



UNIFIED PLANNING WORK PROGRAM FFY 2023



UNIFIED PLANNING WORK PROGRAM

Federal Fiscal Year 2023

Boston Region MPO
DRAFT FOR THE MPO, JULY 21, 2022

Prepared by
The Central Transportation Planning Staff:
Staff to the Boston Region Metropolitan Planning Organization

Directed by the Boston Region Metropolitan Planning Organization,
which is composed of the

Massachusetts Department of Transportation

Metropolitan Area Planning Council

Massachusetts Bay Transportation Authority

MBTA Advisory Board

Massachusetts Port Authority

Regional Transportation Advisory Council

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City of Beverly

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[CERTIFICATION LETTER]

ABBREVIATIONS

Abbreviations	Definition
3C	continuous, comprehensive, cooperative [metropolitan transportation planning process]
A&F	Administration and Finance Committee [Boston Region MPO]
ADA	Americans with Disabilities Act of 1990
Advisory Council	Regional Transportation Advisory Council
AFC	automated fare collection [system]
APC	automatic passenger counter
BRT	Bus Rapid Transit
CAAA	Clean Air Act Amendments of 1990
CA/SC	Clean Air/Sustainable Communities.
CATA	Cape Ann Transportation Authority
CBD	central business district
CM/M	Capacity Management and Mobility
CMP	Congestion Management Process
CO	carbon monoxide
CO2	carbon dioxide
CTPS	Central Transportation Planning Staff
CUFC	Critical Urban Freight Corridors
DBMS	Database Management System
DCR	Department of Conservation and Recreation
DEP	Massachusetts Department of Environmental Protection
DI/DB	Disparate Impact and Disproportionate Burden

Abbreviations	Definition
DOT	Department of Transportation
EJ	environmental justice
EO	executive order [federal]
EPA	US Environmental Protection Agency
EV	economic vitality
FAST Act	Fixing America’s Surface Transportation Act
FFY	federal fiscal year
FHWA	Federal Highway Administration
FMCB	MBTA Fiscal and Management Control Board
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	Geographic Information System
GTFS	General Transit Feed Specification
GWSA	Global Warming Solutions Act of 2008 [Massachusetts]
HOT	High-Occupancy Toll
ICC	Inner Core Committee
ITDP	Institute for Transportation and Development Policy
ITE	Institute of Transportation Engineers
LAP	Language Assistance Plan
LEP	limited English proficiency
LOS	level of service
LRTP	Long-Range Transportation Plan [MPO certification document]
MAGIC	Minuteman Advisory Group on Interlocal Coordination

Abbreviations	Definition
MAP-21	Moving Ahead for Progress in the 21st Century Act
MAPC	Metropolitan Area Planning Council
MARPA	Massachusetts Association of Regional Planning Agencies
MassDOT	Massachusetts Department of Transportation
MassGIS	Massachusetts Bureau of Geographic Information
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MCFRM	Massachusetts Coastal Flood Risk Model
MEPA	Massachusetts Environmental Policy Act
MOU	Memorandum of Understanding
MOVES	Motor Vehicle Emission Simulator
MPO	metropolitan planning organization
MWRC	MetroWest Regional Collaborative
MWRTA	MetroWest Regional Transit Authority
NAAQS	National Ambient Air Quality Standards
NHS	National Highway System
NO _x	nitrogen oxides
NSPC	North Suburban Planning Council
NSTF	North Shore Task Force
NTD	National Transit Database
OD	Origin/Destination
OTP	MassDOT Office of Transportation Planning
PBPP	performance-based planning and programming

Abbreviations	Definition
PL	metropolitan planning funds or public law funds [FHWA]
POP	Public Outreach Plan
PPP	Public Participation Plan
ROC	Rider Oversight Committee [MBTA]
RMAT	Resilient Massachusetts Action Team
RTA	Regional Transit Authority
RTAC	Regional Transportation Advisory Committee
<hr/>	
S	Safety
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act— A Legacy for Users
SFY	state fiscal year
SHSP	Strategic Highway Safety Plan
SIP	State Implementation Plan
SOV	single-occupancy vehicle
SP/M	System Preservation and Modernization
SPR	Statewide Planning and Research [FHWA]
SSC	South Shore Coalition
SWAP	Southwest Advisory Planning Committee
<hr/>	
TAZ	transportation analysis zone
TDM	travel demand management
TE	transportation equity
TIP	Transportation Improvement Program [MPO certification document]
TMA	transportation management association

Abbreviations	Definition
TNC	transportation network company
TOD	Transit-Oriented Development
TRIC	Three Rivers Interlocal Council
UPWP	Unified Planning Work Program [MPO certification document]
USDOT	United States Department of Transportation [oversees FHWA and FTA]
UTC	United States Department of Transportation’s University Transportation Centers Program
VMT	vehicle-miles traveled
VOC	volatile organic compounds
ZEV	zero emission vehicles

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EXECUTIVE SUMMARY

WHAT IS THE BOSTON REGION MPO?

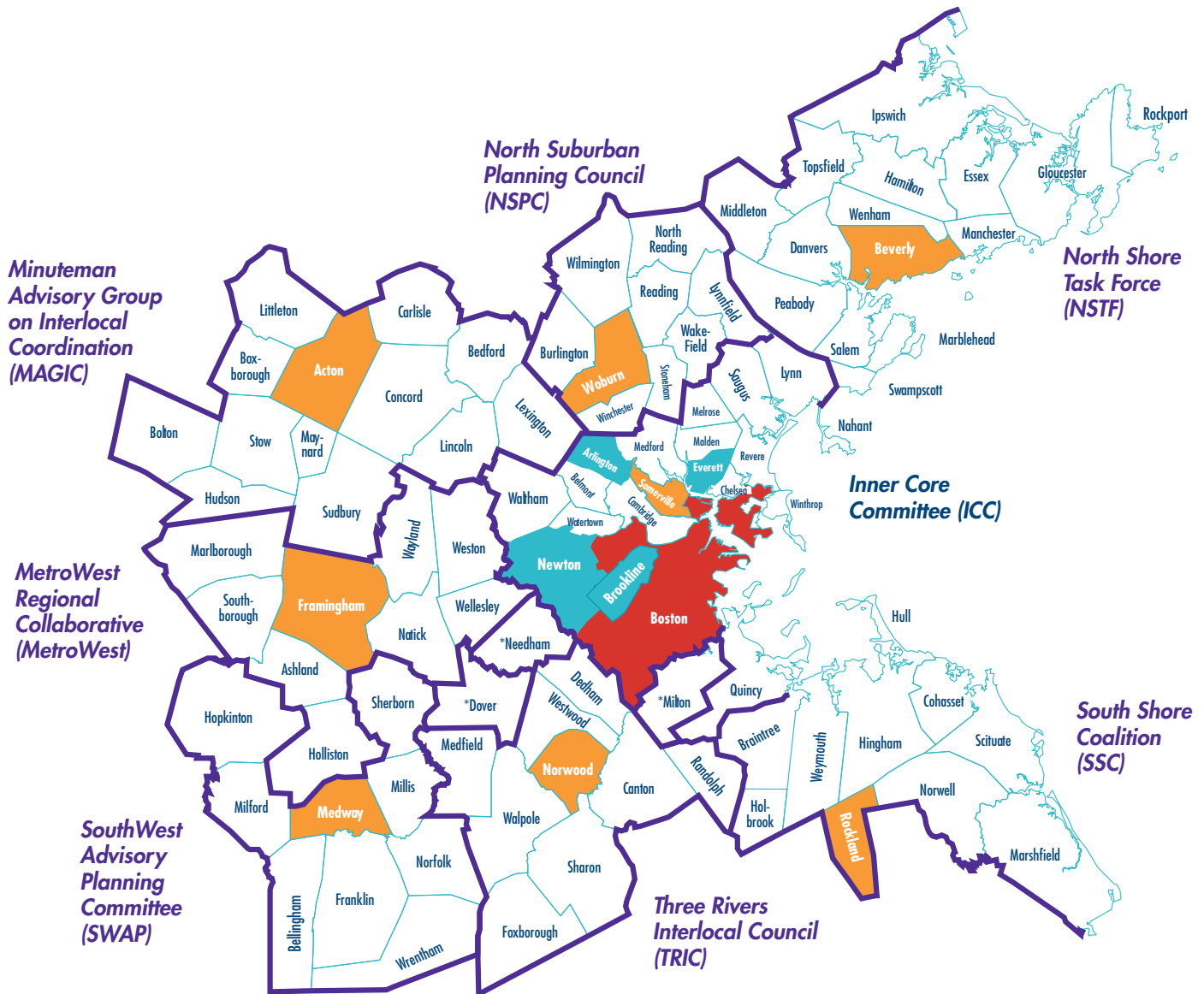
Decisions about how to allocate transportation funds in a metropolitan area are guided by information and ideas garnered from a broad group of people, including elected officials, municipal planners and engineers, transportation advocates, and interested residents. Metropolitan planning organizations (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—is required by federal legislation to establish an MPO, which decides how to spend federal transportation funds for capital projects and planning studies for the area.

Boston Region MPO Jurisdiction and Membership

The Boston Region MPO's planning area extends across 97 cities and towns from Boston north to Ipswich, south to Marshfield, and west to Interstate 495.

Figure ES-1 shows the map of the Boston Region MPO's member municipalities.

**Figure ES-1
Municipalities in the Boston Region**



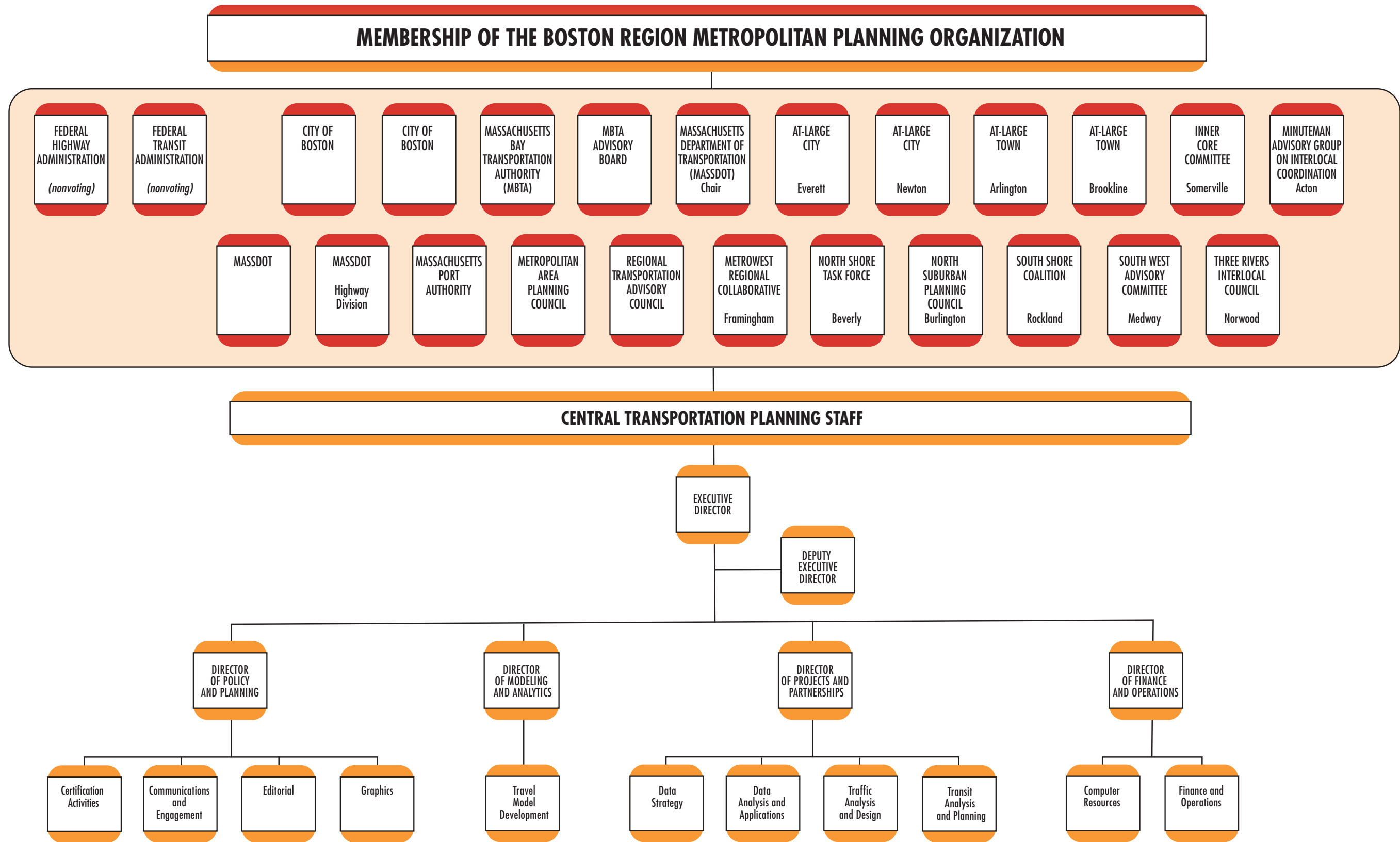
*Community is in more than one subregion: Dover is in TRIC and SWAP; Milton and Needham are in ICC and TRIC.

- 97 Cities and towns
- Subregion boundary
- MPO representative from subregion
- MPO city or town at-large representative
- Boston has two permanent MPO representatives

The MPO's board comprises 22 voting members. Several state agencies, regional organizations, and the City of Boston are permanent voting members, while 12 municipalities are elected as voting members for three-year terms. Eight municipal members represent each of the eight subregions of the Boston region, and there are four at-large municipal seats. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) participate on the MPO board as advisory (nonvoting) members. More details about the MPO's permanent members can be found in Appendix F.

Figure ES-2 shows MPO membership and the organization of the Central Transportation Planning Staff (CTPS), which serves as staff to the MPO.

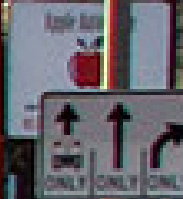
**Figure ES-2
Boston Region MPO Organizational Chart**





BUS ONLY

ONLY BUS



The Transportation Planning Process

The federal government regulates the funding, planning, and operation of the surface transportation system through the federal transportation program, which was enacted into law through Titles 23 and 49 of the United States Code. Section 134 of Title 23 of the Federal-Aid Highway Act and Section 5303 of the Federal Transit Act, as amended, require that urbanized areas conduct a transportation planning process to be eligible for federal funds, resulting in plans and programs consistent with the planning objectives of the metropolitan area.

The most recent reauthorization of the surface transportation law is the new Bipartisan Infrastructure Law (BIL). The BIL sets policies related to metropolitan transportation planning. The law requires all MPOs to carry out a continuing, comprehensive, and cooperative (3C) transportation planning process. As part of its 3C planning 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 and are required for the MPO 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 certification documents, the MPO must establish and conduct an inclusive public participation process, as well as maintain travel models and data resources to support air quality conformity determinations, transportation equity analyses, and long- and short-range planning work and initiatives.

Appendix E explains the regulatory and legislative context in which the MPO operates in greater detail.

The 3C Planning Process

The 3C planning process is an approach for conducting meaningful transportation planning. The federal government requires that MPOs conduct a process that is continuing, comprehensive, and cooperative:

- **Continuing:** Transportation planning should plan for the short- and long-range horizons, emphasizing the evolving progression from systems planning to project planning, programming, and implementation. It should recognize the necessity for continuously reevaluating data and plans.
- **Comprehensive:** Transportation planning should integrate all of the stages and levels of the process and examine all modes to ensure a balanced planning and programming approach. The planning process should include analysis of related non-transportation elements such as land use, economics, environmental resources, and population.
- **Cooperative:** Transportation planning should be a process designed to encourage involvement by all users of the system including businesses, community groups, environmental organizations, the traveling public, freight operators, and the public.

Chapter 1 explains the 3C process in greater detail.

WHAT IS THE UPWP?

The UPWP, produced by the Boston Region MPO, explains how the Boston region's federal transportation planning funds will be spent in a given federal fiscal year (FFY). Specifically, the UPWP is a financial plan that is produced in compliance with the federally mandated metropolitan transportation planning process described above.

The development of the UPWP involves the prioritization of all potential transportation planning studies and technical analyses that could be undertaken to benefit the region in a given year. The scopes and budgets of the prioritized studies are documented in the UPWP. The aim is to ensure that the outcomes of the studies help achieve the transportation goals that the MPO, through its public processes, has set for the region.

The UPWP serves as a source for the following information:

- Information for government officials, municipal officials, and the public about surface transportation planning projects and programs expected to be conducted in the Boston region
- Budget information for federal and state officials about how the Boston Region MPO plans to spend federal metropolitan planning funds on studies and programs performed on behalf of the MPO

How does the UPWP relate to the goals of the Boston Region MPO?

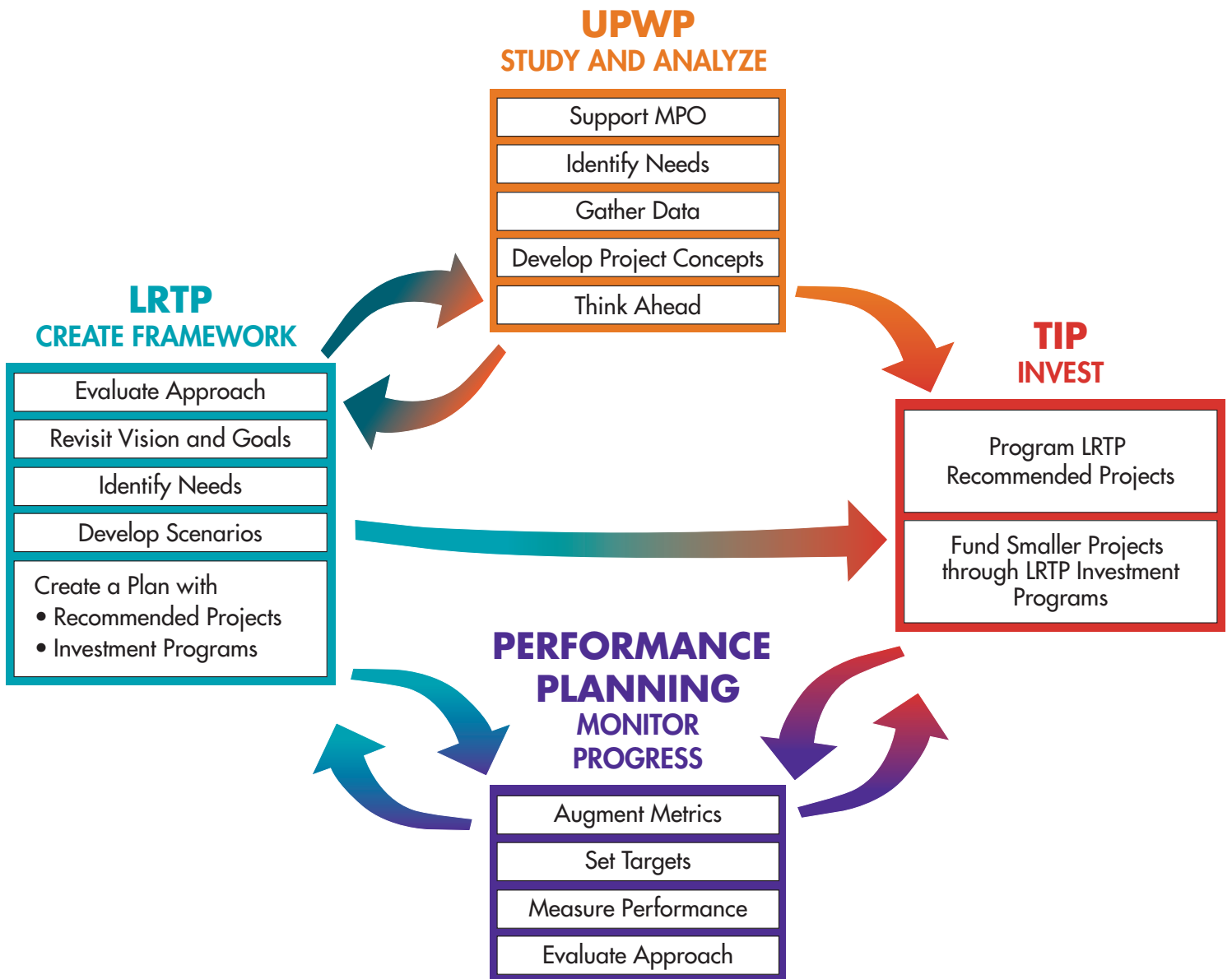
The Boston Region MPO plans for the transportation future of the Boston region. The MPO is guided by a 20-year vision for a modern, safe, equitable, sustainable, and technologically advanced transportation system for the region. This vision is described in the MPO's current LRTP, *Destination 2040*. The transportation planning work funded through the UPWP is an integral part of achieving this regional vision.

The transportation goals of the Boston region, as defined in *Destination 2040*, are as follows:

1. Safety: Transportation by all modes will be safe.
2. System Preservation: Maintain and modernize the transportation system and plan for its resiliency.
3. Clean Air/Clean Communities: Create an environmentally friendly transportation system.
4. Capacity Management/Mobility: Use existing facility capacity more efficiently and increase transportation options.
5. Transportation Equity: Ensure that all people receive comparable benefits from, and are not disproportionately burdened by, MPO investments, regardless of race, color, national origin, age, income, ability, or sex.
6. Economic Vitality: Ensure our transportation network provides a strong foundation for economic vitality.

The MPO is currently in the process of developing its next LRTP. In addition to the LRTP and the UPWP, the MPO also produces the TIP for the Boston region. As the near-term capital investment plan of the MPO, the TIP describes and prioritizes transportation construction projects that are expected to be implemented during the upcoming five-year period. Figure ES-3 illustrates the relationship between the LRTP vision and goals; the planning foundation for the MPO’s work, the UPWP; the TIP; and the process for monitoring and evaluating progress towards achieving the region’s goals.

**Figure ES-3
Links Between LRTP, TIP, and UPWP**



What are federal metropolitan planning funds?

The total federal funding programmed in this UPWP is \$5,708,978. All federal funds programmed in the UPWP are awarded to the Boston Region MPO by the Massachusetts Department of Transportation (MassDOT) as FHWA 3C Planning (PL) funds. However, these federal funds initially come from two sources: the FHWA and the FTA. The federal funds, which are supplemented by a local match provided by MassDOT, include the following initial sources:

- FHWA 3C Planning (PL): FHWA planning funds are distributed to the MassDOT 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 that is primarily based on the region's road mileage and population. The formula was developed by the Massachusetts Association of Regional Planning Agencies (MARPA) and is known as the MARPA formula. The FFY 2023 3C PL funding allocation for the Boston region, including state matching funds, is \$7,098,240. The total Boston region 3C PL allocation is split between CTPS, which receives \$5,912,879, and the Metropolitan Area Planning Council (MAPC), which receives \$1,185,361.
- FTA 3C Planning (Section 5303): FTA provides 3C planning funds for transit projects to MPOs and Departments of Transportation (DOTs) under Section 5303 of the Federal Transit Act. These funds require a local match and are distributed according to an allocation formula. In Massachusetts, these funds are administered by MassDOT, which converts them to PL planning funds before distribution. The FFY 2023 FTA allocation for the Boston region, including a total local match, is \$2,885,265. This amount is split into two categories:
 - MPO and MassDOT FTA 3C Planning (Section 5303): The total amount of FTA funds, including a local match, programmed in this UPWP as PL for work conducted by the MPO staff is \$2,037,574.
 - MAPC FTA 3C Planning (Section 5303): A portion of the Boston region's FTA allocation is provided to MAPC. MAPC uses these funds to conduct its transit-planning studies programmed through the UPWP. The total amount of FTA-derived funds, including a local match, allocated to MAPC as PL funds for FFY 2023 is \$432,790.

In addition, this UPWP includes \$414,901 in carryover FFY 2022 3C PL funds that support the Professional Development task and some direct costs related to travel demand model development.

Are there other funding sources in the UPWP?

Yes, in addition to MPO-funded work, CTPS performs planning analyses and studies funded by state transportation agencies, including MassDOT, the Massachusetts Bay Transportation Authority (MBTA), and the Massachusetts Port Authority (Massport). More detail about these agency-funded studies can be found in Chapter 5. For FFY 2023, the agency funding amounts programmed in this UPWP for projects to be conducted by MPO staff are as follows:

- MassDOT: \$904,579
- MBTA: \$710,100
- Other Sources: \$80,000

WHAT STUDIES AND ACTIVITIES ARE IN THIS FFY 2023 UPWP?

Throughout the following chapters, there is detailed information about work programs, studies, support activities, and technical analyses that are organized in the following categories:

- Certification requirements and administrative activities: The UPWP includes activities that the MPO must conduct to remain certified as an MPO by the federal government, to be eligible to receive and distribute federal transportation dollars, and to maintain its data resources and computer equipment properly. See Chapters 3 and 6 for more detail about these areas of work.
- Ongoing/continuing work programs: These areas of work support technical analyses and planning studies for cities and towns in the region. See Chapter 4 for more detail on these studies and technical analyses.
- New studies: Every year, funding is available for new studies to be conducted by the MPO staff. These efforts are undertaken to enhance the staff's knowledge of the practice, to improve analytical methods, and to evaluate strategies for implementation. See Chapter 4 for more detail on these new studies.
- Agency-funded studies and technical analyses: CTPS conducts planning analyses and studies funded by state transportation agencies, including MassDOT, the MBTA, and Massport. These agency-funded studies are described in Chapter 5.

Table ES-1 contains the budget allocated for the MPO's 3C planning activities in FFY 2023. The table reflects the FHWA metropolitan PL funds and FTA Section 5303 funds, which CTPS and MAPC expect to spend in FFY 2023. The table also reflects the work that CTPS will conduct with funds provided by other transportation agencies.

Chapters 3 through 6 provide detailed information about the transportation-planning activities that will be performed by CTPS during FFY 2023. The new studies chosen for funding in FFY 2023 are summarized below in Table ES-2 and described in more detail in Chapter 4.

Table ES-1
Unified Planning Work Program Budget for FFY 2023

3C Studies and Programs by Budget Categories	Proposed FFY 2023 CTPS Budget
Resource Management and Support Activities	\$275,000
MPO Certification Requirements	\$4,027,088
Continuing MPO-Funded Planning Studies and Technical Analyses	\$247,500
New MPO-Funded Discrete Studies	\$668,000
MassDOT-Directed PL Funds*	\$352,579
Direct Support	\$100,000
Total for CTPS 3C Studies and Programs	\$5,670,167

Agency-Funded CTPS Work	Proposed FFY 2023 CTPS Budget
MassDOT SPR Funds	\$500,000
MassDOT Other Funds	\$42,000
MBTA Funds	\$710,100
Other	\$80,000
Total for Agency-Funded CTPS Project Work	\$1,332,100

Total FFY 2023 CTPS Budget (3C + Agency Work)	\$7,002,267
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Note: This budget figures include salary, overhead, and direct support costs.

* Projects in this category are conducted on behalf of MassDOT but funded through the MPO 3C contract.

(Table ES-1 cont.)

3C Studies and Programs by MAPC Budget Categories	Proposed FFY 2023 MAPC Budget
MAPC Planning Studies and Technical Analyses	\$679,361
MAPC Administration, Resource Management, and Support Activities	\$506,000
Total MAPC FFY 2023 UPWP Funds	\$1,185,361

Agency Supporting MPO/3C Work	Proposed FFY 2023 Budget
CTPS	\$5,670,167
MAPC	\$1,185,361
3C Budget Subtotal	\$6,855,528

Agency-Funded CTPS Work	\$1,332,100
FFY 2023 UPWP Budget	\$8,187,628

**Table ES-2
New Discrete Funded Studies in FFY 2023**

Project ID	Study or Program	Proposed FFY 2023 CTPS Budget
TBD	Multimodal Mobility Infrastructure Program	\$338,000
TBD	Update Bicycle/Pedestrian Count Database	\$80,000
TBD	Flexible Fixed-Route Bus Service	\$20,000
TBD	Transit Modernization Program	\$37,500
TBD	Lab and Municipal Parking Study	\$80,000
TBD	Learning from Roadway Pricing Experiences	\$45,000
TBD	Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area	\$67,500
Total for New Discrete and Recurring Studies		\$668,000

WHAT IS THE PROCESS FOR CREATING THE UPWP AND MONITORING PROGRESS ON STUDIES?

Developing the UPWP

The annual process of creating the UPWP includes both generating and evaluating ideas for new studies, as well as updating the scopes and anticipated deliverables for ongoing technical analysis activities, certification requirements, and administrative support activities.

Ideas for new studies come from a combination of the following resources:

- Public input gathered through community meetings and meetings with MAPC's eight subregional municipal planning groups
- Regional Transportation Advisory Council input gathered from meetings in which the MPO staff discussed study ideas and transportation priorities of the Advisory Council's member organizations
- Input gathered from the MPO's UPWP Committee, which oversees the development of the entire UPWP document and meets throughout the year
- Existing planning documents such as the MPO's Congestion Management Process and LRTP Needs Assessment; the MBTA's long-range capital plan; MetroCommon, MAPC's long-range plan for smart growth in the Boston region; and other recent studies
- Guidance issued by FHWA and FTA on studies that address the federal transportation planning emphasis areas (for more information on the federal emphasis areas, see Appendix E and Table E-1)
- Public comment letters and study proposals that the MPO staff receive during outreach events and during the public comment period for the UPWP and other CTPS-produced reports
- Consultations with MassDOT, the MBTA, and MAPC that occur during document development and throughout the year as new ideas for transportation planning needs arise
- MPO staff-identified needs that emerge from continual interactions between the MPO staff, state and local agencies, organizations, and community groups

Ideas for new studies are compiled into the Universe of Proposed Studies. Each proposal is evaluated based on how it would help the region accomplish the LRTP goals. In selecting the final list of studies, the UPWP Committee also considers the utility of the projected study results to MPO stakeholders; whether sufficient staff resources are available to execute the needed work; and whether the work to be carried out is coordinated, rather than redundant, with work being done in other agencies.

The MPO continually seeks to improve its process through inclusive and collaborative decision-making. For this reason, the MPO seeks to involve a broad and diverse range of stakeholders throughout the UPWP development process.

The MPO staff will continue to seek public input for ideas for the Universe of Proposed New Studies and engage participants in discussing, evaluating, and eventually prioritizing studies for inclusion in the UPWP. Staff also continue to monitor and enhance the MPO's communication channels, such as those listed below:

- An engaging website, which serves as a resource for those seeking to influence transportation planning in the Boston region
- Lively Facebook, Twitter, Instagram, and LinkedIn accounts (@BostonRegionMPO) covering transportation planning news and publicizing MPO events, and a YouTube channel featuring recordings of MPO meetings and virtual events
- A blog that publishes MPO research and data in an approachable format
- Targeted external outreach to advocacy and community groups, especially those representing populations that historically have been less involved in the MPO's processes
- Public in-person and virtual outreach events, hosted by MPO staff or the MPO's partners, where staff present, facilitate activities, and listen at information and resource tables
- Open-house style events, where those seeking feedback and advice on TIP projects, UPWP proposals, or technical assistance applications can interact one-on-one with MPO staff

What is the public review process?

Feedback from public outreach forms a significant part of the input into the UPWP every year. Towards the end of every UPWP development process, the MPO votes to release for public review a draft document that describes ongoing work, new studies, and financial information. Then the MPO invites the public to comment on the Draft UPWP. The MPO staff posts the document for downloading via the MPO's website (www.bostonmpo.org) and publicizes its release via an email distribution list that includes municipal contacts, interested members of the public, and other stakeholders in the region and social media. Email messages inform these contacts about upcoming opportunities for public comment and involvement in MPO decision-making, and for announcing other events sponsored or held by the MPO. The MPO staff also solicit public input during CTPS open houses and at public events hosted by the MPO or its transportation partners (including MassDOT and the MBTA). The MPO staff compiles all of the comments made during this public review period and presents them to the MPO board.

Information about the public review process for the Draft FFY 2023 UPWP is provided in Appendix B.

How are progress and outcomes monitored?

The MPO monitors the progress of studies funded through the UPWP by performing the following tasks:

- Approving detailed work programs and scopes
- Reviewing monthly progress reports
- Tracking UPWP study budgets and updates on actual spending via quarterly reports
- Approving the release of deliverables based on whether the objectives stated in the work program or scope were met and whether the stated deliverables were produced

OVERVIEW OF THIS DOCUMENT

This UPWP document is structured as follows:

- Chapter 1 provides background on the metropolitan transportation planning process and the Boston Region MPO member agencies.
- Chapter 2 provides detailed background and information on the purpose of this document, the process of developing it and monitoring UPWP work, and how it helps the MPO achieve its regional transportation goals.
- Chapter 3 includes descriptions of the certification requirement activities to be completed in FFY 2023 (including the support to the MPO, its committees, and related processes and activities), and the current budgets assigned to each program and activity.
- Chapter 4 describes the following ongoing and discrete CTPS studies and technical analysis work:
 - Summary tables of FFYs 2021–22 UPWP studies that have been completed or are projected to be completed by the end of September 2022, in addition to work products, including reports and technical memoranda
 - MPO planning studies and technical analyses that will be carried over from FFY 2022 to FFY 2023, if any
 - Descriptions of the new planning studies chosen for funding in FFY 2023
 - Updated descriptions of the ongoing technical analysis and support work that the MPO staff conducts for municipalities and the region
- Chapter 5 includes descriptions of the agency-funded transportation planning studies and technical analyses that will be undertaken by CTPS in FFY 2023. These include recurring contracts such as the MassDOT Title VI Program and the MBTA's National Transit Database: Data Collection and Analysis, and new contracts.
- Chapter 6 provides detailed information and FFY 2023 budgets for the resource management and support activities conducted by the MPO staff.

- Chapter 7 provides details on MAPC programs funded through the UPWP, including administrative, support, liaison, and technical assistance, and study activities.
- Chapter 8 includes budget summary tables that present how federal metropolitan planning funds will be spent on the support activities, studies, and programs documented in this UPWP. This chapter provides federal and state officials with necessary information for approving the use of funds and for administering contracts.
- Appendix A presents descriptions of non-MPO transportation-planning projects and studies that are being (or will be) conducted in the Boston region during FFY 2023 and that are funded using federal planning dollars and/or are of regional significance. These projects have a separate review and approval process outside of the MPO's purview. They are included in the UPWP to provide a comprehensive picture of plans and studies that are expected to take place in the Boston region and to ensure that MPO planning efforts are coordinated with other ongoing work.
- Appendix B describes the public participation process used for developing and reviewing the Draft UPWP. This appendix also includes written comments on the Draft UPWP that were received during the public review period.
- Appendix C includes the FFY 2023 Universe of Proposed New Studies and describes the evaluation process that was used by the UPWP Committee and the MPO as a guide for selecting new studies.
- Appendix D contains an updated analysis of the geographic distribution of location-specific studies programmed through the UPWP.
- Appendix E gives detailed information on the regulatory framework that guides the development of the UPWP, and the studies and activities programmed for funding, as well as the overall regulations and guidance that the MPO considers in all of its work.
- Appendix F documents the membership of the MPO in detail.



CHAPTER 1

3C Transportation Planning and the Boston Region Metropolitan Planning Organization

Decisions about how to allocate transportation funds in a metropolitan area are guided by information and ideas gathered from a broad group of people, including elected officials, municipal planners and engineers, transportation advocates, and interested residents. Metropolitan planning organizations (MPO) 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, is required by federal legislation to establish an MPO, which decides how to spend federal transportation funds for capital projects and planning studies for the area.

THE TRANSPORTATION PLANNING PROCESS

The federal government regulates the funding, planning, and operation of the surface transportation system through the federal transportation program, which was enacted into law through Titles 23 and 49 of the United States Code. Section 134 of Title 23 of the Federal Aid Highway Act, as amended, and Section 5303 of Title 49 of the Federal Transit Act, as amended, require that urbanized areas conduct a transportation planning process, resulting in plans and programs consistent with the planning objectives of the metropolitan area, in order to be eligible for federal funds.

The most recent reauthorization of the federal surface transportation law is the Bipartisan Infrastructure Law (BIL), which has succeeded the Fixing America's Surface Transportation Act. The BIL sets policies related to metropolitan transportation planning, and requires that all MPOs carry out a continuing, comprehensive, and cooperative (3C) transportation planning process.

3C Transportation Planning

The Boston Region MPO is responsible for carrying out the 3C planning process in the Boston region. The MPO has established the following objectives for the process:

- Identify transportation problems and develop possible solutions
- Ensure that decision-making balances short- and long-range considerations and adequately reflects the range of possible future scenarios, options, and consequences
- Represent both regional and local considerations, and 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 prioritize transportation activities in a manner consistent with the region's needs and resources

- Comply with the requirements of the BIL, the Americans with Disabilities Act of 1990, the Clean Air Act, 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)

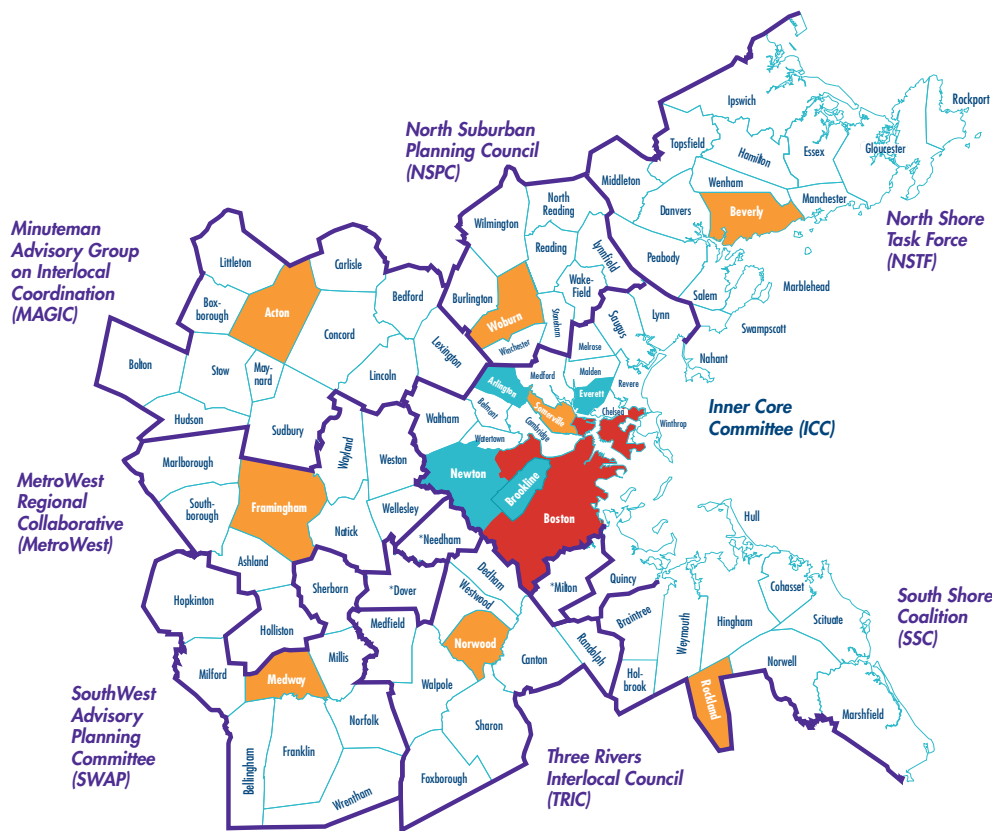
More information about the federal, state, and regional guidance governing the transportation planning process, and about the regulatory framework in which the MPO operates can be found in Appendix E.

THE BOSTON REGION MPO

The Boston Region MPO’s planning area extends across 97 cities and towns from Boston north to Ipswich, south to Marshfield, and west to Interstate 495.

Figure 1-1 shows the map of the Boston Region MPO’s member municipalities.

**Figure 1-1
Municipalities in the Boston Region**



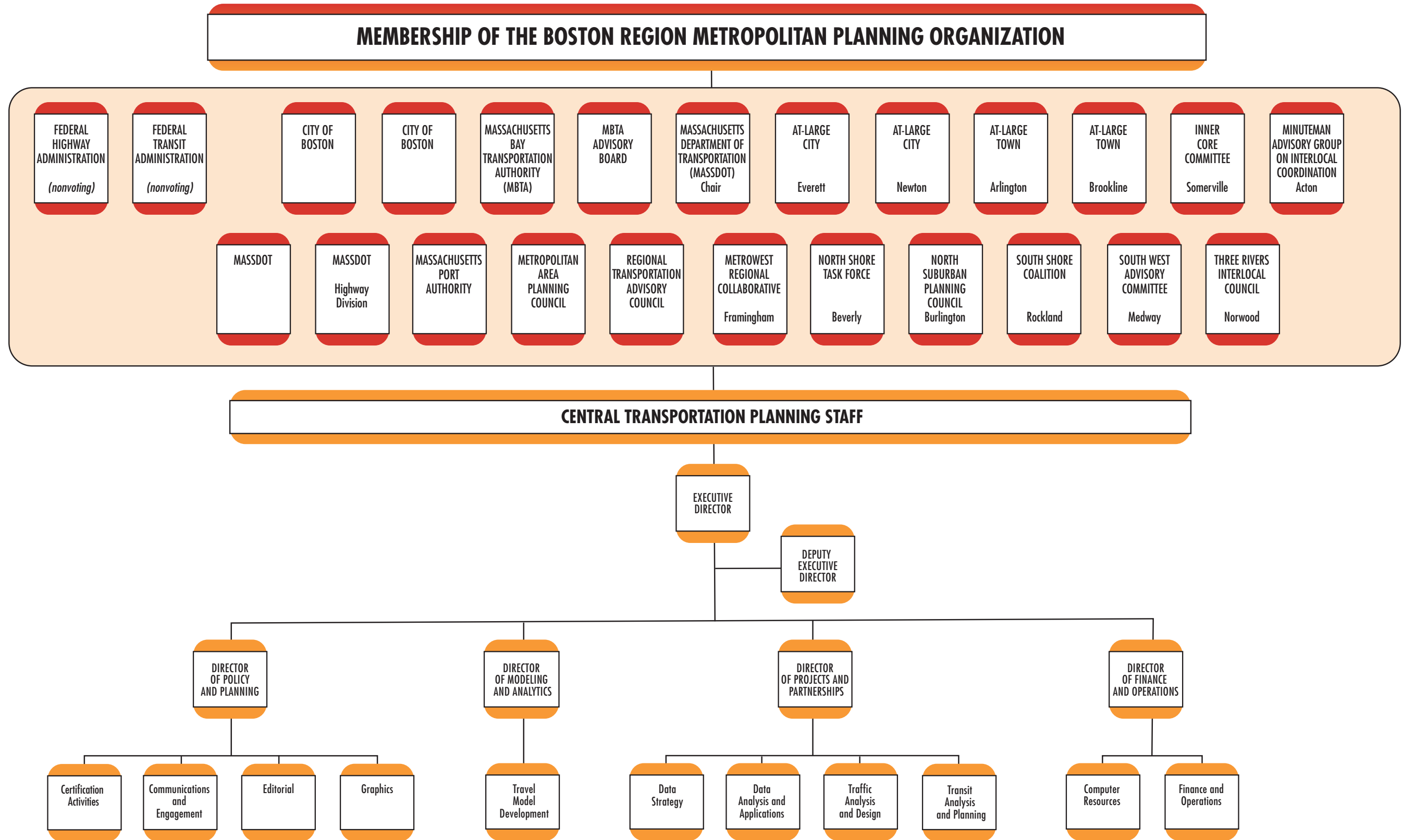
*Community is in more than one subregion: Dover is in TRIC and SWAP; Milton and Needham are in ICC and TRIC.



The MPO's board comprises 22 voting members. Several state agencies, regional organizations, and the City of Boston are permanent voting members, while 12 municipalities are elected as voting members for three-year terms. Eight municipal members represent each of the eight subregions of the Boston region, and there are four at-large municipal seats. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) participate on the MPO board as advisory (nonvoting) members. More details about the MPO's permanent members can be found in Appendix F.

Figure 1-2 shows MPO membership and the organization of the Central Transportation Planning Staff, which serves as staff to the MPO.

**Figure 1-2
Boston Region MPO Organizational Chart**



July 2022



MPO Central Vision Statement

The following paragraph is the MPO's central vision statement, as adopted in *Destination 2040*, the MPO's current Long-Range Transportation Plan (LRTP).

The Boston Region MPO envisions a modern, well-maintained transportation system that supports a sustainable, healthy, livable, and economically vibrant region. To achieve this vision, the transportation system must be safe and resilient; incorporate emerging technologies; and provide equitable access, excellent mobility, and varied transportation options.

This vision statement takes into consideration the significant public input received during the drafting of the Needs Assessment for *Destination 2040*. This statement also reflects the MPO's desire to add emphasis to the maintenance and resilience of the transportation system while supporting the MPO's six core goals: Safety, System Preservation and Modernization, Capacity Management and Mobility, Clean Air and Sustainable Communities, Transportation Equity, and Economic Vitality. More information on the MPO's vision, goals, and objectives for the transportation system is available in Figure 1-3 below.

Certification Documents

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 LRTP, are referred to as *certification documents* and are required for the federal government to certify the MPO's planning process. This federal certification is a prerequisite for the MPO to receive federal transportation funds. In addition to the requirement to produce the LRTP, TIP, and UPWP, the MPO must establish and conduct an inclusive public participation process, and maintain transportation models and data resources to support air quality conformity determinations and long- and short-range planning work and initiatives.

The following is a summary of each of the certification documents.

- The LRTP guides decision-making on investments that will be made in the Boston region's transportation system over the next two decades. It defines an overarching vision of the future of transportation in the region, establishes goals and objectives that will lead to achieving 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. *Destination 2040*, the current LRTP, was endorsed by the MPO board in August 2019 and went into effect on October 1, 2019. Figure 1-3 shows the MPO's goals and objectives as adopted by the MPO board in *Destination 2040*.
- 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, improvements for pedestrians, and first- and last-mile connections to transit or other key destinations. The TIP contains a financial plan that shows the revenue 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 for submission to the FHWA, FTA, United States Environmental Protection Agency, and the Massachusetts Department of Environmental Protection for approval.

- The UPWP contains information about transportation planning studies that will be conducted by MPO staff during the course of a federal fiscal year, which runs from October 1 through September 30. The UPWP describes all of the supportive planning activities undertaken by the MPO staff, including data resources management, preparation of the federally required certification documents, and ongoing regional transportation planning assistance. The UPWP, produced annually, is often a means to study transportation projects and alternatives before advancing to further design, construction, and possible future programming through the TIP. The studies and work products programmed for funding through the UPWP are integrally related to other planning initiatives conducted by the Boston Region MPO, the Massachusetts Department of Transportation, the Massachusetts Bay Transportation Authority, the Massachusetts Port Authority, the Metropolitan Area Planning Council, and municipalities in the Boston region.

**Figure 1-3
LRTP Goals and Objectives**

CENTRAL VISION STATEMENT

The Boston Region Metropolitan Planning Organization envisions a modern, well-maintained transportation system that supports a sustainable, healthy, livable, and economically vibrant region. To achieve this vision, the transportation system must be safe and resilient; incorporate emerging technologies; and provide equitable access, excellent mobility, and varied transportation options.

GOALS

OBJECTIVES

SAFETY

Transportation by all modes will be safe

- Reduce the number and severity of crashes and safety incidents for all modes
- Reduce serious injuries and fatalities from transportation
- Make investments and support initiatives that help protect transportation customers, employees, and the public from safety and security threats

SYSTEM PRESERVATION

Maintain and modernize the transportation system and plan for its resiliency

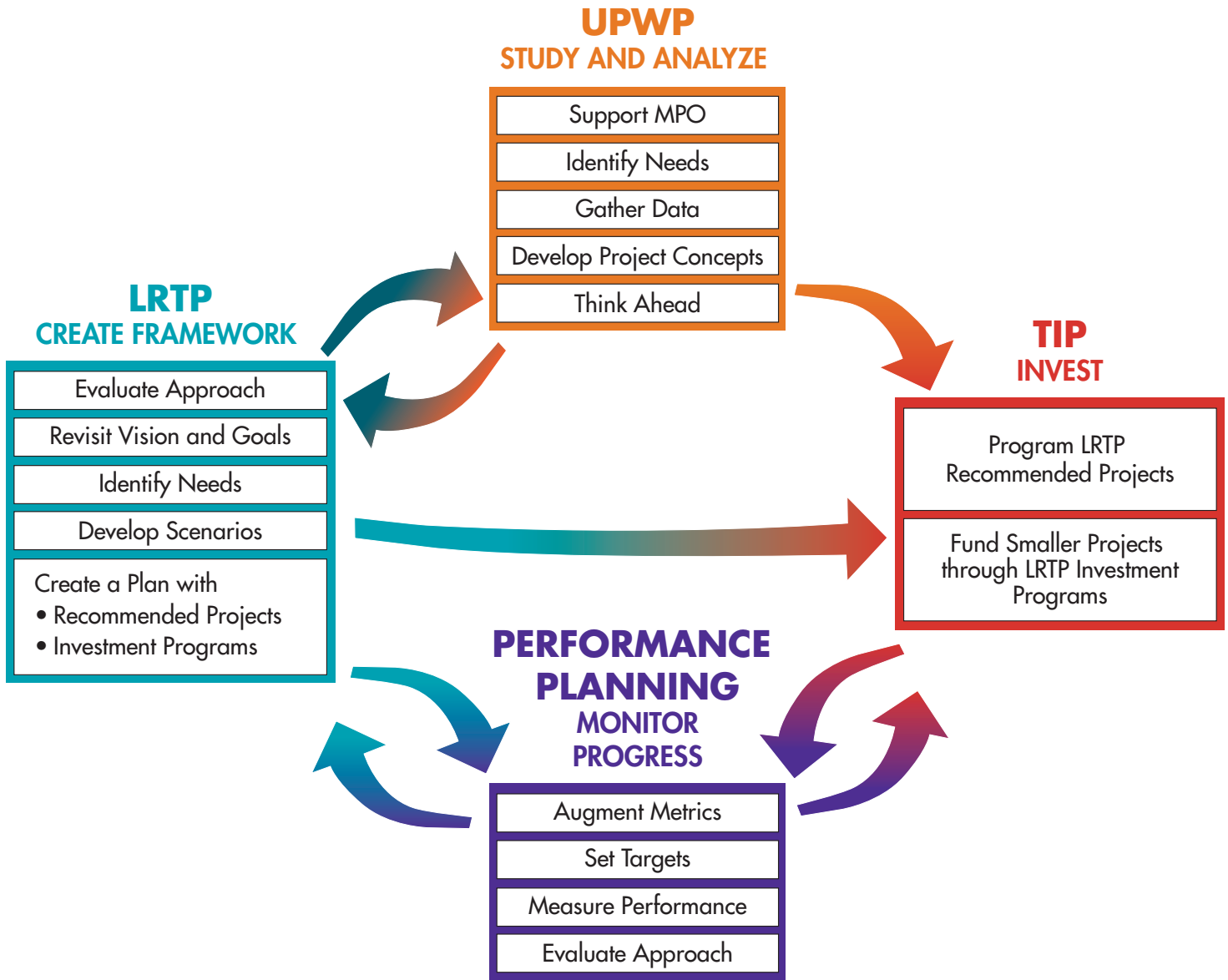
- Maintain the transportation system, including roadway, transit, and active transportation infrastructure, in a state-of-good repair
- Modernize transportation infrastructure across all modes
- Prioritize projects that support planned response capability to existing or future extreme conditions (sea level rise, flooding, and other natural and security-related man-made impacts)

(Figure 1-3 cont.)

GOALS	OBJECTIVES
CAPACITY MANAGEMENT AND MOBILITY	
Use existing facility capacity more efficiently and increase transportation options	<ul style="list-style-type: none">• Improve access to and accessibility of all modes, especially transit and active transportation• Support implementation of roadway management and operations strategies to improve travel reliability, mitigate congestion, and support non-single-occupant vehicle travel options• Emphasize capacity management through low-cost investments; prioritize projects that focus on lower-cost operations/management-type improvements such as intersection improvements, transit priority, and Complete Streets solutions• Improve reliability of transit• Increase percentage of population and employment within one-quarter mile of transit stations and stops• Support community-based and private-initiative services and programs to meet first- and last-mile, reverse commute, and other non-traditional transit/transportation needs, including those of people 75 years old or older and people with a disability• Support strategies to better manage automobile and bicycle parking capacity and usage at transit stations• Fund improvements to bicycle/pedestrian networks aimed at creating a connected network of bicycle and accessible sidewalk facilities (both regionally and in neighborhoods) by expanding existing facilities and closing gaps• Increase percentage of population and places of employment with access to facilities on the bicycle network• Eliminate bottlenecks on freight network; improve freight reliability• Enhance freight intermodal connections
TRANSPORTATION EQUITY	
Ensure that all people receive comparable benefits from, and are not disproportionately burdened by, MPO investments, regardless of race, color, national origin, age, income, ability, or sex	<ul style="list-style-type: none">• Prioritize MPO investments that benefit equity populations*• Minimize potential harmful environmental, health, and safety effects of MPO-funded projects for all equity populations*• Promote investments that support transportation for all ages (age-friendly communities)• Promote investments that are accessible to all people regardless of ability <p>*Equity populations include people who identify as minority, have limited English proficiency, are 75 years old or older or 17 years old or younger, or have a disability; or are members of low-income households.</p>
CLEAN AIR/SUSTAINABLE COMMUNITIES	
Create an environmentally friendly transportation system	<ul style="list-style-type: none">• Reduce greenhouse gases generated in Boston region by all transportation modes• Reduce other transportation-related pollutants• Minimize negative environmental impacts of the transportation system• Support land use policies consistent with smart, healthy, and resilient growth
ECONOMIC VITALITY	
Ensure our transportation network provides a strong foundation for economic vitality	<ul style="list-style-type: none">• Respond to mobility needs of the workforce population• Minimize burden of housing/transportation costs for residents in the region• Prioritize transportation investments that serve residential, commercial, and logistics targeted development sites and "Priority Places" identified in MBTA's Focus 40 plan• Prioritize transportation investments consistent with compact-growth strategies of the regional land-use plan

Figure 1-4 depicts the relationship between the three certification documents and the MPO's performance-based planning and programming process, which is a means to monitor progress towards the MPO's goals and to evaluate the MPO's approach to achieving those goals.

Figure 1-4
Relationship between the LRTP, TIP, UPWP,
and Performance-Based Planning Process





CHAPTER 2

About the Unified Planning Work Program

BACKGROUND

This chapter explains the Unified Planning Work Program (UPWP) and its connection to the overall regional transportation vision developed in the Long-Range Transportation Plan (LRTP). As outlined in Chapter 1, the UPWP plays an integral part of achieving the Boston Region Metropolitan Planning Organization's (MPO) vision and mandate by documenting the federal funding that will be spent on surface transportation studies and work 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.

WHAT DOES THE UPWP DO?

The UPWP is a financial plan that the MPO produces annually in compliance with the federally mandated continuing, cooperative, and comprehensive (3C) metropolitan planning process described in Chapter 1.

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 97-municipality area of the Boston region. The Central Transportation Planning Staff (CTPS) or the staff of the Metropolitan Area Planning Council (MAPC) conduct this work (CTPS is the staff of the MPO and MAPC is the Boston region's regional planning agency). This work primarily consists of the following four parts.

Certification Requirements and Other MPO Support Activities. The UPWP includes activities that the federal government requires the MPO to conduct to remain certified as an MPO and be eligible to receive and distribute federal transportation dollars. Work in this category includes preparing federally required plans such as the LRTP and the Transportation Improvement Program (TIP). The LRTP allocates funding for transportation construction projects and programs over a 20-year period, while the TIP allocates funding for the implementation of projects during the next five years. This category also includes air quality conformity and transportation equity-related compliance and other planning activities associated with the LRTP and TIP. In addition, the UPWP programs the MPO's public participation activities, including support to the Regional Transportation Advisory Council (Advisory Council) and support to meetings of the MPO and its committees.

The UPWP also funds other activities that support MPO planning and certification requirements, including graphics and editing support; managing data and computer resources; and maintaining the MPO's regional travel demand model, which is used to forecast the potential impacts that changes to the transportation system will have on traffic congestion and transit ridership. See Chapters 3 and 6 for more detail about these areas of work.

Ongoing/Continuing Work Programs. Ongoing and continuing work programs support technical analyses and planning studies for cities and towns in the region. Examples of these programs include Bicycle and Pedestrian Support Activities, Regional Transit Service Planning Technical Support, and Community Transportation Technical Assistance. See Chapter 4 for more detail about these programs.

New Studies. Every year, funds are available for the MPO staff to perform new studies. CTPS conducts these activities to enhance staff's and the MPO's knowledge of transportation planning practices, augment analytical methods, and evaluate strategies. Examples of these studies in the FFY 2022 UPWP include Addressing Equity and Access in the Blue Hills and Identifying Transportation Inequities in the Boston Region. See Chapter 4 for more detail about these new studies.

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. CTPS also occasionally conducts planning analyses and studies funded by municipalities. See Chapter 5 for more details on these agency-funded studies.

THE PROCESS OF CREATING AND MONITORING THE UPWP

MPO staff produces the UPWP each year under the supervision and guidance of the MPO's UPWP Committee. The UPWP Committee, supported by MPO staff, convened 10 times in FFY 2022 to consider and provide input on the UPWP development process. Discussion included the following topics:

- proposed budgets for ongoing and continuing activities
- new study ideas and how to prioritize them
- improvements to the UPWP outreach and development process

These meetings resulted in the committee's recommendation for the Draft FFY 2023 UPWP. The MPO approved the UPWP Committee's recommendations for public review of the Draft FFY 2023 UPWP on July 21, 2022.

Below are details about the process for selecting studies and programs for the FFY 2023 UPWP.

Developing the New FFY UPWP

To develop new planning studies for the FFY 2023 UPWP, the MPO drew from the following sources to generate a listing known as the Universe of Proposed New Studies (see Appendix C) for evaluation by MPO staff and the MPO's UPWP Committee.

1. **Public outreach:** Staff held meetings to gain input from subregional planning groups and other stakeholders. Subregional groups—organized by MAPC—involve municipal representatives who are focused on regional planning topics (Figure 1-1). Staff also visited meetings of community-based organizations and transportation advocacy groups during the fall outreach period, and provided opportunities for input at UPWP committee meetings.

2. **Advisory Council:** MPO staff met several times with the Advisory Council to present preliminary drafts of the FFY 2023 Universe of Proposed New Studies and gain ideas and input on transportation planning priorities. The Advisory Council is an independent body that brings public viewpoints and advice on transportation planning to the MPO.
3. **UPWP Committee:** MPO staff met with the UPWP Committee of the MPO throughout development of the UPWP. The committee oversaw the entire document development process and contributed to generating, analyzing, and prioritizing new study ideas.
4. **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 regional Congestion Management Process, which monitors the transportation network to identify locations and sources of congestion; *Focus40*, the MBTA's long-range capital plan; the MPO's long-range planning documents, including the current LRTP *Destination 2040*; *MetroCommon*, MAPC's long-range plan for the region; MassDOT's statewide modal plans; and other recent studies.
5. **Past guidance:** The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) issue guidance on addressing the planning emphasis areas.
6. **FFY 2022 UPWP public comment letters and study proposals:** MPO staff received numerous emails and letters from the public regarding potential study ideas, which were integrated into the Universe of Proposed Studies.
7. **Consultations with MassDOT, the MBTA, and MAPC:** MPO staff consulted with its partner agencies to identify study ideas.
8. **MPO staff-identified needs:** MPO staff shared a survey with other CTPS staff to encourage discussion and sharing of study concepts.

MPO staff works continuously to enhance public participation in the UPWP and other MPO activities, and strives to achieve continued improvements in the volume, diversity, and quality of public input. More information about the MPO's public outreach process is available in Chapter 3, and at www.bostonmpo.org/public_involvement.

Evaluating and Selecting New Studies

MPO staff evaluated each new proposal in the Universe of Proposed New Studies based on how it helps the region accomplish the MPO's goals as laid out in the LRTP; whether staff has the capacity to carry it out; and a variety of other factors.

In addition to conducting the study evaluation process, MPO staff defined general scopes and estimated costs for proposed planning studies and considered potentially feasible issues to study. Staff considered these factors with input from the public, MPO members, and partner agencies, along with the availability of funds for new studies, when identifying a recommended set of new proposed planning studies for review by the UPWP committee.

Table 2-1 shows the studies in the FFY 2023 universe that were selected for funding in FFY 2023. Chapter 4 provides detailed descriptions of these studies.

**Table 2-1
FFY 2023 New Discrete Funded Studies**

Project ID	Study or Program	Proposed FFY 2023 CTPS Budget
TBD	Multimodal Mobility Infrastructure Program	\$338,000
TBD	Update Bicycle/Pedestrian Count Database	\$80,000
TBD	Flexible Fixed-Route Bus Service	\$20,000
TBD	Transit Modernization Program	\$37,500
TBD	Lab and Municipal Parking Study	\$80,000
TBD	Learning from Roadway Pricing Experiences	\$45,000
TBD	Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area	\$67,500
Total for New Discrete and Recurring Studies		\$668,000

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. Staff proposes changes to the budget of any program resulting from revisions to planned activities.

Examples of ongoing and continuing activities comprise work that is required of the MPO, including certification requirements (see Chapter 3), ongoing technical assistance to municipalities (see Chapter 4), and resource management and support activities (see Chapter 6).

The annual study 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.

Public Review of the Draft UPWP

MPO staff incorporates into the draft UPWP descriptive and financial information about ongoing and new UPWP studies, information about the UPWP development process, and other major transportation planning studies that will occur in the region during the relevant federal fiscal year. Appendix D provides an analysis of the distribution of UPWP-funded work products by

subregion and municipality. Once the MPO votes to release the draft for public review, MPO staff posts the document to the MPO website (www.bostonmpo.org) and provides notice of its availability through various communication outlets.

As previously noted, public outreach forms a major part of the input to the UPWP each FFY. After the MPO approves the draft UPWP, there is a public comment period. During this time, MPO staff members solicit public input via the MPO email list, the MPO website, and social media outlets. Staff compiles all public comments received during this period and presents them to the MPO.

Information about the public review process for the Draft FFY 2023 UPWP is available in Appendix B.

Other Regionally Significant Transportation Planning Studies

The UPWP also includes a list (Appendix A) of other federally funded and/or regionally significant transportation planning activities active in the region during the relevant FFY. These activities are not funded with the MPO's planning funds, but may be funded and implemented by individual transportation agencies, municipalities, or academic institutions. Often, these efforts make use of the expertise and tools that CTPS is uniquely able to provide.

Monitoring Progress of UPWP Studies

The MPO approved the following procedures for monitoring the studies in the FFY 2023 UPWP:

- Work programs for tasks that are not permanent (ongoing) MPO programs but are supported by federal 3C planning funds must be approved by the MPO prior to execution of work.
- CTPS work supported by other funding sources (for example, other governmental entities) should be approved by the MPO with the assurance that the new work will not interfere with other MPO-funded work.
- 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:
 - brief narrative describing the work accomplished
 - key personnel attendance at meeting(s) held during the reporting month
 - objectives and planned activities for the next month
 - percent of work completed
 - some measure of actual resources (for example, hours and funds) charged to the contract over the past month
 - comparison of actual cumulative resources expended compared to the contract budget

- CTPS presents a quarterly report that compares 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, MPO staff can make amendments and administrative modifications to the UPWP throughout the year. All 3C documents endorsed by MPOs, such as the TIP, LRTP, and the UPWP, must follow standardized procedures regarding amendments and/or administrative modifications. If an amendment is under consideration, MPO staff notifies the Advisory Council and other interested parties, including any affected communities. The MPO follows the procedures specified in the MPO's Public Engagement Plan.

The following are the guidelines regarding the conditions that constitute an amendment to the UPWP, as received from FHWA by MassDOT and the MPO in FFY 2023 for future UPWPs.

Amendments to the UPWP, defined as significant changes to the overall UPWP that require federal approval, include the following:

- addition or deletion of a UPWP task or sub-task
- major changes to UPWP task descriptions, activities, and other information
- funding increase above the originally approved UPWP overall budget
- funding transfers between tasks equal to or greater than 25 percent of the UPWP task budget
- funding increase or decrease equal to or greater than 25 percent of the UPWP task budget

Administrative modifications to the UPWP, defined as minor adjustments to the overall UPWP that do not require federal approval, include the following:

- minor changes to UPWP task descriptions, activities, and other information
- funding transfers between UPWP tasks less than 25 percent of the UPWP task budget
- funding increase or decrease less than 25 percent of the UPWP task budget

Staff must present all proposed amendments and administrative modifications to the MPO for consultation prior to endorsement. The UPWP Committee will review both amendments and administrative modifications before forwarding them to the MPO. MPO members must vote to approve both amendments and administrative modifications. For amendments, the MPO will vote to either release the amendment for a 21-day public comment period or waive said comment period (upon recommendation from the UPWP Committee) prior to an endorsement vote. Members of the public may attend and provide comments at UPWP committee meetings and MPO meetings at which amendments and administrative modifications are discussed. The MPO

may make administrative modifications without a public review period at the MPO's discretion, although information will be shared with MassDOT's Office of Transportation Planning (OTP). When submitting the standard Budget Reallocation Request form to OTP, staff must fill out all fields with clear indication that the MPO was consulted prior to submission. Staff must submit back-up documentation, including the UPWP description of task(s) affected, original budget, revised budget, and justification for the request. Amendments will go into effect after approval by FHWA.

HOW IS THE WORK FUNDED?

See Chapter 8 for detailed information about the UPWP budget.



CHAPTER 3

Certification Requirements

INTRODUCTION

The programs and activities described in this chapter are categorized as certification requirements because they include work that the Boston Region Metropolitan Planning Organization (MPO) must complete to fulfill the continuous, comprehensive, and cooperative (3C) process and to maintain its certification by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Several of these programs include activities that are necessary to comply with other federal and state laws, such as the federal Clean Air Act Amendments (CAAA), Title VI of the Civil Rights Act of 1964, the Americans with Disabilities Act of 1990 (ADA), and the Global Warming Solutions Act (GWSA).

The certification requirement activities serve to further the MPO operations and decision-making responsibilities. In addition, various programs described in this chapter directly relate to the MPO's planning and programming activities, including the development of the regional Long-Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP). Other activities described in this chapter support all other projects, studies, and programs contained in this Unified Planning Work Program (UPWP) in compliance with the 3C planning process and planning regulations. These activities foster the implementation of MPO policies, federal planning factors and guidance, and all applicable orders and requirements.

Table 3-1 summarizes the ongoing programs conducted as part of the MPO's certification requirements and related MPO support. The table presents the funding in federal fiscal year (FFY) 2022 and FFY 2023 and includes a brief description of the work, progress, and products for these ongoing programs. Although many of these programs generally comprise the same type of task from year to year, often there are variations in budgets that reflect greater or lesser emphasis in certain efforts or tasks. For example, MPO staff may undertake new or additional analyses under specific line items; expand or change the form of public outreach; fold tasks undertaken in one year into an ongoing activity in a subsequent year; take on a new initiative of the MPO; or experience fluctuations in staffing levels that account for budget changes. Where appropriate, the table and individual program descriptions explain these differences.

The budget tables that accompany each of the individual program descriptions in this chapter include the salary and overhead costs associated with these programs. In this chapter, the programs are grouped into two general activity areas: (1) programs that support the MPO and its 3C process (see the section on Support to the MPO and Its 3C Process) and (2) programs that support the 3C planning and programming activities (see the section on 3C Planning and Other Certification Requirements). Any direct costs associated with the projects are presented in Chapter 6 in the Direct Support budget table, under the Administration, Resource Management, and Support Activities section.

**Table 3-1
FFY 2023 Certification Requirements**

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Support to the MPO					
Support to the MPO and its Committees	9123	\$240,000	<p>Continued support to the meetings and activities of the MPO board and its committees. Work entailed</p> <ul style="list-style-type: none"> • Preparing meeting and information materials, including agendas, minutes, notices, document translations, memoranda, reports, correspondence, summaries, website content, maps, charts, illustrations, and other visual materials as needed to support MPO discussion and actions • Posting meeting materials in digital form on the MPO meeting calendar webpage and in hard copies that are provided at meetings • Hosting approximately 24 MPO meetings and 18 MPO subcommittee meetings, and performing the associated tasks and pre- and post-meeting logistics • Conducting activities to support compliance with federal requirements and guidance, including coordination with neighboring MPOs, MassDOT, and federal partners 	\$355,088	<p>Tasks and work products generally remain the same from year to year, with variations to the level of effort based on the specific requests by the MPO and state and federal partners.</p> <p>Generally, the expected effort includes</p> <ul style="list-style-type: none"> • Hosting approximately 24 MPO meetings and 10 MPO subcommittee meetings, and performing the associated tasks and pre- and post-meeting logistics • Coordinating 3C planning and programming activities and programs • Coordinating with state and federal partners • Coordinating with neighboring MPOs • Supporting the Transportation Policy Task Force
Regional Transportation Advisory Council (Advisory Council) Support	9323	\$40,000	<p>Continued support to the Advisory Council. Tasks generally consist of organizing and conducting the Advisory Council's monthly meetings and annual field trip, including</p> <ul style="list-style-type: none"> • Preparing and distributing informational materials, including documents posted on the MPO's website and via email • Organizing and hosting virtual Advisory Council meetings and subcommittee meetings • Attending and recording meetings • Completing meeting follow-up activities, such as maintaining the information flow for members of the Advisory Council and the public, and preparing meeting minutes 	\$18,000	<ul style="list-style-type: none"> • Organizing and hosting approximately 11 Advisory Council meetings and several subcommittee meetings, as needed, and performing associated support tasks and pre- and post-meeting logistics • Conducting targeted outreach efforts to expand Advisory Council membership and seek representation on the Advisory Council from organizations representing people with disabilities, people with low incomes, people who identify as a race other than white and/or who identify as Hispanic or Latino/a/x, people with limited English proficiency, young people, and older adults • Aligning Advisory Council activities with the broader Public Engagement Program of the MPO

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Public Engagement Process	9623	\$182,290	<ul style="list-style-type: none">Supported the MPO's commitment to engage the people of the Boston region in the transportation planning process, including residents of communities that have been underserved by the transportation systemCommunicated about the MPO's meetings and planning activities via the web, emails, newsletters, blog posts, Twitter, Instagram, Facebook, and LinkedInEngaged the public through virtual outreach events, MAPC subregional meetings, virtual meetings with stakeholder organizations, focus groups, surveys, and other digital communicationsConveyed public comments and input to MPO members and staff about MPO programs and processes	\$278,000	<ul style="list-style-type: none">Continue support of the MPO's commitment to inclusion through timely communications and accessible engagement opportunitiesEngage in continuous conversations with stakeholders and the public to inform the MPO's decision-making and work on certification documents, projects, and other programsDeliver MPO communications to municipalities, stakeholders, and the publicEvaluate the Public Engagement Plan and recommend improvementsExpand engagement with non-English speaking communities
General Graphics	9223	\$85,290	Provided graphics support to the MPO and its member agencies. This includes <ul style="list-style-type: none">Designing and producing maps, charts, illustrations, report covers, brochures, slides, and photographsApplying other visualization techniquesCreating other products that improve communication	\$243,500	In FFY 2023, Provision of Materials in Accessible Formats will be incorporated in the General Graphics line item. Tasks and work products for both line items generally remain the same from year to year, although the level of effort varies based on the specific work products and reports that the MPO produces each year and those that need to be converted into accessible formats.
General Editorial	9723	N/A	N/A (new program as of FFY 2023)	\$174,000	In FFY 2023, the General Editorial line item will be introduced. Tasks and work products for this line item generally remain the same from year to year, although the level of effort varies based on the specific work products and reports that the MPO produces each year.
Provision of Materials in Accessible Formats	3122	\$102,040	Supported the MPO and CTPS in <ul style="list-style-type: none">Producing accessible materials in PDF and HTML formats for posting on the Boston Region MPO websiteAssisting in producing materials, including meeting minutes, work scopes, memoranda, reports, and other public materialsReviewing accessibility requirements and current CTPS standards and processesImplementing standards within memorandum and report templates	N/A	In FFY 2023, Provision of Materials in Accessible Formats will be incorporated in the General Graphics line item.

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
3C Planning and Other Certification Requirements					
Long-Range Transportation Plan	8123	\$326,000	<ul style="list-style-type: none">Continued to implement <i>Destination 2040</i>, the LRTP adopted in August 2019, including by carrying out and refining investment programs and initiatives outlined in the LRTP. Established new guidelines for the LRTP Major Infrastructure Program, which is now being implemented in the TIPSynthesized and presented feedback gathered during the Informing the Big Ideas behind the MPO’s scenario planning processConducted public outreach on LRTP topics, including Needs Assessment updates and the MPO’s vision, goals, and objectivesContinued to monitor current state-of-the-practice communications methods, planning tools, and approachesConducted research and analysis and started developing materials for the Needs Assessment for <i>Destination 2050</i>Created and made updates to a web page for the <i>Destination 2050</i> development process.Continued to coordinate with MassDOT, MAPC, and other MPOs to develop socioeconomic projections for 2050Began processes to develop and analyze scenarios to support the MPO’s next LRTP.Coordinated with MassDOT, the MBTA, the region’s RTAs, other MPOs, and other stakeholders regarding LRTP development	\$362,500	<ul style="list-style-type: none">Finalize the Needs Assessment for <i>Destination 2050</i>, share results and materials, and develop processes for maintaining and updating information over timeComplete exploratory scenario planning work to support <i>Destination 2050</i> developmentContinue to review the MPO’s planning framework and make updates as necessaryConduct and report about public outreach to support <i>Destination 2050</i> activities, including scenario planning; creating a planning framework, and selecting investment programs and projectsIdentify, evaluate, and select projects and programs for the recommended LRTPAnalyze the recommended plan with respect to greenhouse gas emissions and equity outcomesDocument, seek public feedback on, and finalize the next LRTP, <i>Destination 2050</i>Address comments on <i>Destination 2050</i> from state and federal agenciesContinue implementation of <i>Destination 2040</i> and prepare amendments if necessaryContinue to monitor best practices in planning and communication, as well as developments in key issue areasRespond to changes to the SIP

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Transportation Improvement Program	8223	\$274,000	<ul style="list-style-type: none">• Developed the FFYs 2023–27 TIP• Administered amendments to the FFYs 2022–26 TIP• Conducted outreach to municipalities, TIP contacts, and subregional groups about TIP development and specific TIP projects, both funded and being considered for funding• Coordinated with MassDOT Highway District offices, MassDOT’s Office of Transportation Planning, and MPO members on TIP projects, TIP amendments, and the TIP process• Continued updating the public-facing TIP project web application• Continued implementing TIP project selection criteria through the creation of new scoring methodologies and other supporting materials• Implemented MPO policy development on project cost changes and other TIP programming issues as approved by the MPO’s Project Cost Ad Hoc Committee	\$323,000	<p>Activities generally remain the same year to year, with staff supporting the MPO in developing its five-year (FFYs 2024–28) TIP. FFY 2023 work will also focus on</p> <ul style="list-style-type: none">• Continuing to refine the public-facing TIP web application and the internal TIP project database to reflect evolving MPO needs on project cost tracking and related concerns• Enhancing outreach to municipalities and TIP contacts to communicate the changes to TIP programming policies• Sourcing projects to fund through the TIP within the LRTP’s new investment programs, including transit modernization, dedicated bus lane, and resiliency projects• Making further improvements to the TIP development process to make it clearer and more engaging for municipal stakeholders, MPO members, and the public• Continuing to report on the progress of the MPO’s PBPP program

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Performance-Based Planning and Programming	8823	\$125,000	<ul style="list-style-type: none">• Conducted analysis, made presentations, and developed documents to help the MPO set or update targets for federally required roadway safety, transit safety, transit asset management, congestion, and emissions performance measures. Began analyzing data to support target-setting for other federally required performance measures• Incorporated information about federally required measures and other metrics in the Needs Assessment for <i>Destination 2050</i>, the MPO's next LRTP• Coordinated with MassDOT, the MBTA, CATA, MWRTA, FHWA, and other stakeholders on target setting and other PBPP topics• Analyzed project-level data and created a performance report for the FFYs 2023–27 TIP• Developed the Full Performance Period CMAQ Progress Report for the first federal performance period and the CMAQ Performance Plan for the second federal performance period• Explored the functionality and potential applications of Conveyal destination access analysis software• Monitored federal guidance and identified ways to integrate PBPP into MPO processes, including TIP and LRTP development• Updated data and content in the MPO's Performance Dashboard and on the PBPP page of the MPO website• Explored software applications to support performance management, target setting, and methods for displaying performance data• Attended conferences and webinars and participated in working groups to learn ways to expand the MPO's PBPP practice	\$117,000	<ul style="list-style-type: none">• Support the MPO in setting targets for federally required measures and other measures, as requested. Analyze data and prepare related presentations, memoranda, and other supporting documents and materials• Enhance activities to integrate performance management into MPO project and program evaluations, to manage data, and to anticipate and monitor the outcomes of MPO investments• Produce or update performance reports, such as those required for the LRTP and TIP.• Develop and/or update MPO applications that include performance data• Explore other measures and methods that the MPO could incorporate into its PBPP process, as well as tools the MPO can apply to PBPP work• Develop or update materials to explain PBPP concepts and activities, including the MPO's PBPP web page• Coordinate with MPO program managers, MPO board members, MassDOT, the region's public transportation providers, other states and MPOs, federal agencies, and other partners to research measures, identify investment strategies, set targets, and otherwise implement PBPP practices• Work with fellow staff, the MPO, and other stakeholders to link MPO investment processes more closely to performance outcomes. Produce memoranda and presentations describing related recommendations

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Air Quality Conformity and Support	8423	\$34,690	<ul style="list-style-type: none">• Performed project-level air quality analysis for conformity with Federal and State Requirements for the TIP• Attended statewide CMAQ consultation meetings• Supported MPO's climate change initiatives• Attended EPA MOVES 3 training and trained staff to run the new MOVES 3 model with MPO specific inputs• Responded to requests for information on the Boston MPO's air quality analysis using MOVES and the travel demand model and other environmental issues• Attended other MPO environmental consultation meetings and began to prepare for the Boston MPO environmental consultation meeting	\$21,000	<ul style="list-style-type: none">• Continue to work with state and local agencies in developing additional emission factors as needed for transportation project analyses• Perform system-level and project-level air quality analysis for the TIP and any required LRTP Amendments• Continue to support the MPO's climate change initiatives• Continue to prepare for and hold the Boston MPO environmental consultation meeting
Unified Planning Work Program	8323	\$127,480	<ul style="list-style-type: none">• Developed the FFY 2023 UPWP• Conducted outreach to municipalities and other stakeholders in the region through MAPC subregional meetings, digital communications, and conversations with agencies to develop study ideas for the UPWP• Conducted outreach to advocacy and policy groups and interested citizens to gauge needs and collect study ideas for the FFY 2023 UPWP and beyond• Discussed UPWP matters with Advisory Council, including development of study ideas for the UPWP and education about the UPWP products and process• Held internal discussions on potential future changes to the UPWP process and document	\$101,500	Activities generally remain the same year to year, with staff supporting the MPO in producing its annual (FFY 2024) UPWP. A potential point of emphasis in FFY 2024 may be streamlining the outreach and development processes to ensure effective communication with stakeholders and the committee.

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Transportation Equity Program	8523	\$174,100	<ul style="list-style-type: none">Supported the MPO's public participation program in outreach to and engagement with Title VI, EJ, and other nondiscrimination populationsProvided technical support to the LRTP Needs Assessment, TIP, and MPO-guided studiesFinished revising metrics analyzed in the LRTP DI/DB analysisDeveloped staff language assistance guideUpdated the website to new translation toolMaintained equity Census data for the MPOSupported project-related EJ analyses	\$177,000	Activities generally remain the same year to year. New activities will include completing a Triennial Title VI Report, completing a new Coordinated Human Services Transportation Plan, continuing the development of equity performance metrics as initiated in the study Identifying Transportation Inequities in the Boston Region, and supporting the LRTP Needs Assessment and Scenario Planning for the LRTP.
Congestion Management Process	2123	\$118,240	<ul style="list-style-type: none">Monitored the performance of the MPO Region's arterial roadways and freeways using electronic travel-time and speed dataMapped and tabulated electronic data for analysis and performance evaluationCoordinated and supported the MPO's programs and documents (LRTP, PBPP, TIP, and UPWP)Supported the MPO's CMP committee	\$134,000	<ul style="list-style-type: none">Monitor the performance of MPO-region arterial roadways and freeways using electronic travel-time and speed dataMap and tabulate electronic data for analysis and performance evaluationMonitor the performance of the MBTA Park and Ride LotsCoordinate with and support the MPO's programs and documents (LRTP, TIP, PBPP, and UPWP)Support the MPO's CMP committee

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Freight Planning Support	2223	\$68,340	<ul style="list-style-type: none">• Modernized format and availability of data previously collected by the Freight Program• Supported required MPO freight and comprehensive planning• Held dialogue with CTPS model development team in support of advanced model implementation• Pursued opportunities for collaborative work with partners on freight planning• Built relationships with key freight stakeholders• Conducted freight-related research on several topics	\$93,000	<ul style="list-style-type: none">• Research and publish freight-related memoranda or studies• Support stakeholder freight-related analytical or planning needs• Support required MPO freight and other comprehensive planning• Collaborate with other teams at CTPS, including model improvement and implementation, TIP evaluation, and LRTP support• Pursue opportunities for collaborative and externally funded work• Continue to modernize MPO freight data both internally and for public availability• Develop an interactive freight data application for the web page
Regional Model Enhancement	7123	\$840,000	<ul style="list-style-type: none">• Conducted regular meetings with model steering committee with CTPS, MAPC, OTP, and Boston Region MPO board members to guide maintenance priorities, development of the next generation model for the 2023 LRTP, and definition of other modeling tools• Defined updates to TAZ geography to improve consistency with 2020 census data boundaries.• Developed 2023 LRTP travel demand model (TDM23) detailed design• Implemented TDM23 core components in Python and TransCAD• Initiated system and component level validation• Maintained and enhanced the TDM19 trip-based regional travel demand model	\$890,000	<ul style="list-style-type: none">• Implement airport ground access, commercial vehicle, and special generator components to TDM23• Finalize land use, transit, and highway networks for a 2019 model base year• Complete validation, conduct training, and move to maintenance and support phase for TDM23• Adoption of TDM23 features for current trip-based travel demand model for near-term applications• Continue engagement with model steering committee and broader set of stakeholders to promote understanding of model capabilities and limitations and stakeholder needs

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Research Next Generation Data and Tools	7223	\$57,790	<ul style="list-style-type: none"> Obtained, reviewed, and enhanced detailed employment data from Data Axle Reviewed tools for conducting data analysis and visualizing and sharing data Reviewed articles about data strategy, analysis, and reporting methods 		see Data Program
Transit Working Group Support	8923	\$64,120	<ul style="list-style-type: none"> Hosted four working group meetings and a series of small discussion groups (“coffee chats”), and managed pre- and post-meeting communications and logistics Updated the MPO about Transit Working Group development and activities Updated the Transit Working Group web page Summarized meeting discussions Hosted a forum on microtransit in cooperation with MAPC and the MBTA Advisory Board Researched topics and issues that may be relevant to future Transit Working Group meetings 	\$42,000	<ul style="list-style-type: none"> Host quarterly working group meetings Host one to two coffee chats per month Host one-off additional events as proposed Manage pre- and post-meeting logistics Develop materials and resources to support working group meeting and activities, as needed Provide updates to the MPO about the transit working group Support communication for and about the group using email, social media, and the MPO website Prepare documentation about pilot working group meetings, activities, and participant feedback for the MPO
MPO Resilience Program	8723	\$11,000	<ul style="list-style-type: none"> Met internally on a monthly basis to coordinate on resiliency issues on work within the agency Met with state and regional agencies on an ongoing basis. Meetings were held bimonthly or as needed with MassDOT Environmental, MBTA Resiliency staff, MAPC staff from the Clean Energy and Environmental groups, and the Resilient Mystic Collaborative Continued to inventory resiliency work being conducted at the municipal level through the Municipal Vulnerability Program Worked with MassDOT to obtain sea level rise data from the MCFRM. This information will be used as part of the MPO’s LRTP in the Needs Assessment Staff continued to familiarize themselves with resiliency issues throughout the region 	\$44,000	<ul style="list-style-type: none"> Prepare and present information on the MPO’s All-Hazards Planning application at an upcoming FHWA webinar Contribute resiliency materials to the upcoming LRTP, <i>Destination 2050</i> Continue to coordinate and inventory climate resiliency activities in the MPO region Coordinate and collaborate with other entities conducting resilience work Participate on resiliency-focused groups at the state, local, and regional level Pursue educational opportunities to gain subject-matter expertise Conduct monthly internal Resiliency Committee meetings

(Table 3-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Progress and Products	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
Data Program	5023	n/a	n/a; program new in FFY 2022	\$572,000	<ul style="list-style-type: none">• Develop a guiding vision for our data and related processes• Develop a data strategy plan to attain progress towards the vision• Develop and maintain a data roadmap• Develop a process and guidelines for serving data requests• Respond to requests for data and small-scale data processing studies• Assess existing and emerging datasets, analytical tools, and techniques• Create design requirement specifications describing the necessary components of new analytical tools and data sets• Recommend data for planning application• Develop foundational work on socioeconomic datasets• Maintain, curate, and enhance spatial and tabular reference data, tools, and distribution channels• Maintain the MPO website• Create design requirement specifications for new processes, services, and platforms• Adopt documentation platforms along with standards and procedures for use• Adopt a data publication platform and data publication standards

SUPPORT TO THE MPO AND ITS 3C PROCESS

These programs provide staff support to the MPO, its committees, and the Regional Transportation Advisory Council (Advisory Council). Other aspects of the work involve the MPO's external communications and public engagement activities. These activities are described in the following work program efforts.

- Support to the MPO and Its Committees
- Regional Transportation Advisory Council Support
- Public Participation Process
- General Graphics
- General Editorial
- Professional Development

Other programs that support 3C planning and programming activities are described in Chapter 4.

Support to the MPO and its Committees

Project ID Number	9123
FFY 2023 Total Budget	\$355,088
Schedule	Ongoing

Purpose

Support to the MPO and its committees includes implementing MPO policies, planning and coordinating delivery of information for MPO decision-making, and supporting the operation of the MPO and its committees. It involves providing support for MPO meeting management and agenda planning.

Approach

MPO staff will perform the following tasks related to MPO board and committee meetings.

- Develop meeting agendas
- Prepare and distribute informational materials via email and the MPO's website
- Conduct meeting site selection and logistics planning
- Set up digital arrangements for virtual meetings and audio/visual equipment for in-person meetings
- Attend and record meetings
- Complete 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 UPWP Committee, Administration and Finance (A&F) Committee, Congestion Management Process (CMP) Committee, and other ad hoc committees. The identified committees of the MPO conduct their work as follows.

- The UPWP Committee meets as needed to develop a UPWP for the upcoming FFY and to monitor expenditures and the progress of studies and programs in the current fiscal year.
- 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 CMP Committee meets as needed to discuss the federally required CMP. Activities include developing and reviewing its TIP Intersection Improvement Program and making recommendations to the MPO.

MPO support also includes conducting metropolitan transportation planning for the MPO. The goal of this work is to ensure compliance with federal requirements and to provide excellence in transportation planning processes, techniques, and outcomes. The work involves researching, analyzing, and reporting information on 3C planning topics, responding to federal recommendations, and incorporating new requirements into the MPO's 3C program. MPO staff will implement the new Bipartisan Infrastructure Law requirements (see Chapter 2 and Appendix E) as guidance is communicated to the MPO, and staff will be prepared to implement future legislation. Staff also participates in training to support compliance with federal requirements and guidance. Staff will support updates to governing Memorandum of Understanding (MOU) between the Boston MPO and partner agencies when necessary.

This effort also includes collaboration with other entities involved in 3C planning activities, other Massachusetts MPOs (particularly those in the Boston region urbanized area), and Metropolitan Area Planning Council (MAPC) subregional municipal groups.

Other activities include overseeing 3C program-related activities, collecting and fielding comments and inquiries, and responding to requests for information and support.

FFY 2023 Anticipated Outcomes

- Host approximately 24 MPO meetings and 10 MPO subcommittee meetings, and performing the associated tasks and pre- and post-meeting logistics
- Coordinate 3C planning and programming activities and programs
- Coordinate with state and federal partners
- Coordinate with neighboring MPOs, including attendance at monthly transportation managers' group meetings

Regional Transportation Advisory Council Support

Project ID Number	9323
FFY 2023 Total Budget	\$18,000
Schedule	Ongoing

Purpose and Approach

The Advisory Council is the MPO's public 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 facilitate 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 regularly provide 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.

FFY 2023 Anticipated Outcomes

- Host approximately 11 Advisory Council meetings and several subcommittee meetings, associated tasks, and pre- and post-meeting logistics

Public Engagement Process

Project ID Number	9623
FFY 2023 Total Budget	\$278,000
Schedule	Ongoing

Purpose

Public engagement is one of the core functions of an MPO. Engaging the public in the transportation planning process improves decision-making by helping to illuminate the social, economic, and environmental impacts of transportation planning decisions. Continuous engagement supports a communication loop that allows the MPO to build and maintain relationships with stakeholders, advocates, community leaders, and members of the public. The MPO’s vision for public engagement in the region is to hear, value, and consider, throughout all planning work, the needs and views from the full spectrum of the public and incorporate this input in decision-making.

Staff coordinates public engagement efforts with the MPO’s Transportation Equity (TE) Program to ensure that all members of the public—including populations that have been traditionally underserved by the transportation system and/or have historically lacked access to the decision-making process—are given the opportunity to participate in the transportation planning process that shapes the Boston region.

Approach

Implementing the Public Engagement Process

MPO staff implement the MPO’s Public Engagement Process according to the MPO’s Public Engagement Plan (PEP). The process includes coordinating and implementing the MPO’s public engagement activities via external communication and proactive engagement efforts. This process provides information to individuals, organizations, and representatives of communities and populations, and collects input from them for MPO use in planning and decision-making, and in developing certification documents. During FFY 2023, staff will evaluate the Public Engagement Plan to ensure that it reflects current best practices and the MPO’s engagement goals.

Communication Methods

MPO staff endeavor to provide convenient, timely, and meaningful opportunities for engagement while disseminating information that is concise, current, and accessible. Staff will use in-person and virtual meetings, printed materials, conversations with the news media, and digital tools such as website content, email campaigns, and social media, for external communications.

Engagement Methods

Through the MPO's Public Engagement Process, staff work to provide opportunities for members of the public to participate in transportation planning and to ensure that everyone's voice may be heard, valued, and considered. These opportunities include the following:

- MPO meetings
- Advisory Council meetings
- MAPC subregional municipal group/coordination meetings
- stakeholder organizations' meetings
- open house events to publicize and solicit feedback on certain MPO efforts
- electronic surveys and solicitation of comments and input
- partnerships with other organizations on their events and communications efforts
- meetings and continuous dialogue with organizations representing TE populations and other underrepresented populations

Program Administration

MPO staff will continue to explore and refine the Public Engagement Process to increase public understanding of the MPO's work and improve its efforts to break down barriers to participation.

In accordance with the MPO's Language Assistance Plan, the Public Engagement Process supports the MPO's federally required efforts to provide language access (both interpreter and translation services) at MPO-sponsored meetings, as well as outreach events as necessary. Translation and interpreter services are funded as a direct cost. As public engagement is a critical avenue for members of the public to be involved in and benefit from the planning process, staff provide translations of outreach documents, emails, the MPO website, and other materials that allow for participation that is comparable to those with English language fluency. Translations are provided in the six most commonly spoken non-English languages in the MPO region.

FFY 2023 Anticipated Outcomes

- Deliver MPO communications to municipalities, stakeholders, and the public
- Conduct engagement activities with municipalities, stakeholders, and the public
- Develop printed and digital communication materials
- Evaluate the Public Engagement Plan

General Graphics

Project ID Number	9223
FFY 2023 Total Budget	\$243,500
Schedule	Ongoing

Purpose

MPO staff will provide graphics support to the MPO and its member agencies. This includes designing and producing maps, charts, illustrations, report covers, brochures, slides, story maps, guidebooks, presentations, and photographs; applying other visualization techniques; and creating other products that improve communication.

The MPO conducts its transportation planning activities and public outreach process in accordance with ADA, Section 508 of the Rehabilitation Act as amended in 1998, and other policies and regulations governing accessibility standards. MPO staff will produce materials in adherence to these policies and regulations as appropriate to enhance public outreach and engagement and provide access to MPO informational materials and reports for more stakeholders in the region.

Approach

In support of the above-referenced accessibility standards, the MPO produces written and electronic materials in accessible formats. The MPO also maintains a library of document templates that incorporate accessibility guidelines and standards. To ensure web access for people with low or no vision who use screen readers, all documents are posted to the MPO website and meeting calendar in both PDF and HTML formats. In addition, the MPO makes every effort to make data presented in tables fully navigable by a screen reader and provides alternative text to describe tables, figures, and images that cannot be read by a screen reader.

FFY 2023 Anticipated Outcomes

- Produce maps, charts, illustrations, report covers, brochures, slides, story maps, guidebooks, presentations, photographs, and other products that improve communication
- Produce materials in accessible formats for public meetings and website postings
- Maintain accessible document templates
- Maintain and update accessibility guidelines and standards for MPO products as needed

General Editorial

Project ID Number	9723
FFY 2023 Total Budget	\$174,000
Schedule	Ongoing

Purpose

The MPO's editorial staff members work with staff throughout CTPS to develop written products that communicate the MPO's work, deliver study results, and provide the MPO board, committees, and the public with discussion materials. This work includes reviewing and editing reports, memoranda, guidebooks, presentations, and other public-facing materials, as well as documents internal to CTPS. The editorial process focuses on making improvements to document structure, correcting grammar, ensuring proper word usage, and adhering to accessibility requirements.

FFY 2023 Anticipated Outcomes

- Provide quality control for written materials
- Maintain standards for accessibility in written materials
- Maintain editorial guidelines and update as necessary

3C PLANNING AND OTHER CERTIFICATION REQUIREMENTS

These programs produce the core documents and work products that the MPO's federal partners require and are the center of the MPO's transportation planning work. These programs cover budgeting, planning, capital programming, and performance management, among other topics, and include the following programs:

- LRTP
- TIP
- Performance-Based Planning and Programming (PBPP)
- Air Quality Conformity Determinations and Support
- UPWP
- TE Program (which includes the development of the Coordinated Public Transit–Human Services Transportation Plan)
- CMP
- Freight Planning Support
- Regional Model Enhancement
- Data Program
- Transit Working Group Support

Long-Range Transportation Plan

Project ID Number	8123
FFY 2023 Total Budget	\$362,500
Schedule	Ongoing

Purpose

The LRTP guides transportation system investments for the Boston metropolitan region for at least the next 20 years and must be updated every four years per federal regulations. The MPO adopted its most recent LRTP, *Destination 2040*, in August 2019. This LRTP serves as the Boston Region MPO's guiding document: it establishes regional goals and objectives and investment approaches that the MPO will use for future decision-making until September 30, 2023. During FFY 2023, staff will work with MPO members to finish creating *Destination 2050*, the next LRTP, which will go into effect in FFY 2024. Staff will also continue to implement *Destination 2040*, the current plan, and will carry out other activities to strengthen the MPO's long-range planning process.

Approach

LRTP Needs Assessment

The MPO's LRTP Needs Assessment provides data, analysis, summaries of research and public feedback, and recommendations to guide the development of the LRTP. It can also inform decision making for the TIP and UPWP and support other MPO work, such as selecting corridor study locations. The *Destination 2040* Needs Assessment and related resources are available on the MPO's website.

In FFYs 2021 and 2022, MPO staff gathered data and stakeholder feedback, conducted analysis, identified preliminary recommendations, and prepared materials to be included in the *Destination 2050* Needs Assessment. MPO staff also explored ways to effectively present and share the results of staff's data gathering, research, and analysis. During FFY 2023, MPO staff will finalize Needs Assessment materials and share those with MPO members and the public. This activity will involve incorporating new information based on finalized socioeconomic projections for 2050. MPO staff will also share preliminary recommendations for the LRTP, such as ideas for investment program modifications, with the MPO and the region's stakeholders. Finally, staff will develop a process for maintaining and updating information over time to meet the needs of the MPO and other stakeholders.

Scenario Planning

During FFY 2022, MPO staff began an exploratory scenario planning process designed to help the MPO to envision multiple possible futures for the Boston region and assess how to best prepare for uncertainties while pursuing an overarching vision. The MPO's process involves using travel demand modeling and other tools to represent scenarios and the effects of different strategies on transportation, the economy, land use, and other areas. During FFY 2023, the MPO expects to complete its exploratory scenario planning process for *Destination 2050*, including completing analysis of scenarios of interest, documenting results, and engaging MPO members and other stakeholders on the process and findings. This exploratory scenario planning process is interrelated with the Needs Assessment, and both will shape staff's and the MPO's recommendations for *Destination 2050*. Moreover, the MPO can continue conducting scenario planning after the *Destination 2050* is completed to meet the needs of the MPO and partner entities.

Reviewing the MPO Planning Framework

Destination 2040 includes the MPO's vision for the region's transportation system, along with goals and objectives to guide the MPO's investments to help achieve that desired future. When developing *Destination 2050*, MPO staff will work with the MPO to revisit the elements of *Destination 2040*'s planning framework—its vision, goals, and objectives—and determine whether structure or content updates are needed. Staff will support this process by organizing information, sharing recommendations, and gathering input from the public.

Selecting LRTP Projects and Programs

Staff will work with the MPO and other stakeholders to select projects and programs to include in the LRTP (and ultimately fund through the TIP). These investment strategies are intended to meet the region's transportation needs and make progress toward performance goals. Tasks will include

- **Identifying MPOs' investment programs and creating a universe of potential projects.** Activities may include modifying existing *Destination 2040* programs.
- **Evaluating candidate LRTP projects.** Staff will propose criteria used for evaluating candidate LRTP projects based on the MPO's vision, goals, objectives, performance measures, and available data. Once the MPO has approved these criteria, staff will compile data on candidate projects, conduct the evaluations, and make results available for MPO and public review.
- **Recommending LRTP programs and projects.** Based on Needs Assessment findings; the universe of projects; project evaluations; information about projects being implemented by Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), and other agencies (without federal

funding); and anticipated funding, staff will recommend investment programs and projects to include in the LRTP. This overall process will involve use of the MPO's travel demand model and other tools to understand the greenhouse gas impacts and equity outcomes of these recommendations.

Documenting and Finalizing the LRTP

Staff will create a draft *Destination 2050* document that describes recommended transportation projects and programs, summarizes the process used to create the recommended plan, and organizes relevant information from the various stages of LRTP development, including state- and federally required information. Once staff has addressed MPO member feedback and received approval, staff will release the draft plan for public review and conduct outreach to gather feedback. After sharing that feedback with the MPO, MPO staff will make necessary adjustments and receive MPO endorsement of *Destination 2050*. The endorsed *Destination 2050* plan then will be submitted to MassDOT and the relevant federal and state agencies for review and approval.

Implement Destination 2040 and Managing Amendments

Staff will continue to implement *Destination 2040* during FFY 2023, including by connecting its recommendations to TIP and UPWP decisions. If any changes are made to regionally significant projects in the FFYs 2023–27 TIP, an amendment to the LRTP *Destination 2040* might be required. Staff will prepare the informational materials for MPO decision-making and follow MPO procedures for informing and involving the public.

Monitoring Planning Best Practices

The LRTP program plays an important role in keeping the MPO abreast of current state-of-the-practice communications methods, issue areas, and planning tools and approaches. This information also supports work happening in other MPO programs. In collaboration with MAPC, the MPO staff will continue to explore effective ways to gather information, understand the Boston region's needs, analyze transportation and land-use options, and apply best practices in metropolitan transportation planning and other facets of planning.

FFY 2023 Anticipated Work Products

- Finalize the Needs Assessment for *Destination 2050*, share results and materials, and develop processes for maintaining and updating information over time
- Complete the MPO's exploratory scenario planning process and share findings to support LRTP development
- Review the MPO's planning framework and make updates as necessary
- Conduct and report about public outreach to support *Destination 2050* activities, including scenario planning; creating a planning framework, and selecting investment programs and projects

- Identify, evaluate, and select projects and programs for the recommended LRTP
- Analyze the recommended plan with respect to greenhouse gas emissions and equity outcomes
- Document, seek public feedback on, and finalize the next LRTP, *Destination 2050*
- Address comments on *Destination 2050* from state and federal agencies
- Continue implementation of *Destination 2040* and prepare amendments if necessary
- Continue to monitor best practices in planning and communication, as well as developments in key issue areas
- Respond to changes to the State Implementation Plan (SIP)

Transportation Improvement Program

Project ID Number	8223
FFY 2023 Total Budget	\$323,000
Schedule	Ongoing

Purpose

The Boston Region MPO’s TIP represents a five-year, financially constrained program of planned investments in the metropolitan area’s transportation system. Although federal regulations require that the TIP be updated every four years, Massachusetts and its MPOs are committed to producing annual updates.

Approach

Development of the FFYs 2024–28 TIP

MPO staff conducts outreach to municipalities and TIP contacts; collects TIP project-funding requests; evaluates and scores proposed new projects; updates the scores of previously scored unprogrammed projects (as needed); proposes programming of current and new projects based on anticipated funding levels; supports the MPO in its decision-making about programming those funds; develops 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 cities and towns in the region through online TIP informational sessions, MAPC subregional meetings with municipalities, and correspondence with municipal TIP contacts and elected officials to gather information on existing and new TIP project-funding requests. MPO staff compiles the projects into a Universe of Projects list for consideration by the MPO.

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 support decision-making for the programming of transportation projects in the region by establishing a transparent, inclusive, and data-driven process through which funds are allocated.

In coordination with the development and endorsement of the current LRTP, *Destination 2040*, staff examined the TIP evaluation criteria and revised them to continue to align the TIP process with LRTP goals and objectives as well as state-of-the-practice transportation project metrics. These new criteria were first implemented for the FFYs 2022–26 TIP and will continue to be used in the development of the FFYs 2024–28 TIP.

Staff Recommendation

MPO staff develops a recommendation that proposes how to prioritize the MPO’s Regional Target funding. Staff prepares a list of projects containing the evaluation scores and project-readiness information. Staff then develops programming recommendations that include a selection of these projects while considering the geographic distribution of investments across the region, project design status, LRTP-identified needs, and cost.

In addition to preparing a recommendation for regionally prioritized projects, MPO staff prepares and presents MassDOT state-prioritized projects and the capital programs for the MBTA, the Cape Ann Transportation Authority, and the MetroWest Regional Transit Authority for the MPO’s consideration.

TIP Document Preparation and Endorsement

MPO staff prepares a draft TIP that maintains compliance with federal regulations and requirements for a public review and comment period. During the public comment period, 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 MPO website.

Staff will prepare for the possibility of implementing several amendments and/or administrative modifications to the FFYs 2023–27 TIP during FFY 2023.

For more information about the TIP development process or the administrative modifications and amendments procedures, refer to Chapter 2 of the TIP, available online at www.bostonmpo.org/tip.

Implementing Performance-Based Planning

The FFYs 2024–28 TIP document will continue to report on the MPO’s implementation of its performance-based planning program. The TIP will highlight the results of monitoring trends in the region and will note any progress made toward established performance targets.

FFY 2023 Anticipated Outcomes

- Develop the FFYs 2024–28 TIP, amendments, and administrative modifications to the FFYs 2023–27 TIP
- Continue to explore enhancements to the TIP interactive database and other web-based TIP resources
- Continue to document progress made on performance measures through the programming of TIP projects
- Continue to develop and implement the MPO’s new investment programs, including the Community Connections and Transit Modernization Programs
- Continue to implement the MPO’s new project programming and cost-change policies, which were endorsed by the MPO in November 2021 and for which implementation began in FFY 2022
- Conduct additional analysis of the distribution of TIP funding and alignment with LRTP-identified needs to help pinpoint areas for targeted outreach to municipalities

Performance-Based Planning and Programming

Project ID Number	8823
FFY 2023 Total Budget	\$117,000
Schedule	Ongoing

Purpose

PBPP applies data to inform decisions aimed at helping to achieve desired outcomes for the region's multimodal transportation system. The PBPP process involves the following tasks:

- setting goals and objectives for the transportation system
- selecting performance measures and setting performance targets
- gathering data and information to monitor and analyze trends
- using performance measures and data to make spending decisions
- monitoring, analyzing, and supporting decision outputs and outcomes

Federal legislation directs states, public transportation providers, and MPOs to use this performance-driven, outcome-based approach in their transportation planning processes. The Boston Region MPO can also use PBPP practices to help achieve its goals for improving the region's transportation system.

Approach

Develop Targets for Federally Required Performance Measures

In FFY 2023, staff will continue to provide information and recommendations to MPO members as they set, revisit, or update targets for federally required performance measures. This includes annual updates to federally required performance targets pertaining to related to roadway safety, transit asset management, and transit safety. This work also involves updating federally required targets that have two-year or four-year time horizons, including those related to NHS infrastructure condition, travel time reliability, congestion, and transportation-related emissions. MPO staff will review and respond to federal regulations and guidance; gather and analyze data; develop performance baselines; and explore ways to improve target-setting methodologies. Staff will continue to coordinate with MassDOT, federal agencies, other MPOs and states, the region's public transportation providers, and other stakeholders as part of this work.

Continue to Integrate PBPP Elements into MPO Planning

During FFY 2023, MPO staff will continue to examine the links between programmed or funded capital projects and potential improvements in various performance areas.

Staff will build upon prior work to include PBPP elements in LRTP and TIP processes, and other processes as appropriate. Activities will include

- analyzing how MPO investments and other factors may influence changes in performance outcomes and what strategies could help the MPO achieve established targets;
- exploring ways to conduct ongoing evaluation of the impacts of MPO-funded TIP projects;
- identifying ways to refine project and program selection criteria and working with program managers to make desired changes in future LRTP and TIP development cycles;
- researching metrics that can be incorporated into the next LRTP;
- managing data to support performance analysis in MPO programs; and
- coordinating performance-based planning and programming work with the MPO's CMP and Transportation Equity program.

Monitor and Report on Performance

The MPO currently reports on performance in its *Destination 2040* (LRTP) and TIP documents, through the CMP, and on its web-based Performance Dashboard. In FFY 2023, MPO staff will

- support updates on performance in the *Destination 2050* Needs Assessment;
- develop a systems performance report for *Destination 2050*;
- provide a performance report for the 2024–28 Transportation Improvement Program;
- develop Congestion Mitigation and Air Quality performance plans and reports, and other federally required reports, as needed;
- continue to update the MPO website; and
- explore new methods for sharing performance data via the web.

Staff will enhance these existing reports and tools by adding and/or updating baseline and trend data and may create additional reports or tools. When developing these documents and resources, staff will incorporate information on performance targets and, to the extent practicable, describe the effect that MPO investments may have on performance.

Enhance the MPO's PBPP Practice

The MPO's PBPP practice can expand beyond meeting federal requirements to address other aspects of the MPO's goals and objectives. During FFY 2023, MPO staff will

- explore the PBPP practices and measures used by other planning agencies and institutions, including by attending conferences and participating in working groups;
- create brochures, presentations, or other materials to describe the MPO's PBPP framework and to help guide the MPO board through its PBPP decision-making processes;
- continue to explore new tools available to analyze performance data and set targets; and
- support the MPO in setting additional performance targets, as desired.

FFY 2023 Anticipated Outcomes

- Support the MPO in setting targets for federally required measures and other measures, as requested. Analyze data and prepare related presentations, memoranda, and other supporting documents and materials
- Enhance activities to integrate performance management into MPO project and program evaluations, to manage data, and to anticipate and monitor the outcomes of MPO investments
- Produce or update performance reports, such as those required for the LRTP and TIP
- Develop and or update MPO applications that include performance data
- Explore other measures and methods that the MPO could incorporate into its PBPP process, as well as tools the MPO can apply to PBPP work
- Develop or update materials to explain PBPP concepts and activities, including the MPO's PBPP web page
- Coordinate with MPO program managers, MPO board members, MassDOT, the region's public transportation providers, other states and MPOs, federal agencies, and other partners to research measures; identify investment strategies; set targets; and otherwise implement PBPP practices
- Work with fellow staff, the MPO, and other stakeholders to link MPO investment processes more closely to performance outcomes. Produce memoranda and presentations describing related recommendations

Air Quality Conformity and Support Activities

Project ID Number	8423
FFY 2022 Total Budget	\$21,500
Schedule	Ongoing

Purpose

To ensure that the MPO's plans, programs, and projects comply with the CAAA of 1990 and to secure federal funding for the Boston Region MPO's transportation system

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

This program covers the tasks needed to demonstrate that an MPO's federally funded transportation programs meet conformity requirements. Typically, a conformity determination is performed annually for the TIP and every four years for a new LRTP (or if an LRTP amendment is undertaken).

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 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.

The Boston Region MPO area previously had 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 was not required to demonstrate that the LRTP and TIP conform to national standards for the two pollutants that form ozone: volatile organic compounds (VOC) and nitrogen oxides (NO_x). 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. If the MPO area is reclassified as a nonattainment area, conformity determinations for ozone would be required.

In 2018, the FHWA and the FTA released new guidance regarding transportation conformity requirements. The United States Court of Appeals for the DC Circuit issued a decision in the *South Coast Air Quality Management District v. EPA*, No. 15-1115 in February 2018, which struck down portions of the 2008 Ozone National Ambient Air Quality Standards (NAAQS) SIP Requirements Rule concerning the ozone NAAQS.

The portions of the 2008 Ozone NAAQS SIP Requirements Rule addressed implementation requirements of the 2008 ozone NAAQS and the anti-backsliding requirements (ensuring that areas do not revert to nonattainment) associated with the revocation of the 1997 ozone NAAQS. The impact of the decision addresses two groups of ozone areas described in the decision, one of which affects Massachusetts. It affects areas that were designated as nonattainment for the 1997 ozone NAAQS at the time of revocation and are designated as attainment for the 2008 ozone NAAQS. These areas have not been required to make transportation conformity determinations for any ozone NAAQS since the 1997 ozone NAAQS were revoked by EPA in April 2016.

With this new court ruling, Massachusetts is now required to perform a transportation conformity determination on any new LRTP and TIP, updates, and amendments that include the addition of a project that is not exempt (also known as a regionally significant project) from transportation conformity.

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 20-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 2023 Anticipated Outcomes

Conformity Determinations

Perform and present conformity determinations as noted below. These include a detailed analysis of air quality impacts (VOC, NO_x, CO, and carbon dioxide) of the projects in the FFYs 2023–27 TIP, *Destination 2040* LRTP amendments, if required, the new LRTP, *Destination 2050* to be adopted in spring 2023, and any work required for implementing the Massachusetts GWSA.

- Prepare a systemwide conformity determination if there are changes to regionally significant projects in the LRTP and TIP.
- Conduct a detailed project-level analysis for each project to receive Congestion Mitigation and Air Quality Program funding in the TIP and for any projects that will help meet the requirements of the GWSA.

Support to MassDOT (including the Highway Division, the Office of Transportation Planning, and the MBTA) and Massachusetts Port Authority (Massport)

Activities will include analysis of transportation-control measures, park-and-ride facilities, and proposed high-occupancy-vehicle 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 CMP, the UPWP, and performance measures. Staff will work with MassDOT to comply with the Department of Environmental Protection's (DEP) GWSA 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. MPO staff support will include the following activities:

- support for amendments or revisions to the MOU 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 MOVES3 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
- provide data and recommendations to MPO agencies regarding funding and the implementation of transportation programs and projects with air quality benefits

Unified Planning Work Program

Project ID Number	8323
FFY 2023 Total Budget	\$101,500
Schedule	Ongoing

Purpose

The UPWP, a federally required document that supports the 3C transportation planning process, has two main purposes.

1. 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
2. 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 3C-funded work conducted by Central Transportation Planning Staff (CTPS) for the MPO; work conducted by CTPS and funded by state agencies or other entities; and 3C-funded work executed by MAPC, which receives approximately one-third of the Boston region's allotment of 3C funding. Appendix A provides supplementary information about transportation studies happening in the Boston region that are either regionally significant or supported by federal, but not MPO, funds.

Chapter 2 contains a thorough description of the UPWP process and document.

Approach

Work on the UPWP is ongoing throughout the year, with the twin goals of developing the coming year's UPWP and supporting staff, the MPO, and its UPWP Committee in monitoring implementation of the current UPWP.

MPO staff coordinates and prepares materials for all phases of development of the upcoming UPWP, including

- coordinating public participation in the UPWP process, such as
 - engaging state transportation agencies, municipalities, and the public, in conjunction with the MPO's Public Engagement Plan; and
 - soliciting, evaluating, and recommending ideas for planning studies and technical assistance programs;

- conducting background research into planning needs;
- preparing budgets and project/program descriptions;
- coordinating document development with the MPO's UPWP Committee;
- responding to federal and state Department of Transportation guidance; and
- preparing, coordinating public review of, and distributing draft and final documents.

In support of the implementation of the current year's UPWP, staff will

- support meetings of the MPO's UPWP Committee;
- prepare quarterly reports on the implementation of the UPWP;
- make adjustments, administrative modifications, and amendments as needed, according to federal regulations and guidance; and
- maintain the UPWP Study Recommendations Tracking Database, which houses details of project contacts, proposed improvements, implementation status, milestones, funding, and issues affecting implementation progress.

FFY 2023 Anticipated Outcomes

- Conduct public engagement for development of the FFY 2023 UPWP
- Implement planned changes to the UPWP document and process
- Plan for and support meetings of the MPO's UPWP committee
- Report on FFY 2023 UPWP implementation quarterly
- Complete amendments and administrative modifications to the FFY 2023 UPWP, as necessary
- Continue to maintain and update the UPWP Study Recommendations Tracking Database
- Work to establish a database and interactive online interface documenting transportation planning studies active around the Boston region
- Provide other informational materials as needed

Transportation Equity Program

Project ID Number	8523
FFY 2023 Total Budget	\$177,000
Schedule	Ongoing

Purpose

The TE program is designed to ensure that the transportation needs of populations underserved by the transportation system and underrepresented in the planning process are addressed throughout all of the MPO's activities. These populations—referred to as TE populations—include those covered by the regulations listed below. They include the minority population, low-income population, people with limited English proficiency, elderly population, youth population, and people with disabilities.

- Title VI of the Civil Rights Act of 1964 prohibits discrimination based on race, color, and national origin, including people with limited English proficiency, in programs and activities that receive federal financial assistance.
- EO 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations" directs recipients of federal financial assistance to identify and address any disproportionate burdens placed on low-income and minority populations.
- The ADA prohibits discrimination against individuals with disabilities by recipients of federal financial assistance.
- United States Department of Transportation (USDOT) nondiscrimination regulations prohibits discrimination on the basis of sex and age under other federal authorities, and requires MPOs to understand and consider the transportation needs of these populations.

Staff undertake several activities under the program. Staff ensure MPO compliance with FTA and FHWA Title VI, environmental justice (EJ), and other nondiscrimination requirements, as described above. Staff also conduct inclusive and accessible public outreach and communications, collect and analyze demographic and other data related to equity, and use the outcomes of these analyses and outreach to support other MPO programs. These tasks not only help the MPO comply with federal regulations, but also go beyond compliance by supporting the building of an equitable transportation system that serves all people, regardless of their background.

Approach

Complying with Title VI, EJ, and Nondiscrimination Requirements and Preparing Title VI Report

The MPO will continue to implement its Title VI program and respond to MassDOT requests regarding changes to the program. MPO staff will also prepare and submit an annual or triennial Title VI report to MassDOT as requested. The report documents the MPO's compliance with Title VI, EJ, and other nondiscrimination requirements, as well as MPO areas of focus of import to MassDOT.

Providing Meaningful Opportunities for Underrepresented Populations to Participate in the Transportation Planning Process

In collaboration with the MPO's Public Participation Process, staff will ensure that TE populations remain central to the MPO's public outreach process. This will include a continued focus on expanding participation opportunities to people with limited English proficiency and expanding language support where possible, both written and oral. These engagement activities are described in the MPO's Public Engagement Plan.

Develop and Refine Equity-Related Analytical Techniques

To improve the effectiveness of the analyses that evaluate the impacts of the MPO's activities on TE populations, staff will refine current methods and develop new ones. This includes work that will support analyses undertaken for the LRTP, TIP, and UPWP, although the specific analyses will be funded under their respective programs. Work funded under the TE program will include, but is not limited to, analyses of demographic data, background research to support MPO programs, and refinement of existing and development of new processes. . Under this task, staff will continue to coordinate with CTPS's regional travel-demand modeling staff, as well as with the CTPS Census Corps. Staff will also leverage other lighter-weight analytical tools, such as the accessibility analysis tool Conveyal and the health impacts model Integrated Transport and Health Impact Model, in order to expand the MPO's capacity for assessing project impacts. In addition, staff will undertake analyses that address the recommendations that emerge from the FFY 2022 study, Identifying Transportation Inequities in the Boston Region.

Project Support

Staff will coordinate with other staff at CTPS who conduct EJ analyses for client work to ensure consistency between analyses for client projects and between MPO-conducted analyses and client project analyses.

Coordinating with and Supporting Other Agencies

MPO staff will continue to coordinate with MassDOT's Office of Diversity and Civil Rights to ensure consistency of MPO Title VI-related processes, procedures, and activities. Staff will also continue to support the MassDOT Rail and Transit Division in its evaluation of applications for funding from the Community Transit Grant Program.

FFY 2023 Anticipated Outcomes

- Submit an annual or triennial Title VI report to MassDOT, if required
- Gather and analyze data related to equity from the United States Census Bureau and other sources, and explore new sources of data that support this program and inform the MPO's planning and programming decision-making
- Explore the use of new analytical tools to assist MPO staff with planning and programming decision-making
- Monitor developments at USDOT regarding civil rights, Title VI, and EJ; participate in workshops, conferences, and seminars, as appropriate; and use this knowledge to inform MPO activities
- Support MassDOT's evaluations of funding applications for the Community Transit Grant Program

Congestion Management Process

Project ID Number	2123
FFY 2022 Total Budget	\$134,000
Schedule	Ongoing

Purpose

The MPO's 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 (LRTP, TIP, and 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
- identify needs and 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, identify existing conditions, and recommend appropriate improvements in accordance with federal guidelines.

FFY 2023 Anticipated Outcomes

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

- monitor the performance of MPO-region arterial roadways and freeways using electronic travel-time and speed data
- map and tabulate electronic data for analysis and performance evaluation
- coordinate with the MPO's certification activities (including the LRTP, TIP, PBPP, and UPWP programs and documents)
- support the CMP Committee of the MPO

Freight Planning Support

Project ID Number	2223
FFY 2023 Total Budget	\$93,000
Schedule	Ongoing

Purpose

Planning for the policies and infrastructure that enable the movement of freight and goods by road, rail, water, and air is a mandatory part of the federal 3C planning process. 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 analysis requirements of federal surface transportation legislation; and
- 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

Freight program priorities and activities were described in an action plan prepared in 2013, which was updated in FFY 2019. The MPO's freight planning and analysis is ongoing and conducted on a multiyear basis. Typical activities include

- freight-specific studies;
- data collection;
- advising MPO staff and partner agencies on freight-related elements of other studies;
- participation in working groups and coordination efforts;
- research on new and evolving elements of freight planning practice; and
- advising on model development efforts relating to freight

The freight program supports the MPO's freight planning needs. Freight planning at the MPO focuses on freight movement between metropolitan areas and, increasingly, with regional and local distribution of goods and packages (first- and last-mile delivery). Freight planning frequently includes investigation, analysis, and classification of truck movement, including commercial and service vehicles.

Specific study topics are chosen in consultation with MPO members and other stakeholders. The choice of topic sometimes hinges on complex regulatory and land use issues outside the direct scope of MPO activities, and freight planning activities often support planning efforts underway through other entities.

Outreach and MPO support activities will continue as opportunities and needs are identified. Freight model development activities, generally funded under the Regional Model Enhancement task, are able to take advantage of ongoing freight program findings and data.

FFY 2023 Anticipated Outcomes

Anticipated FFY 2023 efforts may include

- publishing one or more studies;
- developing a program to coordinate freight and land use in the Boston MPO region;
- working with MPO municipalities and other partners to develop truck-counting and data-sharing protocols in order to extend the freight program's data-gathering reach;
- developing a new Freight Planning Work Program in coordination with the upcoming *Destination 2050* LRTP, and reflecting input gathered from MPO stakeholders during FFY 2022 and implications of the Bipartisan Infrastructure Law
- serving on interagency working groups;
- conducting required MPO freight planning; and
- providing data and analysis in support of advanced model implementation.

Regional Model Enhancement

Project ID Number	7123
FFY 2022 Total Budget	\$890,000
Schedule	Ongoing

Purpose

The long-term goal of the travel demand modeling practice at CTPS is to have a reliable, robust set of well-documented travel demand tools, data, and procedures that address a diverse set of needs for transportation planning in the Boston region and statewide with engaged and informed stakeholders and a coordinated team of modelers who have the skills, knowledge, and experience to effectively

- maintain the set of tools, data, and procedures;
- develop new components in the tool platforms;
- apply the tools and data appropriately on projects; and
- communicate all things related to travel demand modeling.

Through the Regional Model Enhancement work program, CTPS supports the maintenance and development aspects of the long-term goal. This has been realized through the development and maintenance of a regional travel-demand model and support of other tools for assessing the area's transportation needs and evaluating alternatives to improve the transportation system. The regional travel-demand model estimates the millions of individual decisions that generate travel throughout the region and simulates the impact of those decisions on an abstracted representation of the region's roadway and transit networks. Through variations of the inputs and assumptions, the regional travel-demand model provides insights to planners to current and future travel activity and conditions. Metrics produced by the model aid in developing policy, performing technical and equity analyses, and meeting federal reporting requirements, including the MPO's certification requirements. The model is also used by the MPO and state and regional agencies to support planning and policy analysis.

Approach

Model enhancement work is balanced across support for the current model application work, completing development and supporting applications of a new model for the 2023 LRTP, and efforts to evaluate and adopt new tools for long-term needs. CTPS will continue to engage a model steering committee composed of stakeholders internal and external to the agency to solicit feedback and guidance on model enhancement activities and build an understanding of the capabilities and limitations of model tools.

Maintain Legacy Regional Travel-Demand Modeling Materials

The current trip-based regional model (TDM19), developed to support the 2019 LRTP, will be phased out in FFY 2023 as 2023 LRTP travel demand model (TDM23) is completed. As such, CTPS will maintain a reference version of TDM19, but will work to transfer work and enhancements to the new model platform. Maintenance work that is independent of model version, such as tracking and updating the model roadway and travel networks and revising and developing documentation and training materials will continue in FFY 2023.

Deliver a New Model for the 2023 LRTP and Applications

TDM23 will be in use for LRTP scenario planning and needs assessment at the beginning of FFY 2023. TDM23 may be refined and enhanced based on the results of the LRTP model runs. Prior to adoption of the LRTP, CTPS will complete the model validation and produce reports associated with those results following the completion of the regional demographics, expected in late FFY 2022.

TDM23 will have a similar structure and platform as TDM19, but each component, or submodel, will be revised to better meet the current MPO planning needs. The implementation of TDM23 will be largely redeveloped to be more readable and extensible.

A key new feature of TDM23 is the integration with FHWA's Travel Model Improvement Program Exploratory Modeling and Analysis Tool. This utility facilitates the definition of a range of scenario inputs, an efficient modeling procedure to produce outputs, and visualization tools to explore outputs across scenarios varying in multiple dimensions.

Planning for the Long Term

In FFY 2023, CTPS will continue development of a long-term plan with the model steering committee that identifies and prioritizes other model tools and practices.

The TDM23 development process began with the identification of planning needs for model support. Not all of the identified needs will be met by TDM23 because of time and resource constraints as well as the limitations intrinsic in the model structure. CTPS will work to address those needs through complementary tools and data and endeavor to maintain a suite of next generation practices and tools that will serve regional transportation planning needs. The suite will define practice areas, procedures, and tools for common activities. The potential tools and data to be included in this suite include

- dynamic traffic assignment models that can provide a more detailed representation of the roadway and transit networks;
- activity based models that can provide a more detailed representation of travel behavior;
- model platforms such as the Simplified Trips-on-Project Software model, developed by the FTA, and FHWA's VisionEval that can provide insight into specific aspects of travel behavior with less effort than a full regional travel demand model;

- big data products such as origin destination tables, trip patterns, and travel times that can inform our understanding of the existing transportation system to improve the accuracy of the models and could directly support some near-term applications; and
- focused sketch and post-processor tools that leverage the regional model outputs into more useful products.

FFY 2023 Anticipated Outcomes

Staff will complete development of the next generation travel demand model and will advance materials to support use of this model in standard applications as well as in new ways leveraging the exploratory modeling capabilities of the tool that enhance the MPOs ability to provide state-of-the-practice support for MPO staff, member agencies, and partner organizations.

Data Program

Project ID Number	5023
FFY 2023 Total Budget	\$572,000
Schedule	Ongoing

Purpose

The purpose of this ongoing program is to support the data needs of the MPO and its stakeholders. There are four main areas of focus for this program:

- Data planning—developing data strategy, identifying data needs, and preparing a data roadmap;
- Data management—maintaining existing data and infrastructure, providing the structural support for data management and data exploration, and documenting processes and procedures;
- Data research—exploring leading-edge tools and analytical techniques and assessing their application and usefulness for the MPO; and
- Data partnerships—collaborating internally with staff, the MPO, partner agencies, and other stakeholders on data related topics.

This work program allows MPO staff to effectively

- maintain existing data, infrastructure, and documentation;
- research new data and tools and consider how they apply to our work;
- develop best practices around the management and use of these data and tools; and
- apply these data and tools in a comprehensive and strategic way that will benefit the MPO, regional stakeholders, and partner agencies.

Approach

Data Vision, Strategy, and Roadmap

CTPS will create a vision of how it obtains, develops, manages, and shares data. To work towards this vision, staff will develop a strategy that identifies the structures and forces that drive data processes and determine how to use those critical forces to move towards CTPS's vision.

The data roadmap will lay out the steps required to reach defined vision around obtaining, developing, managing, and sharing our data. It will include a data inventory; the high-level data needs of the agency; a gap analysis; and an approach and timeline toward meeting our data vision and strategy. The data vision, strategy, and roadmap will be updated each year to meet the current needs of the MPO and its stakeholders and to keep up with the evolution of data and tools in the industry.

Manage and Respond to Data Requests

Data requests are one of the services that CTPS provides to support municipalities, peer agencies, private sector consultants, research institutions, and the broader public. While CTPS and its peer agencies have made more and more data publicly available, there is still a need to respond to ad hoc, quick-response data gathering, processing, and analysis requests for our constituencies throughout the year. CTPS will create more rigorous internal and external policies and guidelines for fulfilling data requests. These structures will provide data requestors with clear expectations in terms of acceptable scopes of work and timelines.

Research Next Generation Data and Tools

The goal of this ongoing effort is to conduct coordinated, strategic assessments of leading-edge, continuously evolving data sources and analytical techniques to address current and future needs. These assessments will inform CTPS's long-term investments into the tools and staff skills that are required to meet the evolving needs of the MPO and its stakeholders. This work allows MPO staff to effectively research new data and tools, consider how these new tools apply to our work, and develop best practices around the management and use of those tools.

Data Management, Coordination, and Support

CTPS conducts foundational work that supports data users across the organization. Consolidating this effort under this work program ensures that the staff is making decisions about key datasets in a thought-out, collaborative manner. Datasets, tools, and work activities that will be managed under this program include the following:

- Socioeconomic Data and Products—CTPS will support a small team to maintain foundational work associated with the US Census Bureau's Decennial Census and American Community Survey, and products derived from these sources.
- Geographic Information System/Database Management System (GIS/DBMS) —CTPS will continue to develop, curate, and enhance its stores of spatial and tabular reference data, along with associated tools.
- Boston Region MPO Website and Other Distribution Channels—CTPS will continue to maintain and update the existing MPO website while alternatives for a new web platform are being evaluated. Other distribution channels for information delivery may also be considered as part of this task.

- Requirements for Processes, Services, and Platforms—CTPS will review its processes, services, and platforms to determine whether they are serving the ongoing needs of the organization. Staff will create requirements, investigate alternatives, and evaluate whether and how the platforms should be adopted.
- Collaboration with Partners and Other Agencies—CTPS will work with its partner agencies to share ideas, datasets, and techniques.

FFY 2023 Anticipated Outcomes

Data Vision, Strategy, and Roadmap

- Convene stakeholder groups to develop the data vision and strategy
- Develop a guiding vision for data and related processes
- Develop a data strategy plan to attain progress towards the vision
- Develop and maintain a data roadmap

Manage and Respond to Data Requests

- Develop a process and guidelines for serving data requests
- Respond to requests for data and small-scale data processing studies

Research Next Generation Data and Tools

- Assess existing and emerging datasets, analytical tools and techniques
- Create design requirement specification describing the necessary components of new analytical tools and data sets
- Recommend data for planning application

Data Management, Coordination, and Support

- Develop foundational work on socioeconomic datasets
- Maintain, curate, and enhance spatial and tabular reference data, tools, and distribution channels
- Maintain the MPO website
- Create design requirement specifications for new processes, services, and platforms
- Adopt documentation platforms along with standards and procedures for use
- Adopt a data publication platform and data publication standards

Transit Working Group Support

Project ID Number	8923
FFY 2023 Total Budget	\$42,000
Schedule	Ongoing

Purpose

This task supports the MPO's Transit Working Group, which provides a forum for coordination and dialogue among transit providers and stakeholders in the Boston region.

Approach

Staff worked in FFYs 2019–21 to develop and conduct a pilot of an MPO transit working group. After a successful pilot, the MPO formalized the Working Group's status as a permanent MPO activity during FFY 2022. The Working Group meets quarterly, as well as holding informal "coffee chats" one to two times per month and co-sponsoring or supporting other one-off events on occasion. MPO staff support for the Working Group includes the following activities:

- planning programs and meetings
- scheduling speakers and developing presentations
- preparing and distributing agendas, meeting notices, informational packets, and meeting summaries
- facilitating and presenting at meetings
- soliciting new members and maintaining contact lists
- implementing and updating transit working group procedures, as necessary
- gathering feedback from the transit working group participants to inform MPO activities and decision-making
- assessing the success and direction of transit working group activities

This task also supports MPO staff in providing the MPO with information, updates, and briefings about the Working Group.

FFY 2023 Anticipated Outcomes

- Host quarterly Working Group meetings and manage pre- and post-meeting logistics
- Host one to two “coffee chats” per month on diverse transit-related topics
- Develop materials and resources to support working group meetings and activities
- Provide updates to the MPO about the Transit Working Group
- Support communication for and about the group using email, social media, and the MPO website
- Prepare documentation for the MPO about Working Group meetings, activities, participant feedback, and future recommendations for the Working Group
- Explore the possibility of the Working Group acting as a problem-solving forum for specific complex transit coordination issues

MPO Resiliency Program

Project ID Number	8723
FFY 2022 Total Budget	\$44,000
Schedule	Ongoing

Purpose

In the 2014 federal planning certification review, the FHWA issued a recommendation that the Boston Region MPO incorporate resiliency in its TIP project selection criteria. In 2019, FHWA issued a corrective action on resiliency as part of the MPO's federal planning certification review. That corrective action advised the MPO to address resiliency of the transportation system in the LRTP and TIP selection criteria and to seek other opportunities to emphasize the importance of climate resiliency in transportation planning and programming of projects.

The Boston Region MPO incorporated resiliency into its *Charting Progress to 2040* LRTP, adopted in 2015, through its vision, goals, and objectives. The MPO's next LRTP, *Destination 2040*, further strengthened its goals and objectives and identified actions to address resiliency as part of the Needs Assessment under the System Preservation and Modernization goal area. The MPO's project selection criteria for resiliency were recently strengthened to reflect the enhanced focus on it and to properly account for projects that prioritize resiliency investments. In addition, a study on *Exploring Resiliency in MPO-Funded Corridor and Intersection Studies* was conducted using funding in the FFY 2020 UPWP as a discrete study. Funding was also programmed in FFY 2021 to update the MPO's All-Hazards Planning Application, again as a discrete study. In FFY 2022, the MPO established this discrete Resiliency Program. Resiliency will continue to be addressed as part of the next LRTP, *Destination 2050*.

Approach

Over the last three years, staff performed work to strengthen resiliency in the MPO's transportation planning process. That work included

- inventorying ongoing climate resiliency activities in the municipalities in the MPO region participating in the Commonwealth's Municipal Vulnerability Preparedness program;
- participating in the Commonwealth's Resilient Massachusetts Action Team committee to coordinate and collaborate on resiliency activities at the state, local, and regional level;
- coordinating with state (MassDOT, MBTA, the Executive Office of Energy and Environmental Affairs) and regional agencies (MAPC and its subregions and Resilient Mystic Collaborative) on resiliency activities;

- presenting the MPO's work at national FHWA events; and
- conducting monthly internal Resiliency Committee meetings.

Prior to establishing this new resiliency program, work performed regarding resiliency was funded in the Needs Assessment task of the LRTP. The work listed above will be funded under this resiliency program, while some work will continue to be funded under the Needs Assessment task of the new LRTP, *Destination 2050*.

FFY 2023 Anticipated Outcomes

- Ongoing coordination and inventory of climate resiliency activities in the municipalities in the MPO region as part of state, regional, and municipal resiliency programs
- Continued participation, coordination, and collaboration on resiliency activities at the state, local, and regional levels
- Pursuing educational opportunities to gain subject-matter expertise (that is, conferences, webinars, research, and other virtual events)
- Monthly internal Resiliency Committee meetings

This program will allow staff to identify areas that may require additional studies through the UPWP, assistance through the MPO's Technical Assistance programs, projects that could potentially be funded in the TIP, and partnerships with regional entities.



CHAPTER 4

Boston Region MPO Planning Studies and Technical Analyses

INTRODUCTION

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—Central Transportation Planning Staff (CTPS)—to accomplish the certification requirement activities described in Chapter 3; the planning studies and technical analyses described in this chapter; and the administrative tasks and data management described in Chapter 6.

To prepare each Unified Planning Work Program (UPWP) accurately, the Boston Region MPO must understand the status of the previous year's studies and work activities. In general, throughout the UPWP's development, the MPO tracks a study's progress according to the four categories cited below.

- **Completed Studies:** Completed studies are either already complete or expected to be completed by October 1, 2022, when the FFY 2023 UPWP document goes into effect. Table 4-1 (MPO-funded studies) provides a summary of these studies, their funding sources and amounts, and their work products or activities.
- **Continuing or Carried Over Studies:** Continuing studies were originally funded in FFY 2022 or earlier and continue into FFY 2023. 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 because of unforeseen delays or changes in scope. Table 4-2 provides a summary of the salary and overhead costs, status (percent complete by the end of FFY 2022), and completed and planned work products for planning studies started in a previous FFY and continued into FFY 2023.
- **Ongoing Studies and Programs:** Ongoing 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 3), planning studies and technical analyses (Chapter 4), agency-funded contracts (Chapter 5), and administration, resource management, and support activities (Chapter 6). Tables containing summaries of the funding and progress for these ongoing programs are included at the beginning of the relevant chapters. Table 4-3 summarizes the salary and overhead costs in FFY 2022 and FFY 2023, as well as the completed and planned work products, for ongoing MPO technical assistance and transportation planning support work to municipalities throughout the region (also see Technical Analysis and Support section).
- **New Discrete Studies:** New discrete studies are selected through the MPO's UPWP committee and public outreach process for funding as one-time studies in a given FFY. Some of these studies are funded on a predictable schedule and are known as recurring studies. Table 4-4 contains a summary of the new discrete studies for FFY 2023.

In addition, the Metropolitan Area Planning Council (MAPC), an MPO member agency, conducts planning studies and technical assistance throughout the region (see Chapter 7, Metropolitan Area Planning Council Activities).

The project descriptions throughout this chapter describe new transportation planning studies chosen for funding in FFY 2023. They provide detailed updates for the FFY 2023 funding and work products for the MPO's and MAPC's ongoing programs.

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 CTPS at 857.702.3700 (voice), 711 (MassRelay), or ctps@ctps.org (email).



**Table 4-1
Completed MPO-Funded Transportation Planning Studies, FFY 2022-23**

Project Name	ID	FFY 2022 Budgeted Total Funding	Work Products (reports, technical memoranda, and other work products or activities)
FFY 2022 Studies			
Active Transportation			
Improving Pedestrian Variables in the Travel Demand Model	13302	\$25,000	A brief technical memorandum, summarizing findings about the current pedestrian variable and the proposed improvements to it.
Land Use, Environment, and Economy			
Regional TDM Strategies	13303	\$10,000	Two forums on the practice of TDM Travel Demand Management, held in conjunction with MAPC staff.
Multimodal Mobility			
Trip Generation Rate Research	13304	\$45,000	A report of findings on trip generation rate practices and recommendation for applications using ITE and TDM.
Transit			
Access to CBDs Phase 2	14370	\$75,000	A transportation planning guidebook and brief memo on COVID-19 recovery scenarios, supported by interviews of local stakeholders.
The Future of the Curb Phase 2	14371	\$60,000	A guidebook for municipalities interested in planning and implementing curb management strategies, supported by interviews and other research.
Resilience			
Multimodal Resilience and Emergency Planning	13306	\$30,000	An updated All-Hazards Planning application and a presentation to the MPO.
Other Technical Support			
MPO Staff-Generated Research Topics	20905	\$20,000	For the project Exploring Equity Classifications with Machine Learning, a geographic file that shows groupings of towns by demographic profile as found by the unsupervised machine learning algorithm as well as a written description of what each grouping represents. For the project Commuting Profiles of Environmental Justice Communities Using the 2011 Massachusetts Travel Survey, a short memorandum with accompanying tables.

(Table 4-1 cont.)

Project Name	ID	FFY 2022 Budgeted Total Funding	Work Products (reports, technical memoranda, and other work products or activities)
Mapping Major Transportation Infrastructure Projects in the Boston Region	13307	\$20,000	A web-based interactive tool mapping transportation investments in the Boston region and an accompanying print map.
FFY 2021 Studies			
Active Transportation			
Locations with High Bicycle and Pedestrian Crash Rates in the Boston Region MPO Area	13293	\$960	Final report and presentation to the MPO.
Multimodal Mobility			
Addressing Safety, Mobility, and Access on Subregional Priority Roadways FFY 2020	13420	\$13,400	Final report and presentation to the MPO.
Addressing Priority Corridors from the LRTP Needs Assessment FFY 2020	13520	\$13,400	Final report and presentation to the MPO.
Safety and Operations Analysis at Selected Intersections FFY 2020	13720	\$7,420	Final report and presentation to the MPO.
TIP Before and After Studies	13294	\$22,480	Final report and presentation to the MPO.
Resilience			
Exploring Resilience in MPO-Funded Corridor and Intersection Studies	13299	\$960	Final report and presentation to the MPO.

**Table 4-2
Discrete Boston Region MPO Planning Studies and Technical Analyses Continued into FFY 2023**

Project Name	ID	Previous Funding	Percent Complete by End of FFY 2022	FFY 2022 Work Products and Progress	FFY 2023 Funding	FFY 2023 Planned Work Products and Progress
FFY 2022						
Multimodal Mobility						
Addressing Safety, Mobility, and Access on Subregional Priority Roadways	13421	\$127,900	75%	Established advisory task force for the Grove Street corridor in Braintree, investigated the concerns and issues with the corridor, completed existing condition evaluation, and completed needs assessment.	\$8,500	Complete development of recommendations, finalize study reports, and present to the MPO.
Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	13521	\$137,000	75%	Investigated the concerns and issues at select segments of Route 9 in Framingham and Natick, completed existing condition evaluation, and completed needs assessment.	\$9,500	Complete development of recommendations, finalize study reports, and present to the MPO.
Low-Cost Improvements to Express-Highway Bottleneck Locations	13621	\$64,500	70%	Investigated the concerns and issues at two bottleneck locations, completed existing condition evaluations, and completed needs assessments.	N/A	Complete development of recommendations, finalize study reports, and present to the MPO.
Intersection Improvement Program	13305	\$75,000	70%	Investigated the concerns and issues at selected municipal locations, completed existing condition evaluations, and completed needs assessments.	\$4,500	Complete development of recommendations, finalize study reports, and present to the MPO.

**Table 4-3
Ongoing Boston Region MPO Technical Analyses, FFY 2022-23**

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Products and Progress	FFY 2023 Funding	FFY 2023 Planned Work Products and Progress
CTPS Activities					
Community Transportation Technical Assistance Program*	2421, MAPC5	\$73,330	<p>Responded to various communities' inquires related to transportation issues:</p> <p>Salem—Provided assistance analyzing potential impacts associated with changing residential streets to one-way streets to prevent diversions from a congested main street</p> <p>Concord—Provided guidance regarding a possible bicycle count program that Concord would like to conduct associated with the Bruce Freeman Trail and the West Concord MBTA station</p> <p>Coordinated with MAPC about various technical assistance outreach needs and possible study locations</p>	\$68,000	<p>Respond to various communities' inquires related to transportation issues:</p> <p>Salem—Revise previous work to post pandemic conditions analyzing impacts associated with diversions from Route 114</p> <p>Quincy—Provide assistance analyzing safety at the Skyline Trail crossing of Route 28 in the Blue Hills Reservation</p> <p>Medway—Provide assistance analyzing potential impacts associated with change in land use and redevelopment of town-owned land</p>
Bicycle/Pedestrian Support Activities	2521	\$71,810	<p>Conducted Spring and Fall 2021 bicycle and pedestrian counts.</p> <p>Maintained awareness of bicycle- and pedestrian-related work and developments in the Boston metropolitan region.</p> <p>Followed national and global bicycle- and pedestrian-planning best practices and developments.</p> <p>Studied locations that currently affect the safety and comfort of bicycling and walking in the Boston region.</p>	\$83,500	<p>Coordinate with state agencies, MAPC, other MPOs, MassDOT's Safe Routes to School Program, WalkBoston, MassBike, LivableStreets, municipalities, and other groups regarding bicycle and pedestrian planning for the region.</p> <p>Collect data on bicycle and pedestrian volumes at on-road and off-road facilities in the Boston region, and post collected count data to the Boston Region MPO's Bicycle and Pedestrian Count Database for public use.</p> <p>Provide ongoing technical support to communities for current tools and practices regarding bicycle and pedestrian issues, with particular focus on promoting safety.</p> <p>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, LandLine Network, and Emerald Network, where applicable; consider development of future possible strategic bicycle and pedestrian safety plans.</p> <p>Coordinate regional efforts to coincide with the vision and goals outlined in the Massachusetts Bicycle and Pedestrian Statewide Transportation Plans.</p>

(Table 4-3 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Products and Progress	FFY 2023 Funding	FFY 2023 Planned Work Products and Progress
Regional Transit Service Planning Technical Support	14342	\$56,470	Supported City of Peabody and North Shore TMA with a survey on potential public transit in Peabody. Analyzed survey results and presented them to the City of Peabody and the North Shore TMA.	\$50,00	Continue support to communities seeking transit service planning technical assistance.
Roadway Safety Audits	2321	\$14,920	Provided support to MassDOT and communities for safety audits conducted in the Boston Region MPO area.	\$14,500	Provide support to MassDOT and communities for safety audits conducted in the Boston Region MPO area.

*This program is shared between MAPC and CTPS.

**Table 4-4
Unified Planning Work Program Budget—MPO New Discrete Studies, FFY 2023**

Universe ID	Project ID	Study or Program	Proposed FFY 2023 CTPS Budget
N/A	TBD	Multimodal Mobility Infrastructure Program	\$338,000
A-3	TBD	Update Bicycle/Pedestrian Count Database	\$80,000
T-1	TBD	Flexible Fixed-Route Bus Service	\$20,000
T-2	TBD	Transit Modernization Program	\$37,500
M-1	TBD	Lab and Municipal Parking Study	\$80,000
TE-1	TBD	Learning from Roadway Pricing Experiences	\$45,000
TE-4	TBD	Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area	\$67,500
Total for New Discrete and Recurring Studies			\$668,000

NOTE: This information may be updated as the FFY 2023 UPWP budget continues to develop.

PLANNING STUDIES

The project descriptions in this section describe the new studies chosen by the MPO for funding in FFY 2023. As described in Chapter 2 and Appendix B, CTPS gathers new study ideas each year and classifies them into the following categories: active transportation; land use, environment, and economy; multimodal mobility; transit; safety and security; and other technical work. Each of the project descriptions on the following pages begins with a funding table that shows the project identification number, category, funding sources, and total budget.

Update Bicycle/Pedestrian Count Database

Project ID Number	TBD
Category	Active Transportation
FFY 2023 Total Budget	\$80,000
Schedule	10/2022 through 9/2023

Purpose

This study would aim to update the Boston Region MPO Bicycle and Pedestrian Count Database application. This database has not been updated since 2019 due to COVID-related uncertainties. The work would include building a new home on the MPO's website for the Boston region's bicycle and pedestrian counts that is more user friendly and relevant for the needs of the public. Part of this process will feature a reassessment of the locations suggested for bicycle and pedestrian counts in the Boston region to ensure that a broad range of geographies and future project locations are included.

Approach

Staff will assess ideal locations for data collection, with a goal to expand counts beyond just the Greater Boston Area. Particular focus will be given to suburban and rural bikeways to develop a more comprehensive and accurate database of bicyclist and pedestrian counts.

FFY 2023 Anticipated Outcomes

An updated, public-facing database of bicycle and pedestrian counts with an expanded geography.

Flexible Fixed-Route Bus Service

Project ID Number	TBD
Category	Transit
FFY 2023 Total Budget	\$20,000
Schedule	10/2022 through 9/2023

Purpose

This study aims to understand the costs and benefits of transit providers allowing on-demand stops (in between existing stops) on low-ridership bus routes and/or during off-peak service. The goal of this study would be to understand what transit providers need to take into account when considering flexible stops. Some considerations would include the transportation needs of older adults and those with limited access to essential businesses, accessibility issues, and infrastructure.

Approach

Staff will conduct a literature review and preliminary interviews with regional transit authorities (RTA) who have either implemented this policy or are considering its implementation. In this phase of work, staff may develop preliminary dataset mapping RTA routes and identify potential routes for on-demand stops.

FFY 2023 Anticipated Outcomes

A literature review of existing transit providers with on-demand stops and early qualitative data collection.

Transit Modernization Program

Project ID Number	TBD
Category	Transit
FFY 2023 Total Budget	\$37,500
Schedule	10/2022 through 9/2023

Purpose

A Transit Modernization Investment Program was established as part of the Boston MPO's Long-Range Transportation Plan (LRTP), *Destination 2040*, adopted in 2019. This program set aside five percent of the MPO's regional target funds beginning in fiscal year 2025. The Transit Modernization investment program would flex MPO discretionary funding to transit maintenance and modernization projects identified through coordination with the MassDOT, Massachusetts Bay Transportation Authority (MBTA), MetroWest Regional Transit Authority (MWRTA), and the Cape Ann Transportation Authority (CATA). It could also include climate resiliency projects to improve transit infrastructure. Increasing investments in transit modernization and maintenance projects would allow the MPO to use its discretionary funding to augment planned transit improvements throughout the region and help the MPO reach its goals established in the LRTP.

The following are examples of projects that could be funded through this investment program:

- Accessibility Improvements
- Station Modernization Improvements
- Parking Improvements at Stations
- Infrastructure State of Good Repair Projects
- Fleet Modernization
- Bus Maintenance Facilities Upgrades

Approach

This study would dedicate staff time to develop materials and direction for this program. This information would assist CATA, MWRTA, and the MBTA in identifying eligible needs and coordinating efforts with municipalities before the funding program solicits applications.

FFY 2023 Anticipated Outcomes

The anticipated outcomes would include guidelines and materials to assist transportation agencies in coordinating with municipalities during the application process for the Transit Modernization Program.

Lab and Municipal Parking Study

Project ID Number	TBD
Category	Multimodal Mobility
FFY 2023 Total Budget	\$80,000
Schedule	10/2022 through 9/2023

Purpose

The Boston region is experiencing a boom in laboratory and life sciences development. With prices for the necessary real estate rising, development in this category has begun to spread from longstanding centers such as the Kendall section of Cambridge to a diverse set of areas across the region. MAPC and CTPS have heard from numerous stakeholders, especially municipal planners, across the region that there is a need for rigorous research to determine parameters for parking regulation for such developments. As more lab facilities are proposed throughout the Greater Boston region, developers are suggesting that high amounts of parking are needed on-site, which is sparking concern from municipalities about the potential impacts on local and regional transportation systems. As such, MAPC and CTPS propose collaborating on a research study to assess regional parking demand and use at commercial/mixed-use developments, with a particular focus on lab/life science facilities.

Approach

This research would proceed from the basis of MAPC's Perfect Fit Parking research (<https://perfectfitparking.mapc.org/>), which assessed regional parking demand and use at multifamily housing developments. It would adapt the Perfect Fit Parking approach to better fit the specific characteristics of lab development, including lower worker density per square foot and work hours that do not always fit a 9-to-5 model. The study would involve intensive around-the-clock data collection at certain developments to be determined in collaboration with municipal planners and other stakeholders, analysis, and development of a public-facing interface presenting a model or calculator relating parking dynamics at lab developments relative to the built environment, as well as the raw data.

FFY 2023 Anticipated Outcomes

The study will produce a written report and a database organizing parking rates, policies, permit programs of municipal and lab parking spaces in the Boston region, as well as a model or calculator detailing best practices around parking at lab facilities given the surrounding community.

Learning from Roadway Pricing Experiences

Project ID Number	TBD
Category	Transportation Equity
FFY 2023 Total Budget	\$45,000
Schedule	10/2022 through 9/2023

Purpose

Congestion pricing has been implemented or proposed in numerous metropolitan areas around the world, including an initial US project in New York City. Since this paradigm has not been used previously in the Boston region, it is incumbent upon planners to proactively understand what challenges and opportunities may arise around future implementations in the area.

Approach

The literature around congestion pricing is extensive and does not need replication. This study will take a more on-the-ground approach and tackle knotty questions about roadway pricing by engaging with those best qualified to talk about it. MPO staff will interview and learn from planners and policymakers who have implemented, or are implementing, roadway pricing in the United States (and within the planning process of which the MPO is a key part) in various forms, including but not limited to

- cordon-style congestion pricing in New York City;
- highway tolling and pricing of various forms and places; and
- dynamic parking pricing in San Francisco, Washington DC, Boston, and potentially other cities.

Topics for research may include the following:

- technical and political challenges, barriers, and opportunities
- benefits and burdens that congestion pricing strategies may bring for minorities and low-income populations
- key strategies for bringing roadway pricing from concept to reality
- FHWA regulations and oversight

Time and budget allowing, staff may host a forum on this topic, promulgate a survey, or conduct further interviews with local stakeholders.

FFY 2023 Anticipated Outcomes

Staff will prepare a memo or paper summarizing lessons learned from these conversations. These findings will allow the Boston region, both the MPO and its constituent municipalities and other entities, to be better informed and prepared to meet challenges to implement some form of roadway pricing at a future point.

Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area

Project ID Number	TBD
Category	Transportation Equity
FFY 2023 Total Budget	\$67,500
Schedule	10/2022 through 9/2023

Purpose

The proposed project area encompasses a concentration of vital light industrial and industrial uses in northern Suffolk County, including parts of Chelsea, Everett, Revere, East Boston, and Winthrop. Densely settled and largely populated by Environmental Justice (EJ) communities, this area serves as a key node for freight transportation servicing the entire Boston region and much of New England. Sustaining the regional economy, this area encompasses sizable clusters of important industries and critical regional infrastructure. Industrial and commercial uses require the existence of intense transportation corridors for the distribution of road salt, fuel storage, and produce. The transportation sector plays an outsized role in emitting carbon dioxide, nitrous oxide, particulate matter, and ultrafine particulate matter, degrading public health.

This study seeks to balance the preservation of this economically critical industrial and logistical cluster, which supports numerous blue-collar jobs in a heavily immigrant community, with relief of the environmental and health burdens it imposes on the surrounding municipalities. Originally proposed by the City of Chelsea, the study is being advanced by the MAPC and the Boston Region MPO and its staff, the CTPS. Other sponsors include local municipalities. This study will serve as a proof of concept for future similar analyses around the Boston region.

Approach

The study is designed to be conducted in several modules. The UPWP may fund one or more of these modules, or possibly some combination thereof, in FFY 2023 and MPO and MAPC staff are also looking into the possibility of seeking outside funding. The modules include

1. **Literature review**, examining other examples of area-based freight decarbonization efforts; benefits and burdens of public policy inducing mode shift in the freight sector; and economic, policy, and equity challenges. Estimated budget: \$60,000.
2. **Documentation of existing conditions**, including documentation and mapping of existing goods and vehicle movement; equity analysis; mapping of infrastructure; analysis of the emissions and air quality impacts of different subsectors; and stakeholder interviews, most extensively with industry. Estimated budget: \$120,000.

Policy recommendations, including documentation of various barriers to decarbonization; identification of opportunities for carbon and emissions reductions through technological improvements and mode shift; and documentation of what actions can be taken at which levels of government, with an emphasis on identifying tools that can be used at the local level.

FFY 2023 Anticipated Outcomes

MPO and MAPC staff will execute at least one of the above modules, working toward what will likely be a multi-year work program to create a conceptual plan to advance the sustainability and electrification of freight and logistics uses in the North Suffolk area. The end result will be a memorandum and/or set of data products for presentation to the MPO and relevant municipalities.

TECHNICAL ANALYSIS AND SUPPORT

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

Roadway Safety Audits

Project ID Number	2323
FFY 2023 Total Budget	\$14,500
Schedule	Ongoing

Purpose

This program supports CTPS participation in roadway safety audits (RSA).

Approach

An RSA, as defined by FHWA, is a formal safety performance examination of an existing or future road or intersection by an independent audit team. MassDOT guidelines require an RSA to be conducted where Highway Safety Improvement Program-eligible crash clusters are present. The program has expanded to cover additional high-crash locations and individual crash types, such as pedestrian and bicycle hot spots. The RSA examines the location to develop both short- and long-term recommendations to improve safety for vehicles, for people who walk, and for people who bike. These recommendations help communities identify safety improvements that can be implemented in the short term, and determine if more substantial improvements are needed as part of a larger, long-term improvement process.

Audit teams include MassDOT headquarters and district office staff, MassDOT consultants, municipal planners and engineers, local and state police, local emergency response personnel, 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 2023 Anticipated Outcomes

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

Community Transportation Technical Assistance Program

Project ID Number	2423, MAPC5
FFY 2023 Total Budget	\$74,500
Schedule	Ongoing

Purpose

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

Approach

This program is a mechanism for providing quick-response advice to communities that have identified transportation issues of concern about which they would like to have technical advice. In this program, a team of 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 with local officials to understand the potential problem, review existing data, and make suggestions for additional data that may be needed. Analysis of the identified problem and possible solutions, appropriate follow up, and contact information for appropriate MPO and MassDOT staff could be recommended. Descriptions of the various planning processes at MassDOT, the MBTA, the MPO, and MAPC, as well as guidance on how communities can get involved, could also be provided. Technical assistance activities could produce conceptual designs for some project locations.

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. In addition, it 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 2023 Anticipated Outcomes

In FFY 2023, MPO staff will solicit municipal 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. Depending on the complexity of the specific technical assistance requests from municipalities, CTPS and MAPC, the number of projects may vary each FFY. MPO staff will document the work, recommendations, and outcomes of these consultations in the form of technical memoranda.

Bicycle/Pedestrian Support Activities

Project ID Number	2523
FFY 2023 Total Budget	\$86,000
Schedule	Ongoing

Purpose

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

Approach

Bicycle and pedestrian planning studies are identified collaboratively by MPO members, communities, bicycle and pedestrian advisory groups, and CTPS. Through such studies, MPO staff provide support to communities by creating bicycle and pedestrian improvement projects that can be advanced through the MassDOT Project Development process. In addition to these planning studies, the Bicycle and Pedestrian Support Activities program works to improve safety and comfort for people walking and bicycling through the following efforts:

- Coordinate with state agencies, MAPC, other MPOs, MassDOT's Safe Routes to School Program, WalkBoston, MassBike, LivableStreets, municipalities, and other groups regarding bicycle and pedestrian planning for the region.
- Collect data on bicycle and pedestrian volumes at on-road and off-road facilities in the Boston region, and post collected count data to the Boston Region MPO's Bicycle and Pedestrian Count Database for public use.
- Provide ongoing technical support to communities for current tools and practices regarding bicycle and pedestrian issues, with a particular focus on promoting safety.
- Coordinate regional efforts to coincide with the vision and goals outlined in the Massachusetts Bicycle and Pedestrian Statewide Transportation Plans.
- Maintain the Pedestrian Report Card Assessment Interactive Database.

In addition to these ongoing responsibilities, the program may support the following activities:

- Review potential bicycle and pedestrian improvements to ready project recommendations for compliance with the Healthy Transportation Directive.
- Examine bicycle and pedestrian crash data at the intersection, corridor, and regional levels to support development of strategies to address bicycle and pedestrian safety problems.

- Conduct technical analyses to quantify the effects of proposed bicycle facilities, including air quality improvements, reductions in vehicle-miles traveled, and changes in parking needs.
- Conduct analyses to identify critical sidewalk gaps in the region, and possibly provide guidance to communities by accessing available Surface Transportation Block Grant program funding for transportation alternatives 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, LandLine Network, and Emerald Network, where applicable.
- Consider development of future possible strategic bicycle and pedestrian safety plans for the Boston MPO region.
- Identify locations with planned improvement projects and conduct “before” counts of people walking and bicycling.
- Conduct “after” counts of people walking and bicycling at locations where improvement projects with “before” counts have been completed.
- Analyze regional intersection and roadway report cards for bicycle and pedestrian travel.
- Evaluate the regional bicycle network for gaps and recommend solutions to improve connectivity.

FFY 2023 Anticipated Outcomes

Anticipated outcomes include

- Technical assistance, data collection, analysis, review of materials, and attendance at state, regional, and local forums and committee meetings.
- Analysis of regional bicycle and pedestrian counts.
- Identification of gaps in the Boston region bicycle network.
- Evaluation of regional intersections and roadways using the Pedestrian Report Card Assessment and Bicycle Report Card tools.

Regional Transit Service Planning Technical Support

Project ID Number	4123
FFY 2023 Total Budget	\$50,000
Schedule	Ongoing

Purpose

Through this ongoing program, the MPO provides technical support to regional transit authorities, municipalities, MAPC subregions, and transportation management associations. This work is focused on improving or expanding transit service and reducing single-occupancy-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 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 (TMA), MAPC subregions, and municipalities seeking to improve the transit services that they operate or fund.

FFY 2023 Anticipated Outcomes

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

Multimodal Mobility Infrastructure Program

Project ID Number	TBD
FFY 2023 Total Budget	\$338,000
Schedule	Ongoing

Purpose

This permanent program, new in the FFY 2023 UPWP, is the successor to four long-running recurring UPWP studies:

- Addressing Safety, Mobility, and Access on Subregional Priority Roadways
- Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment
- Safety and Operations at Selected Intersections
- Low-Cost Improvements to Express-Highway Bottleneck Locations

For nearly a decade, the first two studies have been funded each year in the UPWP, and the second two trade off every other year. Discussions between MPO staff and the UPWP Committee in spring 2022 revealed a readiness to make these long-standing studies a permanent program. Doing so will allow staff to continue to provide the same types of studies to communities as previously conducted, while addressing additional mobility topics and tackling problems on a more flexible and responsive basis as they emerge.

The purpose of this new program is to provide studies that will address both regional and community multimodal transportation needs. During MPO outreach, communities often identify transportation problems and issues relating to congestion, safety, bottlenecks, and lack of access to multimodal transportation facilities in their areas. These issues can affect livability, quality of life, crash incidence, and air quality along highways, arterial roadways, local streets, and major and local intersections. If problems are not addressed, mobility, access, safety, economic development, and air quality are compromised. These studies will develop conceptual design recommendations that address regional multimodal transportation needs.

Approach

Potential studies and analyses will be largely identified in the same methods used in the previous recurring studies. MPO staff will reach out to MAPC subregions, municipalities, and other groups to identify problem corridors, areas, and intersections, and use the LRTP Needs Assessment and other CTPS tools such as the CMP and crash information databases to identify further candidates. Consistent with federal planning emphasis areas, MPO staff will incorporate issues that are identified by the relevant subregional groups and include EJ and Title VI considerations. Study locations will be screened by staff and final choices made in cooperation with the MPO's

UPWP Committee. In addition to Complete Streets, operational, and safety considerations, analysis will also concentrate on transit services, nonmotorized modes of transportation, curb usage, and truck activity along these arterial segments. MPO staff will consider numerous strategies to improve these study areas, including examining and evaluating any or all the following factors:

- traffic signals (equipment, retiming, redesign, and coordination)
- transit availability and access
- transit priority
- accommodations and safety for people who walk and bike
- Americans with Disabilities Act of 1990 requirements
- travel-lane use by motorized and nonmotorized traffic
- speed limits
- access management

The improvement recommendations and strategies will help develop a guide for designing and implementing a Complete Streets corridor or improved intersection. This guide will be provided to communities and implementing agencies, which may choose to fund improvements through various federal, state, and local sources, either separately or in combination.

FFY 2023 Anticipated Outcomes

Through these studies, MPO staff will recommend conceptual improvement recommendations for an undetermined number of studies based on budget, with further information about the capabilities of the program to be provided as it develops. Study candidate areas will be identified by outreach, the CMP, and the LRTP as part of the Needs Assessment process, and confirmed with the UPWP Committee. The studies will provide communities with the opportunity to review the requirements of a specific study area, 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 will be useful to MassDOT and the community.



CHAPTER 5

Agency and Other Client Transportation Planning Studies and Technical Analysis

INTRODUCTION

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

Some of the contracts described in this chapter are issued to the Central Transportation Planning Staff (CTPS) every year and generally coincide with either the federal fiscal year (FFY) or the state fiscal year (SFY). Examples include the Massachusetts Department of Transportation (MassDOT) PL and MassDOT Statewide Planning and Research (SPR) contracts. Other contracts are issued for tasks and technical support to be conducted over a multi-year 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 a specified timeframe. These may either be one-time contracts in which CTPS conducts analysis or technical support to further a specific agency project, such as MassDOT's Dorchester Bay City Redevelopment DEIR Modeling Support project, 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 Massachusetts Bay Transportation Authority's (MBTA) National Transit Database (NTD): Data Collection and Analysis contract.

The work conducted on behalf of the agencies includes data collection and analyses covering a broad range of topics, including travel demand modeling, air quality, traffic engineering, Title VI, 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 MBTA, and other agencies in the Boston region.

**Table 5-1
Unified Planning Work Program Budget—New and Continuing Agency Transportation Planning Studies and Technical Analyses for FFY 2023**

Project ID	Name	Total Contract^a	Funding Source	FFY 2023 Agency Funds	Direct Support	Proposed FFY 2023 CTPS Budget
Varies by project	MassDOT SPR Program Support ^b	\$500,000	SPR	\$500,000	\$0	\$500,000
13155	MassDOT Title VI Program	\$95,000	MassDOT			\$10,000
Varies by project	MassDOT Transit Planning Assistance ^c	n/a	MassDOT 3C PL	\$352,579	\$0	\$352,579
11495	Silver Line Extension Alternatives	\$211,115	MassDOT	\$42,000	\$0	\$42,000
MassDOT Subtotal				\$894,579	\$0	\$904,579
11415	AFC 2.0 Equity Analysis	\$76,972	MBTA	\$19,000	\$0	\$19,000
TBD	MBTA 2023 Triennial Title VI Report	145800	MBTA	\$84,500	\$0	\$84,500
11429	MBTA 2022 Title VI Program Monitoring	79700	MBTA	\$40,000	\$250	\$40,250
TBD	MBTA Mapping Support	\$25,000	MBTA	\$25,000	\$0	\$25,000
14376	MBTA Rider Oversight Committee Support IV	\$31,000	MBTA	\$7,000	\$0	\$7,000
	MBTA SFY 2022 NTD Support	\$127,288	MBTA	\$6,000	\$0	\$6,000
	MBTA SFY 2023 NTD Support	\$165,145	MBTA	\$120,000	\$250	\$120,250
TBD	MBTA North Shore Busway	\$108,819	MBTA	\$90,000	\$0	\$90,000
TBD	MBTA Bus Tool Ongoing Support	\$60,000	MBTA	\$40,000	\$0	\$40,000
TBD	MBTA SFY 2024 NTD Support		MBTA	\$40,000	\$100	\$40,100
11422	MBTA Transit Service Data Collection X	\$540,000	MBTA	\$13,000	\$0	\$13,000
TBD	MBTA Transit Service Data Collection XI	\$540,000	MBTA	\$180,000	\$0	\$180,000
14358	Service Equity Analysis Support to the MBTA	\$115,000	MBTA	\$45,000	\$0	\$45,000
MBTA Subtotal				\$709,500	\$600	\$710,100

(Table 5-1 cont.)

Project ID	Name	Total Contract ^a	Funding Source	FFY 2023 Agency Funds	Direct Support	Proposed FFY 2023 CTPS Budget
	Other (Massport, Municipalities, etc.)	\$80,000	Other	\$80,000	\$0	\$80,000
Other Subtotal				\$80,000	\$0	\$80,000
Agency-Funded and Client-Funded Subtotal				\$1,684,079	\$600	\$1,694,679

a The total contract amounts include direct costs. Annual direct costs are not included in the FFY budget amounts in the table and are shown separately in the Direct Support column.

b The total FFY budgets in the UPWP represent a combination of funding from two different contract years. The total contract amount listed for the MassDOT SPR is the total contract amount for the FY 2022 and FY 2023 contracts.

c This project is conducted on behalf of MassDOT but funded through the MPO 3C Planning contract, and thus is not included in totals in this table.

MASSDOT

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

MassDOT Statewide Planning and Research Program Support

Project ID Number	Varies
Funding Source	MassDOT SPR
FFY 2023 Total Budget	\$500,000

Purpose

CTPS provides support to MassDOT’s SPR program as requested. These contracts will include multiple individual projects or tasks throughout the federal fiscal year.

Approach

CTPS will conduct studies and analyses and provide technical assistance upon request. Three of the projects that are either underway or expected to begin in FFY 2023 are the Roadway Inventory and Related Support Maintenance, the Statewide Model Improvements, and the Statewide Model Assistance Project.

Other projects may be added throughout FFY 2023.

FFY 2023 Anticipated Outcomes

Activities and work products will depend on tasks requested by MassDOT’s Office of Transportation Planning.

MassDOT Road Inventory and Related Support Maintenance

Project ID Number	97921
Funding Source	MassDOT SPR
FFY 2023 Total Budget*	TBD

*The term of the MassDOT SPR Contract aligns with the SFY, from July 1 through June 30. Therefore, the total FFY 2023 Total Budget represents nine months of funding from the SFY 2023 contract.

Purpose

CTPS provides support to MassDOT’s Geographical Information System (GIS) Services team as requested. This contract will bolster MassDOT’s Road Inventory maintenance and development and expand MassDOT’s GIS Services capacity.

Approach

CTPS staff will support MassDOT’s GIS Services in data cleaning and repair, updating road attributes, and improving routing for the MassDOT Road Inventory File.

FFY 2023 Anticipated Outcomes

Work will primarily result in improvements to the MassDOT Road Inventory File.

MassDOT Highway Division On-Call Modeling Support

Project ID Number	Varies
Funding Source	MassDOT Other
FFY 2023 Total Budget	\$350,000

Purpose

The purpose of this on-call contract is to provide the MassDOT Highway Division with travel demand modeling and planning assistance throughout FFY 2023.

Approach

MassDOT's Highway Division created a general on-call contract to retain CTPS's services, beginning in 2017, to provide travel demand modeling support, planning assistance, and data resources to MassDOT Highway Division projects.

FFY 2023 Anticipated Outcomes

Staff will document findings of travel demand modeling or planning recommendations in memoranda. In addition, staff will fulfill data requests and coordinate with project teams on various issues and items.

MassDOT Title VI Program

Project ID Number	13155
Funding Source	MassDOT Other
FFY 2023 Total Budget	\$45,000

Purpose

Under this contract, CTPS will continue to provide technical support to MassDOT for implementing 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 FHWA and the FTA, is required to comply with Title VI of the Civil Rights Act of 1964, and with protections enacted through several other laws and executive orders that prohibit discrimination based on gender, age, income, and disability. Through this technical support work, CTPS will assist MassDOT in complying with these nondiscrimination laws.

FFY 2023 Anticipated Outcomes

Staff will provide technical support to MassDOT as described above.

MassDOT-Directed Planning

Project ID Number	Varies
Funding Source	MassDOT 3C PL
FFY 2023 Total Budget	\$271,505

Purpose

CTPS will provide transit-planning assistance to MassDOT and the MBTA by conducting various studies under MassDOT's FHWA-funded PL Program. This task will include multiple individual projects or tasks throughout the federal fiscal year.

Approach

In FFY 2023, CTPS will continue to assist MassDOT and the MBTA with the Bus Network Redesign Service Equity Analysis. Following the MBTA's Disparate Impact/Disproportionate Burden (DI/DB) Policy, staff will evaluate whether the effects of the proposed changes in weekly revenue vehicle hours and route length are equitable. Staff will prepare formal Title VI equity analyses for the MBTA Board at critical points throughout this process.

Over the course of the FFY, CTPS may take on additional work through this task, as assigned by MassDOT.

FFY 2023 Anticipated Outcomes

For the Bus Network Redesign Service Equity Analysis, staff will generate the results of several Title VI Service Equity Analyses and produce a final analysis for the system change packages that are likely to move forward from the Bus Network Redesign process. Staff will also create graphics and provide technical assistance as requested by MassDOT and the MBTA.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

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

MBTA National Transit Database: Data Collection and Analysis

Project ID Number	14374 (SFY 2022) 14375 (SFY 2023) TBD (SFY 2024)
Funding Source	MBTA
Total Contract*	\$465,837
FFY 2023 Total Budget	\$7,572 (SFY 2022) \$117,538 (SFY 2023) \$41,425 (SFY 2024)

*Multiple contract years are represented.

Purpose

For many years, in support of the MBTA's NTD submittals to the FTA, CTPS has produced passenger-miles traveled and unlinked trip estimates for MBTA services. This project will develop these estimates for the following modes:

- directly operated MBTA transportation (including motor bus, heavy and light rail, and bus rapid transit)
- purchased-service bus routes (that is, local routes for which the MBTA contracts with a private carrier)
- commuter rail

Approach

CTPS will use the following methods to collect the data on which these estimates will be based:

- ridechecks on a sample of automatic passenger counter-equipped buses on the directly operated bus, rapid bus, and purchased service bus modes

- full-route ridechecks, including farebox fare-mix surveys, on the purchased service bus mode for the routes without automatic passenger counter-equipped buses
- transit trip surveys on heavy rail, light rail, and rapid-bus modes to determine origin-destination information (transfer rates and average trip lengths)
- faregate noninteraction, farebox noninteraction, and rear-door entry surveys from stations or Green Line and Mattapan High-Speed Line vehicles equipped with automated fare collection (AFC) technology
- inferred origin-destination information from AFC data, if available from the MBTA or its partners, to determine origin-destination information (transfer rates and average trip lengths)
- commuter rail ridership data from passenger counts conducted by the MBTA or its contractors or from the MBTA's mobile ticketing vendor
- counts of temporary bus bridge passengers during sample periods when portions of rail service are temporarily suspended for maintenance and replaced with bus service

The MBTA will submit its SFY 2022 NTD passenger-miles traveled and unlinked trip estimates for various transit modes to the FTA with the aid of CTPS during FFY 2023. The final technical memoranda for SFY 2023 NTD will be completed in FFY 2024.

FFY 2023 Anticipated Outcomes

In FFY 2023, staff will complete the final technical memoranda and auditing process for SFY 2022 NTD reporting and will complete data collection begun in FFY 2022 for SFY 2023. Field staff will begin collecting data for SFY 2024 NTD reporting.

MBTA Title VI Program Monitoring

Project ID Number	11429 (CY 2022) 11497 (CY 2023)
Funding Source	MBTA
Total Contract*	\$225,500
FFY 2023 Total Budget	\$45,442 (CY 2022) \$139,000 (CY 2023)

*Multiple contract years are represented.

Purpose

Under this contract, CTPS provides the MBTA with technical assistance by collecting and analyzing MBTA service data to compare service provided to minority riders with service provided to nonminority riders. This work supports the MBTA's compliance with Title VI requirements.

Approach

Staff will collect and analyze data on the following service indicators:

- service coverage
- vehicle load
- vehicle headway
- on-time performance
- station conditions and amenities
- distribution and operability of AFC faregates and fare vending machines
- distribution of AFC retail sales terminals
- station elevator and escalator locations and operability
- vehicle age and condition

The data-collection and analysis activities will help to fulfill monitoring required as part of the MBTA's ongoing Title VI Program. The results of the data collection efforts and analyses will be reported in a memorandum to the MBTA for internal review and follow up and will be included in the next triennial program.

In addition to conducting annual Title VI service monitoring, CTPS will produce the MBTA's 2023 Triennial Title VI program for submission to the FTA. The triennial program will include the service equity analyses and fare equity analyses that were conducted for the MBTA in the preceding three years, demographic and service profile maps and charts, and additional documentation to meet the MBTA's general reporting requirements.

FFY 2023 Anticipated Outcomes

CTPS will provide documentation about selected service monitoring evaluations for SFY 2021 MBTA service and amenities, and staff will prepare the MBTA's 2023 Triennial Title VI program.

MBTA Transit Service Data Collection

Project ID Number	11422
Funding Source	MBTA
Total Contract	\$540,000
FFY 2023 Total Budget	\$195,000

Purpose

The work conducted under this contract will help the MBTA to assess bus and rapid transit service changes.

Approach

The MBTA requires ongoing data collection regarding its transit system to assess service changes. As part of this project, CTPS collects ridership and performance data to support future MBTA service changes. 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 2023 Anticipated Outcomes

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

MBTA Rider Oversight Committee Support

Project ID Number	14376 (SFY 2022–25)
Funding Source	MBTA
Total Contract	\$31,342
FFY 2023 Total Budget	\$6,000

Purpose

The 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, 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 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 2023 Anticipated Outcomes

CTPS will continue to provide technical assistance to the MBTA ROC and attend committee and subcommittee meetings.

Service Equity Analysis Support to the MBTA

Project ID Number	14358
Funding Source	MBTA
Total Contract	\$115,000
FFY 2023 Total Budget	\$45,000

Purpose

CTPS will support the MBTA in conducting the required Title VI service equity analyses for major service changes that take place during the duration of this contract.

Approach

CTPS will conduct service equity analyses for as many as two major service changes.

FFY 2023 Anticipated Outcomes

CTPS will prepare technical memoranda documenting service equity analyses for each major service change.

MBTA Mapping Support

Project ID Number	11491
Funding Source	MBTA
Total Contract	\$18,000
FFY 2023 Total Budget	\$5,000

Purpose

The objective of this work is to provide map-making support, upon request from the MBTA. At the time of each request, CTPS will provide the MBTA with an estimate of the specific cost and schedule for completing the map(s).

Approach

CTPS will update MBTA maps, upon request from the MBTA, within the budget provided for this project.

FFY 2023 Anticipated Outcomes

Updated district maps to reflect changes in bus routes and bus route garage assignments. Upon request from the MBTA, CTPS staff will update other existing CTPS-created MBTA maps within the budget provided for this project.

Silver Line Extension Ridership Projections

Project ID Number	11495
Funding Source	MassDOT
Total Contract	\$211,155
FFY 2023 Total Budget	\$85,000

Purpose

MassDOT is analyzing alternatives for potential extension of the Silver Line from its current Silver Line 3 terminus in the City of Chelsea to connect through the City of Everett to the MBTA's Orange Line. CTPS will continue to be engaged in developing ridership projections for this work.

Approach

Staff will be provided with station locations and Silver Line operations data for the development of ridership projections for up to five service alternatives using data provided by a MassDOT consultant.

FFY 2023 Anticipated Outcomes

Staff will develop a Ridership Technical Memorandum documenting the assumptions used to generate the ridership projections. Ridership estimates will include estimates of ridership by station and by access mode for specific Silver Line stations, potential connecting MBTA subway and commuter rail stations, and connecting bus routes.

AFC 2.0 Equity Analysis

Project ID Number	11415
Funding Source	MBTA
Total Contract	\$88,972
FFY 2023 Total Budget	\$25,000

Purpose

The MBTA is developing a new AFC system, known as AFC 2.0, to supplant its existing fare payment system. In late 2017, the contract for the design, integration, and implementation of AFC 2.0 was awarded to Cubic | John Laing. This change in the MBTA's fare payment system will also lead to changes that may negatively affect some riders. The MBTA has requested that CTPS analyze the equity of the impacts of the following three components of AFC 2.0.

1. Elimination of cash on board

Once AFC 2.0 has been implemented, cash will no longer be accepted on board MBTA vehicles. As part of the project, the MBTA will be vastly increasing its retail network and installing fare vending machines at bus stops. The MBTA wants to ensure that access to locations where riders may purchase fares using cash is equitable.

2. Fee for specific fare media

Unlike the MBTA's current system, passengers may need to purchase some types of fare media for a small fee. Accompanied by this change is the ability for passengers to 'go negative' in stored value to complete a single, complete one-way trip using that fare media. The MBTA wants to determine whether this fee presents a barrier for riders who are classified as low-income or minority riders. Depending on the findings from the analysis, there may also be an evaluation of the effectiveness of any proposed mitigation from the MBTA.

3. Potential changes in fare structure

The new system will also give the MBTA the opportunity to implement fare structure changes, such as allowing discounted transfers between modes that are not currently offered; changing the existing periods of validity for pass products; and eliminating the differential between fares paid using CharlieCards and fares paid using cash or CharlieTickets. The MBTA wants to evaluate whether any proposed fare structure changes would result in inequities.

Approach

CTPS will evaluate the distribution of fare vending machines and other fare media sales locations, the equity impacts of charging for a fare card, and a package of various fare structure changes that may be implemented with AFC 2.0. Tasks in this project include

- participating in meetings and providing technical support;
- analyzing the distribution of fare vending machines and/or sales locations;
- analyzing the impacts of charging for fare media; and
- analyzing other fare structure changes.

FFY 2023 Anticipated Outcomes

CTPS will produce a memorandum documenting the equity analysis of the set of proposed fare structure changes.

CTPS will produce a memorandum documenting the equity analysis of the fare card fee.

CTPS will produce a memorandum documenting the equity analysis of proposed fare sales locations.



CHAPTER 6

Resource Management and Support Activities

INTRODUCTION

To support core Metropolitan Planning Organization (MPO) activities and studies, staff conduct various ongoing computer and other support activities.

For each activity described in this chapter, we cite the purpose of the work, describe how the work is accomplished, and provide a summary of the anticipated federal fiscal year (FFY) 2023 work products. The budget tables at the head of each project description give salary and overhead costs associated with the projects. Any direct costs associated with the projects are included in the Direct Support section beginning on page 6-8.

Table 6-1 summarizes the funding assigned to each of the activities in this chapter that were also assigned in FFY 2022, a summary of the work products and/or progress made in FFY 2022, the funding proposed for each of these activities in FFY 2023, and the anticipated work products and/or progress in FFY 2023.

Although many of the activities in this chapter generally comprise similar tasks from year to year, often there are variations in budgets that reflect greater or lesser emphasis on certain efforts. For example, MPO staff may undertake new or additional work under specific line items; the tasks undertaken as part of one line item in one year might be folded into an ongoing activity in a subsequent year; or there simply could be fluctuations in staffing levels. Where appropriate, these differences are explained in Table 6-1.

**Table 6-1
CTPS Ongoing Resource Management and Support Activities, FFY 2022-23**

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Products and Progress	FFY 2023 Funding	FFY 2023 Planned Work Progress and Products
CTPS Activities					
Computer Resource Management	Varies by Task	\$282,000	Provided maintenance and enhancements to CTPS’s desktop and server computer systems; computer network back-up system; and peripheral devices, such as printers, plotters, and mass storage devices.	\$280,000	Tasks and work products generally remain the same from year to year.
Data Resources Management	Varies by Task	\$320,100	<p>Provided database maintenance and enhanced CTPS’s database of standard reference GIS layers and GIS layers required to carry out particular projects.</p> <p>Updated databases with new versions of standard reference GIS layers released by MassGIS, the MassDOT OTP, and other agencies.</p> <p>Created GIS maps, computer map files, tables of socioeconomic and travel-related data, and databases. Analyzed data.</p>	n/a	This task has been integrated into the Data Program.



CTPS ACTIVITIES

The following sections contain details on the administration, resource management, and support activities undertaken by Central Transportation Planning Staff (CTPS) each FFY.

Computer Resource Management

Project ID Number	See Individual Tasks Below
FFY 2023 Total Budget	\$282,000

Purpose

In order to fulfill the Boston Region MPO functions, CTPS maintains state-of-the-practice computer resources.

Approach

CTPS performs the following subtasks as part of computer resource management.

6022 Computer Resource Management

01 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. Continue to ensure the security and integrity of all hardware, software, and data resources. Plan, monitor, and maintain CTPS's server room and computing facilities.

02 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.

03 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.

04 Computing Resource Purchasing and Maintenance

Purchase and maintain CTPS's computing resources. These include in-house assets such as servers, desktop and laptop computers, tablets 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.

05 Computer Resource Planning

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

FFY 2023 Anticipated Outcomes

Work on these tasks will continue as described above.

Professional Development

Project ID	2023
FFY 2023 Total Budget	\$64,500
Schedule	Ongoing

Purpose and Approach

MPO staff maintains its technical expertise in part by participating in courses, programs, and workshops offered by the Federal Highway Administration, the Federal Transit Administration, the Transportation Research Board, the Association of Metropolitan Planning Organizations, the Institute of Transportation Engineers, and other public, private, and nonprofit organizations. Previous professional development endeavors have been 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.

FFY 2023 Anticipated Outcomes

Staff will attend conferences, peer exchanges, trainings, and other enrichment and professional advancement opportunities.

Direct Support

Project ID Number	Varies
MPO 3C Planning Funds	\$92,000
Extended FFY 2023 MPO 3C Planning Funds	\$25,000
3C-Funded Work Direct Support Total	\$117,000
SPR Funds	\$600
MassDOT Other Funds	\$0
MBTA Funds	\$500
Other Funds	\$0
Agency-Funded Work Direct Support Total	\$1,100

Purpose

Through this activity, 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. During FFY 2023, CTPS plans to procure support from Caliper, the developer of the travel demand software TransCAD used by the Boston Region MPO. Caliper's support provides a one-time opportunity to accelerate the development of the next phase of travel demand modeling tools.

Membership Dues

Annual dues are paid to some organizations of which the MPO is a member. These organizations provide coordination opportunities with other MPOs and transportation planning resources.

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 are also charged as direct-support expenditures.

Translation and Interpretation Services

To meet the needs of persons with limited English proficiency, the MPO translates vital documents into the six most widely spoken non-English languages in the MPO region, currently Chinese (both traditional and simplified), Haitian Creole, Portuguese, Spanish, and Vietnamese, which is new for FFY 2023. Translation expenses are considered a direct cost. The MPO also provides real-time interpretation of meetings and events upon request with one week of advance notice, which is also considered a direct cost.

Other

Various other expenditures may become necessary during the term of this Unified Planning Work Program, such as postage for return mail or services for preparing and processing data for specific projects. Other nonrecurring costs, such as software for specific project work, equipment for conducting passenger surveys, or traffic-counting equipment, also may be funded through this line item.

FFY 2023 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.





CHAPTER 7

Metropolitan Area Planning Council Activities

INTRODUCTION

The Metropolitan Area Planning Council (MAPC) receives approximately 20 percent of the Boston region's annual combined 3C PL and §5303 funding. With this funding, MAPC staff conduct various studies, technical analyses, and outreach and support activities to help fulfill the Metropolitan Planning Organization's (MPO) functions as a regional planning body. The Massachusetts Department of Transportation (MassDOT) provides the match to both the Federal Transit Administration and Federal Highway Administration funds described in this chapter.

**Table 7-1
UPWP-Funded MAPC Activities, FFY 2023**

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Products and Progress	FFY 2023 Funding	FFY 2023 Planned Work Products and Progress
MAPC Planning Studies and Technical Analyses					
Corridor/Subarea Planning Studies	MAPC1	\$160,000	Local parking management plans; data collection and analysis to repurpose on-street parking spaces for dedicated bus and bike lanes; planning products and engagement support for MBTA Better Bus Project; multimodal transportation plans for select corridors or subregions.	\$213,000	Local parking management plans in selected communities; planning projects and engagement support for MBTA Better Bus Project; multimodal transportation planning for selected corridors or subareas; coordinated housing and transportation plan.
Alternative-Mode Planning and Coordination	MAPC2	\$198,136	Planning to support the advancement of zero emission vehicles with a focus on charging station siting and incentives for vehicle purchases; expansion and strategic planning of the Blue Bikes bikeshare system; advancement of the LandLine regional greenway system with conceptual planning to connect key gaps and continued updating of region-wide mapping tools; completed municipal bicycle and pedestrian plans in Milton and Wakefield.	\$218,509	Planning to support the advancement of zero-emission vehicles; bicycle- and pedestrian-planning support; expansion of the LandLine regional greenway system through planning and mapping efforts.
MetroCommon 2050	MAPC3	\$95,000	Final updated plan with policy recommendations and identification of planning needs to mitigate impacts of scenarios.	\$105,000	Support implementation and coordination of plan through outreach and engagement; expand outreach to municipalities and members of the public through regionwide discussion with partner organizations to expand knowledge and understanding of equitable transit-oriented development planning, transportation opportunities, and GHG emissions reduction; continued research and evaluation of planning practices.
Land Use Development Project Reviews	MAPC4	\$89,696	Technical memos with transportation recommendations for development projects and large transportation infrastructure projects with a land use component.	\$94,696	Technical memos reviewing development projects with a significant land use component using the Massachusetts Environmental Policy Act.

(Table 7-1 cont.)

Project Name	ID	FFY 2022 Funding	FFY 2022 Work Products and Progress	FFY 2023 Funding	FFY 2023 Planned Work Products and Progress
Community Transportation Technical Assistance Program*	MAPC5, 2421	\$48,156	Responded to various communities' inquiries related to transportation issues: Salem—Provided assistance analyzing potential impacts associated with changing residential streets to one-way streets to prevent diversions from a congested main street; Concord—Provided guidance regarding a possible bicycle count program that Concord would like to conduct associated with the Bruce Freeman Rail Trail and the West Concord MBTA station. Coordinated with MAPC about various technical assistance outreach needs and possible study locations.	\$48,156	Responded to various communities' inquiries related to transportation issues: Salem—Revised previous work to post-pandemic conditions analyzing impacts associated with diversions from Route 114; Quincy—Provided assistance analyzing safety at the Skyline Trail crossing of Route 28 in the Blue Hills Reservation; Medway—Provided assistance analyzing potential impacts associated with change in land use and redevelopment of town-owned land.
MAPC Administration and Support Activities					
MPO/MAPC Liaison and Support Activities	MAPC6	\$167,000	Continue to support the MPO process to develop the TIP, UPWP, and LRTP with robust public engagement, as well as participate in related regional planning efforts conducted by MassDOT, MBTA, municipalities, or federal partners.	\$175,000	Continue to support the MPO process to develop the TIP, UPWP, and LRTP with robust public engagement, as well as participate in related regional planning efforts conducted by MassDOT, MBTA, municipalities, or federal partners.
UPWP Support	MAPC7	\$10,000	Support the UPWP development process and attend relevant meetings.	\$12,000	Tasks and work products generally remain the same from year to year.
Land Use Data and Forecasts for Transportation Modeling	MAPC8	\$95,000	Improved land use allocation model; multiple demographic and land use scenarios for transportation modeling; updated development data and analysis; documentation; and mapping products to support advanced transportation modeling year to year.	\$105,000	Continued improvement of land use allocation model; multiple demographic and land use scenarios for transportation modeling; updated development data and analysis; documentation; and mapping products to support advanced transportation modeling year to year.
Subregional Support Activities	MAPC9	\$187,000	Support subregional groups. Includes preparing agendas, coordinating with transportation agencies, reviewing transportation studies in subregions, and helping to set subregional transportation priorities.	\$214,000	Tasks and work products generally remain the same from year to year.

*This section is also included in Chapter 5.

MAPC PLANNING STUDIES AND TECHNICAL ANALYSES

MAPC conducts transportation planning studies through four ongoing programs: Corridor/Subarea Planning Studies, Alternative Mode Planning and Coordination, MetroCommon 2050 Implementation, and Land Use Development Project Reviews. MAPC and Central Transportation Planning Staff (CTPS) also collaborate on the Community Transportation Technical Assistance Program (MAPC5), which is described in Chapter 4.

Corridor/Subarea Planning Studies

Project ID Number	MAPC1
FFY 2023 Total Budget	\$213,000

Purpose

This Unified Planning Work Program (UPWP) task includes funding to support MAPC’s work on several corridor and subarea studies in the region. Some of these projects will be funded jointly through the UPWP and other funding that MAPC receives through its assessment on cities and towns, state contracts, and other planning grants.

Approach

This area of work is accomplished through the following subtasks.

Local Parking Management Plans in Selected Communities (\$50,000)

MAPC will work with selected municipalities to develop local parking management plans to provide optimal parking supply to stimulate local economic prosperity, reduce congestion caused by circling vehicles, help municipalities plan for greater land use density by decreasing parking requirements, and encourage mode shift away from single-occupant vehicle trips. This work will involve on- and off-street parking, as well as understanding trade-offs associated with repurposing on-street parking for dedicated bus lanes, bike lanes, or wider sidewalks. 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, and to identify whether space that is currently dedicated for parked cars could be used more efficiently for other transportation or land use purposes. 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.

Supporting MBTA Better Bus Project (\$50,000)

MAPC will support the Massachusetts Bay Transit Authority's (MBTA) Better Bus Project, a multifaceted planning effort to improve the bus system through bus priority infrastructure, a redesigned bus network with changed and new routes, an increase in bus vehicles through planning for fleets and facilities, and improved bus stops with better shelters, street furniture, and electronic information signs. MAPC will convene municipal officials and other stakeholders to coordinate planning. MAPC will provide technical assistance at the corridor level to understand the trade-off of repurposing parking or travel lanes for more dedicated bus space. MAPC will support community engagement at the corridor level.

Corridor/Subarea Multimodal Transportation Planning (\$58,000)

MAPC will work in a selected subregion or roadway corridor to coordinate multimodal transportation planning, safety improvements, and transit service operations to be implemented by MassDOT, MBTA, Regional Transit Authorities, Transportation Management Agencies, the Department of Conservation and Recreation (DCR), employers, and/or municipalities with local land use planning to achieve livability and smart growth goals. The goal is to provide more mobility options for a variety of different users and trip types, as well as safer conditions for all users.

Coordinated Housing and Transportation Planning (\$55,000)

MAPC will work with selected municipalities to help them comply with the new state requirement to allow for multi-family residential development near MBTA transit stations. MAPC will support zoning, transportation planning, transportation demand management, and other activities to establish transit-oriented housing as required by Section 3A of M.G.L. Chapter 40A. MAPC will also conduct regional research on topics related to this new state law to support more cities and towns to comply with the requirement.

FFY 2023 Anticipated Outcomes

- Activities and expected work products related to Local Parking Management Plans include parking use data collection, analysis of data, and recommendations to municipalities in the form of a report with pricing and parking management solutions, or recommendations to repurpose on-street parking for other uses.
- Activities and expected work products related to Supporting MBTA Better Bus Project include coordination meetings, corridor level data collection and technical memos, community engagement meetings, survey information, and data visualization.
- Activities and expected work products related to Corridor/Subarea Multimodal Transportation Planning include identifying mobility solutions, conceptual designs, pilot projects, data and analysis to inform recommendations, and a technical report summarizing findings.

- Activities and expected work products related to Coordinated Housing and Transportation Planning include new zoning and transportation plans that enable transit-oriented housing.

Alternative-Mode Planning and Coordination

Project ID Number	MAPC2
FFY 2023 Total Budget	\$218,509

Purpose

MAPC provides alternative-mode transportation-planning support to the Boston Region MPO and municipalities that focuses on non-single-occupancy vehicle modes and promoting zero emission vehicles (ZEV). This work benefits bicycle and pedestrian transportation, encourages transit in areas that currently are underserved by existing regional transit authorities, improves the region's understanding of transportation network companies, advances ZEVs, and identifies and supports transportation demand management strategies.

Approach

This area of work is accomplished through the following subtasks.

Zero Emission Vehicle Support (\$35,000)

MAPC will support municipalities in planning for ZEVs, such as electric vehicle charging infrastructure, transitioning or retrofitting municipal fleets, advancing electric school buses, electric cargo bikes, promoting zero emission car sharing and ride-hailing, and other initiatives. This work will increase the number of ZEVs in the region, thereby helping the state meet greenhouse gas (GHG) emission reduction goals.

Bicycle and Pedestrian Planning (\$43,509)

MAPC will work with municipalities to identify local bicycle and pedestrian improvements with a focus on closing sidewalk gaps, implementing separated bicycle facilities, supporting bike and pedestrian safety plans, complete streets prioritizations plans, and other improvements at the local level. This work will lead to safer infrastructure, increase the rate of cycling and walking in the region, and decrease bicycle and pedestrian injuries.

Regional Bike Share Planning (\$40,000)

MAPC will continue to support municipalities in the region to plan for the implementation and expansion of the BlueBikes bicycle sharing program. This work will include analyzing trip data, supporting station siting, coordinating funding opportunities, planning for electric bikes, supporting new municipalities that join, and researching future governance and funding structures.

Regional Greenway Planning and Mapping (\$100,000)

MAPC will continue to work with MassDOT, CTPS, DCR, Executive Office of Energy and Environmental Affairs, municipalities, and trail organizations to plan, map, design, 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 worked with the above-cited partners to develop the branding of this system named the LandLine. 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.

FFY 2023 Anticipated Outcomes

- Planning to support deployment of ZEVs and infrastructure
- 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
- Support, technical analysis, coordination, and research to expand the BlueBikes system
- Research and recommendations to support first- and last-mile connections

MetroCommon 2050: Greater Boston's Next Regional Vision

Project ID Number	MAPC3
FFY 2023 Total Budget	\$105,000

Purpose

This UPWP study area will continue to support the ongoing coordination and implementation of our new regional plan, MetroCommon 2050, the Boston region's 30-year comprehensive plan (through the year 2050) for sustainable equitable growth and development. The new plan establishes goals for topics including mobility, climate mitigation, and resiliency, as well as actionable recommendations needed to accomplish these goals. The agency is aligning its annual workplan and technical assistance priorities to implement the recommendations of MetroCommon.

Approach

This area of work is accomplished through the following subtasks.

MetroCommon 2050 Implementation and Education (\$35,000)

Changing demographics and location preferences, planned investments in public transportation, and emerging transportation technologies will have a profound influence on the Boston region in the decades ahead. The regional plan includes recommendations for improving mobility, reducing GHG emissions from the transportation sector, and expanding the access, capacity, and affordability of public and active transportation. This task will include outreach and education to municipal leaders about the mobility focused recommendations, seeking commitments to work towards implementing specific action items.

Building Constituencies for Local, Regional, and State Decisions that Enable Livable Communities and Sustainable Transportation (\$35,000)

MAPC will continue to work with municipal and state officials and residents 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 planning, and influences other decision-making to improve development outcomes, transportation opportunities, and reduction of GHG emissions. As part of the plan update, we will hold regional discussions regarding challenges and opportunities in making long-term improvements to the Boston region's transportation system, including restoring and expanding service to equitable transit-oriented development locations. This is especially critical with the new

state law that requires our cities and towns to zone for multifamily districts around transit stations. Task outputs are expected to include engaging at least 500 people with a focus on diverse and underserved communities and partnering with organizations that serve those communities. Outputs also include hosting at least 10 different events or activities as part of the engagement.

Research and Evaluation that Support Livable Communities and Sustainable Transportation (\$35,000)

Incorporation of best practices and evaluation is important to improving MAPC's work and for advancing implementation at the local and state levels. Transportation and integrated land use planning practices will be evaluated to determine if improvements can be made to our practices, with a particular emphasis on evaluating the equity outcomes and processes of these plans.

FFY 2023 Anticipated Outcomes

Anticipated outcomes include a stronger constituency for sustainable land use and transportation investments and programs; case studies or best practices for regional and local mobility; and local commitments to implement the regional plan's recommendations.

Land Use Development Project Reviews

Project ID Number	MAPC4
FFY 2023 Total Budget	\$94,696

Purpose

This UPWP task supports MAPC’s review of potential development projects in the region. In particular, MAPC will review projects for consistency with its sustainable land use and transportation goals, impacts on the transportation network and projects identified in the Transportation Improvement Program (TIP) and Long-Range Transportation Plan (LRTP), and consistency with the MPO’s livability goals.

Approach

MAPC tracks all projects reviewed in the region under the Massachusetts Environmental Policy Act (MEPA), and provides a regional-planning analysis to MassDOT and the Secretary of Energy and Environmental Affairs for all developments considered to have significant impact. Special attention is given to mitigation and planning requirements that serve to reduce auto travel by encouraging carpooling, transit, parking regulations, and other travel demand management techniques. MAPC coordinates these reviews with MassDOT and the municipalities, 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 2023 Anticipated Outcomes

Anticipated outcomes include analysis and reports 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.

MAPC ADMINISTRATION AND SUPPORT ACTIVITIES

The following section contains details on the administration, resource management, and support activities undertaken by MAPC every federal fiscal year.

MPO/MAPC Liaison and Support Activities

Project ID Number	MAPC6
FFY 2023 Total Budget	\$175,000

Purpose

This project includes working with MPO members and staff to establish work priorities and meeting agendas. It also includes implementing the continuous, comprehensive, and cooperative (3C) transportation planning process and engagement in regional transportation planning led by MassDOT, the MBTA, or municipalities in the region. It also includes reporting to the 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 and Processes (\$95,000)

In addition to participating in the Boston MPO process, MAPC actively participates in and attends statewide and regional planning committees, task forces, working groups, and commissions 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; Regional Coordinating Councils; MassDOT and MBTA board meetings; and various MassDOT, MBTA, or municipally led transportation working groups or study advisory committees. 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 started or completed, but participation in various advisory committees is an ongoing task.

Support the Public Participation Process for Metropolitan Planning Documents (\$10,000)

MAPC provides education and outreach for 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 CTPS in its outreach to environmental justice and senior populations and to people with disabilities.

MPO Elections (\$10,000)

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

Performance-Based Planning and Programming (PBPP) (\$10,000)

MAPC will review PBPP targets and follow progress toward meeting targets and objectives, with a focus on coordinating state, local, and regional safety planning and goal setting.

TIP Evaluation and Criteria (\$25,000)

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

MPO Agenda Setting, Meetings, and Coordination (\$25,000)

MAPC will work with CTPS and MassDOT to develop MPO meeting agendas and presentations, and participate in MPO processes.

FFY 2023 Anticipated Outcomes

Outcomes of this program will result in 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; PBPP targets and data; LRTP scenarios; TIP criteria update and project evaluations; and attendance at relevant meetings.

UPWP Support

Project ID Number	MAPC7
FFY 2023 Total Budget	\$12,000

Purpose

This UPWP task supports MAPC’s management and oversight of UPWP-funded planning studies, projects, and programs, including preparing updates and budget information in monthly reports to MassDOT.

Approach

MAPC assists with the annual development of the UPWP and coordinates with MassDOT and CTPS to support 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 for inclusion in the UPWP.

FFY 2023 Anticipated Outcomes

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

Land Use Data and Forecasts for Transportation Modeling

Project ID Number	MAPC8
FFY 2023 Total Budget	\$105,000

Purpose

This program allows MAPC to support the MPO’s planning and decision-making by providing CTPS with detailed population, household, employment, and land use data (current conditions and scenarios of future growth) for transportation modeling and project evaluation.

Approach

MAPC will continue to investigate, acquire, and improve additional sources of employment and built environment data to inform land use allocation modeling. MAPC will continue to refine and improve Zoning Atlas data and corresponding development capacity estimates that serve as key inputs to the land use allocation model.

MAPC will continue to monitor development projects that are being planned across the region and will maintain an up-to-date development database in an online portal at www.massbuilds.com. MAPC will support CTPS and MassDOT in applying these data for project evaluation or updates to the regional travel demand model.

MAPC will collaborate with MassDOT and other stakeholders on the development of regional population, household, and employment control totals for the Boston MPO region and the next LRTP.

MAPC will use the UrbanSim Land use allocation model to develop scenarios of future land use, represented as population and employment forecasts at the transportation analysis zone and Census Block level, which can be incorporated into CTPS’s travel demand model.

MAPC will continue frequent and regular communication and coordination with the CTPS modeling staff to support travel model improvements and integration of the land use allocation and travel demand models. MAPC will also help to plan and participate in webinars and other peer exchange opportunities involving other regional agencies to improve our understanding of the state of practice regarding demographic and land use forecasting.

FFY 2023 Anticipated Outcomes

Anticipated outcomes include new data sources; an improved land use allocation model; multiple demographic and land use scenarios for transportation modeling; updated development data and analysis; documentation; and mapping products to support advanced transportation modeling.

Subregional Support Activities (MAPC)

Project ID Number	MAPC9
FFY 2023 Total Budget	\$214,000

Purpose

The Boston MPO region consists of 97 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 help members develop an understanding of subregional and regional transportation and land use issues. This project supports community involvement in the development of transportation planning documents.

Approach

Subregions jointly identify and review the transportation priorities in their areas and recommend subregional projects and priorities for the TIP, LRTP, UPWP, and the MassDOT and MBTA capital investment plans.

Subregional coordinators and MAPC transportation staff report 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 identify priority transportation needs, plan for first- and last-mile connections to transit, identify regional trail connections, pilot new technology to support increased mobility, and support planning for transit-oriented housing around MBTA stations.

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

FFY 2023 Anticipated Outcomes

Outcomes of this program include preparing monthly meeting agendas for transportation topics at subregional meetings; coordinating with transportation agencies; reviewing transportation studies in subregions; supporting subregional and corridor advisory committee meetings; generating public input on MPO processes and certification documents; and helping to set subregional transportation priorities.





CHAPTER 8

Boston Region MPO Budget and Operating Summaries

This chapter contains overall budget information for the Boston Region Metropolitan Planning Organization's (MPO) federal fiscal year (FFY) 2023 activities. The information is organized according to the Unified Planning Work Program (UPWP) categories described in Chapters 3 through 7 and recipient agencies and funding sources are indicated.

UPWP Work Areas	Total Budget
Certification Requirements	\$4,046,088
Continuing MPO Planning Studies and Technical Analyses	\$238,500
MAPC Planning Studies and Technical Analyses	\$679,361
New MPO-Funded Discrete Studies	\$653,000
Agency and Other Client Planning Studies and Technical Support	\$1,266,100
CTPS Administration, Resource Management, and Support Activities	\$280,000
MAPC Resource Management and Support Activities	\$506,000
Direct Costs (3C)	\$100,000
Total	\$8,121,628

The funding for the projects, programs, and activities listed in Chapters 3 through 7 comes from the following sources, which are described in Chapter 2.

Funding Source	Total Programmed Funds
FHWA 3C PL/MassDOT Local Match	\$7,098,240
MPO FTA 3C PL (Section 5303)/MassDOT Local Match	\$2,885,265
Extended FFY 2022 FHWA 3C PL/MassDOT Local Match	\$414,901
FHWA SPR/MassDOT Local Match	\$500,000
MassDOT	\$894,579
MBTA	\$645,000

The 10 tables on the following pages summarize the funding information presented in the preceding chapters. There is one table for each UPWP category of work conducted by Central Transportation Planning Staff (CTPS), one for each UPWP category of work conducted by Metropolitan Area Planning Council (MAPC), and two summary tables. These summaries assist federal and state contract administrators in reviewing each work program in detail.

The total federal funding programmed in this UPWP is \$5,708,978. All federal funds programmed in the UPWP are awarded to the Boston Region MPO by the Massachusetts Department of Transportation (MassDOT) as Federal Highway Administration (FHWA) 3C Planning (PL) funds. However, these federal funds initially come from two sources: the FHWA and the Federal Transportation Authority (FTA). The federal funds, which are supplemented by a local match provided by MassDOT, include the following initial sources:

- FHWA 3C PL: FHWA planning funds are distributed to the MassDOT 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 that is primarily based on the region's road mileage and population. The formula was developed by the Massachusetts Association of Regional Planning Agencies (MARPA) and is known as the MARPA formula. The FFY 2023 3C PL funding allocation for the Boston region, including state matching funds, is \$7,098,240. The total Boston region 3C PL allocation is split between CTPS, which receives \$5,912,879, and MAPC, which receives \$1,185,361.
- FTA 3C Planning (§5303): FTA provides 3C planning funds for transit projects to MPOs and state departments of transportation 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. These funds are converted to PL planning funds by MassDOT before distribution. The FFY 2023 FTA allocation for the Boston region, including a total local match, is \$2,885,265 and, like the 3C PL funds, is split into two categories:
 - MPO and MassDOT FTA 3C Planning (§5303): The total amount of FTA funds, including a local match, programmed in this UPWP as PL for work conducted by the MPO staff is \$2,037,574.
 - MAPC FTA 3C Planning (§5303): A portion of the Boston region's FTA allocation also goes to MAPC. MAPC uses these funds to conduct its transit-planning studies programmed through the UPWP. The total amount of FTA-derived funds, including a local match, allocated to MAPC as PL for FFY 2023 is \$432,790.

In addition, this UPWP includes \$414,901 in carryover FFY 2022 3C PL funds that support the Professional Development task and some direct costs related to travel demand model development.

This budget also reflects projects funded with Statewide Planning and Research and other funds from MassDOT; projects funded with Massachusetts Bay Transportation Authority funds; and projects funded from other sources. These projects are listed in Table 8-4.

Project status and financial data reported in the following tables are subject to change.

**Table 8-1
UPWP Budget—Certification Requirements for FFY 2023**

Project ID	Name	FFY 2022 CTPS UPWP Budget	Expected Project Status as of 10/1/2022	Proposed FFY 2023 CTPS Budget
9123	Support to the MPO and its Committees	\$240,000	Ongoing	\$405,088
9323	Regional Transportation Advisory Council Support	\$40,000	Ongoing	\$35,000
9623	Public Participation Process	\$180,000	Ongoing	\$253,000
9223	General Graphics	\$93,800	Ongoing	\$250,500
9523	Professional Development	\$64,500	Ongoing	\$100,000
Support to the MPO Subtotal		\$618,300		\$1,043,588
8123	Long-Range Transportation Plan	\$326,000	Ongoing	\$390,000
8223	Transportation Improvement Program	\$274,000	Ongoing	\$345,000
8823	Performance-Based Planning and Programming	\$125,000	Ongoing	\$125,000
8423	Air Quality Conformity Determinations and Support	\$25,500	Ongoing	\$22,500
8323	Unified Planning Work Program	\$116,000	Ongoing	\$122,500
8523	Transportation Equity Program	\$139,000	Ongoing	\$187,500
2123	Congestion Management Process	\$100,500	Ongoing	\$138,000
2223	Freight Planning Support	\$65,000	Ongoing	\$96,500
7123	Regional Model Enhancement	\$840,000	Ongoing	\$890,000

(Table 8-1 cont.)

Project ID	Name	FFY 2022 CTPS UPWP Budget	Expected Project Status as of 10/1/2022	Proposed FFY 2023 CTPS Budget
7223	Research Next Generation Data and Tools	\$57,790	Ongoing	\$0
5023	Data Program	\$218,000	Ongoing	\$572,000
8923	Transit Working Group Support	\$50,000.00	Ongoing	\$49,000
8723	MPO Resilience Program	\$11,000.00	Ongoing	\$45,500
3C Planning and Other Certification Requirements Activities Subtotal		\$2,347,790		\$2,983,500
Certification Requirements Subtotal		\$2,966,090		\$4,027,088

Table 8-2
UPWP Budget—Ongoing and Continuing MPO Planning Studies
and Technical Analyses for FFY 2023

Project ID	Name	FFY 2022 CTPS UPWP Budget	Expected Project Status/ Completion as of 10/1/2022	Proposed FFY 2023 CTPS Budget
13422	Addressing Safety, Mobility, and Access on Subregional Priority Roadways FFY 2022	\$133,000	95%	\$8,500
13522	Addressing Priority Corridors from the LRTP Needs Assessment FFY 2022	\$145,000	95%	\$9,500
13722	Safety and Operations at Selected Intersections FFY 2022	\$82,000	95%	\$4,500
Planning Studies Subtotal (Continuing FFY 2022 Initiated Work)		\$360,000		\$22,500
2323	Roadway Safety Audits	\$13,000	Ongoing	\$14,500
2423	Community Transportation Technical Assistance	\$67,000	Ongoing	\$74,500
2523	Bicycle and Pedestrian Support Activities	\$74,000	Ongoing	\$86,000
4123	Regional Transit Service Planning Technical Support	\$50,000	Ongoing	\$50,000
Technical Analysis and Support Subtotal		\$204,000		\$225,000
MPO-Funded Planning Studies and Technical Analyses Subtotal		\$564,000		\$247,500

**Table 8-3
UPWP Budget—MPO New Discrete Studies for FFY 2023**

Universe ID	Project ID	Study or Program	Proposed FFY 2023 CTPS Budget
A-3	TBD	Update Bicycle/Pedestrian Count Database	\$80,000
T-1	TBD	Flexible Fixed-Route Bus Service	\$20,000
T-2	TBD	Transit Modernization Program	\$37,500
M-1	TBD	Lab and Municipal Parking Study	\$80,000
TE-1	TBD	Learning from Roadway Pricing Experiences	\$45,000
TE-4	TBD	Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area	\$67,500
Total for New Discrete and Recurring Studies			\$330,000



FACE COVERING REQUIRED

1783



1783

**Table 8-4
UPWP Budget—New and Continuing Agency Transportation Planning Studies and Technical Analyses for FFY 2023**

Project ID	Name	Total Contract ^a	Funding Source	FFY 2023 Agency Funds	Direct Support	Proposed FFY 2023 CTPS Budget
Varies by project	MassDOT SPR Program Support ^b	\$500,000	SPR	\$500,000	\$0	\$500,000
13155	MassDOT Title VI Program	\$95,000	MassDOT			\$10,000
Varies by project	MassDOT Transit Planning Assistance ^c	n/a	MassDOT 3C PL	\$352,579	\$0	\$352,579
11495	Silver Line Extension Alternatives	\$211,115	MassDOT	\$42,000	\$0	\$42,000
MassDOT Subtotal				\$894,579	\$0	\$904,579
11415	AFC 2.0 Equity Analysis	\$76,972	MBTA	\$19,000	\$0	\$19,000
TBD	MBTA 2023 Triennial Title VI Report	145800	MBTA	\$84,500	\$0	\$84,500
11429	MBTA 2022 Title VI Program Monitoring	79700	MBTA	\$40,000	\$250	\$40,250
TBD	MBTA Mapping Support	\$25,000	MBTA	\$25,000	\$0	\$25,000
14376	MBTA Rider Oversight Committee Support IV	\$31,000	MBTA	\$7,000	\$0	\$7,000
	MBTA SFY 2022 NTD Support	\$127,288	MBTA	\$6,000	\$0	\$6,000
	MBTA SFY 2023 NTD Support	\$165,145	MBTA	\$120,000	\$250	\$120,250
TBD	MBTA North Shore Busway	\$108,819	MBTA	\$90,000	\$0	\$90,000
TBD	MBTA Bus Tool Ongoing Support	\$60,000	MBTA	\$40,000	\$0	\$40,000
TBD	MBTA SFY 2024 NTD Support		MBTA	\$40,000	\$100	\$40,100
11422	MBTA Transit Service Data Collection X	\$540,000	MBTA	\$13,000	\$0	\$13,000
TBD	MBTA Transit Service Data Collection XI	\$540,000	MBTA	\$180,000	\$0	\$180,000
14358	Service Equity Analysis Support to the MBTA	\$115,000	MBTA	\$45,000	\$0	\$45,000
MBTA Subtotal				\$709,500	\$600	\$710,100

(Table 8-4 cont.)

Project ID	Name	Total Contract ^a	Funding Source	FFY 2023 Agency Funds	Direct Support	Proposed FFY 2023 CTPS Budget
	Other (Massport, Municipalities, etc.)	\$80,000	Other	\$80,000	\$0	\$80,000
Other Subtotal				\$80,000	\$0	\$80,000
Agency-Funded and Client-Funded Subtotal				\$1,684,079	\$600	\$1,694,679

a The total contract amounts include direct costs. Annual direct costs are not included in the FFY budget amounts in the table and are shown separately in the Direct Support column.
 b The total FFY budgets in the UPWP represent a combination of funding from two different contract years. The total contract amount listed for the MassDOT SPR is the total contract amount for the FY 2022 and FY 2023 contracts.
 c This project is conducted on behalf of MassDOT but funded through the MPO 3C Planning contract, and thus is not included in totals in this table.

**Table 8-5
UPWP Budget—Resource Management and Support Activities for FFY 2023**

Project ID	Name	FFY 2022 CTPS UPWP Budget	Expected Project Status as of 10/1/2022	Proposed FFY 2023 CTPS Budget
6023	Computer Resource Management	\$282,000	Ongoing	\$275,000
Resource Management and Support Activities Subtotal*		\$282,000		\$275,000

*Does not include Direct Support.

**Table 8-6
UPWP Budget—MAPC Planning Studies and Technical Analyses for FFY 2023**

Project ID	Name	FFY 2022 MAPC UPWP Budget	Proposed FFY 2023 MAPC Budget
MAPC1	Corridor/Subarea Planning Studies	\$191,768	\$213,000
MAPC2	Alternative-Mode Planning and Coordination	\$204,713	\$218,509
MAPC3	MetroCommon 2050	\$95,000	\$105,000
MAPC4	Land Use Development Project Reviews	\$89,696	\$94,696
MAPC5, 2421	Community Transportation Technical Assistance Program*	\$48,156	\$48,156
MAPC Planning Studies and Technical Analyses Subtotal		\$629,333	\$679,361

* This project is shared with MAPC.

Table 8-7
UPWP Budget—MAPC Resource Management and Support Activities
for FFY 2023

Project ID	Name	FFY 2022 MAPC UPWP Budget	Proposed FFY 2023 MAPC Budget
MAPC6	MPO/MAPC Liaison and Support Activities	\$167,000	\$175,000
MAPC7	UPWP Support	\$10,000	\$12,000
MAPC8	Land Use Data and Forecasts for Transportation Modeling	\$95,000	\$105,000
MAPC9	Subregional Support Activities	\$187,000	\$214,000
MAPC Resource Management and Support Activities		\$459,000	\$506,000

**Table 8-8
UPWP Budget—Summary of FFY 2023 Budgets for CTPS**

3C Studies and Programs by Budget Categories	Proposed FFY 2023 CTPS Budget
Resource Management and Support Activities	\$275,000
MPO Certification Requirements	\$4,027,088
Continuing MPO-Funded Planning Studies and Technical Analyses	\$247,500
New MPO-Funded Discrete Studies	\$668,000
MassDOT-Directed PL Funds*	\$352,579
Direct Support	\$100,000
Total for CTPS 3C Studies and Programs	\$5,670,167

Agency-Funded CTPS Work	Proposed FFY 2023 CTPS Budget
MassDOT SPR Funds	\$500,000
MassDOT Other Funds	\$42,000
MBTA Funds	\$710,100
Other	\$80,000
Total for Agency-Funded CTPS Project Work	\$1,332,100

Total FFY 2023 CTPS Budget (3C + Agency Work)	\$7,002,267
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Note: Budget figures include salary, overhead, and direct support.

* This project is conducted on behalf of MassDOT but funded through the MPO 3C contract.

**Table 8-9
UPWP Budget—Summary of FFY 2023 Budgets for MAPC**

3C Studies and Programs by MAPC Budget Categories	Proposed FFY 2023 MAPC Budget
MAPC Planning Studies and Technical Analyses	\$679,361
MAPC Administration, Resource Management, and Support Activities	\$506,000
Total MAPC FFY 2023 UPWP Programmed Funds	\$1,185,361

**Table 8-10
UPWP Budget—3C Budget and Overall Budget for FFY 2023**

Agency Supporting MPO/3C Work	Proposed FFY 2023 Budget
CTPS	\$5,670,167
MAPC	\$1,185,361
3C Budget Subtotal	\$6,855,528
Agency-Funded CTPS Work	\$1,332,100
FFY 2023 UPWP Budget	\$8,187,628

APPENDIX A

Other Boston Region Transportation Planning Studies

This appendix consists of brief descriptions of planning studies that will be conducted in the Boston Region Metropolitan Planning Organization (MPO) area by individual agencies, such as the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA), during federal fiscal year (FFY) 2023. These studies fall into one of two categories:

- studies supported with federal planning (but not MPO) funds
- studies that MPO and partner agency staff have determined to be of regional significance

MPO discretionary funding will not be used for these studies, although in certain cases, an agency or one of its consultants may contract with MPO staff—the Central Transportation Planning Staff (CTPS)—to prepare an environmental impact report or large-scale study. For these projects, support work that will be conducted by CTPS is described in Chapters 3 through 6. Likewise, the project listings in this appendix indicate whether components of the projects will be conducted by CTPS. The appendix is organized hierarchically: first by type of study, then by geography, then by the entity organizing or leading the study effort.

The projects in this appendix are not subject to the MPO’s public participation process. Rather, they follow their own public processes, parts of which may be required by the Massachusetts Environmental Policy Act. They are included here to provide a more complete picture of the surface-transportation-planning projects occurring in the region. The listings contained in this appendix were provided to CTPS prior to June 23, 2022.

MULTIMODAL OR ROADWAY STUDIES

Statewide Studies

MassDOT

Beyond Mobility: Massachusetts 2050 Statewide Long-Range Transportation Plan

Beyond Mobility, the Massachusetts 2050 Long-Range Transportation Plan, is a planning process that will result in a blueprint for guiding transportation decision-making and investments in Massachusetts in a way that advances MassDOT’s goals and maximizes the equity and resiliency of the transportation system. The Plan will serve as a strategic plan for MassDOT and document the most pressing transportation priorities for MassDOT to address between now and 2050, relying heavily on input from the public.

Impact of Teleworking

The Impact of Teleworking Study is developing plausible future scenarios for teleworking in Massachusetts and will use a modeling approach to understand the effects that teleworking changes may have on the Commonwealth's transportation system. This study will examine how anticipated increases and/or decreases in teleworking could change household and aggregate travel behavior through measures that include overall vehicle-miles traveled, trip attributes, and mode share. The potential macroeconomics impacts of these changes in travel behavior will also be analyzed. The modeled projections for each scenario could assist MassDOT in future decision-making by providing information about how the demands on the transportation system will change and how the mix of transportation investment may need to respond.

Understanding the Impacts of COVID-19 on the Massachusetts Freight Network and Freight Planning

Because of pandemic-related shifts in supply chains, consumer buying, e-commerce, and associated distribution networks—all of which have clear implications on freight transportation behaviors and travel patterns—and to prepare the state freight network for present and future disruptions, this study will evaluate the network in light of observed and anticipated effects of COVID-19.

MassDOT National Electric Vehicle Infrastructure (NEVI) Plan

This planning process will develop an Electric Vehicle (EV) Infrastructure Deployment Plan for Massachusetts as required by the NEVI Program. Key activities include modeling EV charging demand on highway corridors in Massachusetts, analyzing economic factors associated with direct carbon fuel cell technology, prioritizing highway corridor segments for investment of NEVI funds, and seeking stakeholder input on key questions to be addressed by the plan. This Plan will enable MassDOT to use federal funds to install fast charging infrastructure on EV Alternative Fuel Corridors in Massachusetts, which may help to ease range anxiety for drivers on long-distance trips.

Regional or Subregional Studies

MassDOT

Wellington Circle Study

The Wellington Circle Study will evaluate the existing and future multimodal transportation conditions at Wellington Circle in the City of Medford, and develop and analyze alternatives that are intended to improve transportation conditions. The study will focus on the redesign of Wellington Circle intended to provide better connectivity and mitigate traffic throughout the area for the City of Medford and other communities in the surrounding region. The study will examine

and evaluate the alternatives to the extent possible in the context of vehicular use, bicycle and pedestrian use, transit use, land use, cost, and the resulting economic, social, and cultural impacts.

MassDOT/Executive Office of Energy and Environmental Affairs/Department of Conservation and Recreation/Boston Planning and Development Authority

Kosciuszko Circle and William T. Morrissey Boulevard Corridor Study

This is a conceptual planning study that will evaluate the existing and future multimodal transportation conditions at Kosciuszko Circle and William T. Morrissey Boulevard in the City of Boston, and develop and analyze alternatives for the corridor that are intended to improve the public realm, mobility, connectivity, safety, and climate resiliency throughout the area for the City and other communities in the surrounding region.

Gilmore Bridge Mobility Improvements Study

MassDOT's Office of Transportation Planning is conducting a study regarding opportunities to implement and improve transit priority and multimodal travel over the Gilmore Bridge in Boston and Cambridge, as well as explore the feasibility of building a new bridge between Charlestown and Cambridge to serve transit, walking, and biking trips.

The Gilmore Bridge Mobility Improvements Study will establish existing mobility and other travel conditions within the study area and evaluate short, medium, and long-term recommendations intended to address the needs of current and anticipated future travelers along the corridor, with a particular emphasis on providing dedicated bus lanes. In addition to exploring opportunities for transit priority measures and active transportation improvements on the Gilmore Bridge, the study will assess the feasibility of constructing a new bridge between Charlestown and Cambridge to serve transit, walking, and biking trips.

Route 1A East Boston Corridor Study

The purpose of this study is to assess the potential uses of the MassDOT and MBTA rail parcels located between Route 1A and the Chelsea Creek in East Boston, and evaluate the Route 1A corridor between Bell Circle and Day Square. The study will identify opportunities to improve walking, biking, and transit conditions, address safety deficiencies for all users, accommodate freight needs and increasing demand on the corridor due to new development, and mitigate potential impacts of climate change.

TRANSIT STUDIES

Statewide Studies

MassDOT

Northern Tier Passenger Rail Study

The Northern Tier Passenger Rail Study is a conceptual planning study assessing rail service alternatives along the North Adams-Greenfield-Boston corridor. The study will examine the benefits, costs, and investments necessary to implement passenger rail service from North Adams to Greenfield and Boston, with the speed, frequency, and reliability necessary to be a competitive option for travel along this corridor.

Regional or Subregional Studies

MassDOT/MBTA

MBTA Bus Network Redesign

This work builds off of the *Focus40* effort and the Better Bus Project to evaluate the overall MBTA bus network and propose an alternate vision for how the bus network can better reflect the travel needs of the region and create a more competitive bus service for current and future bus riders. The consultant team is responsible for conducting an in-depth analysis of the network using location-based systems data and the MBTA's origin-destination-transfer model to better understand travel demand in the region. Given that more than 450,000 MBTA customers rely on the bus network every day, the Network Redesign features a major civic engagement effort to ensure that the feedback from current and potential bus customers is a major input into this process. Stakeholder engagement also involves meeting with a range of municipal, business, and advocacy representatives. The consultant has developed concepts for a redesigned MBTA bus network and recommended a final proposed network. The final network will be implemented in phases. The Redesign will develop a detailed phasing plan for rolling out changes based on vehicle availability, the scale of changes, work to be completed, and political will. Currently, the redesign study is in the public engagement phase to obtain feedback on the proposed network changes.

Silver Line Extension Alternatives Analysis

Building off of the work of the Everett Transit Action Plan and the Lower Mystic Regional Working Group, the purpose of the Silver Line Extension Alternatives Analysis is to assess the feasibility, utility, and cost of various alignment and service frequency options of an extension of the Silver Line, providing high-quality transit from Chelsea through Everett and on to Somerville,

Cambridge, and/or Boston. The analysis will include the development of conceptual designs for alternatives, in addition to modeling how the alternatives would interact with other existing services, parking, and transportation demand management policies. The intended outcome of this effort is a report containing the information necessary for MassDOT/MBTA to select a preferred alternative to move into design.

CORRIDOR, AREA, OR GENERAL STUDIES

Regional or Subregional Studies

MassDOT

Route 128 Land Use Study

This study will establish future land use, housing, and economic development assumptions of the segment of Route 128 between Newton and Lexington and make recommendations to improve access to destinations and mobility in the region.

Municipal Studies

City of Boston

Rutherford Avenue—Sullivan Square Design Project

The City of Boston is progressing with the redesign of the Rutherford Avenue corridor in Charlestown, which extends approximately 1.5 miles from the North Washington Street Bridge to Sullivan Square and provides a critical connection between Everett, Somerville, suburbs north and east of Boston, and Boston’s downtown business area. Reconstruction of this corridor is currently programmed in the Transportation Improvement Program beginning in 2022. The corridor’s highway-like design is inconsistent with present-day design preferences and local circumstances, and the function and design of the Sullivan Square rotary is problematic. Pedestrian mobility is limited, and bicycle travel is not compatible with the high-speed road. The corridor is eight- to 10-lanes wide (120 to 140 feet), presenting a significant barrier between areas on either side of the roadway, such as the Bunker Hill Community College, Paul Revere Park, the Hood Business Park employment area, and MBTA rapid transit stations.

There are significant transit-oriented development opportunities along the corridor, and public investment in new infrastructure will support development of commercial and residential uses, whose tenants otherwise probably would not, or could not, locate to the area. A number of major structural elements in the corridor were constructed more than 60 years ago; they are approaching the end of their life cycle and will need to be replaced. With the Central Artery/Tunnel project now complete, more traffic remains on facilities such as Interstate 93

and US Route 1; therefore, reduced traffic volumes along Rutherford Avenue present a unique opportunity to transform the corridor’s character from a 1950s-era, automobile-oriented facility to a twenty-first century, multimodal, urban boulevard corridor that will accommodate private development.

MISCELLANEOUS STUDIES AND PLANNING ACTIVITIES

Statewide Studies

MassDOT

Climate Adaptation Vulnerability Assessment

The Climate Adaptation Vulnerability Assessment is a planning-level analysis of which transportation assets are at risk to flooding over the coming century. This study identifies flood exposure for in-state National Highway System roads, bridges, and large culverts; MassDOT- and MBTA-owned rail; MassDOT facilities; and many public-use airports. It assesses damage and repair costs, time estimates for repairs, and considers the consequences from loss of service. Specifically, this study will estimate “do nothing” costs and qualitative consequences of at-risk transportation assets under future conditions assuming no intervention. This information can be used during the capital planning process to prioritize investments that avoid or reduce long-term climatic impacts associated with flooding.

Shared Travel Network

This study will develop recommendations about where and how to leverage existing facilities and resources that could contribute to the development of a shared travel network, as well as where these existing facilities could be expanded and where new facilities and assets could be introduced.

Regional or Subregional Studies

Colleges and Universities

New England University Transportation Center (Region One)

The New England University Transportation Center (Region One) is a research consortium that includes the Massachusetts Institute of Technology (lead university), Harvard University, and the state universities of Massachusetts, Connecticut, and Maine. It is funded by the US Department of Transportation’s University Transportation Centers (UTC) Program. The New England UTC conducts multiyear research programs that seek to assess and make improvements for

transportation safety as well as develop a systems-level understanding of livable communities. For more information, visit the New England University Transportation Center's website at <http://utc.mit.edu/>.

APPENDIX B

Public Participation and Response to Public Comments

[Under Construction]



APPENDIX C

Universe of Proposed New Studies for Federal Fiscal Year 2023 UPWP

This appendix describes the Universe of Proposed New Studies, a key step in the evolution of the federal fiscal year (FFY) Unified Planning Work Program (UPWP). The Universe documents the study concepts that the Boston Region Metropolitan Planning Organization (MPO) staff collected or suggested for the development of the FFY 2023 UPWP. Each entry includes a summary of the purpose of the proposed study.

Studies in the Universe are organized into the following categories:

- Active Transportation
- Land Use, Environment, and Economy
- Multimodal Mobility
- Transit
- Transportation Equity
- Resilience
- Other Technical Support

The FFY 2020 UPWP development process introduced the Transportation Equity and Resilience categories. Table C-2 tracks the breakdown of studies chosen for funding in the UPWP from FFY 2016 to the present by category.

Staff and the UPWP Committee evaluate each proposed study in the Universe based on the extent to which a study concept addresses each of the six Long-Range Transportation Plan goal areas:

- Safety
- System Preservation
- Clean Air/Clean Communities
- Transportation Equity
- Capacity Management/Mobility
- Economic Vitality

The process of developing a final list of studies to be funded also includes consideration of staff capacity in relevant areas and work that is occurring in other agencies to avoid redundancy.

In addition to evaluating the proposed new studies in the Universe, MPO staff defines general scopes and estimated costs for the proposed studies and considers potential 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. For more information about the process of developing and evaluating the Universe, please see Chapter 2.

**Table C-1
Universe of Proposed Studies for FFY 2023**

Study Information			LRTP Goals					
ID	Project Name	Project Purpose and Outcome	S	SP/M	CM/M	TE	CA/SC	EV
ACTIVE TRANSPORTATION n/a			Key: 5 = most relevant, 1 = least relevant					
A-1	Shared-Use Path Guidebook	<p>Purpose: The purpose of the Shared-Use Path Guidebook project will be to provide municipalities and advocates with recommendations for bringing a shared-use path concept to reality. The UPWP project will entail interviewing municipal staff and advocates who have successfully brought shared-use paths to their communities, helping to inform future path-planning efforts using these effective experiences.</p> <p>Anticipated Outcome: This study would result in a guidebook for municipalities to consult when considering a shared-use path project.</p> <p>Estimated Budget: \$60,000</p>	5	1	4	3	3	1
A-2	Impact of New Active Transportation Facilities in the Boston Region	<p>Purpose: The goal of this project is to analyze, in a before-and-after style (where possible), impacts of new bicycle and pedestrian infrastructure (as documented at this link: https://trailmap.mapc.org/) constructed largely as a result of the COVID-19 pandemic. Variables to be considered could include speed data; accessibility to key destinations; economic impacts (potentially drawing from the recently released MassDOT research project on the economic impact of shared-use paths); and safety data before and after new facilities are constructed.</p> <p>Anticipated Outcome: A memo or study reporting cost/benefit analyses of capital projects intended to improve safety for pedestrians and bicyclists.</p> <p>Estimated Budget: \$40,000–\$60,000</p>	5	1	4	2	3	1
A-3	Update Bicyclist/Pedestrian Count Database	<p>Purpose: The Bicyclist/Pedestrian Count Database that the MPO maintains (https://www.ctps.org/appsloc/bike_ped5/bike_ped_query.html) has not added new counts since 2019. As we are asked to include pedestrian and cyclist counts during project initiation and scoping, and as traffic counts are encouraged to be no older than two years, it would be helpful for the District and member municipalities if the MPO resumed this counting program. Additionally, the previously counted locations are largely centered on portions of the inner core and along the Minuteman Greenway. Some extra attention to developing and restarting a robust program may be necessary to ensure that a broad range of geographies and future project locations are included.</p> <p>Anticipated Outcomes: The anticipated outcome of this project would be an updated database of bicycle and pedestrian counts with a more expanded geography.</p> <p>Estimated Budget: \$80,000</p>	4	1	2	1	4	1

(Table C-1 cont.)

Study Information			L RTP Goals					
ID	Project Name	Project Purpose and Outcome	S	SP/M	CM/M	TE	CA/SC	EV
ROADWAY AND MULTIMODAL MOBILITY								
M-1	Multi-Municipality Parking Study	<p>Purpose: MAPC and CTPS propose collaborating on a research study to assess regional parking demand and utilization at commercial/mixed-use developments, with a particular focus on lab/life science facilities. As more lab facilities are proposed throughout the Greater Boston region, developers are suggesting that high amounts of parking are needed on-site, which is sparking concern from municipalities about the potential impacts on local and regional transportation systems. MAPC’s Perfect Fit Parking research, which assessed regional parking demand and utilization at multifamily housing developments, can provide a potential model to help determine the appropriate amount of parking at lab facilities and to avoid overbuilding.</p> <p>Anticipated Outcome: A database organizing parking rates, policies, permit programs of municipal and lab parking spaces in the Boston region, as well as a model determining the appropriate amount of parking needed at lab facilities given the surrounding community.</p> <p>Estimated Budget: \$125,000</p>	1	1	3	3	3	5
TRANSIT								
T-1	Flexible Fixed-Route Bus Service	<p>Purpose: This study would identify the costs and benefits of allowing on-demand stops (in between existing stops) on low ridership bus routes and/or during off-peak service to increase safety and convenience for riders. Conducted in collaboration with RTAs, this study also would aim to map RTA service areas and identify gaps in service.</p> <p>Anticipated Outcomes: Maps of RTA service routes.</p> <p>Estimated Budget: \$40,000–60,000</p>	2	2	4	4	2	2
T-2	Transit Modernization Program, Phase 1	<p>Purpose: This study would dedicate staff time to develop materials and direction for the Transit Modernization Program that begins in FFY 2025. Beginning early would assist CATA, MWRTA, and the MBTA in identifying eligible needs and coordinating efforts with municipalities before the funding program solicits applications.</p> <p>Anticipated Outcomes: Guidelines and materials to assist transportation agencies in coordinating with municipalities during the application process for the Transit Modernization Program.</p> <p>Estimated Budget: \$75,000</p>	2	4	4	3	2	2

(Table C-1 cont.)

Study Information			LRTP Goals					
ID	Project Name	Project Purpose and Outcome	S	SP/M	CM/M	TE	CA/SC	EV
T-3	Opportunities for Bus Rapid Transit (BRT) in the Boston Region	<p>Purpose: This study addresses four of the six MPO’s goals with Transportation Equity as the primary focus and Clean Air/Clean Communities, Capacity Management/Mobility, and Economic Vitality as secondary objectives. BRT addresses transportation equity by focusing on improving the frequency, speed, reliability, and quality of bus transit service, which is disproportionately utilized by low-income and minority riders. These bus service enhancements provide disadvantaged populations with greater accessibility to jobs and services and improve overall quality of life by allowing people to spend more time at origins and destinations and less time waiting for service. It can also extend the reach of rapid rail transit services by feeding terminal stations and providing line-to-line transfers outside downtown. BRT also addresses the other goals: Clean Air/Clean Communities, by inducing a mode shift away from private automobiles; Capacity Management/Mobility, by increasing capacity of bus routes with greater frequency and longer vehicles; and Economic Vitality, by promoting more sustainable transit-oriented development nearby stations.</p> <p>In 2015, ITDP conducted a BRT analysis, Better Rapid Transit for Greater Boston, that identified five potential corridors for BRT in the Boston Region and provided the time savings estimates. This study will build on the ITDP study by measuring the accessibility benefits of BRT along these and five additional corridors. MPO staff will leverage innovative transit analysis tools such as Conveyal to estimate the number of additional jobs, services, and destinations BRT could provide to environmental justice communities throughout the Boston Region.</p> <p>Anticipated Outcomes: A memo outlining potential new corridors for BRT and potential benefits and impacts of such an expansion on environmental justice communities and economic development.</p> <p>Estimated Budget: \$80,000</p>	1	5	4	3	4	4

(Table C-1 cont.)

Study Information			LRTP Goals					
ID	Project Name	Project Purpose and Outcome	S	SP/M	CM/M	TE	CA/SC	EV
T-4	Funding Free Fares: Possibilities of Eliminating Fares with Value Capture	<p>Purpose: In recent years, transit providers in Massachusetts, including providers in Boston, Worcester, Brockton, and Lawrence, have piloted or are currently piloting fare elimination projects. Eliminating fares has the potential to improve transportation equity, reduce barriers to ridership, and eliminate the expense of operating a fare collection system. However, while eliminating fares has many potential benefits, what remains less clear is how transit providers could pay for it.</p> <p>This study would estimate the feasibility of replacing fare revenue with value capture tools. In 2017, MAPC published Expanding the Use of Value Capture for Transportation and TOD in Massachusetts, which provides an overview of the value capture tools currently employed and available in the Commonwealth. This analysis will expand on the MAPC study by estimating the revenue potential of value capture tools to replace the loss of fare revenue. MPO staff will estimate the revenue potential of value capture tools through the implementation of property assessments and sales taxes at varying distances near MBTA transit services. Staff will create a memo that describes the feasibility of available value capture options to replace fare revenue. The memo will provide details on the amount and geographic extent of property assessments and sale taxes necessary to fully fund the MBTA transit system. Staff will also investigate the possibility of replacing fares with value capture along specific transit routes, modes, and stations.</p> <p>There are many potential benefits of relying on value capture to fund a fare-free transit system. It is well established in the literature that high-quality transit services can have a positive effect on nearby property values and retail revenue. Value capture tools “capture” a portion of this value with property assessments and sales taxes on nearby properties and businesses to fund the operating and capital costs of the transit service. Funding transit with value capture also allows the transit provider to take advantage of positive feedback loops. Eliminating fares induces higher transit ridership which leads to greater retail sales at transit accessible businesses. Similarly, the improvements in accessibility offered by transit services lead to an uplift of nearby property value. These increases to property value and sales revenue lead to more funds to operate, improve, and expand the transit network. Greater funds allow the transit service provider to improve the accessibility benefits of the transit network with greater frequency, reliability, and coverage, which results in more revenue.</p> <p>Anticipated Outcome: A dataset documenting survey responses and a memorandum or web page presenting the analysis. Data will be made available to agency partners and municipalities throughout the region.</p> <p>Estimated Budget: \$60,000</p>	2	2	5	5	5	4

(Table C-1 cont.)

Study Information			LRTP Goals					
ID	Project Name	Project Purpose and Outcome	S	SP/M	CM/M	TE	CA/SC	EV
TRANSIT EQUITY								
TE-1	Analyzing the Environmental Justice Impacts of Congestion Pricing	<p>Purpose: The transportation burden on EJ communities are one of the major reasons that MPOs were created. In the 20th century in particular, transportation innovations were deliberately created and implemented with a purpose to burden different population groups. Congestion pricing is a new proposal that is occurring in several places in the world. While there are surely benefits to congestion pricing, these strategies have not been previously imposed in the Boston region. Therefore, it is ideal to conduct due diligence to ensure that these traffic mitigation strategies do not adversely impact disadvantaged population groups.</p> <p>This study will analyze the benefits and burdens that congestion pricing strategies will have on EJ populations, including minorities and low income populations. This study can also analyze the impact of congestion pricing with other vulnerable populations, such as seniors and disabled individuals, and carless households. Potential adverse impacts to congestion pricing include the increase of congestion in or leading to EJ communities, the disproportional increase of transportation costs to EJ populations relative to population, and the reduction of transportation options in EJ communities. This study will look at different impacts of different methods of congestion pricing, including cordon pricing, HOT lanes, tolling, and parking pricing. This study will also look at potential strategies to alleviate potential burdens, including variable pricing based on the income of the people using the transportation facility.</p> <p>Anticipated Outcomes: Memo or paper outlining benefits and concerns of congestion pricing strategies as they relate to environmental justice communities.</p> <p>Estimated Budget: \$60,000–\$80,000</p>	2	2	5	5	5	3
TE-2	Equity Analysis of Demand-Response Transit in the Boston Region	<p>Purpose: In line with the recent federal emphasis area to “target demand-response service towards communities with higher concentrations of older adults and those with poor access to essential services,” this study will assess the existing conditions of demand-response transit in the region and evaluate whether it is meeting the needs of these traditionally underrepresented communities.</p> <p>Anticipated Outcomes: Memo outlining where service to essential services is limited, along with maps of said corridors.</p> <p>Estimated Budget: \$20,000</p>	1	1	3	5	3	2

(Table C-1 cont.)

Study Information			LRTP Goals					
ID	Project Name	Project Purpose and Outcome	S	SP/M	CM/M	TE	CA/SC	EV
TE-3	Assessing Mobility Options at Affordable Housing Developments	<p>Purpose: This project would conduct a site-specific assessment of mobility services for residents at a sample of affordable housing communities within the region. The task would evaluate mobility options for low-income residents from the perspective of accessing economic opportunities, medical facilities, schools, parks, grocery stores and other daily needs. This study could fall under Transportation Equity Program as an “on-the-ground” counterpart to higher-level analyses from Conveyal and the travel demand model.</p> <p>Anticipated Outcomes: Guidebook or similar manual for transit providers to take to housing authorities and develop more equitable transit options for people in affordable housing communities.</p> <p>Estimated Budget: \$100,000–\$150,000</p>	2	1	2	5	4	4
TE-4	Chelsea Freight Electrification Survey	<p>Purpose: The City of Chelsea has consistently demonstrated high levels of air pollution and associated health risks from transportation. Consequently, the City, through the North Suffolk Office of Resilience and Sustainability (Revere, Winthrop, Chelsea), is seeking to develop an actionable plan to advance the electrification of freight in key industry sectors, informed by a thorough analysis of freight patterns, technologies, economics, and policy impediments. The proposed project area encompasses a concentration of vital light industrial and industrial uses north of Boston, enveloping Chelsea, Everett, and Revere. The project area can be modified to right size the project, based upon the forecasted level of effort, availability of resources, and stakeholder feedback.</p> <p>Anticipated Outcomes: Mapping freight patterns, memo outlining the advancement of freight electrification and impacts such a move would have on the area’s economy, as well as potential policy implications.</p> <p>Budget: \$60,000–\$80,000</p>	2	4	4	5	5	3

LRTP Goal Areas: S = Safety. SP/M = System Preservation and Modernization. CM/M = Capacity Management and Mobility. TE = Transportation Equity. CA/SC = Clean Air/Sustainable Communities. EV = Economic Vitality.

Table C-2
Studies Funded in the UPWP, by Category, FFYs 2016–23

	FFY 2016	FFY 2017	FFY 2018	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFY 2023
Active Transportation	1	1	1	1	1	1	1	3
Land Use, Environment, and Economy		1	1	1	0	1	3	0
Roadway and Multimodal Mobility	3	4	5	6	4	5	5	1
Transit	2	1	2	1	3	2	1	4
Transportation Equity*	1			0	1	0	1	4
Resilience*					1	1	0	0
Other	1	1	1	1	1	3	1	0
Total	8	8	10	10	11	13	12	12

*New category in FFY 2020

NATICK

NATICK



WONDERBREAD
SPUR



APPENDIX D

Geographic Distribution of UPWP Studies and Technical Analyses

INTRODUCTION

This appendix summarizes the Metropolitan Planning Organization (MPO)-funded work products produced by MPO staff (the Central Transportation Planning Staff) and the staff of the Metropolitan Area Planning Council (MAPC) during federal fiscal years (FFY) 2010 through 2022, as well as work products expected to be completed by the end of FFY 2022. The narrative below describes the methodology used to compile this information, as well as some of the additional factors that could be used to further analyze and use these data to inform and guide public involvement and regional equity considerations.

PURPOSE AND METHODOLOGY

Purpose

The purpose of this data collection is to better understand the geographic spread of Unified Planning Work Program (UPWP) work products (that is, reports and technical memoranda) throughout the Boston region. This analysis provides an initial glimpse at which communities and areas of the metropolitan region have benefited from transportation studies and analyses (or have been recipients of technical support) conducted by the MPO staff with continuing, comprehensive, and cooperative (3C) planning funds.

In addition, this Appendix includes a preliminary analysis of the distribution of MPO work products to minority populations, low-income populations, and people with limited English proficiency based on their share of the population in each municipality. This is an initial approach to assessing the extent to which MPO studies may benefit these populations; further development of the UPWP Study Recommendations Tracking Database, including geocoding of studies and creation of an interactive online interface, will eventually allow a more precise analysis of where and how study and analysis funds are spent.

Table D-1 presents a summary of UPWP tasks completed from FFY 2010 through FFY 2022 that resulted in benefits to specific municipalities, aggregated to the subregional level. Table D-2 presents this information disaggregated by municipality. Studies that had a regional focus are presented in Table D-3.

Tracking the geographic distribution of UPWP studies (those benefiting specific communities and those benefiting a wider portion of the region) can serve as one important input into the UPWP funding decisions made each FFY. When considered in combination with other information, these data on geographic distribution of MPO-funded UPWP studies can help guide the MPO's public outreach to ensure that, over time, we are meeting the needs of the region with the funds allocated through the UPWP.

**Table D-1
Summary of Distribution of Work Products by FFY and Subregion**

Subregion		Number of Work Products								Demographics			
Name	FFYs 2010-15 Total	FFY 2016	FFY 2017	FFY 2018	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFYs 2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP
ICC	155	19	21	32	26	17	14	20	304	1,763,304	48.1%	26.1%	16.0%
MAGIC	78	2	5	16	16	9	6	4	136	181,858	26.8%	8.7%	5.4%
MWRC	72	5	12	2	2	0	9	3	105	250,783	33.8%	13.8%	9.2%
NSPC	50	10	10	2	3	1	1	1	78	217,978	19.8%	10.5%	4.6%
NSTF	35	2	23	10	7	4	1	6	88	293,734	17.0%	17.6%	5.5%
SSC	35	1	0	5	3	3	1	9	57	224,764	17.5%	13.5%	3.9%
SWAP	37	0	0	2	0	0	3	1	43	149,159	19.6%	10.7%	4.5%
TRIC	44	2	2	6	15	14	10	10	103	275,614	29.1%	11.5%	7.0%
Regionwide Total	506	41	73	75	72	48	45	54	914	3,357,194	36.5%	19.6%	11.2%

Notes:

- LEP is tabulated for the population aged five and older, the minority population and population in poverty for the entire region.
- People who identify as minority are those who identify as Latino/a/x and/or Black or African American, Asian, American Indian or Alaska Native, and/or Native Hawaiian or other Pacific Islander.
- Duxbury, Hanover, Pembroke, and Stoughton transitioned out of the Boston Region MPO in FFY 2018, so work product totals for some subregions have changed from previous UPWPs.

Sources:

Minority population: U.S. Census Bureau; 2020 Decennial Census Redistricting Data (P.L. 94-171), Table P2: Hispanic or Latino, and Not Hispanic or Latino by Race; www.data.census.gov; (2022-06-15).

Low-income population: U.S. Census Bureau; 2016-20 American Community Survey, Table C17002: Ratio of Income to Poverty Level in the Past 12 Months; www.data.census.gov; (2022-06-15).

People with LEP: U.S. Census Bureau; 2016-20 American Community Survey, Table B16004: Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over; www.data.census.gov; (2022-06-15).



Methodology

As noted above, this analysis examined FFYs 2010 through 2022. To generate information on the number of UPWP studies produced during these FFYs that benefitted specific cities and towns in the Boston region, MPO staff performed the following tasks:

- reviewed all work products listed as complete in UPWPs from FFYs 2010 through 2022
- excluded all agency and other client-funded studies and technical analyses to focus the analysis on MPO-funded work only
- excluded all work products with a focus that was regional or not limited to a specific geography
- excluded all work related to certification requirements (Chapter 3), resource management, and support activities (Chapter 6), which consist of programs and activities that support the MPO, its staff operations, and its planning and programming activities
- compiled a count of all reports and technical memoranda completed specifically for one municipality or reports and technical memoranda directly benefiting multiple municipalities. In the case where multiple municipalities directly benefit from a report or technical memoranda, the work product was counted once for each municipality that benefited.
- reviewed and discussed the status and focus of studies, technical memoranda, and reports with project managers and technical staff
- refreshed demographic data using 2020 Decennial Census counts and American Community Survey 2016–20 five-year estimates

PLANNING STUDIES AND TECHNICAL ANALYSES BY COMMUNITY

Table D-2 shows the number of completed MPO-funded UPWP work products from FFY 2010 through FFY 2022 that are determined to provide benefits to specific municipalities. Studies and technical analyses are grouped by the year in which they were completed, rather than the year in which they were first programmed in the UPWP. Examples of the types of studies and work in the table include the following:

- evaluating parking in several municipalities
- technical assistance on Massachusetts Environmental Policy Act Environmental Impact Reports
- Complete Streets analyses for specific municipalities
- operations analyses and alternative conceptual design recommendations for specific intersections



D BROOKSIDE

3849B

3849

BROOKLINE HILLS

Map and schedule information for Brookline Hills station.

3:43
3 min

**Table D-2
Number of UPWP Tasks by FFY and Municipality, Grouped by Subregion**

Municipality	Number of Work Products									Demographics				
	2010-15 Total	2016	2017	2018	2019	2020	2021	2022	2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP	Median Income
Arlington	3	1	3	3	2	1	0	0	13	46,308	24.8%	11.0%	6.0%	\$114,576
Belmont	3	2	1	2	0	0	0	1	9	27,295	30.4%	9.3%	8.5%	\$140,500
Boston	22	3	2	5	9	3	5	11	60	675,647	55.4%	32.0%	16.9%	\$76,298
Brookline	5	1	2	0	1	3	0	1	13	63,191	34.7%	17.6%	9.2%	\$113,642
Cambridge	9	4	5	2	1	1	0	0	22	118,403	44.6%	19.8%	8.3%	\$107,490
Chelsea	10	0	2	1	1	2	1	0	17	40,787	79.8%	39.0%	40.2%	\$60,370
Everett	13	2	1	3	1	2	0	0	22	49,075	65.9%	31.6%	29.9%	\$70,627
Lynn	7	1	0	1	1	0	1	1	12	101,253	65.9%	35.2%	26.8%	\$61,329
Malden	10	0	2	2	1	0	1	0	16	66,263	60.0%	32.0%	26.8%	\$73,399
Medford	6	1	0	3	0	1	0	0	11	59,659	33.2%	18.5%	10.2%	\$101,168
Melrose	6	0	1	1	0	0	1	0	9	29,817	20.4%	12.3%	4.3%	\$114,604
Nahant	0	0	0	0	0	0	0	0	0	3,334	9.0%	14.5%	2.4%	\$94,243
Newton	12	0	0	1	0	1	0	1	15	88,923	29.9%	9.6%	6.3%	\$154,398
Quincy	11	0	0	0	2	1	2	3	19	101,636	45.8%	24.3%	20.7%	\$80,462
Revere	7	0	0	2	2	1	1	0	13	62,186	55.1%	32.8%	28.4%	\$68,331
Saugus	3	0	0	1	0	0	0	0	4	28,619	24.9%	17.9%	6.8%	\$88,463
Somerville	13	1	1	1	3	0	2	0	21	81,045	34.8%	21.9%	10.3%	\$102,311
Waltham	12	3	1	2	1	0	0	1	20	65,218	39.6%	19.8%	11.2%	\$95,851
Watertown	1	0	0	1	0	1	0	1	4	35,329	26.9%	13.6%	9.6%	\$100,434
Winthrop	2	0	0	1	1	0	0	0	4	19,316	21.1%	16.7%	6.5%	\$76,996
ICC Subtotals	155	19	21	32	26	17	14	20	304	1,763,304	48.1%	26.1%	16.0%	N/A

(Table D-2 cont.)

Municipality	Number of Work Products									Demographics				
	2010-15 Total	2016	2017	2018	2019	2020	2021	2022	2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP	Median Income
Acton	6	1	0	1	3	3	0	0	14	24,021	36.9%	11.8%	7.7%	\$137,981
Bedford	7	0	0	2	2	0	0	1	12	14,383	26.5%	7.5%	4.8%	\$133,824
Bolton	4	0	1	2	1	0	0	0	8	5,665	13.5%	7.5%	1.3%	\$167,708
Boxborough	4	0	0	1	1	0	0	0	6	5,506	32.9%	11.6%	4.3%	\$126,597
Carlisle	2	0	0	1	1	0	0	0	4	5,237	21.2%	6.9%	1.8%	\$197,530
Concord	6	1	3	1	1	1	2	1	16	18,491	18.2%	7.5%	4.1%	\$160,392
Hudson	7	0	0	1	1	0	1	0	10	20,092	21.4%	10.9%	9.7%	\$96,038
Lexington	10	0	0	1	1	1	1	1	15	34,454	43.3%	6.6%	7.1%	\$185,686
Lincoln	9	0	0	1	1	1	1	0	13	7,014	23.8%	15.5%	1.8%	\$140,888
Littleton	5	0	0	1	1	1	0	0	8	10,141	16.9%	10.9%	2.9%	\$125,275
Maynard	7	0	1	2	1	1	0	0	12	10,746	17.0%	10.0%	5.8%	\$107,891
Stow	4	0	0	1	1	0	0	0	6	7,174	14.3%	5.7%	2.7%	\$143,711
Sudbury	7	0	0	1	1	1	1	1	12	18,934	19.1%	4.4%	2.4%	\$195,073
MAGIC Subtotals	78	2	5	16	16	9	6	4	136	181,858	26.8%	8.7%	5.4%	N/A
Ashland	3	0	1	0	0	0	1	0	5	18,832	31.5%	10.0%	8.1%	\$118,348
Framingham	14	1	2	1	2	0	1	1	22	72,362	46.3%	20.0%	15.0%	\$86,322
Holliston	4	0	1	0	0	0	1	0	6	14,996	15.8%	5.7%	2.9%	\$137,589
Marlborough	6	0	2	0	0	0	1	0	9	41,793	40.9%	19.6%	12.1%	\$83,469
Natick	9	1	1	0	0	0	1	1	13	37,006	24.4%	9.6%	7.0%	\$115,652
Southborough	8	0	1	0	0	0	1	0	10	10,450	24.5%	9.1%	5.0%	\$156,845
Wayland	3	0	1	0	0	0	1	1	6	13,943	23.2%	5.4%	3.7%	\$192,632

(Table D-2 cont.)

Municipality	Number of Work Products									Demographics				
	2010-15 Total	2016	2017	2018	2019	2020	2021	2022	2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP	Median Income
Wellesley	11	1	1	0	0	0	1	0	14	29,550	26.7%	6.3%	4.4%	\$213,684
Weston	14	2	2	1	0	0	1	0	20	11,851	26.0%	15.0%	3.1%	\$206,250
MWRC Subtotals	72	5	12	2	2	0	9	3	105	250,783	33.8%	13.8%	9.2%	N/A
Burlington	11	1	1	0	1	0	0	0	14	26,377	30.0%	11.0%	6.1%	\$121,433
Lynnfield	4	1	1	0	0	0	0	0	6	13,000	13.5%	10.2%	3.1%	\$145,594
North Reading	2	1	1	0	0	0	0	0	4	15,554	11.5%	7.1%	2.4%	\$123,042
Reading	10	1	1	0	0	0	0	0	12	25,518	12.8%	9.4%	2.6%	\$131,515
Stoneham	4	1	1	0	0	0	0	0	6	23,244	18.6%	11.5%	4.4%	\$103,104
Wakefield	3	1	1	0	0	0	1	1	7	27,090	14.3%	11.0%	2.5%	\$103,696
Wilmington	5	1	1	0	1	1	0	0	9	23,349	13.8%	9.8%	3.0%	\$133,873
Winchester	4	2	1	1	0	0	0	0	8	22,970	25.4%	7.8%	4.7%	\$173,058
Woburn	7	1	2	1	1	0	0	0	12	40,876	27.2%	13.1%	8.6%	\$92,084
NSPC Subtotals	50	10	10	2	3	1	1	1	78	217,978	19.8%	10.5%	4.6%	N/A
Beverly	5	0	1	1	1	1	0	1	10	42,670	15.4%	20.5%	4.2%	\$84,354
Danvers	6	0	1	0	1	0	0	1	9	28,087	12.7%	12.6%	3.6%	\$99,269
Essex	0	0	1	0	1	0	0	0	2	3,675	7.5%	18.8%	0.9%	\$109,323
Gloucester	2	0	1	0	0	0	0	0	3	29,729	11.7%	21.0%	3.5%	\$76,260
Hamilton	1	0	1	0	1	0	0	0	3	7,561	11.1%	14.5%	2.0%	\$115,203
Ipswich	1	0	1	0	0	0	0	0	2	13,785	9.0%	14.5%	2.2%	\$103,941
Manchester-by-the-Sea	0	0	2	1	1	0	0	1	5	5,395	6.7%	4.5%	1.4%	\$178,250

(Table D-2 cont.)

Municipality	Number of Work Products									Demographics				
	2010-15 Total	2016	2017	2018	2019	2020	2021	2022	2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP	Median Income
Marblehead	2	0	2	0	0	0	0	0	4	20,441	9.2%	9.5%	2.9%	\$131,293
Middleton	0	1	2	0	0	0	0	0	3	9,779	15.7%	5.1%	3.7%	\$145,525
Peabody	4	0	2	2	1	1	0	1	11	54,481	22.7%	18.1%	9.6%	\$80,681
Rockport	3	0	1	2	0	0	0	0	6	6,992	6.9%	13.2%	0.6%	\$87,149
Salem	7	1	3	2	1	1	1	2	18	44,480	31.5%	29.8%	9.2%	\$66,428
Swampscott	3	0	2	1	0	1	0	0	7	15,111	14.2%	13.8%	9.5%	\$102,898
Topsfield	0	0	2	0	0	0	0	0	2	6,569	10.0%	6.9%	1.2%	\$144,258
Wenham	1	0	1	1	0	0	0	0	3	4,979	12.6%	7.4%	2.4%	\$142,734
NSTF Subtotals	35	2	23	10	7	4	1	6	88	293,734	17.0%	17.6%	5.5%	N/A
Braintree	9	1	0	0	0	1	0	1	12	39,143	29.9%	12.6%	9.3%	\$101,544
Cohasset	3	0	0	0	0	0	0	1	4	8,381	7.2%	11.2%	0.2%	\$141,036
Hingham	2	0	0	1	2	1	1	2	9	24,284	8.5%	9.1%	2.1%	\$147,520
Holbrook	3	0	0	0	0	0	0	0	3	11,405	34.4%	14.8%	3.8%	\$79,718
Hull	1	0	0	0	0	0	0	1	2	10,072	8.3%	11.1%	0.8%	\$105,403
Marshfield	2	0	0	0	0	0	0	1	3	25,825	6.8%	13.6%	0.2%	\$105,067
Norwell	2	0	0	1	1	1	1	1	7	11,351	8.8%	5.6%	0.8%	\$162,091
Rockland	1	0	0	1	0	0	0	0	2	17,803	17.5%	18.6%	3.7%	\$80,783
Scituate	3	0	0	1	0	0	0	1	5	19,063	6.6%	8.9%	1.7%	\$122,241
Weymouth	6	0	0	1	0	0	0	1	8	57,437	22.6%	17.9%	5.5%	\$85,536
SSC Subtotals	35	1	0	5	3	3	1	9	57	224,764	17.5%	13.5%	3.9%	N/A

(Table D-2 cont.)

Municipality	Number of Work Products									Demographics				
	2010-15 Total	2016	2017	2018	2019	2020	2021	2022	2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP	Median Income
Bellingham	3	0	0	1	0	0	0	0	4	16,945	14.6%	9.4%	1.1%	\$103,258
Franklin	3	0	0	0	0	0	0	0	3	33,261	14.9%	10.0%	2.8%	\$118,193
Hopkinton	7	0	0	0	0	0	0	0	7	18,758	26.8%	7.3%	2.0%	\$172,683
Medway	4	0	0	0	0	0	0	1	5	13,115	11.7%	9.7%	2.4%	\$139,688
Milford	8	0	0	1	0	0	1	0	10	30,379	34.0%	19.0%	13.7%	\$86,203
Millis	3	0	0	0	0	0	0	0	3	8,460	12.0%	10.9%	6.9%	\$114,255
Norfolk	2	0	0	0	0	0	0	0	2	11,662	15.9%	2.8%	1.2%	\$159,914
Sherborn	4	0	0	0	0	0	1	0	5	4,401	18.3%	7.3%	1.5%	\$216,406
Wrentham	3	0	0	0	0	0	1	0	4	12,178	10.4%	7.8%	0.7%	\$136,563
SWAP Subtotals	37	0	0	2	0	0	3	1	43	149,159	19.6%	10.7%	4.5%	N/A
Canton	2	0	2	2	1	3	0	1	11	24,370	27.1%	7.9%	6.1%	\$107,442
Dedham	5	1	0	0	1	2	1	1	11	25,364	22.0%	13.9%	4.5%	\$101,780
Dover	4	0	0	0	1	0	1	0	6	5,923	19.2%	2.6%	2.8%	Greater than \$250,000
Foxborough	4	0	0	0	1	2	1	0	8	18,618	16.4%	16.0%	4.0%	\$92,978
Medfield	1	0	0	0	1	0	1	0	3	12,799	12.5%	7.6%	1.2%	\$174,417
Milton	5	0	0	2	2	1	3	2	15	28,630	29.0%	14.0%	5.2%	\$141,050
Needham	7	1	0	1	2	0	0	1	12	32,091	18.9%	6.4%	5.0%	\$174,707
Norwood	2	0	0	0	2	2	1	2	9	31,611	27.5%	15.9%	9.4%	\$90,341
Randolph	4	0	0	0	1	0	0	1	6	34,984	73.4%	19.9%	18.9%	\$87,803
Sharon	0	0	0	0	1	0	0	0	1	18,575	33.2%	3.4%	6.1%	\$144,142

(Table D-2 cont.)

Municipality	Number of Work Products									Demographics				
	2010-15 Total	2016	2017	2018	2019	2020	2021	2022	2010-22 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents with LEP	Median Income
Walpole	4	0	0	0	1	2	1	1	9	26,383	17.1%	10.0%	3.9%	\$126,489
Westwood	6	0	0	1	1	2	1	1	12	16,266	17.2%	6.9%	5.6%	\$159,646
TRIC Subtotals	44	2	2	6	15	14	10	10	103	275,614	29.1%	11.5%	7.0%	N/A
Grand Total	506	41	73	75	72	48	45	54	914	3,357,194	36.5%	19.6%	11.2%	#N/A

Notes:
Limited English proficiency is tabulated for the population aged five and older, the minority population and population in poverty for the entire region.
People who identify as minority are those who identify as Latino/a/x and/or Black or African American, Asian, American Indian or Alaska Native, and/or Native Hawaiian or other Pacific Islander.
Duxbury, Hanover, Pembroke, and Stoughton transitioned out of the Boston Region MPO in FFY 2018, so work product totals for some subregions have changed from previous UPWPs.

Sources:
Minority population: U.S. Census Bureau; 2020 Decennial Census Redistricting Data (P.L. 94-171), Table P2: Hispanic or Latino, and Not Hispanic or Latino by Race; www.data.census.gov; (2022-06-15).
Low-income population: U.S. Census Bureau; 2016-20 American Community Survey, Table C17002: Ratio of Income to Poverty Level in the Past 12 Months; www.data.census.gov; (2022-06-15).
People with LEP: U.S. Census Bureau; 2016-20 American Community Survey, Table B16004: Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over; www.data.census.gov; (2022-06-15).

REGIONWIDE PLANNING STUDIES AND TECHNICAL ANALYSES

In addition to work that benefits specific municipalities, many of the projects funded by the MPO through the UPWP have a regional focus. Table D-3 lists MPO-funded UPWP studies completed from 2010 through 2022 that were regional in focus. Some regionally focused studies may have work products that overlap with those analyzed in the tables above.

More information on these studies and other work can be found on the MPO's website (https://www.bostonmpo.org/recent_studies) or by contacting Srilekha Murthy, UPWP Manager, at smurthy@ctps.org.

Table D-3
Regionally Focused MPO-Funded UPWP Studies

FFY 2022	
CTPS	MAPC
<ul style="list-style-type: none">• Trip Generation Follow-up• Travel Demand Management Follow-up• The Future of the Curb Phase 3• Identifying Transportation Inequities in the Boston Region• Staff-Generated Research Topics	<ul style="list-style-type: none">• MetroCommon 2050: Greater Boston's Next Regional Vision

(Table D-3 cont.)

FFY 2021	
CTPS	MAPC
<ul style="list-style-type: none">• Improving Pedestrian Variables in the Travel Demand Model• Regional TDM Strategies• Trip Generation Rate Research• Access to CBDs Phase 2• The Future of the Curb Phase 2• Multimodal Resilience and Emergency Planning• MPO Staff-Generated Research Topics• Mapping Major Transportation Infrastructure Projects in the Boston Region• Exploring Resilience in MPO-Funded Corridor and Intersection Studies	<ul style="list-style-type: none">• Rideshare Electrification Working Group• Impacts of E-commerce in Massachusetts• Planning Successful Bus Priority• Projects in Greater Boston• MetroCommon Regional Plan Development
FFY 2020	
CTPS	MAPC
<ul style="list-style-type: none">• Operating a Successful Shuttle Program• Further Development of the MPOs Community Transportation Program• Disparate Impact Metrics Analysis• Pedestrian Report Card Assessment Dashboard• Innovations in Estimating Trip Generation Rates• Review of Vision Zero Strategies	<ul style="list-style-type: none">• Participation in Rail Vision Study• Participation in East-West Rail Study• MetroCommon Regional Plan Development• Review of Institute of Traffic Engineers Trip Generation Estimates• Inventory of National TNC Fee Structures• Analysis of How Local and State Governments in North America Use TNC Data for Regulation• Literature Review of Initiatives to Incentivize Zero Emission TNC Vehicles

(Table D-3 cont.)

FFY 2019	
CTPS	MAPC
<ul style="list-style-type: none">• Pedestrian Report Card Assessment Dashboard• New and Emerging Metrics for Roadway Usage• The Future of the Curb• Updates to Express-Highway Volumes Charts	<ul style="list-style-type: none">• Coordination and convening of municipalities to implement recommendations of water transportation study• MetroCommon Regional Plan for smart growth and regional prosperity, including extensive stakeholder outreach and public engagement• Support for Blue Bike bikeshare system, Lime dockless bikeshare system, and support for coordinated regulation of electric scooters• Analysis of Transportation Network Company trips from varying data sources

FFY 2018	
CTPS	MAPC
<ul style="list-style-type: none">• Community Transportation Program Development• Review of and Guide to Regional Transit Signal Priority• Crash Rates in Environmental Justice Communities (Staff-Generated Research)• Long-Distance Commuting in the Boston MPO Region (Staff-Generated Research)• Exploring New Software for Transit Planning (Staff-Generated Research)• Safety Effectiveness of Safe Routes to School Programs• Planning for Connected and Autonomous Vehicles• Study of Promising GHG Reduction Strategies	<ul style="list-style-type: none">• Participation in Water Transportation Advisory Council• Regional Plan Update process• Evaluation of Transit-Oriented Development Planning Studies• Ride hailing research, literature review, and survey of 900 Uber and Lyft riders in Boston region to indicate how TNCs are affecting travel behavior.• Participation in suburban mobility working group with MassDOT, MBTA, and CTPS staff to discuss opportunities to pilot dynamic ride dispatching.

(Table D-3 cont.)

FFY 2017	
CTPS	MAPC
<ul style="list-style-type: none">• Using GTFS Data to Find Shared Bus Route Segments with Excessively Irregular Headways• Pedestrian Level-of-Service Metric Development• Exploring the 2011 Massachusetts Travel Survey: MPO Travel Profiles• Exploring the 2011 Massachusetts Travel Survey: Barriers and Opportunities Influencing Mode Shift• Core Capacity Constraints• Barriers and Opportunities Influencing Mode Shift• Bicycle Network Gaps: Feasibility Evaluations• 2016–17 Bicycle and Pedestrian Counts• Bicycle and Pedestrian Count Memo (summarizing counts 2014–17)• Memorandum documenting plans for future Boston Region MPO bicycle and pedestrian counting methodologies	<ul style="list-style-type: none">• North Suburban Mobility Study• North Shore Mobility Study• Perfect Fit Parking Report and Website• Hubway Bikeshare Coordination• MetroWest LandLine Gaps Analyses

(Table D-3 cont.)

FFY 2016	
CTPS	MAPC
<ul style="list-style-type: none">• Modeling Capacity Constraints• Identifying Opportunities to Alleviate Bus Delay• Research Topics Generated by MPO Staff (FFY 2016): Transit dependence scoring system using driver license data• Title VI Service Equity Analyses: Methodology Development• EJ and Title VI Analysis Methodology Review• Transportation Investments for Economic Development	<ul style="list-style-type: none">• Right-Size Parking Report• Transportation Demand Management—Case Studies and Regulations• Hybrid Electric Vehicle Retrofit Procurement• Autonomous Vehicles and Connected Cars research• MetroFuture Implementation technical memorandums
FFY 2015	
CTPS	MAPC
<ul style="list-style-type: none">• Greenhouse Gas Reduction Strategy Alternatives: Cost-Effectiveness Analysis• Roadway Network for Emergency Needs• 2012 Inventory of Bicycle Parking Spaces and Number of Parked Bicycles at MBTA Stations• 2012–13 Inventory of Park-and-Ride Lots at MBTA Facilities• Title VI Service Equity Analyses: Methodology Development	<ul style="list-style-type: none">• Population and Housing Projections for Metro Boston• Regional Employment Projections for Metro Boston• Right-size parking calculator

(Table D-3 cont.)

FFY 2014	
CTPS	MAPC
<ul style="list-style-type: none">• Bicycle Network Evaluation• Household Survey-Based Travel Profiles and Trends• Exploring the 2011 Massachusetts Travel Survey: Focus on Journeys to Work• Methodology for Evaluating the Potential for Limited-Stop Service on Transit Routes	<ul style="list-style-type: none">• Transportation Demand Management Best Practices and Model Municipal Bylaw• Land Use Baseline for Bus Rapid Transit• MetroFuture community engagement
FFY 2013	
CTPS	MAPC
<ul style="list-style-type: none">• Regional HOV-Lane Systems Planning Study, Phase II• Roadway Network Inventory for Emergency Needs: A Pilot Study• Carbon Dioxide, Climate Change, and the Boston Region MPO: 2012 Update• Massachusetts Regional Bus Study• Boston Region MPO Freight Program	<ul style="list-style-type: none">• Regional Trail Network Map and Greenway Planning• MetroFuture engagement at the local level, updates to the Regional Indicators Reports, and Smart Growth Profiles

(Table D-3 cont.)

FFY 2012	
CTPS	MAPC
<ul style="list-style-type: none">• Analysis of JARC and New Freedom Projects• Safety and Security Planning• Emergency Mitigation and Hazard Mapping, Phase II• Impacts of Walking Radius, Transit Frequency, and Reliability• MBTA Systemwide Passenger Survey: Comparison of Results• Pavement Management System Development• Roundabout Installation Screening Tool• TIP Project Impacts Before/After Evaluation• Regional HOV System Planning Study• Freight Survey	<ul style="list-style-type: none">• Snow Removal Policy Toolkit• MetroFuture implementation strategies— updated implementation strategies including focus on equity indicators
FFY 2011	
CTPS	MAPC
<ul style="list-style-type: none">• Charlie Card Trip Paths Pilot Study• Early Morning Transit Service• Maintenance Cost of Municipally Controlled Roadways• Analysis of Responses to the MBTA Systemwide Onboard Passenger Survey by Respondents in Environmental-Justice Areas• MBTA Core Services Evaluation• MPO Freight Study, Phase I and Phase II• MPO Freight/Rail Study	<ul style="list-style-type: none">• MPO Pedestrian Plan• MPO Regional Bike Parking Program• Toolkit for Sustainable Mobility—focusing on local parking issues

(Table D-3 cont.)

FFY 2010	
CTPS	MAPC
<ul style="list-style-type: none">• An Assessment of Regional Equity Outreach 2008–09• Coordinated Human Services Transportation Plan Update• Greenbush Commuter Rail Before and After Study• Mobility Assistance Program and Section 5310 Review• Safety Evaluation of TIP Projects• Red Line-Blue Line Connector Study Support	<ul style="list-style-type: none">• Creation of a GIS coverage and related database of MAPC-reviewed projects and their mitigation commitments• Implementation of the regional and statewide bicycle and pedestrian plans, and work on bicycle/pedestrian-related issues, including coordination with relevant national, state, and regional organizations

USES FOR THE DATA

MPO staff intends to continue to collect these data annually to allow use in future analyses and, potentially, UPWP funding decisions. The MPO could potentially use this collected data in concert with other data that the MPO holds or collects to inform a number of the following future analyses.

- Compare the number of tasks per community to the presence and size of a municipal planning department in each city and town.
- Examine the use of different measures to understand the geographic distribution of benefits derived from funding programmed through the UPWP. For example, in addition to analyzing the number of tasks per community, the MPO could consider the magnitude of benefits that could be derived from UPWP studies (for example, congestion reduction or air quality improvement).
- Examine in greater detail the geographic distribution of UPWP studies and technical analyses per subregion or per MAPC community type to understand the type of tasks being completed and how these compare to municipally identified needs.
- Examine the number of tasks per community and compare the data to the number of road miles or amount of transit service provided in the municipality.
- Develop graphics illustrating the geographic distribution of UPWP studies and spending and mapping that distribution relative to Environmental Justice and Transportation Equity concern areas.
- Compare the number of tasks directly benefiting each municipality with the geographic distribution of transportation needs identified in the current Long-Range Transportation Plan (LRTP), *Destination 2040*. The transportation needs of the region for the next 25 years are identified and organized in the LRTP according to the MPO's goal areas, which are
 - safety;
 - system preservation;
 - capacity management and mobility;
 - clean air and clean communities;
 - transportation equity; and
 - economic vitality.
- Compare the data analyzed in this appendix to the data collected through the MPO's UPWP Study Recommendations Tracking Database, which classifies tasks differently and provides a higher level of detail but is reliant on provision of data by municipalities.

Analyses such as these would provide the MPO with a clearer understanding of the influence of the work programmed through the UPWP.



APPENDIX E

Regulatory and Policy Framework

This appendix contains detailed background on the regulatory documents, legislation, and guidance that shape the Boston Region Metropolitan Planning Organization's (MPO) transportation planning process.

REGULATORY FRAMEWORK

The Boston Region MPO is charged with executing its planning activities in line with federal and state regulatory guidance. Maintaining compliance with these regulations allows the MPO to directly support the work of these critical partners and ensures its continued role in helping the region move closer to achieving federal, state, and regional transportation goals. This appendix describes all of the regulations, policies, and guidance taken into consideration by the MPO during development of the certification documents and other core work the MPO will undertake during federal fiscal year (FFY) 2023.

Federal Regulations and Guidance

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

The purpose of the national transportation goals, outlined in Title 23, section 150, of the United States Code (23 USC § 150), is to increase the accountability and transparency of the Federal-Aid Highway Program and to improve decision-making through performance-based planning and programming. The national transportation goals include the following:

1. **Safety:** Achieve 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 significant reduction in congestion on the National Highway System
4. **System reliability:** Improve 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 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 movement of people and goods by accelerating project completion by eliminating delays in the project development and delivery process, including by reducing regulatory burdens and improving agencies' work practices

The Boston Region MPO has incorporated these national goals, where practicable, into its vision, goals, and objectives, which provide a framework for the MPO's planning processes. More information about the MPO's vision, goals, and objectives is included in Chapter 1.

FAST Act: Planning Factors

The MPO gives specific consideration to the federal planning factors, described in Title 23, section 134, of the US Code (23 USC § 134), when developing all documents that program federal transportation funds. 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 competition, 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 integration and connectivity of the transportation system, across and between modes, for people and freight
7. Promote efficient system management and operation
8. Emphasize preservation of the existing transportation system
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation
10. Enhance travel and tourism

The Boston Region MPO has also incorporated these federal planning factors into its vision, goals, and objectives. Table E-1 shows the relationships between FFY 2022 MPO studies and activities and these federal planning factors.



**Table E-1
FFY 2023 3C-Funded UPWP Studies and Programs—Relationship to Federal Planning Factors**

Federal Planning Factor	3C-funded Certification Activities														3C-funded Technical Analysis and Support				New and Recurring 3C-funded Planning Studies*										Administration and Resource Management	MAPC Activities							
	3C Planning and MPO Support**	General Graphics	Professional Development	Long-Range Transportation Plan	Transportation Improvement Program	Performance-Based Planning and Programming	Air Quality Conformity and Support Activities	Unified Planning Work Program	Transportation Equity Program	Congestion Management Process	Freight Planning Support	Data Program	Transit Working Group Support	MPO Resilience Program	Roadway Safety Audits	Community Transportation Technical Assistance (CTPS and MAPC)	Bicycle and Pedestrian Support Activities	Regional Transit Service Planning Technical Support	Update Bicycle/Pedestrian Count Database	Flexible Fixed-Route Bus Service	Transit Modernization Program	Lab and Municipal Parking Study	Learning from Roadway Pricing Experiences	Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area	Safety and Operations at Selected Intersections, FFY 2022	Addressing Safety, Mobility, and Access on Subregional Priority Roadways, FFY 2022	Addressing Priority Corridors from the LTP Needs Assessment, FFY 2022	Multimodal Mobility Infrastructure Program	Computer Resource Management	Corridor/Subarea Planning Studies	Alternative Mode Planning and Coordination	MetroCommon 2050	Land-Use Development Project Reviews	MPO/MAPC Liaison Activities	UPWP Support	Land-Use Data and Forecasts for Transportation Modeling	Subregional Support Activities
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 the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	•			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•

(Table E-1 cont.)

Federal Planning Factor	3C-funded Certification Activities													3C-funded Technical Analysis and Support				New and Recurring 3C-funded Planning Studies*										Administration and Resource Management	MAPC Activities										
	3C Planning and MPO Support**	General Graphics	Professional Development	Long-Range Transportation Plan	Transportation Improvement Program	Performance-Based Planning and Programming	Air Quality Conformity and Support Activities	Unified Planning Work Program	Transportation Equity Program	Congestion Management Process	Freight Planning Support	Data Program	Transit Working Group Support	MPO Resilience Program	Roadway Safety Audits	Community Transportation Technical Assistance (C/PS and MAPC)	Bicycle and Pedestrian Support Activities	Regional Transit Service Planning Technical Support	Update Bicycle/Pedestrian Count Database	Flexible Fixed-Route Bus Service	Transit Modernization Program	Lab and Municipal Parking Study	Learning from Roadway Pricing Experiences	Sustainability and Decarbonization in the Freight and Logistics Sector in the North Suffolk Area	Safety and Operations of Selected Intersections, FFY 2022	Addressing Safety, Mobility, and Access on Subregional Priority Roadways, FFY 2022	Addressing Priority Corridors from the LTRP Needs Assessment, FFY 2022	Multimodal Mobility Infrastructure Program	Computer Resource Management	Corridor/Subarea Planning Studies	Alternative Mode Planning and Coordination	MetroCommon 2050	Land-Use Development Project Reviews	MPO/MAPC Liaison Activities	UPWP Support	Land-use Data and Forecasts for Transportation Modeling	Subregional Support Activities		
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 storm water impacts of surface transportation.	•			•	•	•	•					•		•				•	•	•	•	•	•					•								•		
10	Enhance travel and tourism.	•			•	•		•	•					•	•	•	•								•		•								•	•			•

*For ongoing FFY 2022 3C-funded studies, see FFY 2022 UPWP
 ** Includes Support to the MPO and its Committees, Public Participation Process, and RTAC Support

FAST Act: Performance-Based Planning and Programming

The United States Department of Transportation (USDOT), in consultation with states, MPOs, and other stakeholders, has established performance measures relevant to these national goals. These performance topic areas include roadway safety, transit system safety, National Highway System (NHS) bridge and pavement condition, transit asset condition, NHS reliability for both passenger and freight travel, traffic congestion, and on-road mobile source emissions. The FAST Act and related federal rulemakings require states, MPOs, and public transportation operators to follow performance-based planning and programming practices—such as setting targets—to ensure that transportation investments support progress towards these goals. See Chapter 3 for more information about how the MPO has and will continue to conduct performance-based planning and programming.

Bipartisan Infrastructure Law (BIL): Planning Emphasis Areas

The Bipartisan Infrastructure Law (BIL), signed into law on November 15, 2021, replaces the FAST Act as the nation’s five-year surface transportation bill, covering FFYs 2022–26. On December 30, 2021, the Federal Highway Administration and Federal Transit Administration jointly issued updated planning emphasis areas for use in MPOs’ transportation planning process. Those planning emphasis areas include the following:

- 1. Tackling the Climate Crisis—Transition to a Clean Energy, Resilient Future:** Ensure that transportation plans and infrastructure investments help achieve the national greenhouse gas reduction goals of 50-52 percent below 2005 levels by 2030, and net-zero emissions by 2050, and increase resilience to extreme weather events and other disasters resulting from the increasing effects of climate change.
- 2. Equity and Justice⁴⁰ in Transportation Planning:** Ensure public involvement in the planning process and that plans and strategies reflect various perspectives, concerns, and priorities from impacted areas.
- 3. Complete Streets:** Review current policies, rules, and procedures to determine their impact on safety for all road users. This effort should work to include provisions for safety in future transportation infrastructure, particularly for those outside automobiles.
- 4. Public Involvement:** Increase meaningful public involvement in transportation planning by integrating virtual public involvement tools into the overall public involvement approach while ensuring continued public participation by individuals without access to computers and mobile devices.
- 5. Strategic Highway Network (STRAHNET)/US Department of Defense (DOD) Coordination:** Coordinate with representatives from DOD in the transportation planning and project programming process on infrastructure needs for STRAHNET routes and other public roads that connect to DOD facilities.
- 6. Federal Land Management Agency (FMLA) Coordination:** Coordinate with FMLAs in the transportation planning and project programming process on infrastructure and connectivity needs related to access routes and other public roads and transportation services that connect to Federal lands.

7. **Planning and Environment Linkages:** Use a collaborative and integrated approach to transportation decision-making that considers environmental, community, and economic goals early in the transportation planning process, and use the information, analysis, and products developed during planning to inform the environmental review process.
8. **Data in Transportation Planning:** Incorporate data sharing and consideration into the transportation planning process.

While federal guidance is still being developing regarding the implementation of the BIL, the FAST Act's national goals and planning factors remain in effect. For this reason, these components of both bills are listed here as governing regulations for the MPO's transportation planning process.

1990 Clean Air Act Amendments

The Clean Air Act, most recently amended in 1990, forms the basis of the United States' air pollution control policy. The act identifies air quality standards, and the US Environmental Protection Agency (EPA) designates geographic areas as *attainment* (in compliance) or *nonattainment* (not in compliance) areas with respect to these standards. If air quality in a nonattainment area improves such that it meets EPA standards, the EPA may redesignate that area as being a *maintenance* area for a 20-year period to ensure that the standard is maintained in that area.

The conformity provisions of the Clean Air Act "require that those areas that have poor air quality, or had it in the past, should examine the long-term air quality impacts of their transportation system and ensure its compatibility with the area's clean air goals." Agencies responsible for Clean Air Act requirements for nonattainment and maintenance areas must conduct air quality conformity determinations, which are demonstrations that transportation plans, programs, and projects addressing that area are consistent with a State Implementation Plan (SIP) for attaining air quality standards.

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 Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (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 air quality standards in any area. The policy, criteria, and procedures for demonstrating air quality conformity in the Boston region were established in Title 40, parts 51 and 53, of the Code of Federal Regulations.

On April 1, 1996, the EPA classified the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville as in attainment for carbon monoxide (CO) emissions. Subsequently, a CO maintenance plan was set up through the Massachusetts SIP to ensure that emission levels did not increase. While the maintenance plan was in effect, past TIPs and LRTPs included an air quality conformity analysis for these communities. As of April 1, 2016, however, the 20-year maintenance period for this CO maintenance area expired and transportation

conformity is no longer required for this pollutant in these communities. This ruling is documented in a letter from the EPA dated May 12, 2016.

On April 22, 2002, the City of Waltham was redesignated as being in attainment for CO emissions with an EPA-approved limited-maintenance plan. In areas that have approved limited-maintenance plans, federal actions requiring conformity determinations under the EPA's transportation conformity rule are considered to satisfy the conformity test.

On February 16, 2018, the US Court of Appeals for the DC Circuit issued a decision in *South Coast Air Quality Management District v. EPA*, which struck down portions of the 2008 Ozone National Ambient Air Quality Standards (NAAQS) SIP Requirements Rule concerning the ozone NAAQS. Those portions of the SIP Requirements Rule included transportation conformity requirements associated with the EPA's revocation of the 1997 ozone NAAQS. Massachusetts was designated as an attainment area in accord with the 2008 ozone NAAQS but as a nonattainment or maintenance area as relates to the 1997 ozone NAAQS. As a result of this court ruling, MPOs in Massachusetts must once again demonstrate conformity for ozone when developing LRTPs and TIPs.

MPOs must also perform conformity determinations if transportation control measures (TCM) are in effect in the region. TCMs are strategies that reduce transportation-related air pollution and fuel use by reducing vehicle-miles traveled and improving roadway operations. The Massachusetts SIP identifies TCMs in the Boston region. SIP-identified TCMs are federally enforceable and projects that address the identified air quality issues must be given first priority when federal transportation dollars are spent. Examples of TCMs that were programmed in previous TIPs include rapid-transit and commuter-rail extension programs (such as the Green Line Extension in Cambridge, Medford, and Somerville, and the Fairmount Line improvements in Boston), parking-freeze programs in Boston and Cambridge, statewide rideshare programs, park-and-ride facilities, residential parking-sticker programs, and the operation of high-occupancy-vehicle lanes.

In addition to reporting on the pollutants identified in the 1990 Clean Air Act Amendments, the MPOs in Massachusetts are also required to perform air quality analyses for carbon dioxide as part of the state's Global Warming Solutions Act (GWSA) (see below).

Nondiscrimination Mandates

The Boston Region MPO complies with Title VI of the Civil Rights Act of 1964, the American with Disabilities Act of 1990 (ADA), Executive Order 12898—*Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations* (EJ EO), and other federal and state nondiscrimination statutes and regulations in all programs and activities it conducts. Per federal and state law, the MPO does not discriminate on the basis of race, color, national origin (including limited English proficiency), religion, creed, gender, ancestry, ethnicity, disability, age, sex, sexual orientation, gender identity or expression, veteran's status, or background. The MPO strives to provide meaningful opportunities for participation of all persons in the region, including those protected by Title VI, the ADA, the EJ EO, and other nondiscrimination mandates.

The MPO also analyzes the likely benefits and adverse effects of transportation projects to equity populations (populations traditionally underserved by the transportation system, as identified in the MPO's Transportation Equity program) when deciding which projects to fund. This analysis is conducted through the MPO's project selection criteria, which were recently strengthened to prioritize projects that provide benefits to these populations. MPO staff also evaluate the projects that are selected for funding, in the aggregate, to determine their overall impacts and whether they improve transportation outcomes for equity populations. The major federal requirements pertaining to nondiscrimination are discussed below.

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 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—*Improving Access to Services for Persons with Limited English Proficiency*, dated August 11, 2000, extends Title VI protections to people who, as a result of their nationality, have limited English proficiency. Specifically, it calls for improved access to federally assisted programs and activities, and it requires MPOs to develop and implement a system through which people with limited English proficiency can meaningfully participate in the transportation planning process. This requirement includes the development of a Language Assistance Plan that documents the organization's process for providing meaningful language access to people with limited English proficiency who access their services and programs.

Environmental Justice Executive Order

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

On April 15, 1997, the USDOT 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; and
- minimize or mitigate any adverse impact on minority or low-income populations.

The 1997 Final Order was updated in 2012 with USDOT Order 5610.2(a), which provided clarification while maintaining the original framework and procedures.

Americans with Disabilities Act

Title III of the ADA “prohibits states, MPOs, and other public entities from discriminating on the basis of disability in the entities’ services, programs, or activities,” and requires all transportation projects, plans, and programs to be accessible to people with disabilities. Therefore, MPOs must consider the mobility needs of people with disabilities when programming federal funding for studies and capital projects. MPO-sponsored meetings must also be held in accessible venues and be conducted in a manner that provides for accessibility. Also, MPO materials must be made available in accessible formats.

Other Nondiscrimination Mandates

The Age Discrimination Act of 1975 prohibits discrimination on the basis of age in programs or activities that receive federal financial assistance. Additionally, the Rehabilitation Act of 1975, and Title 23, section 324, of the US Code (23 USC § 324) prohibit discrimination based on sex.

State Guidance and Priorities

Much of the MPO’s work focuses on encouraging mode shift and diminishing greenhouse gas (GHG) emissions through improving transit service, enhancing bicycle and pedestrian networks, and studying emerging transportation technologies. All of this work helps the Boston region contribute to statewide progress towards the priorities discussed in this section.

Choices for Stewardship: Recommendations to Meet the Transportation Future

The Commission on the Future of Transportation in the Commonwealth—established by Massachusetts Governor Charlie Baker’s Executive Order 579—published *Choices for Stewardship* in 2019. This report makes 18 recommendations across the following five thematic categories to adapt the transportation system in the Commonwealth to emerging needs:

1. Modernize existing transportation assets to move more people
2. Create a mobility infrastructure to capitalize on emerging transportation technology and behavior trends
3. Reduce transportation-related greenhouse gas emissions and improve the climate resiliency of the transportation network
4. Coordinate land use, housing, economic development, and transportation policy
5. Alter current governance structures to better manage emerging and anticipated transportation trends

The Boston Region MPO supports these statewide goals by conducting planning work and making investment decisions that complement MassDOT's efforts and reflect the evolving needs of the transportation system in the region.

Massachusetts Strategic Highway Safety Plan

The *Massachusetts 2018 Strategic Highway Safety Plan* (SHSP) identifies the state's key safety needs and guides investment decisions to achieve significant reductions in highway fatalities and serious injuries on all public roads. The SHSP establishes statewide safety goals and objectives and key safety emphasis areas, and it draws on the strengths of all highway safety partners in the Commonwealth to align and leverage resources to address the state's safety challenges collectively. The Boston Region MPO considers SHSP goals, emphasis areas, and strategies when developing its plans, programs, and activities.

MassDOT Modal Plans

In 2017, MassDOT finalized the *Massachusetts Freight Plan*, which defines the short- and long-term vision for the Commonwealth's freight transportation system. In 2018, MassDOT released the related *Commonwealth of Massachusetts State Rail Plan*, which outlines short- and long-term investment strategies for Massachusetts' freight and passenger rail systems (excluding the commuter rail system). In 2019, MassDOT released the *Massachusetts Bicycle Transportation Plan* and the *Massachusetts Pedestrian Transportation Plan*, both of which define roadmaps, initiatives, and action plans to improve bicycle and pedestrian transportation in the Commonwealth. The MPO considers the findings and strategies of MassDOT's modal plans when conducting its planning, including through its Freight Planning Support and Bicycle/Pedestrian Support Activities programs.

Global Warming Solutions Act

The GWSA makes Massachusetts a leader in setting aggressive and enforceable 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 (EEA), 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 (and updated in 2015), establishes the following targets for overall statewide GHG emission reductions:

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

In 2018, EEA published its GWSA 10-year Progress Report and the GHG Inventory estimated that 2018 GHG emissions were 22 percent below the 1990 baseline level.

MassDOT fulfills its responsibilities, defined in the *Massachusetts Clean Energy and Climate Plan for 2020*, through a policy directive that sets three principal objectives:

1. To reduce GHG emissions by reducing emissions from construction and operations, using more efficient fleets, implementing travel demand management programs, encouraging eco-driving, and providing mitigation for development projects
2. To promote healthy transportation modes by improving pedestrian, bicycle, and public transit infrastructure and operations
3. To support smart growth development by making transportation investments that enable denser, smart growth development patterns that can support reduced GHG emissions

In January 2015, the Massachusetts Department of Environmental Protection amended Title 310, section 7.00, of the Code of Massachusetts Regulations (310 CMR 60.05), *Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation*, which was subsequently amended in August 2017. This regulation places a range of obligations on MassDOT and MPOs to support achievement of the Commonwealth's climate change goals through the programming of transportation funds. For example, MPOs must use GHG impact as a selection criterion when they review projects to be programmed in their TIPs, and they must evaluate and report the GHG emissions impacts of transportation projects in LRTPs and TIPs.

The Commonwealth's 10 MPOs (and three non-metropolitan planning regions) are integrally involved in supporting the GHG reductions mandated under the GWSA. The MPOs seek to realize these objectives by prioritizing projects in the LRTP and TIP that will help reduce emissions from the transportation sector. The Boston Region MPO uses its TIP project evaluation criteria to score projects based on their GHG emissions impacts, multimodal Complete Streets accommodations, and ability to support smart growth development. Tracking and evaluating GHG emissions by project will enable the MPOs to anticipate GHG impacts of planned and programmed projects. See Chapter 3 for more details related to how the MPO conducts GHG monitoring and evaluation.

Healthy Transportation Policy Initiatives

On September 9, 2013, MassDOT passed the Healthy Transportation Policy Directive to formalize its commitment to implementing and maintaining transportation networks that allow for various mode choices. This directive will ensure that all MassDOT projects are designed and implemented in ways that provide all customers with access to safe and comfortable walking, bicycling, and transit options.

In November 2015, MassDOT released the *Separated Bike Lane Planning & Design Guide*. This guide represents the next—but not the last—step in MassDOT's continuing commitment to Complete Streets, sustainable transportation, and the creation of more safe and convenient transportation options for Massachusetts' residents. This guide may be used by project planners and designers as a resource for considering, evaluating, and designing separated bike lanes as part of a Complete Streets approach.

In the LRTP, *Destination 2040*, the Boston Region MPO has continued to use investment programs—particularly its Complete Streets and Bicycle Network and Pedestrian Connections programs—that support the implementation of Complete Streets projects. In the Unified Planning Work Program, the MPO budgets to support these projects, such as the MPO’s Bicycle and Pedestrian Support Activities program, corridor studies undertaken by MPO staff to make conceptual recommendations for Complete Streets treatments, and various discrete studies aimed at improving pedestrian and bicycle accommodations.

Congestion in the Commonwealth 2019

MassDOT developed the *Congestion in the Commonwealth 2019* report to identify specific causes of and impacts from traffic congestion on the NHS. The report also made recommendations for reducing congestion, including addressing local and regional bottlenecks, redesigning bus networks within the systems operated by the Massachusetts Bay Transportation Authority (MBTA) and the other regional transit authorities, increasing MBTA capacity, and investigating congestion pricing mechanisms such as managed lanes. These recommendations guide multiple new efforts within MassDOT and the MBTA and are actively considered by the Boston Region MPO when making planning and investment decisions.

Regional Guidance and Priorities

Focus40, The MBTA’s Program for Mass Transportation

On March 18, 2019, MassDOT and the MBTA released *Focus40*, the MBTA’s Program for Mass Transportation, which is the 25-year investment plan that aims to position the MBTA to meet the transit needs of the Greater Boston region through 2040. Complemented by the MBTA’s Strategic Plan and other internal and external policy and planning initiatives, *Focus40* serves as a comprehensive plan guiding all capital planning initiatives at the MBTA. These initiatives include the Rail Vision plan, which will inform the vision for the future of the MBTA’s commuter rail system; the Better Bus Project, the plan to redesign and improve the MBTA’s bus network; and other plans. The Boston Region MPO continues to monitor the status of *Focus40* and related MBTA modal plans to inform its decision-making about transit capital investments, which are incorporated to the TIP and LRTP.

MetroCommon 2050

MetroCommon 2050, which was developed by the Metropolitan Area Planning Council (MAPC) and adopted in 2021, is Greater Boston’s regional land use and policy plan. *MetroCommon 2050* builds off of MAPC’s previous plan, *MetroFuture* (adopted in 2008), and includes an updated set of strategies for achieving sustainable growth and equitable prosperity in the region. The MPO considers *MetroCommon 2050*’s goals, objectives, and strategies in its planning and activities. See Chapter 7 for more information about *MetroCommon 2050* development activities.

MetroCommon 2050 will serve as the foundation for land use projections in the MPO's next LRTP, *Destination 2050*. The MPO's next LRTP is currently in the early stages of development and is anticipated to be adopted by the MPO board in the summer of 2023.

The Boston Region MPO's Congestion Management Process

The purpose of the Congestion Management Process (CMP) is to monitor and analyze performance of facilities and services, develop strategies for managing congestion based on the results of traffic monitoring, and move those strategies into the implementation stage by providing decision-makers in the region with information and recommendations for improving the transportation system's performance. The CMP monitors roadways and park-and-ride facilities in the Boston region for safety, congestion, and mobility, and identifies problem locations. See Chapter 3 for more information about the MPO's CMP.

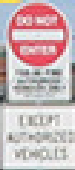
Coordinated Public Transit-Human Services Transportation Plan

Every four years, the Boston Region MPO completes a Coordinated Public Transit-Human Services Transportation Plan (CPT-HST), in coordination with the development of the LRTP. The CPT-HST supports improved coordination of transportation for seniors and people with disabilities in the Boston region. This plan also guides transportation providers in the Boston region who are developing proposals to request funding from the Federal Transit Administration's Section 5310 Program. To be eligible for funding, a proposal must meet a need identified in the CPT-HST. The CPT-HST contains information about

- current transportation providers in the Boston region;
- unmet transportation needs for seniors and people with disabilities;
- strategies and actions to meet the unmet needs; and
- priorities for implementation.

State and Regional COVID-19 Adaptations

The COVID-19 pandemic has radically shifted the way many people in the Boston region interact with the regional transportation system. The pandemic's effect on everyday life has had short-term impacts on the system and how people travel and it may have lasting impacts. State and regional partners have advanced immediate changes in the transportation network in response to the situation brought about by the pandemic. Some of the changes may become permanent, such as the expansion of bicycle, bus, sidewalk, and plaza networks, and a reduced emphasis on traditional work trips. As the region recovers from the impacts of the COVID-19 pandemic and the long-term effects become apparent, state and regional partners' guidance and priorities are likely to be adjusted.



APPENDIX F

Boston Region Metropolitan Planning Organization Membership

VOTING MEMBERS

The Boston Region Metropolitan Planning Organization (MPO) includes both permanent members and municipal members who are elected for three-year terms. Details about the MPO's members are listed below.

The **Massachusetts Department of Transportation (MassDOT)** was established under *Chapter 25 (An Act Modernizing the Transportation Systems of the Commonwealth of Massachusetts)* of the Acts of 2009. MassDOT has four divisions: Highway, Rail and Transit, Aeronautics, and the Registry of Motor Vehicles. The MassDOT Board of Directors, comprised of 11 members appointed by the governor, oversees all four divisions and MassDOT operations and works closely with the Massachusetts Bay Transportation Authority (MBTA) Board of Directors. The MassDOT Board of Directors was expanded to 11 members by the legislature in 2015 based on a recommendation by Governor Baker's Special Panel, a group of transportation leaders assembled to review structural problems with the MBTA and deliver recommendations for improvements. MassDOT has three seats on the MPO board, including seats for the Highway Division.

The **MassDOT Highway Division** has jurisdiction over the roadways, bridges, and tunnels that were overseen by the former Massachusetts Highway Department and Massachusetts Turnpike Authority. The Highway Division also has jurisdiction over many bridges and parkways that previously were 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 **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, 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 97 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 was created to oversee and improve the finances, management, and operations of the MBTA. The FMCB's authorizing statute called for an initial three-year term, with the option for the board to request that the governor approve a single two-year extension. In 2017, the FMCB's initial mandate, which would have expired in June 2018, was extended for two years, through June 30, 2020. In 2020, the FMCB's mandate was extended a second time for an additional period of one year, through June 30, 2021.

Following the expiration of the FMCB's extended mandate, the MBTA Board of Directors was formed as a permanent replacement to provide oversight for the agency. By statute, the board consists of seven members, including the Secretary of Transportation as an ex-officio member. The MBTA Advisory Board appoints one member who has municipal government experience in the MBTA's service area and experience in transportation operations, transportation planning, housing policy, urban planning, or public or private finance. The Governor appoints the

remaining five board members, which include an MBTA rider and member of an environmental justice population, and a person recommended by the President of the American Federation of Labor and Congress of Industrial Organizations.

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's service area. 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 reviewing and commenting on the MBTA's long-range plan, the Program for Mass Transportation; proposed fare increases; the annual MBTA Capital Investment Program; the MBTA's documentation of net operating investment per passenger; and the MBTA's operating budget. The MBTA Advisory Board advocates for the transit needs of its member communities and the riding public.

The **Massachusetts Port Authority (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 developing and improving commerce in Boston and the surrounding metropolitan area. Massport owns and operates Boston Logan International Airport, the Port of Boston's Conley Terminal, Flynn Cruiseport Boston, Hanscom Field, Worcester Regional Airport, and various maritime and waterfront properties, including parks in the Boston neighborhoods of East Boston, South Boston, and Charlestown.

The **Metropolitan Area Planning Council (MAPC)** is the regional planning agency for the Boston region. It is composed of the chief executive officer (or a designee) of each of the cities and towns in the MAPC's planning 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 Massachusetts General Laws. 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 encompass 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 documented in the Boston Region MPO's Unified Planning Work Program.

The **City of Boston**, six elected cities (currently **Beverly, Everett, Framingham, Newton, Somerville, and Burlington**), and six elected towns (currently **Acton, Arlington, Brookline, Medway, Norwood, and Rockland**) represent the 97 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.

The **Federal Highway Administration (FHWA)** and **Federal Transit Administration (FTA)** participate in the Boston Region MPO in an advisory (nonvoting) capacity, reviewing the Long-Range Transportation Plan, Transportation Improvement Program, and Unified Planning Work Program, and other facets of the MPO's planning process to ensure compliance with federal planning and programming requirements. These two agencies oversee the highway and transit programs, respectively, of the United States Department of Transportation under pertinent legislation and the provisions of the Fixing America's Surface Transportation (FAST) Act and the Bipartisan Infrastructure Law.