 7), in preparing a project list for Regional Transportation Improvement Program consideration and for development and programming of any supplementary sources of revenue.

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7.0 CAPITAL IMPROVEMENT PROGRAM (CIP)

7.1 Purpose and Intent of Legislation

California Government Code section 65089(b)(5) requires that a CMP contain a seven-year Capital Improvement Program (CIP) to maintain or improve the performance of the multimodal system for the movement of people and goods and to mitigate regional transportation impacts identified through the Land-Use Analysis Program. Capital improvement projects must conform to transportation-related vehicle emissions and air quality mitigation measures. These transportation control measures (TCMs) are contained in the *Bay Area 2010 Clean Air Plan*.

7.2 Relationship to the Regional Transportation Plan (RTP)

The CMP is substantially recognized into the Metropolitan Transportation Commission's Regional Transportation Plan (RTP). The current RTP, *Transportation 2035: Change in Motion*, was adopted in April, 2009. The plan's action elements and projects for this CIP should be consistent with the assumptions, goals, policies, actions and projects identified in the RTP. The RTP is the basic statement of transportation policy expressed by MTC. Because of the interdependence of transportation planning and land-use planning, a major effort was made by MTC to adopt policies that complement and support programs of federal, state, and regional agencies.

7.3 Relationship to the Regional Transportation Improvement Program (RTIP)

The CIP is the basis for determining which projects are included in the Regional Transportation Improvement Program (RTIP). Inclusion of a project in the RTIP is the first step in obtaining a funding commitment from the State. Projects that MTC includes in the RTIP are then recommended to the California Transportation Commission (CTC) for inclusion in the State Transportation Improvement Program (STIP). If the CTC includes a project in the STIP, it has approved the project for the necessary environmental studies and project design, which ultimately lead to a final decision on whether or not to build the project.

Projects that are to be included in the RTIP must be first included in the County's CIP. However, it is important to note that MTC is responsible for assembling the RTIP and that the RTIP is a funding-constrained document. This CIP is developed with information from the current RTIP, which was adopted in October 2010. The dynamic nature of funding requires minor amendments to the plan several times a year, as recently as May 2011.

7.4 Relationship to Air Quality Attainment Plans

The CIP projects must show consistency to air quality attainment plans. The *Bay Area 2010 Clean Air Plan* is the current adopted plan. A variety of TCMs have been adopted as a part of this plan. MTC gives priority to the proposed projects that support or help implement any of the TCMs (see TDM

Chapter 4 for more discussion on TCMs). Examples of such projects include high occupancy vehicle (HOV) lanes and ramp meter bypass lanes for HOVs.

7.5 Project Funding Identified In Transportation Authority of Marin Strategic Plan

The passage of Measure A in 2004 has resulted in the development of a Strategic Plan for Measure A Program. This plan is routinely updated to reflect current agency strategies. As many projects are also funded partially through Measure A revenues, the relationship of the CIP to this Strategic Plan is important.

The Strategic Plan discusses strategies in four areas. Each area and strategies that involve capital improvements are discussed below:

Strategy 1: Develop a seamless local bus transit system that improves mobility and serves community needs including special transit for seniors and the disabled (paratransit services). This strategy includes transit capital investments.

Strategy 2: Fully fund and ensure the accelerated completion of the Highway 101 Carpool Lane Gap Closure Project through San Rafael. This strategy is a capital improvement project currently is effectively completed at this time.

Strategy 3: Maintain, improve and manage Marin County's local transportation infrastructure, including roads, bikeways, sidewalks, and pathways. This category includes capital improvements for local and regional streets, roads and paths.

Strategy 4: Reduce school-related congestion and provide safer access to schools. This category includes capital projects related to safe routes and safe pathways to schools.

The Strategic Plan includes proposed allocations for each of the various categories through Fiscal Year 2024/2025. Within this plan of revenues and expenditures, key capital projects between 2010 and 2018 have been identified and are summarized in Table 17.

TABLE 17. MEASURE A STRATEGIC PLAN CAPITAL PROJECTS

Strategy	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18
Strategy 1: Local Bus Transit System (Facilities portion only)								
Bus Transit Facilities	\$1,445,338	\$1,357,318	\$1,811,872	\$1,110,021	\$1,141,583	\$1,173,933	\$1,207,092	\$1,241,080
Strategy 2: Highway 101 Gap Closure (Remaining Projects)								
Bus Stop Improvements	\$82,600	TE Swap						
County of Marin HIP		\$484,000	(TLC Swap)					
Un-programmed		\$484,000	(TLC Swap)					
Strategy 3: Local Transportation Infrastructure (Planning Area Allocations)								
Novato Boulevard	\$182,000		\$622,000	\$2,100,000	\$3,248,000			
Other Central Marin Projects				\$250,000	\$500,000		\$3,000,000	\$3,000,000
Miller Avenue Mill Valley		\$300,000	\$2,000,000	\$3,250,000				
E. Blithedale Avenue					\$470,000		\$1,000,000	\$1,000,000
Sir Francis Drake					\$800,000	\$3,100,000	\$3,100,000	\$3,500,000
Sir Francis Drake – Taylor Platform Bridge	\$800,000	\$2,000,000	\$3,035,676					
Local Roads and Streets	\$2,188,000	\$2,254,459	\$2,320,799	\$2,388,797	\$2,458,495	\$2,529,935	\$2,603,162	\$2,678,219
Strategy 4: School Related Congestion and Safer Routes to Schools (Capital Portion Only)								
Safe Routes to Schools	\$618,204	\$505,000	\$375,000	\$575,000	\$590,000	\$590,000	\$600,000	\$610,000
Capital Funds for Safe Pathways	\$1,215,780 ¹	\$532,482	\$550,005	\$567,007	\$75,000	\$1,117,587	\$75,000	\$1,194,010

Source: Transportation Authority of Marin, Strategic Plan, June 2011

¹\$424,253 Allocated to Green Ways Project

7.6 Marin-Sonoma Narrows Project and Funding

The Marin-Sonoma Narrows (MSN) on US Highway 101 is a nationally and regionally significant highway linking the San Francisco Bay Area and Oregon and is the only continuous north/south route through Marin County. The State designated the Narrows as an Inter-Regional Route of Significance, and Highway 101 is listed as a Focus Route in California's 1998 Interregional Transportation Strategic Plan. As a result of these designations the MSN Project has received state discretionary funding on four separate occasions.

The existing segment (Segment 3G) of US 101 through the Narrows has two lanes in each direction, has sections that do not meet current freeway standards and consistently maintains a poor level of service in many sections. The MSN Project will widen approximately 17 miles of US101 from four to six lanes by adding one high-occupancy vehicle (HOV) lane in each direction; create a controlled access freeway section through the historic "Narrows", and upgrading the highway generally to current freeway standards from Route 37 in Novato to Old Redwood Highway in Petaluma.

Project funding was awarded in prior years. In May 2008, the California Transportation Commission awarded \$66.04 million in Inter-regional Transportation Improvement Program (ITIP) funding to the project. This increases available funding to nearly \$280 million out of an estimated \$745 million total project cost for a Phase 1 Project when combined with the \$82.4 million in Proposition 1B Corridor Mobility Improvement Account (CMIA) funds, \$52 Million in STIP funds, and previously committed federal, state, and regional funding.

TAM, the Sonoma County Transportation Authority (SCTA), and Caltrans have developed four individual projects which make up the Phase 1 Project. Three Marin County projects are:

- **HOV Lanes in Novato.** HOV lanes will be added through median widening. This includes NB HOV lanes from Highway 37 to north of Atherton Boulevard and SB HOV lanes from Highway 37 to Rowland Boulevard. Construction started on a portion of this segment in June 2010.
- **Southerly Interchange.** A new interchange, adding on to the existing Redwood Landfill overcrossing, and supporting frontage roads will be built to serve San Antonio Road, enabling the closure of uncontrolled access points.
- **San Antonio Curve Correction.** The mainline highway curve across the Marin/Sonoma county line at San Antonio Creek will be reconstructed to lower the existing highway grade just north of the creek in order to improve sight distances. A new US101 bridge over San Antonio Creek is included. The highway will be raised upward to prevent future freeway closures due to periodic flooding.

A final early project is the construction a new interchange and supporting frontage roads to serve Petaluma Boulevard South and closes uncontrolled access points. This project is being combined with a project to reconstruct the Petaluma River Bridge, widening for high-occupancy vehicle lanes.

A continuous bike route is planned through all four projects by utilizing a combination of class I and II bike lanes.

7.7 Recent Project Funding Identified by California Transportation Commission Programs

The California Transportation Commission manages several funding programs, including the State Transportation Improvement Program (STIP), funds from Propositions 1B and 116, and the State Highway Operations and Protection Program (SHOPP).

The State Transportation Improvement Program (STIP) lists county allocations for each of California’s counties. This share for Marin includes both general program and specific project amounts. The last adopted California Transportation Commission allocations for Marin County projects are shown in Table 18. The bicycle and pedestrian projects are funded primarily from Transportation Enhancement (TE) funds, which are included in the STIP. The most recent STIP (adopted in May, 2010) has allocations from Fiscal Year 2010/11 until Fiscal Year 2014/15.

TABLE 18. STATE TRANSPORTATION IMPROVEMENT PROGRAM PROJECTS

Project Title	Project Description	Program Amount	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
Muir Woods Vehicle	For Transit Shuttle Service	\$400,000	\$400,000				
Bus Stop Improvements	Improvements throughout County on US 101	\$900,000		\$245,000	\$655,000		
Larkspur Improvements	Citywide Landscaping; Heatherwood/ Meadowwood Path Extension	\$200,000					
Sir Francis Drake Bicycle Lane	Class II Facility	\$92,000					
Sycamore Avenue Improvements	Bicycle and Pedestrian Improvements	\$282,000					

Source: Metropolitan Transportation Commission Resolution 3938; California Transportation Commission, 2011

Marin County was originally a recipient of funds through the adoption of Proposition 1B in 2006. This proposition created the Corridor Mobility Improvement Account (CMIA). In the original 2007 adopted program, CMIA funds were key funding sources to help complete three major projects in Marin County:

- The widening of westbound Interstate 580 westbound to northbound US 101 connector in San Rafael was completed in 2010. The completion eased congestion for traffic traveling from the East Bay over the Richmond-San Rafael Bridge.



- The construction of HOV lanes within Novato (part of the Marin-Sonoma Narrows project) has received CMIA funds, and a major portion of the widening is now under construction.
- The construction of interchanges and a portion of the HOV lanes between Novato and Petaluma (also part of the Marin-Sonoma Narrows project) is scheduled to receive CMIA funding in 2012.

The State Highway Operations and Protection Program (SHOPP) lists nine projects in Marin County in the most recent project list, developed in 2010. Currently, Highway 101 is being repaved from North San Pedro Road to SR 37. A second major Highway 101 rehabilitation project is scheduled to start late in 2011, repaving from the Golden Gate Bridge to Lucky Drive. Additional projects to address storm damage to roadways. These are shown in Table 19.

TABLE 19. STATE HIGHWAY OPERATIONS AND PROTECTION PROGRAM (SHOPP) PROJECTS

Route and Location	Description	Amount	Project Year
SR 1: Near Stinson Beach, north of Dipsea Trail	Construct tie-back wall	\$3,140,000	2010/11
SR 37: Near Novato, at Novato Creek Bridge	Reconstruct levee	\$2,308,000	2010/11
SR 1: Near Stinson Beach at Webb Creek	Construct retaining wall and install rock slop protection	\$1,628,000	2011/12
SR 1: Near Point Reyes Station, at Petaluma Road	Reconstruct slope with embankment confinement system	\$1,523,000	2011/12
SR 1: Near Muir Beach, north of Seascape Drive	Construct tie-back wall	\$9,450,000	2011/12
US 101: Near Corte Madera at Tamalpais Drive	Replace existing fill with geotextile fabric	\$3,086,000	2011/12
SR 1: Near Marshall, south of Marshall Petaluma Road	Replace culvert and install rock slope protection	\$2,827,000	2012/13
SR 1: Near Muir Beach, north of Cold Stream Fire Road	Construct tie-back wall	\$8,400,000	2012/13
SR 1: Near Muir Beach, at Cold Stream Road	Construct tie-back wall	\$2,389,000	2012/13

Source: California Transportation Commission, 2011

7.8 Recent Project Funding Identified in Regional Transportation Improvement Program (RTIP)

Other transportation projects are also ongoing in Marin County. Many have been recognized in the *Regional Transportation Improvement Program (RTIP)*, prepared by MTC in October 2010 with subsequent minor amendments. The listing of TIP projects are shown in Table 20, Local Project Funding. In addition to these identified funding programs, additional capital transportation investments are made from time to time. These often involve funding from local sources (such as development fees or development agreements) or from specialized funding made available but not incorporated in multi-year funding documents.

TABLE 20. REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM PROJECTS

Project	Funding Sources	Amount 2010 to 2015
US 101 Mission Bell Installation	IIP	\$241,000
US 101 Bus Pad Improvements	RIP	\$900,000
Green Rancheria Heritage Management Project	IIP, Other	\$1,868,000
Larkspur Doherty Drive Bridge Replacement	HBP, Local	\$2,381,000
Marin Parklands Visitor Access Improvements (Pacific Way Bridge construction, wetlands restoration)	Federal Lands	\$3,410,000
Southern Marin Road Rehabilitation	STP, Local	\$1,354,000
Mill Valley – Miller Avenue Rehabilitation	BTA, Local, TDA, XGEN	\$3,400,000
Bonita Point Lighthouse Bridge	Federal Lands	\$160,000
Novato Boulevard Improvements, Diablo to Grant	Local, XTRAN	\$11,898,000
Marin Roads of Countywide Significance Rehab	Local, XGEN, RTP	\$30,000,000
Fairfax – Non-motorized Transp. Pilot Prog. (remaining)	Earmark	\$68,000
Larkspur Landscaping Project	RIP	\$200,000
Northern Marin County Bicycle Guide Signing	XGEN	\$108,000
Marin County – Non-motorized Transp. Pilot Program (remaining) part 1	Earmark	\$5,366,000
Marin County – Non-motorized Transp. Pilot Program part 2	Earmark	\$6,622,000
Sir Francis Drake Blvd Westbound Bicycle Lane	TFCA, RIP	\$461,000
Mill Valley Sycamore Avenue Improvements	XGEN, RIP	\$411,000
Novato – Non-motorized Transp. Pilot Program	Earmark	\$1,700,000
San Rafael – Non-motorized Transp. Pilot Program (remaining)	Earmark	\$740,000
Sausalito – Non-motorized Transp. Pilot Program (remaining)	Earmark	\$484,000
Central Marin Ferry Access Improvements	Bridge Toll, CMAQ	\$9,770,000
Marin Bike/Ped Facility North of Atherton Ave	Earmark, Local	\$610,000
Golden Gate Transit Preventative Maintenance Program	STP	\$5,000,000
ACIS Radio Communications System for GGT Buses	Local	\$288,000
Fixed Guideway Connectors Ferry Terminal Rehab/Repair	Transit 5307,5309, Local	\$2,863,000
Golden Gate Transit Express Bus Replacement	Bridge Tolls	\$1,600,000
Refurbish MS San Francisco Ferry Vessel	Transit 5307, 5309, Local	\$13,455,000
San Rafael Transit Center Improvements	Earmark	\$100,000
Golden Gate Transit Bicycle Racks/Signage	Earmark	\$123,000
Ferry Major Components Propulsion Replacement	Transit 5307, 5309, Local,	\$4,575,000
ADA Paratransit Assistance	Transit 5307, Local	\$1,537,000
Golden Gate Transit MCI Bus Replacement	5307, Local	\$19,081,000
Golden Gate Transit Paratransit Vehicle Replacement	5307, Local	\$557,000
Ferry Channel and Berth Dredging	Transit 5307, 5309, Local	\$2,500,000
Marin County Transit Priority Measures	RTP, Local	\$25,300,000
Sonoma Marin Area Rail Transit (SMART)	Bridge Tolls, Proposition 116, TCRP, 5309, Sales Tax, Earmark	\$386,018,000
Marin County – Miller Creek Bicycle and Pedestrian Improvements	STIP-TE	\$407,000

Source: 2010 Metropolitan Transportation Commission Regional Transportation Improvement Program, October 2010



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8.0 MONITORING, DEFICIENCY PLANS, AND CONFORMANCE

7.9 Purpose and Intent of Legislation

California Government Code sections 65089.3, 65089.4, and 65089.5 govern the conformance process. These sections require that, based on information obtained through monitoring, TAM must biennially determine whether Marin County and its cities and towns conform to the requirements of the CMP. If an agency believes that a local government is not conforming to CMP requirements, it must then hold a noticed public hearing to determine areas of nonconformance. If after the public hearing TAM still believes that the local government is not conforming to CMP requirements, it must provide written notice to the local government citing the specific instances of nonconformance. The local government then has 90 days to remedy the instances of nonconformance. If after 90 days the local government has not remedied the nonconformance instances, TAM makes a finding of nonconformance and notifies the State Controller to withhold certain gas tax subvention funds.

7.10 Local Government Conformance Requirements

The CMP legislation makes the following requirements of a conformance determination for local jurisdictions:

- Maintaining the highway LOS standards outlined in the CMP (Chapter 2).
- Participating in adoption and implementation of a deficiency plan when highway and roadway LOS standards are not maintained on portions of the designated system.
- Participating in a program to analyze the impact of land use decisions, including the estimate of the costs associated with mitigating these impacts. Specific requirements and recommendations are outlined in the Land-Use Analysis Program element of the CMP (Chapter 5).

If either Marin County or cities and towns in the county do not meet each of these CMP requirements when the TAM is scheduled to make its conformance determination for each jurisdiction (“Jurisdiction” referring to the local government that has the greatest segment distance within its boundaries), the jurisdiction is found in nonconformance and may risk losing an increment in its gasoline tax subvention funds and not having projects programmed in the Regional Transportation Improvement Program (RTIP).

7.11 Local Government Monitoring Requirements

TAM must take active steps to ensure that Marin County and each city and town in Marin County at least biennially conforms to each requirement of the CMP legislation. Monitoring must be done for several reasons:

- Congestion is projected to increase, which will waste valuable time and add to transportation costs of goods and services.
- Congestion causes energy to be wasted and contributes to worsening of air quality.
- Coordinated growth management and transportation planning is essential to minimizing both travel time and costs.

The CMP legislation specifies that jurisdictions that do not demonstrate that they conform to the requirements are to lose street and highway subvention money. Many jurisdictions use this money for maintenance of existing streets and roads so that their transportation infrastructure does not go neglected.

Outlined below are the major actions that may be required by each jurisdiction in order to conform to the CMP. Currently, TAM performs all required LOS monitoring.

7.11.1 Maintaining the Highway Level-of-Service Standards

TAM biennially monitors level of service on segments of CMP designated routes within Marin County and its jurisdictions. Where a segment falls within two or more jurisdictions, the jurisdiction responsible for the segment is the jurisdiction with the greatest segment mileage. The monitoring program occurs during the P.M. peak period (4:00 P.M. to 6:00 P.M.). The traffic counts also should be taken in the spring (April or May), with counts at fall periods acceptable when needed (September or October). Consistent with this, the 2009 CMP update includes counts done in October and December 2010. The LOS is to be based on the counts consistent with the methods for determining LOS outlined in the highway LOS standards (Chapter 2).

Transportation improvements or changed economic conditions may result in changes in LOS. If the LOS is determined to be A, B, or C for any year that is monitored, the monitoring frequency could be reduced to every other CMP (four years), until such time as the segment is found to operate at LOS D or worse. Any segment determined to operate at LOS D should then be monitored for each CMP. Certain facilities that currently operate at LOS F do not have to be improved because they are grandfathered, but their conditions should be monitored with each CMP.

7.11.2 Participating in Any Required Deficiency Plans

Where facilities experience congestion above the highway LOS standard established in Chapter 2, the congestion should be monitored annually until the congestion eases. If the LOS is exceeded for two CMP cycles, the roadway becomes considered potentially deficient; a determination to see if a Deficiency Plan is required once the exempted trips allowed in state legislation are assumed to not exist.

If a segment that has not been grandfathered is determined by TAM to not meet the adopted LOS standards (D for principal arterial roadways; E for freeways), then that jurisdiction must:

- Immediately propose and designate funds for measures that improve the LOS to meet or be better than the adopted LOS standard which TAM would then incorporate into the CIP, or

- Create a “deficiency plan” in accordance with CMP requirements. A deficiency plan requires the local government to:
 1. Analyze the cause of the deficiency **AND** define improvements to the facility that maintain the LOS standard, **OR**
 2. Define improvements that have a measurable improvement on the transportation system’s LOS or substantial air quality benefit **AND** determine the cost of the improvements.

Guidelines governing specific issues related to Deficiency Plan preparation are provided on the TAM website. No deficiency plans will be required by this CMP. For all deficient facilities (including ones that are grandfathered), TAM and its partnering agencies should develop an “operational plan” to minimize congestion these facilities. Operational plans are envisioned as a description of capital projects, multi-modal programs, and/or roadway management techniques that a local jurisdiction intends to advocate for implementation by that jurisdiction or others (e.g., Caltrans for state facilities).

All of Marin County’s cities and towns, along with the County, are in conformance at this time.

7.11.3 Maintaining a Program to Analyze the Impact of Land Use Decisions

Land use impact analysis monitoring requirements are detailed in the Land Use Analysis Program (Chapter 5). There are two general requirements:

- For any general plan update or amendment or major development proposal that would result in a net increase of 100 or more P.M. peak- hour vehicle trips, local governments are to forward information on the application to TAM and run the MTM to obtain transportation impact information related to the application. The jurisdiction is responsible for conducting the model run if requested by TAM, which could be performed: (1) by the jurisdiction, (2) by a consultant hired by the jurisdiction, or (3) by TAM (only if staff is available to do the work). The jurisdiction requesting the model run reimburses the County for the cost of the model run. Model results are useful to cities and the County as part of their current review and approval process, especially for purposes of defining the necessary mitigation measures.
- Each jurisdiction is to be responsible for preparing and transmitting land-use data to TAM for use in the Marin Travel Model, as well as tracking the build-out of that land-use through issuance of planning and building permits. This requirement ties in with the existing property development (“PROPDEV”) database that local governments are already using, as well as the County Community Development Agency’s Countywide Land-Use Database. TAM biennially runs the Marin Travel Model for updating future year LOS information in the CMP. Local governments can find this information useful when updating the land-use and circulation elements of their general plans.

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In the next two years, a more formalized compliance process is likely to be developed. Failure to participate in this new process may result in a finding of non-compliance for a local jurisdiction.