National Capital Region Transportation Planning Board
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MEMORANDUM

TO: Commuter Connections Subcommittee

FROM: Andrew J. Meese, AICP
Systems Management Planning Director

Melanie Wellman
Transportation Planner

DATE: February 7, 2008

SUBJECT: Congestion Management Process (CMP) Update

Please find attached the following information on the Congestion Management Process (CMP), a requirement of SAFETEA-LU and the associated federal regulations for metropolitan planning. The Commuter Connections Subcommittee was briefed on the development of the CMP at its November 20, 2007 meeting.

This information will provide the basis for CMP discussion at the February 19, 2008 Commuter Connections Subcommittee meeting.

1. **Excerpts from the February 14, 2007 Final Rule addressing the CMP**, showing the emphasis that has been placed on the CMP requirements in the new law and regulations. These were distributed at the November 20, 2007 Commuter Connections Subcommittee meeting, and are being provided again for your information.

2. **An Internet Web print-out of the CMP component of the Constrained Long-Range Plan (CLRP)**, which provides an overview and background information for the topic. The 2007 CLRP was approved by the TPB on January 16, 2008. This information can also be viewed at http://www.mwcog.org/clrp/elements/cmp/default.asp

3. **A sample CMP documentation form for the Long-Range Plan and TIP.** For any agency proposing an SOV capacity-increasing project (except those projects that are exempt) a CMP documentation form is required. This form describes what type of congestion management strategies have been considered in the project's vicinity.

   In order to help agencies better understand what type of information we are looking for when filling out these forms, a template was developed with sample language. Agencies submitting projects to the TIP will be able to cite various Commuter Connections programs as the types of Transportation Demand Management (TDM) strategies being implemented.

4. **An example of supplementary information compiled to help agencies provide necessary input into the CMP and CLRP.** In addition to the generic language provided in the

document above, this supplementary information would provide agencies with specific strategies in local jurisdictions. Again, much of this type of information is related to Commuter Connections alternative commuter programs. This information was distributed to the Travel Management Subcommittee on January 31, 2008.

5. **Two draft qualitative criteria short lists;** one for Demand Management Strategies (of particular interest to Commuter Connections) and another for Operational Management Strategies. These lists are a strawman developed as a way of categorizing and prioritizing strategies in the region. A similar list was completed as part of the Transportation Emission Reduction Measure (TERM) process for air quality in the region.

   The criteria listed across the top of the charts and the strategies listed down the left side were developed from the knowledge and research of what sorts of activities are going on in our region. The "high," "med," and "low" rankings were estimated based on the likelihood of being implemented, or the extent to which they are already implemented, in our region.

   These lists are currently in draft form, and are expected to be improved based on committee and subcommittee suggestions. We are also working to develop a narrative to go along with the lists to better explain their content.

   Feedback on the charts is encouraged. Is this the right number of strategies and criteria? Are the strategies and criteria appropriate? Are the rankings accurate? This is a step toward the CMP technical report, expected to be completed by the end of the fiscal year in June.

Federal Register

Wednesday,
February 14, 2007

Part III

Department of Transportation

Federal Highway Administration
23 CFR Parts 450 and 500

Federal Transit Administration
49 CFR Part 613

Statewide Transportation Planning; Metropolitan Transportation Planning; Final Rule

Section 450.320 Congestion Management Process in Transportation Management Areas

The docket included more than 25 documents that contained almost 30 comments on this section with about one-third from State DOTs, one-fifth from national and regional advocacy organizations, half from MPOs and COGs, and the rest from transit operators.

On May 16, 2006, the U.S. Secretary of Transportation announced a national initiative to address congestion related to highway, freight and aviation.[13] The intent of the "National Strategy to Reduce Congestion on America's Transportation Network" is to provide a blueprint for Federal, State and local officials to tackle congestion. USDOT encourages the States and MPO(s) to seek Urban Partnership Agreements with a handful of communities willing to demonstrate new congestion relief strategies and encourages states to pass legislation giving the private sector a broader opportunity to invest in transportation. It calls for more widespread deployment of new operational technologies and practices that end traffic tie-ups, designates new interstate "corridors of the future," targets port and border congestion, and expands aviation capacity.

U.S. DOT encourages State DOTs and MPOs to consider and implement strategies, specifically related to highway and transit operations and expansion, freight, transportation pricing, other vehicle-based charges techniques, congestion pricing, electronic toll collection, quick crash removal, etc. The mechanism that the State DOTs and MPOs employ to explore these strategies is within their discretion. The USDOT will focus its resources, funding, staff and technology to cut traffic jams and relieve freight bottlenecks.

A few commenters reiterated that the congestion management process (CMP) should result in multimodal system performance measures and strategies. The FHWA and the FTA note that existing language reflects the multimodal nature of the CMP. Existing language (§ 450.320(a)(2)) specifically allows for the appropriate performance measures for the CMP to be determined cooperatively by the State(s), affected MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area.

Most of the comments pointed out that the provisions of § 450.320(e) pertaining to projects that add significant new carrying capacity for Single Occupant Vehicles (SOVs) applies in "Carbon Monoxide (CO) and Ozone Nonattainment TMAs," but does not apply to TMAs in air quality maintenance areas. The FHWA and the FTA agree and have clarified the language in paragraph (e). We also clarified that this provision applies to projects "to be advanced with Federal funds."

Several commenters asked for a clarification regarding what CMP requirements apply in air quality maintenance and attainment areas, as opposed to the requirements in air quality nonattainment areas. The CMP requirements for all TMA areas (attainment, maintenance and nonattainment) are identified in § 450.320(a), § 450.320(b), § 450.320(c), and § 450.320(f). Additional CMP requirements that apply only to non-attainment TMA areas (for ozone and carbon monoxide) are identified in § 450.320(d) and § 450.320(e).

Another commenter asked for clarification regarding the exact requirements for a CMP and how the CMP is integrated with the metropolitan transportation plan. As noted above, the specific CMP requirements for all TMAs, regardless of air quality status, are identified in this section. The CMP

[13] Speaking before the National Retail Federation's annual conference on May 16, 2006, in Washington, DC, former U.S. Transportation Secretary Norman Mineta unveiled a new plan to reduce congestion plaguing America's roads, rails and airports. The National Strategy to Reduce Congestion on America's Transportation Network includes a number of initiatives designed to reduce transportation congestion. The transcript of these remarks is available at the following URL: *http://www.dot.gov/affairs/minetasp051606.htm.*

in this section is not described as, nor intended to be, a stand-alone process, but an integral element of the transportation planning process. To reinforce the integration of the CMP and the metropolitan transportation plan, § 450.322(f)(4) requires that the metropolitan transportation plan shall include "consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for carbon monoxide or ozone."

One commenter asked for examples of the reasonable travel demand reduction and operational management strategies as required in § 450.320(e). Examples of such strategies include, but are not limited to: Transportation demand management measures such as car and vanpooling, flexible work hours compressed work weeks and telecommuting; Roadway system operational improvements, such as improved traffic signal coordination, pavement markings and intersection improvements, and incident management programs; Public transit system capital and operational improvements; Access management program; New or improved sidewalks and designated bicycle lanes; and Land use policies/regulations to encourage more efficient patterns of commercial or residential development in defined growth areas.

23 CFR Part 500

Section 500.109 Congestion Management Systems

Few docket documents specifically referenced this section. However, the docket included more than 25 documents that contained almost 30 comments on § 450.320 (Congestion management process in transportation management areas) which is relevant to this section.

As was mentioned, on May 16, 2006, the U.S. Secretary of Transportation announced a national initiative to address congestion related to highway, freight and aviation. The intent of the "National Strategy to Reduce Congestion on America's Transportation

Network" is to provide a blueprint for Federal, State and local officials to tackle congestion. The States and MPO(s) are encouraged to seek Urban Partnership Agreements with a handful of communities willing to demonstrate new congestion relief strategies and encourages States to pass legislation giving the private sector a broader opportunity to invest in transportation. It calls for more widespread deployment of new operational technologies and practices that end traffic tie ups, designates new interstate "corridors of the future," targets port and border congestion, and expands aviation capacity.

U.S. DOT encourages the State DOTs and MPOs to consider and implement strategies, specifically related to highway and transit operations and expansion, freight, transportation pricing, other vehicle-based charges techniques, etc. The mechanism that the State DOTs and MPOs employ to explore these strategies is within their discretion. The U.S. DOT will focus its resources, funding, staff and technology to cut traffic jams and relieve freight bottlenecks.

A few comments were received reiterating that the CMP should result in multimodal system performance measures and strategies. The FHWA and the FTA note that existing language reflects the multimodal nature of the CMP. Specifically, § 450.320(a)(2) allows for the appropriate performance measures for the CMP to be determined cooperatively by the State(s), affected MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area.

Several commenters asked for a clarification with regards to what CMP requirements apply in air quality attainment areas, as opposed to the requirements in air quality nonattainment areas. The CMP requirements for all TMA areas (attainment and nonattainment) are identified in §§ 450.320(a), 450.320(b), 450.320(c), and 450.320(f). Additional CMP requirements that apply only to nonattainment TMA areas (for CO and ozone) are identified in § 450.320(d) and § 450.320(e).

Congestion management process means a systematic approach required in transportation management areas (TMAs) that provides for effective management and operation, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under title 23 U.S.C., and title 49 U.S.C., through the use of operational management strategies.

Consideration means that one or more

binding guidance material.

§ 450.320 Congestion management process in transportation management areas.

(a) The transportation planning process in a TMA shall address congestion management through a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53 through the use of travel demand reduction and operational management strategies.

(b) The development of a congestion management process should result in multimodal system performance measures and strategies that can be reflected in the metropolitan transportation plan and the TIP. The level of system performance deemed acceptable by State and local transportation officials may vary by type of transportation facility, geographic location (metropolitan area or subarea), and/or time of day. In addition, consideration should be given to strategies that manage demand, reduce single occupant vehicle (SOV) travel, and improve transportation system management and operations. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity and safety of those lanes.

(c) The congestion management process shall be developed, established, and implemented as part of the metropolitan transportation planning process that includes coordination with transportation system management and operations activities. The congestion management process shall include:

(1) Methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes of recurring and non-recurring congestion, identify and evaluate alternative strategies, provide information supporting the implementation of actions, and evaluate the effectiveness of implemented actions;

(2) Definition of congestion management objectives and appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods. Since levels of acceptable system performance may vary among local communities, performance measures should be tailored to the specific needs of the area and established cooperatively by the State(s), affected MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area;

(3) Establishment of a coordinated program for data collection and system performance monitoring to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. To the extent possible, this data collection program should be coordinated with existing data sources (including archived operational/ITS data) and coordinated with operations managers in the metropolitan area;

(4) Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combinations of strategies, are some examples of what should be appropriately considered for each area:

(i) Demand management measures, including growth management and congestion pricing;

(ii) Traffic operational improvements;

(iii) Public transportation improvements;

(iv) ITS technologies as related to the regional ITS architecture; and

(v) Where necessary, additional system capacity;

(5) Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation; and

(6) Implementation of a process for periodic assessment of the effectiveness of implemented strategies, in terms of the area's established performance measures. The results of this evaluation shall be provided to decisionmakers and the public to provide guidance on selection of effective strategies for future implementation.

(d) In a TMA designated as nonattainment area for ozone or carbon monoxide pursuant to the Clean Air Act, Federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for SOVs (i.e., a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), unless the project is addressed through a congestion management process meeting the requirements of this section.

(e) In TMAs designated as nonattainment for ozone or carbon monoxide, the congestion management process shall provide an appropriate analysis of reasonable (including multimodal) travel demand reduction and operational management strategies for the corridor in which a project that will result in a significant increase in capacity for SOVs (as described in paragraph (d) of this section) is proposed to be advanced with Federal funds. If the analysis demonstrates that travel demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, then the congestion management process shall identify all reasonable strategies to manage the SOV facility safely and effectively (or to facilitate its management in the future). Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself, shall also be identified through the congestion management process. All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation.

(f) State laws, rules, or regulations pertaining to congestion management systems or programs may constitute the congestion management process, if the FHWA and the FTA find that the State laws, rules, or regulations are consistent with, and fulfill the intent of, the purposes of 23 U.S.C. 134 and 49 U.S.C. 5303.

§ 450.322 Development and content of the metropolitan transportation plan.

(a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In nonattainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and the FTA. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO.

(b) The transportation plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.

(c) The MPO shall review and update the transportation plan at least every four years in air quality nonattainment and maintenance areas and at least every five years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The transportation plan (and any revisions) shall be approved by the MPO and submitted for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.

(d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP).

(e) The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

(f) The metropolitan transportation plan shall, at a minimum, include:

(1) The projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan;

(2) Existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan. In addition, the locally preferred alternative selected from an Alternatives Analysis under the FTA's Capital Investment Grant program (49 U.S.C. 5309 and 49 CFR part 611) needs to be adopted as part of the metropolitan transportation plan as a condition for funding under 49 U.S.C. 5309;

(3) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;

(4) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide;

(5) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation

movement of people and goods in a region. A congestion management system or process is a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system operations and performance and assesses alternative strategies for congestion management that meet State and local needs.

(b) The development of a congestion management system or process should result in performance measures and strategies that can be integrated into transportation plans and programs. The level of system performance deemed acceptable by State and local officials may vary by type of transportation facility, geographic location (metropolitan area or subarea and/or non-metropolitan area), and/or time of day. In both metropolitan and non-metropolitan areas, consideration needs to be given to strategies that manage demand, reduce single occupant vehicle (SOV) travel, and improve transportation system management and operations. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity of those lanes.

PART 500—MANAGEMENT AND MONITORING SYSTEMS

■ 2. Revise the authority citation for part 500 to read as follows:

Authority: 23 U.S.C. 134, 135, 303, and 315; 49 U.S.C. 5303–5305; 23 CFR 1.32; and 49 CFR 1.48 and 1.51.

■ 3. Revise § 500.109 to read as follows:

§ 500.109 CMS.

(a) For purposes of this part, congestion means the level at which transportation system performance is unacceptable due to excessive travel times and delays. Congestion management means the application of strategies to improve system performance and reliability by reducing the adverse impacts of congestion on the

WHAT IS THE CMP?

The Congestion Management Process (CMP) is a systematic process in Transportation Management Areas (TMAs) that provides for safe and effective integrated management and operation of the multimodal transportation system. The process is based on a cooperatively developed metropolitan-wide strategy of new and existing transportation facilities.

Congestion is the level at which transportation performance is no longer acceptable due to traffic interference resulting in decreased speeds and increased travel times. As our region continues to experience dynamic economic and demographic growth, congestion remains a primary focus of the TPB.

What Are the Major Components of and Considerations for the CMP?

The CMP requires a systematic approach. The TPB's CMP is part of the regional transportation plan and includes the following:

- Methods to monitor and evaluate system performance
- Objectives and performance measures
- Data collection and analysis
- Identification and evaluation of anticipated performance and expected benefits of Congestion Management strategies, including demand management, traffic operational improvements, public transportation improvements, ITS technologies, and additional system capacity, (where necessary)
- Assessment of the effectiveness of previously implemented strategies

Proposed single-occupant vehicle (SOV) capacity-increasing projects must show that congestion management strategies have been considered. In addition, the regional transportation plan will consider the **results of the CMP**.

The Need for a CMP

Congestion Management as a Goal of the TPB

As the Washington region continues to grow, congestion management will remain a primary goal of the TPB. Over the years the TPB has implemented a number of demand and operational management strategies to address congestion. The TPB is committed to documenting these strategies in an enhanced structured process to get maximum benefit from new and existing transportation systems.

Federal Requirements

The Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted August 10, 2005, requires that metropolitan transportation planning processes include a CMP, similar to the Congestion Management System (CMS) requirements under previous federal transportation bills. In addition, the March 2006 Federal certification of the TPB process suggested that the region's CMP be enhanced. The TPB develops the CMP in concert with long-range transportation plan development.

The Transportation Planning Board (TPB) is committed to management of the existing and future transportation system through the use, where appropriate, of **demand management and**

operational management strategies. These strategies, when taken as a whole, form a large portion of the CMP.

The CMP addresses the SAFETEA-LU requirements, as laid out in the February 14, 2007 federal regulations (Source: §450.320(a), Metropolitan Transportation Planning, Final Rule, Federal Register, February 14, 2007). These regulations state that:

> "The transportation planning process shall address congestion management ... through a process that provides for *safe and effective integrated management and operation* of the multimodal transportation system ... based on a cooperatively developed and implemented *metropolitan-wide* strategy ... of *new and existing* transportation facilities ... through the use of *travel demand reduction and operational management* strategies."

The CMP is important to the Washington region for many reasons. First, it provides for safe and effective integrated management and operation of the multimodal transportation system. Compiling information on congestion throughout the region can help determine priorities for regional transportation projects. The CMP takes a metropolitan-wide, systematic approach, in that congestion is examined over the entire metropolitan region, and the process is integrated into the Long Range Transportation Plan.

Both new and existing transportation infrastructure is part of the CMP. This is important in determining what existing facilities could be improved upon to reduce congestion, and what congestion management strategies are appropriate for new facilities. Travel demand reduction strategies, such as alternative commute programs, growth management, and HOV facilities and value pricing, as well as operational management strategies such as identifying non-recurring congestion, ITS technologies, and capacity increases (where necessary), are potential strategies the CMP considers for new and existing facilities.

The CMP is important when considering single-occupant vehicle (SOV) capacity-increasing projects in the Long-Range Plan. Capacity increasing projects are sometimes necessary to eliminate bottlenecks, make safety improvements, and implement traffic operational improvements. However, in many instances, travel demand management or operational demand management strategies can be implemented in lieu of, or in conjunction with, capacity increase. Capacity-increasing projects are considered as a metropolitan-wide strategy, for new and existing transportation facilities.

The results of the CMP are important to the long-range planning process. The CMP, including the locations and extent of congestion, along with which strategies are most successful, helps guide decision makers to prioritize areas for current and future projects. The CMP is important to long-range planning to help determine priorities for implementation and funding.

Air Quality Planning
Bicycle and Pedestrian Plan
Congestion Management Process
- CMP in the Planning Process
- Components of the CMP
- CMP Strategies
- Demand Management Strategies
- Operational Management Strategies
- Results of the CMP

Environmental Consultation and Mitigation
Emergency Preparedness and Transportation Security
Financial Plan
Freight Planning
Human Service Transportation Coordination
Land Use Coordination
Management, Operations and Technology
Transportation Safety Planning
Scenario Planning

ADDRESSING THE CMP IN THE REGIONAL PLANNING PROCESS

Integrating CMP Components into the CLRP

Four major **CMP components** are integrated into the region's CLRP. Each component reflects the federal law and regulations.

The components consist of:

- Monitoring and evaluating transportation system performance
- Defining and analyzing strategies
- Implementing strategies
- Compiling project-specific congestion management information

Interactions with Supporting Committees and Program Areas

Program or Committee	CMP - Related Activities
TPB Technical Committee	Long-range plan; interaction with necessary subcommittees - CMP lead
Travel Monitoring Program (in conjunction with the Travel Forecasting Subcommittee)	Travel monitoring and forecasting of future recurring congestion
Travel Management Program	Strategy identification and analysis
Management, Operations, and Intelligent Transportation Systems (MOITS) Program	Non-recurring congestion, traffic management, ITS technologies
Commuter Connections Program	Implementation and assessment of regional demand management alternatives
Regional Bus Planning Program	Public transportation issues

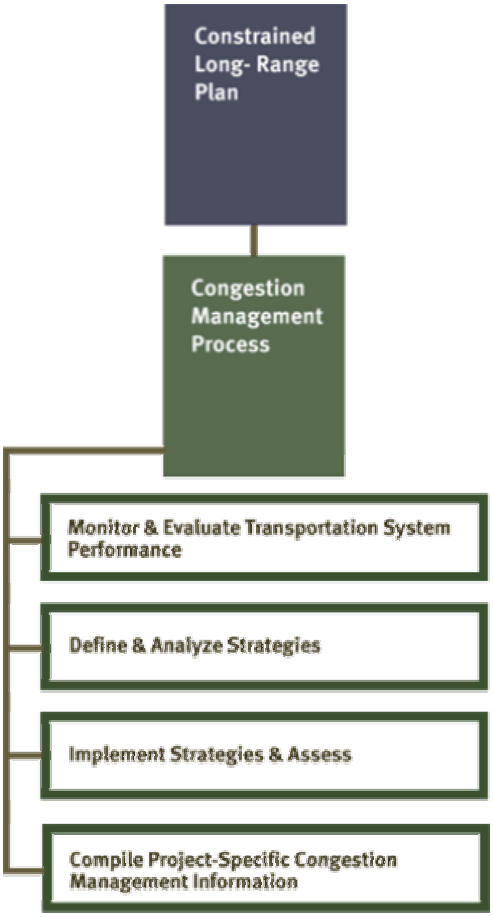
Frequency, Timing, Schedule, and TPB Approval

The initial CMP process focuses on developing and documenting components of the CMP. This component identifies congestion in the region, through available data such as the Freeway Monitoring Program. Ongoing congestion management strategies are documented and help form the CMP process.

The CMP is a living document addressing the region's congestion. It is updated as information becomes available. The results are incorporated into the CLRP when the CLRP is updated. A major update of the CLRP occurs every four years, with other significant updates occurring annually. The CMP can be updated at times that major new data or information become available.

The process itself can also be modified and enhanced as new information becomes available and additional strategies are considered.

MAJOR CMP COMPONENTS



Monitoring and Evaluating Transportation System Performance

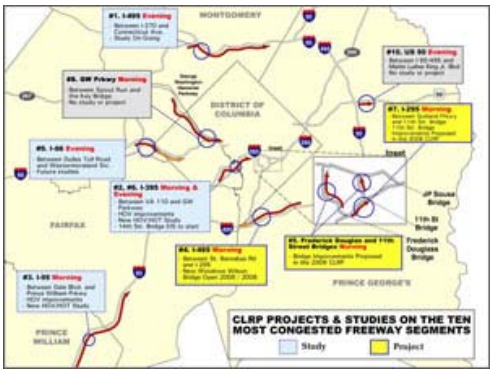
Freeway Monitoring Program

Freeways comprise the critical backbone of the region's roadway system, and provide the most important indicator of our overall system. This is the portion of the region's roadway system for which the most comprehensive data set is available.

The TPB's regional freeway monitoring program is based upon comprehensive aerial photography of the region's freeways. Peak period congestion is monitored on a once-every-three-years cycle during the am and pm peak periods, and off-peak congestion is monitored once every five years during weekday mid-day and weekend mid-day. It provides a comprehensive data set of the region's freeway conditions and congestion.

The program and analysis provide the following information on the region's freeways:

- A summary is developed of the overall conditions of the region's freeways. This data is then analyzed to indicate the most congested freeway locations, trends over time, and identification of factors associated with the congested conditions.
- A summary and description is developed of the top congested freeway locations in the region (see map to right). Planning, congestion management, or construction activity at or near these locations is also indicated to show what is being done to address this congestion.
- Significant changes to congestion levels are noted at given locations or to the overall system, based on trend analysis over time, including where the impacts of previously implemented projects or congestion management strategies are notable.
- A summary of technical information is developed regarding how the freeway condition information was developed, as well as associated performance measures.



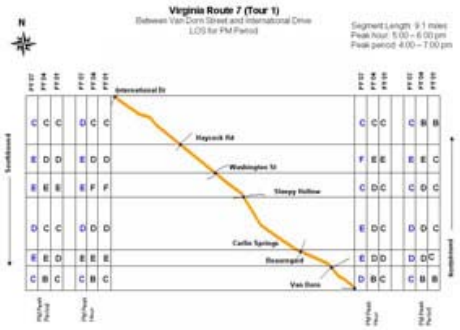
Example from 2006 CLRP. Click image to enlarge.

- Off-peak and weekend traffic conditions are monitored once every five years.

Arterial Monitoring Program

The TPB's regional Arterial Monitoring Program is based upon travel time information collected on a sample basis on a number of the region's non-freeway arterial highways.

The Program provides a data set of the region's arterial conditions and congestion. A sample of the arterials is taken, as there are thousands of miles of arterial highways in the region, and a comprehensive data collection effort would be cost-prohibitive. The data collection is limited to a number of important arterials, including the National Highway System (NHS).



Example from 2007 Arterial Monitoring Report. Click image to enlarge.

From these data, a summary of the overall conditions of the region's monitored arterials is produced. These are categorized into a number of key types of urban situations. Examples from the data set are analyzed to illustrate the types of and reasons for arterial congestion in the region. As data are available, trends over time are shown.

Regional Transportation Data Clearinghouse

TPB compiles roadway usage data as available, collected from the region's agencies and jurisdictions. These data may come from jurisdictions' regular traffic counting efforts, special studies, permanent count stations, or other sources.

The Clearinghouse program transforms these data into a format associated with the region's travel demand forecasting model. Compiled data are also associated with the estimated capacity of links on the region's roadway network, providing the opportunity to calculate estimated volume-to-capacity (V/C) ratios, a widely-used performance measure.

Special Studies and Data Collection Efforts

The TPB and its member agencies undertake special studies or data collection efforts, on both one-time and recurring bases. Examples include monitoring of high-occupancy vehicle (HOV) systems, transit usage, and cordon counts of traffic on specified areas of the region.

Defining and Analyzing Strategies

This component involves **identifying existing and potential strategies** by the TPB Technical Committee, subcommittees, and staff. The TPB considers a number of demand management and operational management strategies.<<hyperlink>>

To define and analyze CMP strategies, the TPB's efforts consist of compiling and analyzing information for each of the following strategies:

- Committees and staff identifying and advising the TPB on the analysis, methods, criteria, and performance measures used to analyze CMP strategies.
- Compiling information on how and where a particular CMP strategy has been implemented.
- Identifying a strategy as regional, corridor-wide, or local.
- Performing qualitative or, if possible, quantitative analysis of the potential impacts of CMP strategies
- Compiling information on potential impacts of strategies into summaries such as a “short list” and “long list.”

Implementing Strategies

This TPB effort is to focus on compiling information on strategies that have been implemented, particularly on a region-level basis. Also, the TPB is exploring how to assess previously implemented strategies. Feedback from the process is beneficial when it comes to updating the CMP and considering additional strategies and technical methods.

TPB currently reports on results of regional strategies implemented through the **Commuter Connections Program**.

Compiling Project-Specific Congestion Management Information

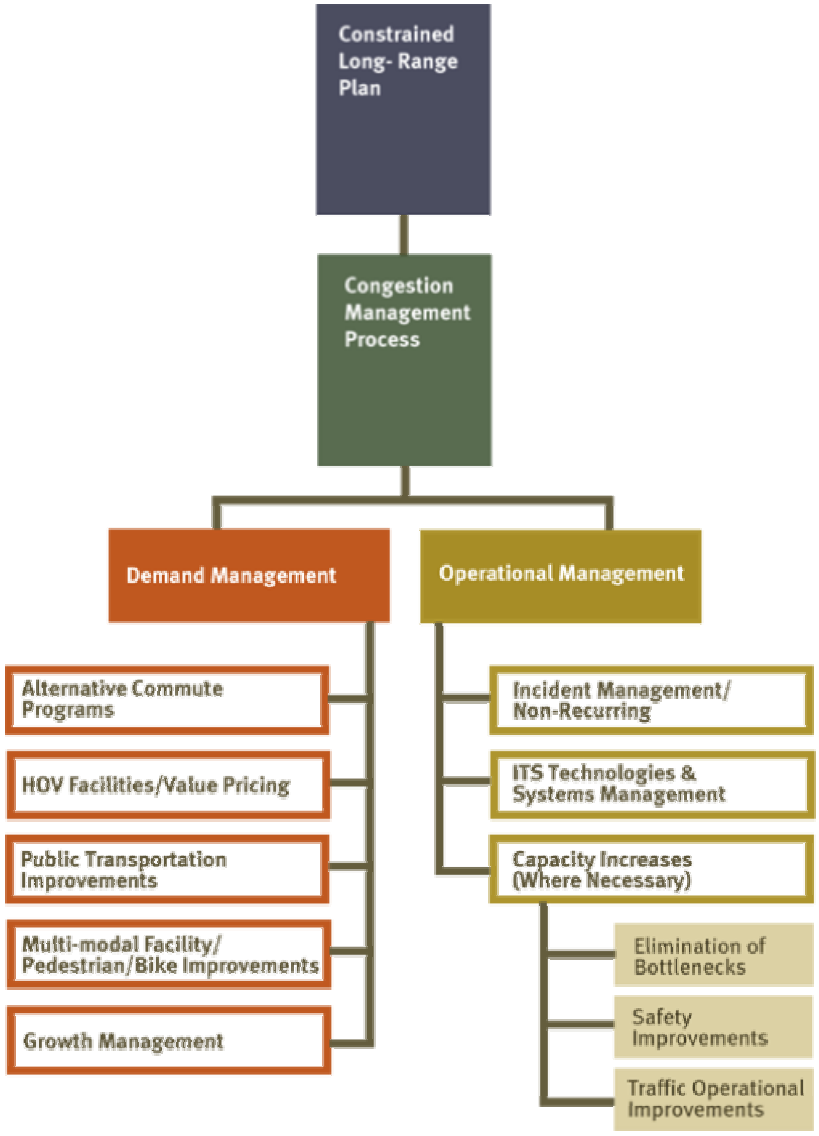
Pursuant to Federal regulations, the TPB encourages consideration and inclusion of congestion management strategies in all SOV capacity-increasing projects. This involves compiling and analyzing information in the Call for Projects documentation forms, which are submitted from regional agencies when the CLRP is developed.

The Call for Projects documentation requests any project-specific information available on congestion that necessitates or impacts the proposed project. Agencies compile this information from various sources, including TPB-published congestion information (if available), internal or other directly measured information, or by conducting engineering estimates of the Level of Service (LOS). TPB compiles and analyzes this submitted information, along with information from other CMP sources.

Specifically for SOV capacity-increasing projects, the TPB requests documentation that the implementing agency considered all appropriate systems and demand management alternatives to the SOV capacity. In the Call for Projects documentation a special set of SOV questions is completed by implementing agencies and the TPB compiles this information.

MAJOR CMP STRATEGIES

The TPB undertakes a wide range of congestion management strategies. These strategies generally fall into two categories – demand management strategies and operational management strategies.



Demand Management aims at influencing travelers' behavior for the purpose of redistributing or reducing travel demand. Examples of TPB's demand management strategies include alternative commute programs, HOV facilities and value pricing, public transportation improvements, multimodal facility/bicycle/pedestrian improvements, and growth management.

Further demand management strategies and their impacts on the CMP are defined by coordinating with various subcommittees, including the Commuter Connections program, which provides information on alternative commute programs.

Operational management focuses on improvements made to the existing transportation system to keep it functioning effectively. Examples of TPB's operational management strategies include incident management/nonrecurring congestion strategies, ITS technologies and system management, and capacity increases (where necessary).

Further operational management strategies and their impacts on the CMP are defined by coordinating with various subcommittees, including **Management, Operations, and Intelligent Transportation Systems (MOITS)**, which provides information on incident management, ITS technologies, and system management.

TPB incorporates demand and operational management strategies into the CMP by:

- Compiling existing information and data.
- Considering how these strategies are important to congestion management.
- Analyzing this information to help define congested conditions and locations in the region.
- Considering the results strategies once implemented.

DEMAND MANAGEMENT STRATEGIES

The TPB's CMP effort focuses on defining the existing demand management strategies that contribute to the more effective use and improved safety of existing and future transportation systems. The TPB is committed to a number of ongoing demand management strategies, such as:

Alternative Commute Programs

TPB's **Commuter Connections program** encourages a number of alternative commute programs with an overall goal of taking more cars off the road, which is important to the CMP. These programs include:

- ***Carpooling*** is a popular commuting option of two or more employees sharing the ride to work in a private automobile. TPB provides the public with tips on carpooling, ridesharing applications, and regional maps of park-and-ride lot locations.
- ***Vanpooling*** is when groups of commuters travel to work together in an owner-operated, third-party, or employer-operated van. Examples include vanpool incentive programs, such as VanStart and VanSave in Maryland and Virginia .
- ***Telecommuting*** , when employees work at their home or at a telework center near their home one or more days a week, is an effort to replace work-related travel.TPB provides information on telecommuting to both employees and employers.
- ***Transit*** , consisting of buses and rail, is a popular option available to commuters in the District, Maryland , and Virginia . TPB encourages the use of electronic transit payment systems such as Metrochek and SmarTrip.
- ***Guaranteed Ride Home*** encompasses all of the above commuting programs. It helps alleviate commuters concerns of using alternative commute methods by offering those who carpool, vanpool, bike, walk, or ride transit to work a free ride home incase an unexpected situation would arise.
- With ***bicycling to work*** , employers are encouraged to set up programs to facilitate employees the option to bike to work by providing showers/lockers, subsidies for purchasing bicycles, etc.
- ***Employer Outreach/Mass Marketing*** are two types of marketing programs the region uses to market all of the above alternative commute programs.

HOV Facilities and Value Pricing

TPB conducts analysis and documentation of HOV facilities in the region. These studies give the TPB, decision makers, and the public insight into the number of commuters using the HOV systems during peak hours and peak periods. Recent HOV studies include a 2004 analysis of regional HOV facilities in the Washington Region, and a study of the AM Peak Period Travel along the I-66 and I-95/I-395 corridors.

In addition, the TPB is studying the concept of "pricing" under a grant awarded to the TPB by the FHWA. Congestion pricing is a demand management strategy, as it gives drivers a choice of time to travel or travel route.

Public Transportation Improvements

Public transportation offers a popular alternative to driving, and is important in reducing our region's congestion. The TPB commits to improvements that maintain a safe and effective transit system for the large amount of riders that use it. The TPB compiles and analyzes information collected on local transportation systems including:

- Local and regional rail agencies Amtrak, MARC, Virginia Railway Express (VRE), and Metrorail
- Local bus systems such as the District's Downtown Circulator, Georgetown Metro Connection, Metrobus , Maryland Transit Administration (MTA), county bus systems, and private bus companies that work with **Commuter Connections**.

Compiling existing information and data will allow the TPB to identify the needs and locations for public transportation improvements. Improving the region's public transportation system maintains and increases transit ridership, which is an important congestion management strategy. Public transportation strategies can also be discussed in conjunction with the **Regional Bus Subcommittee**.

Multi-modal Facility/Pedestrian/Bicycle Improvements

The TPB recognizes the benefit the Washington region's many bicycle and pedestrian facilities have on congestion management. Maintaining, updating, and implementing new facilities is important to increase multi-modal usage. The TPB compiles information on existing facilities and explores additional multi-modal improvements in our region.

- The ***Bicycle and Pedestrian Plan for the National Capital Region*** includes approximately 350 bicycle and pedestrian facility improvement projects from across the region, including two new bicycle and pedestrian crossings over the Potomac , the addition of locks and bike racks, and improvements to enhance the safety of pedestrians and cyclists.
- Carsharing/short-term car rental programs are beneficial to congestion management in that they provide a convenient and cost-effective mobility option for those that typically do not have a need to own a car.

Growth Management

The TPB recognizes the importance of integrating land use and transportation planning at a regional level, and encourages the provision and availability of a variety of transit and commuting options as the region grows. The TPB views growth management as a beneficial congestion management tool, and analyzes data from the following programs for inclusion in the CMP:

- ***Regional Activity Centers***, help coordinate transportation and land use planning in specific areas in the Washington region experiencing and anticipating growth. Focusing growth in Regional Activity Centers is important to congestion management, where transportation options for those who live and work there can be provided.
- ***Transportation-Land Use Connection (TLC) Program***, providing support and assistance to local governments in the Washington region as they implement their own strategies to improve coordination between transportation and land use.
- ***Live Near Your Work***, striving to bridge the gap between work and home. The TPB's ***2006 Regional Mobility and Accessibility Study*** concludes that locating jobs and housing closer together can provide alternative commuting options that may not have been options otherwise.

OPERATIONAL MANAGEMENT STRATEGIES

The TPB's CMP effort focuses on defining the existing operational management strategies that contribute to the more effective use and improved safety of existing and future transportation systems. The TPB is committed to a number of ongoing operational management strategies, such as:

Incident Management/Non-Recurring Congestion Strategies

According to the Federal Highway Administration, an estimated 50% of congestion is associated with incidents such as crashes, disabled vehicles, and traffic associated with special events. The TPB minimizes the impact these events have on the transportation network and traveler safety. If an incident disrupts traffic, it is important for congestion that normal flow resumes quickly. The TPB compiles and analyzes data associated with these incident management programs.

- **DDOT's emergency incident plan** provides information on many incident management areas, including updating and protecting communication network, deployment of evacuation dynamic message signs, emergency public address system, evacuation plans, and deployment of CCTV cameras.
- **Maryland's Coordinated Highways Action Response Team (CHART) program** provides TPB with information such as distribution of incidents and disabled vehicles by location; number and type of incidents responded to; reduction in secondary incidents; percent of incidents occurring on weekdays versus weekends; and roadway segments with highest number of incidents.
- **VDOT's Smart Traffic Control Center in Northern Virginia** collects data from loop detectors and pavement sensors embedded in the roadways to prompt an automatic incident detection system which alerts the traffic control center when there is an accident, complete with speed and occupancy data. In addition, VDOT alerts drivers of unexpected conditions with variable message signs and an AM radio station, such as for the Springfield Interchange and Woodrow Wilson Bridge projects.
- **The Metropolitan Area Transportation Operations Coordination (MATOC) program**, comprised of DDOT, MDOT, VDOT, and WMATA, is a regional program to enhance the availability of real-time transportation information and strengthen coordination among transportation agencies.

ITS Technologies and Systems Management

The TPB works with the region's jurisdictions and local transportation agencies to implement these ITS technologies, from which the TPB compiles and analyzes operational management data.

- **Advanced Traffic Signal Systems** apply computer and communications technologies to the operations of traffic signals in order to maximize safety and efficiency. Components of such systems include interconnection of groups of signals to facilitate timing and coordination among them, and countdown signals for pedestrians to bolster safety and walkability.
- **Electronic Payment Systems** use cards or transponders carried by the user that electronically communicate with devices maintained by a transportation agency to conduct and record payment transactions. Examples include WMATA's SmarTrip card, for uses on bus, rail, and WMATA parking lots, as well as the E-Z Pass toll system.
- **Service Patrols** involve specialized trucks or vans traveling the highways and rendering assistance where needed, such as pushing disabled vehicles off the road, providing gasoline, or changing tires.DDOT, MDOT, and VDOT all implement service patrols on roadways. Also, Montgomery County is the first local jurisdiction in the area to have patrols (since 2006), primarily on arterials.
- **Advanced Traveler Information Systems (ATIS)** are technology-based means of compiling and disseminating transportation system information on a real-time or near-real-time basis prior to or during tripmaking. Examples include the Virginia 511 system.
- **Transit Information Systems** provide information to riders after their trips have started,

including arrival and departure times, information on transfers and connections, and related services like park and ride availability.Metrorail implements passenger information on platform displays, on the web, and via mobile phone.

Capacity Increases (Where Necessary)

Federal law and regulations list capacity increases as another possible component of operational management strategies, for consideration in cases of:

- **Elimination of bottlenecks**, where a modest increase of capacity at a critical chokepoint can relieve congestion affecting a facility or facilities well beyond the chokepoint location. Widening the ramp from I-495 Capital Beltway Outer Loop to westbound VA 267 (Dulles Toll Road) relieved miles of regularly occurring backups on the Beltway and across the American Legion Bridge .
- **Safety improvements**, where safety issues may be worsening congestion, such as at high-crash locations, mitigating the safety issues may help alleviate congestion associated with those locations.
- **Traffic operational improvements**, including adding or lengthening left turn, right turn, or merge lanes or reconfiguring the engineering design of intersections to aid traffic flow while maintaining safety.

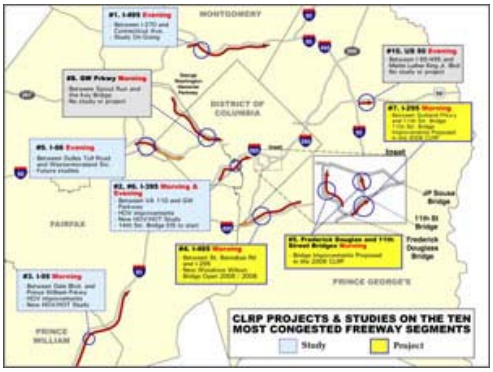
CONSIDERING THE RESULTS OF THE CMP

Integrating CMP Components

Considering Information on Existence and Extent of Congestion

The travel monitoring activities associated with the CMP inform decision makers on the region's congestion. Planning and programming decisions are able to be made with knowledge of the region's significant congestion issues.

The regional Congestion Monitoring Program is key to providing this information. Periodic congestion data on all 340 miles of freeway in the region shows the locations of significant congestion. These are then able to be cross-compared with other pertinent information, as shown in the figure below. Information for the region's numerous non-freeway arterial highways is compiled in the Arterial Monitoring Program, which provides general congestion information on a sample basis.



Example from 2006 CLRP. Click image to enlarge.

The region considers congested locations with a number of other types of information, such as:

- *Facility, corridor, or area studies* : Studies help agencies determine problems, solutions, costs, and related information to addressing transportation issues. The CLRP contains information on ongoing or proposed studies for facilities and corridors. Similar to the planned and programmed projects in the CLRP and TIP, the locations of studies is recommended to be cross-compared to the locations of congestion as noted from the CMP.
- *Regional Activity Centers and land use considerations* : Regional Activity Centers and clusters are identified throughout the region as locations experiencing a concentration of employment, housing, and activity. Movement to and from these Activity Centers, in addition to within them, is considered in the CMP. Activity Centers that have a mix of uses where people can live and work, along with having accessibility to other activity centers, is an important consideration in congestion management. In addition, because activity centers are often thought of to be pedestrian-oriented facilities and/or a higher density of development, safety issues are also concerns of the CMP.

This is also linked to Growth Management, an aim at ensuring that residents have access to a variety of transportation modes as this region grows.

- *Transportation safety information* is important to incident management and non-recurring congestion. Safety in itself is a primary concern in our region. However, congestion can often result from incidents and secondary incidents on our roadways. A focus of the CMP is integrating and assessing incident management, ITS technologies, and other operational management strategies that can help prevent and clear incidents safely and efficiently.

Considering CMP Strategies

The region compiles information on the congestion management strategies considered, implemented, or committed to in conjunction with roadway projects or studies. This provides an overall picture of

congestion in the region, and helps set the stage for agencies to implement CMP strategies, including those integrated into capacity-increasing roadway projects.

Considering the Impacts of Implemented CMP Strategies

Each strategy is assessed in the post-implementation phase. This determines the success each strategy has at reducing congestion. Considering the impacts and results becomes especially important when updating the CMP and considering adding new strategies to the process.

Considering CMP Components of Major Projects

For planned (CLRP) or programmed (TIP) projects, the locations of planned or programmed improvements on freeways are able to be noted with the locations of congestion. The level of correlation is shown between projects and congestion. This helps guide decision makers as to prioritize areas for current and future projects.

For the 2007 CLRP, the correlation between congested locations as shown in the CMP and planned or programmed projects was high. Most planned or programmed projects were in locations where significant congestion is being experienced.

Future Outlook for Maintaining and Enhancing the CMP

The CMP is to be a living document, and an ongoing and developing process. Congestion information will be updated as it becomes available. The process itself will be updated as is determined to be necessary. Addressing congestion and meeting regional goals is an integral part of the TPB's metropolitan planning process. As the Washington region continues to grow, congestion management will remain a primary goal of the TPB.

Congestion Management Documentation Form for Projects in the 2030 CLRP

DRAFT

BASIC PROJECT INFORMATION

1. Agency: Secondary Agency:

2. Project Title: **GENERIC TEMPLATE (SAMPLE)**

	Prefix	Route	Name	Modifier
4. Facility:				
5. From (_ at):				
6. To:				

7. Jurisdiction(s):

8. Indicate whether the proposed project's location is subject to or benefits significantly from any of the following in-place congestion management strategies:

X Metropolitan Washington Commuter Connections program (ridesharing, telecommuting, guaranteed ride home, employer programs)

X A Transportation Management Association is in the vicinity

_ Channelized or grade-separated intersection(s) or roundabouts

_ Reversible, turning, acceleration/deceleration, or bypass lanes

_ High occupancy vehicle facilities or systems

X Transit stop (rail or bus) within a 1/2 mile radius of the project location

X Park-and-ride lot within a one-mile radius of the project location

_ Real-time surveillance/traffic device controlled by a traffic operations center

X Motorist assistance/hazard clearance patrols

X Interconnected/coordinated traffic signal system

X Other in-place congestion management strategy or strategies (briefly describe below:)

This corridor also benefits from carsharing offered at transit stations and park-and-ride lots in the vicinity, which encourages people to leave their cars at home. In addition, there are extensive pedestrian connections in the area, including sidewalks and bicycle paths along this roadway. (Customize and/or add agency specifics…)

9. List and briefly describe how the following categories of (additional) strategies were considered as full or partial alternatives to single-occupant vehicle capacity expansion in the study or proposal for the project.

a. Transportation demand management measures, including growth management and congestion pricing

The status of and potential impacts of transportation demand management measures, including growth management and congestion pricing, have been considered for this corridor. The facility benefits from the regional alternative commute program, Commuter Connections, jointly funded by Virginia, Maryland, and the District of Columbia. Commuter Connections encourages ridesharing, teleworking, carpooling, vanpooling, and riding/biking to work, among other demand management measures. Additionally, the County promotes its own ridesharing program, providing a wealth of free information on commuting options, and promotes flexible/compressed workweeks. (Customize and/or add agency specifics…)

b. Traffic operational improvements

The status of and potential impacts of traffic operational improvements have been considered for this corridor. Feasible traffic operations management activities have been or will be implemented along the corridor, as well as traffic signal coordination. Strategies include those that aid in reducing non-recurring congestion.(Customize and/or add agency specifics…)

c. Public transportation improvements

The status of and potential impacts of feasible public transportation improvements have been considered for this corridor. Public transportation in the corridor includes regional bus and rail, along with locally-operated bus services. Park-and-Ride lots are also provided in the vicinity of the project. (Customize and/or add agency specifics…)

d. Intelligent Transportation Systems technologies

The status of and potential impacts of feasible Intelligent Transportation Systems (ITS) technologies have been considered for this corridor. ITS technologies providing traveler information and/or traffic management have been or will be implemented along the corridor. (Customize and/or add agency specifics…)

e. Other congestion management strategies

(Customize and/or add agency specifics…)

f. Combinations of the above strategies

The status of and potential impacts of feasible combinations of the above strategies have been considered for this corridor. The above strategies work together to reduce recurring and non-recurring congestion. (Customize and/or add agency specifics…)

10. Could congestion management alternatives fully eliminate or partially offset the need for the proposed increase in single-occupant vehicle capacity? Explain why or why not.

No. While the above congestion management alternatives help manage existing traffic flow on the corridor, additional capacity is needed. However, additional congestion management strategies will continue to be considered and implemented to help manage future capacity in the corridor. (Customize and/or add agency specifics…)

11. Describe all congestion management strategies that are going to be incorporated into the proposed highway project.

The following congestion management strategies (#9a,b,c,d,e,and/or f) will be implemented and improved upon, and/or additional feasible strategies will be considered… (Customize and/or add agency specifics…)

12. Describe the proposed funding and implementation schedule for the congestion management strategies to be incorporated into the proposed highway project. Also describe how the effectiveness of strategies implemented will be monitored and assessed after implementation.

Feasible congestion management strategies are or will be in place along the corridor, and will continue to be in place as the project is implemented, under funding identified within the project. Consideration will be given on how to enhance these existing strategies and to what extent feasible new strategies can be implemented. (Customize and/or add agency specifics…)

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Survey of CMP Strategies in Local Jurisdictions

The following is an example of what type of supplementary information could be compiled to help agencies provide necessary input into the CMP and CLRP. Only a summary of information for Maryland has been compiled to date, as we wanted to obtain feedback from Subcommittee members on the type of information that would be most beneficial. Therefore, when reviewing the information below, please note that this list is not exhaustive and that additional information will continue to be added.

This information will later be put in spreadsheet form to make it easier for agencies to search for information. The spreadsheet would contain information such as:

- The name of the jurisdiction/organization/agency
- Type of organization (DOT, transit agency, Transportation Management District, etc.)
- Geographic location
- Website for reference (including links to transit maps and schedules, if applicable)
- Type of strategy (alternative commute program, ITS technology, public transportation improvement)

Feedback on this supplementary information is welcome. Is this the type of information that is helpful in filling out the CMP and CLRP form? Is this the right amount of information that should be provided?

MARYLAND

Throughout Maryland:

- ***BWI Business Partnership, Inc***. http://www.bwipartner.org/
  - Provides information on and promotes commuter resources such as Commuter Connections, Ridesharing, and Commuter Assistance (GRH).

- ***Coordinated Highway Action Response Team (CHART)***

- ***Maryland Transit Administration Local Bus***
  - Operates nearly 50 local bus lines throughout Central Maryland, many of which connect with Metrorail and MARC. Routes, schedule, and maps can be found here: http://www.mtamaryland.com/services/bus/routes/bus/

In Montgomery County:

- ***Montgomery County's Transportation Management Districts (TMDs)*** http://www.montgomerycountymd.gov/mcgtmpl.asp?url=/Content/DPWT/Transit/commuter/tmdlegislation.asp#FH
  - Montgomery County has four TMDs - Bethesda, North Bethesda, Friendship Heights, and Silver Spring.

- One effort they all have in common is the promotion of alternative commute methods, including ridesharing, carpooling, telecommuting, and the Montgomery County Super Fare Share program (a commuting benefit program where employers are eligible for a certain amount of money to be used to subsidize employees' commuter costs.)
- Also, all four TMDs are served by Montgomery County Ride On in some capacity.

- ***Bethesda Transportation Solutions (BTS)*** http://www.bethesdatransit.org/
  - Manages the **Bethesda Circulator** (formally Bethesda 8 Trolley) – free bus around Downtown Bethesda.
  - Provides transit maps and bus routing information for Metro, Ride On, MARC Rail, MTA (Commuter Buses), VRE.
  - Bicycling and walking: BTS provides information on bicycling information on everything from bike-on-rail guidelines to all the locations of public bike racks in Bethesda as well as information on the Capital Crescent Trail. Also hosts annual Bike to Work Day and the Bike Spirit Awards.
    - Pedestrian safety and awareness: BTS works with the Maryland Department of Transportation and Montgomery County Transit Services to include downtown Bethesda in a pilot program testing the effectiveness of pedestrian countdown signals.

- ***North Bethesda Transportation Center*** http://www.nbtc.org/
    - Public transportation improvements to improve access to, and the condition of, bus stops in North Bethesda.
    - Along with Maryland Transit Administration (MTA), promotes the Commuter Express Bus 991, which offers express service via I-70 and I-270 to Hagerstown MVA, Monocacy MARC station, Urbana Park and Ride, Shadygrove Metro Station, and Rock Spring Business Park (see route map).

- ***Friendship Heights Transportation Management District (TMD)*** http://www.montgomerycountymd.gov/mcgtmpl.asp?url=/Content/DPWT/Transit/commuter/tmdlegislation.asp#FH
    - Location: straddles the Montgomery County and District of Columbia boundary.
    - There are six Montgomery Ride On buses that serve the area, one Metro station (the Friendship Heights station), ten Metrobus routes, and many opportunities for walking, cycling, telecommuting, and carpooling.

- ***Silver Spring Transportation Management District (TMD)*** http://www.montgomerycountymd.gov/mcgtmpl.asp?url=/Content/DPWT/Transit/commuter/tmdlegislation.asp#DSS
    - Traffic reduction strategies include constrained parking, expanded transit services, financial incentives, free fringe park-and-ride lots outside the central business district, and intersection improvements.
    - The TMD area includes 20 Ride On bus routes, 14 Metrobus routes, the Silver Spring MARC station that serves commuter trains originating from Martinsburg, WV. The free Montgomery County VanGo Circulator shuttle also operates in the Silver Spring area.

- ***Montgomery County Department of Public Works and Transportation*** http://www.montgomerycountymd.gov/mcgtmpl.asp?url=/content/dpwt/index.asp
  - ***Montgomery County Ride On***
    http://www.montgomerycountymd.gov/tsvtmpl.asp?url=/content/dpwt/transit/index.asp
    - Website provides a detailed route map for the entire County, including a list of buses serving each Metro station in the County.
    - **VanGo** is a free circulator shuttle, provided by Ride On, which serves Route 28 in Montgomery County. Route operates between the Silver Spring MARC station and the Georgia Ave MARC station with stops in between. VanGo schedule and map: http://www.montgomerycountymd.gov/tsvtmpl.asp?url=/content/dpwt/transit/routesandschedules/allroutes/route28.asp
  - ***Division of Capital Projects and Construction*** provides a database of all transportation projects in the region, including roads, bridges, and pedestrian facilities (bike paths and sidewalks).
  - ***Commuter services*** provides free information on all types of alternative commute programs, including the Super Fare Share employer benefits program, a guide to park and ride lots along the I-270 and I-29 corridors, and the new White Oak and vicinity bicycle and pedestrian map.
  - ***Transportation Management Systems***
    - Implement traffic monitoring cameras for several routes and intersections in Montgomery County, which can be viewed on the County website. (Additional cameras are provided through MSH and CHART.)

In Prince George's County:

- ***Prince George's County Dept. of Public Works and Transportation***
  - **TheBus** operates bus routes throughout the County, Monday through Friday. Website provides bus routes, schedule, and maps. http://www.goprincegeorgescounty.com/Government/AgencyIndex/DPW&T/Transit/thebus.asp?nivel=foldmenu(2)
  - ***Prince George's Ride Smart Commuter Solutions***, a website serviced by Prince George's County Dept. of Public Works and Transportation, provides information to commuters and employers with a comprehensive list of transportation options in the County. http://www.ridesmartsolutions.com/
  - ***Call-A-Bus*** is a service available to all residents of Prince George's County who are not served by, or cannot use, existing bus or rail services. Priority is given to seniors or disabled persons.

CONGESTION MANAGEMENT PROCESS (CMP) OPERATIONAL MANAGEMENT STRATEGIES CRITERIA
December 14, 2007 - DRAFT

		QUALITATIVE CRITERIA (HIGH, MED, LOW)											
		Impacts on Congestion											
STRATEGY		Reduces Overall Congestion	Reduces Incident-related Congestion	Supports/Promotes Multi-modal Transportation	Regional Applicability	Local Applicability	Existing Level of Deployment	Ease of Implementation	Cost	Cost Effectiveness	Enhance Existing Programs		
											DC	MD	VA
Incident Mngt./Non-recurring													
C.1.1	Imaging/Video for surveillance and Detection	MED	HIGH	MED	HIGH	HIGH	MED	MED	MED	HIGH	HIGH	HIGH	HIGH
C.1.2	Service patrols	MED	HIGH	LOW	HIGH	HIGH	MED	HIGH	MED	HIGH	HIGH	HIGH	HIGH
C.1.3	Variable Message Signs (VMS)	MED	HIGH	MED	MED	HIGH	MED	MED	MED	HIGH	HIGH	HIGH	HIGH
C.1.4	Highway Advisory Radio (HAR)	LOW	MED	LOW	MED	HIGH	MED	HIGH	MED	LOW	LOW	MED	MED
C.1.5	Emergency Mngt. Systems (EMS)	LOW	MED	LOW	MED	HIGH	HIGH	MED	HIGH	HIGH	HIGH	HIGH	HIGH
C.1.6	Emergency Vehicle Preemption	LOW	MED	LOW	LOW	HIGH	MED	MED	MED	LOW	MED	MED	MED
C.1.7	Road Weather Management	LOW	HIGH	LOW	HIGH	HIGH	MED	MED	MED	MED	MED	MED	MED
C.1.8	Traffic Mngt. Centers (TMCs)	MED	HIGH	MED	HIGH	MED	MED	MED	MED	HIGH	HIGH	HIGH	HIGH
C.1.9	Curve Speed Warning System	MED	MED	LOW	LOW	MED	LOW	MED	MED	MED	LOW	LOW	LOW
C.1.10	Work Zone Management	MED	HIGH	LOW	MED	HIGH	MED	MED	MED	MED	MED	MED	MED
C.1.11	Automated truck rollover systems	LOW	MED	LOW	LOW	MED	MED	MED	MED	MED	LOW	MED	MED
ITS Technologies													
C.2.1	Advanced Traffic Signal Systems	HIGH	MED	MED	HIGH	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH	HIGH
C.2.2	Electronic Payment Systems	HIGH	LOW	MED	HIGH	MED	MED	MED	MED	HIGH	MED	MED	MED
C.2.3	Freeway Ramp Metering	MED	LOW	LOW	MED	MED	LOW	MED	MED	MED	MED	MED	MED
C.2.4	Probe Testing	MED	HIGH	LOW	MED	MED	LOW	MED	MED	HIGH	MED	MED	MED
C.2.5	Advanced Traveler Information Systems	MED	HIGH	HIGH	HIGH	HIGH	MED	MED	HIGH	HIGH	MED	MED	MED
C.2.6	Bus Priority Systems	LOW	LOW	HIGH	MED	HIGH	LOW	MED	HIGH	MED	MED	MED	MED
C.2.7	Lane Management (e.g. Variable Speed Limits)	MED	MED	LOW	MED	HIGH	LOW	MED	MED	MED	MED	MED	MED
C.2.8	Transit Information Systems	MED	MED	HIGH	MED	HIGH	MED	LOW	MED	MED	HIGH	HIGH	HIGH
C.2.9	Automated Enforcement (e.g. red light cameras)	LOW	LOW	LOW	LOW	HIGH	MED	MED	MED	MED	MED	MED	MED
C.2.10	Traffic signal timing	HIGH	LOW	MED	HIGH	HIGH	MED	HIGH	LOW	HIGH	HIGH	HIGH	HIGH
C.2.11	Reversible Lanes	MED	LOW	LOW	MED	HIGH	LOW	LOW	MED	MED	LOW	MED	MED
C.2.12	Parking Management Systems	MED	LOW	MED	MED	HIGH	LOW	LOW	HIGH	MED	MED	MED	MED
C.2.13	Dynamic Routing/Scheduling	MED	LOW	MED	HIGH	HIGH	LOW	LOW	HIGH	MED	MED	MED	MED
C.2.14	Service Coordination and Fleet Mngt. (e.g. buses and trains sharing real-time information)	MED	LOW	HIGH	HIGH	HIGH	LOW	LOW	MED	MED	MED	MED	MED
Traffic Engineering													
C.3.1	Traffic Engineering Improvements	HIGH	MED	LOW	MED	HIGH	HIGH	HIGH	LOW	HIGH	HIGH	HIGH	HIGH

CONGESTION MANAGEMENT PROCESS (CMP) DEMAND MANAGEMENT STRATEGIES CRITERIA

December 18, 2007 - DRAFT

		QUALITATIVE CRITERIA (HIGH, MED, LOW)											
		Impacts on Congestion											
STRATEGY		Reduces Overall Congestion	Reduces Incident-related Congestion	Supports/Promotes Multi-modal Transportation	Regional Applicability	Local Applicability	Existing Level of Deployment	Ease of Implementation	Cost	Cost Effectiveness	Enhance Existing Programs		
											DC	MD	VA
Alternative Commute Programs													
C.4.1	Carpooling	HIGH	LOW	LOW	HIGH	HIGH	HIGH	MED	LOW	HIGH	MED	HIGH	HIGH
C.4.2	Ridematching Services	HIGH	LOW	LOW	HIGH	HIGH	HIGH	MED	LOW	HIGH	HIGH	HIGH	HIGH
C.4.3	Vanpooling	HIGH	LOW	LOW	HIGH	MED	MED	MED	LOW	HIGH	MED	HIGH	HIGH
C.4.4	Telecommuting	MED	LOW	LOW	HIGH	MED	MED	HIGH	LOW	MED	MED	HIGH	HIGH
C.4.5	Promote Alternate Modes	MED	LOW	HIGH	HIGH	HIGH	HIGH	HIGH	LOW	MED	HIGH	HIGH	HIGH
C.4.6	Compressed/flexible workweeks	MED	LOW	LOW	HIGH	HIGH	HIGH	HIGH	LOW	LOW	MED	MED	MED
C.4.7	Employer outreach/mass marketing	MED	LOW	HIGH	HIGH	HIGH	MED	MED	MED	MED	HIGH	HIGH	HIGH
C.4.8	Parking cash-out	MED	LOW	HIGH	LOW	HIGH	LOW	LOW	MED	MED	LOW	LOW	LOW
C.4.9	Alternative Commute Subsidy Program	MED	LOW	HIGH	HIGH	MED	MED	LOW	LOW	HIGH	HIGH	HIGH	HIGH
Managed Facilities													
C.5.1	HOV	MED	LOW	HIGH	HIGH	MED	MED	MED	HIGH	HIGH	MED	HIGH	HIGH
C.5.2	Variably Priced Lanes (VPL)	HIGH	LOW	MED	HIGH	MED	LOW	LOW	HIGH	HIGH	MED	MED	MED
C.5.3	Cordon Pricing	HIGH	LOW	HIGH	HIGH	LOW	LOW	LOW	MED	HIGH	HIGH	MED	MED
C.5.4	Bridge Tolling	HIGH	LOW	LOW	MED	MED	LOW	LOW	HIGH	MED	MED	LOW	LOW
Public Transportation Improvements													
C.6.1	Electronic Payment Systems	MED	LOW	HIGH	MED	MED	HIGH	MED	MED	HIGH	MED	MED	MED
C.6.2	Improvements/added capacity to regional rail and bus transit	MED	MED	HIGH	MED	HIGH	MED	LOW	HIGH	HIGH	MED	MED	MED
C.6.3	Improving accessibility to multi-modal options	MED	LOW	HIGH	MED	HIGH	MED	MED	MED	MED	HIGH	HIGH	HIGH
C.6.4	Park-and-ride lot improvements	MED	LOW	MED	MED	MED	MED	MED	MED	MED	MED	MED	MED
C.6.5	Carsharing Programs	MED	LOW	HIGH	HIGH	HIGH	MED	HIGH	MED	MED	HIGH	HIGH	HIGH
Pedestrian, bicycle, and multi-modal improvements													
C.7.1	Improve pedestrian facilities	MED	LOW	HIGH	MED	HIGH	MED	MED	MED	MED	HIGH	HIGH	HIGH
C.7.2	Creation of new bicycle and pedestrian lanes and facilities	MED	LOW	HIGH	HIGH	HIGH	MED	MED	MED	MED	HIGH	HIGH	HIGH
C.7.3	Addition of bicycle racks at public transit stations/stops	LOW	LOW	MED	HIGH	HIGH	MED	HIGH	LOW	LOW	HIGH	HIGH	HIGH
Growth Management													
C.8.1	Coordination of Regional Activity Centers	MED	LOW	HIGH	HIGH	HIGH	MED	LOW	HIGH	HIGH	MED	MED	MED
C.8.2	Implementation of TLC program (i.e. coordination of transportation and land use with local gov'ts)	MED	LOW	HIGH	HIGH	HIGH	MED	HIGH	LOW	HIGH	HIGH	HIGH	HIGH
C.8.3	"Live Near Your Work" program	MED	LOW	MED	HIGH	MED	LOW	MED	LOW	LOW	MED	MED	MED