

1. INTRODUCTION

1.1 Need for a CMP Technical Report

This report presents a technical review of the Congestion Management Process (CMP), as addressed by the Transportation Planning Board (TPB) of the Metropolitan Washington Council of Governments (COG).

The Fixing America's Surface Transportation (FAST) Act, signed into law by President Obama on December 4, 2015, continued the requirement for the use of the Congestion Management Process (CMP) in Transportation Management Areas (TMA) that was first stipulated in the SAFETEA-LU and maintained in the MAP-21 legislation. The FAST Act added that a Metropolitan Planning Organization (MPO) serving a TMA may develop an optional Congestion Management Plan (CMPL) that includes projects and strategies that will be considered in the MPO's Transportation Improvement Program (TIP).

The federal Metropolitan Transportation Planning final rule released on May 27, 2016 adds a list of examples of travel demand reduction strategies; adds job access projects as a congestion management strategy; and adds a new section regarding the optional development of a congestion management plan. These changes of the regulations will be reflected in future CMP activities and reports.

The CMP is similar to the previous requirements for a Congestion Management System (CMS) introduced in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), except that the change in name and acronym of CMS to CMP is intended to place a greater emphasis on the planning process and environmental review process, while maintaining and developing effective management and operation strategies. Federal regulations state that Metropolitan transportation planning areas with a population of 200,000 or more, designated as a TMA, are required to have a CMP, and that long-range transportation plans developed after July 1, 2007 must contain a CMP component. Also, in metropolitan planning areas classified as non-attainment for Ozone and Carbon Monoxide (CO) under the Clean Air Act, no single occupant vehicle (SOV) capacity expanding project can receive federal funds unless it shows that the CMP has been considered.

Federal 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..., job access projects, and operational management strategies."¹*

Additionally, a previous federal certification of the TPB planning process, dated March 2006, addressed CMS/CMP with the following still-relevant recommendation:

The TPB should develop a comprehensive description of a regional Congestion Management System to demonstrate its application at critical stages of the metropolitan planning

¹ "Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning; Final Rule," *Federal Register*, Vol. 81, No. 103, May 27, 2016, § 450.322 (a) page 34152 – emphasis added.

process, including the development of the CLRP, TIP, and the development of major projects and policies.

The description should be part of the next update to the CLRP or a stand-alone document that is completed in one year from the issuance of this report. The description can build on key elements in place, including monitoring and evaluating alternatives to new capacity (such as for the Mixing Bowl Springfield Exchange and the Woodrow Wilson Bridge) and the range of congestion related strategies (such as the Commuter Connections Program).²

The Congestion Management Process is intended to operate within or in conjunction with the planning process, which is the focal point for consideration of other factors, such as Clean Air Act requirements, transit, funding, land use scenarios, and non-motorized alternatives. The planning process also leads to decisions on which projects are programmed and implemented. The CMP will provide better information to decision-makers, such as the TPB, who consider transportation planning in our region.

This report is a step in the CMP, which is an ongoing activity. Just as there are many causes of congestion, there are also many solutions. While this report documents the region's recent CMP activities, the concept of addressing congestion and meeting regional goals will continue to be an integral part of the metropolitan planning process.

1.2 The Institutional Context of the CMP in the Washington Region

The federally designated Metropolitan Planning Organization (MPO) for the region is the National Capital Region Transportation Planning Board (TPB) at the Metropolitan Washington Council of Governments (MWCOCG). The TPB is charged with producing long-range transportation plans and transportation improvement programs (TIPs) for the region, which includes the District of Columbia as well as portions of the States of Maryland and Virginia. The members of the TPB include representatives from state, county, local government agencies, as well as the Washington Metropolitan Area Transit Authority (WMATA), non-voting members of the Metropolitan Washington Airports Authority, and federal agencies.

The TPB is advised by a standing Technical Committee for transportation. The TPB Technical Committee oversees details of transportation planning and engineering studies and efforts required to support the region's transportation decision-making process. The Technical Committee has a number of standing subcommittees that focus on particular aspects of the transportation planning process, such as aviation, bicycle and pedestrian planning, regional public transportation planning, travel forecasting, transportation safety, and management, operations and intelligent transportation systems (SPOTS)³.

The TPB Technical Committee is the oversight committee for the CMP, as the committee that guides long-range plan activity and oversees interaction of the various subcommittees. The Technical Committee is also advised by a number of the standing subcommittees who have knowledge about particular aspects of the CMP (for example, SPOTS, Commuter Connections, and Travel Forecasting).

² *Transportation Planning Certification Summary Report* (March 16, 2006). Prepared by Federal Highway Administration and Federal Transit Administration. Page 10. <http://www.mwcog.org/uploads/committee-documents/tVpXVIs20060405140322.pdf>

³ As of July 2016, under the auspices of the FY2017 Unified Planning Work Program (UPWP), the MOITS Technical Subcommittee has been renamed the Systems Performance, Operations, and Technology Subcommittee (SPOTS), reflecting a focus on both existing and emerging topics.

Previous CMS/CMP activities of the region were steered by a CMS Task Force, developed in the mid-1990s. Congestion Management System reports were developed in FY 1995 and FY 1996. However, a decision was then made to fully incorporate congestion management information into the CLRP rather than having a stand-alone document, in order to achieve continuity between the CMS and the CLRP. As such, over the years the CMS/CMP process had included data collection and analysis through compilation of information from implementing agencies associated with projects submitted to the CLRP and TIP, and through consideration of management and operations strategies under the Management, Operations, and Intelligent Transportation Systems (MOITS) Policy Task Force and MOITS Technical Subcommittee. The previously published 2008 CMP Technical Report represented a return to the practice of developing a separate congestion management document.

The 2010 CMP Technical Report was the first report that incorporated the I-95 Corridor Coalition Vehicle Probe Project (VPP)/INRIX data⁴ and developed new performance measures. The 2012 CMP Technical Report utilized even more third-party data than the previous one, including expanded VPP/INRIX data, and traffic volume information from the Transportation Technology Innovation and Demonstration (TTID) Program of the FHWA⁵. The 2014 CMP Technical Report included updates or initiatives taking place between mid-2012 to mid-2014 and adjusted itself toward meeting MAP-21 requirements. The 2016 CMP Technical Report summarized the region's travel trends including congestion up to the end of 2015 and congestion management strategies up to mid-2016. The current 2018 CMP Technical Report summarized the region's travel trends including congestion up to the end of 2017 and congestion management strategies up to mid-2018. Section 1.5 summarizes the highlights of the 2018 Report.

1.3 Coverage Area of the CMP

The Washington region CMP covers the TPB Planning Area (Figure 1-1). As of June 30, 2018, the TPB's planning area covered the District of Columbia and surrounding jurisdictions. In Maryland these jurisdictions include Charles County, Frederick County, Montgomery County, and Prince George's County, plus the cities of Bowie, College Park, Frederick, Gaithersburg, Greenbelt, Rockville, and Takoma Park. In Virginia, the planning area includes Alexandria, Arlington County, the City of Fairfax, Fairfax County, Falls Church, the urbanized area in Fauquier County, Loudoun County, the Cities of Manassas and Manassas Park, and Prince William County.

1.4 Components of the CMP

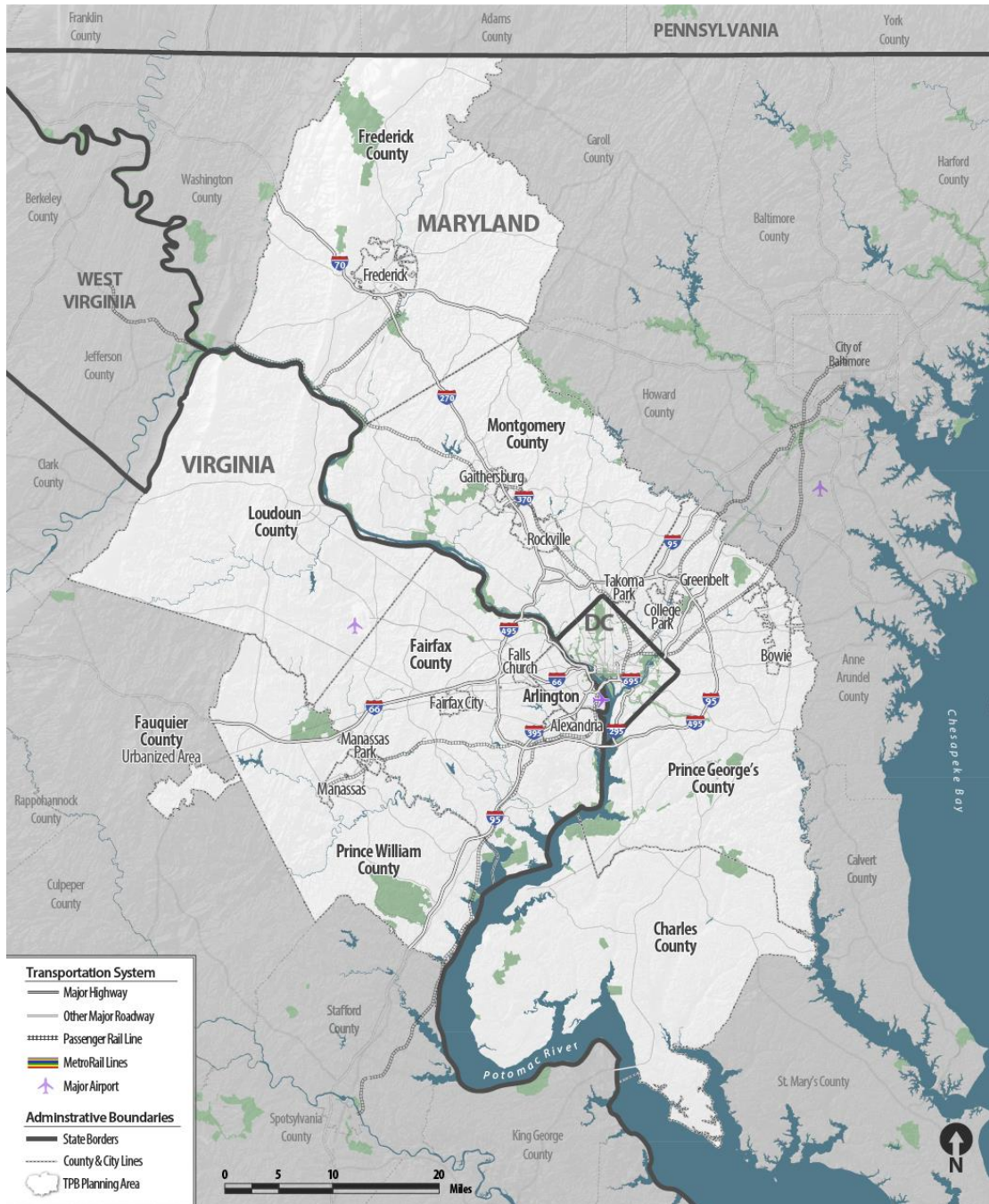
The Congestion Management Process in the National Capital Region consists of the following four components, all of which are wholly integrated into the CLRP:

1. **Monitoring and Evaluating Transportation System Performance.** This TPB effort includes congestion analyses leveraged by emerging data sources (Vehicle Probe Project (VPP) data and analysis tools), the regional transportation data clearinghouse, special studies.
2. **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.

Figure 1-1: TPB Planning Area

⁴ I-95 Corridor Coalition, <http://i95coalition.org/projects/vehicle-probe-project/>

⁵ Transportation Technology Innovation and Demonstration (TTID) Program, FHWA, <http://ops.fhwa.dot.gov/travelinfo/ttidprogram/ttidprogram.htm>



- 3. 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.
- 4. 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.

1.5 Highlights of the 2018 Update of the CMP Technical Report

The 2018 CMP Technical Report presents more congestion facts and analyses than the previous report while still maintaining a comprehensive and updated documentation of the congestion management strategies that are considered and implemented in the National Capital Region. The highlights of the 2018 update include:

- **FAST Act and New Metropolitan Planning Rule.** The FAST Act signed into law on December 4, 2015 and the new federal Metropolitan Transportation Planning rule promulgated on May 27, 2016 set a new stage for the CMP. Job access projects for the first time will be considered as a congestion management strategy. A MPO serving a TMA may develop a congestion management plan, which has specific requirements. Several examples of travel demand reduction strategies are explicitly listed in the new legislation and regulation (such as providing facilities for intercity bus and commuter vanpools and takes into consideration resiliency needs). These new requirements will be reflected in future CMP activities and reports.
- **System Performance/Freight/CMAQ Performance Measures Final Rule.** The FHWA published a Final Rule in the Federal Register on January 18, 2017 (82 FR 5886) to establish performance measures for State Departments of Transportation (DOTs) and metropolitan planning organizations (MPOs) to report on the performance of the Interstate and non-Interstate National Highway System (NHS) to carry out the National Highway Performance Program (NHPP); freight movement on the Interstate system; and traffic congestion and on-road mobile source emissions for the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. The rule, as effective on May 20, 2017, has established four congestion-related performance measures, including:
 - Percent of reliable person-miles traveled on the Interstate.
 - Percent of reliable person-miles traveled on the non-Interstate NHS.
 - A measure that will assess freight movement on the Interstate by the percentage of Interstate system mileage providing for reliable truck travel time (Truck Travel Time Reliability Index).
 - A measure that will assess annual hours of peak hour excessive delay per capita.
- **Enhanced Event-Related Analysis.** Over the past four years, the CMP increased its use of vehicle probe data and other sources to conduct event-related transportation systems performance analysis to better inform planning for operations.
 - Some recent examples include the September 2015 the Pope's visit to Washington, DC, January 2016 snow/ice event and category 4 blizzard, March 16, 2016 Metrorail system-wide shutdown, 2016 Memorial Day holiday traffic looking ahead, Pre-Thanksgiving Traffic Slow Down in November 2016 and updated in November 2017,, and the impact of the 2017 WMATA's SAFE TRACK program. Results of these analyses were published in the TPB Weekly Report, the TPB News, the quarterly Congestion Report (Dashboard), and social media such as the TPB's twitter account. These reports often attracted notable media attention and relays.
- **Disruptive Technologies and Shared Mobility.** The CMP has been monitoring the advancement of disruptive technologies such as autonomous vehicles, connected vehicles and enhanced mass transit systems and the integration of such technologies with shared mobility such as

ride-hailing services. These new technologies along with changed travel behaviors could potentially transform the transportation industry and alter future travel trends predicted by existing models and assumptions. The CMP will continue this monitoring and inform the CLRP and the TIP as needed.

- **Variably Priced Lanes (VPLs) Provide Options to Travelers.** The Intercountry Connector (ICC or MD 200) was opened in November 2011 for the section between I-270 and I-95, and in November 2014 for the final segment between I-95 and US-1. The 495 Express Lanes were opened on the Virginia side of the Capital Beltway in November 2012. The 95 Express Lanes in Northern Virginia were opened in December 2014. The I-66 Express Lanes inside the Capital Beltway opened in late 2017. There are more express lanes planned for the future, including the I-395 Express Lanes and I-66 Express Lanes outside the Capital Beltway currently under construction.
- **Periodic updates.** Since the release of the 2016 CMP Technical Report, a variety of planning and program periodic updates and outside data sources have been released. This current report uses these updates to provide the most up-to-date information for the CMP. Some critical updates include, but are not limited to:
 - 2016 CLRP Amendment and FY 2017-2022 TIP, including searchable online database
 - Round 9.0 Cooperative Forecasts of the region's demographics
 - I-95 Vehicle Probe Project data (through December 31, 2017)
 - Bus Lane Enforcement Study
 - 2017 State of Commute Report 2017 Airport Ground Access Travel Time Study
 - Baltimore Washington Regional Air Passenger Survey
 - Intercity Bus Traffic and Patronage in the Washington Region
 - Vehicle Census of the Region
 - 2017/2018 Household Travel Survey (underway)
 - 2017 Transportation Emissions Reductions (TERMs) Analysis Report