



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair
Tegin L. Teich, Executive Director, MPO Staff

WORK PLAN

CONGESTION MANAGEMENT PROCESS:

FFY 2020-21

DECEMBER 17, 2020

Project Identification

Project Number 2121

Client

Boston Region Metropolitan Planning Organization (MPO)

Project Supervisors

Principal: Mark Abbott

Manager: Ryan Hicks

Funding Source

MPO Planning and MPO §5303 Contract #: C2121

Schedule and Budget

Schedule: Twelve months after work commences

Budget: \$118,240

Schedule and budget details are shown in Exhibits 1 and 2, respectively.

Background

The Congestion Management Process (CMP) is an integral part of the metropolitan transportation planning process. The purpose of the CMP is to apply a systematic performance-driven approach to measuring and identifying locations where congested conditions limit mobility to assess safety and mobility concerns and causes.

Findings from the CMP are used to propose congestion mitigation projects and strategies to be included in the MPO's Long-Range Transportation Plan (LRTP). Projects that are funded by the MPO's Transportation Improvement Program (TIP) are evaluated through the CMP. The CMP uses data to evaluate the effectiveness of strategies that have already been implemented. In addition, the CMP recommends

appropriate detailed follow-up studies, and prioritizes them for funding in the MPO's Unified Planning Work Program (UPWP).

The MPO began its CMP in 1995 after the passing of the federal Intermodal Surface Transportation Efficiency Act of 1991. The Fixing America's Surface Transportation (FAST) Act, which is the current federal transportation legislation, expanded the CMP's role. New legislative requirements for the CMP include monitoring congestion reduction and system reliability. The national goal of congestion reduction is "to achieve a significant reduction in congestion on the national highway system." The national goal of system reliability is "to improve the efficiency of the surface transportation system."

As a result of CMP monitoring, numerous studies have been included in the UPWP, and funds for constructing many projects have been programmed in the LRTP and TIP. CMP products may be viewed on the CMP page of the Boston Region MPO's website (www.bostonmpo.org). Listed below are a sample of current and past work conducted by MPO staff that was based on recommendations from CMP monitoring:

- Needs Assessments for the LRTP
- Roadway Speeds and Travel Time Monitoring using INRIX Data (2013–present)
- Boston Region MPO CMP: Performance-Based Planning for Efficiency, Mobility, and Safety (2013)
- New and Emerging Metrics for Roadway Usage (2019)
- Traffic Congestion in the Boston Region—Beyond the Daily Commute (2019)
- Pedestrian Report Card Assessment (PRCA) (2017)
- TIP Intersection Improvement Program (2021–25)
- Route 16 Priority Corridor Study, Chelsea and Everett, Massachusetts (2020)
- Route 9 Corridor Study, Brookline, Massachusetts (2020)
- Route 138 Priority Corridor Study in Canton Massachusetts (2017)
- Medford Square Priority Roadways Improvement Study (2017)
- Route 1A Corridor Study in Wrentham (2017)
- Route 20 East Corridor Study in Marlborough (2017)
- Summer Street/George Washington Boulevard Subregional Priority Roadway Study in Hingham and Hull (2015)
- Washington Street Subregional Priority Roadway Study in Newton (2015)
- Routes 127A/127 Subregional Priority Roadway Study in Gloucester and Rockport (2014)
- Route 3A Subregional Priority Roadway Study in Cohasset and Scituate (2014)

- Priority Corridors for the LRTP Needs Assessment: Traffic Signal-Retiming Study for Route 2 in Concord and Lincoln (2014)
- Federal Fiscal Year (FFY) 2013, 2014, 2016, and 2018 Safety and Operations Analyses at Selected Intersections
- Low-Cost Improvements to Bottleneck Locations, Phase I (2011)
- Low-Cost Improvements to Bottleneck Locations Phase II (2012)
- Low-Cost Improvements to Bottleneck Locations Phase III (2015)
- Low-Cost Improvements to Bottleneck Locations Phase IV (2017)
- Low-Cost Improvements to Bottleneck Locations Phase V (2019)
- 2012–13 Inventory of Park-and-Ride Lots at Massachusetts Bay Transportation Authority (MBTA) Facilities
- 2012 Inventory of Bicycle Parking Spaces and Number of Parked Bicycles at MBTA Stations
- Massachusetts Department of Transportation Park-and-Ride Lot Capacity and Utilization Monitoring
- High-Occupancy Vehicle Monitoring

Objective(s)

The mission of the Boston Region MPO's CMP is to support sustainable economic growth, sustain livability in the region, prevent congestion from increasing, and improve mobility, efficiency, and safety for people, goods and services by encouraging programs that reduce the use of single-occupant vehicles, including programs that employ transportation systems management and operations techniques, travel demand management, and new technologies.

The objectives of this work plan are as follows:

1. Continue to support and coordinate with the MPO's CMP Committee.
2. Identify, evaluate, and select strategies to include in the LRTP, TIP, and UPWP.
3. Monitor the effectiveness of congestion management strategies implemented through the TIP.
4. Devise innovative ways to communicate the results of analyses on travel time data and person throughput for all modes to public officials and the general public.
5. Ensure that the Boston Region MPO's CMP conforms to FAST Act standards.
6. Establish and refine measures to understand the transportation system's performance.

7. Continue to explore, collect, and evaluate data on the transportation network that can be used for performance monitoring.

Work Description

Task 1 CMP Committee Support and Project Evaluation

The Boston Region MPO's CMP Committee was formed in January 2012. The purpose of the CMP Committee is to help implement recommended solutions from the most recent CMP report, the LRTP, the TIP, and corridor studies.

The CMP Committee will meet approximately two times during FFY 2021. In order to support the CMP Committee, MPO staff will organize and attend CMP Committee meetings, create agendas, take minutes, present materials, and ensure that the meetings are accessible according to the Americans with Disabilities Act. When a task is completed, MPO staff will present the results formally to the CMP Committee. Staff will also evaluate projects for the FFYs 2022–26 TIP.

Subtask 1.1 Prepare materials and organize CMP committee meetings

Staff will prepare meeting materials for CMP committee meetings, including the agenda, meeting minutes, and work materials. Staff will also participate and assist with setting up meetings. Staff will coordinate with the CMP Committee chair to determine the flow of the meeting.

Subtask 1.2 Evaluate FFYs 2022-26 TIP projects through the CMP

Staff will conduct annual evaluations of projects that are submitted for the 2022–26 TIP. The analysis will include scoring based on CMP and transit criteria.

Subtask 1.3 Ensure that the CMP complies with federal regulations

The latest federal regulations require that the MPO expands performance monitoring to include performance measures that monitor system reliability. This task is completed in collaboration with the Certification Activities group (MPO staff) that calculates the performance measures on a regional level and determines performance targets to be set for the MPO.

Products of Task 1

CMP Committee meeting materials; CMP and transit scoring results from TIP project scoring; monitoring standards that conform with Federal Highway Administration's regulations

Task 2 Congestion Summary of the Region

Staff will create a summary of the CMP. This summary will be an online report that will display up-to-date analysis and data on congestion in the Boston region across

multiple modes. Background will be provided and an overview of the congestion situation for each mode of transportation. If the data are available, the congested corridors will be displayed for respective modes. The goal of this task is to inform both professional planners and the public about problem areas on the transportation network in the Boston region.

Subtask 2.1 Evaluation of data sources

This subtask will help fulfill the CMPs commitment to objective seven in the CMP objectives listed above. The Boston Region MPO currently has access to different transportation datasets so data collection will not be necessary, but can be performed for this task as needed. This subtask will evaluate different data sources to determine if and how data can be included in the congestion summary.

Subtask 2.2 Performance measure definitions

Performance measures will be thoroughly defined in this section. Most of the performance measures used are performance measures from the CMP, or CMP related studies. Additionally, detailed parameters will be stated for each performance measure used.

Subtask 2.3 Performance monitoring

Detailed visuals will be created in this section that will show the level of congestion for each transportation mode monitored, according to the performance measure thresholds listed in Subtask 2.1. Visuals will be created that show recent congested conditions and the change in congestion over time, depending on the data that are available.

Subtask 2.4 Problems and needs

This subtask will summarize problem locations on the transportation network based on the performance measure thresholds. The specific performance measures that indicate congestion at a location will be indicated.

Subtask 2.5 Summary of the region

This section will summarize how congestion has changed in recent years for several modes that are monitored through the CMP. Trends will be analyzed for different modes of transportation. The extent of analysis will be determined by the data that are available for each mode.

Products of Task 2

List of data sources used for the congestion summary; definitions and thresholds for performance measures; detailed visuals and maps for congestion in the region for various modes; list and summary of congested locations on the transportation network; summary of changes in congestion for all modes during the CMP

Task 3 Park-and-Ride Updates

Since 2017, the Boston Region MPO has been collecting, analyzing, and processing park-and-ride data as part of the 2017–18 iteration of the park-and-ride collection effort. In FFY 2020, MPO staff created a park-and-ride dashboard that summarizes automobile and bicycle parking near MBTA stations. The park-and-ride dashboard may undergo updates in FFY 2021, as needed.

Subtask 3.1 Conduct updates to park-and-ride lot data as needed

The park-and-ride dashboard may undergo minor updates that include data and programming-related changes, which would need to be completed by MPO staff (IT).

Subtask 3.2 Process license plate data

License plate capture was conducted at certain stations when the park-and-ride data were collected in 2017 and 2018. This enabled the MPO to calculate the origin and destination of the vehicles parked at MBTA stations. These data can be used for the travel demand model or the park-and-ride dashboard, the latter of which can be upgraded to display origin-destination data.

Subtask 3.3 Add archived data to park-and-ride dashboard

Prior to 2017–18, park-and-ride and bicycle parking inventory data were collected in the years 2012–13, 2009–10, 2005–06, 2002, and 2000. These inventories are available to be archived and could be added to the park-and-ride dashboard.

Products of Task 3

Updates to the park-and-ride dashboard as needed; origin-destination data calculated for certain MBTA stations; archived inventories added to park-and-ride dashboard

The Boston Region Metropolitan Planning Organization (MPO) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination under any program or activity that receives federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, Federal Transit Administration, or both, prohibit discrimination on the basis of age, sex, and disability. The Boston Region MPO considers these protected populations in its Title VI Programs, consistent with federal interpretation and administration. In addition, the Boston Region MPO provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with U.S. Department of Transportation policy and guidance on federal Executive Order 13166.

The Boston Region MPO also complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 sections 92a, 98, 98a, which prohibits making any distinction, discrimination, or restriction in admission to, or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry. Likewise, the Boston Region MPO complies with the Governor's Executive Order 526, section 4, which requires that all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.

A complaint form and additional information can be obtained by contacting the MPO or at http://www.bostonmpo.org/mpo_non_discrimination. To request this information in a different language or in an accessible format, please contact

Title VI Specialist
Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116
civilrights@ctps.org
857.702.3700 (voice)
617.570.9193 (TTY)

Exhibit 1
ESTIMATED SCHEDULE
Congestion Management Process: FFY 2020–21

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
1. CMP Committee Support and Project Evaluation	A											
2. Congestion Summary of the Region											B	
3. Park-and-Ride Updates	C											D

Products/Milestones

- A: TIP project scores
- B: Completed snapshot dashboard
- C: Processed park-and-ride origin-destination data
- D Archived park-and-ride inventories

Exhibit 2
ESTIMATED COST
Congestion Management Process: FFY 2020–21

Direct Salary and Overhead	\$118,240
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Task	Person-Weeks					Direct Salary	Overhead (106%)	Total Cost
	M-1	P-5	P-4	P-2	Total			
1. CMP Committee Support and Project Evaluation	0.6	0.2	3.6	0.0	4.4	\$6,756	\$7,162	\$13,918
2. Congestion Summary of the Region	1.2	1.8	16.1	4.0	23.1	\$33,788	\$35,816	\$69,604
3. Park-and-Ride Updates	1.0	2.2	3.4	4.8	11.4	\$16,853	\$17,865	\$34,718
Total	2.8	4.2	23.1	8.8	38.9	\$57,398	\$60,842	\$118,240

Other Direct Costs	\$0
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TOTAL COST	\$118,240
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Funding

MPO Planning Contract #C2121