



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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WORK PLAN

AIR QUALITY CONFORMITY AND SUPPORT ACTIVITIES:

FFY 2020

OCTOBER 3, 2019

Proposed Action

The Boston Region Metropolitan Planning Organization (MPO) reviews this work plan.

Project Identification

Project Number 8420

Client

Boston Region MPO

Project Supervisors

Principal: Alexandra Kleyman

Manager: Anne McGahan

Funding Source

MPO Planning Contract and MPO §5303 Contract #108217

Schedule and Budget

Schedule: 12 months after work commences

Budget: \$31,260

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

Background

Under the Clean Air Act Amendments (CAAA) of 1990, states must monitor emissions from transportation vehicles and other sources to determine whether ambient emission levels exceed health-based allowable levels of air pollutants. Areas in which the emissions exceed the allowable levels are designated as nonattainment areas. For these areas, the state must develop a State Implementation Plan (SIP) that establishes emissions budgets and shows how the plan would sufficiently reduce emissions in the area to comply with national ambient air quality standards. MPOs with nonattainment areas must complete air quality conformity determinations to demonstrate the conformity of transportation plans, programs, and projects with the Massachusetts SIP. Typically, a conformity determination is performed annually for the Transportation Improvement Program (TIP), and every four years for a new Long-Range Transportation Plan (LRTP). However, a conformity determination may be required if a LRTP amendment is undertaken during the year. This work plan covers the tasks that must be undertaken to demonstrate that the Boston Region MPO's federally funded transportation programs meet conformity requirements.

Also, as required by the Massachusetts Global Warming Solutions Act (GWSA), the MPO must track the greenhouse gas (GHG) emissions of planned and programmed projects, and consider GHG impacts when prioritizing transportation projects. Analyzing and tracking the projects in the LRTP and TIP are included as part of this work plan.

In addition, air quality support work is funded in this work plan. This work includes research and analysis for air quality and climate change issues in the MPO area. It allows for additional support in implementing air quality-related transportation programs and projects, and includes consultation, research, and coordination between MPO staff and federal, state, local, and private agencies. Much of the research, analysis, and coordination with federal and state agencies results in products used by the MPO, including the mobile-source emissions factors used in all of the MPO's regional and project-level air quality analyses and conformity analyses for the Massachusetts SIP.

Objectives

This work plan has two primary objectives, as follows:

1. To ensure that the MPO's plans, programs, and projects comply with the CAAA of 1990 and to allow for the flow of federal funding into the Boston Region MPO area's transportation system.
2. To provide ongoing support services to the MPO to maintain a technical capability in air quality and climate change matters, conform to federal air quality requirements and the state's climate change policies, and fund activities that support the MPO's response to changing requirements for planning, analysis, and reporting. These activities involve participating in initiatives, while reserving

some capacity for participating in issues that might emerge during the course of the federal fiscal year (FFY).

Work Description

This work, which is conducted on an ongoing basis, consists of the following tasks:

Task 1 Perform System-Level Air Quality Analysis for Conformity with Federal and State Requirements

The Boston Region MPO's regional travel demand model and the emissions model, Motor Vehicle Emission Simulator (MOVES), are used to analyze various pollutant emissions for the entire Boston Region MPO area. The analysis provides collective emissions data from all regionally significant transportation projects included in the LRTP and the TIP. For air quality conformity analysis purposes, a regionally significant project is one that adds capacity to the system.

A systemwide conformity determination is required for ozone; however, for carbon monoxide (CO), a conformity determination is required for the city of Waltham only. Although not part of the federal conformity determination, carbon dioxide (CO₂) emissions must be calculated to provide information to meet the requirements of the GWSA.

A conformity determination will also be done for the TIP to show that the SIP projects are being funded and are advancing in a timely manner.

Products of Task 1

- Air quality conformity determination of the TIP to comply with air quality standards and to show that SIP projects are advancing in a timely manner; an air quality conformity determination for the LRTP will be done if an amendment is required in FFY 2020.
- Region-wide analysis of CO₂ emissions

Task 2 Perform Project-Level Air Quality Analysis

In accordance with US Department of Transportation and US Environmental Protection Agency (EPA) guidelines, staff will conduct a detailed analysis of potential effects from volatile organic compounds and nitrogen oxides, the two precursors of ozone, and CO and CO₂ for each project that will receive funding from the Congestion Mitigation and Air Quality (CMAQ) Program in the TIP. Staff will also conduct such an analysis for each project that would help the MPO meet the requirements of the Commonwealth's GWSA.

In addition, the CO₂ analysis will be used as an input into the MPO's TIP project-selection process and, furthermore, estimates of CO₂ emissions from projects that

are funded in the TIP will be provided to Massachusetts Department of Transportation (MassDOT) for monitoring transportation projects for the GWSA.

Products of Task 2

- Analyses of individual projects for CMAQ eligibility review
- Analyses of individual projects for use in GWSA implementation

Task 3 Support for Climate Change Initiatives

Staff will integrate climate change considerations and emissions reduction opportunities into the MPO's planning processes and will assist with integrating them into state agencies' planning processes. Activities in this task include the following:

1. Support the MPO's climate change initiatives, including integrating awareness of climate change and strategies for addressing it into every aspect of the MPO's planning processes, and engaging in research on climate change issues
2. Integrate the MPO's climate change work with MassDOT and Federal Highway Administration initiatives
3. Coordinate MPO climate change initiatives with other state, regional, and local agencies and organizations

Products of Task 3

- Text and memoranda for inclusion in the MPO's certification documents
- Presentations and white papers on climate change issues, as requested
- Air quality analyses of requested projects and memoranda documenting the climate change impacts

Task 4 Support for the Mobile-Source Element of the State Implementation Plan

The Massachusetts Department of Environmental Protection (DEP) is required to submit a SIP to the EPA that documents the strategies and actions designed to bring Massachusetts into compliance with air quality standards, as needed. In order to assist the Commonwealth with this task, staff will support MassDOT and DEP work and provide data and recommendations to MPO member agencies about funding programs and projects that have air quality benefits.

Product of Task 4

Air quality analyses of specific projects and programs

Task 5 Ongoing Technical Support to State Agencies

Staff will provide support to agencies by conducting the following activities:

- Developing new emissions factors using the MOVES emissions model
- Evaluating policies on long-term growth, transportation, land use, and other public policies that affect air quality
- Analyzing transportation control measures, park-and-ride facilities, and proposed high-occupancy-vehicle projects throughout the Boston Region MPO area
- Evaluating emerging and innovative highway and transit clean-air activities
- Coordinating with DEP on statewide regulations and programs that relate to air quality

Staff will provide project-level support by conducting the following activity:

- Developing air toxic emissions factors by using the MOVES model for studies done by the Boston Region MPO staff to determine the health-related impacts of transportation projects

Products of Task 5

- Updated MOVES emission factors and appropriate documentation for inclusion on the MPO's website
- Air quality analyses and evaluations of projects for various pollutants as needed, as requested by MassDOT, the Massachusetts Bay Transportation Authority (or MBTA) and the Massachusetts Port Authority

Exhibit 1

ESTIMATED SCHEDULE

Air Quality Conformity and Support Activities: FFY 2020

Task	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	
1. Perform System-Level Air Quality Analysis for Conformity with Federal and State Requirements						A							
2. Perform Project-Level Air Quality Analysis						B							
3. Support for Climate Change Initiatives	[Shaded Bar]												
4. Support for the Mobile Source Element of the State Implementation Plan	[Shaded Bar]												
5. Ongoing Technical Support to State Agencies	C												

Products/Milestones

- A: TIP Conformity Determination
- B: Individual Project Analyses for TIP
- C: Updated MOVES Emission Factors

Exhibit 2
ESTIMATED COST
Air Quality Conformity and Support Activities: FFY 2020

Direct Salary and Overhead										\$31,260
Task	Person-Weeks							Direct Salary	Overhead (102.11%)	Total Cost
	M-1	P-5	P-4	P-3	P-2	SP-1	Total			
1. Perform System-Level Air Quality Analysis for Conformity with Federal and State Requirements	0.3	0.9	0.1	0.1	0.0	0.0	1.5	\$2,716	\$2,773	\$5,489
2. Perform Project-Level Air Quality Analysis	0.3	0.8	0.1	0.1	0.3	1.2	2.9	\$3,786	\$3,866	\$7,652
3. Support for Climate Change Initiatives	0.0	0.7	0.0	0.0	0.1	0.0	0.8	\$1,502	\$1,534	\$3,036
4. Support for the Mobile Source Element of the State Implementation Plan	0.0	0.3	0.0	0.0	0.0	0.0	0.3	\$596	\$609	\$1,204
5. Ongoing Technical Support to State Agencies	0.6	2.5	0.0	0.0	0.0	1.0	4.1	\$6,867	\$7,012	\$13,879
Total	1.2	5.3	0.2	0.2	0.4	2.2	9.5	\$15,467	\$15,794	\$31,260
Other Direct Costs										\$0
TOTAL COST										\$31,260

Funding
MPO Planning Contract and MPO §5303 Contract 108217