



# **CMP** Congestion Management Process

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## INTRODUCTION

As Eugene and Springfield and surrounding communities continue to grow, traffic congestion will need to be addressed and appropriately managed. Over the years the area has successfully employed a number of strategies to reduce overall demand on our highways and to efficiently manage our existing transportation system, reducing our need to rely solely upon expensive capacity building projects to alleviate traffic. The Central Lane MPO is committed to documenting these ongoing strategies and to implementing a congestion management process (CMP) for ensuring that the area continues to get the maximum benefit from both our existing and new transportation system.

This document describes the many elements of the Central Lane CMP – a comprehensive set of policies, performance measures, ongoing activities and recommended future actions designed to manage traffic congestion and to maintain high levels of transportation service in the Central Lane County metropolitan area.

### Background

One of the eight planning factors that every Metropolitan Planning Organization must consider is the promotion of efficient system management and operations. Strategies to improve the performance of existing transportation facilities to relieve congestion and to maximize the safety and mobility must be included in the area's Regional Transportation Plan (RTP). To this end, a process has to be developed that provides a framework to recognize, track, address and monitor congested roadways and corridors. This is the Congestion Management Process.

### Purpose

The purpose of the CMP is to identify and target congested areas and to bring an objective basis to the process of developing those strategies that will allow the region to achieve the greatest benefit for its investment. A CMP must:

- Measure multi-modal transportation system performance
- Identify the causes of congestion
- Assess alternative actions
- Implement cost-effective actions; and
- Evaluate the effectiveness of implemented actions.

To accomplish these objectives, the CMP features a significant component of data collection and monitoring activities and sets forward performance measures or criteria for identifying when action is needed and for identified management strategies that will be most effective.

### Definition of Congestion

For the purposes of this document, congestion is defined as *the level at which transportation system performance is no longer acceptable due to traffic interference*. Determining what is **acceptable** system performance considers a number of factors, including the type of transportation facility, location within the region and time of day. Transportation and development goals for a region and public perception of traffic interference are also important considerations.

## **Regulations**

The United States Safe, Accountable, Flexible, Efficient Transportation Equity Act, a Legacy for Users (SAFETEA-LU) requires the development, establishment and implementation of a Congestion Management Process which is fully integrated into the regional transportation planning process. The Federal Highway Administration defines the congestion management process as a systematic approach that provides for effective management and operation, based on a cooperatively developed and implemented metropolitan-wide strategy of new and existing transportation facilities and through the use of operational management strategies.

In 2008, the Federal Highways Administration conducted a certification review of the Central Lane MPO. It determined that the MPO had accomplished significant work toward developing a Congestion Management Process (CMP) for the Central Lane region. The MPO acknowledged that work was needed to more fully develop a CMP that is integrated into transportation decision making. This document, and subsequent regular updates of it, are a result of this determination, and demonstrate the MPO's commitment to enhance and refine the MPO's CMP, and continue to monitor its effectiveness in the MPO's overall work.

## **Document Overview**

The CMP provides the MPO with the opportunity to compile a variety of ongoing strategies and activities already under way, and to present an expanded range of recommended actions within a formally recognized Congestion Management Process. The first section of the document describes progress to-date within four key MPO program areas, including long range planning, transportation system modeling and data maintenance, transportation options (also referred to as transportation demand management), and programming and implementation. Significant efforts relating to the Congestion Management Process include the Congestion Management System presented in the Regional Transportation Plan adopted in November 2007, the adopted Intelligent Transportation System Plan, and the Transportation Demand Management programs operated primarily through point2point Solutions.

In developing Recommended Actions, the CMP also looks at enhancing work elements of the four program areas to meet the following objectives:

- Improve regional and local collection and management of congestion-relevant data, including travel time, accident occurrence and duration, and traffic counts;
- Review and update performance measures to evaluate acceptable and unacceptable levels of congestion;
- Maintain an updated identification of roadways and corridors within the MPO that are negatively impacted by congestion;
- Review and update policies, criteria and procedures to address and manage congestion; and
- Evaluate the effectiveness of congestion management actions as well as specific transportation system improvement projects.

## **CMP Development Process**

The CMP is a combined effort of the partner agencies of the Central Lane MPO, notably Lane Council of Governments, the Cities of Eugene, Springfield, and Coburg, Lane County, Lane

Transit District, and point2point Solutions. Staff has developed this document for review and acknowledgement by the MPO's Transportation Planning Committee and Citizens Advisory Committee. Based on their feedback, the document will be presented to the Metropolitan Policy Committee (the MPO Policy Board) for their review and consideration as a component of the next Regional Transportation Plan in 2011.



## Part I CONGESTION MANAGEMENT PROCESS – CURRENT ELEMENTS

The CMP provides the MPO with the opportunity to compile a variety of ongoing strategies and activities already under way within the framework of a Congestion Management Process. Significant efforts relating to congestion management include the Congestion Management System report originally prepared and adopted in September, 2004 and updated in the Regional Transportation Plan (RTP) adopted in November 2007, the adopted Intelligent Transportation System Plan, and the Transportation Demand Management programs operated primarily through point2point Solutions.

In addition, the following are all major efforts under the umbrella of the CMP:

- Alternative Mobility Standards Report (2005) – Among other aspects of this report, the analysis of existing and future highway system performance at the corridor level, and of current and future congestion and mobility, are significant elements of the MPO’s CMP.
- Developed 2005-2010 Strategic Plan for the MPO’s TDM program (then *Commuter Solutions*, now *point2point Solutions*).
- Identification of Key Transportation Demand Management Corridors – combining the results of the Congestion Management System’s identification of congested corridors with other analysis such as the location and concentration of employment centers, the regional TDM program identified and prioritized “Key TDM Corridors” where a focus on implementing demand management strategies would be most likely to produce the greatest positive outcomes.
- Obtained traffic crash data for Lane County.
- Successfully launched the travel data probe project with ODOT.
- Implemented process at the Oregon Modeling Steering Committee (OMSC) to determine a common database for storing traffic count data for region/state.
- Began development of a comprehensive traffic count plan effort.
- Organized and implemented ongoing ITS committee. Committee meets monthly and discusses ITS infrastructure and related issues as they can be applied to congestion, safety and other problems in the MPO.
- Started development of the MPO’s Regional Transportation Options Plan (RTOP), a long-range plan that will result in updated TDM policies and strategies for the area, providing an effective approach to meeting mobility needs, prioritizing and evaluating projects, and meeting social and environmental targets in the region.

This first section of this document describes progress to-date within four of the key MPO program areas, including:

- Regional Transportation Plan and Long Range Planning
- Transportation System Modeling and Data Maintenance
- Transportation Options (also referred to as transportation demand management)
- Programming and Implementation.

### **Regional Transportation Plan (RTP) and Long Range Planning**

The RTP guides planning and development of the transportation system within the Central Lane MPO. The federally-required RTP includes provisions for meeting the transportation demand of

residents over at least a 20-year planning horizon while addressing transportation issues and making changes that can contribute to improvements in the region's quality of life and economic vitality. It includes consideration of all transportation modes, including roadways, transit, bikeways and pedestrian circulation, as well as freight movement and regional aspects of air, rail and inter-city bus service. The RTP must be updated at least every four years, and must include participation by the citizens of the region. The current Central Lane RTP was adopted in November 2007. It includes a number of Congestion Management Process components, including the following:

### **Congestion Management System**

A Congestion Management System (CMS) Baseline Report was originally developed in September 2004 and represents the region's first product within the overall CMP. The purpose of a Congestion Management Process is to provide a framework for addressing congestion on the regional transportation system. While in some cases congestion may be eliminated or significantly reduced, a more realistic goal is to improve the way we *manage* congestion, now and in the future. A CMP is meant to aid in better understanding where the worst congestion is located and what the best mix of strategies is likely to be for each situation.

The 2004 Baseline CMS report was structured around three main concepts:

- Build on existing plans and capabilities. The CMS makes use of the adopted Regional Transportation Plan, adopted Goals, Objectives and Policies, adopted performance measures, and the regional traffic forecasting model to define the level of congestion on the system and evaluate alternative congestion management strategies.
- Focus on major corridors and a range of strategies. The CMS identifies major congested corridors and a set of strategies for each congested corridor. The strategies include both short range and longer term actions, and a wide array of options including operations, TDM, access management, land use measures, and adding new capacity.
- Improve the techniques for obtaining and analyzing information. The CMS incorporates a process for monitoring and evaluating transportation system performance on a more systematic basis. Future efforts will focus on improved data collection and analysis, better modeling tools, and ongoing coordination among individual agencies that operate different pieces of the overall system.

The CMS collects and organizes various pieces of the RTP that are related to congestion—in effect, providing a view of the RTP through a “congestion filter” to better define the different components and their connections with one another.

Using the most up-to-date inputs for land use allocation and network assumptions, the model was used to simulate traffic flow on the major roadway network and compare each roadway section with the level of service or volume-to-capacity measures discussed earlier. Based on a review of this information, nine roadways were identified as congestion management corridors for the initial CMS:

**Table 1. CONGESTION MANAGEMENT CORRIDORS**

<b>CORRIDOR</b>	<b>SEGMENT</b>
Interstate 5	OR 58 interchange at Goshen to north boundary of the MPO at Coburg
OR 126/I-105	Garfield Street in Eugene to Main Street/McKenzie Highway in Springfield
	<ul style="list-style-type: none"> <li>• 6 -7th couplet from Garfield to Jefferson</li> <li>• Washington-Jefferson Bridge (I-105) from 7th to Delta Highway</li> <li>• I-105 from Delta Highway to Interstate 5</li> </ul>
Eugene-Springfield Highway	I-5 to Main Street/McKenzie Highway
Beltline Highway	Highway 99 to Interstate 5
Main Street/McKenzie Highway	Mill Street in downtown Springfield to 70 <sup>th</sup> Street
Broadway/Franklin Boulevard	Mill Street in Eugene to Springfield Bridge
	<ul style="list-style-type: none"> <li>• Broadway from Mill Street to Alder Street</li> <li>• Franklin Boulevard from Alder Street to I-5</li> <li>• Franklin Boulevard from I-5 to Springfield Bridge</li> </ul>
West 11 Avenue	Terry Street to Chambers Street
Ferry Street Bridge/Coburg Road	Broadway to Crescent Avenue
Southeast Eugene corridor	Hilyard, Patterson, Amazon Parkway, and Willamette from 13 to 33rd Avenue
18th Avenue	Bertelsen Road to Agate Street

The 2004 CMS report discussed a set of strategies for addressing congestion within each corridor, including land use strategies; transportation demand management (TDM); intelligent transportation system (ITS) techniques and operational tools; roadway projects to add capacity; transit strategies; and bicycle/pedestrian strategies. For each corridor, the list includes projects and actions from the adopted *TransPlan* as well as additional work being done in ongoing efforts, such as the ITS plan for the area.

In addition to specific corridors, the CMS also served the purpose of monitoring congestion on the overall network of major roadways.

For the 2031 RTP update adopted in November 2007, the regional travel model was utilized to produce updated values for four Key Performance Measures on all of the Congestion Management Corridors: congested miles of travel, roadway congestion index, network vehicle hours of delay, and percent transit mode share on congested corridors. The MPO will continue to use the Congestion Management System to update and analyze information related to the Congestion Management Corridors during each update of the MPO's RTP.

In addition to identification of the Congestion Management Corridors, the CMS report, and its subsequent updates, contains an assessment of each of the Corridors, including:

- The location and severity of congestion in the corridor
- The type(s) of congestion on each corridor

- The main factors contributing to the congestion
- A summary of proposed projects or major studies for the corridor
- A summary of other adopted strategies directed at addressing congestion in the corridor
- An assessment of the potential for additional strategies to address congestion in the corridor, including land use measures, transit, bike/pedestrian improvements/measures, transportation demand management, ITS or operational measures, or other tools.

### **Intelligent Transportation System Planning**

In 2003 the *Regional Intelligent Transportation System (ITS) Operations & Implementation Plan for the Eugene-Springfield Metropolitan Area* was presented to MPC. The plan represents a collective effort by the Oregon Department of Transportation (ODOT), Lane County, the City of Eugene, the City of Springfield, Lane Council of Governments (LCOG), and the Lane Transit District (LTD). The plan outlines the deployment of ITS projects, which include advanced technologies and management techniques, to improve the safety and efficiency of the transportation system over the long term.

Intelligent Transportation Systems (ITS) involve the application of advanced technologies and proven management techniques to solve transportation problems, enhance safety, provide services to travelers, and assist transportation system operators in implementing suitable traffic management strategies. ITS focuses on increasing the efficiency of existing transportation infrastructure, which enhances the overall system performance and reduces the need to add capacity (e.g., travel lanes). Efficiency is achieved by providing services and information to travelers so they can (and will) make better travel decisions and to transportation system operators so they can better manage the system. ITS applications provide a viable opportunity for improving the safety and efficiency of the surface transportation system in the Eugene-Springfield metropolitan area. These applications help improve transportation system operations by performing a function more quickly or reliably or by providing a service that was not previously available. In effect, ITS improves the mobility of people and goods on the existing roadways and also provides the potential for substantial savings on future construction, particularly of highways. It is often easy to overlook the importance of investing in operations, but it is necessary to ensure that the traveling public makes safe and efficient use of existing roadways.

The ITS Operations and Implementation Plan identified several potential ITS projects to be implemented as part of existing projects or as funding becomes available. In addition, the plan identifies the following steps as necessary for successful ITS plan implementation:

- Continue the ITS Steering Committee. This action was identified as the most important item for the successful implementation of the ITS plan. This group includes the key stakeholders from the planning process and will be organized as a new subcommittee to the Transportation Planning Committee (TPC). This group has initiated the ITS Plan implementation, including planning projects that fit agency needs, and have successfully pursued funding opportunities for ITS projects. The group also is responsible for monitoring and report progress and effectiveness.
- Deploy “Early Winner” Projects. Another key to the success of ITS in Eugene-Springfield will depend on the deployment of successful projects within a short time

frame. A potential early winner project includes the deployment of field devices such as closed circuit television cameras, count stations, variable message signs, and ramp meters on Beltline Highway.

- Incorporate the ITS Plan in the RTP Update Process. The ITS Plan has been incorporated within the Regional Transportation Plan.

### ***Performance and Monitoring***

An important component of the Regional Transportation Plan relates to plan performance and implementation monitoring. Findings that result from analysis of these performance measures will allow for informed decisions to be made as to how best implement the plan. For example, priorities or emphasis for implementation actions may be adjusted, policies may be amended and additional policies or implementation actions may be recommended due to performance measure outcomes. Findings may also influence budgeting and the type and phasing of capital projects included in the region's TIP.

The RTP includes the following performance measures directly relating to traffic congestion:

- Congested miles of travel;
- Roadway congestion index;
- Daily vehicle hours of delay; and
- Percent transit mode share on congested corridors.

During each update of the RTP, in addition to assessing the RTP's on the full set of performance measures across the transportation system as a whole, the assessment will include specific analysis of the four congestion performance measures above on each of the Congestion Management Corridors.

### **Programming and Implementation**

#### ***STP-U Fund Allocation Process***

The Central Lane MPO is required to develop a process for allocating the MPO's Federal Surface Transportation Program Urban (STP-U) funds. STP-U funds are allocated and programmed for eligible projects at the discretion of the MPO, following federal guidelines. The MPO Policy Board has approved a process for the use of a set of screening or eligibility criteria and a set of evaluation criteria and guidelines to be applied to applications for STP-U funding. MPC approved the process and sets target funding levels for 3 categories of need. Transportation Demand Management (TDM) & Transportation Options (TO) programs receive a minimum of ten percent of the annual STP-U funds, to support TDM and TO efforts to address congestion management. Planning program activities receive twenty-five percent of the annual STP-U funds to address regional planning priorities including:

- Priorities established in the UPWP;
- Compliance with SAFETEA-LU including the Congestion Management Process;
- Planning for Public Outreach and Participation, including E-MPO development and coordination;
- State system regional project planning and NEPA activities;
- Coordinated public transit and human services planning;
- RTP implementation; and
- Local transportation planning and coordination as part of regional system.

The remaining 65% of STP-U annual allocations are programmed for Preservation, Project Development and Modernization Activities. Applications for funding of these activities are assessed and prioritized based on a set of eligibility factors and prioritization criteria approved by the MPO Policy Board. The four primary *Regional Priority Factors* include whether the proposed project:

- Preserves or Enhances Transit Services
- Reduces Greenhouse Gas Emissions by Reducing Congestion, Increasing Operational Efficiency, Supporting Alternative Modes, and Managing Transportation Demand
- Preserves Existing Transportation Assets
- Improves Safety

In addition, the STP-U application and prioritization process requires each jurisdiction to specifically describe how proposed projects address the following:

- Congestion Reduction
- Connectivity
- Benefits to Multiple Modes
- Benefits to the Freight System and Freight Movement
- Public Health

### ***Metropolitan Transportation Improvement Program (MTIP)***

The MTIP is a set of transportation improvements and projects which are scheduled to occur within the Central Lane MPO area over a four-year time period. The MTIP primarily lists projects for which application of certain federal funds will be made or which will require USDOT approval to proceed. Priorities for the use of STP-U funds administered by the MPO are established during the development of the MTIP. All MTIP projects are determined by the transportation needs identified in the Regional Transportation Plan (RTP). The MTIP project list itemizes for each project the anticipated year in which each phase will be undertaken, the funds source and amount, and the responsible agency.

### **Transportation System Modeling and Data Maintenance**

The ability to acquire, maintain and analyze traffic data is critical to implementing a successful Congestion Management Process. Central Lane MPO staff are constantly obtaining and updating performance information and other characteristics of the regional transportation system. These include:

- Roadway network data
- Traffic counts
- Travel speed data
- VMT estimates
- Traffic safety data
- Transit passenger counts
- Route descriptions
- Vehicle operations data
- Data pertaining to the movement of freight within and through the region
- Bicycle and pedestrian network data and counts

Modeling and data activities specifically related to the Congestion Management Process include the following:

- Implementation of a 1500-household activity and travel survey
- Continual development and enhancement of the regional traffic count database
- Obtaining vehicle classification counts and travel time studies
- Implementation of a new commercial vehicle model for truck model calibration
- Travel time studies for forecasting network delay and reliability issues for the Congestion Management Process

LCOG continues to work with point2point Solutions and other partners on implementing and expanding the TMA's Congestion Management Process. The process draws together the relevant regional Goals, Objectives and Policies, and information on congested corridors, measures of congestion, various management alternatives, and ongoing data needs. The MPO is working to expand data, surveillance, and modeling element of the work program, specifically expanding data gathering to meet the needs identified in the CMP, and will continue to explore modeling software and methods to better represent queues, signal delays, and the effects of ITS projects in congested corridors. Results from the 2006 TGM-funded Alternative Mobility Standards continue to provide insight into feasible CMP analyses and data needs.

Working with Lane County, LCOG updated traffic counts at all external stations entering the TMA model area in FY07. We have continued to obtain traffic count data from our regional partners, and are continuing work to ultimately incorporate counts into a regional database. In FY08-09, ODOT conducted counts on all ramps of all limited-access highways in the TMA. Additional counts will be undertaken by the MPO at roadway locations identified through the regional model as being critical to the movement of people and goods.

Expansion of the bicycle and pedestrian networks within the MPO area and changes in the format of the GIS databases have resulted in an incomplete and geographically poor representation of these networks. These networks are important in supporting mode choice modeling, assessing alternate mode accessibility and mobility, identifying land use and infrastructure issues that may affect use, and in particular, for assisting in the Safe Routes to Schools program. The MPO has been working to review and update the current coverages so that an accurate network description is obtained. The MPO is also developing a process whereby future additions can be incorporated more seamlessly.

### **Transportation Options**

Transportation Options (TO), otherwise known as Transportation Demand Management (TDM), is a set of strategies, plans, and programs that influence travel behavior for the purpose of reducing or redistributing the demand on roads. It also looks at strategies that improve the efficiency of the existing transportation system. The primary purpose of TO or TDM is to reduce the number of single-occupant vehicles using road facilities while providing a wide variety of mobility options. For example, an important way to reduce demand is to promote and implement projects that support bike, pedestrian, transit infrastructure and programs. Central Lane MPO contributes to and coordinates regional TO projects and programs by providing information, resources, and tools to help metro-area residents, employers, and employees make good choices about how to get around. The regional TO program,

point2point Solutions, is a program of the Central Lane MPO. This program offers a coordinated menu of tools, encouragement, information, and activities to promote walking, biking, transit use, carpooling, and carsharing. Commuter Solutions targets several populations including employers, commuters, schools, and bike/walk advocates through the following:

- Employer/Employee Transportation Benefits;
- Rideshare;
- Valley Vanpool; and
- Smart Ways to School.

### ***Congestion Mitigation Program***

Another component of the MPO's congestion management program is the website [KeepUsMoving.info](http://KeepUsMoving.info). The site includes an interactive map that highlights large transportation projects and events that are being constructed within a year and that have a large potential impact on the Eugene-Springfield Metro Area. [KeepUsMoving.info](http://KeepUsMoving.info) provides user-friendly information about current road construction projects with anticipated congestion and provides direct access to transportation options resources.

### ***Transportation Options Advisory Committee (TOAC)***

Providing planning and leadership for the areas transportation options activities is the primary charge of the Transportation Options Advisory Committee. This Committee is comprised of individuals from the various MPO partner agencies and meets on a monthly basis.

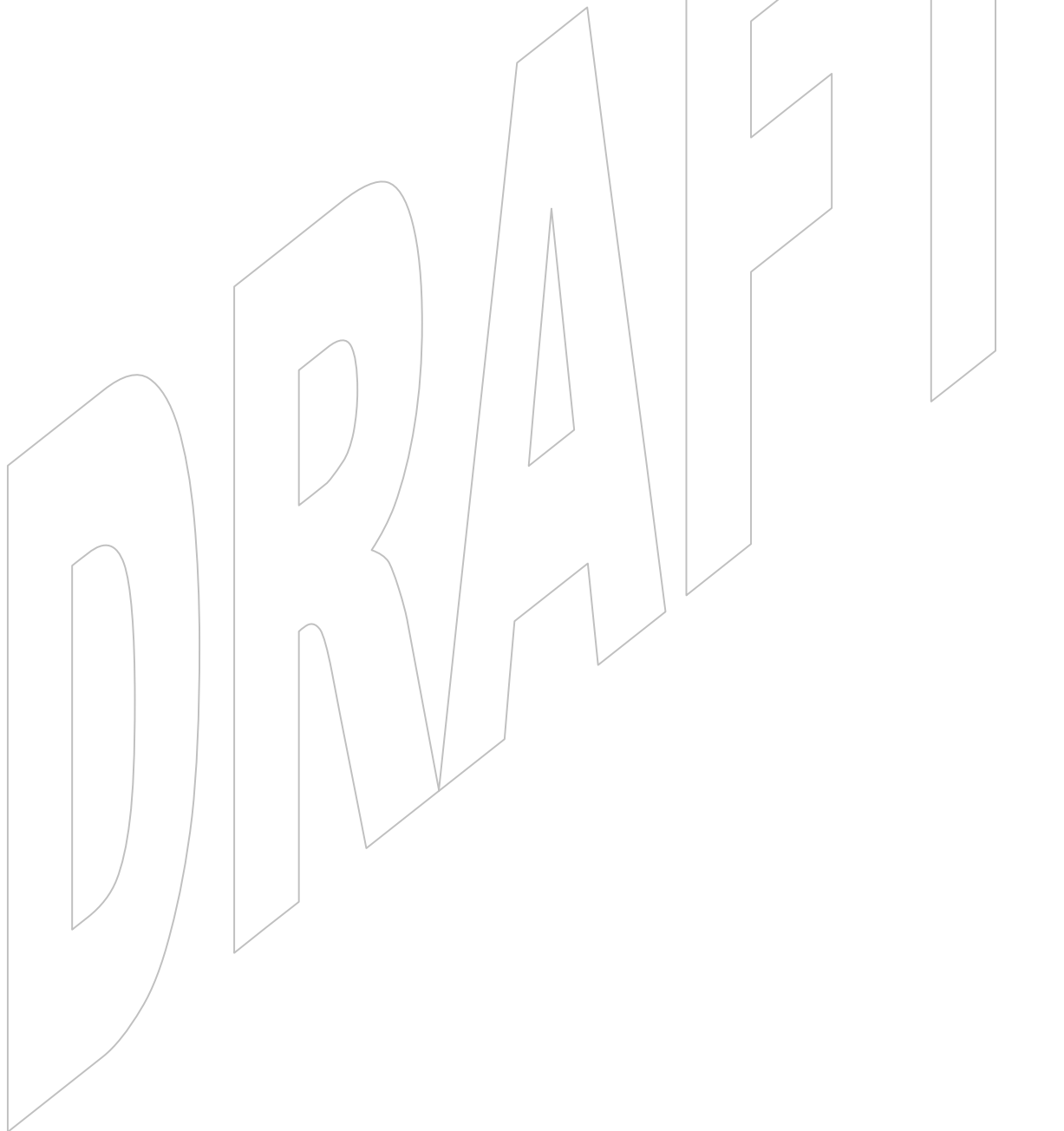
## Part 2 RECOMMENDED ADDITIONAL ELEMENTS

The following are currently being pursued, subject to funding, data availability, and staff capacity, to further integrate the ongoing congestion management process and activities into the planning operations of the Central Lane MPO.

- Action 1 *Incorporate Congestion Management Process into the Next Update of the Regional Transportation Plan (RTP).* As mentioned in Part I of this document, staff has developed the CMP for review and acknowledgement by the MPO's Transportation Planning Committee (TPC) and Citizens Advisory Committee (CAC). Prior iterations of the CMP and CMS Reports were provided as information items to the MPO Policy Board and utilized by staff throughout the MPO's planning processes. Based on the review and feedback from the TPC and CAC, this document will be revised and presented to the Metropolitan Policy Committee (the MPO Policy Board) for their review and consideration as a formal component of the next Regional Transportation Plan in 2011.
- Action 2 *Conduct an Update of the ITS Plan.* The MPO is working with its ITS Committee to identify funding and other resources to conduct an update of the MPO's ITS Plan. A major focus of this update will be to improve the data collection, storage, and analysis to support the MPO's Congestion Management Process.
- Action 3 *Review and Update CMP Performance Measures.*
- Action 4 *Incorporate CMP Criteria into STP-U Process.* With the completion (April, 2010) of the MPO's FFY10-13 STP-U funding cycle, the MPO has overhauled the STP-U funding criteria in part to reflect the goals of the CMP. This is described in more detail in Part I of this document under *STP-U Fund Allocation Process*.
- Action 5 *Incorporate CMP Criteria into MTIP project Assessment.* The MPO is working toward a more comprehensive analysis of the implementation of each MTIP. This will use not only the CMP Performance Measures, but also the full set of the RTP Performance Measures, as well as other criteria. The MPO Policy Board has directed the MPO to provide the Policy Board with metrics illustrating the impact the MPO's projects and programs are having toward achieving not only the performance measure outcomes, but also in achieving the *Regional Priority* factors used by the MPO to determine project funding priorities.
- Action 6 *Coordinate Regional Traffic Counts.* Continue improving the regional traffic count program.
- Action 7 *Update Transportation Options Strategic Plan.* This action is just getting under way with the start of the project to develop a *Regional Transportation Options Plan (RTOP)*. This is discussed further in *Part I: Progress To-Date* and the RTOP work program is included as an Appendix to this document.

**Action 8**     *Develop Long-Range Transit Plan.* While a project of the Lane Transit District, the development of a *Long-Range Transit Plan* will provide a crucial element of the overall CMP planning framework.

**Action 9**     *Complete Household Activity and Travel Survey.* While as of February 2010 the survey itself is complete, work on the data resulting from the survey has just begun. As the first update of the survey in the MPO area since 1994-95, this data will provide crucial information necessary for the accurate modeling of the congested corridors and analysis of the performance measures.



**APPENDICES**

- Congestion Management System Report (2004)
- Updated Congestion Management System Analysis (2007)
- Alternative Mobility Standards Report
- Commuter Solutions Strategic Plan 2005-2010
- ITS Strategic Plan Executive Summary
- Regional Transportation Options Plan (RTOP) Work Program

*Please note that at this time, in the interest of conserving paper, the appendices are not published with this draft but are available on request.*

