



UNIFIED PLANNING WORK PROGRAM
Federal Fiscal Year 2017



**BOSTON REGION
METROPOLITAN
PLANNING
ORGANIZATION**





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Unified Planning Work Program

Federal Fiscal Year 2017

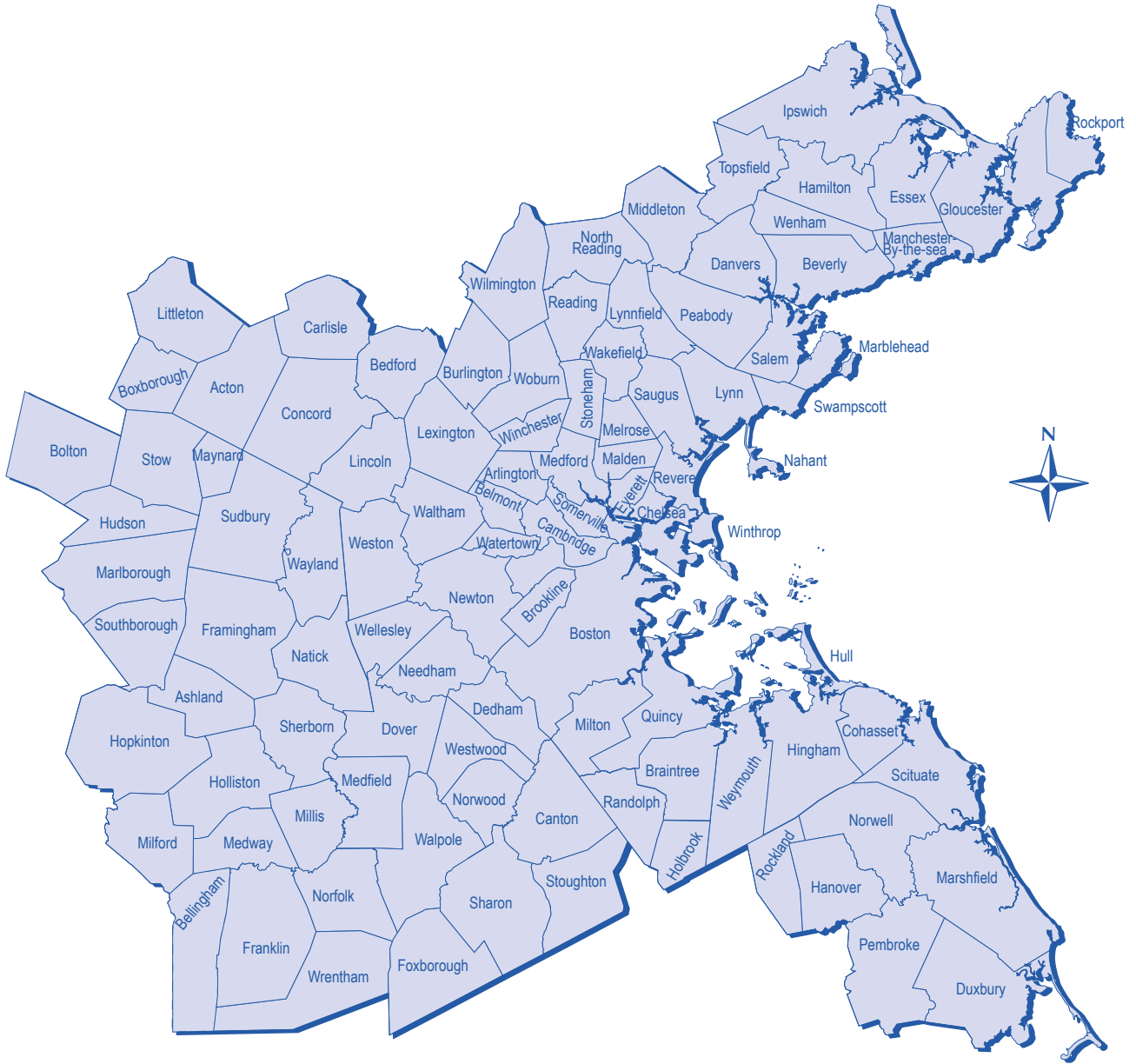
Boston Region Metropolitan Planning Organization
Organization Pre-Circulation Draft

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Staff to the Boston Region Metropolitan Planning Organization

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Massachusetts Bay Transportation Authority
MBTA Advisory Board
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City of Boston
City of Beverly
City of Everett
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City of Somerville
City of Woburn
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Boston Region Metropolitan Planning Organization Municipalities

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Following MPO endorsement of the final FFY 2017 UPWP, this section will include the MPO's self-certification statement regarding the federal requirements for the metropolitan transportation planning process. This document will be signed by MPO members.

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Executive Summary

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CHAPTER 1

Coordinating Comprehensive Transportation Planning in the Region: What is the Unified Planning Work Program?

The Boston Region Metropolitan Planning Organization (MPO) plans for the transportation future of the Boston region (Figure 1-1). The MPO is guided by a 25-year vision for a modern, safe, equitable, sustainable, and technologically advanced transportation system for the region, which is described in the MPO's Long-Range Transportation Plan (LRTP), *Charting Progress to 2040*.

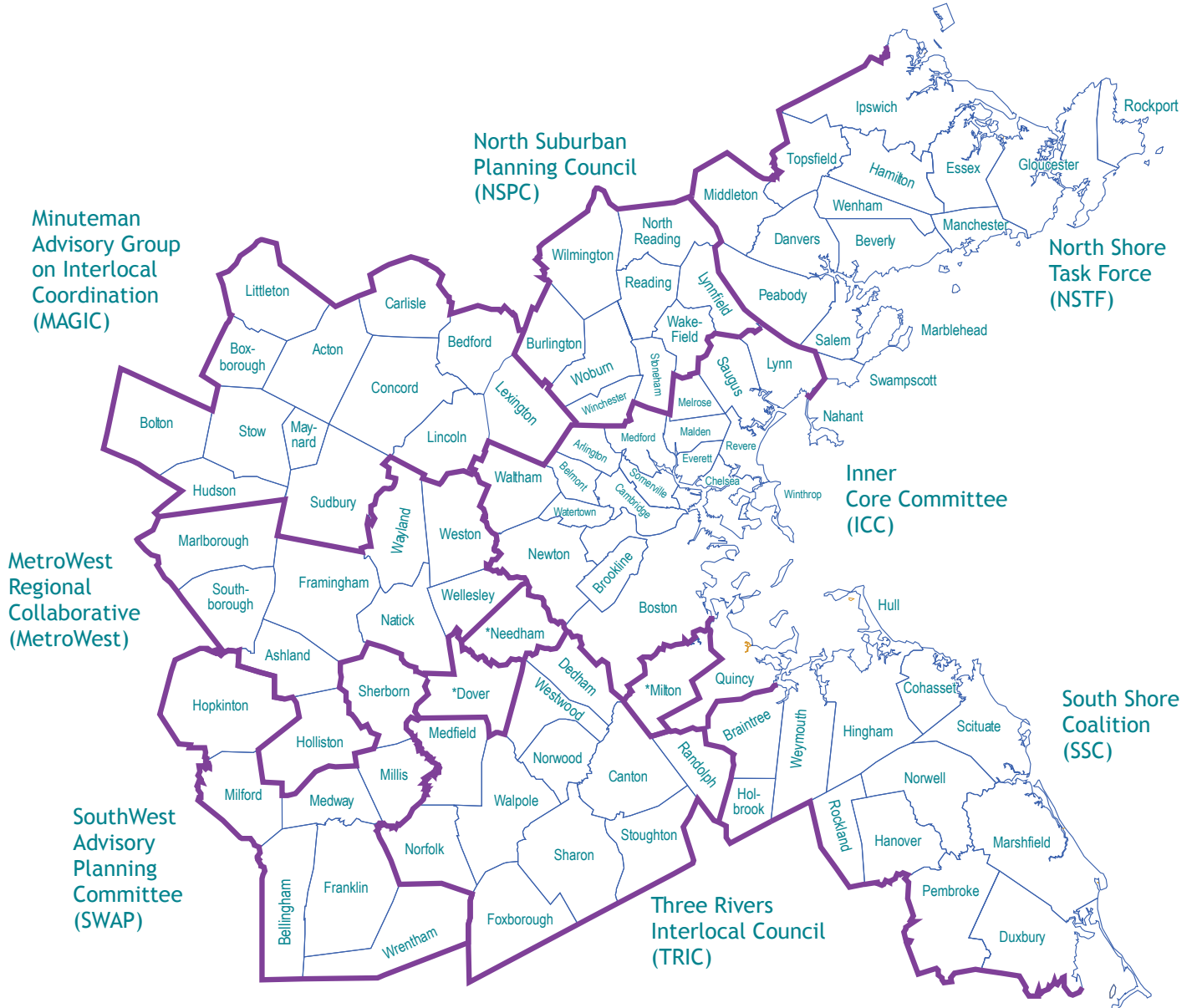
An integral part of achieving this regional vision is the transportation planning work funded through the Unified Planning Work Program (UPWP).

The UPWP is a financial plan that the MPO produces annually in compliance with the federally mandated metropolitan planning process. This process requires transportation decision-making in urbanized areas based on a continuing, comprehensive, and cooperative planning process (the 3C process) that involves coordination of state and local governments as well as the public.

The UPWP documents the federal funding that will be spent on surface transportation studies and programs in the Boston region during a given federal fiscal year (FFY). This plan also serves as the basis for financing the ongoing work of the staff to the Boston Region MPO.

This chapter explains the UPWP, its connection to the overall regional vision developed in the LRTP, and how the planning work of the MPO is funded.

Figure 1-1: Boston Region MPO Municipalities Map



*Several communities are represented by more than one subregional group. Dover is in TRIC and SWAP; Milton and Needham are in ICC and TRIC.

1.1 WHAT DOES THE UPWP DO?

As the basis for transportation planning at the Boston Region MPO, the UPWP prioritizes federal funding for transportation planning work that will be implemented in the 101-municipality area of the Boston region. This work is conducted by the Central Transportation Planning Staff (CTPS), staff to the MPO, or by the staff of the MPO member agency, the Metropolitan Area Planning Council (MAPC) and primarily consists of four parts:

1. **Certification requirements and other administration activities:** The UPWP includes activities that the MPO must conduct in order to remain certified as an MPO by the federal government, and to be eligible to receive and distribute federal transportation dollars. Work in this category includes preparing federally required financial plans, including the LRTP and the Transportation Improvement Program (TIP); the LRTP allocates funding for regionally significant transportation construction projects and programs over a 25-year period, while the TIP allocates funding for projects to be implemented in the near-term of the next five years. Air quality conformity and environmental justice-related compliance associated with the LRTP and TIP are also included in this category. Other administrative work funded through the UPWP includes data and computer resources management as well as maintenance of the MPO's regional travel demand model, which is used to forecast the potential impacts and changes the transportation system will have on traffic congestion and transit ridership. See Chapters 5 and 8 for more detail on these areas of work.
2. **Ongoing/continuing work programs:** These are areas of work that support technical analyses and planning studies for cities and towns in the region. Examples of these ongoing/continuing programs include Bicycle and Pedestrian Support Activities, Regional Transit Service Planning Technical Support, and Community Transportation Technical Assistance. See Chapter 6 for more detail on these studies and technical analyses.
3. **New studies:** Every year, a certain amount of funding is available for new studies to be undertaken by MPO staff. These efforts are conducted to enhance the knowledge of the practice, to enhance analytical methods, and to evaluate strategies. Examples of these studies in the FFY 2017 UPWP include Planning for Connected and Autonomous Vehicles, Study of Promising Greenhouse Gas Reduction Strategies, and Safety Effectiveness of Safe Routes to School Programs. See Chapter 6 for more detail on these new studies.
4. **Agency Studies and Technical Analyses:** CTPS conducts planning analyses and studies funded by state transportation agencies, including the Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), and the Massachusetts Port Authority (Massport). These agency-funded studies are described in more detail in Chapter 7.

1.2 HOW ARE FUNDING DECISIONS MADE?

The MPO's UPWP Committee works with the MPO staff to develop the UPWP for the upcoming FFY. Numerous sources of guidance are considered when compiling the UPWP and making decisions about the new and ongoing work that will be carried out. Additionally, as described in further detail in Section 1.3, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) provide funding each year for UPWP studies and programs in the upcoming FFY. The amount of available funding plays an important role in determining what work will be done in a given FFY.

1.2.1 The Guiding Vision of the LRTP

The chief framework that directs decisions about what to fund through the UPWP includes the goals and objectives of the LRTP, which guide the MPO in its overall decision-making. As described in more detail in Section 1.2.2, each new proposed study is evaluated based on how it helps the region achieve the goals and objective outlined in the LRTP.

Figure 1-2 shows the goals and objectives in the MPO's most recent LRTP, *Charting Progress to 2040*, endorsed by the MPO in July 2015.

Figure 1-2: LRTP Goals and Objectives

CENTRAL VISION STATEMENT	
<p>The Boston Region Metropolitan Planning Organization envisions a modern transportation system that is safe, uses new technologies, provides equitable access, excellent mobility, and varied transportation options—in support of a sustainable, healthy, livable, and economically vibrant region.</p>	
GOALS	OBJECTIVES
SAFETY	
<p>Transportation by all modes will be safe</p>	<ul style="list-style-type: none"> • Reduce number and severity of crashes, all modes • Reduce serious injuries and fatalities from transportation • Protect transportation customers and employees from safety and security threats <p>(Note: The MPO action will be to incorporate security investments into capital planning.)</p>
SYSTEM PRESERVATION	
<p>Maintain the transportation system</p>	<ul style="list-style-type: none"> • Improve condition of on- and off-system bridges • Improve pavement conditions on MassDOT-monitored roadway system • Maintain and modernize capital assets, including transit assets, throughout the system • Prioritize projects that support planned response capability to existing or future extreme conditions (sea level rise, flooding, and other natural and security-related man-made hazards) • Protect freight network elements, such as port facilities, that are vulnerable to climate-change impacts
CLEAN AIR/CLEAN COMMUNITIES	
<p>Create an environmentally friendly transportation system</p>	<ul style="list-style-type: none"> • Reduce greenhouse gases generated in the Boston region by all transportation modes as outlined in the Global Warming Solutions Act • Reduce other transportation-related pollutants • Minimize negative environmental impacts of the transportation system • Support land use policies consistent with smart and healthy growth

GOALS (cont.)	OBJECTIVES (cont.)
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CAPACITY MANAGEMENT/ MOBILITY	
------------------------------------------	--

Use existing facility capacity more efficiently and increase healthy transportation capacity

- Improve reliability of transit
- Implement roadway management and operations strategies, constructing improvements to the bicycle and pedestrian network, and supporting community-based transportation
- Create connected network of bicycle and accessible sidewalk facilities (at both regional and neighborhood scale) by expanding existing facilities and closing gaps
- Increase automobile and bicycle parking capacity and usage at transit stations
- Increase percentage of population and places of employment within one-quarter mile of transit stations and stops
- Increase percentage of population and places of employment with access to bicycle facilities
- Improve access to and accessibility of transit and active modes
- Support community-based and private-initiative services and programs to meet last mile, reverse commute and other non-traditional transit/transportation needs, including those of the elderly and persons with disabilities
- Eliminate bottlenecks on the freight network
- Enhance intermodal connections
- Emphasize capacity management through low-cost investments; give priority to projects that focus on lower-cost O&M-type improvements such as intersection improvements and Complete Streets solutions

TRANSPORTATION EQUITY	
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Provide comparable transportation access and service quality among communities, regardless of income level or minority population

- Target investments to areas that benefit a high percentage of low-income and minority populations
- Minimize any burdens associated with MPO-funded projects in low-income and minority areas
- Break down barriers to participation in MPO-decision making

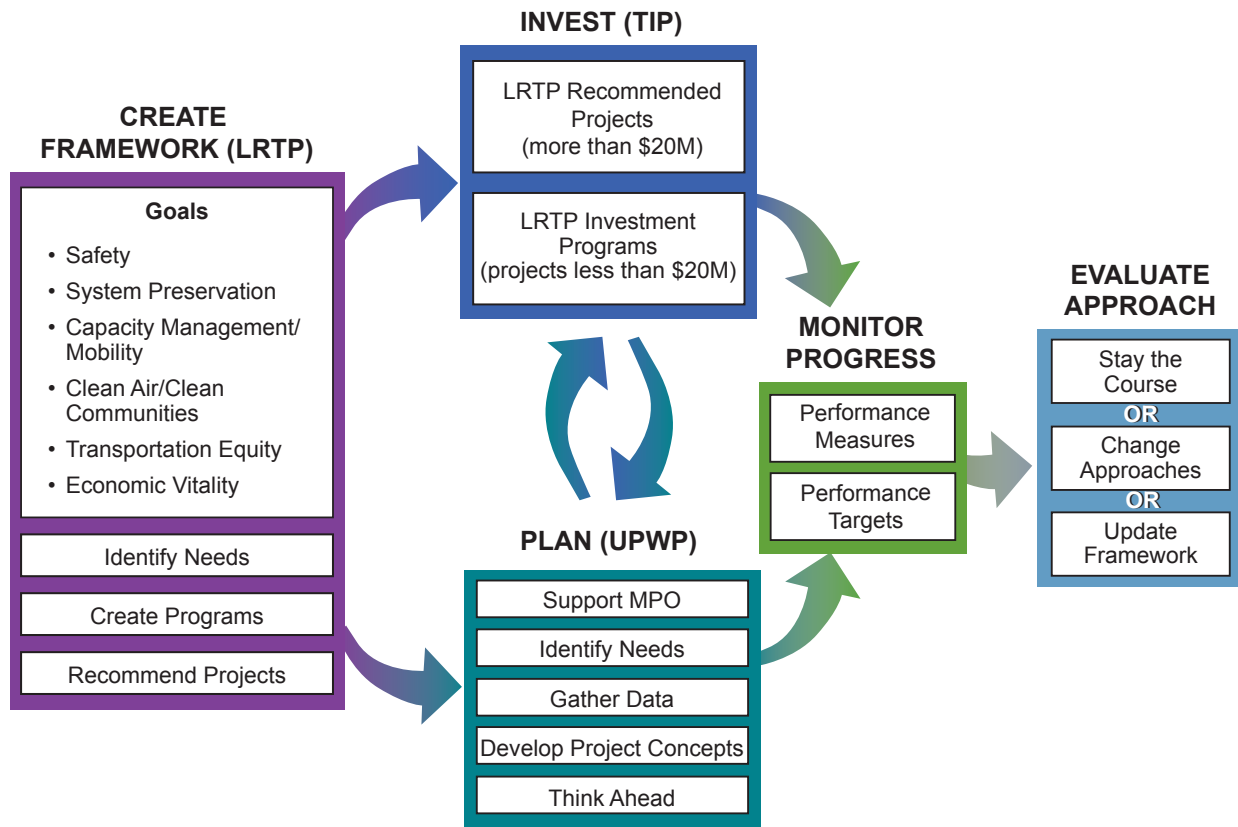
ECONOMIC VITALITY	
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Ensure our transportation network provides a strong foundation for economic vitality

- Respond to the mobility needs of the 25–34-year-old workforce
- Minimize the burden of housing and transportation costs for residents in the region
- Prioritize transportation investments that serve targeted development sites
- Prioritize transportation investments consistent with the compact-growth strategies of MetroFuture

Figure 1-3 depicts the relationship between the framework established in the LRTP, the planning foundation of the MPO (the UPWP), the near-term investment plan of the MPO (the TIP), and the feedback loop for monitoring progress towards the region’s goals as well as continuously evaluating our approach to achieving them.

Figure 1-3: Links Between LRTP, TIP, and UPWP



1.2.2 The Process of Creating and Monitoring the UPWP

Each year, the UPWP Committee considers new studies for funding. The UPWP documents these new studies (as well as studies that are continuing from previous UPWPs), and it provides updates on the MPO’s ongoing programs that fulfill the federally required 3C transportation-planning process.

The UPWP Committee met with the MPO staff five times in FFY 2016 to consider and provide guidance on the UPWP development process, including proposed budgets for ongoing and continuing activities, new study ideas, and the prioritization of these ideas. These meetings resulted in the Committee’s recommendation for the Draft FFY 2017 UPWP. The MPO approved the UPWP Committee’s recommendations for the public review of Draft FFY 2017 UPWP on May 19, 2016.

Below are more details about the process for selecting studies and programs for the FFY 2017 UPWP.

Developing the New Federal Fiscal Year UPWP

To develop new planning studies for the FFY 2017 UPWP, the MPO drew from the following sources to generate a universe of proposed new studies for evaluation by MPO staff and the MPO's UPWP Committee.

1. **Public outreach:** Meetings were held to gain input from subregional planning groups in the region. These groups, which are organized by an MPO member agency, MAPC, involve municipal representatives focused on regional planning topics (Figure 1-1). Two additional targeted TIP and UPWP public meetings were held in the region in December 2015 and January 2016.
2. **Regional Transportation Advisory Council (Advisory Council):** MPO staff met with the Advisory Council, an independent body that brings public viewpoints and advice on transportation planning to the MPO, to present preliminary drafts of the FFY 2017 Universe of New Studies and gain ideas and input on transportation planning priorities.
3. **Existing planning documents:** Various plans and programs developed and conducted by the MPO and other state agencies document transportation issues that require further study. These include the Congestion Management Process (CMP), which monitors the transportation network to identify locations and sources of congestion; the Program for Mass Transportation (PMT), the MBTA's long-range capital plan; the MPO's long-range planning documents, including the former LRTP, *Paths to a Sustainable Region*, and the LRTP Needs Assessment for the current LRTP, *Charting Progress to 2040*; MetroFuture, a long-range plan for smart growth developed by the MAPC; and other recent studies.
4. **Past guidance:** The FHWA and FTA issue guidance on addressing the planning emphasis areas.
5. **FFY 2016 UPWP public comment letters and study proposals.**
6. **Consultations with MassDOT, the MBTA, and MAPC.**
7. **MPO staff-identified needs.**

In an effort to increase public input into the Universe of New Studies, the MPO has new and additional public involvement planned in coming years, including using more social media, holding outreach meetings with advocacy groups, conducting outreach at more convenient locations, and concentrating outreach on traditionally less-involved municipalities in the region.

Proposed planning studies are documented in the FFY 2017 UPWP Universe of Proposed New Studies (see Appendix C). Selected studies for FFY17 are summarized in Table 1-1 and described in detail in Chapter 6.

Evaluating and Selecting New Studies

Each new proposed study in the Universe of New Studies was evaluated based on the following criteria: how it helps the region accomplish the LRTP goals, the mode(s) it addresses, the scale of the study, the time frame and type of impact it is anticipated to result in, whether it furthers some body of existing work, and whether it has been funded in the past or is a completely new idea.

The evaluation process provides an important tool for the MPO and stakeholders to understand the amount of spending on studies across the following criteria:

- **Primary and secondary LRTP goal areas:** whether a study addresses, either as a primary focus or a secondary focus, one of the six LRTP goal areas:
 - o Safety
 - o System Preservation
 - o Clean Air/Clean Communities
 - o Transportation Equity
 - o Capacity Management/Mobility
 - o Economic Vitality
- **Mode:** whether a study primarily addresses roadway, bicycle and pedestrian, or transit issues.
- **Study scale:** whether a study primarily impacts one or two specific communities in the region or the region as a whole.
- **Time frame and type of impact:** whether a study results in research and findings that enhance the state of the transportation planning practice in the Boston Region, low-cost/short-term implementation of improvements, or long-term implementation (for transportation studies leading to construction projects that have to go through the MassDOT design process).
- **Connection to existing work:** whether a study furthers analysis or conclusions developed from a previous study.
- **Continuing or new study:** whether a study has been conducted previously at a specific location/roadway and is being conducted again at a new location, or whether a study is a completely new idea that has never been undertaken by the MPO.

In addition to the study evaluation process, MPO staff defined general scopes and estimated costs for proposed planning studies and considered potential study feasibility issues. These various factors, along with the availability of funds for new studies, were considered as staff identified a recommended set of new proposed planning studies for review by the UPWP Committee. The FFY 2017 Universe of

Proposed Studies, along with the estimated costs of each study, the evaluation results of how each supports the LRTP goals, and any supporting comments about each study are documented in the FFY 2017 UPWP Universe of Proposed New Studies in Appendix C.

Table 1-1 shows the studies in the FFY 2017 Universe that were chosen for funding in FFY 2017. These are described in more detail in Chapter 6.

Updates to Ongoing and Continuing Activities

In addition to the process of selecting new discrete transportation planning studies, the MPO reviews activities for ongoing programs and work. MPO staff identifies and develops budgets for these continuing programs that will be carried out in the upcoming FFY. If there are changes to the budget of any program as a result of revisions to planned activities, these changes are proposed.

Examples of ongoing and continuing activities include work that is required of the MPO, including certification requirements (see Chapter 5), administration and resource management activities (see Chapter 8), and ongoing technical assistance to municipalities (see Chapter 6).

Additionally, in FFY 2017, the MPO decided to include a new ongoing program in the UPWP. Described in detail in Chapter 8, the UPWP Study Recommendation Tracking Database will track the status of recommendations advanced through UPWP studies on an annual basis.

The annual study and program review and budget development process defines the amount of 3C funding (from federal grants that support the 3C process) that is available for new studies in the UPWP. After accounting for 3C-funded continuing and ongoing programs, the remaining funding is available for new studies.

Table 1-1
FFY 2017 New Discrete Funded Studies

Universe ID	Category	Project Name	Estimated Cost	Page Number
A-7	Active transportation	Safety Effectiveness of Safe Routes to School Programs	\$80,000	6-2
B-7	Land use, environment, and economy	Study of Promising Greenhouse Gas Reduction Strategies	\$55,000	6-4
C-1	Multimodal mobility	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	\$110,000	6-7
C-3	Multimodal mobility	Low-Cost Improvements to Express-Highway Bottleneck Locations	\$50,000	6-9
C-4	Multimodal mobility	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	\$110,000	6-5
C-6	Multimodal mobility	Planning for Connected and Autonomous Vehicles	\$50,000	6-11
E-7	Transit	Using General Transit Feed Specification (GTFS) to Find Shared Segments with Excessively Irregular Headways	\$25,000	6-12
F-1	Other technical support	MPO Staff-Generated Research Topics	\$30,000	6-13
	Total		\$510,000	

Note: these studies and associated budgets reflect the UPWP Committee Recommendation for FFY 2017 and will be finalized once the MPO has approved the draft FFY 2017 UPWP for public review.

Public Review of the Draft UPWP

Descriptive and financial information about ongoing and new UPWP studies, along with information about the UPWP development process and other major transportation-planning studies occurring in the region, are incorporated into the draft UPWP. Once the MPO votes to release the draft for public review, MPO staff posts the document for downloading from the MPO website (www.bostonmpo.org) and provides notice of its availability through various media and MPO communication outlets.

As noted above, public outreach forms a major part of the input into the UPWP each FFY. After the draft UPWP is approved by the MPO, there is a 30-day public comment period. During this time, MPO staff members solicit public input through the MPO website, social media outlets, open houses, and public meetings held in conjunction with MassDOT and the MBTA. All public comments received during this period are compiled and presented to the MPO. Information about the public review process for the Draft FFY 2017 UPWP is available in Appendix B.

Monitoring Progress of UPWP Studies

The following procedures for monitoring the studies in the FFY 2017 UPWP were approved by the MPO:

- Work programs supported by federal 3C planning funds must be approved by the MPO prior to expenditure.
- Work scopes supported by other funds (e.g., agency) for CTPS work must be approved by the MPO with the assurance that the new work will not impact the MPO-funded work by CTPS.
- Monthly progress reports on all active studies and work programs must be submitted to the respective funding agency (FHWA or FTA) by the agency conducting the work (CTPS and/or MAPC). The reports must include the following information for each study or work program:
 - o Brief narrative describing the work accomplished by the task
 - o Key personnel attendance at meeting(s) held each week
 - o Objectives and planned activities for the next month
 - o Percent of work completed by the task
 - o Some measure of actual resources (e.g., hours, funds, etc.) charged to the contract over the past month
 - o Comparison of actual cumulative resources expended compared to the contract budget
- CTPS presents a quarterly report comparing the UPWP study budgets with the actual spending.
- MPO approval for release of a 3C-funded study's work products is based on whether the objectives stated in the work program were met and whether the stated deliverables were produced.

Amendments and Administrative Modifications to the UPWP

If necessary, amendments and administrative modifications may be made to the UPWP throughout the year. All 3C documents (TIP, LRTP, UPWP, etc.) endorsed by MPOs must follow standardized procedures regarding amendments and/or administrative adjustments. If an amendment is under consideration, the Regional Transportation Advisory Council and other interested parties, including any affected communities, are notified. The MPO follows the procedures specified in the MPO's Public Participation Plan.

Below are general guidelines regarding the conditions that constitute an administrative adjustment or amendment to the UPWP.

Table 1-2
UPWP Amendment and Administrative Adjustment Guidelines

UPWP Administrative Adjustment	UPWP Amendment
Reallocation of budget funds	Addition or Removal of UPWP task(s)
Change in start/completion dates within the originally intended federal fiscal year(s)	Change in start/completion dates, outside of originally intended federal fiscal year(s)
Adjustment to project scope	Significant change in project scope, cost, and/or time allocation

All proposed administrative adjustments and amendments must be presented to the MPO for consultation prior to endorsement. Both adjustments and amendments must be voted on by the MPO members and amendments must be released for 30-day public comment period prior to endorsement. Members of the public may attend and present comments at UPWP Committee meetings and MPO meetings, at which amendments and administrative modifications are discussed. Administrative modifications may be made by the MPO without legal notice or a public review period, although these can be provided at the MPO's discretion.

When submitting the standard Budget Reallocation Request form to MassDOT OTP, all fields must be filled out with clear indication that the MPO was consulted prior to submission. Back up documentation must be submitted, including the UPWP description of the task(s) affected, original budget, revised budget, and justification for request.

A change to a project scope, budget, and/or project schedule is considered significant when it alters the original intent of the project or intended deliverables of the project.

Other Regionally-Significant Transportation Planning Studies

To provide a comprehensive perspective of transportation planning in the Boston region, the UPWP also includes a list of other major transportation planning activities in the region. This list includes projects that are not funded with the MPO's planning funds, but which are being funded and implemented by individual transportation agencies, municipalities, or academic institutions. Often, these efforts also use the expertise and tools CTPS is uniquely able to provide. These are described in Appendix A.

1.3 HOW IS THE WORK FUNDED?

The funding for the studies and programs included in this UPWP (presented in Chapters 5 through 8) comes from a variety of federal and state sources, as described below. The source of funds has important implications with regard to which agency or organization is responsible for programming them and for the MPO's vote to approve both the UPWP and the subsequent work programs for the studies. The chapters of this UPWP are organized based on funding source: MPO-funded (3C-funded) studies and agency/other client-funded studies.

- **FHWA 3C Planning (PL)/MassDOT Local Match:** These are FHWA planning funds distributed to MassDOT's Office of Transportation Planning (OTP), according to an allocation formula established by federal legislation, to carry out the 3C planning process. OTP distributes these funds to Massachusetts MPOs according to a formula based on population. The FFY 2017 3C PL funding allocation for the Boston Region is \$3,546,663, which includes \$709,332 in state matching funds.
- **FTA 3C Planning (\$5303)/MassDOT Local Match:** FTA provides 3C planning funds for transit projects to MPOs under Section 5303 of the Federal Transit Act. These funds require a local match, are distributed according to an allocation formula, and are administered by MassDOT. The FFY 2017 FTA allocation for the Boston Region, including a total local match, is \$2,210,858. The total amount programmed in this UPWP for studies to be conducted by MPO staff, MassDOT, and MAPC on behalf of the MPO is \$1,892,936. Of the total FTA 3C funds allocated to the region, MassDOT, MAPC, and the MPO receive a portion, as described below:
 - o **MPO FTA 3C Planning (\$5303)/MassDOT Local Match:** The total amount of FTA funds, including a local match, programmed in this UPWP for work conducted by MPO staff is \$1,291,141.
 - o **MassDOT FTA 3C Planning (\$5303)/MassDOT Local Match:** The total amount of FTA funds, including a local match, allocated to MassDOT for FFY 2017 is \$270,167. MassDOT uses these funds to issue a contract to the MPO for transit planning assistance throughout the FFY (referred to as MassDOT Transit Planning Assistance).

- o **MAPC FTA 3C Planning (\$5303)/MassDOT Local Match:** A portion of the Boston Region FTA allocation also goes to MAPC. MAPC uses these funds to conduct their transit-planning studies programmed through the UPWP. The total amount of FTA funds, including a local match, allocated to MAPC for FFY 2017 is \$331,629.
- **FHWA Statewide Planning and Research (SPR)/MassDOT Local Match:** As in the case of 3C PL funds, FHWA provides SPR funds to OTP according to a distribution formula. OTP uses these funds to carry out planning and research projects throughout the state. This UPWP describes only the SPR studies that will be conducted in the Boston Region MPO area; however, OTP provides a complete listing of how these funds are distributed statewide in a document called the SPR Transportation-Planning Work Program. SPR funds in the amount of \$572,000 (including \$114,400 in state matching funds) are programmed in this UPWP for studies to be conducted by MPO staff. The MPO's role in these studies is crucial to the 3C process because it provides an opportunity to coordinate studies with other related transportation work efforts that may be planned for the same area.
- **MassDOT:** Funds in the amount of \$642,900 for MassDOT studies are included in this UPWP.
- **MBTA:** The MBTA provides \$1,061,819 in funding for this UPWP for transit studies to be conducted by CTPS.
- **Massport:** This UPWP also includes \$53,150 in funding provided by Massport for work being conducted by CTPS on its behalf.



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CHAPTER 2

Transportation Planning and the Boston Region MPO

This chapter explains the transportation-planning process in the Boston Region Metropolitan Planning Organization (MPO) area and the composition of the Boston Region MPO.

Decisions about how to spend transportation funds in a metropolitan area are guided by information and ideas garnered from a broad group of people, including elected officials, municipal planners and engineers, transportation advocates, and other interested people. MPOs are the bodies responsible for providing a forum for this decision-making process. Each metropolitan

area in the United States with a population of 50,000 or more—also known as an urbanized area—has an MPO, which decides how to spend federal transportation funds for capital projects and planning studies for the area.

2.1 THE TRANSPORTATION PLANNING PROCESS

The federal government regulates the funding, planning, and operation of surface transportation through the federal transportation program (enacted into law through Titles 23 and 49 of United States Code). The most recent reauthorization of the surface transportation law is called the Fixing America's Surface Transportation (FAST) Act.

FAST Act legislation, as with previous federal transportation laws, sets policies related to metropolitan transportation planning. The law requires all MPOs to carry out a continuing, comprehensive, and cooperative (3C) transportation-planning process.

2.1.1 3C Transportation Planning

Title 23, Section 134 of the Federal-Aid Highway Act and Section 5303 of the Federal Transit Act, as amended, require that urbanized areas, in order to be eligible for federal funds, conduct a 3C transportation-planning process, resulting in plans and programs consistent with the planning objectives of the metropolitan area. The Boston Region MPO is responsible for carrying out the 3C planning process in the Boston region and has established the following objectives for the process:

- Identify transportation problems and develop possible solutions.
- Balance short- and long-range considerations so that beneficial incremental actions adequately reflect an understanding of probable future consequences and possible future options.
- Represent both regional and local considerations, as well as both transportation and non-transportation objectives and impacts, in the analysis of project issues.
- Assist implementing agencies in effecting timely policy and project decisions with adequate consideration of environmental, social, fiscal, and economic impacts, and with adequate opportunity for participation by other agencies, local governments, and the public.
- Help implementing agencies to prioritize transportation activities in a manner consistent with the region's needs and resources.
- Comply with the requirements of the FAST Act, the Americans with Disabilities Act of 1990 (ADA), the Clean Air Act (CAA), the Civil Rights Act of 1964, Executive Order 12898 (regarding environmental justice), Executive Order 13166 (regarding outreach to populations with limited English-language proficiency), and Executive Order 13330 (regarding the coordination of human-services transportation).

As part of its 3C process, the Boston Region MPO annually produces the Transportation Improvement Program (TIP) and the Unified Planning Work Program (UPWP). These documents, along with the quadrennial Long-Range Transportation Plan (LRTP), are referred to as Certification Documents (described in Section 2.1.2), and are required for the MPO's process to be certified as meeting federal requirements; this certification is a prerequisite for receiving federal transportation funds. In addition to the requirement to produce the LRTP, the TIP, and the UPWP, the MPO must establish and conduct an inclusive public participation process, as well as maintain transportation models and data resources to support air quality conformity determinations and long- and short-range planning work and initiatives.

2.1.2 Certification Documents

An essential aspect of maintaining an open and transparent 3C transportation planning and programming process in conformance with federal and state requirements and guidelines is the development of the MPO's certification documents.

- The **LRTP** guides investment in the transportation system of the Boston metropolitan region for the next 25 years. It defines an overarching vision of the future of transportation in the region, establishes goals and objectives that will lead to the achievement of that vision, and allocates projected revenue to transportation projects and programs consistent with established goals

and objectives. The Boston Region MPO produces an LRTP every four years. *Charting Progress to 2040*, the current LRTP, was endorsed by the MPO in 2015 and guided the development of this document.

- The **TIP** is a multiyear, multimodal program of transportation improvements that is consistent with the LRTP. It describes and prioritizes transportation projects that are expected to be implemented during a five-year period. The types of transportation projects funded include major highway reconstruction and maintenance, arterial and intersection improvements, public transit expansion and maintenance, bicycle paths and facilities, and improvements for pedestrians. The TIP contains a financial plan that shows the revenue source or sources, current or proposed, for each project. The TIP serves as the implementation arm of the MPO's LRTP, and the Boston Region MPO updates the TIP annually. An MPO-endorsed TIP is incorporated into the State Transportation Improvement Program (STIP) for its submission to the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Environmental Protection Agency for approval.
- The **UPWP** contains information about surface transportation planning studies that will be conducted by MPO staff. Generally, the work described throughout the following chapters has a scope defined by the current federal fiscal year (FFY) from October 1st through September 30th. The UPWP also describes all of the supportive planning activities undertaken by the MPO, including data resources management, preparation of the federally required certification documents, and ongoing regional transportation planning assistance. The UPWP is produced annually and often serves as a first step in determining whether or not a transportation improvement will be implemented. As described throughout this document, the studies and work products programmed for funding through the UPWP are integrally related to other planning initiatives conducted by the Boston Region MPO as well as by the Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), the Massachusetts Port Authority (Massport), the Metropolitan Area Planning Council (MAPC), and the municipalities.

2.2 THE BOSTON REGION MPO

The Boston Region MPO consists of a 22 voting member board that includes state agencies, regional organizations, and municipalities; its jurisdiction extends from Boston north to Ipswich, south to Duxbury, and west to Interstate 495. There are 101 cities and towns that make up this area (see Chapter 1, Figure 1-1).

The permanent MPO voting members are:

- MassDOT
- MAPC
- MBTA

- MBTA Advisory Board
- Massport
- City of Boston
- Regional Transportation Advisory Council (Advisory Council)

The elected MPO voting members are municipalities. A municipality from each of the eight MAPC subregions has a seat, and there are four at-large municipal seats. The current elected members are:

- City of Beverly – North Shore Task Force
- City of Braintree – South Shore Coalition
- City of Everett – At-Large City
- City of Newton – At-Large City
- City of Somerville – Inner Core Committee
- City of Woburn – North Suburban Planning Council
- Town of Arlington – At-Large Town
- Town of Bedford – Minuteman Advisory Group on Interlocal Coordination
- Town of Framingham – MetroWest Regional Collaborative
- Town of Lexington – At-Large Town
- Town of Medway – SouthWest Advisory Planning Committee
- Town of Norwood – Three Rivers Interlocal Council

In addition, the FHWA and the FTA participate in the MPO as advisory (nonvoting) members. Figure 2-1 shows MPO membership and organization of the Central Transportation Planning Staff (CTPS), staff to the MPO. Details about MPO voting members are provided below.

MassDOT was established under Chapter 25 (“An Act Modernizing the Transportation Systems of the Commonwealth of Massachusetts”) of the Acts of 2009. It includes four divisions: Highway, Rail and Transit, Aeronautics, and Registry of Motor Vehicles. The MassDOT Board of Directors, comprised of 11 members appointed by the Governor, oversees all four divisions and MassDOT operations, including the MBTA. The MassDOT Board was expanded to 11 members by the legislature this year based on a recommendation by Governor Baker’s Special Panel, comprised of transportation leaders, which was assembled to review structural problems with the MBTA and deliver recommendations for improvements. MassDOT has two seats on the MPO: the Highway Division and the MBTA each hold a seat.

The Highway Division of MassDOT has jurisdiction over the roadways, bridges, and tunnels of the former Massachusetts Highway Department and the Massachusetts Turnpike Authority. The Highway Division also has jurisdiction over many bridges and parkways previously under the authority of the Department of Conservation and Recreation. The Highway Division is responsible for the design, construction, and maintenance of the Commonwealth's state highways and bridges. It is also responsible for overseeing traffic safety and engineering activities for the state highway system. These activities include operating the Highway Operations Control Center to ensure safe road and travel conditions.

The Rail and Transit Division oversees MassDOT's freight and passenger rail program, and provides oversight of Massachusetts's 15 regional transit authorities (RTAs), as well as intercity bus, MBTA paratransit (THE RIDE), and a statewide mobility-management effort.

The **MBTA**, created in 1964, is a body politic and corporate, and a political subdivision of the Commonwealth. Under the provisions of Chapter 161A of the Massachusetts General Laws (MGL), it has the statutory responsibility within its district of operating the public transportation system, preparing the engineering and architectural designs for transit development projects, and constructing and operating transit development projects. The MBTA district comprises 175 communities, including all of the 101 cities and towns of the Boston Region MPO area. In April 2015, as a result of a plan of action to improve the MBTA, a five-member Fiscal and Management Control Board (FMCB) was created. The FMCB will enforce new oversight and management support, and increase accountability over a three-to-five-year time frame. The goals will target governance, finance, and agency structure and operations through recommended executive and legislative actions that embrace transparency and develop stability in order to earn public trust. By statute, the MBTA FMCB consists of five members, one with experience in transportation finance, one with experience in mass transit operations and three who are also members of the MassDOT Board.

The **MBTA Advisory Board** was created by the Massachusetts Legislature in 1964 through the same legislation that created the MBTA. The Advisory Board consists of representatives of the 175 cities and towns that compose the MBTA district. Cities are represented by either the city manager or mayor, and towns are represented by the chairperson of the board of selectmen. Specific responsibilities of the Advisory Board include review of and comment on the MBTA's long-range plan, the Program for Mass Transportation (PMT), proposed fare increases, and the annual MBTA Capital Investment Program; review of the MBTA's documentation of net operating investment per passenger; and review of the MBTA's operating budget. The MBTA Advisory Board advocates for the transit needs of its member communities and the riding public.

Massport has the statutory responsibility under Chapter 465 of the Acts of 1956, as amended, for planning, constructing, owning, and operating such transportation and related facilities as may be necessary for the development and improvement of commerce in Boston and the surrounding metropolitan area. Massport owns and operates Boston Logan International Airport, the Port of Boston's Conley Terminal, Cruiseport Boston, Hanscom Field, Worcester Regional Airport, and various maritime/waterfront properties, including parks in East Boston, South Boston, and Charlestown.

The **MAPC** is the regional planning agency for the 101 cities and towns in the MAPC/MPO region. It is composed of the chief executive officer (or her/his designee) of each of the 101 cities and towns in the MAPC region, 21 gubernatorial appointees, and 12 ex-officio members. It has statutory responsibility for comprehensive regional planning in its region under Chapter 40B of the MGL. It is the Boston Metropolitan Clearinghouse under Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966 and Title VI of the Intergovernmental Cooperation Act of 1968. Also, its region has been designated an economic development district under Title IV of the Public Works and Economic Development Act of 1965, as amended. MAPC's responsibilities for comprehensive planning include responsibilities in the areas of technical assistance to communities, transportation planning, and development of zoning, land use, demographic, and environmental studies. MAPC activities that are funded with federal metropolitan transportation planning dollars are included in this UPWP.

The **city of Boston, six elected cities (currently Beverly, Braintree, Everett, Newton, Somerville, and Woburn), and six elected towns (currently Arlington, Bedford, Framingham, Lexington, Medway, and Norwood)** represent the 101 municipalities in the Boston Region MPO area. The city of Boston is a permanent MPO member and has two seats. There is one elected municipal seat for each of the eight MAPC subregions and four seats for at-large elected municipalities (two cities and two towns). The elected at-large municipalities serve staggered three-year terms, as do the eight municipalities representing the MAPC subregions.

The **Regional Transportation Advisory Council**, the MPO's citizen advisory group, provides the opportunity for transportation-related organizations, non-MPO member agencies, and municipal representatives to become actively involved in the decision-making processes of the MPO as it develops plans and prioritizes the implementation of transportation projects in the region. The Advisory Council reviews, comments on, and makes recommendations regarding certification documents. It also serves as a forum for providing information on transportation topics in the region, identifying issues, advocating for ways to address the region's transportation needs, and generating interest among members of the general public in the work of the MPO.

Two members participate in the Boston Region MPO in an advisory (nonvoting) capacity, reviewing the LRTP, the TIP, the UPWP, and other facets of the MPO's planning process to ensure compliance with federal planning and programming requirements:

- The **FHWA and the FTA** oversee the highway and transit programs, respectively, of the U.S. Department of Transportation under pertinent legislation and the provisions of the FAST Act.

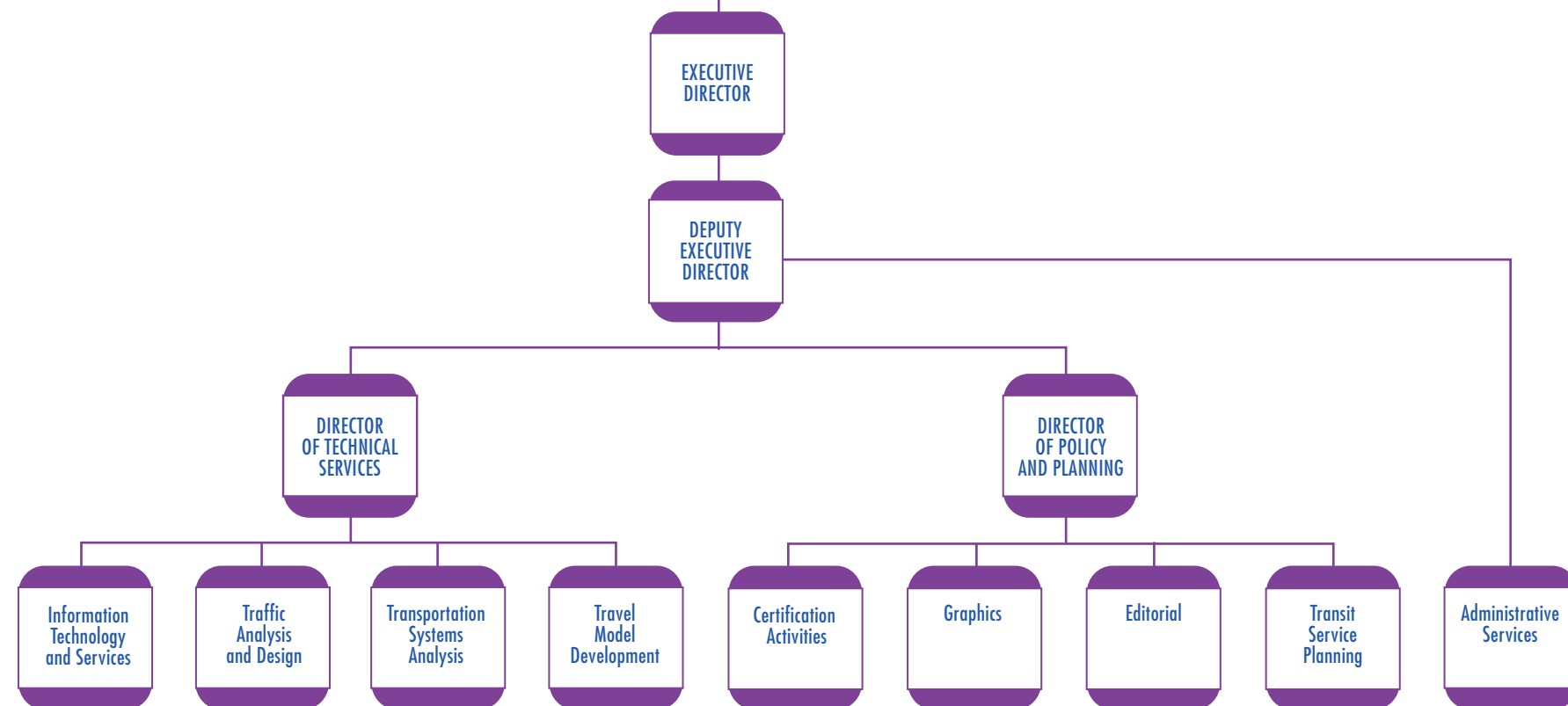


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MEMBERSHIP OF THE BOSTON REGION METROPOLITAN PLANNING ORGANIZATION



CENTRAL TRANSPORTATION PLANNING STAFF





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CHAPTER 3

Regulatory Framework

The Boston Region Metropolitan Planning Organization (MPO) plays a critical role in helping the region move closer to achieving federal, state, and regional transportation goals and policies. Therefore, a central step in producing the Unified Planning Work Program (UPWP) is ensuring that the MPO's planning activities align with federal and state regulatory guidance. This chapter describes all of the regulations taken into consideration by the MPO during the development of the federal fiscal year (FFY) 2017 UPWP.

3.1 FEDERAL REGULATIONS AND GUIDANCE

3.1.1 Fixing America's Surface Transportation (FAST) Act: National Goals

The purpose of the national transportation goals (23 United States Code [USC] 150) is to increase the accountability and transparency of the Federal-Aid Highway Program as well as to improve decision-making through performance-based planning and programming. The national transportation goals include:

1. **Safety:** Achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. **Infrastructure condition:** Maintain the highway infrastructure asset system in a state of good repair.
3. **Congestion reduction:** Achieve a significant reduction in congestion on the National Highway System.
4. **System reliability:** Improve the efficiency of the surface transportation system.
5. **Freight movement and economic vitality:** Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
6. **Environmental sustainability:** Enhance the performance of the transportation system while protecting and enhancing the natural environment.

7. **Reduced project delivery delays:** Reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion by eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

3.1.2 FAST Act: Planning Factors

Because transportation planning studies are programmed for funding in the UPWP, specific consideration is given to the federal planning factors (23 USC 134). The FAST Act added two new planning factors to the eight factors established in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) transportation legislation. In accordance with the legislation, studies and strategies undertaken by the MPO shall

1. support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. increase the safety of the transportation system for all motorized and nonmotorized users.
3. increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and nonmotorized users.
4. increase accessibility and mobility of people and freight.
5. protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. promote efficient system management and operation.
8. emphasize the preservation of the existing transportation system.
9. improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. enhance travel and tourism.

Table 3-1 illustrates how studies and ongoing work conducted by the MPO and funded through federal formula grant programs address the federal planning factors.

TABLE 3-1: 3C-funded UPWP Studies and Programs: Relationship to Federal Planning Factors

Federal Planning Factor	Certification Activities								Technical Analyses					Planning Studies								Administration, Resource Management, and Transportation Data Collection											
	3C Planning and MPO Support	L RTP	TIP	Unified Planning Work Program (CTPS and MAPC)	Air Quality Conformity and Support Activities	Boston Region MPO Title VI Reporting	Congestion Management Process	Freight Planning Support	Transportation Equity/Environmental Justice Support	Bicyclist/Pedestrian Support Activities	Community Transportation Technical Assistance	Regional Transit Service Planning Technical Assistance Program	Land Use Development Project Reviews	Using GTFS to Find Shared Segments with Excessively Irregular Headways	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	Low Cost Improvements to Express-Highway Bottleneck Locations	Safety Effectiveness of Safe Routes to School Programs	Planning for Connected and Autonomous Vehicles	Study of Promising GHG Reduction Strategies	MPO Staff-Generated Research Topics	Alternative Mode Planning and Coordination (MAPC)	MetroFuture Implementation (MAPC)	Corridor/Subarea Planning Studies (MAPC)	Access Advisory Committee Support	Provision of Materials in Accessible Formats	Regional Model Enhancement	Transit Data Support	Traffic Data Support	Roadway Safety Audits	MPO/MAPC Liaison Activities	Land Use Data for Transportation Modeling	Subregional Support Activities
1 Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.	X	X	X	X			X	X						X	X	X		X				X											X
2 Increase the safety of the transportation system for all motorized and nonmotorized users.	X	X	X	X			X	X		X	X			X	X	X	X	X			X							X	X	X			
3 Increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and nonmotorized users.	X	X	X	X			X								X	X	X	X												X			
4 Increase accessibility and mobility of people and freight.	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
5 Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X		X	X	X
6 Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X		X	X						X	X	X				X
7 Promote efficient system management and operation.	X	X	X	X			X	X			X	X	X	X	X	X	X	X	X		X						X	X	X				
8 Emphasize the preservation of the existing transportation system.	X	X	X	X				X							X	X	X	X	X									X	X				X
9 Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.	X	X	X	X	X					X			X	X	X					X	X	X	X										
10 Enhance travel and tourism.	X	X	X	X						X	X	X	X	X	X	X		X		X	X	X	X				X	X					

3C = continuing, comprehensive, and cooperative transportation-planning process. CTPS = Central Transportation Planning Staff. GHG = greenhouse gas. GTFS = General Transit Feed Specification. L RTP = Long-Range Transportation Plan. MAPC = Metropolitan Area Planning Council. MPO = Metropolitan Planning Organization. TIP = Transportation Improvement Program. UPWP = Unified Planning Work Program. X = applicable.



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3.1.3 Federal Planning Emphasis Areas

Each year, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issue guidance for MPOs to consider when preparing their UPWPs. For FFY 2017, FHWA and FTA guidance includes:

- **Responding to recommendations in the most recent federal certification review:** The FHWA and the FTA conducted a Transportation Planning Certification Review of the Boston Region MPO's transportation planning process in December 2014. In response to recommendations received at the review, the MPO considered specific new studies in the FFY 2017 Universe of Projects.
- **Ensuring that at least one-third of UPWP funds results in tangible products:** The MPO meets and exceeds federal guidelines for expenditure of metropolitan planning funds that result in tangible products. The MPO considers feasibility and potential for implementation of study recommendations when selecting studies to fund with continuing, comprehensive, and cooperative (3C) dollars and when selecting particular locations to study. Tangible products resulting from UPWP-funded studies are described in the summary tables at the beginning of Chapters 5 through 8.
- **Focusing on developing safe bicycle and pedestrian networks:** The MPO addresses the safety needs of users of active transportation modes (e.g., bicyclists and pedestrians) throughout its planning activities. Specific programs and studies that address bicycle and pedestrian needs are described in detail in Chapter 6: Boston Region MPO Planning Studies and Technical Analyses.
- **Creating a performance-based planning and programming system:** The MPO coordinates performance-based planning activities in the Long-Range Transportation Plan (LRTP) and in the Transportation Improvement Program (TIP), with work carried out through the MPO's Congestion Management Process. Performance-based planning is discussed in detail in Chapter 5: Certification Requirements.
- **Working towards regional models of collaboration:** In addition to the Boston Region MPO, MPOs in the Boston urbanized area (UZA) include the Merrimack Valley, Northern Middlesex, Old Colony, Southeastern Massachusetts, and others. The existing memorandum of understanding (MOU) is being updated, and will continue to describe areas of cooperation and coordination among MPOs in the Boston UZA, including sharing draft certification documents for review, notifications of meetings, and attending one another's MPO meetings.
- **Focusing on Ladders of Opportunity and providing access to essential services:** The MPO monitors and considers access to essential services (e.g., employment, health care, education, and recreation destinations) through a variety of activities. Chapter 5 discusses certification requirements that address

Ladders of Opportunity and include Boston Region MPO Title VI Reporting and Environmental Equity/Environmental Justice Support. Chapter 6 discusses planning studies and technical analyses, such as Addressing Safety, Mobility, and Access on Subregional Priority Roadways and Community Transportation Technical Assistance. These studies focus on enhancing access to essential services throughout the region. Additionally, Chapter 7 discusses Agency and Other Client Funded Transportation Planning Studies, which focus on increasing access to transit and enhancing mobility for the region.

- **Tracking the geographic distribution of UPWP-funded studies and target TIP projects:** In January 2015, MPO staff analyzed the distribution of metropolitan planning funds and federal transportation improvement funds programmed across the 101 municipalities in the Boston Region MPO area for FFYs 2008 through 2013. This analysis was transmitted to the FHWA and the FTA, and MPO staff is currently updating this information. As a follow-up action, MPO staff will target its FFY17 outreach towards municipalities that have been found to have a low representation of UPWP studies and TIP projects. Appendix G presents summary and analysis information on the UPWP ongoing programs, studies, and technical analyses conducted over the past five FFYs and the geographic distribution of the MPO staff's work throughout the Boston Region.

3.1.4 1990 Clean Air Act Amendments

Air quality conformity determinations must be performed for capital improvement projects that receive federal funding and for those that are considered regionally significant, regardless of the funding source. These determinations must show that projects in the MPO's LRTP and TIP will not cause or contribute to any new air quality violations, will not increase the frequency or severity of any existing air quality violations in any area, and will not delay the timely attainment of the air quality standards in any area.

In the most recent LRTP, *Charting Progress to 2040*, the air quality conformity determination concluded that the emission levels from the Boston area carbon monoxide (CO) maintenance area, including emissions resulting from implementation of the LRTP, are in conformance with the State Implementation Plan (SIP) according to state and federal conformity criteria. Specifically, the CO emissions for the build scenarios of the MPO's regional travel demand model set are less than the projections for analysis for the years 2020 through 2040 for the nine cities in the Boston CO maintenance area. In accordance with Section 176(c)(4) of the Clean Air Act as amended in 1990, the Boston Region MPO has completed this review and hereby certifies that the LRTP, and its latest conformity determination, conditionally conforms with federal (40 CFR Part 93) and Massachusetts (310 CMR 60.03) regulations and is consistent with the air quality goals in the Massachusetts SIP.

Transportation control measures identified in the SIP for attaining air quality standards are federally enforceable and must be given first priority when using federal funds. Such projects include the parking-freeze program in Boston, the statewide rideshare program, rapid transit and commuter rail extension programs, park-and-ride

facilities, residential parking-sticker programs, and the operation of high-occupancy-vehicle lanes. The United States Environmental Protection Agency 40 CFR Parts 51 and 93 Conformity Regulation established the policy, criteria, and procedures for demonstrating air quality conformity in the MPO region.

As of April 1, 2016, the Boston Region MPO has been classified as attainment for CO. Therefore, the MPO is in attainment for all of the criteria pollutants (ozone and CO) and is not required to perform air quality analyses for these pollutants as part of the LRTP and TIP. The MPO, however, is still required to report on the TCMs as part of air quality conformity determinations in these documents. In addition, the MPO is still required to perform air quality analyses for carbon dioxide as part of the state's Global Warming Solutions Act (see below).

3.1.5 Non-discrimination Mandates

The Boston Region MPO complies with Title VI of the Civil Rights Act of 1964, the American with Disabilities Act of 1990 (ADA), and other federal and state non-discrimination statutes and regulations in all programs and activities. The MPO, as well as its plans and programs, does not discriminate on the basis of race, color, national origin, English-language proficiency, income, religious creed, ancestry, disability, age, gender, sexual orientation, gender identity or expression, or military service. The major federal requirements are discussed below.

Title VI of the Civil Rights Act of 1964

This statute requires that no person be excluded from participation in, be denied the benefits of, or be subjected to discrimination on the basis of race, color, or national origin, under any program or activity provided by an agency receiving federal financial assistance.

Executive Order 13166, dated August 11, 2000, extends Title VI protections to persons who, as a result of national origin, have limited English-language proficiency (LEP). Specifically, it calls for improved access to federally conducted and federally assisted programs and activities, and requires MPOs to develop and implement a system by which LEP persons can meaningfully participate in the transportation-planning process.

MPO activities that meet these requirements are discussed in the Boston Region MPO Title VI Report, the Massachusetts Department of Transportation (MassDOT) Title VI Program, and the Massachusetts Bay Transportation Authority (MBTA) Title VI Program Monitoring. These projects are discussed in more detail in Chapters 5 and 7.

Environmental Justice Executive Orders

Executive Order 12898, dated February 11, 1994, further expands upon Title VI, requiring each federal agency to achieve environmental justice by identifying and addressing any disproportionately high adverse human health or environmental effects, including interrelated social and economic effects, of its programs, policies, and activities on minority or low-income populations.

On April 15, 1997, the U.S. Department of Transportation issued its Final Order to Address Environmental Justice in Minority Populations and Low-Income Populations. Among other provisions, this order requires programming and planning activities to

- explicitly consider the effects of transportation decisions on minority and low-income populations.
- provide meaningful opportunities for public involvement by members of minority and low-income populations.
- gather (where relevant, appropriate, and practical) demographic information such as race, color, national origin, and income level of populations affected by transportation decisions.
- minimize or mitigate any adverse impact on minority or low-income populations.

The ADA

Title III of the ADA requires all transportation projects, plans, and programs to be accessible to people with disabilities. At the MPO level, this means that public meetings must be held in accessible buildings and be conducted in a manner that provides for accessibility. MPO materials must also be made available in accessible formats.

Executive Order 13330

Executive Order 13330, dated February 26, 2004, calls for the establishment of the Interagency Transportation Coordinating Council on Access and Mobility under the aegis of the US Secretary of Transportation. This executive order reinforces both environmental justice and ADA requirements by charging the council with developing policies and methods for improving access for persons with disabilities, low-income persons, and older adults.

3.2 STATE GUIDANCE AND TRANSPORTATION PRIORITIES

3.2.1 You Move Massachusetts and We Move Massachusetts

You Move Massachusetts, a statewide initiative designed as a bottom-up approach to transportation planning, developed ten core themes derived from a broad-based public participation process that articulated the expressed concerns, needs, and aspirations of Massachusetts residents that are related to their transportation network. These themes were considered in the development of this UPWP.

We Move Massachusetts (WMM) is MassDOT's statewide strategic multimodal plan. The initiative is a product of the transportation reform legislation of 2009, You Move Massachusetts civic engagement process, wider outreach to environmental justice and Title VI communities, and other outreach activities. In May 2014, MassDOT released

We Move Massachusetts: Planning for Performance (WMM), the Commonwealth of Massachusetts' 2040 LRTP. WMM identifies high-level policy priorities, which were considered in the development of this UPWP. WMM also incorporates performance management into investment decision-making to calculate the differences in performance outcomes resulting from different funding levels available to MassDOT. In the future, MassDOT will use the scenario tool, described in WMM, to update and refine investment priorities.

3.2.2 Global Warming Solutions Act

The Global Warming Solutions Act (GWSA) makes Massachusetts a leader in setting aggressive and enforceable greenhouse gas (GHG) reduction targets and implementing policies and initiatives to achieve these targets. In keeping with this law, the Massachusetts Executive Office of Energy and Environmental Affairs, in consultation with other state agencies and the public, developed the Massachusetts Clean Energy and Climate Plan for 2020. This implementation plan, released on December 29, 2010, establishes the following targets for overall statewide GHG emissions:

- By 2020: 25 percent reduction below statewide 1990 GHG emission levels
- By 2050: 80 percent reduction below statewide 1990 GHG emission levels

3.2.3 GreenDOT

GreenDOT, an initiative that MassDOT launched in June 2010, is a comprehensive environmental responsibility and sustainability policy that has three primary objectives:

- reduce GHG emissions
- promote the healthy transportation options of walking, bicycling, and public transit
- support smart-growth development

GreenDOT applies to MassDOT divisions and contractors, as well as to Massachusetts' MPOs and regional transit authorities. It responds to several critical laws and policies, which include:

- The GWSA of 2008, which establishes legally enforceable requirements that Massachusetts significantly reduce its GHG emissions
- The Healthy Transportation Compact (HTC), which is discussed in section 3.2.5
- Executive Orders 484 (Leading by Example) and 515 (Environmental Purchasing Policy), which require state agencies to invest public resources in ways that support environmental sustainability by conserving energy and water, implementing efficiency measures, and producing or purchasing renewable energy

The GreenDOT Implementation Plan serves as the framework for incorporating the sustainability principles of GreenDOT into MassDOT's core business practices. The plan details 16 broad sustainability goals and related measurable tasks and performance indicators.

3.2.4 MassDOT's Statewide Mode-Shift Goal

MassDOT's statewide mode-shift goal aims to triple the current mode shares of bicycling, public transit, and walking by 2030. The statewide mode-shift goal is an important part of MassDOT's strategy for meeting the Commonwealth's commitments under the GWSA. In 2013, MassDOT built upon the mode shift goal by passing the Healthy Transportation Policy Directive to formalize its commitment to the implementation and maintenance of transportation networks that serve all modes. The directive will ensure that all MassDOT projects are designed and implemented in a way that provides all customers access to safe and comfortable walking, bicycling, and transit options.

3.2.5 Healthy Transportation Compact (HTC)

The HTC is a key requirement of the Massachusetts landmark transportation reform legislation that took effect on November 1, 2009. It is an interagency initiative that will help ensure that the transportation decisions the Commonwealth makes balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment, and create stronger communities.

Participating agencies work together to achieve positive health outcomes through the coordination of land use, transportation, and public health policy. HTC membership is made up of the Secretary of Transportation or designee (co-chair), the Secretary of Health and Human Services or designee (co-chair), the Secretary of Energy and Environmental Affairs or designee, the MassDOT Highway Administrator or designee, the MassDOT Transit Administrator or designee, the Commissioner of Public Health or designee, and the Secretary of Housing and Economic development or designee. The HTC will also promote improved coordination among the public sector, private sector, and advocacy groups, as well as among transportation, land use, and public health stakeholders.

3.3 REGIONAL GUIDANCE AND TRANSPORTATION PRIORITIES

3.3.1 The MBTA's Program for Mass Transportation (PMT)

The MBTA's latest PMT, Focus40, is under development. Focus40 is the 25-year strategic vision for MBTA investments. This process will engage customers— as well as elected officials, major employers and business leaders, academic institutions, the advocacy community, and other stakeholders— in developing a financially responsible, long-

term investment strategy that positions the MBTA to better serve the region of today, as well as the Greater Boston region of 2040. Focus40 will be an open and frank conversation about a number of critical issues, including:

- necessary investments in the state of good repair, including actions that keep our system operating well and working safely
- the Commonwealth's financial capacity to expand the system's footprint
- the potential for transformative change on local streets through strong partnerships between the MBTA and municipalities
- the Boston region in 2040: shifting demographics, new technology, and climate change may all impact how the MBTA must operate in the years leading up to 2040

In the first phase of the development of Focus40, MassDOT released the State of the System series, which provides a clear picture of where the MBTA stands today in terms of asset inventory, condition, and service performance. The second phase of the Focus40 effort is centered on developing a better understanding of the world in which the MBTA will be operating in the years leading up to 2040. A variety of trends in demographics, technology, and climate may require that the MBTA function differently in the coming years than it does today. Finally, Focus40 will work with the public and stakeholders to develop and evaluate various investment strategies that will address current and future needs.

During development of the MPO's next LRTP, the MPO will consider the findings and recommendations for transit investments in Focus40. These will provide important input for future scenario planning and investment decisions in the LRTP.

3.3.2 MetroFuture

MetroFuture, which was developed by the Metropolitan Area Planning Council and adopted in 2008, is the long-range plan for land use, housing, economic development, and environmental preservation in the Boston region. It includes a vision for the region's future and a set of strategies for achieving that future, and is the foundation for land use projections used in the MPO's LRTP, *Charting Progress to 2040*. Work being done to support MetroFuture implementation and updates is detailed in the MetroFuture Implementation project description in Chapter 6. MetroFuture's goals, objectives, and strategies were considered in the development of this UPWP.

3.3.3 The MPO's Congestion Management Process (CMP)

The purpose of the CMP is to monitor and analyze the performance of facilities and services, develop strategies for the management of congestion based on the results of monitoring, and move those strategies into the implementation stage by providing decision-makers in the region with information and recommendations for the improvement of transportation system performance. The CMP monitors roadways

and park-and-ride facilities in the MPO region for safety, congestion, and mobility, and identifies “problem” locations. Studies that help address problems identified in the most recent CMP monitoring were considered for inclusion in this UPWP, including Priority Corridors for LRTP Needs Assessment: FFY 2017. Work that is currently being performed in accordance with the FFY 2017 CMP is detailed in Chapter 5.



CHAPTER 4

Federal Fiscal Years 2014–2016 Completed Studies

4.1 TRACKING STUDY PROGRESS

In order to accurately plan each Unified Planning Work Program (UPWP), the Boston Region Metropolitan Planning Organization (MPO) must gain an understanding of the status of the previous year’s studies and work activities. For example, some studies that began in one federal fiscal year (FFY) may carry

over into the following FFY. The budgetary and staff requirements for these “carry-over” studies are factored into decision-making about the type and number of new studies that MPO staff can undertake in the upcoming FFY.

Similarly, the budgetary and staffing needs of ongoing programs, both those required to maintain certification as an MPO and support MPO functioning (such as the Congestion Management Process and Regional Model Enhancement), as well as the ongoing programs in which MPO staff conduct technical transportation planning work for communities (such as Bicycle and Pedestrian Support Activities), can fluctuate from one FFY to another. These changes are based, in part, on varying work levels for certification requirements (e.g., the Long-Range Transportation Plan [LRTP] is developed over the course of four years) as well as varying demands for work and assistance under the MPO’s ongoing technical programs.

In general, the MPO tracks three categories of study progress throughout the UPWP. These include:

- **Completed:** These studies are either already complete or expected to be completed by October 1, 2016, when the FFY 2017 UPWP document goes into effect. These studies, their funding sources and amounts, and their work products or activities are summarized in Table 4-1 (MPO-funded studies).
- **Ongoing:** These programs support the transportation-planning process from year to year, and often serve to provide technical assistance to communities or transportation agencies throughout the region. These programs include certification requirements (Chapter 5), transportation technical analyses

(Chapter 6), agency-funded ongoing contracts (Chapter 7), and Administration, Resource Management, and Support Activities (Chapter 8). Tables summarizing the funding and progress for these ongoing programs are included at the beginning of each chapter.

- **Continuing or Carry Over:** These studies were originally funded in FFY 2016 or earlier and are continuing into FFY 2017. However, unlike ongoing activities that take place each FFY, these projects have a specific, limited duration. These include defined-duration MPO-funded studies as well as defined-duration agency-funded studies. These studies were either originally planned with a schedule extending beyond one FFY or are continuing due to unforeseen delays. Tables summarizing these studies are included at the beginning of Chapters 6 and 7.

This chapter summarizes completed studies; the other study categories, as described above, are presented in their corresponding chapters.

4.2 PROJECT BUDGET TABLES AND WORK PRODUCTS

Table 4-1 summarizes the budgets, work products, and activities for studies that were funded in FFYs 2014 through 2016 and are expected to be complete by the end of FFY 2016. Each table includes the project name, the MPO project identification number, the funding amount from each of the federal formula grants (Federal Highway Administration continuing, cooperative, and comprehensive [3C] Planning [PL] funds and Federal Transit Administration/Massachusetts Department of Transportation 3C Planning [§ 5303] funds), total funding, and work products, including reports, technical memoranda, and other accomplishments during the study period.

Please note that some titles of these products and activities may change as they are finalized. All certification documents and many other work products are, or will be, available for download from the MPO website (www.bostonmpo.org). Work products not found on the MPO website may be requested by contacting the Central Transportation Planning Staff (CTPS) at 857-702-3700 (voice), 617-570-9193 (TTY), or ctps@ctps.org (email). Metropolitan Area Planning Council (MAPC) work products can be found at www.mapc.org.

[Tables under development]



CHAPTER 5

Certification Requirements

5.1 INTRODUCTION

The projects in this chapter are categorized as certification requirements because they include work that the Boston Region Metropolitan Planning Organization (MPO) must do to maintain its certification by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The projects also include activities that are necessary to comply with federal and state laws, such as the federal Clean Air Act Amendments and the Americans with Disabilities Act of 1990.

The budget tables for the individual projects in this chapter describe the salary and overhead costs associated with these projects. Any direct costs associated with the projects are included in the Direct Support budget table in Chapter 8, Administration, Resource Management, and Support Activities.

Table 5-1 summarizes the funding in FFY 2016 and FFY 2017 as well as the work progress and products for the ongoing programs conducted as part of the MPO's certification requirements.

[Table 5-1 Under development] [Budget information for the following projects will be added once the MPO has approved a draft FFY 2017 UPWP budget for public review.]



5.2 CERTIFICATION REQUIREMENT ACTIVITIES

This section describes the certification requirement activities and plans that MPO staff conducts during the FFY.

3C PLANNING AND MPO SUPPORT

Project ID Number	See Individual Tasks Below
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match

Purpose

The work described below consists of the 3C activities that support the federally mandated transportation-planning process that is continuing, comprehensive, and cooperative. This process creates numerous products and materials and furthers MPO operations and decision-making.

Approach

The activities included in this category of certification requirements are separated into the specific work areas detailed below.

SUPPORT TO THE MPO

Project ID 90011: Support to the MPO and Its Committees

Support to the MPO and its committees includes implementing MPO policies on planning and programming, planning and coordinating delivery of information for MPO decision-making, and supporting the work and operation of the MPO and its committees. It involves providing support for MPO meeting management and planning, delivering MPO communications, and implementing the MPO's public participation program. Some tasks related to MPO meetings, MPO committee meetings, Regional Transportation Advisory Council (Advisory Council) meetings, and other MPO-sponsored meetings include:

- Developing meeting agendas
- Preparing and distributing informational materials, including document postings on the MPO's website and via email
- Conducting meeting site selection and logistics planning
- Setting up audio/visual equipment for meetings
- Attending and recording meetings
- Completing meeting follow-up activities, such as maintaining the information flow for members of the MPO and the public, processing approved work scopes, preparing audio-recording files, and documenting meeting minutes

Technical and process support is provided to the MPO's Unified Planning Work Program (UPWP) Committee, Administration and Finance (A&F) Committee, Congestion Management Process (CMP) Committee, and other ad hoc committees that are formed as needed.

- The CMP Committee meets as needed throughout the year to discuss the federally required CMP. Activities include developing and reviewing its Transportation Improvement Program (TIP) Intersection Improvement Program and making recommendations to the MPO.
- The A&F Committee meets periodically to make recommendations to the MPO on the staff's operating budget, legal matters, and other administrative functions.
- The UPWP Committee meets as needed throughout the year to develop a UPWP for the upcoming federal fiscal year (FFY) and to monitor expenditures and the progress of studies and programs in the current fiscal year.
- The Advisory Council is the MPO's citizens' advisory committee. MPO staff provides operations support to this body and its subcommittees.

This work program also includes consultation with other entities and agencies involved with or interested in 3C planning activities, collaboration with other Massachusetts MPOs (with more detailed coordination with those in the Boston Region urbanized area), and communication with Metropolitan Area Planning Council (MAPC) subregional groups.

MPO support also includes conducting metropolitan transportation planning and implementing planning activities for the MPO. The goal of this work is to ensure compliance with federal regulations and requirements and to provide excellence in transportation planning processes, techniques, and outcomes. The work involves researching, analyzing, and reporting information on 3C planning topics, including those identified in federal reauthorization legislation, and issues related to other federal policies, regulations, and guidance. It also involves responding to federal recommendations or requirements for certification documents or MPO

certification, and incorporating new requirements into the MPO's 3C program. MPO staff will continue to implement Fixing America's Surface Transportation (FAST) Act requirements (see Chapter 2 and Chapter 3) as guidance from this federal legislation is communicated to the MPO, and staff will also be prepared to implement future legislation.

Other activities include the day-to-day oversight of 3C-program-related activities, reports on the progress of projects listed in the UPWP, collection and fielding of day to day comments and inquiries, and responses to requests for information and support.

Project ID 90021: Regional Transportation Advisory Council Support

The Advisory Council is the MPO's citizens' advisory committee. MPO staff provides operations support to this body and its subcommittees. This includes planning programs and meetings, scheduling speakers, and preparing and distributing agendas, meeting notices, informational packets, and meeting minutes. It also includes helping to conduct meetings; attending and making presentations at meetings; organizing and conducting field trips; soliciting new members; implementing and updating the bylaws; coordinating other activities, such as Advisory Council elections; and maintaining contact lists. MPO staff provides information, updates, and briefings on MPO activities, studies, and reports; requests and coordinates comments on MPO documents; and works with the Advisory Council and its committees as they conduct their programs, planning, and reviews.

Project ID 90025: TRANSREPORT

The MPO's newsletter, TRANSREPORT, is an important part of the MPO's public involvement program. MPO staff is responsible for soliciting, researching, and writing articles about MPO studies and activities. This work includes managing all aspects of the newsletter's production: writing and editing, layout, graphics, proofreading, and distribution via email and U.S. mail. MPO staff coordinates the development of articles by staff, MPO members, and other interested organizations.

MPO staff is responsible for the newsletter's distribution in an accessible format on the MPO website, electronic-transfer formats for email subscribers, and hard-copy format for the few recipients who request it. Once posted on the website, the newsletter can be translated into the languages (besides English) most frequently spoken in the region, using the website's Google Translate tool.

MPO staff stays current on newsletter software and styles with an eye to making improvements in the newsletter's visual appeal and ability to communicate.

Project ID 90026: Public Participation Process

MPO staff implements the MPO's Public Participation Program and coordinates and conducts MPO public outreach activities. These activities are opportunities to involve all members of the public, including:

- Local, regional, state, and federal officials and agencies
- Transportation, environmental, and social-service advocacy groups
- Senior citizens, minorities, people with low incomes, people with disabilities, people with limited English-language proficiency, youth, veterans, and people living in zero vehicle households
- Freight operators
- Transit service providers
- Other interested parties and other members of the general public

This program provides information to these parties and collects input from them for the MPO to use in its planning, decision-making, and development of certification documents, including programming the region's transportation funding. The program supplements the involvement of the Regional Transportation Advisory Council.

Communication is ongoing and conducted through a variety of means.

- The **MPO's website** is an important tool that provides and gathers information for MPO planning and programming. Highly visible and frequently updated News Flashes (in the form of Twitter tweets) are published on the MPO home page. These quickly read items promote news about MPO activities and information on how the public can be involved in MPO planning. Material on all MPO plans and programs is posted on the website. The MPO also hosts a public-information email address and comment tool on its website so that members of the public may request information and provide input. MPO staff monitors input from this address to coordinate responses and refer received comments to the appropriate recipient. The MPO also solicits input through web-based surveys.
- **Public meetings** are important in this process, and several types of meetings are planned and conducted each year. The MPO holds public information sessions three to four times a year, and conducts TIP-development and UPWP-development workshops in December and January. The MPO also holds workshops and special-issue forums throughout the year to gather input on MPO activities and on draft certification documents and other plans. MPO staff and MAPC collaborate on public involvement activities whenever possible. MPO and MAPC staffs hold timely and constructive discussions of MPO issues at MAPC subregional group meetings. Other types of collaboration involve hosting and cosponsoring special events. For example, MAPC dedicated its 2015 Winter Council Meeting to interactive activities related to the LRTP, and cosponsored the MPO's Transportation Equity Forum in 2014. This collaboration was very fruitful and will continue.

- **Subregional Outreach:** MPO staff members attend MAPC subregional group meetings to listen to and learn about community issues in the region and to answer questions about the MPO and its activities. This helps staff incorporate subregional issues and concerns into the development of MPO documents.

The MPO recently adopted an updated Public Participation Plan reflecting an improved Public Participation Program, and has been implementing improvements discussed in this plan. In FFY 2017, the MPO will continue refining this process, implementing tactics designed to break down barriers to participation for groups currently underrepresented in the planning process:

- Maintain frequent e-based communications, including press releases, public notices, and refreshed website newsflashes/Twitter tweets regarding ongoing planning products and MPO milestones and events
- Team with other entities to conduct joint programs and outreach
- Integrate the Title-VI-related Four Factor Analysis for guidance on providing materials in languages other than English
- Expand the MPO program to involve people in the region with limited English-language proficiency by translating critical documents (e.g., the Title VI Complaint Process and Form and notices of MPO-sponsored public-participation meetings) into the MPO languages of policy, including Spanish, Portuguese, and Chinese. If information is needed in another language, Boston Region stakeholders are encouraged to contact the MPO's Title VI Specialist.
- When planning meetings, take additional steps to understand the language and cultural needs of those who might attend
- Make it a standard practice to solicit comments on the Public Participation Program from meeting participants, and conduct periodic assessments of the effectiveness of public involvement activities
- Encourage public libraries to make MPO information publicly available
- Increase the MPO's use of graphic materials to provide information
- Offer more web-based surveys at timely points in the planning process
- Continue the quest for tools and practices to make outreach activities as interactive, engaging, and easily accessible as feasible
- Expand the use of Twitter and participation in the MPO website's Rich Site Summary (RSS) feed to enhance communication

Maintaining contact with members of the public requires continuous updates to the MPO's contact database and email lists. A significant part of the MPO's Public Participation Program involves keeping contact information current and

identifying and including new contacts, particularly those in or representing minority communities; persons with disabilities, low incomes, or limited English-language proficiency; the elderly; veterans; and youth.

The MPO's Public Participation Program also involves consultations as specified in federal guidance; arranging, upon request, for the provision of American Sign Language (ASL) and other language-interpretation services at meetings; and providing public participation support to MPO member entities.

OTHER 3C PLANNING SUPPORT ACTIVITIES

Project ID 90012: Professional Development

MPO staff maintains its technical expertise in part by participating in courses, programs, and workshops offered by the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Transportation Research Board (TRB), the Association of Metropolitan Planning Organizations (AMPO), the Institute of Transportation Engineers (ITE), and other public and private organizations. Previous professional development endeavors have related to topics such as performance-based planning, traffic engineering issues and applications, regional modeling, bicycle/pedestrian issues, transit planning, public involvement, environmental justice, air quality, computer operations and maintenance, database applications, and other areas related to the provision of technical support services.

Project ID 90090: General Graphics

Graphics support will be provided to MPO staff and MPO agencies. This includes designing and producing maps, charts, illustrations, report covers, brochures, slides, and photographs; applying other visualization techniques; and creating other products that improve communication.

FFY 2017 Anticipated Outcomes

Staff will prepare materials—including agendas, minutes, notices, document translations, memoranda, reports, correspondence, summaries, and website postings, as well as maps, charts, illustrations and other visual materials—as needed; continue to support the MPO and its committees and the Regional Transportation Advisory Council; conduct communications with the public, including publishing TRANSREPORT; conduct planning to support compliance with federal requirements and guidance; engage in professional-development activities; and remain prepared for unforeseen issues as they arise.

Note: The above activities support all other projects in this UPWP in compliance with the 3C planning process. They foster the implementation of MPO policies, federal planning factors and guidance, and all applicable orders and requirements, including Executive Order 13166 (governing outreach to persons with limited English-language proficiency). These activities are supported by the Provision of Materials in Accessible Formats project.

LONG-RANGE TRANSPORTATION PLAN

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

Under the current federal transportation funding legislation, Fixing America’s Surface Transportation Act (FAST Act), a new Long-Range Transportation Plan (LRTP) must be produced every four years.

The LRTP guides transportation system investments for the Boston metropolitan region for at least the next 20 years. The MPO adopted its most recent LRTP, *Charting Progress to 2040*, in August 2015. This LRTP serves as the Boston Region MPO’s guiding document. It establishes regional goals and objectives that the MPO will use for future decision-making.

While the quadrennial LRTP document was endorsed in FFY 2015, the MPO’s continuing, comprehensive, and cooperative planning process—including its long-range planning activities—is ongoing. The MPO’s robust LRTP development program helps meet Moving Ahead for Progress in the 21st Century Act (MAP21) requirements, which include measuring and tracking performance of the region’s transportation system and the effectiveness of MPO programming in meeting regional goals. This program also supports scenario planning to generate data for decision-making.

Approach

LRTP Needs Assessment

The Needs Assessment has become a foundational resource for the MPO’s transportation planning work. Staff developed a Needs Assessment as part of *Charting Progress to 2040*; it is available to the public via the Needs Assessment application on the MPO’s website. In FFY 2017, staff will continue to update the Needs Assessment with new information as it becomes available. Staff also will perform additional analyses to keep the Needs Assessment current, and will use this information for future studies, reports, and deliberations. The updated information will be made available to

the public via the website. Data from the Needs Assessment will support two of the MPO's initiatives: its scenario planning activities and its performance-based planning practice.

In FFY 2017, staff will use output from the Needs Assessment to develop and analyze land use and transportation options and scenarios. This information also will be used to review performance measures, continue to set MPO performance targets, evaluate progress toward them, and track other indicators of interest.

The LRTP and Performance-Based Planning

The MPO adopted its goals, objectives, and an initial set of performance measures in FFY 2015 as part of developing *Charting Progress to 2040*, which were used for scenario planning and evaluating LRTP projects and programs. In FFY 2015, the MPO also initiated the development of performance targets, which are specific levels of performance the MPO desires to achieve within a certain time frame. The Transportation Improvement Program (TIP) and LRTP programs work together to support the MPO's performance-based planning program.

In FFY 2017, the MPO will expand its performance-based planning practice as components of the LRTP and TIP programs. Staff will review the MPO's performance measures developed in FFYs 2015 and 2016 under the LRTP program. This review may result in fine-tuning of the existing set of performance measures. Additional updates or measures may be made based on Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) guidance, new Massachusetts Department of Transportation (MassDOT) measures, or emerging data sources. Staff will use the MPO goals, objectives, and performance measures to continue to develop a set of targets for the MPO's performance-based planning. The MPO will use the performance measures to track how well TIP-implemented projects and programs are helping to meet the region's targets and goals.

In the Boston Region MPO, the LRTP and the TIP will each include a performance report that describes progress towards targets and the trends of non-target indicators of interest. The LRTP will report progress at the systems and project levels, as applicable, and will include a full assessment of progress made toward the region's goals. The TIP will report on project-level performance and the results of system-level analysis, as applicable. Each LRTP will provide an opportunity to review and document progress in meeting performance goals and, if needed, make adjustments to the LRTP to meet those goals.

In the future, the MPO will review and possibly revise the performance measures and further develop the targets. LRTP program work will include pre-planning for data needs to support performance-based planning. Staff will continue to coordinate internally and externally, as needed, to understand data availability, determine future data needs, and set a plan for meeting those needs.

The LRTP and Scenario Planning

In 2015, the MPO began the ongoing practice of using model-based planning tools and off-model processes to generate forecasts and information about regional conditions and future needs as part of *Charting Progress to 2040* and continued it in 2016. These tools assess the effects of potential options for changes to the transportation network. The MPO plans to use this information to make policy and capital-investment decisions. Throughout the year, staff will build on its previous work and identify one or more opportunities to explore options and compare various alternative scenarios to better understand impacts on transportation, air quality, climate change, mode shift, the economy, and land use. Using these tools will provide additional and more substantive answers to various planning questions.

Some of this work also may explore policy-related implications. In this way, the LRTP program serves as an ongoing resource for current information, insights, and analysis for all those involved in managing and improving the regional transportation network.

Laying the Groundwork for the Next LRTP

Prior to the next LRTP endorsement year, staff will research, plan, coordinate with interested parties, and review priorities. Through ongoing performance based planning and scenario planning, MPO staff will generate information that will help guide the investment strategies for the next LRTP.

The LRTP program plays an important role in keeping the MPO abreast of current state-of-the-practice methods of communication and planning tools and approaches.

In collaboration with the Metropolitan Area Planning Council (MAPC), the MPO will explore effective ways to gather information, understand the region's needs, and analyze transportation and land-use options. As part of FFY 2017 activity, staff will research best practices in metropolitan transportation planning and other facets of planning.

LRTP Amendments

If any changes are made to regionally significant projects in the FFY 2017 TIP, an amendment to the LRTP might be required. Staff will prepare the informational materials for MPO decision-making and follow MPO procedures for informing and involving the public.

FFY 2017 Anticipated Outcomes

- Update details and analyses in the current Needs Assessment to supply the most current information to the MPO and the public.
- Prepare amendments to *Charting Progress to 2040*, as needed.
- Expand the MPO's scenario-planning capabilities by using the regional travel demand model set and various planning tools such as TREDIS and CubeLand to support the performance-based planning and programming process.

- Produce summaries of results from transportation scenario analyses for the MPO.
- Continue to update performance measures and prepare targets for the MPO's goals and objectives.
- Prepare memoranda on performance based planning topics such as performance targets and guidelines for the LRTP system performance report.
- Prepare LRTP system performance reports monitoring measures-of-interest trends and tracking the MPO's performance-meeting targets.
- Conduct public outreach on all LRTP topics, including Needs Assessment updates, scenario planning, and further development of performance measures and targets; report results to the MPO for use in all of its planning and programming.
- Address comments or changes from the FHWA and the FTA or changes to the State Implementation Plan (SIP).

TRANSPORTATION IMPROVEMENT PROGRAM

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The Boston Region MPO's Transportation Improvement Program (TIP) presents a multi-year, financially constrained program of planned investments in the metropolitan area's transportation system. Although federal regulations require the TIP to be updated every four years, Massachusetts and its MPOs are committed to producing annual updates.

Approach

Development of the FFYs 2018–2022 TIP

MPO staff coordinates the collection of TIP project-funding requests, evaluates the requests, proposes programming of current and new projects based on anticipated funding levels, supports the MPO in its decision-making about programming and in developing a draft document, and facilitates public review of the draft document before the MPO endorses the final TIP.

Outreach and Compilation of the Universe of Projects

MPO staff communicates with the 101 cities and towns in the region through TIP and Unified Planning Work Program (UPWP) workshops, Metropolitan Area Planning Council (MAPC) subregional meetings, and correspondence with municipal TIP contacts and chief elected officials to gather existing and new TIP funding requests. MPO staff compiles the projects into a Universe of Projects list for the MPO.

Based on the list of project-funding requests, MPO staff will compile and update information on each project for the TIP Interactive Database. Data inputs and updates will consist of mapping the project boundaries, inventorying pavement condition, documenting the extent of bicycle and pedestrian accommodations, computing crash rates, documenting traffic volumes and the severity of congestion,

calculating greenhouse gas (GHG) impacts, and compiling information on Title VI/ non-discrimination populations. The TIP Interactive Database integrates frequently updated information from the MPO, the Massachusetts Department of Transportation (MassDOT) divisions, municipal TIP contacts, members of the general public, and MPO staff in order to inform TIP evaluations.

Project Evaluation

The MPO uses TIP project evaluation criteria to identify projects that will help the region attain the vision, goals, and objectives established by the LRTP. The MPO's evaluation criteria enhance decision-making for transportation projects in the region by establishing a transparent, inclusive, and data-driven process. The evaluation results are posted on the MPO website to allow project proponents to review the ratings and provide feedback.

MPO staff seeks to review the project evaluation criteria annually. In FFY 2016, the MPO updated the evaluation criteria based on the new goals and objectives of the LRTP, *Charting Progress to 2040*. These updates helped align the MPO's goals, objectives, and performance measures with TIP investment decisions.

Staff Recommendation

Staff develops a recommendation that proposes how to prioritize the MPO's Regional Target funding. MPO staff prepares a First-Tier List of Projects using the results of the evaluation ratings and project-readiness information. Staff then develops recommendations, giving strong consideration to the First Tier List of Projects while also balancing equity of investments across the region and accounting for cost (to comply with the fiscal-constraint requirement).

In addition to preparing a recommendation, MPO staff also prepares and presents the Statewide Infrastructure Items and Bridge Programs and the capital programs for the Massachusetts Bay Transportation Authority (MBTA), the Cape Ann Transportation Authority (CATA), and the MetroWest Regional Transit Authority (MWRTA) for the MPO's consideration.

TIP Document Preparation and Endorsement

Staff prepares a draft TIP that maintains compliance with federal regulations and requirements for a 30day public review and comment period. During the public comment period, MPO staff compiles and summarizes comments on the draft TIP and relays the comments to the MPO for consideration before endorsing the final TIP document.

Amendments and Administrative Modifications

In a typical year, various projects experience cost or schedule changes that require an amendment or administrative modification to the TIP. MPO staff manages all public review processes regarding TIP amendments and administrative modifications, including posting TIP materials on the website.

For these actions, MPO staff collects information on the project(s) involved, the change(s) needed, and the reason(s) for the change(s). Staff prepares draft TIP tables that reflect the proposed changes and indicate their rationale. Staff briefs the MPO on the proposed changes to the TIP. The MPO reviews, discusses, and takes appropriate action regarding public review of the proposed changes. Staff also compiles and summarizes comments on the proposed amendment. MPO staff relays public comments to the MPO for its consideration prior to endorsement of the TIP amendment. Staff estimates that there will be as many as six amendments and/or administrative modifications to the FFYs 2017–2021 TIP during FFY 2017.

Implementing Performance-Based Planning

The FFYs 2018–2022 TIP will continue to report on the MPO’s implementation of its performance-based planning program and the results of tracking trends in the region. Chapter 4 of the TIP document reports on the progress of performance-based planning. This chapter tracks trends for safety and system preservation measures and establishes baselines for measures of other goal areas, such as capacity management and mobility. It also demonstrates that the MPO investments through the TIP are making progress toward these goals and also to Clean Air/Clean Communities, Transportation Equity, and Economic Vitality. The FFYs 2018–2022 TIP will seek to further develop the performance-based planning process by establishing baselines, monitoring trends, and setting targets.

FFY 2017 Anticipated Outcomes

The FFYs 2018–2022 TIP, as well as amendments and administrative modifications to the FFYs 2017–2021 TIP, will be prepared as described above. The interactive TIP database for tracking projects will be maintained and enhanced to support the development and tracking of performance measures. The performance-based planning process will expand the tracking of performance measures and initiate the discussion of setting targets.

UNIFIED PLANNING WORK PROGRAM

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The Unified Planning Work Program (UPWP), a 3C (continuing, cooperative, and comprehensive) transportation-planning process, prioritizes federal funding for transportation planning work that will be implemented in the 101-municipality area of the Boston region.

The UPWP has two main purposes:

- Provide budget information to federal and state officials about the expenditure of federal funds for transportation-planning projects being carried out by the Boston Region MPO
- Provide information to government officials, local communities, and the general public about surface-transportation-planning projects expected to take place in the Boston Region MPO area

The UPWP document includes descriptions and budgets for work that MPO staff will conduct during the upcoming federal fiscal year, including both 3C-funded work for the MPO and work that is funded by state agencies or other entities. The UPWP also provides supplementary information about other transportation-planning activities in the region that are not funded by the MPO or conducted by MPO staff. The federal government requires that the UPWP comply with federal regulations and address the focus areas recommended by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).

Work on the UPWP is ongoing and is under way year-round. This work program element focuses the development of the federal fiscal year (FFY) 2018 UPWP and support for the MPO and its UPWP Committee in monitoring FFY 2017 UPWP implementation and in considering adjustments and amendments.

An integral part of developing the UPWP is engaging the public throughout the process. Some of the public outreach process for the UPWP is covered as part of the 3C Planning and MPO Support program.

The Metropolitan Area Planning Council (MAPC) also provides content for the UPWP, which details MAPC's 3C-funded projects. MAPC's participation is funded through its allocation of federal transportation-planning funding.

Approach

MPO staff prepares materials for and coordinates all phases of this work, including soliciting, evaluating, and recommending ideas for planning studies and technical assistance programs; conducting background research; preparing budgets and project descriptions; coordinating document development with the MPO's UPWP Committee; responding to federal guidance; and preparing draft and final documents.

MPO staff members are responsible for coordinating public participation in the UPWP process, distributing the draft UPWP, preparing the final UPWP, and making administrative modifications and amendments as needed. MPO staff also prepares quarterly reports on the implementation of the UPWP.

FFY 2017 Anticipated Outcomes

- Development of, and public outreach for, the FFY 2018 UPWP, with details related to certification requirements and other administration activities, ongoing/continuing work programs, and new studies.
- Planning for relevant meetings, including the MPO's subcommittee
- Amendments and administrative modifications to the FFY 2017 UPWP, as necessary
- Quarterly implementation reports for the FFY 2017 UPWP
- Other information materials as needed

AIR QUALITY CONFORMITY AND SUPPORT ACTIVITIES

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

1. To ensure that the MPO's plans, programs, and projects comply with the Clean Air Act Amendments (CAAA) of 1990 and to secure federal funding for the Boston Region MPO's transportation system
2. To provide ongoing support services for the MPO regarding air-quality matters and maintain technical expertise in air-quality and climate-change matters, including conformance with federal air-quality requirements and the state's climate-change policies

Approach

Air-Quality Conformity Determinations

Under the CAAA, 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, 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. 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 an LRTP amendment is undertaken during the year. This program covers the tasks needed to demonstrate that an MPO's federally funded transportation programs meet conformity requirements.

The Boston Region MPO area had previously been classified as a nonattainment area for ozone, but it was reclassified as an attainment area under the new 2008 ozone standard. Because the reclassification resulted from a new standard, a maintenance plan was not required, and the area was not classified as a maintenance area. A maintenance area is an area that had been reclassified from nonattainment to attainment; it is an area for which a maintenance plan has been approved as part of the Massachusetts SIP. As an attainment area, the MPO is not required to demonstrate that the LRTP and TIP conform to national standards for the two pollutants that form ozone: volatile organic compounds (VOCs) and nitrogen oxides (NOx). A new ozone standard was recently proposed and released for public comment by the United States Environmental Protection Agency (EPA), and the Boston Region MPO area might again be classified as a nonattainment area if this standard is approved; however, this might not occur within the 2017 UPWP year. If the MPO area is reclassified as a nonattainment area, conformity determinations for ozone will be required.

The city of Boston and surrounding cities and towns were classified as a maintenance area for carbon monoxide (CO). However, as of April 1, 2016, the twenty-year maintenance period expired and conformity is not required for this area. The city of Waltham, however is classified as attainment with a limited maintenance plan in place and projects in this city still must comply with certain requirements. The MPO must still show that, it is complying with transportation control measure requirements outlined in the Massachusetts SIP.

Other Air-Quality Support

This ongoing Air-Quality Conformity and Support Activities program supports the MPO's expertise in air-quality and climate-change matters, as well as the MPO's response to changing requirements for planning, analysis, and reporting. This includes initiatives known today, as well as the ability to participate in issues that might emerge during the year. This program also supports implementation of air-quality-related transportation programs and projects, and it includes consultation, research, and coordination between the MPO and federal, state, local, and private entities.

FFY 2017 Anticipated Outcomes

Conformity Determinations

These determinations will be performed and presented as noted below. They include a detailed analysis of air-quality impacts (CO and carbon dioxide [CO₂]) of the projects in the FFYs 2018–2022.

TIP, any changes to the LRTP, and any work required for implementing GreenDOT (the state's comprehensive environmental responsibility and sustainability policy). MPO staff will also complete analysis of VOCs and NOx emissions.

- A systemwide conformity determination will be prepared if there are changes to regionally significant projects in the LRTP and the TIP.

- A detailed project-level analysis will be conducted for each project to receive Congestion Mitigation and Air Quality Program funding in the TIP and for any projects that will help meet the GreenDOT initiative.

Support to the Massachusetts Department of Transportation (MassDOT) (including the Highway Division, the Office of Transportation Planning, and the Massachusetts Bay Transportation Authority [MBTA]) and Massport

Activities will include analysis of transportation-control measures (TCMs), park-and-ride facilities, and proposed high-occupancy-vehicle (HOV) projects throughout the Boston Region MPO area, as well as evaluation of emerging and innovative highway and transit clean-air activities.

Support for Climate-Change Initiatives

Activities will include integrating concerns about climate change and opportunities for emissions reduction into the MPO's planning process relative to the regional travel-demand model set, the TIP, project specific work products, the LRTP, the Congestion Management Process, the Unified Planning Work Program (UPWP), and performance measures. Staff will work with MassDOT to implement its GreenDOT policy and comply with the Department of Environmental Protection (DEP)'s Global Warming Solutions Act Requirements for the Transportation Sector and MassDOT. Staff will also confer with agencies and organizations concerned about climate-change issues to inform actions in the MPO region.

Mobile-Source Element of the SIP

The Massachusetts DEP is required to submit a SIP to the EPA documenting strategies and actions to bring Massachusetts into compliance with air-quality standards. Central Transportation Planning Staff (CTPS) support will include:

- Support for amendments or revisions to the Memorandum of Understanding between the MPO and the DEP
- Support to regional, local, and private entities, and to the agencies involved in monitoring, updating, and revising the mobile-source section of the SIP
- Data collection and analysis to measure regional air-quality conditions, support development of MOVES2014 emission factors, validate emissions inventories and budgets, and evaluate the air-quality impacts of policies regarding long-term growth, transportation, and land use
- Coordination with the DEP to develop statewide regulations and programs concerning transportation and air quality
- Support to regional, local, and private entities
- Providing data and recommendations to MPO agencies regarding funding and the implementation of transportation programs and projects with air-quality benefits

BOSTON REGION MPO TITLE VI REPORTING

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This program's objective is to develop a report documenting Title VI-related activities undertaken by the MPO during the past year. The report will show the MPO's full compliance with the requirements of both the Federal Transit Administration (FTA) Title VI Circular C 4702.1B and the Federal Highway Administration (FHWA) Title VI/Nondiscrimination Program.

Approach

Title VI of the federal Civil Rights Act prohibits discrimination based on race, color, and national origin, including individuals with limited English-language proficiency (LEP), in programs and activities that receive federal financial assistance. The FTA and the FHWA require the MPO to develop programs that ensure compliance with Title VI. This is accomplished by reaching out to protected populations and involving them in MPO planning and decision-making, which includes development of the Unified Planning Work Program (UPWP), the Transportation Improvement Program (TIP), and the Long-Range Transportation Plan (LRTP). In addition to the populations given protection under Title VI, FHWA's Title VI/Nondiscrimination Program prohibits discrimination based on a person's sex, age, disability/handicap, and income status.

FFY 2017 Anticipated Outcomes

The MPO will comply with FTA and FHWA Title VI requirements by preparing and submitting reports on the implementation of its nondiscrimination programs, as required. The MPO will provide updates on Title VI-related activities to determine the equity of TIP spending, as required by the Massachusetts Department of Transportation (MassDOT). The MPO also will continue consulting and coordinating with the MassDOT Office of Diversity and Civil Rights (ODCR) to achieve best practices in this area.

CONGESTION MANAGEMENT PROCESS

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The MPO's Congestion Management Process (CMP) is a federally mandated requirement that seeks to monitor congestion, mobility, and safety needs; it also recommends appropriate strategies for reducing congestion. The CMP is developed in an integrated manner along with the MPO's certification documents—the Long-Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Planning work Program (UPWP)—to ensure cohesive strategy evaluation and implementation.

Approach

In the Boston Region MPO area, the CMP follows federal guidelines and recommendations from the MPO's CMP Committee to fulfill the following activities:

- Set goals, objectives, and performance measures
- Identify congested locations
- Determine the causes of congestion
- Develop alternative strategies to mitigate congestion
- Evaluate the strategies' potential for efficacy
- Recommend the strategies that best address the causes and impacts of congestion
- Coordinate with and support development of the LRTP, TIP, and UPWP
- Create needs priorities for planning studies

Depending upon CMP Committee recommendations, monitoring and analysis will continue for highways, arterial roads, park-and-ride lots, freight movements, and bicycle and pedestrian facilities. CMP activities will include using electronic travel-time and speed data to monitor roadways, identifying existing conditions, and recommending appropriate improvements in accordance with federal guidelines.

FFY 2017 Anticipated Outcomes

CMP activities will include monitoring, assessing needs, and recommending strategies for multimodal facilities and services, including:

- Using electronic travel-time and speed data to monitor MPO arterials and freeways
- Mapping and tabulating electronic data for analysis and performance evaluation
- Coordinating with the MPO's certification activities (LRTP, TIP, and UPWP)
- Supporting the CMP Committee of the MPO

FREIGHT-PLANNING SUPPORT: FFY 2017

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

As part of its FFY 2014 UPWP, the Boston Region MPO established a formal freight-planning program. The goals for MPO freight planning are to:

- Fulfill the Boston Region MPO's freight-planning needs
- Complement state and other official planning efforts
- Study specific freight-related issues
- Fulfill new analysis requirements of the current federal surface transportation legislation
- Address the lack of freight data for the MPO region, including developing enhanced technical capabilities for MPO staff to use in estimating freight demand

Approach

The freight analysis within the framework of this program will be ongoing and conducted on a multiyear basis. In September 2013, MPO staff proposed a Freight Planning Action Plan, which presented possible studies for one or more of the MPO's freight-planning goals.¹

The MPO's FFY 2016 freight-planning activities included analyzing the adequacy of rest locations for long-distance truck drivers in Massachusetts, and collecting freight data to support MPO model development. The MPO will look to the Freight Planning Action Plan to determine future activities for the MPO's freight-planning program. In its freight-planning activities, MPO staff will incorporate input from stakeholders who represent the freight-shipping community in the Boston region to learn about obstacles and transportation needs for freight movement.

¹ Proposed Freight Planning Action Plan for the Boston Region MPO: Meeting the Goals and Addressing the Issues, memorandum, Boston Region MPO, September 12, 2013.

FFY 2017 Anticipated Outcomes

Potential issues to study are documented in the FFY 2013 Freight Planning Action Plan. MPO staff will collect data, conduct analysis, and develop recommendations and documentation as appropriate for the study topics.

TRANSPORTATION EQUITY/ENVIRONMENTAL JUSTICE SUPPORT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The purpose of this program is to foster awareness and consideration of transportation equity and the transportation needs of environmental justice (EJ) populations in MPO planning and programming. This program is instrumental in maintaining compliance with federal and state requirements and guidelines regarding civil rights. It also seeks to stimulate participation of low-income, minority, elderly, and limited English-language proficient (LEP) populations in the MPO's planning process.

Approach

Gathering Input and Supporting Participation in Transportation Planning

Gathering input and generating participation in transportation planning from low income, minority, elderly, and LEP populations will be accomplished in several ways.

One approach is through continued outreach to these populations, primarily by attending regularly scheduled meetings held by the state's newly formed Regional Coordinating Councils (RCCs), which work in areas that include MPO EJ populations. (The mission of the RCCs is to identify and address paratransit, human services, and community transportation service gaps at the multi-municipality level.)

RCCs have been formed, under the direction of the Massachusetts Department of Transportation (MassDOT), in response to recommendations made in the Executive Order 530: Community, Social Service, and Paratransit Transportation Commission Report to Governor Deval Patrick. RCCs are voluntary advisory bodies that provide a forum for open discussion, information exchange, and decision-making about regional transportation priorities. Their capture areas range from two communities to as many as several dozen communities.

In FFY 2017, MPO staff will continue to gather information on transportation gaps and needs in each RCC area through the RCC coordination process. Staff also will inform the RCCs about MPO activities and provide technical support, if feasible. Attending the RCC meetings will give staff an opportunity to foster working relationships with community advocates and promote direct participation in the Regional Transportation Advisory Council and other MPO planning and programming activities.

Staff will speak to individuals living in EJ areas and community organizations serving EJ areas to identify transportation needs and solicit ideas for transportation and program improvements. Information gathered through these initiatives (targeting low-income, minority, LEP, and elderly populations, as well as persons with disabilities and zero-vehicle households) will be analyzed and presented to the MPO, which will use the information to plan activities.

Staff will work with the Metropolitan Area Planning Council (MAPC) to develop joint outreach activities to reach EJ and Title VI populations.

Staff will use results of the MPO's Title VI four factor analysis process to guide decisions on materials to translate and to make other recommendations regarding MPO outreach (for more information on the Boston MPO's Title VI work, see the Boston Region MPO Title VI Reporting project description).

Supporting the Transportation Improvement Program (TIP) and the Long-Range Transportation Plan (LRTP) Development

Staff will support TIP and LRTP development by adopting EJ definitions for the TIP and LRTP, evaluating projects, and conducting LRTP analysis of benefits and burdens. Staff also will support the LRTP Needs Assessment on an ongoing basis.

Supporting and Coordinating with Other Agencies

Staff will continue to support Federal Transit Administration (FTA) programs that target minority and low-income populations, elderly individuals, and people with disabilities in the region. For example, MPO staff will continue to help MassDOT publicize its Community Transit Grant Program solicitation, and will evaluate that program's grant applications. MPO staff will continue to coordinate with MassDOT's Office of Diversity and Civil Rights (ODCR) to ensure consistency of MPO Title VI-related processes, procedures, and activities.

Conducting Special Studies

As budget permits, staff will conduct special studies and analyses during the year and report results to the MPO via technical memoranda. This year, staff plans to study emergency evacuation and transportation infrastructure vulnerabilities of Transportation Equity Program households. As budget allows, staff will review and inventory current community planning initiatives for the transportation needs of vulnerable populations. This process will help staff understand which agencies or organizations are addressing this topic. Staff will summarize plans that are in place or

under development and identify geographic or programmatic planning gaps. Another possible study would involve analyzing the transportation options available to elderly MPO-area residents.

FFY 2017 Anticipated Outcomes

- Continue MPO outreach to minority, low-income, and LEP communities by attending monthly RCC meetings, conducting surveys, and holding an MPO sponsored meeting
- Prepare a summary of issues, gaps in service, and transportation priorities obtained from RCCs for use in planning and programming discussions
- Monitor developments at the U.S. Department of Transportation regarding civil rights, Title VI, and EJ; participate in workshops, conferences, and seminars, as appropriate; and use this knowledge to inform MPO activities
- Prepare meeting summaries and other updates for the MPO
- Support the Community Transit Grant Program solicitation for projects, and help to evaluate applicant proposals
- Complete EJ analyses as needed
- Produce additional maps, tables, and technical memoranda



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CHAPTER 6

Boston Region MPO Planning Studies and Technical Analysis

As described in Chapter 1, each federal fiscal year (FFY), the Boston Region Metropolitan Planning Organization (MPO) receives federal transportation planning funds from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Combined with the local Massachusetts Department of Transportation (MassDOT) matching amount, these funds form the budget that allows the MPO staff to accomplish the certification requirement activities described in Chapter 5, the planning studies and technical analyses described in this chapter, and the

administrative tasks and data management described in Chapter 8.

The work described in this chapter consists of the following:

- New transportation planning studies chosen for funding in this FFY through the committee and public outreach processes described in Chapter 1 (see Section 6.1, Planning Studies)
- Ongoing MPO work programs that provide technical assistance and transportation planning support to municipalities throughout the region (see Section 6.2, Technical Analyses)

Additionally, the MPO member agency, the Metropolitan Area Planning Council (MAPC), conducts planning studies and technical assistance throughout the region under four ongoing work programs each FFY (see Section 6.3, MAPC Planning Studies and Technical Analyses).

Table 6-1 summarizes the salary and overhead costs, status (percent complete by the end of FFY 2016), and completed and planned work products for planning studies started in a previous FFY and continued into FFY 2017. Table 6-2 summarizes the salary and overhead costs in FFY 2016 and FFY 2017, as well as the completed and planned work products for ongoing MPO technical assistance and transportation planning support work.

The project descriptions throughout this chapter describe new transportation planning studies chosen for funding in FFY 2017. They provide detailed updates for the FFY 2017 funding and work products for the MPO's and MAPC's ongoing programs.

[Tables under development] [Budget information for the following projects will be added once the MPO has approved a draft FFY 2017 UPWP budget for public review.]

6.1 PLANNING STUDIES

The project descriptions in this section describe the new studies chosen by the MPO for funding in FFY 2017. As described in Chapter 1, each year as ideas for new studies are formed, MPO staff classifies the new studies into the following categories: active transportation; land use, environment, and economy; multi-modal mobility; transit; safety and security; and other technical work. Each of the project descriptions on the following pages is preceded by a funding table that shows the project identification number, category, funding sources, and total budget.

SAFETY EFFECTIVENESS OF SAFE ROUTES TO SCHOOL PROGRAMS

Project ID Number	
Category	Active Transportation
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This study will investigate the safety effectiveness of the Safe Routes to School (SRTS) program and the primary factors contributing to a program's effectiveness. Such factors could include reduced-speed school zones, infrastructure improvements, grade levels of students, the presence of school crossing guards, and others.

Approach

Main study tasks will include:

- Formation of a multiagency task force to guide the study.
- Review of the literature on the SRTS program in the Boston region as well as in other states to determine locations where school speed zones and other infrastructure improvements are encouraged, require further justification, or are discouraged.

- Review of the Metropolitan Area Planning Council's (MAPC's) spatial analysis and MySchoolCommute survey tools to assess the effectiveness of SRTS programs.
- Review of MassRIDES and WalkBoston joint assessments conducted for SRTS programs to provide valuable information for evaluating the safety effectiveness of the SRTS program.
- After review of the literature, MPO staff, working in conjunction with the task force, will select schools (approximately one school in each of the eight MAPC subregions) that have been participating in the SRTS program for study. Schools will be selected to represent a range of grade levels and ages (elementary, middle, and high schools); a wide geographical area that is representative of several communities in the MPO region; and additional factors to illustrate different conditions that could impact the effectiveness of a SRTS program such as environmental justice zones, high- and low-density communities, varied traffic characteristics on surrounding roads, and other factors to be determined from the literature review.
- Once the schools are selected, MPO staff will gather data on traffic volumes, pedestrian and bicycle volumes, crashes, roadway setting and characteristics, traffic control devices, modes of commute to school, school hours and after-school activities, and school policies.

FFY 2017 Anticipated Outcomes

After gathering data for analysis, MPO staff will evaluate the safety effectiveness of the SRTS program. The goal is to be able to conduct this study quantitatively through an analysis of before-and-after data on traffic and safety characteristics in the immediate vicinity of the selected schools and within a two-mile radius, both before and after implementation of the SRTS program and applicable infrastructure or policy changes. Schools that have been participating in the SRTS program with infrastructure projects funded by the Massachusetts Department of Transportation (MassDOT) or through the Transportation Improvement Program (TIP) process will be good candidates for before-and-after study. MPO staff will determine and evaluate any relationships among roadway setting, traffic characteristics, and traffic regulations contributing to the safety effectiveness of the SRTS program. Depending on the availability of data, some of the effectiveness evaluation and recommendations may be qualitative.

MPO staff will recommend improvements (safety, operations, policy), document the study, allow review of the study and comments, produce a final report, and present study results to the MPO.

STUDY OF PROMISING GHG-REDUCTION STRATEGIES

Project ID Number	
Category	Land Use, Environment, and Economy
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This study will build on the greenhouse gas (GHG) Reduction Strategies Study that was completed in 2016. The purpose of this related study would be to take the national-level findings in the 2016 GHG Reduction Strategies Study and understand possible implementation approaches and impacts at the regional level. Because this study would focus on the regional level, the MPO would gain a detailed understanding of concrete approaches to reduce GHGs in the region and the cost-effectiveness of different GHG reduction tactics.

Approach

Based on recommendations from the 2016 GHG Reduction Strategies Study, MPO staff proposes to examine in further detail a subset of the 14 promising strategies identified in the 2016 report. These are all strategies that the MPO could fund or advocate for at the regional level. Examples of potential strategies to fund include transit expansion or service improvement, teleworking, and parking management.

FFY 2017 Anticipated Outcomes

This study would result in a report documenting a subset of strategies from the 2016 GHG Reduction Strategies Study to further understand the potential for their implementation at a regional level. The study would aim to evaluate the strategies' GHG reduction and cost-effectiveness potential at the regional level, as well as the equity, safety, and mobility impacts of the subset of GHG reduction strategies.

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

Project ID Number	
Category	Multi-modal Mobility
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The purpose of these studies are to develop conceptual design plans that address regional multimodal transportation needs along priority corridors identified in the Long- Range Transportation Plan (LRTP), *Charting Progress to 2040*. These studies include recommendations that address multimodal transportation needs that are expected to arise from potential future developments in the study area.

Approach

The LRTP identified needs for all modes of transportation in the MPO region. These needs guide decision-making about which projects to include in current and future Transportation Improvement Programs (TIPs). Projects that address the region’s current mobility needs are those that focus on maintaining and modernizing roadways with high levels of congestion and safety problems, expanding the quantity and quality of walking and bicycling, and making transit service more efficient and modern. During the past several years, the MPO has conducted these planning studies, and municipalities have been receptive to them.

MPO staff would select locations for study with consideration of municipal, subregional, and other public feedback, and would then collect data, conduct technical analyses, and develop recommendations for improvements. The recommendations would be forwarded to implementing agencies, which may choose to fund improvements through various federal, state, and local sources, either separately or in combination.

FFY 2017 Anticipated Outcomes

Through these studies, MPO staff would recommend conceptual improvements for one or more corridors, or several small sections within a corridor, that are identified by the Congestion Management Process and the LRTP as being part of the needs-assessment process.

The studies would provide cities and towns with the opportunity to review the requirements of a specific arterial segment, starting at the conceptual level, before committing design and engineering funds to a project. If the project qualifies for federal funds for construction of the recommended upgrades, the study's documentation also might be useful to the Massachusetts Department of Transportation (MassDOT) and the municipalities.

ADDRESSING SAFETY, MOBILITY, AND ACCESS ON SUBREGIONAL PRIORITY ROADWAYS

Project ID Number	
Category	Multi-modal Mobility
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

During MPO outreach, Metropolitan Area Planning Council (MAPC) subregional groups identify transportation problems and issues that concern them, often those relating to bottlenecks or lack of safe access to transportation facilities in their areas. These issues can affect livability, quality of life, crash incidence, and air quality along an arterial roadway and its side streets. If problems are not addressed, mobility, access, safety, economic development, and air quality are compromised.

Approach

To address feedback from the MAPC subregional groups, MPO staff will identify priority arterial roadway segments in the MPO region, emphasizing issues identified by the relevant subregional groups, and will develop recommendations. Staff will concentrate on transit service, nonmotorized modes of transportation, and truck activity along these arterial segments. Staff will consider numerous strategies to improve arterials, including examining and evaluating any or all of the following factors:

- Traffic signals (equipment, retiming, redesign, and coordination)
- Bus stop locations
- Processing buses through traffic lights
- Location and management of pedestrian crossings and signals, including
- Americans with Disabilities Act of 1990 (ADA) requirements

- Travel-lane utilization by motorized and bicycle traffic
- Speed-limit assessment
- Access management

These improvements will provide a guide to designing and implementing a “Complete Streets” corridor, which could be recommended to implementing agencies and funded through various federal, state, and local sources, separately or in combination.

The Boston Region MPO has conducted Addressing Safety, Mobility, and Access on Subregional Priority Roadways studies as part of the FFY 2013, 2014, 2015, and 2016 Unified Planning Work Programs (UPWPs). In FFY 2016, MPO staff completed their recommendations for the Summer Street/Rockland Street/George Washington Boulevard corridor in Hingham and Hull.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include data collection, technical analysis, development of recommendations, and documentation for selected corridors.

LOW-COST IMPROVEMENTS TO EXPRESS-HIGHWAY BOTTLENECKS

Project ID Number	
Category	Multi-modal Mobility
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This study would build off of the work conducted previously in two consecutive Unified Planning Work Program (UPWP) studies, Low-Cost Improvements to Express-Highway Bottlenecks Phase I and Phase II. These studies aim to address points in the highway system where traffic flow is restricted with operational and low-cost infrastructure solutions. The recommendations that stem from these studies are aimed at reducing congestion, increasing safety, and improving traffic operations throughout the Boston region.

Approach

According to the Federal Highway Administration (FHWA), “Much of recurring congestion is due to physical bottlenecks—potentially correctable points on the highway system where traffic flow is restricted. While many of the nation’s bottlenecks can only be addressed through costly major construction projects, there is a significant opportunity for the application of operational and low-cost infrastructure solutions to bring about relief at these chokepoints.”¹ In general, recurring bottlenecks, the subject of this study, are influenced by the design or operation present at the point where the bottleneck begins (e.g., merges, diverges, lane drops, traffic weaving, and abrupt changes in highway alignment).

The previous two studies of express-highway bottlenecks were very well received by the Massachusetts Department of Transportation (MassDOT) and the FHWA. Some of the recommendations from those studies already have been executed, and the FHWA has interviewed MPO staff about the successful implementation. The MPO has been conducting these studies to identify low-cost methods to reduce congestion, increase safety, and improve traffic operations in the Boston region.

¹ Federal Highway Administration, Recurring Traffic Bottlenecks: A Primer: Focus on Low-Cost Operations Improvements, US Department of Transportation, Federal Highway Administration, June 2009, p. 1.

FFY 2017 Anticipated Outcomes

This study would select additional express-highway bottleneck locations and produce reports documenting low-cost solutions to existing traffic congestion issues at the selected locations.

PLANNING FOR CONNECTED AND AUTONOMOUS VEHICLES

Project ID Number	
Category	Multi-modal Mobility
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This project would involve research into the overarching issues that the Boston Region MPO needs to understand and plan for regarding autonomous vehicle and connected vehicle (AV/CV) technologies.

Approach

Some of the questions that could form the body of research include:

- What research exists already?
- How are other states, regions, and municipalities approaching preparation for these technologies?
- How might these technologies affect transportation and land use planning (i.e., the need for off-street parking) and modeling in the future?
- What is the current thinking around the potential penetration level of these new technologies?
- Could scenario planning provide a useful approach to understand how best to plan for these technologies?
- What are the best next steps for the region in terms of being prepared for these technological changes?

FFY 2017 Anticipated Outcomes

This project would be an important first step to understanding the transportation planning consequences of AV/CV technologies and how the MPO and the region can be prepared for them.

USING GENERAL TRANSIT FEED SPECIFICATION DATA TO FIND SHARED BUS ROUTE SEGMENTS WITH EXCESSIVELY IRREGULAR HEADWAYS

Project ID Number	
Category	Transit
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The goals of this study would be to use existing data to provide schedule improvements for the Massachusetts Bay Transportation Authority (MBTA) buses and to document reasons behind irregularities in the existing schedule.

Approach

By mining the MBTA's General Transit Feed Specification (GTFS) data, MPO staff can discover the distribution of headways at a stop over time. This would allow MPO staff to document segments that have excessively irregular headways or segments where multiple bus routes are scheduled to overlap.

FFY 2017 Anticipated Outcomes

In many cases, there may be a reason for the irregular combined headways. This project would document these reasons and, where appropriate, propose recommendations for improvement.

MPO STAFF-GENERATED RESEARCH TOPICS

Project ID Number	
Category	Other Technical Support
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This program would support work by MPO staff members on topics that relate to the Boston Region MPO's metropolitan transportation-planning process, that staff members have expressed interest in, and that are not covered by an ongoing Unified Planning Work Program (UPWP) or discrete project.

Approach

Interested MPO staff members would complete an application for MPO funding to do independent research on a topic of professional interest and potential use in the metropolitan transportation-planning process. The application would be reviewed by MPO managers and directors.

FFY 2017 Anticipated Outcomes

This research program would produce valuable information for the MPO's consideration and would support staff members' professional development. It would yield highly creative solutions for transportation-planning problems.

6.2 TECHNICAL ANALYSES

The project descriptions in this section consist of ongoing MPO programs that provide technical planning assistance and analysis to cities and towns throughout the region. The major areas of technical analyses include bicycle and pedestrian support, transit service planning, and community-level transportation planning and technical assistance.

BICYCLE/PEDESTRIAN SUPPORT ACTIVITIES

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

MPO staff supports the MPO's and the region's needs for bicycle and pedestrian planning through the ongoing data collection, analysis, and technical assistance in this program.

Approach

In addition to the items listed below, during the federal fiscal year (FFY), other bicycle and pedestrian planning studies often are identified collaboratively by MPO members, communities, bicycle and pedestrian advisory groups, and the Central Transportation Planning Staff (CTPS). Through such studies, MPO staff provides support to communities in creating bicycle and pedestrian improvement projects that can be advanced through the Massachusetts Department of Transportation (MassDOT) Project Development process.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include technical assistance, data collection, analysis, review of materials, and attendance at state, regional, and local forums and committee meetings. Tasks not related directly to separate studies or activities may include the following:

- Coordinate with state agencies, the Metropolitan Area Planning Council (MAPC), other MPOs, the Safe Routes to School Program at MassRIDES, WalkBoston, MassBike, Livable Streets, municipalities, and other groups regarding bicycle and pedestrian planning for the region, and possibly including issues pertaining to bicycle/pedestrian law enforcement and education
- Collect data on bicycle and pedestrian volumes at selected on-road and off-road facilities
- Examine bicycle and pedestrian crash data at the intersection, corridor, and regional level to support the development of strategies to address bicycle and pedestrian safety problems
- Provide ongoing technical support on current tools and practices to communities on bicycle and pedestrian issues, with a particular focus on promoting safety
- Conduct technical analyses to quantify the impacts of proposed bicycle facilities, including air quality improvements, reductions in vehicle-miles traveled, and parking needs
- Conduct analyses to identify critical sidewalk gaps in the region, and possibly provide guidance to communities in accessing available Transportation Alternatives Program (TAP) funding to close gaps on federal-aided roadways
- Examine potential routes, both on-road and off-road, to increase the connectivity of the existing transportation system, including trails, on-road facilities, and public transit, emphasizing connections on the Bay State Greenway, where applicable
- Consider development of future possible strategic bicycle and pedestrian safety plans

REGIONAL TRANSIT SERVICE PLANNING TECHNICAL SUPPORT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This ongoing program sustains MPO staff's technical support of expanding transit services to reduce single-occupant-vehicle (SOV) travel in the region.

Approach

The MPO's policy is to support transit services and reduce SOV travel in the region. As such, MPO staff provides technical support to regional transit authorities (RTAs) to promote best practices and address issues of ridership, cost-effectiveness, route planning, first- and last-mile strategies, and other service characteristics. The MPO also extends support to Transportation Management Associations (TMAs), Metropolitan Area Planning Council (MAPC) subregions, and municipalities seeking to improve the transit services that they operate or fund.

FFY 2017 Anticipated Outcomes

MPO staff will provide technical assistance to RTAs, TMAs, MAPC subregions, and municipalities as described above.

COMMUNITY TRANSPORTATION TECHNICAL ASSISTANCE PROGRAM

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

Through this ongoing program, MPO staff and the Metropolitan Area Planning Council (MAPC) provide technical advice to municipalities throughout the region about identified transportation issues of concern.

Approach

Community officials often identify transportation issues of concern about which they would like to have technical advice. In this program, a team of Central Transportation Planning Staff (CTPS) and MAPC engineers and planners will meet with community officials to learn more about specific problems and provide advice on next steps concerning issues that the community may have identified, such as those related to parking, traffic calming, walking, bicycling, and bus stops. In many cases, there will be a site visit to better understand the potential problem, review existing data, and make suggestions for additional data that may be needed. General types of solutions, along with appropriate follow-up and contact information, might be recommended. Descriptions of the various planning processes at the Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), the MPO, and MAPC, as well as guidance on how communities can get involved, might also be provided. Technical assistance activities might produce conceptual designs for some project locations. This program is a mechanism for providing quick-response advice to communities for resolving the issues they have identified.

This work will advance the MPO's goals for system preservation, modernization, and efficiency; mobility; and land use and economic development. It will be consistent with the MPO's Congestion Management Process (CMP) and other staff-identified needs. It also will include a safety component in which staff will respond to community requests to conduct analyses at crash locations and recommend possible mitigation strategies.

FFY 2017 Anticipated Outcomes

In early FFY 2017 staff will solicit town technical assistance requests. The number of technical assistance cases will depend on the funding amount, and MAPC and CTPS will coordinate and collaborate on a case-by-case basis. MAPC and CTPS will field and prioritize each service request, and expect to spend three to four weeks working on community technical assistance requests that are selected for funding. Professional teams will be dispatched to client municipalities, and memoranda on the consultations will document the work, recommendations, and outcomes.

6.3 MAPC PLANNING STUDIES AND TECHNICAL ANALYSES

MAPC conducts transportation planning studies through four ongoing programs, including Corridor/Subarea Planning Studies, Alternative Mode Planning and Coordination, MetroFuture Implementation, and Land Use Development Project Reviews. Each FFY, some work that was started in previous FFYs is continued through these ongoing programs, and new work also is planned and undertaken.

CORRIDOR/SUBAREA PLANNING STUDIES

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This Unified Planning Work Program (UPWP) task includes funding to support the Metropolitan Area Planning Council's (MAPC's) work on several corridor and subarea studies in the region. Some of these projects will be funded jointly through the UPWP and the District Local Technical Assistance Program.

Approach

This area of work is accomplished through the following subtasks.

Opportunities for and Impediments to Creating Transit-Oriented Development (\$XX,XXX):

MAPC will continue planning work that can support transit-oriented development (TOD). MAPC will use demographic data to identify two or three existing transit stations (subway or commuter rail) or high volume bus corridors that have the potential to support TOD. MAPC will analyze these sites and identify their development potential, along with impediments to development. Factors that may affect the potential for TOD include existing zoning, inadequate pedestrian connections, outdated parking requirements, existing levels of travel demand management (TDM) implementation, and infrastructure elements. MAPC will offer recommendations about

how to improve the sites' potential for TOD. Where applicable, MAPC will conduct a market analysis to determine whether the market can support additional development at the chosen station areas or corridors. Where appropriate, MAPC will work with the Massachusetts Bay Transportation Authority (MBTA), the Central Transportation Planning Staff (CTPS), the Massachusetts Department of Transportation (MassDOT), the Executive Office of Housing and Economic Development (EOHED), the Division of Capital Asset Management and Maintenance (DCAMM), land owners, and the municipalities in which the stations or corridors are located.

FFY 2017 Anticipated Outcomes Related to TOD

Anticipated outcomes include analysis to identify transit stations or bus corridors with the potential to support TOD, market analysis, mapping and visualization products, demographic and vehicle-miles-traveled data for chosen station areas or corridors, community engagement, recommendations to overcome impediments to TOD, and technical support to municipalities.

Right Size Parking Calculator (\$XX,XXX):

MAPC will continue creating and refining an online parking calculator that would provide MassDOT, MBTA, municipalities, developers, nonprofit organizations, and the general public with information to better understand the parking supply and demand of multifamily housing developments in the region. This project could benefit air quality and reduce congestion by providing information that municipalities and developers can use when deciding whether to reduce the total number of parking spaces required as a component of a new development. In locations where parking requirements are reduced, the number of households with one or more vehicles could decline, resulting in higher percentages of walking, biking, and transit ridership.

Parking also has a direct impact on overall development costs, and can hinder developers looking to construct multifamily housing from investing in a particular area. A better understanding of parking supply and demand could help communities achieve a parking balance, and thereby assist in the state's goal of creating 10,000 new housing units each year.

MAPC has gathered data in Malden, Chelsea, Everett, and Revere. This body of work seeks to expand data collection to other community types and refine analysis of parking utilization relative to parking supply. As part of this work, MAPC will research how traffic circulation might be affected because of changes in parking availability across various community types. This research may involve coordination with CTPS. MAPC also will educate municipal decision makers, developers, and the public about the impact of parking locally and regionally.

FFY 2017 Anticipated Outcomes Related to Right Size Parking

Anticipated outcomes include coordinating with municipalities, identifying residential properties from which to collect data, collecting off-street residential parking utilization data, analyzing data, reporting findings, and building a web portal to

host reporting tools and an interactive calculator. This calculator would allow users to identify the amount of parking needed for new residential development by community type. Other outcomes include conducting parking-related educational activities for municipal decision makers, developers, and the public, as well as researching the relationship between parking availability and impacts on traffic circulation.

Local Parking Management Plans in Selected Communities (\$XX,XXX):

MAPC will work with selected municipalities to develop local parking management plans to provide better parking availability to stimulate local economic prosperity, reduce congestion caused by circling vehicles, and help municipalities plan for greater land use density by decreasing parking ratios. The goal of this work program is to address the problems that municipalities face from not managing their parking supply in commercial and mixed-used areas. This work would benefit local air quality and congestion by managing parking supply and demand and creating places where people can park once and then walk to multiple destinations. In locations where parking requirements can be reduced, the number of households with one or more vehicles could decline, which could result in higher percentages of walking, biking, and transit ridership.

FFY 2017 Anticipated Outcomes Related to Local Parking Management Plans

Activities and expected work products include parking utilization data collection, analysis of data, and recommendations to municipalities in the form of a report with pricing and parking management solutions.

Corridor Level Transportation and Land Use Planning (\$XX,XXX):

MAPC will work in one or two selected roadway corridors to coordinate transportation planning conducted by MassDOT, the Department of Conservation and Recreation (DCR), and/or municipalities with local land use planning to achieve livability and smart growth goals.

FFY 2017 Anticipated Outcomes Related to Corridor Level Transportation and Land Use Planning

Activities and expected work products include coordination between agencies and municipalities, recommendations for roadway improvements and coordinated land use planning, and solutions documented in reports or memoranda.

ALTERNATIVE-MODE PLANNING AND COORDINATION

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The Metropolitan Area Planning Council (MAPC) provides alternative-mode transportation-planning support to the Boston Region Metropolitan Planning Organization (MPO) and municipalities that focuses on non-single-occupant vehicle modes. This work benefits bicycle and pedestrian transportation, encourages transit in areas currently underserved by existing regional transit authorities (RTAs), and identifies and supports transportation demand management (TDM) strategies.

Approach

Autonomous Vehicles and Connected Cars (\$XX,XXX)

MAPC will further the regional and municipal understanding of the potential future impacts of autonomous vehicle/connected vehicle (AV/CV) technologies. MAPC staff will work with the Central Transportation Planning Staff (CTPS) to identify how AV/CV technologies may influence future travel behaviors and how these findings can best be incorporated into travel demand and land use modeling as well as long-range transportation and land use plans. Staff will also continue to stay informed of how other states and municipalities are preparing for AV/CV technologies.

Suburban Mobility and Technology (\$XX,XXX)

MAPC will work with selected municipalities to advance solutions that apply technology, dynamic ride dispatching, ride-sharing technologies, and public-private partnership funding models to first mile/last mile connections and other gaps in the transit system.

Bike Share Program Implementation (\$XX,XXX)

MAPC will continue to work with the cities of Boston, Cambridge, and Somerville, and the town of Brookline to implement the regional Hubway Bike Share system, expanding the system within these municipalities and to neighboring cities and towns, including Watertown, Newton, Everett, and Winthrop. Seed funding for the program came from the MPO's Clean Air and Mobility Program, a separate Federal Transit Administration (FTA) Bus Livability award, and local support from the municipalities. In order to implement the system more fully, MAPC will continue to support the municipalities in their planning.

Local Bicycle and Pedestrian Plans and Technical Assistance in Selected Communities (\$XX,XXX)

MAPC will continue to work with selected municipalities to develop local bicycle and pedestrian prioritization plans. MAPC will provide technical support to identify implementable steps that the municipalities, the Massachusetts Department of Transportation (MassDOT), the Massachusetts Department of Conservation and Recreation (DCR), and other entities could take to advance bicycle and pedestrian infrastructure in specific locations. MAPC will also provide small-scale technical assistance to municipalities that are seeking support. This work continues the implementation efforts of the MPO's 2007 Regional Bicycle Plan and the 2010 Regional Pedestrian Plan.

Regional Greenway Planning and Mapping (\$XX,XXX)

MAPC will continue to work with MassDOT, CTPS, municipalities, and trail organizations to better develop and implement portions of a regional bicycle and pedestrian network of off-road and on-road connections (a greenway) that form a contiguous system around greater Boston. In 2015, MAPC—working with the above-cited partners—developed the branding of this system, called the LandLine. Trail development is increasingly frequent in most communities in the Boston region. The trails consist of shared-use paths along former railroad rights-of-way, hiking trails through conservation land, and historic corridors that connect points of interest. The binding theme of the proposed and completed corridors is creating attractive places to walk, bike, or otherwise travel through low-traffic or no-traffic green areas. These greenways often are local in nature; however, if all of these separate projects could be connected to form a regional system, a world-class regional network could be created.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include data collection, research and analysis to support completed bicycle and pedestrian plans in selected municipalities, technical support for bicycle and pedestrian improvements, support for regional trail and greenway development, implementation of the regional bike share program, research and recommendations to support suburban transit, and research to understand potential transportation and land use impacts of AV/CV technologies in long-range planning efforts.

METROFUTURE IMPLEMENTATION

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This Unified Planning Work Program (UPWP) study area will continue to support implementation of MetroFuture, the Boston Region’s 30-year comprehensive plan for sustainable growth and development, by increasing community engagement in the Metropolitan Area Planning Council’s (MAPC’s) local planning work. Specifically, this task includes an emphasis on engaging diverse groups of stakeholders. It also will identify transportation and land use best practices by evaluating the different approaches and strategies used in MAPC’s work, and through case studies of positive models from around the region.

Approach

Building Constituencies for Local Decisions that Enable Livable Communities and Sustainable Transportation

MAPC will continue to work with municipal officials and residents at the local level to seek changes in land use that will support livable communities and sustainable transportation. This will include engaging the public in planning and dialogue that enhances equitable transit-oriented development (ETOD) planning; supports engagement in MPO planning processes; and influences other decision-making to improve development outcomes, transportation opportunities, and the reduction of greenhouse gas emissions. Task outputs are expected to include engagement of at least 500 people in at least ten different events or activities.

Honing MAPC’s Practice of Planning for Livable Communities and Sustainable Transportation

MAPC will evaluate the approaches, strategies, and implementation status of its transportation and land use planning work, with particular emphasis on ETOD plans. Implementation of these recommendations can take time and typically rely on local,

municipal actions. MAPC will conduct interviews with municipal staff, advocates, and other stakeholders to assess the progress on implementing the recommendations, identify any barriers that exist, and document successes across the region. Lessons learned will be documented in a fashion that will facilitate their application to future work of a similar nature. Task outputs are expected to include an assessment of at least three planning studies.

Research and Policy Development that Support Livable Communities and Sustainable Transportation

Best practices and state policy that support sustainable land use planning, which include local and state practices from across the country, provide both ideas and “proof of concept.” MAPC will identify such best practices and employ appropriate means to promote their use in the region. Activities may include researching transportation strategies addressing senior mobility that are successfully employed in other parts of the country to assess their applicability in Massachusetts. MAPC may also research strategies to improve transportation equity and access for low-income and minority residents.

Updating MetroFuture

As it nears its eighth anniversary, it is time to begin planning for an update to MetroFuture. Changing demographics and location preferences, planned investments in public transportation and complete streets, and emerging transportation technologies will have a profound impact on our region in the decades ahead. MAPC will research how other regional agencies have integrated emerging technologies and trends in transportation and assess these approaches for their applicability in the update of MetroFuture. As part of preparing for the update, MAPC will also assess progress towards the existing MetroFuture goals. An assessment of progress towards the transportation goals in Strategy 12— Expand Coordinated Transportation will also be developed.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include assessments of TOD plans, case studies identifying best practices, and research on integrating emerging transportation technologies and trends in the MetroFuture update.

LAND USE DEVELOPMENT PROJECT REVIEWS

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This Unified Planning Work Program (UPWP) task supports the Metropolitan Area Planning Council's (MAPC's) review of potential development projects in the region. In particular, projects will be reviewed for consistency with MetroFuture (the Boston Region's 30-year comprehensive plan for sustainable development), impacts on the transportation network and projects identified in the Transportation Improvement Program (TIP) and the Long-Range Transportation Plan (LRTP), and for consistency with the Metropolitan Planning Organization's (MPO's) livability goals and the Commonwealth's sustainable-development principles.

Approach

MAPC tracks all projects reviewed in the region under the Massachusetts Environmental Policy Act (MEPA), and provides a regional-planning analysis to the Secretary of Energy and Environmental Affairs for all developments considered to have significant impact. Special attention is given to local zoning ordinances and regulations that serve to reduce auto travel by encouraging carpooling, transit, and other travel demand management techniques. MAPC also will recommend appropriate mitigation measures. MAPC coordinates these reviews with the Massachusetts Department of Transportation (MassDOT), and works with MassDOT to identify updated requirements to be included in the transportation impact assessments that must be conducted by developers.

MAPC also reviews notices of offered railroad property from MassDOT, consults with municipalities as necessary, and provides appropriate input. Often, these notices involve rail trails, but they also may involve other types of proposed developments.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include analysis and write-up of MEPA reviews, development of mitigation recommendations, coordination with municipalities and transportation agencies, maintenance and updates of MAPC's development database, and input into the project evaluations for the TIP and LRTP. In addition, MAPC will continue to review and respond to notices of offered railroad property.



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CHAPTER 7

Agency and Other Client Transportation Planning Studies and Technical Analyses

The transportation studies and technical analysis work described in this chapter will be undertaken to support the work of various transportation agencies in the Boston Region Metropolitan Planning Organization (MPO) area.

Some of the contracts described in the pages that follow are issued to the Central Transportation Planning Staff (CTPS) every year and coincide with either the federal fiscal year (FFY) or the state fiscal year (SFY).

These contracts include the Massachusetts Department of Transportation (MassDOT) Section 5303 and MassDOT Statewide Planning and Research (SPR) contracts. Other contracts are issued for tasks and technical support to be conducted over a multiyear period, and they might be renewed with the agencies after several years. A third contract type covers the work for discrete studies or technical analyses intended to be completed within one FFY. These may either be one-time contracts in which CTPS conducts analysis or technical support to further a specific agency project, such as the Massachusetts Bay Transportation Authority's (MBTA's) Plan for Accessible Infrastructure (PATI), or they can be contracts in which CTPS provides technical support to an agency for data collection and analysis that is undertaken annually, such as the MBTA's National Transit Database (NTD): Data Collection and Analysis contract.

The work conducted on behalf of the agencies includes data collection and analyses on a broad range of topics, including travel-demand modeling, air quality, traffic engineering, and environmental justice. The products of this work are vital to support compliance with federal and state regulations such as the Massachusetts Environmental Policy Act (MEPA) and Title VI of the Civil Rights Act of 1964. CTPS also enhances regional understanding of critical transportation issues through the preparation of graphics, maps, and other materials for agency studies and presentations. The work described in this chapter is organized by agency, and includes studies and technical analyses for MassDOT, the Massachusetts Port Authority (Massport), and the MBTA.

Table 7-1 summarizes agency-funded work undertaken in FFY 2016; it provides information on the funding source, total contract amount, budget in FFY 2016 and FFY 2017 (if applicable), and work products or progress.

[Summary tables under development] [Budget information for the following projects will be added once the MPO has approved a draft FFY 2017 UPWP budget for public review.]

7.1 MASSDOT

The contracts and technical analyses in this section are being undertaken for MassDOT.

MASSDOT HIGHWAY DIVISION ON-CALL MODELING SUPPORT

Project ID Number	
Funding Source	MassDOT
Total Contract	
FFY 2017 Total Budget	

Purpose

The purpose of this on-call contract is to provide the Massachusetts Department of Transportation (MassDOT) Highway Division with travel demand modeling and planning assistance throughout federal fiscal year (FFY) 2017.

Approach

For the past few years, the MassDOT Highway Division has employed the Central Transportation Planning Staff (CTPS) to provide travel demand modeling support and planning assistance for a number of its projects, each of which has necessitated creating either a new contract or a contract amendment. In an effort to streamline the process, MassDOT's Highway Division will create a general on-call contract to engage CTPS's services for three years to provide necessary assistance to MassDOT Highway Division projects.

FFY 2017 Anticipated Outcomes

CTPS will support MassDOT and its study teams in planning work associated with its bridge project management and other projects, producing necessary memoranda and data upon request.

MASSDOT STATEWIDE PLANNING AND RESEARCH PROGRAM SUPPORT

Project ID Number	
Funding Source	MassDOT SPR
Total Contract	
FFY 2017 Total Budget	

Purpose

The Central Transportation Planning Staff (CTPS) provides support to the Massachusetts Department of Transportation's (MassDOT's) Statewide Planning and Research (SPR) Program as requested. This contract will include multiple individual projects or tasks throughout the federal fiscal year (FFY).

Approach

This work includes studies, analyses, and technical assistance. Projects that are either underway or expected to begin in FFY 2017 are listed below. (Other projects may be added throughout FFY 2017.)

- 2016–2017 I93 North and Southeast Expressway High-Occupancy-Vehicle (HOV) Lane Monitoring
- Diversity Posters
- Everett Transit Study
- Foxborough Station Study
- Kendall Square Mobility Task Force
- Miscellaneous Graphics
- Program for Mass Transportation (PMT) Assistance and Support
- Road Inventory and Related Support Maintenance
- Statewide Travel Model Assistance

FFY 2017 Anticipated Outcomes

Activities and work products will depend on tasks requested by MassDOT's Office of Transportation Planning. Projects of appropriate scope will be submitted to the MPO before proceeding.

MASSDOT TITLE VI PROGRAM

Project ID Number	
Funding Source	MassDOT
Total Contract	
FFY 2017 Total Budget	

Purpose

Under this contract, the Central Transportation Planning Staff (CTPS) will continue to provide technical support to the Massachusetts Department of Transportation (MassDOT) in the implementation of its Title VI Program for both the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

Approach

MassDOT, as a recipient of federal funds from both the FHWA and the FTA, is required to comply with Title VI of the Civil Rights Act of 1964 and with protections enacted through several additional laws and executive orders that prohibit discrimination on the basis of gender, age, income, and disability. Through this technical support work, CTPS will assist MassDOT in complying with these equal protection laws.

FFY 2017 Anticipated Outcomes

Staff will assist MassDOT in updating its Title VI/Nondiscrimination Program for FHWA, and will provide technical support to MassDOT as described above.

MASSDOT TRANSIT PLANNING ASSISTANCE

Project ID Number	
Funding Source	MassDOT Section 5303
Total Contract	
FFY 2017 Total Budget	

Purpose

The Central Transportation Planning Staff (CTPS) provides transit-planning assistance to the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA) by conducting various studies under MassDOT's Federal Transit Administration (FTA)-funded Section 5303 Program. This contract will include multiple individual projects or tasks throughout the federal fiscal year (FFY).

Approach

This assistance may include:

- Short-term and ongoing analysis of projects and proposals, including travel demand modeling, impact analyses, air quality analyses, traffic engineering analyses, and other types of quick-response analyses
- Preparation of supporting data, graphics, maps, and other materials for MassDOT studies and presentations
- Support of environmental document preparation for projects under development
- Other studies and activities requested by MassDOT

FFY 2017 Anticipated Outcomes

Activities and work products will depend on tasks requested by MassDOT's Office of Transportation Planning. Projects of appropriate scope will be submitted to the MPO before proceeding.

SECTION 405C TRAFFIC RECORDS IMPROVEMENT

Project ID Number	
Funding Source	MassDOT
Total Contract	
FFY 2017 Total Budget	

Purpose

The purpose of this program is to test the template developed by Vanasse Hangen Brustlin, Inc. (VHB), an engineering, planning, and design consulting firm, for collecting Model Inventory Road Element (MIRE) Fundamental Data Elements (FDEs) for intersections on a subset of Massachusetts intersections.

Approach

The template application developed by VHB will be used to collect MIRE FDEs at approximately 5,500 intersections in Massachusetts. Feedback on the template will be provided to VHB (via the Massachusetts Department of Transportation [MassDOT] Traffic Safety and Engineering group); if necessary, the template can be modified before it is used to collect MIRE FDEs on the more than 250,000 intersections in the Commonwealth of Massachusetts.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include collecting MIRE FDEs for approximately 5,500 intersections in Massachusetts. Written reports will be provided regarding the VHB data collection template. The project work is expected to take approximately one year to complete. It is possible that the work may not be completed in federal fiscal year (FFY) 2017; it may extend into FFY 2018, depending on when the grant funds are released and when the Central Transportation Planning Staff (CTPS) receives a notice to proceed (NTP) with the work.

NORTH-SOUTH RAIL LINK

Project ID Number	
Funding Source	MassDOT
Total Contract	
FFY 2017 Total Budget	

Purpose

The purpose of this work is to update the previously completed analysis of the proposed North-South Rail Link project that would connect Boston's North Station and South Station by rail.

Approach

This project would provide more transit connectivity to the region. It would connect transit markets that now require two or more transfers, and provide passengers with a one-seat ride. In the coming years, train-set capacity at South Station is expected to be a major limitation that would inhibit expansion of the commuter rail network south of Boston. This project would add capacity to the commuter rail system, while at the same time obviate the need to conduct a costly expansion project at South Station.

Because the North-South Rail Link project was studied in detail over a decade ago, an updated analysis is required.

FFY 2017 Anticipated Outcomes

This study will examine the local and regional demand for a north-south link connection, and also address the air quality and economic impacts associated with the project. After collecting and analyzing data, the Central Transportation Planning Staff (CTPS) will produce draft and final reports for the Massachusetts Department of Transportation (MassDOT).

LOWER MYSTIC RIVER WORKING GROUP SUPPORT

Project ID Number	
Funding Source	MassDOT
Total Contract	
FFY 2017 Total Budget	

Purpose

This study and support work stem from the proposed Wynn Casino development in Everett and the findings in the Massachusetts Environmental Protection Act (MEPA) Certificate issued by the Executive Office of Energy and Environmental Affairs (EOEEA) in August 2015. The certificate states that although the project complied with MEPA, there could be broader regional transportation impacts associated with other large scale development proposals in the area near the Wynn Casino north of Boston. In order to understand the extent of these broader impacts, the EOEEA Certificate required the establishment of a Regional Working Group.

Approach

MPO staff will take the lead in transportation modeling and analyses. Additionally, MPO staff and staff of the MPO member agency, the Metropolitan Area Planning Council (MAPC), will work in partnership with the working group to achieve the following main objectives:

- Assess existing conditions, planned improvements, and reviewed and permitted development
- Identify planning development and potential build-out
- Identify critical existing and proposed infrastructure and study alternatives
- Consider funding resources and equitable allocation of project costs

FFY 2017 Anticipated Outcomes

MPO and MAPC staff support is anticipated to include the following main tasks in federal fiscal year (FFY) 2017:

- Assistance with stakeholder engagement: Staff will plan public meetings, attend working group meetings, and assist the Massachusetts Department of Transportation (MassDOT) in answering questions and presenting information.

- Verification of existing land uses and identification of future developments: Staff will review current and proposed developments in the study area, verify existing data, and collect new data. This will be based, in part, on feedback from stakeholders. Staff will produce a database of existing and proposed demographics in the study area.
- Examination of existing and proposed transportation infrastructure: Staff will coordinate with MassDOT, affected municipalities, and other key stakeholders to verify existing and proposed transportation infrastructure by the forecast years (2030 and 2040). This will result in a database of existing and proposed transportation infrastructure in the study area.
- Review of current and recent transportation studies: Staff will review the analysis and conclusions of several transportation studies conducted in the study area during the past 15 years.
- Development and examination of a model of existing transportation conditions: Staff will use a model that reflects existing land use and transportation infrastructure in eastern Massachusetts and will produce analysis of existing transportation conditions.
- Development and examination of baseline scenarios for both forecast years: Staff will produce a model and analysis of baseline transportation conditions for 2030 and 2040.
- Identification of mitigation strategies and land use alternatives for both forecast years (2030 and 2040): Staff will identify potential issues associated with transportation operations within the study area and will work with the Regional Working Group to recommend a series of mitigation strategies to help address the negative transportation impacts identified in this study.
- Development and examination of alternative scenarios for both forecast years (2030 and 2040): Staff will model scenarios based on different assumptions about land use, transportation networks and operations, traveler behavior, and other inputs. The analysis of these multiple alternatives will help test the impacts of mitigation strategies.
- Examination of funding options: Staff will work with the Regional Working Group, MassDOT, and other stakeholders to estimate the cost of mitigation and infrastructure improvements identified through this project and will develop a list of funding strategies.
- Development of recommendations and creation of a blueprint and schedule for implementation: Staff will develop a recommended set of policies, programs, and infrastructure investments, which will include a blueprint and schedule for implementation.
- Production of draft and final reports: Staff will produce a draft report that will be presented to the working group. Staff will then produce a final report that will be posted on the MassDOT, MAPC, and MPO websites.

7.2 MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA)

The contracts and technical analyses in this section are being undertaken for the Massachusetts Bay Transportation Authority (MBTA).

MBTA NATIONAL TRANSIT DATABASE: DATA COLLECTION AND ANALYSIS

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

* Several different contract years are included in this work.

Purpose

For many years, in support of the Massachusetts Bay Transportation Authority's (MBTA's) National Transit Database (NTD) submittals to the Federal Transit Administration (FTA), the Central Transportation Planning Staff (CTPS) has produced estimates of passenger miles and boardings for MBTA services. This project will develop these estimates for

1. Directly operated MBTA transportation modes (including motor bus, trackless trolley, heavy and light rail, and bus rapid transit)
2. Purchased-service bus routes (that is, local routes for which the MBTA contracts with a private carrier)

CTPS will also verify MBTA estimates of average passenger trip length on its commuter rail mode.

Approach

The data underlying these estimates will be collected in a variety of ways:

- Full-route ridechecks on buses used in contracted MBTA local bus service and trackless trolleys¹
- MBTA automatic passenger counter (APC) data
- Passenger counts on APC-equipped buses
- Electronic passenger fare-mix counts from automated-fare-collection (AFC) faregates at heavy and light rail subway stations and fareboxes on motor bus and trackless trolley routes
- Origin-destination information inferred from AFC data
- Commuter rail ridership data from passenger counts conducted by the MBTA or its contractors, or from the MBTA's mobile ticketing vendor
- Fare-mix counts from AFC faregates at stations and from fareboxes on vehicles
- Passenger surveys on the heavy rail, light rail, and gated portions of the bus rapid-transit systems to collect origin and destination information

The MBTA will submit its state fiscal year (SFY) 2016 NTD estimates of passenger boardings and passenger miles for various transit modes to the FTA with the aid of CTPS during FFY 2017. In addition, the MBTA will submit its SFY 2017 NTD estimates of passenger boardings and passenger miles for various transit modes to the FTA with the aid of CTPS during FFY 2018. The final technical memorandum for the 2017 NTD will be completed in FFY 2018.

FFY 2017 Anticipated Outcomes

In SFY 2017, CTPS will complete the final technical memorandum for SFY 2016 NTD reporting and will continue data collection begun in SFY 2016 for SFY 2017.

- Ridechecks¹ will be conducted for the trackless trolley and contracted local bus service portions of the SFY 2017 NTD reporting. Ridecheck data that will be collected for bus routes will include boardings and alightings by stop, farebox readings, trip-level travel times, departure and arrival times, and arrival times at intermediate stops.
- For heavy and light rail lines, origin-destination surveys will be conducted, and fare-mix data will be obtained.

¹ Ridechecks refer to a method of collecting sample data with one or more persons observing and recording passenger activities while riding in a transit vehicle.

MBTA SYSTEMWIDE PASSENGER SURVEY

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

Through this contract, initiated in federal fiscal year (FFY) 2015, the Central Transportation Planning Staff (CTPS) will conduct a systemwide passenger survey to assist the Massachusetts Bay Transportation Authority (MBTA) in its Title VI analysis.

Approach

The Federal Transit Administration (FTA) requires that the MBTA collect information on its riders for use in Title VI analyses; this survey must be conducted within a five-year time frame. The required information will include race, color, national origin, English-language proficiency, language spoken at home, household income, fare usage by fare type, and travel patterns. In this project, CTPS will conduct a systemwide survey, administered as paper forms as well as online surveys, of the passengers who use rapid transit, bus, bus rapid transit (BRT), commuter rail, and water transportation services. The survey results also will provide the MBTA, other state and federal agencies, consultants, and the public with more up-to-date data to support transportation-planning activities.

FFY 2017 Anticipated Outcomes

CTPS will complete the systemwide passenger survey for each transportation mode, and staff will process the survey results.

MBTA TITLE VI PROGRAM MONITORING

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

Under this contract, the Central Transportation Planning Staff (CTPS) provides the Massachusetts Bay Transportation Authority (MBTA) with technical assistance in collecting data on and conducting assessments of the level of service (LOS) provided in minority communities compared to nonminority areas to support the MBTA's compliance with Title VI requirements.

Approach

Data will be collected on service indicators such as

- Service coverage
- Vehicle load
- Vehicle headway
- On-time performance
- Station conditions and amenities
- Distribution and operability of automated-fare-collection (AFC) faregates and fare vending machines
- Distribution of AFC retail sales terminals
- Station elevator and escalator locations and operability
- Vehicle age and condition

This data collection will help fulfill the monitoring required as part of the MBTA's ongoing Title VI Program. The results of the analyses will be reported internally at the MBTA and will be folded into future triennial Federal Transit Administration (FTA) reporting.

FFY 2017 Anticipated Outcomes

CTPS will provide documentation about selected LOS evaluations for state fiscal year (SFY) 2016 MBTA revenue service and amenities, and staff will prepare the 2017 triennial MBTA Title VI Program Report.

TITLE VI SERVICE EQUITY ANALYSIS: METHODOLOGY DEVELOPMENT: PHASE II

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

In a federal fiscal year (FFY) 2015 Boston Region MPO study (Title VI Service Equity Analysis: Methodology Development), the Central Transportation Planning Staff (CTPS) developed an improved methodology for conducting Title VI service equity analyses, and conducted a proof of concept to demonstrate its application. The developed methodology utilizes the Modified Transit Opportunity Index (MTOI) to measure the amount of transit opportunity provided to a census tract as a function of the transit system network. In this FFY 2017 project, staff will develop a full-scale model of the Massachusetts Bay Transportation Authority (MBTA) bus and rapid transit system to provide a platform for conducting comprehensive assessments of the MTOI for each census tract within the MBTA bus and rapid transit network.

Approach

Outputs from the MTOI model will be used as a comprehensive tool for conducting Title VI service equity analyses, enabling CTPS, the MBTA, and the Massachusetts Department of Transportation (MassDOT) Office of Diversity and Civil Rights staff to conduct future Title VI service equity analyses of MBTA major service changes. By completing this work, the MPO will continue to adhere to its commitment to conduct industry-leading Title VI and other transportation-equity-related work.

FFY 2017 Anticipated Outcomes

- Development of a full-scale MBTA bus and rapid transit system model for calculating the MTOI from existing transit services and proposed major service changes
- A memorandum documenting the development and framework of the MTOI model, and a user manual for its use as a tool for conducting Title VI service equity analysis of proposed major service changes
- Technical assistance to the MBTA and MassDOT Office of Diversity and Civil Rights

MBTA BUS SERVICE DATA COLLECTION

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

The work conducted under this contract will help the Massachusetts Bay Transportation Authority (MBTA) assess bus service changes included in the biennial MBTA service plans.

Approach

In order to assess bus service changes that are included in the biennial MBTA service plans, the MBTA requires ongoing data collection regarding its bus system.

The data collected by the Central Transportation Planning Staff (CTPS) as part of this project also support future MBTA service plans, through which bus routes undergo comparative evaluations for cost-effectiveness, crowding, schedule adherence, and other indicators. Work may also include support for improving the ridecheck database so that it will be compatible with new software and data sources. CTPS also may provide analytical assistance to the MBTA as requested.

FFY 2017 Anticipated Outcomes

- Point checks on bus routes and other data collection as requested by the MBTA for planning purposes. (Point checks are observations of the arrival times, departure times, and passenger loads of a transit service at a single location.)
- Improvements to the ridecheck database.
- Analytical assistance as requested.

MBTA REVIEW OF FARE STRUCTURE, TARIFFS, AND POLICY

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

Through this contract, the Central Transportation Planning Staff (CTPS) assists the Massachusetts Bay Transportation Authority (MBTA) in analyzing the potential impacts of changes in fare structure and tariffs.

Approach

CTPS has provided technical assistance to the MBTA in forecasting potential ridership, revenue, air quality, and socioeconomic impacts of proposed changes in the MBTA's fare structure and tariffs for all fare increases since 1991. In federal fiscal year (FFY) 2017, CTPS will analyze the potential impacts of any proposed changes in fare structure and tariffs. CTPS will also conduct the Federal Transit Administration (FTA)-required fare equity analysis.

FFY 2017 Anticipated Outcomes

Analyses will be conducted as requested. CTPS will participate in meetings, provide technical support, and develop documentation and other communication materials as requested. Staff will also prepare final reports of findings from each fare change analysis and each associated fare equity analysis.

MBTA RIDER OVERSIGHT COMMITTEE SUPPORT

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

The Massachusetts Bay Transportation Authority (MBTA) established a Rider Oversight Committee (ROC) in 2004 to provide ongoing public input on a number of different issues, including strategies for increasing ridership, developing new fare structures, and prioritizing capital improvements. Through this contract, the Central Transportation Planning Staff (CTPS) supports the MBTA by providing technical assistance to the ROC on an ongoing basis.

Approach

Over the past several years, the assistance provided by CTPS has included analyzing the revenue and ridership impacts of potential fare and service changes, providing the MBTA ridership statistics, offering insights into the MBTA's planning processes, providing data analysis, and attending committee meetings at which staff may respond directly to ROC members' questions.

FFY 2017 Anticipated Outcomes

CTPS will continue to provide technical assistance to the MBTA Rider Oversight Committee and attend committee and subcommittee meetings.

MBTA PLAN FOR ACCESSIBLE TRANSIT INFRASTRUCTURE SUPPORT

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

The Central Transportation Planning Staff (CTPS) will provide technical support to the Massachusetts Bay Transportation Authority (MBTA) as the Department of System-Wide Accessibility (SWA) develops a Plan for Accessible Transit Infrastructure (PATI).

Approach

The MBTA's Department of SWA is developing PATI—a long-term strategic barrier-removal plan that will prioritize accessibility improvements in the context of limited resources. Through this initiative, the MBTA will catalog barriers to access at each rapid transit, bus rapid transit, and commuter rail station or stop, and at every bus stop. Concurrently with this survey effort, a working group (the PATI Engagement Committee), which is composed of MBTA officials and disability-accessibility stakeholders, will develop a method for prioritizing the removal of the barriers in a manner that is sustainable, while maximizing the positive impact on accessibility. CTPS will provide the technical support required for the MBTA to develop criteria for determining which accessibility improvements would have the greatest positive impacts on seniors, people with disabilities, and others who rely on accessible infrastructure, while taking into account funding constraints. CTPS will also develop an algorithm for prioritizing accessibility improvements that will incorporate selected criteria.

FFY 2017 Anticipated Outcomes

- Participation in the PATI Engagement Committee
- Technical support and analyses required for reviewing the proposed criteria for evaluating accessibility improvements
- Development of an algorithm for prioritizing accessibility improvements

OFFICE OF PERFORMANCE MANAGEMENT AND INNOVATION ON-CALL CONTRACT

Project ID Number	
Funding Source	MBTA
Total Contract	
FFY 2017 Total Budget	

Purpose

Through this contract, the Central Transportation Planning Staff (CTPS) will support the Massachusetts Department of Transportation's (MassDOT's) Office of Performance Management and Innovation (OPMI).

Approach

This is a one-year contract for state fiscal year (SFY) 2017, and specific task orders and technical support will be determined by CTPS and OPMI.

FFY 2017 Anticipated Outcomes

This MassDOT contract will result in various analytical studies and technical reports for the Massachusetts Bay Transportation Authority (MBTA).

7.3 MASSACHUSETTS PORT AUTHORITY (MASSPORT)

The contracts and technical analysis in this section are being undertaken for the Massachusetts Port Authority (Massport).

MASSPORT TECHNICAL ASSISTANCE

Project ID Number	
Funding Source	Massport
Total Contract	
FFY 2017 Total Budget	

Purpose

The Central Transportation Planning Staff (CTPS) will provide technical assistance to the Massachusetts Port Authority's (Massport's) Department of Economic Planning and Development, which will support Massport in its desire to examine and improve ground-access options.

Approach

Activities may include support for Logan International Airport ground-access planning, ground-access model development, and related data collection and analysis; analysis related to Logan Airport; air-quality analysis; and support for additional to-be-determined transportation-planning activities. This work may be redirected or modified in response to emerging issues.

FFY 2017 Anticipated Outcomes

This contract will include multiple individual projects or tasks, and specific work activities and products will be determined by Massport.



CHAPTER 8

Administration, Resource Management, and Support Activities

8.1 INTRODUCTION

In addition to the certification requirements described in Chapter 5, Metropolitan Planning Organization (MPO) staff conducts various ongoing administrative, data resource, and other support activities on an annual basis in order to maintain the critical functions of the MPO.

The activities described in this chapter are all funded with federal 3C planning funds and fall into the following categories:

- Activities that support the ongoing functioning of the MPO: These include ongoing work to provide materials in accessible formats and provide computer resource management, among other activities.
- Activities that provide assistance to the MPO and its subcommittees: These include ongoing work involved in supporting the Access Advisory Committee and MPO agenda setting, as well as coordination and participation in statewide and regional planning committees.
- Activities that provide data resources support to municipalities in the region: These include work conducted through the ongoing roadway safety audit, traffic data support, and transit data support tasks.

Each activity in this chapter includes a description of the purpose of the work, a general description of how the work is accomplished, and a summary of the anticipated FFY 2017 work products. The budget tables at the beginning of each project description describe the salary and overhead costs associated with these projects. Any direct costs associated with the projects are included in the Direct Support budget table in this chapter.

Table 8-1 summarizes the funding in FFY 2016 and FFY 2017 as well as the work progress and products for the ongoing programs conducted as part of the MPO's ongoing administration, resource management, and support activities. Table 8-2 summarizes the funding for the Direct Support task for FFY 2016 and the proposed funding for FFY 2017. [Summary tables under development] [Budget information for the following projects will be added once the MPO has approved a draft FFY 2017 UPWP budget for public review.]

8.2 CTPS ACTIVITIES

This section provides details on the administration, resource management, and support activities undertaken by CTPS every FFY.

COMPUTER RESOURCE MANAGEMENT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

In order to carry out its functions, the MPO staff (the Central Transportation Planning Staff [CTPS]), maintains state-of-the-practice computer resources.

Approach

The following subtasks are undertaken as part of computer resource management:

60405 System Administration and Computer Room Management

Manage and maintain hardware and software for all CTPS computer systems to ensure that staff has maximum access to the computing resources required for its work, including an intranet site. Increased emphasis will be given to the security and integrity of all hardware, software, and data resources. Plan, monitor, and maintain CTPS's server room and computing facilities.

60406 Boston Region MPO Website

Develop and maintain a website that provides information regarding the MPO's activities and reports, studies produced by MPO staff, a data catalogue, and several interactive mapping applications. Continue to improve the site's design, information provided, and accessibility of this communication tool to those who are visually impaired. The website plays a critical role in the MPO's public-participation program by

providing information and eliciting public comment. All announcements for MPO and Regional Transportation Advisory Council meetings and committee meetings, as well as their related materials, are posted on the website.

60430 Software Development

Develop computer software to support CTPS's analytical, administrative, and documentation requirements. Maintain and enhance software developed by CTPS and/or others when program maintenance is no longer available from the original vendor.

60465 Staff Assistance and Training

Assist staff in using computer resources; organize and distribute vendor-supplied documentation, and, where appropriate, provide written and online user guides for particular resources.

60470 Liaison with Other Agencies

Work with other public agencies, including the Metropolitan Area Planning Council (MAPC) and the Commonwealth's Office of Geographic Information (MassGIS), to encourage sharing of computer and data resources and techniques.

60475 Computing Resource Purchasing and Maintenance

Purchase and maintain CTPS's computing resources. These include in-house assets such as servers, desktop and laptop computers, tablet and handheld computers, mass-storage devices, networking and communications hardware, printers and plotters, system and application software, and consumable supplies. These also include out-of-house resources, such as software purchased as a service, cloud-based storage, and other cloud-based computing resources.

60492 Computer Resource Planning

Update the CTPS Five-Year Plan for Computer Resource Development in conjunction with developing the next CTPS budget.

FFY 2017 Anticipated Outcomes

Work on these tasks will continue as described above.

DATA RESOURCES MANAGEMENT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The Central Transportation Planning Staff (CTPS) provides travel data and analyses at regional, corridor, and site-specific levels to support transportation planning and decision-making.

Approach

The categories below comprise the variety of tasks encompassed by this work:

60130 Socioeconomic Data

CTPS's database of statistics from the US Census Bureau's decennial census and American Community Survey, and products derived from these sources, will be maintained and kept current.

60201, 60202 Response to Data Requests

Data will be processed or analyzed upon request to meet the needs of local, state, and federal agencies, as well as private institutions and firms. The 60201 project number is used for data requests handled by CTPS's Information Technology and Systems (IT&S) group; the 60202 number is used for data requests handled by all other groups.

60600 Geographic Information System/Database Management System (GIS/DBMS)

CTPS will continue to develop and enhance its GIS database. CTPS will coordinate data development and distribution with the Massachusetts Department of Transportation (MassDOT) and MassGIS in order to prevent duplication of effort, ensure data quality, and reduce costs. CTPS's GIS database will be made available to staff through ArcSDE, ArcMap layer files, Web services, and Web applications.

FFY 2017 Anticipated Outcomes

Databases of standard reference GIS data, socioeconomic data, Registry of Motor Vehicles (RMV) data, and travel data; GIS processing tools; tabular and spatial data analyses; Web service and Web applications; responses to data requests.

DIRECT SUPPORT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
SPR Funds	
MassDOT Section 5303 Funds	
MBTA Funds	
Massport Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.
SPR = State Planning and Research Contract with MassDOT.

Purpose

Through this activity, the Central Transportation Planning Staff (CTPS) provides integral direct support for all CTPS projects and functions.

Approach

Computer Equipment

CTPS computer needs are programmed in the CTPS Five Year Plan for Computer Resource Development, as amended.

Consultants

Consultants are hired periodically to perform specialized, time-specific tasks as project work demands.

Printing

Project-specific printing costs, such as those for surveys, maps, reports, presentation boards, and other informational materials, are included in this budget.

Travel

Periodically, the US Department of Transportation and other organizations sponsor courses and seminars that enhance staff's ability to do project work; the costs of registration, travel, and lodging associated with attending such programs are direct-support expenditures. Mileage, tolls, and parking expenses associated with project work also are charged as direct-support expenditures. Additional project work, such as high-occupancy-vehicle (HOV) lane monitoring, is funded through this budget to cover rental vehicles and fuel costs.

Other

Various other expenditures may become necessary during the term of this Unified Planning Work Program (UPWP). Costs associated with postage for return mail, services for preparing and processing data for specific projects, and translations of MPO materials into other languages are direct-support expenditures. Other nonrecurring costs, such as software for specific project work, video-camera equipment for license-plate surveys, or traffic-counting equipment, also may be funded through this line item.

FFY 2017 Anticipated Outcomes

Direct costs include computer and general office equipment, professional consulting services, in-state project-related travel, out-of-state travel associated with staff attendance at professional and training conferences, and other costs deemed appropriate.

ACCESS ADVISORY COMMITTEE SUPPORT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

MPO staff supports the Massachusetts Bay Transportation Authority (MBTA) in meeting Americans with Disabilities Act of 1990 (ADA) requirements by providing ongoing support to the Access Advisory Committee to the MBTA (AACT), a user group representing people with disabilities. AACT advises the MBTA on all accessibility matters relating to the use of the MBTA's systemwide fixed-route services and THE RIDE paratransit service for people with disabilities. It also ensures that users' ideas concerning accessible transportation are heard.

Approach

AACT is a member of the MPO's Regional Transportation Advisory Council, and MPO staff solicits input from AACT regarding the transportation-planning process. Staff provides a variety of support services (detailed below).

FFY 2017 Anticipated Outcomes

- Support regularly scheduled AACT Membership, AACT Executive Board, and other related meetings at which attendees advise and comment on projects being planned or implemented throughout the system for fixed route services, commuter rail, rapid transit, surface transit, and paratransit service
- Distribute monthly reports on system-wide accessibility, THE RIDE's service statistics, and other materials pertinent to AACT meeting agenda items
- Support the AACT Chairperson by attending special consultations and other meetings
- Support the activities of the AACT Executive Board of Directors
- Maintain awareness of and provide guidance on the AACT Memorandum of Understanding, AACT bylaws, and disability issues in general

- Coordinate AACT elections and other committee activities, as needed
- Prepare and distribute AACT meeting agendas and minutes, meeting announcements, correspondence, meeting calendars to post in THE RIDE vans, and updated AACT informational materials
- Produce and distribute orientation packets for new AACT members
- Track follow-up for members' requests for information
- Maintain AACT databases for mailings, attendance log, membership standing, AACT archives, supplies, and accessible-formatting equipment
- Coordinate briefings on MPO activities
- Produce meeting materials in accessible formats for AACT members and members of the public upon request
- Coordinate forums on transit accessibility
- Update the AACT brochure

PROVISION OF MATERIALS IN ACCESSIBLE FORMATS

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The purpose of this program is to comply with the Americans with Disabilities Act of 1990 (ADA), Section 508 of the Rehabilitation Act as amended in 1998, and other policies and regulations governing accessibility standards. When the MPO ensures compliance with these policies and regulations, public outreach and engagement is enhanced because more stakeholders in the region can access our informational materials and reports.

Approach

As mentioned above, the MPO conducts its transportation-planning activities and public outreach process in accordance with the ADA, Section 508 of the Rehabilitation Act as amended in 1998, and other policies and regulations governing accessibility standards. In support of these standards, the MPO produces written and electronic materials in accessible formats. In addition to producing these materials, the MPO will continue to maintain a library of templates that incorporate accessibility guidelines and standards.

FFY 2017 Anticipated Outcomes

- Production of materials in accessible formats for public meetings and website postings, as requested
- Ongoing maintenance of accessible document templates
- Development of accessibility guidelines and standards for MPO products

REGIONAL MODEL ENHANCEMENT

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

Through this work program, the Central Transportation Planning Staff (CTPS) builds and maintains a state-of-the-practice regional travel-demand model to help assess the area's transportation needs and evaluate alternatives to improve the transportation system. The model is principally a simulation of travel behavior that emulates the millions of travel-behavior decisions that ultimately produce more than 16 million daily person-trips across the 164 municipalities in the modeled area. Metrics produced by the model are designed to aid in both policy planning and technical analysis, as well as in meeting federal reporting requirements. The model is also used by MPO member transportation agencies because it is an extremely robust tool that incorporates data from all the region's transportation agencies (public transportation) and transportation service providers (private transportation) that are within the Boston Region MPO area.

Approach

During federal fiscal year (FFY) 2015, CTPS and the Metropolitan Area Planning Council (MAPC) jointly developed a Cube Land software model implementation that covers all 101 communities in the MPO region, as well as 63 additional border communities. Cube Land is a land-use allocation model that allows users to project future land use patterns. MPO staff will use Cube Land to forecast land use allocation.

Also in FFY 2015, CTPS (under contract to the Massachusetts Department of Transportation [MassDOT]) refreshed the statewide travel model. This refresh included better linkage between the MPO's model and the statewide model.

The MPO's regional modeling software was converted to TransCAD version 7 in FFY 2015. This new version has improved analysis capabilities that will benefit CTPS. These capabilities include better methods for computing accessibility indexes, improved dynamic traffic assignments, the inclusion of traffic signal delays in the path-building and highway assignments, and improved transit assignments and transit capacity analysis.

FFY 2017 Anticipated Outcomes

MPO staff plan to pursue the following activities associated with the Boston Region MPO's travel demand model, the Cube Land land-use allocation model, and the statewide model:

- Continue to use the 2011 Massachusetts Travel Survey, the most recent Massachusetts Bay Transportation Authority (MBTA) user surveys, the most recent traffic counts, and the latest MBTA counts to maintain, update, and calibrate the model set.
- Continue to refine the in-house scenario-management program within the regional modeling software, TransCAD, which will make it easier for MPO staff to evaluate multiple scenarios.
- Use the linkage between the statewide and CTPS model sets to improve the CTPS model with a better way to estimate external-external travel through the region. This linkage will also allow for improvements in the forecasting of external transit usage (basically, commuter rail trips that begin outside of the MPO's 101 communities, but end within the 101 communities, or more specifically, downtown Boston).
- Use the statewide model linkage to enhance the CTPS model by improving the ability to predict and analyze traffic flow with bordering planning agencies, including the Central Massachusetts Regional Planning Commission and the Southeast Regional Planning and Economic Development District.
- Work toward the development of an activity-based model (ABM). TransCAD version 7 has several new capabilities for ABM development, including a population synthesizer tool and the ability to create trip tables from survey-based activity logs.
- Work toward the development of a parking choice model for the Boston core.
- Develop adequate model documentation.
- Provide technical support and training to model users.
- Build better linkage between the regional model set and the Environmental Protection Agency's (EPA's) Motor Vehicle Emissions Simulator (MOVES) software, which calculates vehicle emissions.
- Continue to test dynamic traffic assignment methods for use in the MPO model set. Current practice suggests that dynamic traffic assignment (DTA) helps planners understand traffic flows at a finer temporal and spatial resolution than other assignment methods.

The activities listed above support projects in this Unified Planning Work Program (UPWP) that rely on the regional model for travel forecasting and analysis, particularly analysis that supports the Long-Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP).

Additional regional model enhancement activities may include the following:

- Continue to improve the linkage between the regional travel demand model set and Cube Land, and examine the potential for using Cube Land for project level land use forecasting. MPO staff will coordinate with MAPC and consult with peers and colleagues—including those in other regions—to learn more about best practices and lessons learned based on their experiences with alternative modeling approaches.
- The Logan International Airport ground access model has been recently updated for the Massachusetts Port Authority (Massport). This revised model will be integrated into the regional model set.
- The truck model is in need of an update. During the current work program, methods for updating the model will be examined. The update will likely be a two-step process. Step one will be to use the matrix estimation process and a set of new vehicle classification counts to update the truck trip tables. Step two will be a more comprehensive examination of the truck trip generation and distribution process.
- Continue to work on the park-and-ride station choice model.

TRANSIT DATA SUPPORT: FFY 2017

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The purpose of this program is to provide transit data and small-scale analyses of available data to interested parties, upon request.

Approach

By performing various planning studies for the Massachusetts Bay Transportation Authority (MBTA) and other entities, the Central Transportation Planning Staff (CTPS) has accumulated a large amount of transit ridership, revenue, and service data. This program allows CTPS to provide this data to interested parties throughout the federal fiscal year.

FFY 2017 Anticipated Outcomes

CTPS will respond to requests for data and small-scale studies from agencies, municipalities, members of the public, academic institutions, and other interested parties.

TRAFFIC DATA SUPPORT: FFY 2017

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The purpose of this program is to perform various quick-response data gathering or data analysis tasks for public and private institutions throughout the federal fiscal year.

Approach

In the vast majority of requests for transportation planning and traffic engineering analysis, the amount of effort is significant; therefore, a specific scope of work is developed for these projects. Occasionally, public and private institutions and their consultants ask the Central Transportation Planning Staff (CTPS) to perform various quick-response analyses or to provide data. Accounting for these requests, which are expected to require less than two person-days each, is done under this general project description.

FFY 2017 Anticipated Outcomes

Work products will depend on the tasks requested by the MPO agencies, the general public, consultants, or other parties.

ROADWAY SAFETY AUDITS

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This program supports Central Transportation Planning Staff (CTPS) participation in Roadway Safety Audits (RSAs).

Approach

An RSA, as defined by the Federal Highway Administration (FHWA), is a formal safety performance examination of an existing or future road or intersection by an independent audit team. The Massachusetts Department of Transportation (MassDOT) guidelines require an RSA to be conducted where Highway Safety Improvement Program (HSIP)-eligible crash clusters are present. The RSA examines the location to develop both short- and long-term recommendations to improve safety for vehicles, pedestrians, and bicyclists. These recommendations help communities identify safety improvements that can be implemented in the short-term, and determine if more substantial improvements also are needed as part of a larger, long-term improvement process.

Audit teams include MassDOT headquarters and district office staff, MassDOT consultants, and CTPS personnel, as requested. In the RSA process, the audit team: 1) reviews available crash data; 2) meets and communicates with local officials, planners, engineers, and other stakeholders; 3) visits the site to observe traffic operations and identify safety issues; and 4) develops and documents recommendations.

FFY 2017 Anticipated Outcomes

The anticipated outcome is participation in audit teams as requested by the MassDOT.

UPWP STUDY RECOMMENDATION TRACKING DATABASE

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

Annually track status of recommendations advanced through Unified Planning Work Program (UPWP) studies

Approach

Each year, the Central Transportation Planning Staff (CTPS) (staff to the Boston Region Metropolitan Planning Organization [MPO]) conducts planning studies that are programmed for funding through the UPWP. These studies address roadway, transit, pedestrian, and bicycle needs throughout the Boston Region MPO area. Ideas for the studies come from numerous sources, including:

- Public outreach
- Outreach to Metropolitan Area Planning Council subregions
- Meetings with the Regional Transportation Advisory Council (Advisory Council)
- Meetings with the UPWP Committee
- Meetings with the MPO
- Needs identified in the Long-Range Transportation Plan
- Needs that CTPS identifies throughout the region

CTPS performs these studies to further the goals and objectives of the MPO, which include increasing roadway safety, increasing the quality and quantity of pedestrian and bicycle infrastructure, increasing transit mode share, reducing congestion, and modernizing roadways to accommodate all users. Through these studies, MPO staff recommend short-, medium-, and long-term improvements.

Historically, the MPO board has requested updates on the status of these planning studies to determine their effectiveness—for example, to see if the Massachusetts Department of Transportation (MassDOT) and the municipalities are implementing recommendations from the studies or advancing them via projects that would lead to implementation.

Tracking recommendations from completed studies to identify their status in the MassDOT project development process would require resources to reference the MassDOT Highway Division project information database, to call municipalities to obtain project information, and to use Google Maps and/or site visits to identify recent improvements.

FFY 2017 Anticipated Outcome

We propose creating a database of previous UPWP planning studies that would house details of project contacts, proposed improvements, implementation status, milestones, funding, and issues affecting implementation progress. MPO staff would use the database to produce reports for the MPO board detailing topics such as the percentage of planning studies that have advanced to the MassDOT project information system or are in preliminary design. By updating the database every year, CTPS will have a timely and efficient way to inform the MPO about the status of recommendations from its planning studies.

8.3 MAPC ACTIVITIES

This section provides details on the administration, resource management, and support activities undertaken by MAPC every FFY.

MPO/MAPC LIAISON AND SUPPORT ACTIVITIES

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This project includes working with MPO members and staff to establish work priorities and meeting agendas. It also includes reporting to the Metropolitan Area Planning Council (MAPC) Executive Committee, MAPC Council members, MAPC subregions, and MAPC staff on MPO activities to ensure strong coordination of land use and transportation planning across the region.

Approach

Statewide and Regional Planning Committees

MAPC actively participates in statewide and regional planning committees and task forces to represent the interests of the region, with a particular focus on the critical links between land use and transportation. These committees include the Massachusetts Association of Regional Planning Agencies (MARPA) and Regional

Coordination Councils, as well as various Massachusetts Department of Transportation (MassDOT), Massachusetts Bay Transportation Authority (MBTA), or municipally led transportation planning groups, such as Go Boston 2030. MAPC will also be actively involved in regional transportation plans and programs related to land use and transportation. Advisory committees may change from year to year as studies are begun or completed, but participating in various advisory committees is an ongoing task.

Support of the Public Participation Process for Metropolitan Planning Documents

MAPC provides education and outreach on a wide variety of transportation-related and land-use-related topics in the region, with emphasis on outreach through the subregions to municipal officials. MAPC also supports the Central Transportation Planning Staff (CTPS) in its outreach to environmental justice and senior populations and to people with disabilities.

MPO Elections

Working with the MBTA Advisory Board, MAPC will coordinate and implement annual elections for municipal representatives in the MPO.

Transportation Improvement Program (TIP) Evaluation and Criteria

MAPC will advise CTPS about the land-use and economic-development aspects of the TIP evaluations. MAPC will provide updated TIP criteria and help to implement the comprehensive regional growth plan, MetroFuture. MAPC will research TIP projects and work with municipalities to advance TIP projects.

MPO Agenda Setting and Coordination

MAPC will work with CTPS and MassDOT to develop MPO meeting agendas and presentations.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include interagency coordination; work scopes and agendas; participation in advisory and corridor committees; public participation and outreach; reports to the MAPC Executive Committee, MAPC Council members, MAPC subregions, and MAPC staff; MPO elections; TIP criteria update and project evaluations; and attendance at relevant meetings.

UNIFIED PLANNING WORK PROGRAM SUPPORT (MAPC)

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This Unified Planning Work Program (UPWP) task supports the Metropolitan Area Planning Council's (MAPC's) management and oversight of UPWP-funded planning studies, projects, and programs, which includes preparing updates and budget information in monthly reports to the Massachusetts Department of Transportation (MassDOT).

Approach

MAPC assists with the annual development of the UPWP and supports, in coordination with MassDOT and the Central Transportation Planning Staff (CTPS), the development of UPWP project ideas and specific work scopes. Through community liaison and subregional support activities, MAPC staff also helps communities identify and develop studies to be included in the UPWP.

FFY 2017 Anticipated Outcomes

MAPC staff will prepare UPWP project listings and monthly reports on UPWP activities. MAPC will provide assistance with the annual development of the UPWP and support for the development of specific project proposals and work scopes. Staff will also provide assistance to communities in identifying and developing studies to be included in the UPWP through community liaison and subregional support activities.

LAND USE DATA FOR TRANSPORTATION MODELING (MAPC)

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

This program allows the Metropolitan Area Planning Council (MAPC) to support the MPO’s planning and decision-making by helping the Central Transportation Planning Staff (CTPS) develop and implement the land-use allocation model and to conduct analysis supporting transportation modeling and project evaluation.

Approach

Land-Use Allocation Model Development: MAPC will continue to participate in integrating a land-use allocation model with the regional transportation demand model, working closely with CTPS and the Massachusetts Department of Transportation (MassDOT).

Development Database: MAPC will continue to monitor development projects that are being planned across the region and update and/or add to the development database as necessary.

Population, Household, and Employment Projections: MAPC will continue development of an updated set of regional socioeconomic projections based on updated information about migration patterns, household formation, economic activity, and development patterns, with the intention of releasing a new set of regional forecasts in calendar year 2017.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include an improved land-use allocation model, updated population and household projections, data development and analysis, documentation, and mapping products to support advanced transportation modeling.

SUBREGIONAL SUPPORT ACTIVITIES (MAPC)

Project ID Number	
FHWA 3C PL Funds	
FTA Section 5303 Funds	
FFY 2017 Total Budget	

Note: FTA and FHWA funds include the MassDOT local match.

Purpose

The Metropolitan Area Planning Council (MAPC) region consists of 101 cities and towns. The region is subdivided into eight geographic areas that are represented by subregional councils comprising municipal officials, business leaders, community based organizations, and other local participants. MAPC staff planners are assigned as coordinators to each of the subregional groups to assist members in developing an understanding of subregional and regional transportation and land-use issues.

Approach

Subregions are encouraged to recommend subregional projects and priorities for the Transportation Improvement Program (TIP), the Long-Range Transportation Plan (LRTP), and the Unified Planning Work Program (UPWP). Subregional coordinators and MAPC transportation staff report back to the MPO through formal and informal communications. MAPC subregional groups will continue to participate in local corridor advisory committees whenever these committees are appropriate vehicles for working on projects in their areas. The subregions will continue to advance Priority Development Area and Priority Preservation Area planning and mapping activities.

MAPC staff ensures timely discussions of transportation-related issues by placing the topics on meeting agendas, by leading and participating in the discussions, and by distributing appropriate documents and notices relating to region-wide and statewide transportation meetings.

FFY 2017 Anticipated Outcomes

Anticipated outcomes include preparation of monthly meeting agendas for transportation topics at subregional meetings, coordination with transportation agencies, reviews of transportation studies in subregions, support for subregional and corridor advisory committee meetings, and assistance in setting subregional transportation priorities. This project supports community involvement in the development of transportation-planning documents.



CHAPTER 9

Boston Region MPO Budget and Operating Summaries

This chapter contains overall budget information by recipient agency and funding source for the projects listed in Chapters 5 through 8. The information is presented according to the same Unified Planning Work Program (UPWP) categories used in those chapters.

UPWP Work Areas	Total Budget
Certification Requirements	\$1,510,241
MPO Planning Studies and Technical Analyses	\$1,317,464
Agency and Other Client Planning Studies	\$2,545,940
Administration, Resource Management, and Support Activities	\$2,400,761
Total	\$7,774,406



The funding for the projects listed in Chapters 5 through 8 comes from the following sources, which are described in Chapter 1:

Funding Source	Total Funds
FHWA 3C Planning (PL)/MassDOT Local Match	\$3,546,660
MPO FTA 3C Planning (Section 5303)/MassDOT Local Match	\$1,311,200
MassDOT FTA 3C Planning (Section 5303)/MassDOT Local Match	\$270,167
MAPC FTA 3C Planning (Section 5303)/MassDOT Local Match	\$331,629
FHWA Statewide Planning and Research (SPR)/MassDOT Local Match	\$572,000
MassDOT	\$642,900
MBTA	\$1,046,700
Other	\$53,150
Total	\$7,774,406

On the following pages, the funding information presented in the preceding chapters is summarized in nine tables, one for each UPWP category. These tables are followed by a one-page summary, which shows the entire budget by recipient agency and funding source, and a table, which shows the federally designated elements and tasks for projects utilizing Section 5303 funding. The purpose of these summaries is to assist federal and state contract administrators in reviewing each work program in detail. This chapter also includes charts that present schedules and staff assignments for the Central Transportation Planning Staff (CTPS) projects in this UPWP.

[Tables under development]

[Note: these budget amounts reflect the UPWP Committee Recommendation for FFY 2017 and will be finalized once the MPO has approved the draft FFY 2017 UPWP for public review.]