



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair
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WORK PLAN

AIR QUALITY CONFORMITY AND SUPPORT ACTIVITIES: FEDERAL FISCAL YEAR 2019

SEPTEMBER 20, 2018

Proposed Action

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

Project Identification

Project Number 8419

Client

Boston Region MPO

Project Supervisors

Principal: Alexandra Kleyman

Manager: Anne McGahan

Funding Source

MPO Planning Contract #105757, MPO §5303 Contract #102694, and subsequent MPO §5303 contract

Schedule and Budget

Schedule: 12 months after work commences

Budget: \$41,340

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 emissions 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 reduce emissions in the area sufficiently to comply with national ambient air-quality standards. Metropolitan Planning Organizations (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). 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, 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. The support 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:

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 that are known

today, while reserving some capacity for participating in issues that might emerge during the course of the federal fiscal year.

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 and a conformity determination is required for carbon monoxide (CO) in the city of Waltham. Although not part of the federal conformity determination, carbon dioxide (CO₂) emissions must be calculated to provide information for implementing MassDOT's GreenDOT policy and to meet requirements of the Global Warming Solutions Act.

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 LRTP and TIP to comply with the air-quality standards and to show that SIP projects are advancing in a timely manner
- Regionwide 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 (VOCs) and nitrogen oxides (NO_x) – 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 Global Warming Solutions Act and MassDOT's GreenDOT policy.

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

are funded in the TIP will be provided to MassDOT for monitoring under the GreenDOT program.

Products of Task 2

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

Task 3 Provide 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 (FHWA) 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 Provide 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 in developing mobile-source emissions budgets as well as 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 Provide Ongoing Technical Support to State Agencies

1. 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
2. Staff will provide project-level support by conducting the following activity:
 - Using the MOVES model to develop air toxic emissions factors for use in studies done by the Boston Region MPO staff to determine the health-related impacts of transportation projects

Products of Task 5

- New MOVES emission factors
- Air-quality analyses and evaluations, requested by MassDOT, the MBTA and the Massachusetts Port Authority, of projects for various pollutants as needed

Exhibit 2**ESTIMATED COST****Air Quality Conformity and Support Activities: Federal Fiscal Year 2019**

Direct Salary and Overhead										\$41,340
Task	Person-Weeks						Direct Salary	Overhead (99.00%)	Total Cost	
	M-1	P-5	P-4	P-3	Temp	Total				
1. Perform System-Level AQ Analysis	0.1	1.0	0.0	0.3	0.0	1.4	\$2,526	\$2,501	\$5,027	
2. Perform Project-Level AQ Analysis	0.0	1.9	0.8	0.9	3.0	6.6	\$7,521	\$7,446	\$14,967	
3. Support on Climate Change Initiatives	0.1	1.1	0.0	0.7	0.0	1.9	\$3,225	\$3,193	\$6,418	
4. Support the Mobile-Source Element of SIP	0.0	0.4	0.4	0.0	0.0	0.8	\$1,350	\$1,336	\$2,686	
5. Ongoing Technical Support to Agencies	0.0	1.3	2.1	0.5	0.0	3.9	\$6,152	\$6,090	\$12,242	
Total	0.2	5.7	3.3	2.4	3.0	14.6	\$20,774	\$20,566	\$41,340	
Other Direct Costs										\$0
TOTAL COST										\$41,340

Funding

MPO Planning Contract #105757,

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