CONGESTION MANAGEMENT PROCESS

2013 Update

PROJECT IMPLEMENTATION PROCEDURE AND DOCUMENTATION TRAINING SESSION

August 19, 2014
CMP Project Implementation Workshop Overview

Overview of the CMP

Overview of CMP Corridor Analysis Process

CMP Project Implementation Documentation

Project Implementation Form

CMP Corridor Analysis Fact Sheet Template

CMP Roadway Deficiency Form

Questions and Answers
Why Do We Need a Congestion Management Process (CMP)?

Manage Travel Demands
Reduce Single Occupancy Vehicle (SOV) Travel
Improve Efficiency of Transportation System
Maximize Transportation Funds
Justify Additional Capacity is Needed
Coordinate with Regional Partners
Federal Requirement
1. Develop Regional Objectives

2. System Identification

3. Develop Performance Measures

4. Monitor & Evaluate Performance

5. Strategy Identification

6. Strategy Selection

7. Project Implementation

8. Project Performance Evaluation

Metropolitan Transportation Plan*

Progress North Texas

Unified Planning Work Program

Program, Policy, Partnership, and Project Selection

Transportation Improvement Program*

* Conforming Plan and TIP
NCTCOG CMP History

Congestion Management System (CMS) was adopted in 1994

CMS Amended Through Metropolitan Transportation Plan Update in 2005

CMS was Updated and Renamed Congestion Management Process (CMP) in 2007
http://www.nctcog.org/trans/cmp/index.asp

CMP -2013 Update Approved by RTC in July 2013

RTC approved policy that requires the review and application of congestion mitigation strategies to correct corridor deficiencies identified in the Congestion Management Process (CMP) when performing corridor and environmental studies and report findings back to NCTCOG.
NCTCOG CMP – 2013 Update Goals

Goal One: Identify quick-to-implement low-cost strategies and solutions to better operate the transportation system.

Goal Two: More evenly distribute congestion across the entire transportation corridor.

Goal Three: Ensure corridors have options and available alternate routes/modes to relieve congestion during incidents and accidents.
Overview of CMP Corridor Analysis Process
Corridors Evaluated in the CMP
Individual Corridor Evaluations

Inventory of Roadway Corridor

Alternative Roadway Infrastructure
- Parallel Freeway/Toll Roads
- Frontage Roads
- Parallel Arterials
- Direct Connections (Interchanges)

Modal Options
- Transit Options (Bus and Rail)
- Park-and-Ride
- HOV/Managed Lanes
- Bike Options
Individual Corridor Evaluations

Inventory of Roadway Corridor

System Demand (Recurring)
  Peak V/C
  Truck Volume Percentage
  Number of Employees (by TSZ)
  Residential Population (by TSZ)

System Reliability (Non-Recurring)
  Crash Data/Crash Rate
  Shoulders
  Incident Management Training Inventory
  Truck Lane Restrictions
  Intelligent Transportation Systems
Individual Corridor Evaluations

Legend
- One Mile Buffer
- SH 360 Corridor Limits
- Primary Highway
- Secondary Highway
- Major Arterial
- Existing Bike Trails
- Passenger Rail
- Non Passenger Rail
### CMP Corridor Scoring Criteria

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<tr>
<th>Category</th>
<th>Measure</th>
<th>Inventory</th>
<th>Objective</th>
<th>Points Max</th>
<th>Number of Points</th>
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<tr>
<td></td>
<td>Under Construction and Funded Future Construction</td>
<td>This will be used as a screening process when assigning points to a corridor. If the corridor is under-planned construction then it can be exempt from being scored since a solution is currently being proposed.</td>
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<tr>
<td><strong>Points Description</strong></td>
<td>The maximum number of points a corridor can receive is 100. This means that the corridor is functioning at a sufficient level based on the four scoring categories. If the corridor receives a low score, then improvements should be considered in the four scoring categories.</td>
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<tr>
<td><strong>Category</strong></td>
<td>Measure</td>
<td>Inventory</td>
<td>Objective</td>
<td>Points Max</td>
<td>Number of Points</td>
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**Sufficient:** 25 – 15 Corridor Scoring Points  
**Needs Improvement:** ≤ 14 Corridor Scoring Points
Congestion Management Process
Step 1: Evaluate Corridor Segments by Category

- Roadway Infrastructure
- Modal Options
- System Demand
- System Reliability

34 Segments Need Improvements
75 Segments Need Improvements
33 Segments Need Improvements
26 Segments Need Improvements
CMP Roadway Infrastructure Map
CMP System Demand Map
Congestion Management Process
Step 2: Filter Corridor Segments with Combined Category Need and Construction

- **34 Segments Need Improvements in Roadway Infrastructure**
- **75 Segments Need Improvements in Modal Options**
- **33 Segments Need Improvements in System Demand**
- **26 Segments Need Improvements in System Reliability**

**Combined Corridor Segment Improvement Needs**

- **14 Segments Need Improvements in Roadway Infrastructure**
- **32 Segments Need Improvements in Modal Options**
- **33 Segments Need Improvements in System Demand**
- **26 Segments Need Improvements in System Reliability**

**Corridor Segments with Construction**

- **5 Segments Need Improvements in Roadway Infrastructure**
- **17 Segments Need Improvements in Modal Options**
- **15 Segments Need Improvements in System Demand**
- **9 Segments Need Improvements in System Reliability**

*Current, Funded and Recently Completed Construction*
CMP Corridors - Need Improvements
CMP Corridors - Need Improvements with No Construction
Congestion Management Process
Step 3: Identify Strategies to Address Corridor Segment Deficiencies

Example Strategies

Segments Need Improvements in Roadway Infrastructure

Traffic Signal Improvements
Continuous Frontage Roads

Segments Need Improvements in Modal Options

Transit Service with Park-and-Ride
Bike and Pedestrian Improvements

Segments Need Improvements in System Demand

Bottleneck Improvements
Employer Trip Reduction Programs

Segments Need Improvements in System Reliability

Staging Tow Truck
Quick Clearance Policies
Improvements at Crash Hot Spots
## CMP Corridor Rankings

<table>
<thead>
<tr>
<th>#</th>
<th>CMP Rank</th>
<th>Highway From</th>
<th>To</th>
<th>Roadway Infrastructure</th>
<th>Modal Options</th>
<th>System Reliability</th>
<th>System Demand</th>
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</tr>
</tbody>
</table>

○ = Needs Improvement  
✓ = Sufficient

CMP Project Implementation Documentation
CMP Project Implementation Documentation

1. CMP Project Implementation Form
   • Completion Instructions Document

2. CMP Corridor Analysis Fact Sheet Template

3. CMP Roadway Deficiency Form
   • Completion Instructions Document

4. Reference Documents and Websites
   • Transportation Improvement Program Information System (TIPINS)
   • Mobility Plan Fact Sheet – Appendix G of MTP
   • TDM and TSM&O Strategies – Appendix A of CMP
   • CMP Corridor Fact Sheets – Appendix C of CMP
   • CMP Corridor Rankings – Appendix D of CMP
CMP Project Implementation Form

NCTCOG CMP - 2013 UPDATE
PROJECT IMPLEMENTATION FORM

1. Project Name and Project Location

2. Does this project add roadway capacity?
   - Yes
   - No

3. Are complimentary Travel Demand Management (TDM) or Transportation System Management & Operations (TSM&O) projects within this corridor in the TIP? This information can be verified in the Transportation Improvement Programs (TIPs), if yes, identify the project name(s), TIP code(s), and/or CSU number(s):
   - Yes
   - No

4. Is the corridor included in the current Metropolitan Transportation Plan? This information can be verified in the Mobility Plan Fast Sheets found in Appendix C of the RTP?
   - Yes
   - No

5. Is the corridor included in the current CMP Corridor Analysis? The complete inventory of corridor fast sheets can be found in Appendix D of the CMP
   - Yes
   - No

6. Is the corridor identified as deficient in any category?
   - Yes
   - No

7. Identify corridor deficiencies as specified in the current CMP Corridor Analysis or in the Roadway Deficiency Form. (Check all that apply)
   - Alternative Roadway Infrastructure
   - System Demand
   - System Reliability

8. Review Appendix E of the current CMP or other available resources to identify possible mitigation strategies to correct the deficiency. (Check all that apply)
   - Computer Transportation Options
   - Freight Management Operations
   - Incentives to Use Alternative Modes
   - In-Vehicle System Efficiency Improvements
   - Roadway Incident and Emergency Management Operations
   - Roadway Infrastructure Improvements
   - Reduction/Development Improvements
   - System Management and Operations Improvements
   - Transit System Efficiency Improvements
   - Transfer Information Services
   - Work Zone/Construction Management Operations

9. Specify deficiencies-correcting congestion mitigation strategy that will be implemented as part of the project.

10. If not implementing a congestion mitigation strategy, please explain reason.

11. Submit completed form to the NCTCOG - CMP Team at cmp@nctco.org.
CMP Project Implementation Form

1. Completed Form is Required

2. Completion Paths
   a. Project Does Not Add Roadway Capacity
      • Complete Project Identifier Info
      • Answer First Two Questions
      • Email Completed Form to CMP Team
   b. Project Adds Roadway Capacity
      • Entire Form Must Be Completed
      • Will Require Use of Reference Documents and Website
      • May Require Completion of CMP Roadway Deficiency Form and Corridor Analysis Fact Sheet Template

3. Submit Completed Form to CMP@nctcog.org
### CMP Corridor Analysis

#### CMP Corridor Analysis

**ROADWAY NAME:**

- **HIGHWAY**
- **LIMITS**
- **LENGTH**
- **DIRECTION**
- **MAINLANES**

**CORRIDOR FACTS (WITHIN 1 MILE):**

- Function Class: ______________________
- HOV Lanes: ______________________
- Parallel Freeways (within 5 mi): ______________________
- Shoulders: ______________________
- Frontage Roads: ______________________
- Bike Options: ______________________
- Available Transit: ______________________
- Park and Ride: ______________________
- Direct Connections: ______________________
- Truck Lane Restriction: ______________________
- Hazmat Route: ______________________
- Population: ______________________
- Number of Employees: ______________________
- FIM Training Participants: ______________________
- Crash Rate (Use Most Recent Year): ______________________
- Construction Status: ______________________

**PARALLEL ARTERIALS (ENTIRE LIMITS):**

**PARALLEL ARTERIALS (PARTIAL LIMITS):**

**CORRIDOR SCORE:**

<table>
<thead>
<tr>
<th>ROADWAY INFRASTRUCTURE</th>
<th>MODAL OPTION</th>
<th>SYSTEM RELIABILITY</th>
<th>SYSTEM DEMAND</th>
<th>SCORE</th>
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</table>

**CONCLUSIONS/RECOMMENDATIONS**
CMP Corridor Analysis Fact Sheet Template

1. Document Required if Completing a Corridor Deficiency Form

2. Project Corridor Inventory Completed in Conjunction with Corridor Deficiency Form

3. Information Needed to Accurately Complete Deficiency Form

4. Some Information is Tracked by NCTCOG Safety Program Staff
   a. FIM Training Participants
   b. Crash Rates

5. Submit Completed Form to CMP@nctcog.org
1. Document Required if Project Corridor was Not Included in the CMP Corridor Analysis and the Project Adds Capacity

2. Corridor Deficiency Form Completed in Conjunction with Corridor Analysis Fact Sheet

3. Suggest Completing Corridor Fact Sheet Before Completing the Deficiency Form

4. Scores Auto-populate Based on Provided Answers

5. Category Scores Should Be Transferred to the Corridor Analysis Fact Sheet

6. Submit Completed Form to CMP@nctcog.org
## CMP Roadway Deficiency Form

### Alternative Roadway Corridor Deficiency

The factors that influence alternative roadway infrastructure include the presence of parallel freeways, frontage roads, parallel arterials, and direct connections or interchanges.

<table>
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<tr>
<th>Question</th>
<th>Score</th>
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</tr>
<tr>
<td>2. Does the roadway facility include a frontage road system?</td>
<td>0</td>
</tr>
<tr>
<td>3. Does the roadway facility have a parallel arterial within two miles?</td>
<td>0</td>
</tr>
<tr>
<td>4. Does the roadway network include a direct connection or non-signalized interchange to another highway?</td>
<td>0</td>
</tr>
</tbody>
</table>

### Total Points Received in Alternative Roadway Infrastructure Category

0

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.

### Modal Options Deficiency

The factors that influence modal options include the presence of transit options (bus and/or rail), park-and-ride facilities, HOV/Managed Lanes, and bicycle/pedestrian options.

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the roadway facility have established transit service?</td>
<td>0</td>
</tr>
<tr>
<td>2. Is a park-and-ride facility located along the roadway corridor?</td>
<td>0</td>
</tr>
<tr>
<td>3. Are HOV or Managed lanes available along the roadway corridor?</td>
<td>0</td>
</tr>
<tr>
<td>4. Are bike trails or other bike options available along the roadway corridor?</td>
<td>0</td>
</tr>
</tbody>
</table>

### Total Points Received in Modal Options Category

0

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.
CMP Roadway Deficiency Form

System Demand (Recurring) Deficiency

The factors that influence system demand include traffic volume, truck volume/percentage, number of employees along the roadway corridor block, and residential population.

<table>
<thead>
<tr>
<th>Question</th>
<th>Please Select</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the peak hour volume capacity above or below the current average Peak V/C of 0.692?</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>2. Is the truck volume percentage along the corridor above or below the current average of 9%?</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>3. Is the total number of employees along the corridor above or below the current average of 82,549 (by TSZ)?</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>4. Is the population along the corridor above or below the current average of 74,611 (by TSZ)?</td>
<td>Please Select</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Points Received in System Demand Category: 0

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.

System Reliability (Non-Recurring) Deficiency

The factors that influence system reliability include facility crash rates, agencies that participate in incident management training, truck lane restrictions, roadway shoulders, and the presence of Intelligent Transportation Systems (ITS) technology.

<table>
<thead>
<tr>
<th>Question</th>
<th>Please Select</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the crash rate for the corridor below or above the current crash rate average of 75.19?*</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>2. Does the roadway facility have paved shoulders?</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>3. Have emergency response agencies (police and fire) along the corridor participated in Freeway Incident Management (FIM) training?**</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>4. Have truck lane restrictions been implemented along the corridor?</td>
<td>Please Select</td>
<td>0</td>
</tr>
<tr>
<td>5. Is Intelligent Transportation Systems (ITS) technology being utilized along the corridor?</td>
<td>Please Select</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Points Received in System Reliability Category: 0

If total score is 14 or below, then improvements are needed in this category. Please see Appendix A of the current CMP to identify possible congestion mitigation strategies to correct the deficiency.
What Happens Next?

1. Project Implementation Documentation is Submitted to CMP Team

2. Documentation will be Reviewed by Staff

3. If Necessary, NCTCOG Staff will Contact the Submitter Regarding Any Questions

4. If Necessary, NCTCOG will Update CMP and Notify MTP and Conformity Teams
QUESTIONS?
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