Memorandum

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DATE:	October 3, 2013
SUBJECT:	Draft 2013 Congestion Management Program
RECOMMENDATION:	Approve Draft 2013 Congestion Management Program

Summary

As required by state Congestion Management Program (CMP) legislation, Alameda CTC biennially develops and updates a Congestion Management Program for Alameda County to monitor the performance of the County's roadway transportation system, assess the performance of the county's transportation system, develop strategies to address congestion and improve the performance of a multi-modal system, and strengthen the integration of transportation and land use planning. The CMP is required to incorporate five key elements: a designated CMP roadway network, level of service monitoring, multimodal performance element, land use analysis program, and capital improvement program. Since April 2013, Alameda CTC has performed a comprehensive review of the Alameda County's CMP, conducted a multi-modal performance review, evaluated strategies for reducing congestion, evaluated local jurisdiction conformity with the CMP, and incorporated the actions and recommendations previously approved by the Commission during the adoption of the 2011 CMP into the updated document. 2011 CMP identified about ten specific recommendations and needed follow-up actions to enhance the CMP in addition to required updates to the CMP elements. This update reflects implementation of those actions in addition to completing the required updates to the CMP elements.

The attached draft executive summary (Attachment A) of the 2013 CMP highlights the key features, related issues, recommendations, and outcomes for each CMP element as a result of this 2013 update. The complete draft CMP document is available on the Congestion Management Program page of the Alameda CTC website. Upon adoption of the 2013 CMP by the Commission, it will be submitted to MTC by the November 11, 2013 deadline to meet the MTC requirement for CMP Conformity and for inclusion of the proposed Alameda County 2014 STIP projects, as defined in the CMP CIP, and as adopted by the Commission, into the 2014 Regional Transportation Improvement Program for adoption into the State Transportation Improvement Program.

Background

As the Congestion Management Agency for Alameda County, Alameda CTC is required to be in conformance with the state CMP legislation and to update the CMP every two years, including developing, adopting and updating the following CMP elements:

- Roadway Monitoring: Monitor congestion levels against the LOS standards established for the County's designated CMP roadway system. If roadway LOS standards are not maintained in the CMP roadway system, a deficiency plan is required that defines how improvements will be implemented to bring the LOS to an acceptable standard.
- Multimodal Performance Measures: Evaluate the region's multimodal transportation system against adopted performance measures.
- Transportation Demand Management: Promote alternative transportation strategies with a transportation demand management (TDM) element
- Land Use Impact Analysis: Analyze the effects of local land use decisions on the regional transportation system.
- Capital Improvement Program: Prepare a capital improvement program that maintains or improves the performance of the transportation system.

The 2013 CMP update incorporates the actions identified as next steps in the 2011 CMP and more closely aligns the CMP with the 2012 Countywide Transportation Plan (CWTP) and Plan Bay Area (the Bay Area Regional Transportation Plan and Sustainable Communities Strategy), and other related efforts and legislative requirements (e.g., Assembly Bill 32 and Senate Bill 375) to better integrate transportation and land use for achieving greenhouse gas reductions. Since April 2013, Alameda CTC has undertaken a comprehensive review of Alameda County's CMP. The following table provides a summary of the technical review, evaluation, and findings within each CMP chapter and highlights the recommended changes adopted by the Commission for the 2011 CMP for inclusion in the 2013 update.

Chapter	Technical Review, Evaluation, and Findings	Recommended Changes
2, Designated CMP Roadway Network	Reviewed the designated CMP roadway network for potential additions as required by legislation. No new roadways were proposed by the jurisdictions.	No change
3, Level of Service Standards	The State law recommended Highway Capacity Manual (HCM) defines methods for monitoring roadway and other transportation modes levels of service. In 2010, the HCM was updated to include alternative level of service monitoring. As directed by the Commission in the 2011 CMP adoption, Alameda CTC assessed the	

Chapter	Technical Review, Evaluation, and Findings	Recommended Changes
3, Level of Service Standards (continued)	use of the most recent HCM (HCM2010) compared to current use of HCM1985 to monitor LOS for auto and other modes. • Evaluation results for auto LOS showed that the HCM2010 methodology's shift from measuring speed to measuring density to assign auto LOS would result in the loss of Alameda CTC's ability to track network performance trends and conformity, particularly for the Tier 1 network that is subject to conformity. For Tier 2 arterials that are not subject to conformity, both the 1985 and 2000 HCMs can be applied in 2014 when the next LOS monitoring is performed. • Evaluation results for alternative modes LOS showed that HCM2010 Multi Modal LOS (MMLOS) is not well-designed for annual monitoring application, as it is very data-intensive.	• Continue to use speed-based HCM1985 for auto LOS monitoring for Tier 1 network. Apply both 2000 and 1985 HCMs to Tier 2 network as appropriate and reevaluate expanded HCM use in the 2015 CMP update. • Use countywide modal studies to identify countywide facilities and metrics for monitoring alternative modes, and incorporate these in the 2015 CMP for future LOS monitoring efforts.
4, Multimodal Performance Element	Updated performance report to continue tracking the performance of the CMP network by mode and incorporate Plan Bay Area goals.	Identified the need for a comprehensive review and alignment of performance measures from all Alameda CTC planning efforts for use in programming and transportation investment decisions.
5, Travel Demand Management Element	Updated the 2013 CMP based on the Countywide Comprehensive Transportation Demand Management (TDM) Strategy adopted by the Commission in May 2013.	No change
6, Land Use Analysis Program 6, Land Use Analysis	Comprehensively reviewed and reorganized the Land Use Analysis Program to better document the various related efforts of the agency and incorporate Plan Bay Area goals. • Reviewed the application of HCM2010 to assess impact of auto and other modes. For auto impact analysis of the land use analysis program, using HCM2010 data to perform the impact analysis was found to be consistent with the current data requirements; therefore, use of HCM2010 is encouraged per regional direction, but flexibility to use HCM2000 is permitted where consistency is needed by local jurisdictions. Evaluation results for LOS monitoring of alternative modes impact analysis showed that HCM2010 MMLOS is suitable to identify multimodal trade-offs in mitigation	• Incorporate the Alameda County Priority Development Area Investment and Growth Strategy recommendations adopted by the Commission March 2013 • Encourage use of HCM2010 to study auto impacts on roadways but provide flexibility to conform to local requirements as needed. • Encourage study of multimodal tradeoffs of mitigation measures proposed in environmental documents, including use of HCM2010 MMLOS to perform the analysis. • Include recommendations for the types of impacts to be analyzed for alternative modes in Alameda CTC's standard response for environmental review. • Develop a database of countywide land use approvals and track local

Chapter	Technical Review, Evaluation, and Findings	Recommended Changes
Program (continued)	measures, and use of HCM2010 is encouraged. • Implemented development of land use database based on development approvals information from the local jurisdictions. • Identified alternative trip generation methodologies to support infill development projects. • Updated subarea model guidelines consistent with MTC's updated regional model consistency requirements.	jurisdiction Housing Element progress. This is a new requirement for local jurisdictions to submit information on development approvals that occurred in the prior fiscal year for developing a countywide land use approvals database, and provide a copy of the most recent Housing Element Annual Progress Report submitted to the State Department of Housing and Community Development, starting 2014. See recommended changes under Chapter 9, Program Conformance and Monitoring. • Incorporate identified alternative trip generation methodologies for use in Traffic Impact Analysis. • Implement updated subarea model guidelines.
7, Database and Travel Demand Model	Included information that the countywide model is currently in the process of being updated.	No change
8, Capital Improvement Program	• Updated the 2013 CMP to include new State Transportation Improvement Program (STIP) projects, other capital improvement projects planned to improve the CMP transportation network for the next seven years, and new funding sources. • Identified the development of the Strategic Plan including a comprehensive Capital Improvement Program and Program Investment Plan (CIP/PIP).	• Incorporate 2014 STIP. • Incorporate updated Capital Improvement Program projects for fiscal years 2013-2014 to 2019-2020). • Develop CIP/PIP as next steps.
9, Program Conformance and Monitoring	Identified two new requirements through the Land Use Analysis Program to track land developments and to identify how well transportation investments are coordinated with the land use to support monitoring the implementation of SB375 in Alameda County	Local jurisdictions will submit to Alameda CTC as part of the Annual Conformity Findings process: • Information on development approvals that occurred in the prior fiscal year, starting 2014; and • A copy of the most recent Housing Element Annual Progress Report submitted to the State Department of Housing and Community Development.
10, Deficiency Plans	• Updated deficiency plan guidelines to incorporate procedures for developing areawide deficiency plans to improve	• Follow updated deficiency plan guidelines for developing areawide deficiency plans when appropriate.

Chapter	Technical Review, Evaluation, and Findings	Recommended Changes
	performance of multimodal transportation infrastructure over a larger area when localized improvements are not practical or workable. • Updated Conflict Resolution process for multijurisdictional deficiency plans.	• Follow updated conflict resolution process.

In addition to the changes in the table, the updated draft 2013 CMP incorporates the 2012 Annual Performance Report as a new appendix.

Upon adoption of the 2013 CMP by the Commission, Alameda CTC will submit it to MTC by the November 11, 2013 deadline to meet the MTC CMP Conformity requirements and for inclusion of the proposed Alameda County 2014 STIP projects into the 2014 Regional Transportation Improvement Program for adoption into the STIP.

Fiscal Impact: There is no fiscal impact for this item.

Attachments

A. Draft 2013 Congestion Management Program – Executive Summary

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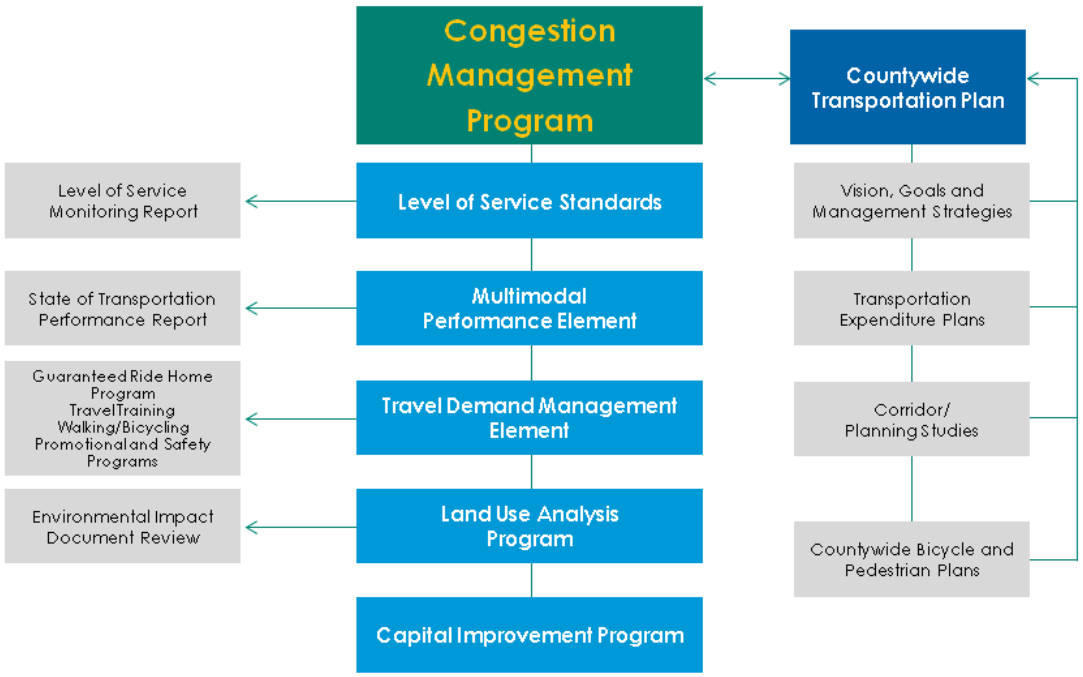
Executive Summary

California law requires urban areas to develop and biennially update a "congestion management program," or CMP—a plan that describes the strategies to assess and monitor the performance of the County's multi-modal transportation system, address congestion and improve the performance of a multi-modal system, and strengthen the integration of transportation and land use planning. In Alameda County, the Alameda County Transportation Commission (Alameda CTC) as the Congestion Management Agency (CMA) for Alameda County prepares the CMP. Alameda CTC works cooperatively with the Metropolitan Transportation Commission (MTC), transit agencies, local governments, the California Department of Transportation (Caltrans), and the Bay Area Air Quality Management District (BAAQMD) to manage and update the CMP. The CMP for Alameda County incorporates various strategies and measures to improve congestion management on the Alameda County multi-modal transportation system. The CMP is required to incorporate five key elements: designated CMP roadway network, level of service monitoring, multimodal performance element, land use analysis program, and capital improvement program. The CMP also acts as a short-range plan to implement the long-range Countywide Transportation Plan.

Figure ES1—CMP and Five Main Elements



The CMP law places considerable authority with the CMAs for the CMP. Appendix A contains the full text of the pertinent sections of state law. For example, these agencies are required to oversee how local governments meet the requirements of the CMP. The legislation also forges a new relationship between local governments and the California Department of Transportation (Caltrans) by requiring new highway projects in urban areas to be included in a CMP if they will be part of the State Transportation Improvement Program (STIP). This means that funding of highway projects is, in part, controlled by local government in the form of the CMAs. With this authority comes the responsibility to recognize federal and state funding limitations and to work with Caltrans and MTC to formulate cost-effective projects.

The CMP is designed to meet legal requirements and address the challenges in doing so. Furthermore, Alameda CTC has developed working relationships with all levels of government as well as the private sector and is prepared to demonstrate that local governmental agencies—working together—can solve regional transportation problems.

The 2013 CMP update incorporates several actions identified as next steps in the 2011 CMP and more closely aligns the CMP with the 2012 Countywide Transportation Plan (CWTP) and the 2013 Regional Transportation Plan and Sustainable Communities Strategy (Plan Bay Area), and other related efforts and legislative requirements (e.g., Assembly Bill 32 and Senate Bill 375) to better integrate transportation and land use for achieving greenhouse gas reductions. Outcomes of the update include a number of actions and recommendations by the Commission highlighted in the Table ES-1, which follows (see details in the relevant chapters of the report).

Table ES1—2013 CMP Update Actions/Recommendation and Policy Changes

Chapter	Technical Review, Evaluation, and Findings	Recommended Changes
2, Designated CMP Roadway Network	Reviewed the designated CMP roadway network for potential additions as required by legislation. No new roadways were proposed by the jurisdictions.	No change
3, Level of Service Standards	Assessed use of the most recent Highway Capacity Manual (HCM2010) to monitor LOS for auto and other modes. • Evaluation results for auto LOS showed that the HCM2010 methodology's shift from measuring speed to measuring density to assign auto LOS would result in the loss of Alameda CTC's ability to track network performance trends and conformity, particularly for the Tier 1 network that is subject to conformity. For Tier 2 arterials not subject to conformity, both the 1985 and 2000 HCMs can be applied in 2014 when the next LOS monitoring is performed. • Evaluation results for LOS monitoring of alternative modes showed that HCM2010 multimodal LOS (MMLOS) is not well-designed for annual monitoring application, as it is very data-intensive.	• Continue to use speed-based HCM1985 for auto LOS monitoring for Tier 1 network. Apply both 2000 and 1985 HCMs to Tier 2 network as appropriate and reevaluate expanded HCM use in the 2015 CMP update. • Use countywide modal studies to identify countywide facilities and metrics for monitoring alternative modes, and incorporate these in the 2015 CMP for future LOS monitoring efforts.
4, Multimodal Performance Element	Updated performance report to continue tracking the performance of the CMP network by mode and incorporate Plan Bay Area goals.	Identified the need for a comprehensive review and alignment of performance measures from all Alameda CTC planning efforts for use in programming and transportation investment decisions.
5, Travel Demand Management Element	Updated the 2013 CMP based on the Countywide Comprehensive Transportation Demand Management (TDM) Strategy adopted by the Commission in May 2013.	No change
6, Land Use Analysis Program	Comprehensively reviewed and reorganized the Land Use Analysis Program to better document the various related efforts of the agency and incorporate Plan Bay Area goals. • Reviewed the application of HCM2010 to assess impact of auto and other modes. For auto impact analysis in the land use analysis program, using HCM2010 data to perform the impact analysis was found to be consistent with the current data requirements; therefore, use of HCM2010 is encouraged per regional direction, but flexibility to use HCM2000 is permitted where consistency is needed by local jurisdictions. Evaluation results for LOS monitoring of alternative modes showed that HCM2010 MMLOS is suitable to identify multimodal trade-offs in mitigation measures, and use of	• Incorporate the Alameda County Priority Development Area Investment and Growth Strategy recommendations adopted by the Commission March 2013. • Encourage use of HCM2010 to study auto impacts on roadways but provide flexibility to conform to local requirements as needed. • Encourage study of multimodal tradeoffs of mitigation measures proposed in environmental documents, including use of HCM2010 MMLOS to perform the analysis. • Include recommendations for the types of impacts to be analyzed for alternative modes in Alameda CTC's standard response for environmental review.

Chapter	Technical Review, Evaluation, and Findings	Recommended Changes
	HCM2010 is encouraged. • Implemented development of land use database based on development approvals information from the local jurisdictions. • Identified alternative trip generation methodologies to support infill development projects. • Updated subarea model guidelines consistent with MTC's updated regional model consistency requirements.	• Develop a database of countywide land use approvals and track local jurisdiction Housing Element progress. This is a new requirement for local jurisdictions to submit information on development approvals that occurred in the prior fiscal year for developing a countywide land use approvals database, and provide a copy of the most recent Housing Element Annual Progress Report submitted to the State Department of Housing and Community Development, starting 2014. See recommended changes under Chapter 9, Program Conformance and Monitoring. • Incorporate identified alternative trip generation methodologies for use in Traffic Impact Analysis. • Implement updated subarea model guidelines.
7, Database and Travel Demand Model	Included information that the countywide model is currently in the process of being updated.	No change
8, Capital Improvement Program	• Updated the 2013 CMP to include new State Transportation Improvement Program (STIP) projects, other capital improvement projects planned to improve the CMP transportation network for the next seven years, and new funding sources. • Identified the development of the Strategic Plan including a comprehensive Capital Improvement Program and Program Investment Plan (CIP/PIP).	• Incorporate 2014 STIP. • Incorporate updated Capital Improvement Program projects for FY2013-14 to 2019-20). • Develop CIP/PIP as next steps.
9, Program Conformance and Monitoring	Identified two new requirements through the Land Use Analysis Program to track land developments and to identify how well transportation investments are coordinated with the land use to support monitoring the implementation of SB 375 in Alameda County.	Local jurisdictions will submit to Alameda CTC as part of the Annual Conformity Findings process: • Information on development approvals that occurred in the prior fiscal year, starting 2014; and • A copy of the most recent Housing Element Annual Progress Report submitted to the State Department of Housing and Community Development.
10, Deficiency Plans	• Updated deficiency plan guidelines to incorporate procedures for developing areawide deficiency plans to improve performance of multimodal transportation infrastructure over a larger area when localized improvements are not practical or workable. • Updated Conflict Resolution process for multijurisdictional deficiency plans.	• Follow updated deficiency plan guidelines for developing areawide deficiency plans when appropriate. • Follow updated conflict resolution process.

Following the adoption of the 2013 CMP by Alameda CTC Commission, Alameda CTC will submit the CMP to MTC. As the regional transportation planning agency in the San Francisco Bay Area, MTC is required to evaluate the CMP's consistency with MTC's RTP and with the CMPs of the other counties in the Bay Area. If the Alameda County CMP is found to be consistent with the RTP, MTC will incorporate the projects listed in the CMP's Capital Improvement Program into MTC's Regional Transportation Improvement Program (RTIP).

THE TRANSPORTATION SYSTEM

Alameda CTC must define and identify components of the transportation system that is being monitored and improved. For the purposes of the CMP, two different systems are used: the designated CMP roadway network (Chapter 2, Designated CMP Roadway Network) and the broader Metropolitan Transportation System (MTS). The CMP roadway network is a subset of the MTS. Alameda CTC monitors performance in the CMP roadway network in relation to established level of service (LOS) standards. Alameda CTC also uses the MTS in the Land Use Analysis Program (Chapter 6).

Designated CMP Roadway Network

The designated CMP roadway network was developed in 1991 and includes state highways and principal arterials that meet all minimum criteria (carry 30,000 vehicles per day; have four or more lanes; be a major cross-town connector; and connect at both ends to another CMP route or major activity center). The system of roadways carries at least 70 percent of the vehicle miles traveled countywide and contains 232 miles of roadways. Of this total, 134 miles (58 percent) are interstate freeways, 71 miles (31 percent) are state highways (conventional highways), and 27 miles (11 percent) are city/county arterials.

Recognizing the need to expand the CMP network to reflect the changes in land use patterns over the years, in 2011, the Alameda CTC Commission adopted a two-tier approach for the CMP network in Alameda County. The first tier (Tier 1) is the existing CMP network, and the second tier (Tier 2) consists of roadways identified using a set of adopted criteria. This Tier 2 network forms a supplemental network monitored for informational purposes only and is not used in the conformity findings process. The identified Tier 2 network roadways have a total length of 92 miles. Details are included in Chapter 2, Designated CMP Roadway Network.

No new CMP roadways were proposed by the local jurisdictions during this 2013 update. For the 2015 CMP update, Alameda CTC will review the criteria for inclusion of roadways to the CMP network and will apply the updated criteria to identify potential new CMP routes in the 2017 CMP update.

MTS System

A regionally designated system, MTS includes the entire CMP network, as well as major arterials, transit services, rail, maritime ports, airports, and transfer hubs critical to the region's movement of people and freight. MTS roadways were originally developed in 1991 and updated in 2005 and include roadways

recognized as “regionally significant” and all interstate highways, state routes, and portions of the street and road system operated and maintained by local jurisdictions.

LOS MONITORING

State law requires that level of service (LOS) standards be established to monitor the CMP roadway network’s LOS as part of the CMP process. The legislation leaves the choice of LOS measurement methodology to the CMAs, but mandates that the LOS be measured by the most recent version of the Transportation Research Board’s Highway Capacity Manual (HCM) or a uniform methodology adopted by the CMA, in our case Alameda CTC, that is consistent with the HCM. LOS definitions describe traffic conditions in terms of speed and travel time, volume and capacity, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS is represented by letter designations, ranging from A to F. LOS A represents the best operating conditions, and LOS F represents the worst.

The purpose of these standards is to provide a quantitative tool to analyze the effects of land use changes and to monitor congestion, which is a measure of system performance. Alameda CTC is required to determine how well local governments meet the standards in the CMP, including how well they meet LOS standards. The CMP legislation requires a standard of LOS E for all CMP Tier 1 roadways in Alameda County.

Alameda CTC uses LOS standards as defined in the 1985 Highway Capacity Manual (HCM1985), the nationally accepted guidelines published by the Transportation Research Board, and re-evaluated its applicability in 2005 for roadway LOS monitoring purposes and again in 2013 for roadway and alternative modes purposes. The review conducted in 2013 showed that using the 2000 and 2010 HCM versions for roadway LOS monitoring purposes would result in applying density-based rather than speed-based LOS methodology for freeways and changed speed classifications for arterials, which would hinder the ability to compare past performance trends important for determining conformity with the CMP. Based on this review, Alameda CTC will continue to use the speed-based LOS methodology in the HCM1985 to monitor freeways and existing roadway classifications for arterials for the Tier 1 roadway network, which is subject to the conformity process. For the Tier 2 network, since it has been only monitored for informational purposes since 2012 and is not comparable to any previous performance data, LOS will be reported using the methodologies in both the HCM1985 and HCM2000 in 2014 when the next LOS monitoring will be performed, and future use of appropriate HCM for Tier 2 purposes will be determined in the 2015 CMP update.

The evaluation of HCM2010 for the 2013 CMP update also reviewed its applicability for monitoring service level standards for alternative modes by using multi-modal level of service (MMLOS). It was found that using the 2010 HCM-based MMLOS is data and resource intensive and costly for large-scale applications such as monitoring countywide performance of the alternative modes; therefore, it is not well designed for annual LOS monitoring purposes. Alameda CTC will assess how to best include the performance measurement metrics for monitoring alternative modal performance in the 2015 CMP update, based on the outcomes of the following countywide modal plans—Goods Movement Plan, Multimodal Arterial Corridor Plan, and Transit Plan. A summary of the evaluation and comparison of

using 1985, 2000, and 2010 HCMs for LOS monitoring purposes, including a comparison of approaches adopted by various large CMAs in the Bay Area, is provided as Appendix B.

Alameda CTC conducts a LOS monitoring study every two years. The last study was conducted in spring 2012, and the next one will be in 2014. The 2013 CMP incorporates the results of 2012 LOS monitoring, and Alameda CTC is exploring use of commercially available travel time data for 2014 LOS monitoring.

At present, Alameda CTC is monitoring the designated CMP roadway network by contracting biennially with a consultant to collect speed data. Alameda CTC analyzes the data and prepares the results. If a local government or Caltrans assumes responsibility for monitoring roadways in the CMP network within its jurisdiction, it will be required to do the following: biennially monitor the LOS on the designated system and report to the Alameda CTC by June 15 of each year relative to conformance with the adopted standards (see Chapter 3, Level of Service Monitoring for more information).

MULTIMODAL PERFORMANCE ELEMENT

The CMP must contain performance measures that evaluate how highways and roads function, as well as the frequency, routing, and coordination of transit services. The performance measures should support mobility, air quality, land use, and economic objectives and be used in various components of the CMP. The legislation intends for the performance element to include multimodal performance measures, in addition to the required roadway and transit measures. However, only the roadway LOS standards will be used to trigger the need for a deficiency plan in Alameda County.

Combined with LOS standards, the multimodal performance element provides a basis for evaluating whether the transportation system is achieving the broad mobility and congestion management goals in the CMP. These include developing the Capital Improvement Program, analyzing land use impacts, and preparing deficiency plans to address problems. They help comprehensively evaluate the performance of the countywide multimodal transportation system and include the goals and performance measures adopted for the 2012 CWTP and *Plan Bay Area* (refer to Chapter 4, Multimodal Performance Element for a more comprehensive table listing the performance measures and related goals). The CMP performance measures appear in Table ES2 below.

Table ES2—Multimodal Performance Measures

CMP Performance Measures
Average Highway Speeds
CO_2 Emissions*
Completion of Countywide Bicycle Plan
Completion of Countywide Pedestrian Plan*
Coordination of Transit Service
Duration of Traffic Congestion
Fine Particulate Emissions*
Low-income Households Near Activity Centers*
Low-income Households Near Transit*
Roadway Collisions*

CMP Performance Measures
Roadway Maintenance
Transit Availability
Transit Capital Needs and Shortfall
Transit Frequency
Transit Ridership
Transit Routing
Transit Vehicle Maintenance
Travel Time*
Trips by Alternative Modes*

*Denotes new or expanded existing performance measure resulting from integrating the measures from the 2012 CWTP. Extent of data collection for these measures depends on additional funds being available.

Using these measures, Alameda CTC prepares an annual Transportation System Performance Report, which local agencies and transit operators review prior to publication. To minimize cost, Alameda CTC relies on established data-collection processes and regularly published reports for data. A list of established data collection resources, by agency, follows in Table ES3.

Table ES3—Agency Data Collection Resources

Agency	Resources
Alameda CTC	• Roadway Speeds on CMP Roads, Except Freeways • Travel Times for Origin-Destination Pairs
Caltrans	• Accident Rates on State Freeways • Freeway Speed Runs and Duration of Freeway Congestion (when performed by Caltrans) • Highways in Need of Rehabilitation
Cities and County	• Countywide Bicycle Plan (Cities and County Public Works Department and Alameda CTC)
MTC	• Freeway Speed Runs and Duration of Freeway Congestion (when performed by MTC) • Pavement Management System Data for the MTS • Roadway Maintenance Needs
Transit Agencies	• Average Time Between Off-Loads (BART) • Frequency (number of lines operating at each frequency level) • Mean Time Between Service Delays (BART and ACE) • Miles Between Mechanical Road Calls (AC Transit, LAVTA and Union City Transit) • Service Coordination (number of transfer centers) • Service Schedules and On-Time PerformanceTransit Capital Needs and Shortfall for High Priority (Score 16) Projects • Transit Ridership Routing (percentage of major centers served within 1/4-mile of a transit stop) • Transit Service Frequency During Peak Periods and Population at All Transit Stations in County

Local agencies are encouraged to provide data to MTC or to maintain their own database of maintenance needs on the MTS. However, there is no compliance requirement for local agencies or transit operators related to the multimodal performance element.

The 2012 Performance Report for Fiscal Year 2011-12 (attached as Appendix C) shows that in the past five years, 2012 marked the first time that the Alameda County economy added jobs, and reported increases in commuting and economic activity that are reflected in a number of transportation indicators. Average travel speeds declined by roughly 1 mph from 2010 to 2012 and weekday freeway congestion increased by nearly 20 percent between FY 10/11 and FY 11/12. Transit boardings increased in 2012, reversing several years of decline; rail and ferry in particular showed strong ridership growth from 2011 to 2012, increasing ridership by 10 and 19 percent. State of repair improved in 2012, but major system investment needs loom on the horizon: local road pavement condition improved and transit service interruptions declined in 2012, but many miles of roadway are at risk of rapid deterioration and transit operators have a number of aging assets requiring rehabilitation or replacement. Biking and walking both saw increases in fiscal year 2012, and several key countywide projects were completed. In addition, several local pedestrian and bicycle master plans were completed, and most jurisdictions have up to date local master plans to guide investment in active transportation modes.

The 2012 performance report also revealed interesting longer term trends around commuting patterns in Alameda County. Alameda County's commuting has become more regional over the last decade, as the percent of workers employed in Alameda County who also live in the county has declined. Roughly two thirds of workers who live or work in Alameda County cross county lines as part of their daily commute. At the same time, the use of alternative modes for commuting purposes has increased. Between 2000 and 2011, the share of workers carpooling declined by nearly 4 percent and the share driving alone by 1 percent, while the shares working from home, riding BART, and bicycling all increased.

Based on the review of Performance Report and performance measures used in various monitoring activities, Alameda CTC identified the need for a comprehensive review to streamline the reporting timeline and availability of data for various multimodal performance measures from all Alameda CTC planning efforts for use in programming and transportation investment decisions. This will be done for the 2015 CMP update.

TRAVEL DEMAND MANAGEMENT ELEMENT

Transportation demand management (TDM) measures seek to reduce pressure on existing roadway and parking capacity by using various strategies that include incentives and disincentives to influence travel choice. They reduce peak-period vehicle trips and total vehicle miles traveled. Related benefits include reducing congestion and carbon emissions, improving public health, and increasing transportation choice. The most effective TDM programs include some form of financial incentive, either through pricing parking or subsidizing transit and other non-drive alone modes. TDM strategies tend be cost-effective ways of meeting regional goals. By making the most efficient possible use of the available

system capacity, they complement the region's investments in transit systems and other alternatives to driving.

The Commission adopted a Countywide Comprehensive TDM Strategy in May 2013 that provides an inventory of the broad range of TDM programs and activities present in Alameda County and recommends a strategy for better integrating, supporting, and building on these existing efforts, including implementation of the regional commute benefit program and the Guaranteed Ride Home Program. These programs are designed to reduce the need for new highway facilities over the long term and to make the most efficient use of existing facilities. The TDM element also incorporates strategies to integrate air quality planning requirements with transportation planning and programming. Funding generally comes from the Transportation Fund for Clean Air (from motor vehicle registration fees) and from the federal Surface Transportation Program and Congestion Mitigation and Air Quality Program. Alameda County's TDM element represents a fiscally realistic program that effectively complements the overall CMP.

A balanced TDM element requires actions that local jurisdictions, Alameda CTC, BAAQMD, Caltrans, MTC, and local transit agencies undertake. As required by state law, the Alameda County TDM program promotes alternative transportation methods (carpools, vanpools, transit, bicycles, park-and-ride lots, etc.), promotes improvements in the jobs-housing balance and SMART Growth, considers parking cash-out programs (paying employees who do not use parking), and promotes other strategies such as flextime and telecommuting.

The county's approach to TDM includes the following major actions:

- **Regional actions:** BAAQMD, Caltrans, and MTC take actions to support TDM throughout the San Francisco Bay Area. Alameda County's efforts work within the context of these broader regional initiatives.
- **Countywide actions:** Alameda CTC takes actions to encourage, supplement, and support local governments in their TDM efforts, including allocating funds for multimodal transportation improvements, providing guidance and technical assistance to localities in developing their own TDM programs, and monitoring compliance with the **Required Program** in the CMP. Alameda CTC also manages certain key TDM programs, such as Guaranteed Ride Home, that work most effectively at the countywide level.
- **Local jurisdication actions:** Local governments have primary responsibility for implementing TDM programs and encouraging and incentivizing TDM by private organizations. The CMP requires local governments to undertake certain TDM actions, known as the **Required Program**. The CMP also encourages local governments to undertake TDM efforts above and beyond these requirements.
- **Private TDM actions:** Private employers, developers, homeowner associations, and nonprofit organizations can undertake TDM measures on a voluntary basis or as required by a city. Alameda CTC provides resources to support these actions, including guidance on best practices and other technical resources.

Chapter 5, Travel Demand Management Element includes a variety of tools available to local governments for facilitating TDM. To be found in conformance with this element of the CMP, local jurisdictions must adopt and implement the **Required Program** by September 1 of each year.

LAND USE ANALYSIS PROGRAM

The CMP incorporates a program to analyze the impacts of land use decisions made by local jurisdictions on the regional transportation systems (MTS), including estimating costs associated with mitigating those impacts. The intent of this legislatively required component of the CMP is to:

- Coordinate local land use and regional transportation facility decisions;
- Assess the impacts of development in one community on another community; and
- Promote information sharing between local governments when the decisions made by one jurisdiction will impact another.

While the Alameda CTC's land use analysis program was initially developed as a program to meet the CMP legislative mandate, the growing focus at all levels of governments on improved coordination between land use and transportation planning has resulted in the program's evolution. In this context, the Alameda CTC's Land Use Analysis Program (Chapter 6) currently includes:

- Legislatively required review of:
    - Land use actions of local jurisdictions by Alameda CTC to ensure that impacts on the regional transportation system are disclosed and mitigation measures identified; and
    - Long-range land use projections by local jurisdictions for use in the countywide model database.
- Planning initiatives and programs that foster transportation and land use connections; and
- Strategic monitoring of transportation-land use coordination performance measures.

Although land use remains the purview of local governments, Alameda CTC can apply sanctions if local agencies do not conform to the requirements of the CMP. Local jurisdictions have the following responsibilities under the Alameda CTC Land Use Analysis Program element of the CMP:

- Throughout the year:
    - Forward to the Alameda CTC all Notices of Preparation, Draft and Final Environmental Impact Reports and Environmental Impact Statements, and final dispositions of General Plan Amendment and development requests.
    - Analyze large development projects according to the adopted guidelines, including the use of the Alameda Countywide Travel Demand Model or an approved subarea model and disclosure of impacts to the MTS, if the Alameda CTC determines the project exceeds the threshold for which CMP review is required.

- Work with Alameda CTC on the mitigation of development impacts on the regional transportation system.

- By October 1 of each year as part of the annual conformity process:
  - Demonstrate to Alameda CTC that the Land Use Analysis Program is being carried out.
  - Provide the Alameda CTC with 1) a list of land use development projects approved during the previous fiscal year; and 2) a copy of the most recent Housing Element Annual Progress Report submitted to the state Department of Housing and Community Development. These items are new and to be used to develop a database of land use approvals for enhanced monitoring of transportation-land use coordination and planning.

- During travel model updates:
  - Provide an update (prepared by the jurisdiction's planning department) of the anticipated land use changes likely to occur using the most recent Association of Bay Area Government (ABAG) forecast for a near-term and long-term horizon year. This land use information should be provided in a format that is compatible with the countywide travel model.

The 2013 CMP update includes expanded discussion of the Alameda CTC's activities to fulfill the legislative requirements of Senate Bill 375 and Assembly Bill 32 to better integrate transportation and land use and to reduce greenhouse gas emissions by curtailing vehicle miles traveled. The following enhancements are made to the Land Use Analysis Program to meet these objectives:

- Incorporate the recommendations of the Alameda County Priority Development Investment and Growth Strategy as required by MTC and adopted by the Commission in March 2013;

- Modify the agency's guidelines for environmental review consistent with action items identified in the 2011 CMP.
  - HCM 2010: Alameda CTC performed an assessment of the HCM2010 including its MMLOS methodologies for use in the Land Use Analysis Program similar to the evaluation effort for the LOS Monitoring element. Based on this assessment, the following changes are made:
    - Encourage use of HCM2010 to study auto impacts on roadways but provide flexibility to conform to local requirements as needed.
    - Encourage study of multimodal tradeoffs of mitigation measures proposed in environmental documents, including use of HCM2010 MMLOS to perform the analysis.
    - Expand and clarify language as to the types of impacts to transit, bicyclists, and pedestrians that project sponsors should consider.

- In-fill development trip generation: Alameda CTC performed an assessment of alternative project trip generation methodologies that more accurately account for the nature of trip generation in areas such as PDAs or infill sites; based on this assessment, Alameda CTC proposes three alternative methods for project sponsors to use for CMP land use analysis:
  - EPA's Mixed Use Development (MXD) model
  - Caltrans/UC Davis Smart Growth Trip Generation rates
  - MTC's Station Area Residents Study (STARS) mode share adjustment method

- Establish a development approvals database that will be populated using information provided by local jurisdictions as part of the annual conformity process starting in 2014.

Many action items identified in the 2011 CMP update for a further enhanced land use analysis program are still valid and continue to be carried forward, so that based on the resource availability and coordination with other efforts of Alameda CTC, they can be implemented.

DATABASE AND TRAVEL DEMAND MODEL

Alameda CTC has developed a uniform land use database for use in the countywide travel model. The database and travel demand model bring to the congestion management decision-making process a uniform technical basis for analysis. This includes consideration of the benefits of transit service and TDM programs, as well as projects that improve congestion on the CMP network. The model is also intended to assist local agencies in assessing the impacts of new development on the transportation system.

The most recent update to the model was completed in May 2011. It incorporates land use assumptions based on ABAG's *Projections 2009*. Projections of socioeconomic variables were made for the traffic analysis zones defined for Alameda County. By aggregating the projections made for each zone, Alameda CTC produced projections of socioeconomic characteristics for unincorporated areas of the county, the 14 cities, and for the four planning areas.

Table ES4—Alameda County Planning Areas

Planning Area	Cities
North Planning Area	Alameda, Albany, Berkeley, Emeryville, Oakland, and Piedmont
Central Planning Area	Hayward, San Leandro, and the unincorporated areas of Castro Valley, Ashland and San Lorenzo
South Planning Area	Fremont, Newark, and Union City
East Planning Area	Dublin, Livermore, Pleasanton, and the unincorporated areas of East County

The countywide model is being updated to include the recently adopted SCS and RTP, the *Plan Bay Are*a. The updated model will also incorporate 2010 US Census data along with updates to the model base year from 2000 to 2010, to correspond with the 2010 US Census and to change the long-term forecast year from 2035 to 2040, along with updates to other related features of the model (see Chapter 7, Database and Travel Demand Model for details). In spring 2014, the updated Alameda Countywide Travel Demand Model is expected to be available for use.

CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program (CIP) reflects Alameda CTC's efforts to maintain or improve the performance of the multimodal transportation system for the movement of people and goods and to mitigate regional transportation impacts identified through the Land Use Analysis Program.

Per federal requirements, Alameda CTC considers various multimodal methods to improve the existing system, such as traffic operations systems, arterial signal timing, parking management, transit transfer coordination, and transit marketing programs. Projects selected for the CIP also are consistent with the assumptions, goals, policies, actions, and projects identified in the *Plan Bay Area*, MTC's basic statement of Bay Area transportation policy.

The 2013 CIP covers fiscal year 2013-2014 to 2019-2020 and is comprised of:

- Major capital projects and rehabilitation projects programmed in the 2014 STIP and Moving Ahead for Progress in the 21st Century (MAP-21); and
- Other major highway, transit, bicycle and pedestrian, and local projects intended to maintain or improve the performance of the CMP network.

The CIP projects link to the vision and projects presented in the 2012 Countywide Transportation Plan, either as a specific capital project or from funding set aside to cover categories of projects. Project types include maintaining and rehabilitating local streets and roads, transit capital replacement, bicycle and pedestrian improvements, and operational improvements.

By July 31st of each odd-numbered year, to be in conformance with the CMP, local jurisdictions and project sponsors must submit to Alameda CTC a list of projects intended to maintain or improve the LOS on the CMP network and to meet transit performance standards.

In 2013, Alameda CTC initiated a new process for an enhanced Strategic Plan/CMP that will include a Capital Improvement Program/Programs Investment Plan (CIP/PIP) and Allocation Plan. To meet legislative requirements and help maintain and improve the performance of the multimodal transportation system, the CIP/PIP will be incorporated in to the 2015 CMP update. The new comprehensive CIP/PIP is anticipated to be adopted in 2014.

PROGRAM CONFORMANCE AND MONITORING

Alameda CTC is responsible for ensuring local government conformance with the CMP and annually monitors the implementation of four elements: LOS standards on CMP network, travel demand management including implementation of the Required Program, land use analysis program, and capital improvement program. Alameda CTC ensures local agencies are in conformance with CMP requirements for these elements.

To assist local jurisdictions, Alameda CTC provides LOS standards resources (Chapter 3, Level of Service Standards); travel demand management resources and countywide programs to facilitate implementation of the Required Program (Chapter 5, Travel Demand Management Element); and a database and Countywide Travel Demand Model (Chapter 7, Database and Travel Demand Model). Alameda CTC has also developed a Land Use Analysis Program for implementation by local agencies. This program analyzes the impacts and determines mitigation costs of land use decisions on the regional transportation system (see Chapter 6, Land Use Analysis Program). Local jurisdictions remain responsible for approving, disallowing, or altering projects and land use decisions. The program must be able to determine land development impacts on the MTS and formulate appropriate mitigation measures commensurate with the magnitude of the expected impacts.

In addition, Alameda CTC is required to prepare and biennially update a CIP (see Chapter 8, Capital Improvement Program) aimed at maintaining or improving transportation service levels. Each city, the county, transit operators, and Caltrans provide input to these biennial updates.

As part of Alameda CTC's annual monitoring, if it finds a local jurisdiction in non-conformance with the CMP, it will notify the local jurisdiction, which then has 90 days to remedy the area(s) of non-conformance. If the local jurisdiction fails to provide a remedy within the stipulated time, it may lose local, state, and/or federal funding (see Chapter 9, Program Conformance and Monitoring for more information).

DEFICIENCY PLANS

CMP legislation requires preparation of deficiency plans when a CMP roadway segment does not meet the adopted level of service standard, which is LOS E for Alameda County CMP roadways. Local jurisdictions must develop a deficiency plan to achieve the adopted LOS standards at the deficient segment or intersection, or to improve the LOS and contribute to significant air-quality improvements. The two types of deficiency plans include Localized Deficiency Plans and Areawide Deficiency Plans, which address transportation impacts to more than one CMP roadway and including alternative modes in a large geographic area. To provide support to local jurisdictions in terms of meeting any potential deficiency plan requirements, Alameda CTC updated the deficiency plan guidelines to include more details and procedures for developing Areawide Deficiency Plans (included as Appendix D) as part of the 2013 CMP update.

Responsibilities for Deficiency Plans

Local governments are responsible for preparing and adopting deficiency plans; however, they need to consult with Alameda CTC, BAAQMD, Caltrans, and local transit providers regarding the deficient roadway segment, and coordinate with more than one jurisdiction to develop multijurisdictional Deficiency Plans. Local public-interest groups and members of the private sector may also have an interest in developing deficiency plans.

During the process of developing a deficiency plan, a local agency needs to consider whether it is possible to make physical improvements to the deficient segment or if an areawide deficiency plan needs to be prepared. In developing the deficiency plan, the local agency must consider and describe both local and system alternatives. Local governments and Alameda CTC must consider the impact of the proposed deficiency plan on the CMP system. The local agency must also provide an action plan to implement the chosen alternative. The selection of either alternative is subject to approval by Alameda CTC, which must find the action plan in the interest of the public's health, safety, and welfare. In 2011, Alameda CTC has adopted a policy to consider providing funding priority to projects that would improve the performance of deficient segments. The procedure for assigning priority for those projects will be defined in the CIP/PIP, which is anticipated to be adopted in 2014.

CONCLUSIONS AND FUTURE CONSIDERATIONS

The CMP has several interrelated elements intended to foster better coordination among decisions about land development, transportation, and air quality. Several conclusions can be reached about the CMP relative to the requirements of law and its purpose and intent (Chapter 11 Conclusions and Future Considerations). Specifically, the CMP:

- Contributes to maintaining or improving multimodal transportation service levels;
- Conforms to MTC's criteria for consistency with the *Plan Bay Area*;
- Provides a travel model with specifications and output consistent with MTC's regional model;
- Is consistent with BAAQMD's Clean Air Plan Transportation Control Measures;
- Specifies a method for estimating roadway LOS that is consistent with state law and expanding options to assess LOS for alternative modes;
- Identifies candidate projects for the STIP and federal Transportation Improvement Program;
- Has been developed in cooperation with the cities, the County of Alameda, transit operators, the BAAQMD, MTC, adjacent counties, Caltrans, and other interested parties;
- Provides a forward-looking approach to deal with the transportation impacts of local land use decisions; and
- Considers the benefit of greenhouse gas reductions in developing the CIP.

During the development and update of the 2013 CMP for Alameda County, several long-standing issues have been uncovered that will continue to need further action by the Alameda CTC.

- Lack of funding to support the CMP, including adequate capital resources and Alameda CTC/local government funding;
- Limited ability of Alameda CTC to influence transportation investments when most transportation funding programs are beyond the purview of the CMP legislation;
- The need to identify the responsible agency for monitoring and maintenance of LOS on the state highway system; and
- Scope of the CMP network and lack of incentive to local jurisdictions to add new roadways.

The 2013 CMP update made recommendations as next steps in addressing issues related to addressing new and existing legislative requirements, monitoring standards and other efforts related to congestion management, and better integrating transportation and land use. The following highlights key areas identified for follow-up:

- Based on the California Environmental Quality Act reform efforts and recently enacted Senate Bill 743, in collaboration with the local jurisdiction and regional agencies, comprehensively evaluate and identify efforts and next steps for Alameda CTC to actively participate in the process of developing new standards of significance for transportation impacts and in supporting local jurisdictions in implementing the new standards.

- Continue efforts to improve land use and transportation connections in Alameda County including addressing issues related to parking standards and policies to reduce green house gas emissions and implementing the Alameda County Priority Development Area Investment and Growth Strategy.

- Coordinate the outcome of the countywide modal plans to identify facilities to monitor and metrics to follow for monitoring performance of countywide alternative modes along with auto monitoring.

- Perform a comprehensive review and alignment of performance measures from all Alameda CTC planning efforts for use in programming and transportation investment decisions.

- Develop a land use development database to track land development approvals from local jurisdictions for use in various planning efforts and to analyze how and whether the land development and transportation investments are coordinated.

- Develop a comprehensive Strategic Plan that includes a performance-based Capital Improvement Program/Program Investment Plan (CIP/PIP) to better inform the programming process.

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