

2010 Congestion Management Process (CMP) Technical Report

DRAFT

**Travel Management Subcommittee
April 27, 2010**

Wenjing Pu and Andrew Meese
National Capital Region Transportation Planning Board (TPB)
Metropolitan Washington Council of Governments (COG)

Background

- A Congestion Management Process (CMP) is a requirement in metropolitan transportation planning
 - SAFETEA-LU and associated 2007 Federal regulations for metropolitan planning address CMP requirements
- Metropolitan long-range plans developed after July 1, 2007 must have a CMP
 - A CMP component is now wholly integrated into the CLRP to address the federal requirement
- March 2006 Federal certification of the TPB process recommended demonstrating how the Congestion Management System (CMS, now CMP) was applied at critical stages of the metropolitan planning process, in the CLRP or a stand-alone document
- A 2008 CMP Technical Report was published
- Draft 2010 CMP Technical Report now ready for review

Outline of the Draft Report

- Executive Summary
 1. Introduction
 2. State of Congestion
 3. Consideration and Implementation of Congestion Management Strategies
 4. Studies of Congestion Management Strategies
 5. How Results of the CMP Are Integrated into the CLRP
 6. Conclusions

04/27/2010

2010 CMP Technical Report (DRAFT)

3

Executive Summary

- “Brief story” of the 2010 CMP Technical Report
- 14 pages
 - Significantly expanded versus the 2008 Report
- Highlights of chapters
- Key findings
- Key recommendations

04/27/2010

2010 CMP Technical Report (DRAFT)

4

Chapter 1 – Introduction

- Need for a CMP Technical Report
- Institutional context of the CMP
- Coverage area and extent of the CMP
- Highlights of the 2010 update
 - New data source for highway performance monitoring
 - Quantified congestion analysis: Travel Time Index and Mile-Hours of Congestion
 - Travel time reliability analysis: Planning Time Index and Buffer Time Index
 - MATOC program
 - MOITS Strategic Plan

04/27/2010

2010 CMP Technical Report (DRAFT)

5

Chapter 2 – State of Congestion

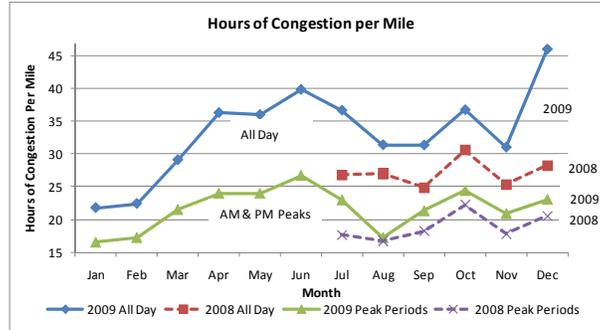
- Congestion on major highways
 - Freeways (Skycomp and INRIX)
 - Sampled arterials (arterial monitoring program and INRIX)
- Safety and congestion
- Congestion on the area's transit systems
- Park-and-ride facilities
- Airport access
- Freight movement and congestion
- Other congestion monitoring and data consolidation activities
- National comparison of the region's congestion
- 2009 CLRP congestion analysis

04/27/2010

2010 CMP Technical Report (DRAFT)

6

Congestion on Freeways



- Congestion increased from 2nd half of 2008 to 2nd half of 2009:
 - 14% increase for AM & PM peaks
 - 24% increase for all time
- Congestion in 2009:
 - From January to June, increasing
 - From July to December, fluctuating

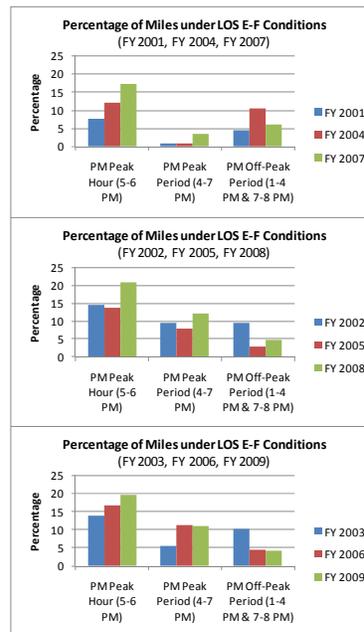
04/27/2010

2010 CMP Technical Report (DRAFT)

7

Congestion on Sampled Arterials

- Arterial congestion tended to become worse over years in the PM peak period (4:00-7:00 PM)
 - especially during the PM peak hour (5:00-6:00 PM)
- Unchanged or relieved in the PM off-peak period (1:00-4:00 PM & 7:00-8:00 PM)



04/27/2010

2010 CMP Technical Report (DRAFT)

8

Analyses of INRIX Data (New for 2010)

- Section 2.1.3 (pages 44-61)
 - A New Data Source for Highway Performance Monitoring
 - Travel time index
 - Mile-hours of congestion
 - Planning time index
 - Buffer time index

04/27/2010

2010 CMP Technical Report (DRAFT)

9

Chapter 3 – Consideration and Implementation of Congestion Management Strategies

- Similar to the 2008 Report with appropriate updates
- Demand management strategies
 - Commuter connections programs
 - Local jurisdictional activities (Table 5, pages 92-101)
- Operational management strategies
 - HOV Facilities
 - Variably Priced Lanes (VPLs)
 - Traffic Management (MATOC, MOITS)
 - Capacity Increases (Based upon CLRP)
- Construction-Related Congestion Management

04/27/2010

2010 CMP Technical Report (DRAFT)

10

Chapter 4 – Studies of Congestion Management Strategies

- Expanded from the 2008 Report
- Review of performance measures
- Review of congestion management strategies
- Updated information on studies
 - TERMS evaluations
 - Regional mobility and accessibility study (RMAS)
 - Phase I: from 2000 to 2006, five scenarios
 - Phase II: from 2007 to present, two scenarios
 - MATOC benefit-cost study
 - MOITS Strategic Plan

04/27/2010

2010 CMP Technical Report (DRAFT)

11

Chapter 5 – How Results of the CMP Are Integrated into the CLRP

- Expanded from the 2008 Report
- The following are integrated into the CLRP:
 - Components of the CMP
 - Demand management
 - Operational management
 - Capacity increases in the CLRP

04/27/2010

2010 CMP Technical Report (DRAFT)

12

Chapter 6 – Conclusions

- New in the 2010 Report
- Key findings of the 2010 CMP Technical Report
- Recommendations for the Congestion Management Process

04/27/2010

2010 CMP Technical Report (DRAFT)

13

Key Findings

- 2008 (when fuel prices were at an all-time high) saw reductions in congestion compared to previous years, but congestion returned to higher levels by 2009.
 - Total freeway lane miles with level of service (LOS) F congestion in the AM and PM peak periods dropped by 24 percent from 2005 to 2008, almost back to 2002 levels.
 - Peak period mile-hours of congestion on the sample of the region's freeway system increased 14 percent in the second half of 2009 compared to the second half of 2008; all time mile-hours of congestion increased 24 percent in the same time frame.
- Congestion varies seasonally on freeways in the region: January had the least congestion and June had the worst congestion in 2009.
- Travel time reliability has been examined in the CMP for the first time. In line with the increase of congestion, freeway travel time reliability deteriorated 13 percent from 2008 to 2009.
- Arterial congestion tended to become worse over the years in the PM peak period (4:00-7:00 PM), especially during the PM peak hour (5:00-6:00 PM), while kept unchanged or relieved in the PM off-peak period (1:00-4:00 PM & 7:00-8:00 PM).

04/27/2010

2010 CMP Technical Report (DRAFT)

14

Key Findings (Continued)

- There was a region wide modal share shift from auto driver/passenger to walk, transit, bike and other modes from 1994 to 2007/2008.
- The transit system in the Washington region serves as a major alternative to driving alone – transit mode share is among the highest several metropolitan areas in the country.
- The Commuter Connections program remains a vital means to assist and encourage people in the Washington region to use alternatives to the single-occupant automobile.
- Congestion management strategies of Management, Operations, and Intelligent Transportation Systems (MOITS) provide essential ways to make most of the existing transportation facilities.
- The Metropolitan Area Transportation Operations Coordination (MATOC) program enhances regional coordination for regional-significant incidents and the program is cost-effective with a conservative benefit to cost ratio of 10:1.

04/27/2010

2010 CMP Technical Report (DRAFT)

15

Recommendations

- Continue the Commuter Connections Program
- Continue the MATOC program and agency/ jurisdictional transportation management activities
- Encourage implementation of congestion management for major construction projects
- Continue and enhance the use of continuous, probe-based congestion monitoring data
- Integrate probe-based congestion monitoring data and location-fixed sensor data
- Continue travel time reliability analysis
- *New since April 23 draft:* Explore the use of INRIX and other emerging data sources to produce online quarterly snapshots of regional congestion

04/27/2010

2010 CMP Technical Report (DRAFT)

16

Priorities for Subcommittee Review

- Executive Summary (pages 7-20)
- Analyses of INRIX data (pages 44-61)
- Implemented strategies overall (Chapter 3, pages 86-125)
 - Local TDM strategies (pages 91-101)
 - Any missing documentation?
 - Any updates?
- Conclusions (Chapter 6, pages 142-143)

04/27/2010

2010 CMP Technical Report (DRAFT)

17

Review Schedule

- Committee presentations
 - TPB Technical Committee, May 7 & June 4
 - MOITS, May 11
 - Commuter Connections, May 18
 - Travel Forecasting Subcommittee, May 21
- FINAL DEADLINE for comments May 28
- Finalization at June 4 Technical Committee

04/27/2010

2010 CMP Technical Report (DRAFT)

18