



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair
Karl H. Quackenbush, Executive Director, MPO Staff

WORK PROGRAM

ADDRESSING PRIORITY CORRIDORS FROM THE LONG-RANGE TRANSPORTATION PLAN NEEDS ASSESSMENT: FFY 2019

SEPTEMBER 20, 2018

Proposed Motion

The Boston Region Metropolitan Planning Organization (MPO) votes to approve this work program.

Project Identification

Unified Planning Work Program (UPWP) Classification

Boston Region MPO Planning Studies and Technical Analyses

Project Number 13519

Client

Boston Region MPO

Project Supervisors

Principal: Mark Abbott

Manager: Seth Asante

Funding Source

MPO Planning Contract #105757 and MPO §5303 Contract #102694

Schedule and Budget

Schedule: Eleven months after work commences

Budget: \$120,000

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

Relationship to MPO Goals

The Boston Region MPO elected to fund this study with its federally allocated metropolitan planning funds during federal fiscal year (FFY) 2019. The work completed through this study will address the following goal areas established in the MPO's Long-Range Transportation Plan (LRTP): safety, system preservation, capacity management and mobility, transportation equity, and economic vitality.

Background

The Boston Region MPO's LRTP, *Charting Progress to 2040*, identifies existing needs for all modes of transportation in the MPO region.¹ These needs guide decisions about which projects to include in the Transportation Improvement Program (TIP).² Among the region's current mobility needs are maintaining and modernizing the roadways that have high levels of congestion and safety problems; improving the quantity and quality of venues for walking and bicycling; improving adherence to schedules of transit service; and advancing the efficiency and modernization of transit service.

For roadways, the LRTP identified several priority arterial segments that need maintenance, updates, and safety and mobility improvements. These arterial segments were identified from previous and ongoing transportation planning work, including the MPO's Congestion Management Process (CMP) and MPO planning studies. To help identify solutions to address the mobility and safety concerns in some of the identified arterial segments, a roadway corridor study was included in the FFY 2019 UPWP.³

A roadway corridor study is a logical way to address regional multimodal transportation needs, since it evaluates a roadway corridor or arterial segment comprehensively, considering the needs of pedestrians, bicyclists, motorists, public transportation users, and roadway abutters. Using a holistic approach to analyze the issues, the MPO staff develops short- and long-term recommendations for improvements within the roadway's right-of-way. The intent is to improve a roadway corridor so that it is safe for people to walk or bicycle to shops, schools, transit stations, and recreational areas, and so that buses can run on time.

In this document, an arterial segment is defined as either a portion of a roadway corridor that spans multiple towns, an entire town, or a segment that includes a few intersections in a town or near a shopping center. Within these arterial segments, there are problem locations. The arterial segments that will be considered for this study are identified in the current LRTP.

¹ *Charting Progress to 2040, the Long-Range Transportation Plan of the Boston Region Metropolitan Planning Organization*, July 30, 2015.

² Transportation Improvement Program and Air Quality Conformity Determination, Federal Fiscal Years 2018–22, endorsed by the Boston Region Metropolitan Planning Organization on May 25, 2017.

³ Federal Fiscal Year 2018 Unified Planning Work Program, Endorsed by the Boston Region Metropolitan Planning Organization on June 15, 2017.

Objective(s)

1. Select an arterial segment from those identified in the current LRTP
2. Identify the safety, mobility, access, and other transportation-related problems within the arterial segment
3. Develop and evaluate multimodal transportation solutions to the problems

Work Description

In this work program, the selection of study corridor was completed in the previous federal fiscal year. This will allow the MPO staff to complete field data collection before the winter and expedite the study process. The MPO staff will perform the following tasks in FFY 2019:

- Establish advisory task force and identify problem locations
- Collect and gather data
- Analyze data
- Recommend improvements
- Document results
- Elicit and review input for FFY 2020 study locations
- Select study locations for FFY 2020

Task 1 Establish an Advisory Task Force and Identify Problem Locations

The MPO staff will establish an advisory task force composed of municipal officials and members of subregional groups in the MPO's planning area whose jurisdictions include areas in which the LRTP arterial segments are located, as well as representatives from the Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning and MassDOT Highway Division, the Massachusetts Bay Transportation Authority (MBTA), regional transit authorities (if the segment is in the service area of MetroWest or Cape Ann), and the Metropolitan Area Planning Council (MAPC) to participate in the study. These stakeholders will advise the MPO staff about the study areas and data sources; help identify transportation-related problems; and help develop multimodal transportation solutions and recommendations. The recommendations from this study will be implemented by either municipalities or the Highway Division; therefore, it is important that the recommendations reflect those entities' experience and MassDOT design standards.

Products of Task 1

- An advisory task force
- Identify and define problem areas for data collection
- Documentation of stakeholder input

Task 2 Collect and Gather Data

Once the problem locations within the arterial segment have been identified, staff will gather recent and historical data from existing sources, including studies performed by municipalities or proponents of private development projects and databases maintained by the MPO staff and the Highway Division. Some data will need to be collected in the field. The following data will be gathered for the arterial segment:

- Turning-movement counts for the peak periods, including for trucks traffic data, pedestrians, and bicyclists, and average weekday traffic data from automatic traffic recorder counts
- Traffic signal timing plans, signage, and lane configurations
- Bus service performance data and locations of stops, signage, and shelters
- Right-of-way, pavement widths and conditions, sidewalk widths and conditions, and the condition and signage at midblock crossings
- Planned development projects, development mitigation proposals, and proposed transportation projects
- Crash data and police reports from the MassDOT Registry of Motor Vehicles and municipality

Products of Task 2

- Datasets for assessing safety, mobility, and operational performance at the problem locations, including roadway inventory data and an inventory of bus service and performance data
- A list of planned economic development and transportation improvement proposals for the arterial segment

Task 3 Analyze Data

Based on analyses conducted in similar past studies and the need to provide Complete Streets—where pedestrians, bicyclists, motorists, and transit riders of all ages and abilities can move along and across a street safely—staff will perform the following tasks:

- Analyze crash data, prepare crash diagrams, and identify safety concerns and possible improvements
- Evaluate the need for installing or replacing sidewalks and closing gaps in sidewalk network
- Evaluate the need for improving safety at pedestrian crossings and/or making them accessible for persons with disabilities

- Assess potential safe and economical means of accommodating bicyclists, for example, by adding protected bike lanes, providing adequate shoulders, and allowing bicyclists to share the road with motorists
- Analyze traffic volume data and intersection turning-radius data to determine potential truck traffic safety improvements
- Conduct analyses of traffic signal warrants, signal retiming plans, and coordination to determine appropriate intersection traffic controls and the best signal timing plans for the safe and efficient movement of pedestrians, bicyclists, and motorists
- Assess the need for upgrading traffic signal equipment to comply with MassDOT standards
- Evaluate the on-time performance of bus service, bus stop placement in relation to demand and pedestrian activity, and the need for bus signs and shelters

Products of Task 3

- Crash analyses tables and figures
- Collision diagrams
- Delay and queue calculations
- Tables of bus performance statistics
- Maps and other graphics showing pedestrians and bicyclists' activities

Task 4 Recommend Improvements: Pedestrian Mobility, Traffic Operations, Bus Service, and Safety

Based on the results of consultation with advisory task force and the analyses described above, staff will recommend geometric, traffic control, pavement rehabilitation, roadway enhancement, and other changes to improve traffic operations and truck movement, with an emphasis on the effective, safe accommodation of pedestrians and bicyclists. Additional recommendations will suggest improvements to allow buses to run on time, and to make it safe for people to walk to and from bus stops and train stations.

Products of Task 4

- Recommendations for addressing pedestrian, bicyclist, and motorist safety; accommodation of pedestrians, bicyclists, and transit users; other traffic operations improvements, including accommodating trucks and buses and reducing congestion

Task 5 Document Results

Staff will submit a report or memorandum on the background of the study, agency and municipal input, identification of problems, data collection, analyses, and recommendations. The document will follow the Highway Division's guidelines for

preparation of functional design reports as much as possible, taking into consideration the study's budget. The document will be available for review by the advisory task force. After their comments have been addressed, the final document will be presented to the MPO.

Product of Task 5

- A final report or memorandum documenting all of the project's tasks and products, including recommendations

Task 6 Elicit and Review Input from Municipalities and Agencies for FFY 2020 Study Locations

The MPO staff will review public comments gathered during the development of the LRTP and UPWP and from other FFY 2019 outreach activities. In addition, MPO staff will contact municipal officials and members of subregional groups, as well as representatives from MassDOT Office of Transportation Planning, MassDOT Highway Division, the MBTA, regional transit authorities, and the MAPC to discuss arterial segments from the LRTP that are on their high-priority list. These stakeholders will advise the MPO staff about high-priority study areas and data sources; help identify transportation-related problems; and assess commitment to implement study recommendations.

Products of Task 6

- List of LRTP arterial segments mentioned during MPO outreach or those included on the high-priority lists of the municipalities and agencies
- Relevant information about the potential study locations

Task 7 Select Study Location for FFY 2020

First, MPO staff will rate the arterial segments using available CMP data, such as traffic volumes, crashes, vehicle speeds, freight and truck routes, bus crowding and/or schedule adherence, traffic signal coordination, and pedestrian and bicyclists' needs. Then safety and congested conditions, multimodal and regional significance, regional equity, and implementation potential will be used to score and rank each arterial segment. The MPO staff will then select an arterial segment for study based on the rankings of the arterial segments and stakeholder support for implementing the study's recommendations.

The arterial segment considered for study will be a segment that could benefit from improvements related to sidewalks and crosswalks, access management, traffic control and operations (including traffic signal upgrades and coordination), and potential land use changes and redevelopment. In addition, MPO staff will consider highway jurisdiction agency and municipality commitment to advance the recommendations of the study into a project through the Highway Division's project

development process. This recommendation, along with the full list of arterial segments from the LRTP, will be presented to the MPO for discussion.

Products of Task 7

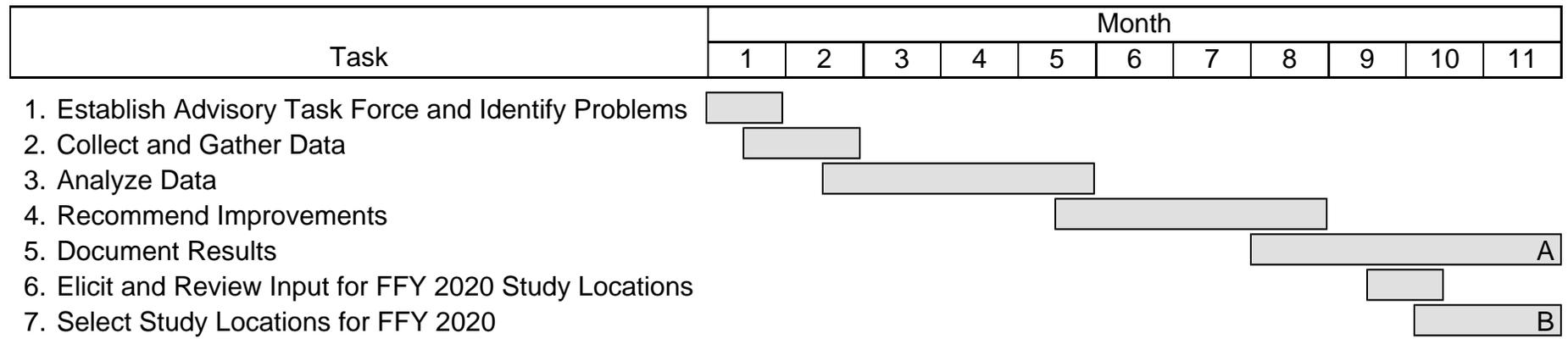
A technical memorandum documenting:

- The selection process for study location
- The evaluation criteria
- Final selected arterial segment

Exhibit 1

ESTIMATED SCHEDULE

Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment: FFY 2019



Products/Milestones

A: Final report

B: Technical memorandum about selection process

Exhibit 2**ESTIMATED COST****Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment: FFY 2019****Direct Salary and Overhead** **\$119,050**

Task	Person-Weeks						Direct Salary	Overhead (99.00%)	Total Cost
	M-1	P-5	P-4	P-3	P-1	Total			
1. Establish Advisory Task Force and Identify Problems	0.2	2.0	0.0	0.0	0.0	2.2	\$4,299	\$4,256	\$8,555
2. Collect and Gather Data	0.2	2.0	0.4	0.0	1.0	3.6	\$5,815	\$5,757	\$11,571
3. Analyze Data	0.4	3.4	0.0	0.2	2.0	6.0	\$9,574	\$9,478	\$19,052
4. Recommend Improvements	0.4	4.5	1.0	0.4	2.0	8.3	\$13,397	\$13,263	\$26,659
5. Document Results	3.0	5.0	1.0	0.0	2.0	11.0	\$18,664	\$18,478	\$37,142
6. Elicit and Review Input for FFY 2020 Study Locations	0.2	1.0	0.0	0.0	0.0	1.2	\$2,334	\$2,310	\$4,644
7. Select Study Locations for FFY 2020	0.5	1.0	0.0	0.0	3.0	4.5	\$5,742	\$5,684	\$11,426
Total	4.9	18.9	2.4	0.6	10.0	36.8	\$59,824	\$59,226	\$119,050

Other Direct Costs **\$950**

Travel	\$950
--------	-------

TOTAL COST **\$120,000****Funding**

MPO Planning Contract: #105757

MPO §5303 Contract #102694 and subsequent MPO §5303 contract