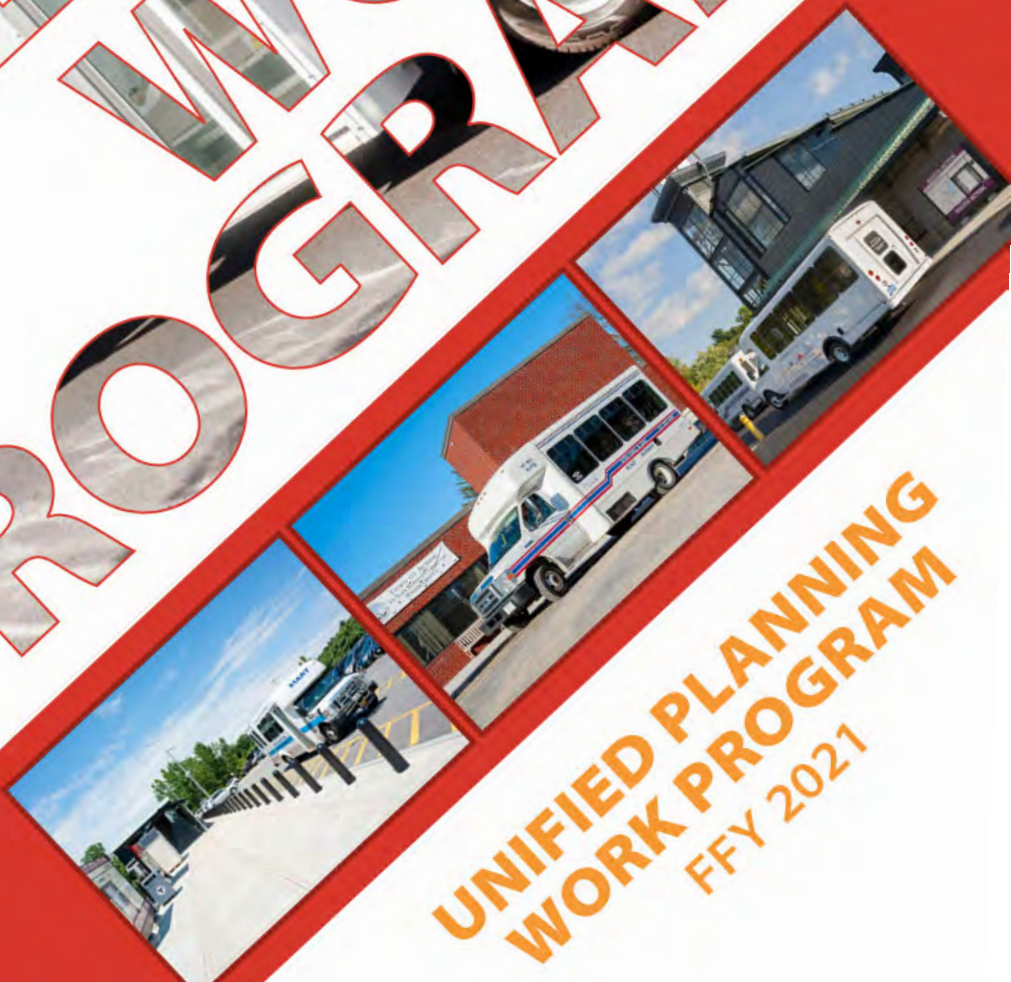




UNIFIED PLANNING WORK PROGRAM



**UNIFIED PLANNING
WORK PROGRAM
FFY 2021**

Unified Planning Work Program

Federal Fiscal Year 2021

Boston Region MPO

Endorsed by the MPO JULY 16, 2020

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

City of Boston

City of Beverly

City of Everett

City of Framingham

City of Newton

City of Somerville

City of Woburn

Town of Arlington

Town of Acton

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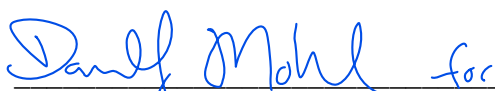


Certification of the Boston Region MPO Transportation Planning Process

The Boston Region Metropolitan Planning Organization certifies that its conduct of the metropolitan transportation planning process complies with all applicable requirements, which are listed below, and that this process includes activities to support the development and implementation of the Regional Long-Range Transportation Plan and Air Quality Conformity Determination, the Transportation Improvement Program and Air Quality Conformity Determination, and the Unified Planning Work Program.

1. 23 USC 134, 49 USC 5303, and this subpart.
2. In nonattainment and maintenance areas, sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 USC 7504, 7506 (c) and (d) and 40 CFR Part 93.
3. Title VI of the Civil Rights Act of 1964, as amended (42 USC 2000d-1) and 49 CFR Part 21.
4. 49 USC 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity.
5. Section 1101(b) of the Fast Act (Pub. L. 114-357) and 49 CFR Part 26 regarding the involvement of disadvantaged business enterprises in U.S. DOT-funded projects.
6. 23 CFR part 230, regarding implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;
7. The provisions of the Americans with Disabilities Act of 1990 (42 USC 12101 et seq.) and 49 CFR Parts 27, 37, and 38.
8. The Older Americans Act, as amended (42 USC 6101), prohibiting discrimination on the basis of age in programs or activities receiving federal financial assistance.
9. Section 324 of Title 23 USC regarding the prohibition of discrimination based on gender.
10. Section 504 of the Rehabilitation Act of 1973 (29 USC 794) and 49 CFR Part 27 regarding discrimination against individuals with disabilities.
11. Anti-lobbying restrictions found in 49 USC Part 20. No appropriated funds may be expended by a recipient to influence or attempt to influence an officer or employee of any agency, or a member of Congress, in connection with the awarding of any federal contract.

July 16, 2020

Handwritten signature in blue ink that reads "Stephanie Pollack for".

Stephanie Pollack, Secretary and Chief Executive Officer
Massachusetts Department of Transportation
Chair, Boston Region MPO

Due to the COVID-19 pandemic, and guidance provided by the Massachusetts Division of FHWA, this document was endorsed by the MPO via voice vote. The signature of the MPO Chair represents the endorsement of all voting MPO members who voted to endorse this document and who were present at the July 16, 2020 MPO meeting.

ABBREVIATIONS

Acronym	Definition
3C	continuous, comprehensive, cooperative [metropolitan transportation planning process]
A&F	Administration and Finance Committee [Boston Region MPO]
ABM	Activity based model [transportation planning tool]
ADA	Americans with Disabilities Act of 1990
Advisory Council	Regional Transportation Advisory Council
AFC	automated fare collection [system]
AMPO	Association of Metropolitan Planning Organizations
APC	automatic passenger counter
AV/CV	autonomous vehicle/connected vehicle
BNRD	Bus Network Redesign
BPDA	Boston Planning & Development Agency
CAA	Clean Air Act of 1970
CAAA	Clean Air Act Amendments of 1990
CA/SC	Clean Air/Sustainable Communities.
CATA	Cape Ann Transportation Authority
CBD	central business district
CC	Community Connections
CMAQ	Congestion Management Air Quality
CM/M	Capacity Management and Mobility
CMP	Congestion Management Process
CO	carbon monoxide
CO ₂	carbon dioxide
CTPS	Central Transportation Planning Staff

Acronym	Definition
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
DOT	Department of Transportation
EJ	environmental justice
EO	executive order [federal]
EPA	US Environmental Protection Agency
EPDO	Equivalent Property Damage Only
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]
HOV	high-occupancy vehicle
HTC	Healthy Transportation Compact
ICC	Inner Core Committee
ITE	Institute of Transportation Engineers
JARC	Job Access and Reverse Commute Program

Acronym	Definition
LAP	language access plan
LBS	location-based services
LEP	limited English proficiency
LOS	level of service
LRTP	Long-Range Transportation Plan [MPO certification document]
MAGIC	Minuteman Advisory Group on Interlocal Coordination
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
MEPA	Massachusetts Environmental Policy Act
MGL	Massachusetts general laws
MOU	Memorandum of Understanding
MOVES	Motor Vehicle Emission Simulator
MPO	metropolitan planning organization
MTOI	Modified Transit Opportunity Index
MWRC	MetroWest Regional Collaborative
MWRTA	MetroWest Regional Transit Authority
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHS	National Highway System
NOx	nitrogen oxides

Acronym	Definition
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
PEV	pedestrian environmental variable
PfP	Planning for Performance [scenario-planning tool]
PL	metropolitan planning funds or public law funds [FHWA]
PMT	Program for Mass Transportation [MBTA]
PPP	Planning for Performance [scenario-planning tool]
PPP	Public Participation Program
RITIS	Regional Integrated Transportation Information System
ROC	Rider Oversight Committee [MBTA]
RSA	Roadway Safety Audit [FHWA]
RTA	regional transit authority
S	Safety
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act– A Legacy for Users
SCC	South Shore Coalition
SFY	state fiscal year
SIP	State Implementation Plan
SOV	single-occupancy vehicle
SP/M	System Preservation and Modernization
SPR	Statewide Planning and Research [FHWA]

Acronym	Definition
STIP	State Transportation Improvement Program
STOPS	Simplified Trips-on-Project Software
STP	Sustainable Transportation Plan
SWAP	Southwest Advisory Planning Committee
TAZ	transportation analysis zone
TCM	transportation control measure
TDM	transportation demand management
TE	transportation equity
TEAC	Transportation Equity Analysis Committee
TIP	Transportation Improvement Program [MPO certification document]
TMA	Transportation Management Association
TMA	Transportation Management Area
TNC	transportation network company
TOD	transit-oriented development
TRB	Transportation Research Board
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
VOCs	volatile organic compounds [pollutants]
WMM	weMove Massachusetts [MassDOT planning initiative]
ZEV	zero emission vehicles

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EXECUTIVE SUMMARY

WHAT IS THE BOSTON REGION MPO?

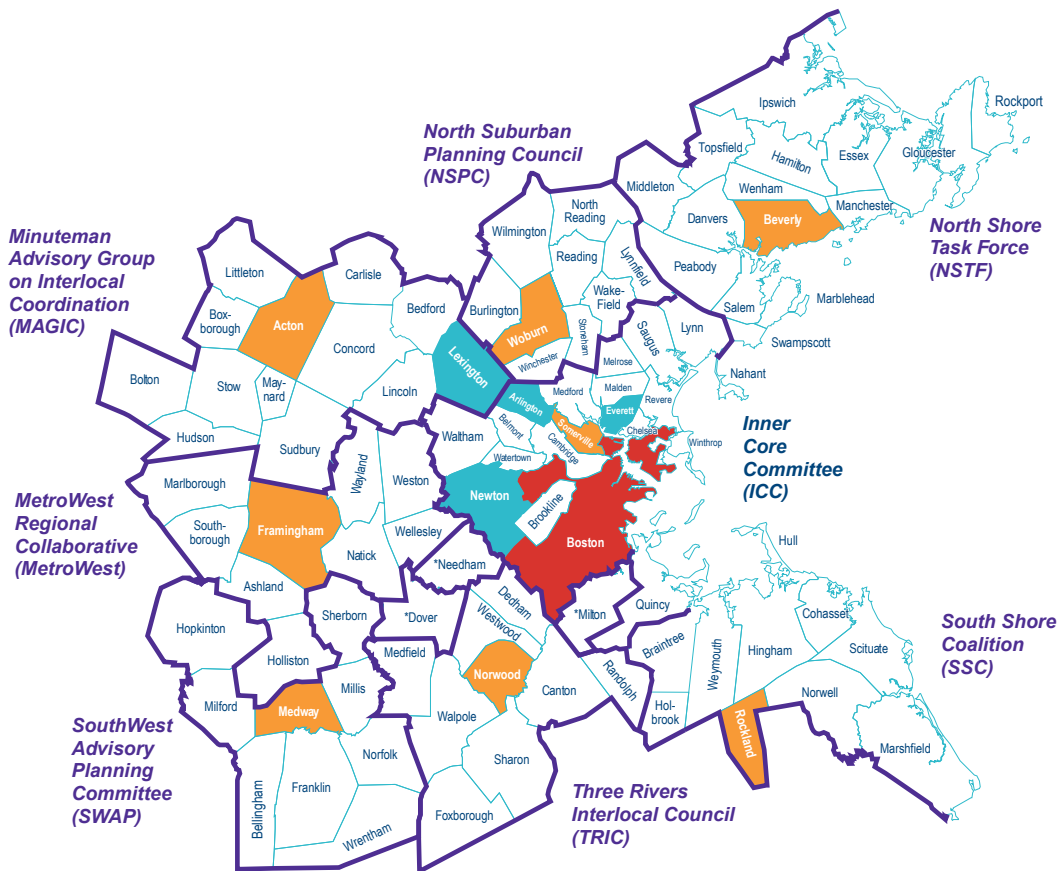
Decisions about how to allocate transportation funds in a metropolitan area are guided by information and ideas garnered from a broad group of people, including elected officials, municipal planners and engineers, transportation advocates, and interested residents. Metropolitan planning organizations (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.

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**



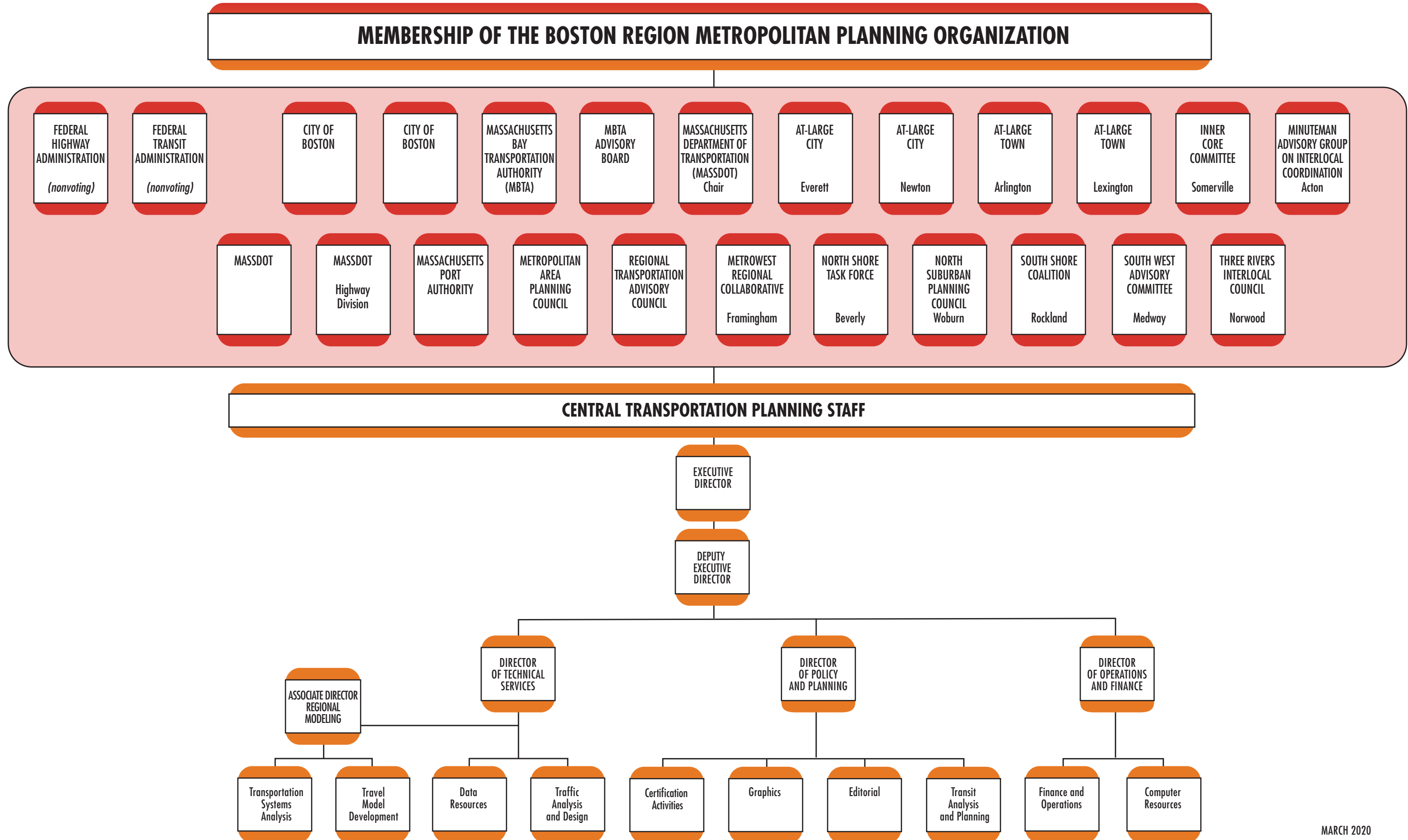
*Community is in more than one subregion: Dover is in TRIC and SWAP; Milton and Needham are in ICC and TRIC.

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

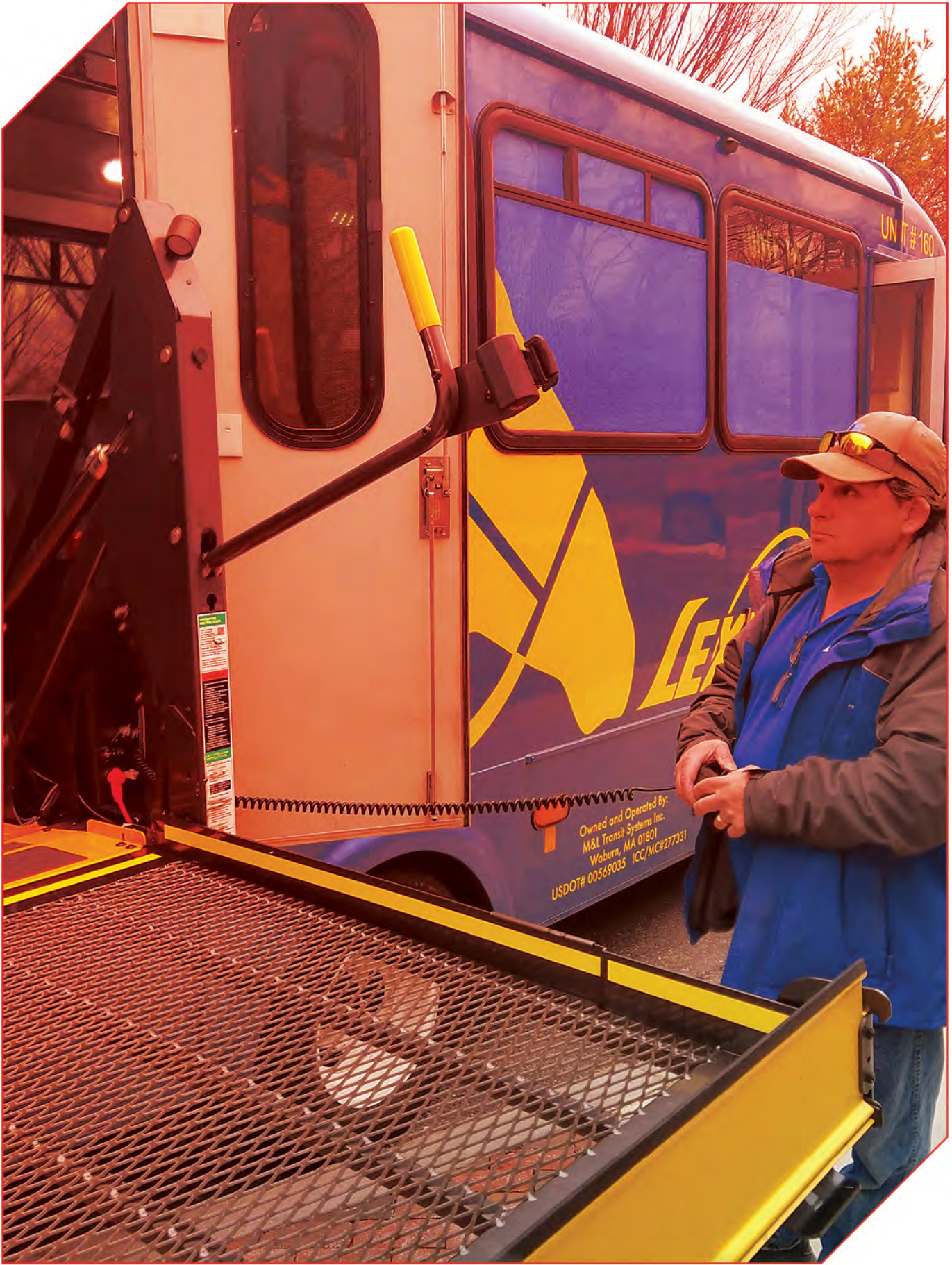
The MPO's board comprises 22 voting members. Several state agencies, regional organizations, and the City of Boston are permanent voting members, while 12 municipalities are elected as voting members for three-year terms. Eight municipal members represent each of the eight subregions of the Boston region, 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**



MARCH 2020



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 Fixing America's Surface Transportation (FAST) Act. The FAST Act 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 transportation 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?

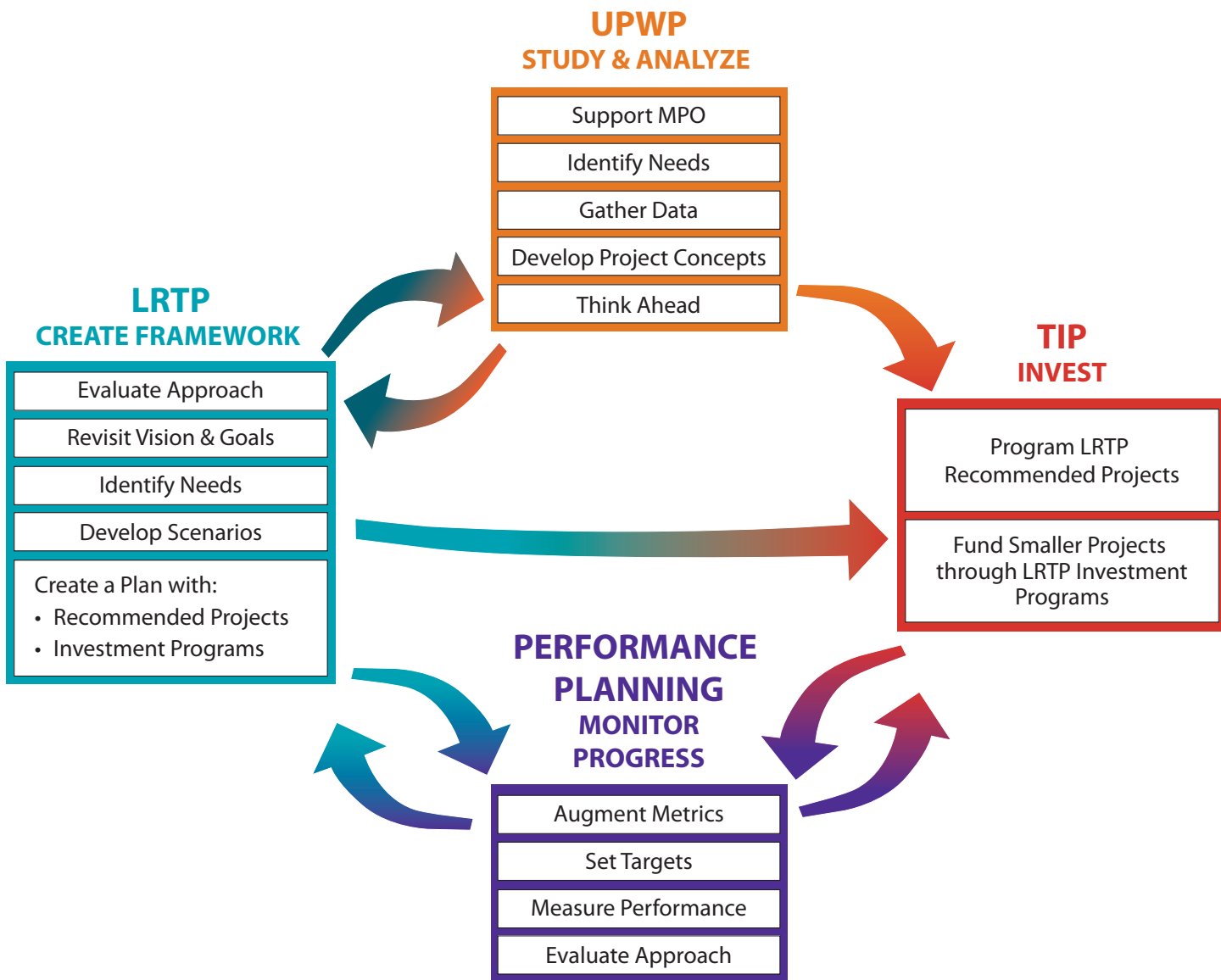
The Boston Region MPO plans for the transportation future of the Boston region. The MPO is guided by a 20-year vision for a modern, safe, equitable, sustainable, and technologically advanced transportation system for the region. This vision is described in the MPO's current LRTP, *Destination 2040*. 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.

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 \$5,923,303. 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 2021 3C PL funding allocation for the Boston region, including state matching funds, is \$3,785,331. The total Boston region 3C PL allocation is split between CTPS, which receives \$3,066,118, and MAPC, which receives \$719,213.
- FTA 3C Planning (§5303): FTA provides 3C planning funds for transit projects to MPOs and Department of Transportation (DOT) 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 2021 FTA allocation for the Boston region, including a total local match, is \$2,106,937 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 \$1,737,817.
 - 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 2021 is \$369,120.

In addition, this UPWP includes \$50,000 in carryover FFY 2019 FTA Section 5303 funds that support the CTPS Strategic Plan and MPO Operations Plan tasks.

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 2021, the agency funding amounts programmed in this UPWP for projects to be conducted by MPO staff are as follows:

- FHWA Statewide Planning and Research (SPR): \$525,320 (including state matching funds). As in the case of 3C PL funds, FHWA provides SPR funds to OTP according to a distribution formula. OTP uses these funds to carry out planning and research projects throughout the

state. This UPWP describes only the SPR-funded studies that will be conducted in the Boston region; however, OTP provides a complete listing of how these funds are distributed statewide in a document called the SPR Transportation-Planning Work Program.

- Other MassDOT: \$335,000
- MBTA: \$615,525
- Massport: \$5,000
- Other Sources: \$97,000

WHAT STUDIES AND ACTIVITIES ARE IN THIS FFY 2021 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, a certain amount of 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 more detail in Chapter 5.

Table ES-1 contains the budget allocated for the MPO's 3C planning activities in FFY 2021. The table reflects the FHWA metropolitan PL funds and FTA Section 5303 funds, which the CTPS and MAPC expect to spend in FFY 2021. 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 2021. The new studies chosen for funding in FFY 2021 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 2021**

3C Studies and Programs by Budget Categories	Proposed FFY 2021 CTPS Budget
Resource management and support activities	\$654,100
MPO Certification Requirements	\$2,974,930
Continuing MPO-funded planning studies and technical analyses	\$306,240
New MPO-funded discrete studies	\$710,100
MassDOT Transit Planning Assistance*	\$48,190
Direct support	\$125,000
Total for CTPS 3C Studies and Programs	\$4,818,560

Agency-Funded CTPS Work	Proposed FFY 2021 CTPS Budget
MassDOT SPR Funds	\$523,320
MassDOT Other Funds	\$335,000
MBTA Funds	\$615,525
Massport Funds	\$5,000
Other	\$97,000
Total for Agency-Funded CTPS Project Work	\$1,575,845

Total FFY 2021 CTPS Budget (3C + Agency Work)	\$6,394,405
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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 ES-1 cont.)

3C Studies and Programs by MAPC Budget Categories		Proposed FFY 2021 MAPC Budget
MAPC Planning Studies and Technical Analyses		\$629,333
MAPC Administration, Resource Management, and Support Activities		\$459,000
Total MAPC FFY 2021 UPWP Programmed Funds		\$1,088,333

Agency Supporting MPO/3C Work		Proposed FFY 2021 Budget
CTPS		\$4,818,560
MAPC		\$1,088,333
3C Budget Subtotal		\$5,906,893

Agency-Funded CTPS Work	\$1,575,845
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TOTAL PROGRAMMED IN FFY 2021 (CTPS 3C Budget, CTPS Agency-Funded Budget, and MAPC 3C Budget)	\$7,482,738
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**Table ES-2
New Discrete Funded Studies in FFY 2021**

Project ID	Study or Program	Proposed FFY 2021 CTPS Budget
13302	Improving Pedestrian Variables in the Travel Demand Model	\$25,000
13303	Regional TDM Strategies	\$10,000
13421	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	\$127,900
13521	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	\$137,000
13621	Low-Cost Improvements to Express-Highway Bottleneck Locations	\$64,500
13304	Trip Generation Rate Research	\$45,000
13305	Intersection Improvement Program	\$75,000
14370	Access to CBDs Phase 2	\$75,000
14371	The Future of the Curb Phase 2	\$60,000
13306	Multimodal Resilience and Emergency Planning	\$30,000
20905	Staff-Generated Research and Technical Assistance	\$20,000
13307	Mapping Major Transportation Infrastructure Projects in the Boston Region	\$20,000
13308	Informing the Big Ideas Behind the MPO's Scenario Planning Process	\$20,700
Total for New Discrete and Recurring Studies		\$710,100

NOTE: This information may be updated as the FFY 2021 UPWP budget continues to develop.

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 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
- UPWP Committee input gathered from meetings held throughout the year between this committee of the MPO and the MPO staff. The UPWP Committee oversees the development of the entire UPWP document
- Existing planning documents such as the MPO's Congestion Management Process and LRTP Needs Assessment; the MBTA's long-range capital plan; MetroFuture, 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 New 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 takes into account 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 documented below.

- An engaging website, which serves as a resource for those seeking to influence transportation planning in the Boston region
- A lively Twitter account (@BostonRegionMPO) covering transportation planning news and events
- A blog, *TRANSREPORT*, 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 events, hosted by the MPO's transportation partners, where staff administer and listen at information and resource tables
- Open-house style events, where those seeking feedback and advice on TIP projects, UPWP proposals, or Community Transportation 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 house and at public events hosted by the MPO or its transportation partners (including MassDOT and the MBTA). The MPO staff compile 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 2021 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 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 and monitoring it, 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 2021 (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 study and technical analysis work:
 - summary tables of FFYs 2019–20 UPWP studies that have been completed or are projected to be completed by the end of September 2020, in addition to work products, including reports and technical memoranda
 - MPO planning studies and technical analyses that will be carried over from FFY 2020 to FFY 2021, if any
 - descriptions of the new planning studies chosen for funding in FFY 2021
 - 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 2021. These include recurring contracts such as MassDOT’s SPR grant; ongoing 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 2021 budgets for the resource management and support activities conducted by the MPO staff.
- **Chapter 7** provides details on MAPC programs funded by the UPWP, including administrative, support, liaison, 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 project summaries for non-MPO transportation-planning projects/studies that are being (or will be) conducted in the Boston region during FFY 2021. 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 2021 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.



Decisions made on 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 (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.

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 of 1956 and Section 5303 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 surface transportation law is the Fixing America's Surface Transportation (FAST) Act. The FAST Act sets policies related to metropolitan transportation planning. The law 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, and 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 FAST Act, 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).

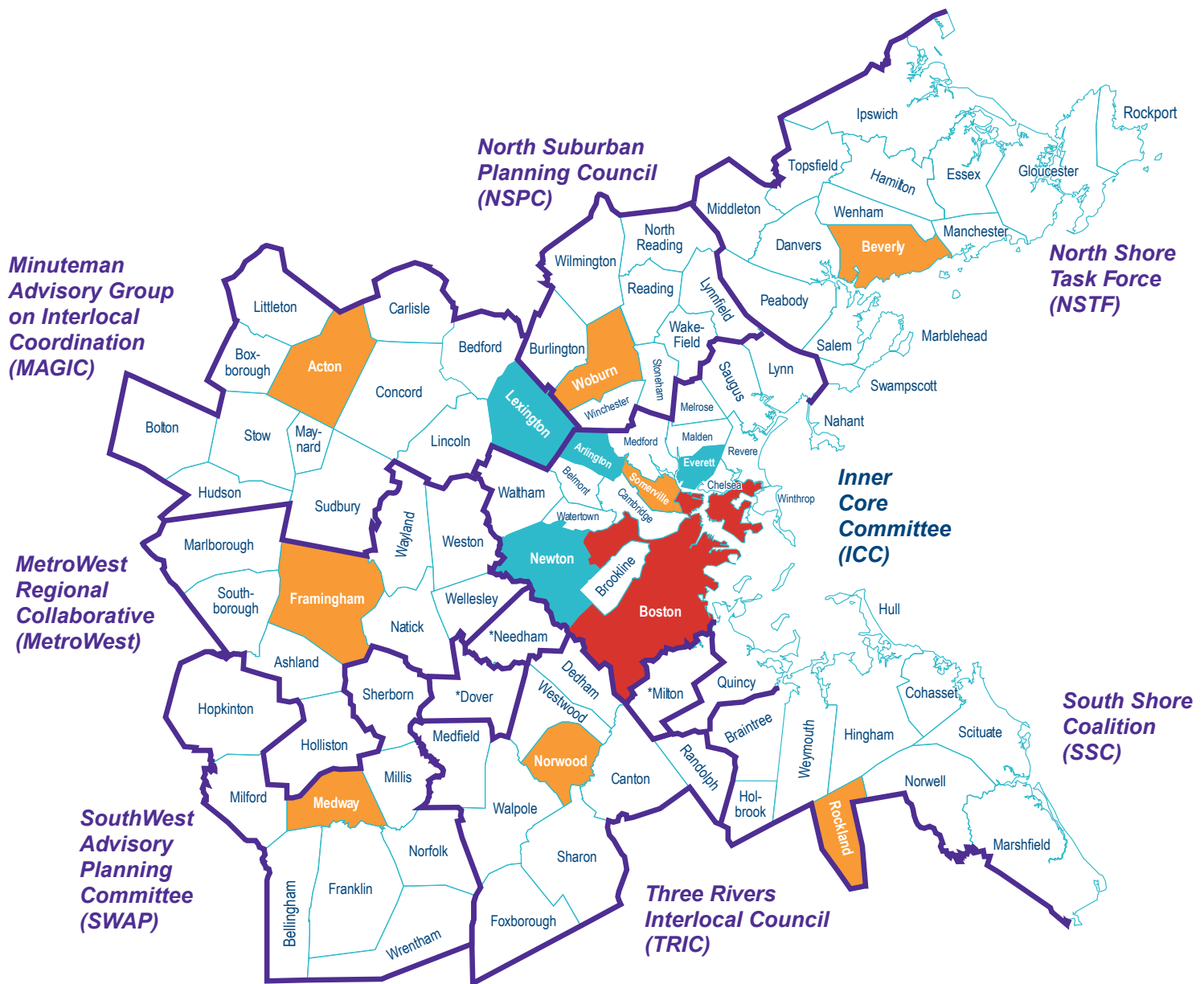
More information about the federal, state, and regional guidance governing the transportation planning process, and about the regulatory framework in which the MPO operates can be found in Appendix E.

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



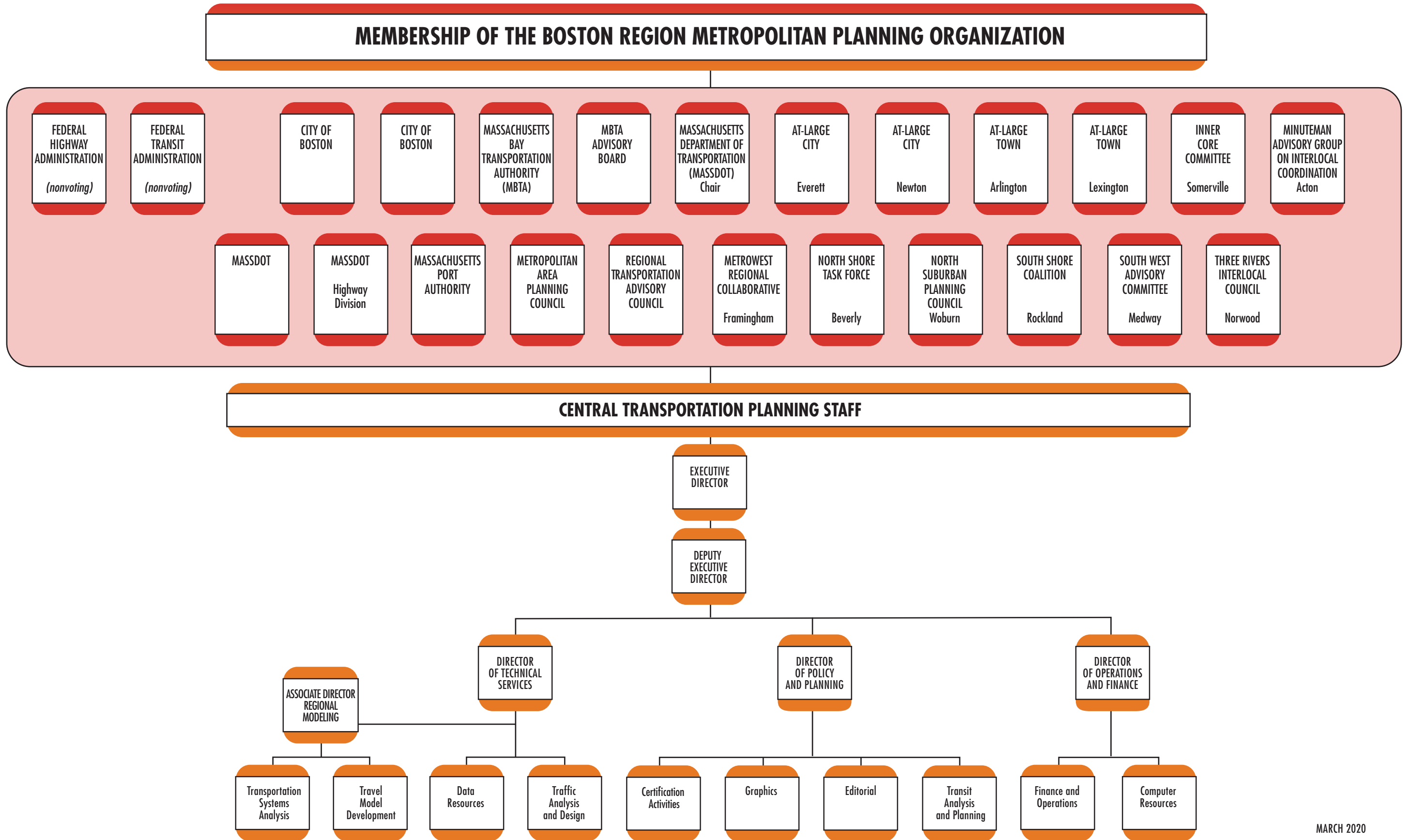
*Community is in more than one subregion: Dover is in TRIC and SWAP; Milton and Needham are in ICC and TRIC.

- 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 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**



MARCH 2020



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 its 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 MPO's certification process for meeting federal requirements; this certification is a prerequisite for receiving 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, and improvements for pedestrians. 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, and United States Environmental Protection Agency 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 1-4 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 in achieving those goals.

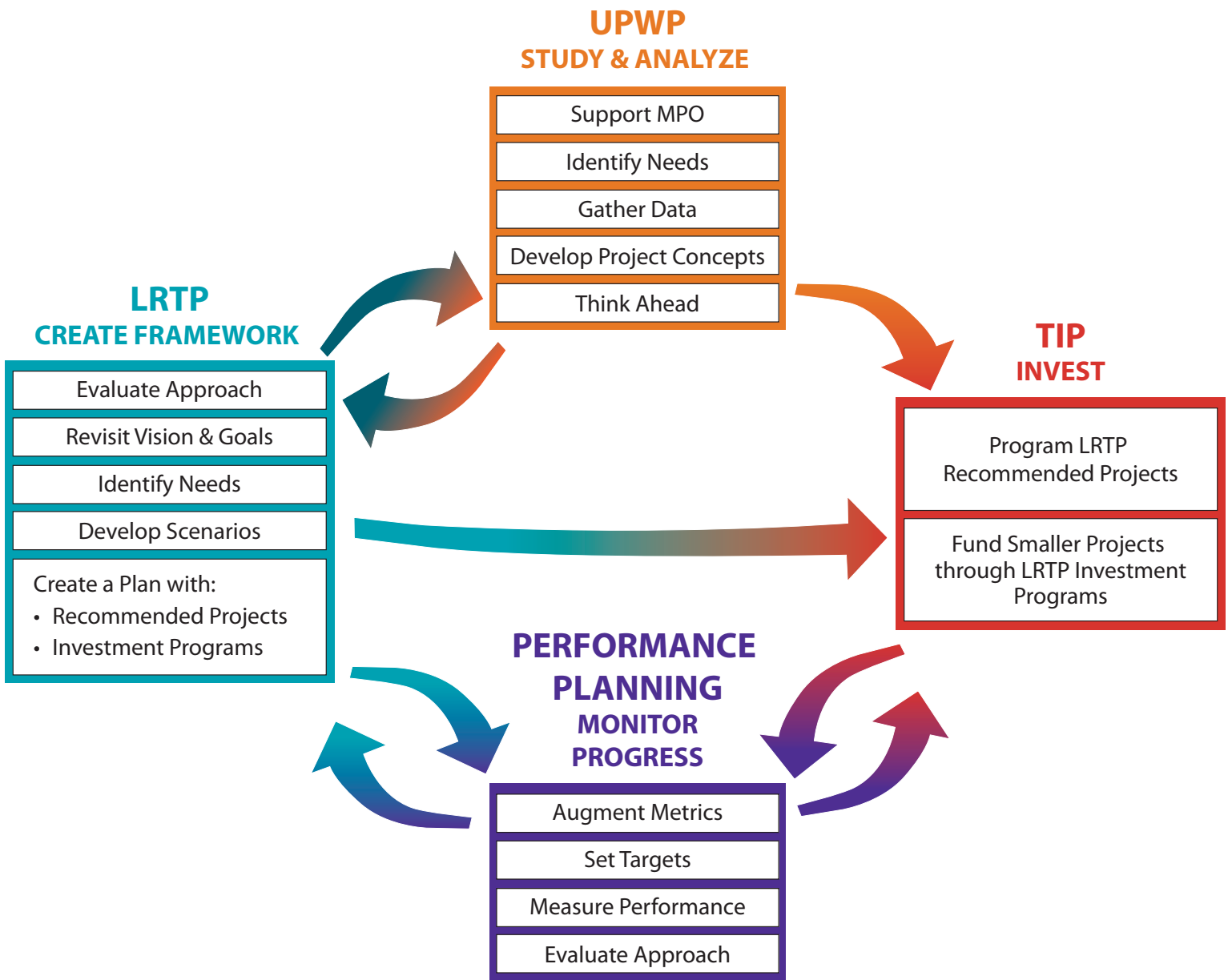
Figure 1-3 L RTP Goals and Objectives

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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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)
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

(Fig 1-3 cont.)

GOALS (CONT.)	OBJECTIVES (CONT.)
CAPACITY MANAGEMENT AND MOBILITY (CONT.)	
	<ul style="list-style-type: none">• 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-/last-mile, reverse commute, and other non-traditional transit/transportation needs, including those of people 75 years old or older and people with disabilities• 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	
<p>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</p>	<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	
<p>Create an environmentally friendly transportation system</p>	<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	
<p>Ensure our transportation network provides a strong foundation for economic vitality</p>	<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 <i>Focus 40</i> plan• Prioritize transportation investments consistent with compact-growth strategies of the regional land use plan

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





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), staff to the MPO, or the staff of the Metropolitan Area Planning Council (MAPC), Boston's Regional Planning Agency, conduct this work. 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 regionally significant transportation construction projects and programs over a 25-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 and changes that 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 2021 UPWP include Regional Travel Demand Management Strategies, Multimodal Resilience and Emergency Planning, and Mapping Major Transportation Infrastructure Projects 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 (Massport). 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 11 times in FFY 2020 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 2021 UPWP. The MPO approved the UPWP Committee’s recommendations for public review of the Draft FFY 2021 UPWP on May 28, 2020.

Below are details about the process for selecting studies and programs for the FFY 2021 UPWP.

DEVELOPING THE NEW FFY UPWP

To develop new planning studies for the FFY 2021 UPWP, the MPO drew from the following sources to generate a listing known as the Universe of Proposed New Studies 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, an MPO member agency—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, an independent body that brings public viewpoints and advice on transportation planning to the MPO, to present preliminary drafts of the FFY 2021 Universe of Proposed New Studies and gain ideas and input on transportation planning priorities.
- 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 and analyzing 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 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*, a long-range plan for the region in development by MAPC; 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 2020 UPWP public comment letters and study proposals.**
- 7. Consultations with MassDOT, the MBTA, and MAPC.**
- 8. MPO staff-identified needs.**

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 bostonmpo.org/public_involvement.

The FFY 2021 UPWP Universe of Proposed New Studies documents proposed planning studies (see Appendix C).

Evaluating and Selecting New Studies

MPO staff evaluated each new proposed study 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. A description of the Universe and the full Universe table are included in Appendix C.

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 various factors, along 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 2021 universe selected for funding in FFY 2021. Chapter 4 provides detailed descriptions of these studies.

**Table 2-1
FFY 2021 New Discrete Funded Studies**

Project ID	Study or Program	Proposed FFY 2020 CTPS Budget	Page Number
13302	Improving Pedestrian Variables in the Travel Demand Model	\$25,000	4-9
13303	Regional TDM Strategies	\$10,000	4-11
13421	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	\$127,900	4-12
13521	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	\$137,000	4-13
13621	Low-Cost Improvements to Express-Highway Bottleneck Locations	\$64,500	4-14
13304	Trip Generation Rate Research	\$45,000	4-15
13305	Intersection Improvement Program	\$75,000	4-16
14370	Access to CBDs Phase 2	\$75,000	4-17
14371	The Future of the Curb Phase 2	\$60,000	4-18
13306	Multimodal Resilience and Emergency Planning	\$30,000	4-20
20905	Staff-Generated Research and Technical Assistance	\$20,000	4-21
13307	Mapping Major Transportation Infrastructure Projects in the Boston Region	\$20,000	4-22
13308	Informing the Big Ideas Behind the MPO's Scenario Planning Process	\$20,700	4-23
Total for New Discrete and Recurring Studies		\$710,100	

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 2021 UPWP is available in Appendix B.

Other Regionally Significant Transportation Planning Studies

To provide a comprehensive perspective of transportation planning in the Boston region, the UPWP also includes a list (Appendix A) of other major transportation planning activities in the region. Appendix A of this UPWP includes projects that are not funded with the MPO's planning funds, but which are being funded and implemented by individual transportation agencies, municipalities, or academic institutions. Often, these efforts use 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 2021 UPWP:

- Work programs 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) must 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 each week
 - 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 adjustments. 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 Participation 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 2020 for future UPWPs.

- Any revision that would result in the need for additional funding.
- Any change in budget for an individual budget line that exceeds 10 percent of the total allotted to that budget line.
- Any revision of the scope or objectives of the project or program that would substantially alter the scope or objectives of that project or program, regardless of whether there is an associated budget revision requiring prior approval.
- Need to extend the period of availability of funds.
- Contracting out, sub-granting, or otherwise obtaining the services of a third party to perform activities central to the purposes of the award unless described in the adopted UPWP. This requirement does not apply to the procurement of equipment, supplies, and general support services.

- The absence for more than three months, or a 25 percent reduction in time devoted to the project, by the approved project director or principal investigator.
- The need for additional federal funding.
- The transfer of funds allotted for training allowances (direct payment to trainees) to other categories of expense.

Reallocation of budget funds amounting to less than 10 percent of a budget line will constitute an administrative adjustment, rather than an amendment, unless it also triggers one of the other conditions above.

Staff must present all proposed administrative adjustments and amendments to the MPO for consultation prior to endorsement. The UPWP Committee will review both adjustments and amendments before forwarding them to the MPO. MPO members must vote to approve adjustments. For amendments, the MPO will vote to release the amendment for a 30-day public comment period prior to an endorsement vote. Members of the public may attend and present 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.



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, Title VI of the Civil Rights Act of 1964, and the Americans with Disabilities Act of 1990 (ADA).

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) 2020 and FFY 2021 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 2021 Certification Requirements**

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Progress and Products	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
Support to the MPO					
Support to the MPO and its Committees	9121	\$218,200	<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 10 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 	\$229,920	<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. 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
Regional Transportation Advisory Council (Advisory Council) Support	9321	\$44,550	<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, as needed, in response to COVID-19 • Setting up audio/visual equipment for in-person 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 	\$45,960	<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 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.

(Table 3-1 cont.)

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Progress and Products	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
Public Participation Process	9621	\$157,400	<ul style="list-style-type: none"> Supported the MPO's commitment to engage the people of the Boston region in regional transportation planning, including residents of communities that may have been underserved by the transportation system. Communicated about the MPO's meetings and planning activities via the web, emails, newsletters, blog posts, Twitter, Instagram, Facebook, and LinkedIn. Engaged the public through MAPC subregional groups, visits to stakeholder organizations, pop-ups at community events, and web-based surveys and other digital communications. Conveyed public comments and input to MPO members about MPO programs and processes. 	\$182,290	<ul style="list-style-type: none"> Continue support of the MPO's commitment to inclusion through timely communications and engagement opportunities. Gather input and feedback on the MPO's various certification documents and other processes. Publish <i>TRANSREPORT</i> articles and other digital communications. Update the Public Participation Plan. Provide translations of printed materials in non-English languages as specified in the MPO's LAP.
General Graphics	9221	\$87,440	<p>Provided graphics support to the MPO and its member agencies. This includes:</p> <ul style="list-style-type: none"> Designing and producing maps, charts, illustrations, report covers, brochures, slides, and photographs Applying other visualization techniques Creating other products that improve communication 	\$85,290	Tasks and work products generally remain the same every 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	3121	\$105,770	<p>Supported the MPO and CTPS in:</p> <ul style="list-style-type: none"> Producing accessible materials in PDF and HTML formats for posting on the Boston Region MPO website Assisting in producing materials, including meeting minute, work scopes, memoranda, reports, and other public materials Reviewing accessibility requirements and current CTPS standards and processes Implementing standards within memorandum and report templates 	\$102,040	Tasks and work products generally remain the same every year, although the level of effort varies based on the specific work products and reports that the MPO produces each year that need to be converted into accessible formats.
Professional Development	9521	\$28,996	Covered the labor expenses of staff attending conferences and seminars related to MPO work.	\$52,720	Cover the labor expenses of staff attending conferences and seminars related to MPO work.

(Table 3-1 cont.)

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Progress and Products	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
3C Planning and Other Certification Requirements					
Long-Range Transportation Plan	8121	\$330,920	<ul style="list-style-type: none"> Started implementation of <i>Destination 2040</i>, the LRTP adopted in August 2019, including research on new investment programs and initiatives outlined in the LRTP. Specifically, research on resiliency of the transportation system and coordination with state and local agencies on ongoing resiliency initiatives. Also research on the transit modernization program. Started exploring scenarios that will help the MPO in its decision-making for the next LRTP. Incorporated information from outreach on the transportation needs throughout the region into the LRTP Needs Assessment. Coordinated with staff and MPO members on the revisions of criteria to be used in project selection for the LRTP and the TIP. Developed an LRTP Amendment to provide consistency with the FFYs 2020–24 TIP. 	\$324,120	<ul style="list-style-type: none"> Continue to implement the LRTP through its investment programs. Continue to explore scenarios that will help the MPO in its decision making for the next LRTP. Continue to update the LRTP Needs Assessment. Continue to coordinate with staff and MPO members on the revisions of criteria to be used in project selection for the LRTP and the TIP. Develop an LRTP Amendment if needed.
Transportation Improvement Program	8221	\$262,660	<ul style="list-style-type: none"> Developed the FFYs 2021–25 TIP. Administered amendments to the FFYs 2020–24 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. Revised the internal TIP project database to better support project scoring and tracking. Continued updating the public-facing TIP project web application. Revised the TIP project selection criteria to reflect the updated goals, objectives, and investment programs contained in <i>Destination 2040</i>. Conducted additional public outreach in support of the revised TIP criteria. 	\$278,890	<p>Activities generally remain the same every year, with staff supporting the MPO in developing its five-year (FFYs 2022–26) TIP. FFY 2021 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 the changes to the TIP project selection criteria Enhancing outreach to municipalities and TIP contacts to communicate the changes to the TIP project selection criteria 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 2020 Funding	FFY 2020 Work Progress and Products	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
Performance-Based Planning and Programming	8821	\$142,040	<ul style="list-style-type: none">• Conducted analysis, made presentations, and developed documents to help the MPO to update targets for federally required roadway safety and transit asset management performance measures.• Coordinated with MassDOT, the MBTA, CATA, MWRTA, FHWA, and other stakeholders on target setting and other PBPP topics, such as coordination agreements.• Provided recommendations for updates to the MPO's project selection criteria based on PBPP principles and needs.• Worked with Transportation for America and State Smart Transportation Initiative staff to obtain technical assistance on MPO PBPP and project selection activities.• Participated in PBPP peer exchange and working group sessions with representatives of other states and MPOs.• Analyzed project-level data and developed a performance report for the FFYs 2021–25 TIP.• Monitored federal guidance and identified ways to integrate PBPP into MPO processes, including TIP and LRTP development.• Explored other performance measures that the MPO could monitor.• Updated reporting materials and tools, such as the MPO's performance dashboard.• Prepared a federally required mid-performance period CMAQ performance plan.	\$153,570	<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.• Produce or update performance reports, such as the performance report included in the TIP, and tools, such as the MPO's Performance Dashboard.• Work with fellow staff, the MPO, and other stakeholders to more closely link MPO investment processes to performance outcomes. Produce memoranda and presentations describing related recommendations.• Explore other measures and methods the MPO could incorporate into its PBPP process.• Coordinate with MassDOT, the region's public transportation providers, other states and MPOs, and federal agencies to research measures, identify investment strategies, set targets, and otherwise implement PBPP practices.
Air Quality Conformity and Support	8421	\$31,260	<ul style="list-style-type: none">• Updated emission factors for use in air quality analyses of transportation projects using the MOVES model.• Performed system-level and project-level air quality analysis for conformity with Federal and State Requirements for the LRTP and TIP.• Supported MPO's climate change initiatives.	\$34,690	<ul style="list-style-type: none">• Continue to work with state and local agencies in developing emission factors 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.

(Table 3-1 cont.)

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Progress and Products	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
Unified Planning Work Program	8321	\$116,050	<ul style="list-style-type: none"> • Developed the FFY 2021 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 2021 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. • Maintained the UPWP Study Recommendations Tracking Database. • Held internal discussions on potential future changes to the UPWP process and document. 	\$127,480	Activities generally remain the same every year, with staff supporting the MPO in producing its annual (FFY 2022) UPWP. A potential point of emphasis in FFY 2021 may be developing an interactive online interface for the UPWP Study Recommendations Tracking Database.
Transportation Equity Program	8521	\$171,850	<ul style="list-style-type: none"> • Completed the memo Development of the DI/DB Policy for the LRTP: Phase One documenting the MPO’s effort to develop a Disparate Impact and Disproportionate Burden Policy for use in the LRTP. • Provided annual Title VI update to MassDOT/FHWA. • Supported the MPO’s public participation program in outreach to and engagement with Title VI, EJ, and other nondiscrimination populations. • Provided technical support to the LRTP, TIP, and MPO-guided studies. • Convened an internal staff-based Transportation Equity Analysis Committee in support of updating existing and developing new equity-related analytical techniques. • Developed proposals for revisions to the equity criteria for TIP project selection. • Provided public outreach support for revisions to the TIP project selection criteria. • Developed proposals for revisions to metrics analyzed in the LRTP DI/DB analysis. • Developed preliminary analyses for assessing equity in the LRTP needs assessment. 	\$174,100	Activities generally remain the same every year. New activities will include finalizing the MPO’s LRTP DI/DB Policy for the LRTP and developing the MTOI tool for MPO use.

(Table 3-1 cont.)

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Progress and Products	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
Congestion Management Process	2121	\$112,060	<ul style="list-style-type: none"> Monitor the performance of the MPO Region's arterial roadways and freeways using electronic travel-time and speed data. Map and tabulate electronic data for analysis and performance evolution. Coordinate and support the MPO's programs and documents (LRTP, TIP, PBPP, and UPWP). Support the MPO's CMP committee. 	\$118,240	<ul style="list-style-type: none"> 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. Monitor the performance of the MBTA Park and Ride Lots. Coordinate with and support the MPO's programs and documents (LRTP, TIP, PBPP, and UPWP). Support the MPO's CMP committee.
Freight Planning Support	2221	\$56,730	<ul style="list-style-type: none"> Publish a study on truck issues at South Bay in Boston. Support MassDOT data needs for Bypass Road management. Conduct required MPO freight planning. Provide data and analysis in support of advanced model implementation. 	\$68,340	<ul style="list-style-type: none"> Publish a topical truck study of East Boston or similar truck hot spot. Support stakeholder freight-related analytical or planning needs. Conduct required MPO freight planning. Provide data and analysis in support of advanced model implementation.
Regional Model Enhancement	7121	\$827,650	<ul style="list-style-type: none"> Maintained and enhanced the trip-based regional travel demand model. Developed set of documentation to communicate model parameters and components to consumers of model outputs. Processed data from TNCs to estimate share of TNC activity relative to total traffic. Developed a regional model strategic plan requirements, assessment of state-of-the-practice tools, and began design for a next generation suite of tools and application procedures. 	\$875,370	<ul style="list-style-type: none"> Maintain and enhance the trip-based regional travel demand model. Prepare for use of 2020 census data in regional model. Finalize design of regional model tools, data, and procedures. Develop, acquire, and train staff on near-term regional model tool suite components. Advance development on long-term regional model tool suite components.
Research Next Generation Data and Tools	7121	n/a	n/a	\$57,790	<ul style="list-style-type: none"> Better understanding of data sets for use in the MPO's technical analysis. Review of tools for planning application. Updates to the Travel Demand Modeling Framework Strategic Plan.
Transit Working Group Support	8921	\$46,630	<ul style="list-style-type: none"> Hosted a series of pilot transit working group meetings and managed related logistics. Developed materials to support the working group, including meeting summaries, fact sheets, maps. Supported communication for and about the group using email, social media, and the MPO website. Prepared documentation about pilot working group meetings, activities, and participant feedback to support MPO decision-making about the future of the group. 	\$64,120	<ul style="list-style-type: none"> Host a series of working group meetings and manage pre- and post-meeting logistics. Develop materials and resources to support working group meeting 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.

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
- Provision of Materials in Accessible Formats
- 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	9121
FFY 2021 Total Budget	\$229,920

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 audio/visual equipment
- 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 continue to implement Fixing America's Surface Transportation (FAST) Act requirements (see Chapter 2 and Chapter 3) 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 MOUs 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 2021 Anticipated Outcomes

- 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, including attendance at monthly transportation managers' group meetings

REGIONAL TRANSPORTATION ADVISORY COUNCIL SUPPORT

Project ID Number	9321
FFY 2021 Total Budget	\$45,960

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 provides information, updates, and briefings on MPO activities, studies, and reports; requests and coordinates comments on MPO documents; and works with the Advisory Council and its committees as they conduct their programs, planning, and reviews.

FFY 2021 Anticipated Outcomes

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

PUBLIC PARTICIPATION PROCESS

Project ID Number	9621
FFY 2021 Total Budget	\$182,290

Purpose

Public participation is one of the six core functions of an MPO. The Boston Region MPO's vision for public participation in the region is "to hear, value, and consider—throughout its planning and programming work—the views of and feedback from the full spectrum of the public, and use this input in its decision making."

Staff coordinates public participation efforts with the MPO's Transportation Equity (TE) Program to reach organizations that serve populations covered by federal and state regulations and ensure that people from these populations have meaningful opportunities to participate in the MPO's planning process. These populations include people who are protected by federal mandates—people who identify as minority, are low income, have limited English proficiency (LEP), are 75 years old or older or 17 years old or younger, or have a disability.

Approach

Implementing the Public Participation Plan

MPO staff implements the MPO's Public Participation Process according to the MPO's Public Participation Plan (PPP). The process includes coordinating and implementing the MPO's public outreach activities, via communications and engagement efforts. This process, which supplements the involvement of the Advisory Council, provides information to various parties and collects input from them for MPO use in planning and decision-making, and in developing certification documents. During FFY 2021, staff will update the PPP to reflect current practices and goals for future enhancements to the Public Participation Process.

Communications Methods

MPO staff aims to make it easy to access the information required to understand, follow, and engage in the MPO's transportation planning and decision-making. Staff will use in-person meetings, printed materials, and digital tools, such as website content, emails, social media, and blog posts, for external communications.

Engagement Methods

Through the MPO's Public Participation 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 certain MPO efforts
- electronic surveys and solicitation of comments and input
- partnerships with other organizations on their events and communications platforms
- targeted one-on-one and outreach meetings with organizations representing TE populations and other potentially underrepresented populations

Program Administration

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

The MPO's Public Participation Process also involves consultations as specified in federal guidance, providing required American Sign Language and non-English language interpretation services at MPO-sponsored meetings, and translations of MPO materials into non-English languages.

FFY 2021 Anticipated Outcomes

- Deliver MPO communications, send engagement emails, and update MPO website, social media, and *TransREPORT* blog as needed
- Conduct engagement opportunities with municipalities and the public
- Develop printed communication materials
- Update the PPP

GENERAL GRAPHICS

Project ID Number	9221
FFY 2021 Total Budget	\$85,920

Purpose and Approach

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

PROVISION OF MATERIALS IN ACCESSIBLE FORMATS

Project ID Number	3121
FFY 2021 Total Budget	\$102,040

Purpose

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. Adherence to these policies and regulations enhance public outreach and engagement because more stakeholders in the region can access MPO informational materials and reports.

Approach

In support of these 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.

FFY 2021 Anticipated Outcomes

- Produce materials in accessible formats for public meetings and website postings
- Maintain accessible document templates
- Maintain and update as needed accessibility guidelines and standards for MPO products

PROFESSIONAL DEVELOPMENT

Project ID Number	9521
FFY 2021 Total Budget	\$52,720

Purpose and Approach

MPO staff maintains its technical expertise in part by participating in courses, programs, and workshops offered by FHWA, the FTA, 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 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 2021 Anticipated Outcomes

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

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
- Transportation Equity Program
- CMP
- Freight Planning Support
- Regional Model Enhancement

LONG-RANGE TRANSPORTATION PLAN

Project ID Number	8121
FFY 2021 Total Budget	\$324,120

Purpose

Under federal transportation funding legislation, a new LRTP must be produced every four years. The LRTP guides transportation system investments for the Boston metropolitan region for at least the next 20 years. The MPO adopted its most recent LRTP, *Destination 2040*, in August 2019. This LRTP serves as the Boston Region MPO’s guiding document: it establishes regional goals and objectives that the MPO will use for future decision-making until September 30, 2023.

Although the latest quadrennial LRTP document was endorsed in FFY 2019, the MPO’s 3C planning process—including its long-range planning activities—is ongoing. The MPO’s robust LRTP development program helps meet the federal legislation, Moving Ahead for Progress in the 21st Century Act (MAP-21) and FAST Act requirements, which include keeping abreast of current state-of-the-practice planning tools and approaches and coordinating planning efforts with other regional and state transportation plans and programs. This program also supports scenario planning to generate data for decision-making.

Approach

L RTP Needs Assessment

The Needs Assessment has become a foundational resource for the MPO's transportation planning work. In FFY 2019, staff updated the Needs Assessment for use in developing *Destination 2040*; it is available to the public via the Needs Assessment document and application on the MPO's website. In FFY 2020, staff continued to update the Needs Assessment with new information, particularly information on the resiliency of the transportation network.

In FFY 2021, staff will continue to update the Needs Assessment with new information as it becomes available. Staff will also perform further analyses to keep the Needs Assessment current and will use this information for future studies, reports, and deliberations. The updated information will also be made available to the public via the website.

Data from the Needs Assessment will support two other MPO initiatives in FFY 2021:

- Scenario Planning Activities: Output from the Needs Assessment can be used to develop and analyze land use and transportation options and scenarios
- PBPP: Needs Assessment information can be used to monitor performance measures, set MPO performance targets, evaluate progress toward them, and track other indicators of interest

The L RTP and Scenario Planning in FFY 2021

The MPO has an ongoing practice of using model-based planning tools and off-model processes to generate forecasts and information about regional conditions and future needs. These tools will be used to assess the effects of potential options for changes to the transportation network. The MPO will use this information to make policy and capital-investment decisions.

Throughout the year, MPO staff will seek to identify one or more opportunities to explore options and compare various alternative scenarios to understand effects on transportation, air quality, climate change, mode shift, the economy, and land use. Some of this work also may explore policy-related implications. In this way, the L RTP program serves as an ongoing resource for current information, insights, and analysis for all those involved in managing and improving the regional transportation network.

Laying the Groundwork for the Next L RTP

In developing the next L RTP, staff will research, plan, coordinate with interested parties, and review the priorities of the MPO and other state and regional agencies. Through updating the Needs Assessment and scenario planning, MPO staff will generate information that will guide the investment strategies for the next L RTP.

The L RTP program plays an important role in keeping the MPO abreast of current state-of-the-practice communications methods, planning tools, and approaches. In collaboration with MAPC, the MPO staff will explore effective ways to gather information, understand the needs of the Boston region, and analyze transportation and land-use options. As part of FFY 2021 work activities, staff will research the best practices in metropolitan transportation planning and other facets of planning.

L RTP Amendments

If any changes are made to regionally significant projects in the FFYs 2021–25 TIP, an amendment to the LRTP might be required. Staff will prepare the informational materials for MPO decision-making and follow MPO procedures for informing and involving the public.

FFY 2021 Anticipated Outcomes

- Update details and analyses in the current Needs Assessment to supply the most current information to the MPO and public
- Produce summaries of results from transportation scenario analyses for the MPO
- Conduct public outreach on all LRTP topics, including Needs Assessment updates and scenario planning; report results to the MPO for use in all of its planning and programming
- Keep abreast of current state-of-the-practice communications methods, planning tools, and approaches
- Prepare amendment(s) to *Destination 2040*, if necessary
- Address comments or changes from FHWA and the FTA or changes to the State Implementation Plan (SIP)

TRANSPORTATION IMPROVEMENT PROGRAM

Project ID Number	8221
FFY 2021 Total Budget	\$278,890

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 2022–26 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 TIP conference calls, 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 are examining the TIP evaluation criteria and are revising them as needed to continue to align the TIP process with LRTP goals and objectives as well as state-of-the-practice transportation project metrics. Staff anticipates the implementation of new criteria for the FFYs 2022–26 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 Massachusetts Departments of Transportation's (MassDOT) state-prioritized projects and the capital programs for the Massachusetts Bay Transportation Authority (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 2021–25 TIP during FFY 2021.

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

Implementing Performance-Based Planning

The FFYs 2022–26 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 2021 Anticipated Outcomes

- Develop the FFYs 2022–26 TIP, amendments, and administrative modifications to the FFYs 2021–25 TIP
- Continue to explore enhancements to the TIP interactive database and other web-based TIP resources
- Continue efforts related to PBPP, including tracking performance measures and setting targets
- Implement the revised TIP project evaluation criteria
- 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	8821
FFY 2021 Total Budget	\$153,570

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

MAP-21 and its successor, FAST Act, direct 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 specific goals and objectives.

Approach

The MPO is already applying PBPP principles when making investment decisions as part of the LRTP, TIP, and UPWP development processes, and it is already responding to federal PBPP requirements. In FFYs 2018, 2019, and 2020, the MPO established or updated performance targets for several sets of federally required performance areas, including but not limited to roadway safety, National Highway System (NHS) bridge and pavement condition, NHS reliability, and transit asset management.

In FFY 2021, staff will support the MPO in continuing to meet federal requirements for PBPP, and will monitor and report on performance. Staff will also support the MPO in expanding and enhancing its PBPP practices, including further integrating PBPP into ongoing MPO planning processes. MPO 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 these processes.

Develop Targets for Federally Required Performance Measures

In FFY 2021, staff will continue to provide information and recommendations to the MPO as it sets or updates targets for federally required performance measures. This work will involve reviewing federal regulations and guidance, gathering and analyzing data, developing performance baselines, and exploring ways to improve target-setting methodologies.

Continue to Integrate PBPP Elements into MPO Planning

Staff will build upon prior work to include PBPP elements into LRTP and TIP processes. In FFY 2021, this will include researching how MPO investments and other factors may influence changes in performance outcomes and what strategies could help the MPO achieve its targets. This will likely

include supporting ongoing evaluation of the impacts of MPO-funded TIP projects. Staff will also continue to examine ways to refine project and program selection criteria and work with program managers to make desired changes in future LRTP and TIP development cycles.

Monitor and Report on Performance

The MPO currently reports on performance in its LRTP and TIP documents, through the CMP, and on its web-based Performance Dashboard. In FFY 2021, 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.

Expand the MPO's PBPP Practice

The MPO's PBPP practice needs to address the MPO's specific goals and objectives as well as meet federal requirements. During FFY 2021, staff will continue to seek guidance from MassDOT and federal agencies to ensure that its PBPP program addresses federal requirements and recommendations. Staff will also

- continue to research other measures—beyond those that are federally required—that the MPO may wish to monitor;
- explore the PBPP practices used by other planning agencies and institutions;
- research other PBPP approaches to implement and other measures to track; and
- support the MPO in setting additional performance targets, as desired.

FFY 2021 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
- Produce or update performance reports, such as the performance report included in the TIP, and tools, such as the MPO's Performance Dashboard
- 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
- Explore other measures and methods that the MPO could incorporate into its PBPP process
- Coordinate with MassDOT, the region's public transportation providers, other states and MPOs, and federal agencies to research measures, identify investment strategies, set targets, and otherwise implement PBPP practices

AIR QUALITY CONFORMITY AND SUPPORT ACTIVITIES

Project ID Number	8421
FFY 2021 Total Budget	\$34,690

Purpose

- To ensure that the MPO's plans, programs, and projects comply with the Clean Air Act Amendments (CAAA) of 1990 and to secure federal funding for the Boston Region MPO's transportation system
- 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 (NOx). A new ozone standard was recently proposed and released for public comment by the United States Environmental Protection Agency (EPA), and the Boston Region MPO area might again be classified as a nonattainment area if this standard is approved. 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 2021 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 2022–26 TIP, *Destination 2040* LRTP amendments, if required, and any work required for implementing the Massachusetts Global Warming Solutions Act (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 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 Memorandum of Understanding between the MPO and the DEP
- support to regional, local, and private entities, and to the agencies involved in monitoring, updating, and revising the mobile-source section of the SIP
- data collection and analysis to measure regional air quality conditions, support development of MOVES2014b 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	8321
FFY 2021 Total Budget	\$127,480

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 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. The UPWP's Appendix A provides supplementary information about other transportation planning activities in the region that are not funded by the MPO or conducted by MPO staff. 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 by
 - engaging state transportation agencies, municipalities, and the public, in conjunction with the MPO's Public Participation 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 2021 Anticipated Outcomes

- Conduct public outreach for development of the FFY 2022 UPWP
- Implement planned changes to the UPWP document and process
- Plan for and support meetings of the MPO's UPWP subcommittee
- Report on FFY 2021 UPWP implementation quarterly
- Complete amendments and administrative modifications to the FFY 2021 UPWP, as necessary
- Continue to maintain and update the UPWP Study Recommendations Tracking Database
- Provide other informational materials as needed

TRANSPORTATION EQUITY PROGRAM

Project ID Number	8521
FFY 2021 Total Budget	\$174,100

Purpose

The core objective of the TE program is to ensure MPO compliance with FTA and FHWA Title VI, environmental justice (EJ), and other nondiscrimination requirements. The TE program encompasses the programmatic, monitoring, and reporting activities that are necessary for MPOs to comply with these requirements, including public outreach to protected populations (TE populations), data collection and analysis, and support to other MPO programs. These requirements are rooted in the following federal laws and executive orders (EO).

- Title VI of the Civil Rights Act of 1964: prohibits discrimination based on race, color, and national origin, including people with LEP, 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.

Approach

Complying with Title VI, EJ, and Nondiscrimination Requirements and Preparing an Annual 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 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 areas of focus of import to MassDOT.

Supporting Participation in the MPO’s Transportation Planning Process and the Public Participation Program

In conjunction with the MPO’s Public Participation Program, the TE program works to ensure that TE populations remain central to the MPO’s public outreach process. These engagement activities are described in the MPO’s Public Participation Program.

Providing Technical Support to the LRTP, TIP, and UPWP

Staff will support development of the MPO's certification documents through the continuing implementation of analyses in adherence with Title VI, EJ, and other nondiscrimination regulations. In future TIPs staff will analyze the change in emission reductions over time in order to develop a more complete picture of the air quality impacts of the MPO's Regional Target program.

Because some TE populations receive less reduction in CO emissions than their respective general populations, additional work will be done to investigate strategies for addressing these impacts.

Managing the Transportation Equity Analysis Committee (TEAC)

This committee provides an opportunity for MPO staff to discuss its analytical practices on behalf of the MPO and client agencies, make decisions about updating and implementing these practices, and promote integration of EJ and Title VI principles throughout MPO activities. TEAC's goals are to ensure that these principles are integrated fully into the MPO's activities and that analytical processes are applied consistently. Topics under TEAC's consideration evolve as the need arises within the MPO.

Refining Equity-Related Analytical and Modeling Techniques

To improve the effectiveness of the analyses that evaluate the impacts of the MPO's activities on minority and low-income populations, staff will refine current methods. Staff will address analyses that are prepared using CTPS's regional travel-demand model, as well as those conducted with other tools. These processes will support the analyses conducted for the LRTP and TIP.

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 2021 Anticipated Outcomes

- Submit an annual Title VI report to MassDOT
- Gather and analyze data from the United States Census Bureau, and explore other potential sources of data, that support this program and inform the MPO's planning and programming decision-making
- Explore development of new analytical tools to assist MPO staff with planning and programming decision-making
- Evaluate, refine, and complete equity analyses as needed for the MPO's TIP, LRTP, and UPWP
- 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	2121
FFY 2021 Total Budget	\$118,240

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 2021 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	2221
FFY 2021 Total Budget	\$68,340

Purpose

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

- fulfill the Boston Region MPO’s freight-planning needs;
- complement state and other official planning efforts;
- study specific freight-related issues;
- fulfill 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.

Freight program priorities and activities were described in an action plan prepared in 2013, which was updated as part of the FFY 2019 freight program. The goals remain the same, but new freight-related issues were suggested for study because most issues from the initial action plan had already been studied.

Approach

The freight analysis within the framework of this program is ongoing and conducted on a multiyear basis. Freight studies, data collection, and model development efforts in the future will build on work undertaken as part of the initial action plan.

The freight program supports the MPO’s freight planning needs. In 2017, the MPO was required to recommend a set of Critical Urban Freight Corridors (CUFC) for inclusion in the National Highway Freight Network. As part of this effort, MPO staff identified several truck hot spots where the CUFCs connected with important but congested limited-access highways. These truck hot spots include the following locations:

- Sullivan Square and the Rutherford Avenue Corridor
- the Allston interchange and its connections to arterials crossing the Charles River
- the Southeast Expressway at Interchange 18, serving three industrial areas
- East Boston, including Logan Airport and the working waterfront

Truck traffic serves as a lens through which other freight modes can be studied. The South Boston Waterfront was one of the initial action plan topics, and a comprehensive gate survey of trucks entering and leaving Massport’s Conley Container Terminal in South Boston provided a clear geographical picture of merchandise freight travel markets served through the port of Boston. The updated action plan envisions using similar analyses to understand airfreight and intermodal rail travel markets.

Specific study topics are chosen in consultation with MPO members and other stakeholders each year. The choice of topic sometimes hinges on complex regulatory and land use issues outside the direct scope of MPO activities.

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, have accelerated because new truck data development and model improvement approaches are taking advantage of data and findings from the initial action plan.

FFY 2021 Anticipated Outcomes

MPO staff will move beyond the 2013 action plan. Anticipated efforts include

- publish a study, possibly of a CUFC hot spot or one or more intermodal terminals;
- serve on interagency working groups, likely involving truck rest areas;
- conduct required MPO freight planning; and
- provide data and analysis in support of advanced model implementation.

REGIONAL MODEL ENHANCEMENT

Project ID Number	7121
FFY 2021 Total Budget	\$875,370

Purpose

Through the Regional Model Enhancement work program, CTPS builds and maintains a state-of-the-practice regional travel-demand model and fosters development of other tools for assessing the area's transportation needs and evaluating alternatives to improve the transportation system. The regional travel-demand model is a simulation of travel behavior that emulates the millions of individual decisions that generate travel throughout the region, which then can be put into a forecasting mode by varying the inputs. This tool allows planners to understand current and future travel activity. 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

The current trip-based regional model will be the primary tool for planning and policy analysis requiring regional model support through FFY 2021. As such, CTPS will continue to maintain and enhance the current model. In parallel, staff will finalize the design and begin development of 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 tools envisioned to be included in this suite are an activity based model (ABM), leveraging the previous work conducted, an agile network-based model, as well as new data sources, such as location-based services data. Staff plans to pursue the activities listed below to enhance their technical analysis capabilities.

Maintain and Enhance the Regional Travel-Demand Model

Staff will update and maintain the regional model in good working order to address certification requirements and project needs. Some of the high priority components to be updated include the following:

- Improving model usability through better scenario management, cleaner reports, and procedures to capture input and script versioning.
- Implementing a Transportation Network Company (TNC) mode alternative into mode choice and assignment.
- Developing hybrid modes of operation to reduce runtime.

Continue Work on the Activity Based Model

Most MPOs of similar size to the Boston MPO (or larger) and many smaller MPOs have already developed an ABM. The transition to ABMs is based on advances in modeling practice that more accurately reflects the importance of the household unit and the interaction of household members in the planning and execution of travel. Initially, the Boston Region MPO's ABM will not replace the existing travel-demand model, but instead will augment the agency's analytical capabilities by providing a tool that is more sensitive to variables affecting travel decisions. Staff will assess the recent development in the open-source ABM platform, ActivitySim, as well as the Massachusetts Institute of Technology-developed SimMobility and develop a roadmap for ABM deployment.

Assess Agile Regional Model

Staff will assess the usefulness of a network-based model that has a substantially faster run-time than the current regional model, but with limited sensitivities. This model could leverage data-driven inputs (that is, Origin-Destination [OD] data from Regional Integrated Transportation Information System [RITIS]) and/or outputs from the current regional model. This model platform would be used to support projects where restricted sensitivities are consistent with purpose and as a scenario analysis tool to more quickly test various inputs.

Explore Other Modeling Methods and Tools

Staff will investigate other modeling tools in the public domain that could be useful in project analysis and certification work. Potential tools that staff may use could include the following:

- The Simplified Trips-on-Project Software (STOPS) model, developed by the FTA, that can be used as a high-level planning tool to examine transit service area changes and/or transit operation changes. CTPS will investigate further the potential for STOPS project application in the Boston Region MPO area.
- The Travel Model Improvement Program Exploratory Modeling and Analysis Tool. This utility supports risk and exploratory-based modeling and facilitates an extension of the disparate impact and disproportionate burden analysis conducted as part of the last LRTP.
- Additional tools may be available that address specific needs related to certification activities or project evaluations.

Explore Data Resources

Big data, which comes in many forms, support the model and planning activities. Staff will explore data on TNC in addition to Trip Analytics data that are available through the I-95 Corridor Coalition agreement to determine how they can support the regional model development work.

- TNCs' market share has grown in Boston to the extent that the city is considering installing well-marked curbside passenger pickup areas. Quantifying TNCs' effect on taxi service, the MBTA, and private auto modes is difficult. In the coming year, CTPS will work in conjunction with partner transportation agencies to quantify the effects of TNCs on mode share, vehicle-miles and vehicle-hours traveled, and system capacity. CTPS will work toward incorporating this travel mode into the regional travel model and planning process.

- Trip Analytics provides transportation and planning agencies with vehicle trip data, allowing them to track trends and accurately calibrate models to make more informed decisions for their transportation network investments. The Trip Analytics includes speeds, incidents, and trajectory information, which identifies origins and destinations. While it doesn't currently include volumes, staff will test use of these data to validate and calibrate several aspects of the regional model, including Trip Distribution and Highway Assignment.

FFY 2021 Anticipated Outcomes

Staff will continue to improve the existing trip-based model while pursuing the development of new models to enhance the MPOs ability to provide state-of-the-practice support for MPO staff, member agencies, and partner organizations.

RESEARCH NEXT GENERATION DATA AND TOOLS

Project ID Number	7221
FFY 2021 Total Budget	\$57,790

Purpose

The goal of this effort, new in FFY 2021, is to conduct a leading-edge assessment of new data sources, analytical techniques, and application needs. This assessment will inform CTPS's long-term investments into the travel modeling data, tools, and staff skills to meet the evolving needs of the MPO and its stakeholders. Creating a line item allows MPO staff to create an ongoing process for conducting work that had previously been executed in a more limited or piecemeal approach, to be on the leading edge with rapidly evolving data and models, and to be comprehensive and strategic about how we apply it to our MPO and state work.

The nature, quality, and source of transportation data products are continuously evolving. Passively collected data from phones and GPS devices have recently introduced a new suite of metrics with varying degrees of completeness and validity. Academia, consultants, and other transportation agencies are also continuously developing and demonstrating new analytical approaches to gain insight into travel behavior. Finally, the transportation landscape itself is changing as new mobility services develop and travel behavior responds in different ways.

Approach

Research pursuits for FFY 2021 may encompass a variety of data, tools, and planning efforts. Potential new data products include synthesized accessibility data, transportation network company reports, and passively collected travel data. New analytical tools of interest may include data-driven models and exploratory modeling analyses. An example of this new planning effort requiring advances in application practice is the congestion bottleneck assessment, which requires a systematic assessment across the region and consideration of a variety of future uncertainties.

These resources will be used for the following activities:

- assessing the state of the practice through review of conference proceedings, papers, and phone interviews with MPOs and DOTs
- acquiring and testing demonstration versions of identified tools and datasets
- producing an assessment of and recommendations for adoption and integration of these analytical tools
- producing a design requirement specification describing the necessary components of new analytical tools and data sets for application in the MPO's work flow

FFY 2021 Anticipated Outcomes

- Better understanding of data sets for use in the MPO's technical analysis
- Review of tools for planning application
- Updates to the Travel Demand Modeling Framework Strategic Plan

TRANSIT WORKING GROUP SUPPORT

Project ID Number	8921
FFY 2021 Total Budget	\$64,120

Purpose

This task would support an MPO transit working group, which provides a forum for coordination and dialogue among transit providers and stakeholders in the Boston region.

Approach

Staff will continue work it began in FFYs 2019 and 2020 to establish and support an MPO transit working group. During FFY 2021, MPO staff support for the MPO's transit working group will likely include the following activities:

- planning programs and meetings
- scheduling speakers
- 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
- coordinating elections and other activities, as necessary
- gathering feedback from the transit working group to inform MPO activities and decision-making

MPO staff will also regularly provide information, updates, and briefings about the transit working group to the MPO board.

FFY 2021 Anticipated Outcomes

- Host a series of working group meetings and manage pre- and post-meeting logistics
- 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 about pilot working group meetings, activities, and participant feedback to support MPO decision-making about the future of the group





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, 2020, when the FFY 2021 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 2020 or earlier, and will continue into FFY 2021. 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 2020), and completed and planned work products for planning studies started in a previous FFY and continued into FFY 2021.

- **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 2020 and FFY 2021, 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 2021.

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 2021. They provide detailed updates for the FFY 2021 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 857.702.3500 (voice), 617.570.9193 (TTY), or ctps@ctps.org (email).

**Table 4-1
Completed MPO-Funded Transportation Planning Studies, FFY 2019–20**

Project Name	ID	FFY 2020 Budgeted Total Funding	Work Products (reports, technical memoranda, and other work products or activities)
FFY 2020 Studies			
Transit:			
Transit Mitigation for New Development Sites	13295	\$60,000	A report highlighting current examples of transit mitigation methodologies.
Operating a Successful Shuttle Program	13296	\$50,000	A guidebook that draws from national best practices and a series of interviews from local shuttle providers to provide information on planning and operating a successful shuttle program.
Further Development of the MPO's Community Transportation Program	13297	\$20,000	<ul style="list-style-type: none"> • Framework for the pilot round of the CC (formerly Community Transportation) program. • List of projects to be funded through the pilot round of the CC program. • Memorandum summarizing lessons learned from the pilot round and recommendations for the future of the program.
Transportation Equity:			
Disparate Impact Metrics Analysis	13298	\$40,000	<ul style="list-style-type: none"> • Meeting of the DI/DB Policy working group to get input on the MPO's recommended LRTP DI/DB Policy. • Memorandum summarizing the results of the study and recommendations to changes to the MPO's LRTP DI/DB Policy.

(Table 4-1 cont.)

Project Name	ID	FFY 2020 Budgeted Total Funding	Work Products (reports, technical memoranda, and other work products or activities)
Other Technical Support:			
MPO Staff-Generated Research Topics	20904	\$40,000	<ul style="list-style-type: none"> • Inventory of Ferry Boat and Other Passenger Water Transportation Services in Massachusetts as of 2018. • Initial comparison of 2015–17 MBTA Systemwide Survey demographic data to American Community Survey data with goal of developing a model that estimates the likely demographics of transit riders at a route or subroute level.
FFY 2019 Studies			
Active Transportation:			
Pedestrian Report Card Assessment Dashboard	13292	\$8,700	Final report and presentation to MPO.
Roadway and Multimodal Mobility:			
New and Emerging Metrics for Roadway Usage	13292	\$5,720	Final report and presentation to MPO.
Addressing Safety, Mobility, and Access on Subregional Priority Roadways FFY 2019	13419	\$7,220	Final report and presentation to MPO.
Addressing Priority Corridors from the LRTP Needs Assessment FFY 2019	13519	\$7,630	Final report and presentation to MPO.
Low-Cost Improvements to Express-Highway Bottlenecks FFY 2019	13619	\$7,420	Final report and presentation to MPO.

**Table 4-2
Discrete Boston Region MPO Planning Studies and Technical Analyses Continued into FFY 2021**

Project Name	ID	Previous Funding	Percent Complete by End of FFY 2020	FFY 2020 Work Products and Progress	FFY 2021 Funding	FFY 2021 Planned Work Products and Progress
FFY 2020						
Active Transportation:						
Locations with High Bicycle and Pedestrian Crash Rates in the Boston Region MPO Area	13293	\$70,000	90%	Draft memoranda for study locations	\$960	Final report and presentation to MPO
Multimodal Mobility:						
Addressing Safety, Mobility, and Access on Subregional Priority Roadways FFY 2020	13420	\$115,000	95%	Draft report for Route 53 corridor in Norwell	\$13,400	Final report and presentation to MPO
Addressing Priority Corridors from the LRTP Needs Assessment FFY 2020	13520	\$120,000	90%	Draft report for Route 28 corridor in Milton	\$13,400	Final report and presentation to MPO
Safety and Operations Analysis at Selected Intersections FFY 2020	13720	\$80,000	95%	Draft report for Quincy and Medfield intersection locations	\$7,420	Final report and presentation to MPO
TIP Before and After Studies	13294	\$60,000	90%	Draft report for study locations	\$22,480	Final report and presentation to MPO
Resilience:						
Exploring Resilience in MPO-Funded Corridor and Intersection Studies	13299	\$90,000	90%	Draft report	\$960	Final report and presentation to MPO

**Table 4-3
Ongoing Boston Region MPO Technical Analyses, FFY 2020–21**

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Products and Progress	FFY 2021 Funding	FFY 2021 Planned Work Products and Progress
CTPS Activities					
Community Transportation Technical Assistance Program*	2421, MAPC5	\$73,330	<ul style="list-style-type: none"> Acton: Provided further traffic signal analysis related to the town’s commuter rail lot Norwell: Provided assistance in coordination with MAPC related to traffic impacts associated with rezoning proposals Canton: Provided assistance evaluating existing conditions for a section of Washington Street 	\$69,190	<ul style="list-style-type: none"> Continue to support communities seeking transportation technical assistance Canton: Provide further assistance to develop Complete Streets improvement recommendations for the study section of Washington Street
Bicycle/Pedestrian Support Activities	2521	\$71,810	<ul style="list-style-type: none"> 2019–20 bicycle and pedestrian counts Maintain awareness of bicycle- and pedestrian-related work and developments in the Boston metropolitan region Follow bicycle- and pedestrian-planning best practices and developments nationwide and globally Memorandum summarizing Boston region bicycle and pedestrian counts Study gaps that currently affect the safety and comfort of bicycling in the Boston region at both urban and suburban level 	\$77,420	<ul style="list-style-type: none"> 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 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 Provide ongoing technical support to communities for current tools and practices regarding bicycle and pedestrian issues, with a particular focus on promoting safety 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 who may be able to access 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 Coordinate regional efforts to coincide with the vision and goals outlined in the Massachusetts Bicycle and Pedestrian Statewide Transportation Plans

(Table 4-3 cont.)

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Products and Progress	FFY 2021 Funding	FFY 2021 Planned Work Products and Progress
Regional Transit Service Planning Technical Support	14342	\$56,470	<ul style="list-style-type: none"> • Provide support to MAPC for the Neponset Valley TMA Routes 1 and 1A Mobility Study • Provide bus service planning support to the town of Lexington • Recommend alternatives for improving transit connections between downtown Hingham and the ferry service at Hingham Shipyard • Recommend strategies for improving transit service in the town of Acton 	\$55,360	Continue support to communities seeking transit service planning technical assistance
Transit Data Support	4221	\$11,170	Responded to data request needs	\$13,730	Continue to respond to data request needs
Traffic Data Support	2721	\$15,340	Responded to data request needs	\$18,180	Continue to respond to data request needs
Roadway Safety Audits	2321	\$14,920	Provided support to MassDOT for safety audits conducted in the Boston Region MPO area.	\$13,740	Tasks and work products generally remain the same every year

*This program is shared between MAPC and CTPS.

**Table 4-4
Unified Planning Work Program Budget—MPO New Discrete Studies, FFY 2021**

Project ID	Study or Program	Proposed FFY 2021 CTPS Budget
13302	Improving Pedestrian Variables in the Travel Demand Model	\$25,000
13303	Regional TDM Strategies	\$10,000
13421	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	\$127,900
13521	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	\$137,000
13621	Low-Cost Improvements to Express-Highway Bottleneck Locations	\$64,500
13304	Trip Generation Rate Research	\$45,000
13305	Intersection Improvement Program	\$75,000
14370	Access to CBDs Phase 2	\$75,000
14371	The Future of the Curb Phase 2	\$60,000
13306	Multimodal Resilience and Emergency Planning	\$30,000
20905	Staff-Generated Research and Technical Assistance	\$20,000
13307	Mapping Major Transportation Infrastructure Projects in the Boston Region	\$20,000
13308	Informing the Big Ideas Behind the MPO's Scenario Planning Process	\$20,700
Total for New Discrete and Ongoing Studies		\$710,100

NOTE: This information may be updated as the FFY 2021 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 2021. 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.

IMPROVING PEDESTRIAN VARIABLES IN THE TRAVEL DEMAND MODEL

Project ID Number	13302
Category	Active Transportation
FFY 2021 Total Budget	\$25,000

Purpose

The CTPS Regional Travel Demand Model uses a variable known as Pedestrian Environmental Variable (PEV) as a metric to gauge the quality of the pedestrian environment at transit stations and stops. The PEV is calculated at the geographic level of the Transportation Analysis Zone (TAZ), the basic building block for analysis in the model. The PEV is presently composed of three weighted, indexed elements:

- pedestrian level of service (based on physical characteristics in the TAZ)
- geographic characteristics of the station/stop (such as presence of sidewalks)
- pedestrian hindrances (such as designated truck routes)

MPO staff and stakeholders have identified the need to improve the model's sensitivity to and handling of the pedestrian environment. The pedestrian environment is critical not only to determining how walking trips function, but also supports analysis of transit trips.

Approach

This task will improve the calculation of PEV by incorporating new variables into its three key elements. Possible new variables may include the following:

- roadway density
- analysis of mixing of uses, density, and other land use characteristics
- intersection density
- safety measures, as represented by crash rates at the TAZ level

Once new PEVs are developed for each TAZ, staff will recalibrate the travel demand model's mode choice component.

FFY 2021 Anticipated Outcomes

Documentation of improved variables that inform the PEV and their implementation in the model.

REGIONAL TRAVEL DEMAND MANAGEMENT (TDM) STRATEGIES COORDINATION

Project ID Number	13303
Category	Land Use, Environment, and Economy
FFY 2021 Total Budget	\$10,000

Purpose

TDM is a topic of interest to many of the MPO's stakeholders and to municipal and business interests in the Boston region. The basic tenets of TDM practices are fairly well understood, and MAPC has conducted significant work on the practice in the past. However, there is demand among municipalities, TMAs, businesses, and other stakeholders for space in which those who are executing TDM policies can swap information, and those who are examining the possibility of implementing TDM ordinances can ask questions. In addition, stakeholders state that there is a need for better understanding of the legal and legislative context for TDM in Massachusetts and believe that the MPO and its partner agencies are well-positioned to convene informative conversations on the topic.

Approach

During the process of developing the FFY 2021 UPWP, members of the MPO's UPWP Committee suggested that the MPO and MAPC could collaborate on one or more forums or other such gatherings to discuss TDM. This task sets aside funding for MPO support for those events, including preparation of materials; logistical support; and staff time.

FFY 2021 Anticipated Outcomes

A series of in-person and/or digital forums on the topic of TDM, co-hosted by the MPO and other entities such as MAPC.

ADDRESSING SAFETY, MOBILITY, AND ACCESS ON SUBREGIONAL PRIORITY ROADWAYS

Project ID Number	13421
Category	Multimodal Mobility
FFY 2021 Total Budget	\$127,900

Purpose

The Boston Region MPO has conducted Addressing Safety, Mobility, and Access on Subregional Priority Roadways studies as part of the UPWP in every FFY since 2013. During MPO outreach, MAPC subregional groups identify transportation problems and issues that concern them, often those relating to bottlenecks or lack of safe access to transportation facilities in their areas. These issues can affect livability, quality of life, crash incidence, and air quality along an arterial roadway and its side streets. If problems are not addressed, mobility, access, safety, economic development, and air quality are compromised.

Approach

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

- Traffic signals (equipment, retiming, redesign, and coordination)
- Bus stop locations
- Processing buses through traffic lights
- Location and management of pedestrian crossings and signals
- Americans with Disabilities Act of 1990 requirements
- Travel-lane use by motorized and bicycle traffic
- Speed limit
- Access management

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

FFY 2021 Anticipated Outcomes

The study will include data collection, technical analysis, development of recommendations, and documentation for selected corridors.

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

Project ID Number	13521
Category	Multimodal Mobility
FFY 2021 Total Budget	\$137,000

Purpose

The purpose of these studies is to develop conceptual design plans that address regional multimodal transportation needs along priority corridors identified in the MPO's LRTP, *Destination 2040*. These studies include recommendations that address multimodal transportation needs that are expected to arise from potential future developments in the study area.

Approach

The LRTP identified needs for all modes of transportation in the MPO region. These needs guide decision-making about which projects to include in current and future Transportation Improvement Programs (TIP). Projects that address the region's current mobility needs are those that focus on maintaining and modernizing roadways with high levels of congestion and safety problems;¹ expanding the quantity and quality of walking and bicycling; and making transit service more efficient and modern. During the past several years, the MPO has conducted these planning studies, and municipalities have been receptive to them.

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

FFY 2021 Anticipated Outcomes

Through these studies, MPO staff would recommend conceptual improvements for one or more corridors, or several small sections within a corridor, that are identified by the CMP and the LRTP as part of the Needs Assessment process.

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

¹ Congestion is used as one of the selection criteria for potential study locations. Congested conditions are defined as a travel time index of at least 1.3 (this means that a trip takes 30 percent longer than it would under ideal conditions).

LOW-COST IMPROVEMENTS TO EXPRESS-HIGHWAY BOTTLENECK LOCATIONS

Project ID Number	13621
Category	Multimodal Mobility
FFY 2021 Total Budget	\$64,500

Purpose

This study would build off of the work conducted in previous iterations of this study, Low-Cost Improvements to Express-Highway Bottlenecks, Phases I-IV. These studies aim to address points in the highway system where traffic flow is restricted with operational and low-cost infrastructure solutions. The recommendations that stem from these studies are aimed at reducing congestion, increasing safety, and improving traffic operations throughout the Boston region. Examples of recommendations from previous phases of this study include creating an auxiliary lane for merging and diverging traffic and lengthening the deceleration lane at an exit. The previous three studies of express-highway bottlenecks were very well received by MassDOT and the FHWA. Some of the recommendations from those studies already have been executed, and the FHWA has interviewed MPO staff about the successful implementation.

Approach

According to the FHWA, “Much of recurring congestion is due to physical bottlenecks—potentially correctable points on the highway system where traffic flow is restricted. While many of the nation’s bottlenecks can only be addressed through costly major construction projects, there is a significant opportunity for the application of operational and low-cost infrastructure solutions to bring about relief at these chokepoints.”² In general, recurring bottlenecks are influenced by the design or operation present at the point where the bottleneck begins—for example, merges, diverges, lane drops, traffic weaving, and any abrupt changes in highway alignment. Low-cost infrastructure solutions, as opposed to major construction projects, could involve changes in the design or operation of merges, traffic operations, or highway alignment. Examples of recommendations from previous phases of this study include creating an auxiliary lane for merging and diverging traffic and lengthening the deceleration lane at an exit. The previous three studies of express-highway bottlenecks were very well received by MassDOT and the FHWA. Some of the recommendations from those studies already have been executed, and the FHWA has interviewed MPO staff about the successful implementation.

FFY 2021 Anticipated Outcomes

Reports documenting low-cost solutions to existing traffic congestion issues at the selected express-highway bottleneck locations.

² Federal Highway Administration, Recurring Traffic Bottlenecks: A Primer: Focus on Low-Cost Operations Improvements, US Department of Transportation, Federal Highway Administration, June 2009, p. 1.

TRIP GENERATION RATE RESEARCH

Project ID Number	13304
Category	Multimodal Mobility
FFY 2021 Total Budget	\$45,000

Purpose

The Massachusetts Environmental Policy Act (MEPA) and National Environmental Policy Act (NEPA) require certain proposed developments to prepare a traffic/transportation impact analysis. A metric known as trip generation rate, which estimates how many trips people will make from or in response to a particular development, is key to this type of analysis, and impact analyses typically use a trip generation rate manual developed by the Institute of Transportation Engineers (ITE). However, ITE's rates are based on national averages, sometimes generated from a small sample size, and are highly influenced by suburban locations, resulting in a high degree of variability and interpretability in their application.

ITE rates consequently do not necessarily describe the Boston region well, as this region is characterized by differences from national averages in areas such as availability and usage of transit; prevalence of bicycle and pedestrian facilities; and scale of economic growth and density of employment centers. Thus, straightforward application of ITE rates for analysis of projects within the MPO's area of responsibility may lead to trip generation estimates that are highly inaccurate. This error can affect the mitigation imposed on development projects and may change or restrict the scale of the development.

Approach

MPO staff will examine recently completed development impact studies in the greater Boston area, compiling available travel monitoring data and trip generation rates used in MEPA/NEPA submissions, and using the statewide Travel Demand Model's trip generation results as a point of comparison. Staff will then compare the compiled data with ITE rates, with the goal of developing an improved understanding of the relationship between land use, development, trip activity, and the transportation network that is more accurate and specific to the Boston region.

FFY 2021 Anticipated Outcomes

A dataset of information on trip generation in the Boston region and a memorandum or report documenting lessons learned from analysis of that dataset and potential implications for analysis carried out by the MPO or other agencies.

INTERSECTION IMPROVEMENT PROGRAM

Project ID Number	13305
Category	Multimodal Mobility
FFY 2021 Total Budget	\$75,000

Purpose

In 2014, the MPO participated in an intersection improvement program funded in the TIP by Congestion Mitigation and Air Quality (CMAQ) dollars, with the goal of identifying low-cost improvements that would help alleviate congestion at problem intersections. Through the CMP, MPO staff selected candidate intersections and contacted the relevant municipalities. A consulting firm then visited 35 intersections around the region, altered the signals if necessary, and submitted suggestions for other low-cost improvements to the relevant municipality.

For this UPWP project, MPO staff will survey and analyze additional intersections around the Boston region to determine suitable low-cost improvements.

Approach

Staff will select a set of intersections based on CMP performance metrics, and then consult with planners or engineers from the respective communities to validate the congestion issues at the selected locations. Staff will then survey the selected intersections, develop recommendations for low-cost improvements, and present the recommendations to the relevant municipality. The municipalities can use the recommendations to develop an implementation project that would improve traffic operations.

The original intersection improvement program focused on altering traffic signals while the surveyor was on site. The recommendations from this current study may include alterations to traffic signals, but because MPO staff will not have access to the signal cabinet, the traffic signals will not be altered on site. Instead, recommendations for altering traffic signals will be presented to the relevant municipality for implementation.

FFY 2021 Anticipated Outcomes

Staff will survey 10 to 15 intersections, evaluate them for low-cost improvements, and convey recommendations to municipal staff. The municipalities will be responsible for implementation.

ACCESS TO COMMERCIAL BUSINESS DISTRICTS PHASE 2

Project ID Number	14370
Category	Transit
FFY 2021 Total Budget	\$75,000

Purpose

This study will serve as a follow up to FFY 2019's *Transportation Access Studies of Central Business Districts*. There is a growing need to ensure that commercial business districts (CBD) can be accessed by users of all transportation modes—including walking, biking, taking transit, using ridehail services, or driving—and growing evidence to suggest that CBDs perform better economically when access by walking, biking, or transit is adequately prioritized. Research from across the region and country has shown that those who arrive by these modes will visit a CBD more frequently, visit more businesses per trip to the CBD, and spend more money in the CBD over time than those who arrive by driving.

However, planners and municipal officials often encounter reluctance from the business community when infrastructural reconfigurations necessary to support more diverse modes of access are proposed, because some business owners may believe the success of their business relies on the ability of their customers to have access to ample nearby street parking. Additional data gathering in this area can help planners' and municipal officials' decision-making efforts in their work to improve access to CBDs, and help make the case to the business community that investments in transportation improvements for non-driving modes are also investments in the economic vitality of the neighborhood overall.

Approach

In the FFY 2019 study, MPO staff conducted surveys of business owners in select CBDs, asking for their perceptions of their customers' travel and spending patterns. Staff then surveyed customers at these businesses as to their actual travel and spending patterns.

Phase 2 of this study will build upon the FFY 2019 work, with surveys conducted in a new set of case study locations, to build a larger sample dataset. Staff will also make the tools used in the survey work accessible to municipalities and other stakeholders, so that they can carry out similar data collection themselves.

FFY 2021 Anticipated Outcomes

The results of this study will be documented and presented in a report. Staff will also produce a toolbox that will be made available to municipalities and other partners for conducting CBD-access studies.

THE FUTURE OF THE CURB PHASE 2

Project ID Number	14371
Category	Transit
FFY 2021 Total Budget	\$60,000

Purpose

This study will build upon FFY 2019's *Future of the Curb* study, which compiled nationwide examples of cities reconfiguring their curb lanes in response to changing demands on the space. Curb space in urban areas has traditionally been used for parking, but cities throughout the region and across the country have been making changes to the way they used this valuable, but often overlooked, public space. In addition to parking, cities have been reconfiguring their curbs so they can be used for a number of other purposes, including short-term passenger pick-up and drop-off zones; commercial vehicle loading zones; improved infrastructure for people walking and biking; and enhanced transit service, including space for dedicated transit lanes, stations, and stops.

In some cases, these reconfigurations are made on an ad hoc basis, responding to changing demands and economic, environmental, and political constraints at a particular location. In other cases, cities have crafted specific policy to inform how curb space can and should be used. These curb management strategies guide how improvements are developed, prioritized, and implemented.

By actively managing curb space, cities can work to ensure sufficient access to users of all transportation modes, including people walking, biking, taking transit, using ridehail services, and driving. When space is limited and accommodating all modes is not possible or practical, a curbside management strategy can help planners and city officials determine a course of action that is rooted in the shared goals and vision of the community. This ensures that a valuable but limited public asset is used effectively and efficiently.

Approach

As a follow up to the FFY 2019 work, this study will examine existing curb management strategies in use around the country and develop a guidebook for municipalities interested in planning and implementing curb management strategies of their own.

The guidebook will discuss several topic areas:

- developing curb management strategies that are consistent with the municipality's larger goals
- identifying stakeholders and engaging the public in developing curb management strategies
- establishing metrics to evaluate the success of curb management changes; for example, considering effects on access and accessibility, parking turnover, transit reliability, safety, businesses and economic vitality, travel times, congestion, emissions, and other factors

- evaluating how the positive and negative effects of changes to curb management can affect equity populations
- developing a plan for monitoring and enforcing compliance with the curb management strategy
- considering the broader context of curb space changes, including land use, density, and existing activities at the curb

The study will include outreach to municipalities in the Boston region to learn about the process that they took, if any, to implement curb management strategies. The study will document these municipalities' considerations, successes, challenges, and lessons learned.

FFY 2021 Anticipated Outcomes

A guidebook for planning and implementing curb management strategies.

MULTIMODAL RESILIENCE AND EMERGENCY PLANNING

Project ID Number	13306
Category	Resilience
FFY 2021 Total Budget	\$30,000

Purpose

The purpose of this study is to provide an interactive tool that can help to analyze the impact of various emergency events on the transportation network. As the impacts of climate change intensify and become more frequent, communities must build a more resilient transportation network to safely evacuate from potentially life-threatening weather events. The top concerns for the Boston region include heavy precipitation, coastal and inland flooding and extreme heat. This work will update CTPS' existing All-Hazards Planning tool and incorporate the most up-to-date data sets for multiple transportation modes and hazards.

Approach

The current All-Hazards Planning tool will be updated with the most current information using existing open or publicly available data. The required data sets to be incorporated may include the following categories.

1. Climate hazards
2. Transportation assets for multiple modes
3. Emergency preparedness (that is, designated evacuation routes, shelter facilities, etc.)
4. Critical facilities (that is, hospitals, elderly care, food distribution centers, etc.)

Staff will also examine the possibility of incorporating data on transportation equity populations into the application.

FFY 2021 Anticipated Outcomes

This study will produce a well-designed interactive application, based on the existing All-Hazards Planning tool, to help stakeholders, such as municipal planners, better analyze and visualize transportation impacts in the event of a climate-related emergency. The resulting information will help municipal planners create network redundancies and adaptive infrastructure in hazard-prone areas.

This work may provide the basis for future efforts, such as modeling how transportation network users will react to various emergency or disaster scenarios, perhaps through the LRTP scenario planning process or a future UPWP study.

STAFF-GENERATED RESEARCH AND TECHNICAL ASSISTANCE

Project ID Number	20905
Category	Other
FFY 2021 Total Budget	\$20,000

Purpose

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

This program was funded for the first time in FFY 2016, when the work undertaken consisted of investigating the possibility of using driver license acquisition rates obtained through Registry of Motor Vehicles data as a possible measure of transit dependence. In FFY 2017, MPO staff members completed research projects including an examination of crash rates in Environmental Justice communities; analysis of long-distance commuting in the Boston region and its implications for the MPO; and development of a new software tool for transit planning.

In FFY 2020, the scope of this program was extended to allow MPO staff members to pursue small technical assistance projects for local communities. Individual MPO staff members would be able to identify small-scale needs in the diverse communities in which they live (within the MPO region), and a partner entity or entities to work with in making recommendations to solve the problem. This budget line would provide MPO staff with time to study the problem—involving their colleagues with specialty skills if resources and availability allow—and make recommendations to solve it.

Approach

Interested MPO staff members will complete an application for MPO funding to conduct independent research on a topic of professional interest and potential use in the metropolitan transportation planning process, or pursue a local transportation-related technical assistance project. MPO managers and directors will review the applications and select the most promising topics for study.

FFY 2021 Anticipated Outcomes

The research element of this program will produce valuable information for the MPO’s consideration and support staff members’ professional development. The technical assistance element will yield highly creative, yet flexible and lightweight, solutions for transportation planning problems. Both elements allow staff to raise the profile of the MPO and publicize its ability to help local communities, whether by publishing compelling research or by reaching out to help solve local problems.

MAPPING MAJOR TRANSPORTATION INFRASTRUCTURE PROJECTS IN THE BOSTON REGION

Project ID Number	13307
Category	Other
FFY 2021 Total Budget	\$20,000

Purpose

MPO staff a number of years ago created a print *Eastern Massachusetts Transportation Timeline/Map* recognizing infrastructural milestones from 1800 to 2000. The timeline distinguishes highway, transit, bicycle, and airport milestones, and the accompanying map displays the Eastern Massachusetts transportation network along with milestone dates. The timeline/map has not been updated since 2000, and staff have had requests from within the agency and from external stakeholders to update it and move it online.

Approach

This project would compile data from various sources to update the timeline and map to reflect the current status of the transportation network, and create an interactive, layer-based online interface that would be available to the public.

FFY 2021 Anticipated Outcomes

Interactive online tool mapping developments in the transportation network of Eastern Massachusetts from 1800 to the present, and potentially print materials to complement it.

INFORMING THE BIG IDEAS BEHIND THE MPO'S SCENARIO PLANNING PROCESS

Project ID Number	13308
Category	Other
FFY 2021 Total Budget	\$20,700

Purpose

The transportation world is rapidly evolving. The MPO and its staff have heard significant interest from stakeholders, including municipal partners, in examining how some of the large-scale ongoing trends, open policy questions, and possible developments could affect the MPO's work and the Boston region's transportation system and infrastructure in the upcoming years.

The LRTP is the MPO's main vehicle for tackling large-scale questions. With the next LRTP set to be approved in three years, now is the time to inform the questions the development process should explore. This task will jump-start outreach and framing efforts for the development of the new LRTP, with a special focus on integrating input into possible scenarios to be examined through the scenario planning process.

Approach

To support development of big picture items to be tested through scenario planning, staff would conduct a thorough program of outreach to stakeholders—including MPO member municipalities, other agencies, community groups, and advocacy groups—to determine priorities for possible analyses. Possible scenario elements to discuss with stakeholders include congestion pricing; free transit fares on some or all services; implementation of the Transportation Climate Initiative or another funding mechanism; impacts of climate change or other natural disasters, and the field of resiliency more broadly; and large-scale regional zoning and land-use changes.

FFY 2021 Anticipated Outcomes

Documentation of outreach to a wide range of stakeholders that can inform the development of a framework for LRTP scenario planning and analysis.

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.

TRANSIT DATA SUPPORT, FFY 2021

Project ID Number	4221
FFY 2021 Total Budget	\$13,730

Purpose

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

Approach

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

FFY 2021 Anticipated Outcomes

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

TRAFFIC DATA SUPPORT, FFY 2021

Project ID Number	2721
FFY 2021 Total Budget	\$18,180

Purpose

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

Approach

For the vast majority of requests for transportation planning and traffic engineering analysis, the amount of effort is significant; therefore, a specific scope of work is developed for these projects. Occasionally, public and private institutions and their consultants ask CTPS to perform various quick-response analyses or to gather data. These requests, which are expected to require fewer than two person-days each, are accounted for under this general project description.

FFY 2021 Anticipated Outcomes

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

ROADWAY SAFETY AUDITS

Project ID Number	2321
FFY 2021 Total Budget	\$13,740

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 bicycle. 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 2021 Anticipated Outcomes

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

BICYCLE/PEDESTRIAN SUPPORT ACTIVITIES

Project ID Number	2521
FFY 2021 Total Budget	\$77,420

Purpose

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

Approach

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

FFY 2021 Anticipated Outcomes

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

- Review potential bicycle and pedestrian improvements to ready project recommendations for compliance with the Healthy Transportation Directive.
- 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.
- 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.
- Provide ongoing technical support to communities for current tools and practices regarding bicycle and pedestrian issues, with a particular focus on promoting safety.
- 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.
- Coordinate regional efforts to coincide with the vision and goals outlined in the Massachusetts Bicycle and Pedestrian Statewide Transportation Plans.

REGIONAL TRANSIT SERVICE PLANNING TECHNICAL SUPPORT

Project ID Number	14342
FFY 2021 Total Budget	\$55,360

Purpose

Through this ongoing program, the MPO provides technical support to regional transit authorities (RTA), municipalities, MAPC subregions, and transportation management associations (TMA). 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 TMAs, MAPC subregions, and municipalities seeking to improve the transit services that they operate or fund.

FFY 2021 Anticipated Outcomes

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

COMMUNITY TRANSPORTATION TECHNICAL ASSISTANCE PROGRAM

Project ID Number	2421, MAPC5
FFY 2021 Total Budget	\$69,190

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 to understand the potential problem, review existing data, and make suggestions for additional data that may be needed. General types of 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 CMP and other staff-identified needs. It also will include a safety component in which staff will respond to community requests to conduct analyses at crash locations and recommend possible mitigation strategies.

FFY 2021 Anticipated Outcomes

In FFY 2021, 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 typically undertake three to four projects each FFY. MPO staff will document the work, recommendations, and outcomes of these consultations in the form of technical memoranda.



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 Allston I-90 Interchange study, 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 2021

Project ID	Name	Total Contract ^a	Funding Source	FFY 2021 Agency Funds	Direct Support	Proposed FFY 2021 CTPS Budget
Varies by project	MassDOT SPR Program Support ^b	\$614,427	SPR	\$523,320	\$0	\$523,320
Varies by project	MassDOT On-call Projects	\$600,000	MassDOT	\$299,700	\$300	\$300,000
13155	MassDOT Title VI Program	\$95,000	MassDOT	\$35,000	\$0	\$35,000
13309	MassDOT Transit Planning Assistance ^c	n/a	MPO 3C	\$48,190	\$0	\$48,190
MassDOT Subtotal				\$858,020	\$300	\$858,320
14362	MBTA 2020 NTD	\$127,835	MBTA	\$6,500	\$0	\$6,500
14366	MBTA SFY 2021 NTD	\$120,000	MBTA	\$102,000	\$150	\$102,150
14372	MBTA SFY 2022 NTD	\$125,000	MBTA	\$35,000	\$250	\$35,250
11426	MBTA 2021 Title VI Program Monitoring	\$85,000	MBTA	\$45,000	\$250	\$45,250
11424	MBTA 2020 Triennial Title VI Report	\$139,632	MBTA	\$37,500	\$350	\$37,850
11422	MBTA Bus Service Data Collection X	\$540,000	MBTA	\$185,000	\$125	\$185,125
14355	MBTA Rider Oversight Committee Support III	\$24,500	MBTA	\$6,000	\$0	\$6,000
14358	Service Plan Equity Analysis Support	\$115,000	MBTA	\$60,000	\$0	\$60,000
11491	MBTA Mapping Support	\$12,000	MBTA	\$4,000	\$0	\$4,000

(Table 5-1 cont.)

Project ID	Name	Total Contract ^a	Funding Source	FFY 2021 Agency Funds	Direct Support	Proposed FFY 2021 CTPS Budget
74021	Diversity Committee Support	\$6,000	MBTA	\$2,400	\$0	\$2,400
11492	Haymarket Station Redevelopment Study	\$65,000	MBTA	\$15,000	\$0	\$15,000
11425	Prioritization of Dedicated Bus Lanes II	\$82,245	MBTA	\$16,000	\$0	\$16,000
11495	Silver Line Extension Ridership Projections	\$130,000	MBTA	\$130,000	\$0	\$130,000
MBTA Subtotal				\$644,400	\$1,125	\$645,525
221xx	Massport Technical Assistance	\$75,000	Massport	\$5,000	\$0	\$5,000
Massport Subtotal				\$5,000	\$0	\$5,000
11162	Keolis Neighborhood Maps	\$45,229	Keolis	\$5,000	\$0	\$5,000
23330	Dedham Route 1 Corridor	\$120,594	Dedham	\$50,000	\$0	\$50,000
11493	MWRTA Sunday Service Study	\$75,000	MWRTA	\$42,000	\$0	\$42,000
Other Subtotal				\$97,000	\$0	\$97,000
Agency-Funded and Client-Funded Subtotal				\$1,604,420	\$1,425	\$1,605,845

^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 term of the MassDOT SPR Contract is from July 1 through June 30. Therefore, 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 2021 and FY 2022 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 2021 Total Budget*	\$250,000

*The term of the MassDOT SPR Contract aligns with the SFY, from July 1 through June 30. Therefore, the total FFY budgets in the UPWP represent a combination of funding from two different contract years. The FFY 2021 total budget is from the SFY 2021 and SFY 2022 contracts.

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. Some of the projects that are either underway or expected to begin in FFY 2021 are listed below.

- Cape Rail Study
- Statewide Travel Model Assistance
- Statewide Growth Rates
- Miscellaneous Technical Support

Other projects may be added throughout FFY 2021.

FFY 2021 Anticipated Outcomes

Activities and work products will depend on tasks requested by MassDOT's Office of Transportation Planning (OTP).

MASSDOT ROAD INVENTORY AND RELATED SUPPORT MAINTENANCE

Project ID Number	97821
Funding Source	MassDOT SPR
FFY 2021 Total Budget*	\$273,320

*The term of the MassDOT SPR Contract aligns with the SFY, from July 1 through June 30. Therefore, the total FFY 2021 Total Budget represents nine months of funding from the SFY 2021 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 2021 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 2021 Total Budget	\$300,000

Purpose

The purpose of this on-call contract is to provide the MassDOT Highway Division with travel demand modeling and planning assistance throughout FFY 2021.

Approach

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

FFY 2021 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 2021 Total Budget	\$35,000

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 2021 Anticipated Outcomes

Staff will provide technical support to MassDOT as described above.

MASSDOT TRANSIT PLANNING ASSISTANCE

Project ID Number	13309
Funding Source	MassDOT 3C PL
FFY 2021 Total Budget	\$48,190

Purpose

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

Approach

In FFY 2021, CTPS will 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 and present formal Title VI equity analyses to the Fiscal and Management Control Board (FMCB) at critical points throughout this process.

In addition to the formal service equity analyses, staff will use a CTPS-developed tool, known as the Modified Transit Opportunity Index (MTOI), to evaluate changes in the amount of service available to the protected populations (minority and low-income) and to the non-protected populations. Further, staff will measure the equity impacts of metrics developed by MassDOT and the MBTA that are not contained in the DI/DB Policy.

Finally, staff will provide ongoing service planning support and assist the MassDOT and the MBTA in designing maps, graphics, and other visual products as requested.

Assistance may also include the following tasks:

- analysis of projects and proposals (both short-term and ongoing), including modeling, impact analyses, transit service planning, and other technical support
- preparation of supporting data, graphics, maps, and other materials

FFY 2021 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 (BNRD) process. Staff will also create graphics and provide technical assistance as described above. Other activities and work products will depend on tasks requested by MassDOT's OTP. Projects of appropriate scope will be submitted to the MPO before proceeding.

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	14362 (SFY 2020), 14366 (SFY 2021) (SFY 2022)
Funding Source	MBTA
Total Contract*	\$372,835
FFY 2021 Total Budget	\$6,500 (SFY 2020) \$102,150 (SFY 2021) \$35,250 (SFY 2022)

*Several different contract years are included in this work.

Purpose

For many years, in support of the MBTA's National Transit Database submittals to the FTA, CTPS has produced estimates of passenger miles and boardings for MBTA services. This project will develop these estimates for the following uses:

- directly operated MBTA transportation modes (including motor bus, trackless trolley, 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)

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

Approach

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

- full-route ridechecks on contracted MBTA local bus routes with buses not equipped with automatic passenger counters (APC)
- MBTA APC data
- passenger counts on APC-equipped buses and trackless trolleys to verify APC data
- electronic passenger fare-mix counts from automated-fare-collection (AFC) faregates at heavy and light rail subway
- origin-destination information inferred from AFC data
- commuter rail ridership data from passenger counts conducted by the MBTA or its contractors, or from the MBTA's mobile ticketing vendor

- fare-mix counts from AFC faregates at stations and from fareboxes on vehicles
- passenger surveys on the heavy rail, light rail, and gated portions of the bus rapid-transit systems to collect origin and destination information

The MBTA will submit its SFY 2020 NTD estimates of passenger boardings and passenger miles for various transit modes to the FTA with the aid of CTPS during FFY 2021. The final technical memoranda for the 2020 NTD will be completed in FFY 2021.

FFY 2021 Anticipated Outcomes

In FFY 2021, staff will complete the final technical memoranda and auditing process for SFY 2020 NTD reporting and will complete data collection begun in FFY 2020 for SFY 2021. Field staff will begin collecting data for SFY 2022 NTD reporting.

MBTA TITLE VI PROGRAM MONITORING

Project ID Number	11424 (SFY2020), 11426 (SFY2021)
Funding Source	MBTA
Total Contract*	\$223,632
FFY 2021 Total Budget	\$37,850 (SFY2020), \$45,250 (SFY2021)

*Several different contract years are included in this work.

Purpose

Under this contract, CTPS provides the MBTA with technical assistance by collecting data on and assessing the level of service (LOS) provided in minority areas compared to nonminority areas to support 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
- bus shelter 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 LOS-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 report.

FFY 2021 Anticipated Outcomes

CTPS will provide documentation about selected LOS evaluations for SFY 2020 MBTA revenue service and amenities.

MBTA TRANSIT SERVICE DATA COLLECTION

Project ID Number	11422
Funding Source	MBTA
Total Contract	\$540,000
FFY 2021 Total Budget	\$185,125

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 in order 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 2021 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	14355
Funding Source	MBTA
Total Contract	\$24,500
FFY 2021 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 2021 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 2021 Total Budget	\$60,000

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 2021 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	\$12,000
FFY 2021 Total Budget	\$4,000

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 2021 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.

DIVERSITY COMMITTEE SUPPORT

Project ID Number	74021
Funding Source	MBTA
Total Contract	\$6,000
FFY 2021 Total Budget	\$2,400

Purpose

The purpose of this contract is to design and produce posters and flyers to advertise MassDOT's diversity events.

Approach

During calendar year 2020, the CTPS Graphics Group will design and produce a series of diversity posters and flyers for the MassDOT diversity events consistent with the national diversity topic theme. The following topics are included in the series: Black History; Martin Luther King Jr. Day; Woman's History; Asian/Pacific Islander Heritage; Gay, Lesbian, Bisexual, and Transgender Pride; Disability Awareness; Hispanic Heritage; Native American History; and Veterans Day.

FFY 2021 Anticipated Outcomes

Posters and flyers for the remaining diversity celebrations in calendar year 2020: Disability Awareness, Veterans Day, and Native American History

HAYMARKET STATION REDEVELOPMENT STUDY

Project ID Number	11492
Funding Source	MBTA
Total Contract	\$65,000
FFY 2021 Total Budget	\$15,000

Purpose

Under this contract, CTPS will work with the MBTA and other partners to better understand how the current development at Government Center Garage/Bulfinch Crossing will affect Haymarket Station in the short-term and long-term.

Approach

The objectives to be addressed in this study are as follows:

- Coordinate with the client and key stakeholders for the life of this project and document the analysis and results of the work being undertaken.
- Support the client with transit service planning to help mitigate the short-term construction impacts.
- Identify what the short-term transportation impacts would be on service and demand due to the demolition of the Government Center garage and quantify these results to present to the client and key stakeholders.
- Forecast and estimate the demand and usage for the Haymarket bus terminal, Haymarket Station, and surrounding stations in 2040 and 2060.

FFY 2021 Anticipated Outcomes

Modeling and transit service planning support to the MBTA as outlined above.

PRIORITIZATION OF DEDICATED BUS LANES II

Project ID Number	11425
Funding Source	MBTA
Total Contract	\$82,245
FFY 2021 Total Budget	\$16,000

Purpose

The purpose of this study is to expand upon a previously completed study that identified roadway segments with comparatively high rates of weekday bus passenger delay. This study will categorize roadway segments in the MBTA bus network into prioritization tiers that will assist MBTA staff with the allocation of capital funds for bus lane construction, in coordination with municipal partners.

Approach

Staff will identify and compile data items to support the classification of roadway segments into tiers for bus priority implementation, review and summarize the demographics of the routes and corridors identified, and work with the MBTA to define a funding model for each tier.

FFY 2021 Anticipated Outcomes

The funding and partnership model developed will be presented in a graphical guide for municipal staff. The guide is intended to communicate information to municipal staff by highlighting the key points for municipalities. The guide will also explain the classification tiers and the levels of support that the MBTA will provide for corridors in each tier to help with the implementation of bus priority treatments. The details of the funding and partnership model will be documented in a technical memorandum. Staff will also develop a publicly available interactive mapping tool that displays select components of this study.

SILVER LINE EXTENSION RIDERSHIP PROJECTIONS

Project ID Number	11495
Funding Source	MBTA
FFY 2021 Total Budget	\$130,000

Purpose

MassDOT is analyzing alternatives for potential extension of the Silver Line from its current Silver Line 3 (SL3) terminus in the City of Chelsea to connect through the City of Everett to the MBTA's Orange Line. CTPS will be engaged to develop 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 a no-build alternative and for up to four service alternatives using data provided by a MassDOT consultant.

FFY 2021 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.

MASSACHUSETTS PORT AUTHORITY

TECHNICAL ASSISTANCE

Project ID Number	221xx
Funding Source	Massport
Total Contract	\$75,000
FFY 2021 Total Budget	\$5,000

Purpose

CTPS will provide technical assistance to Massport’s Strategic & Business Planning Department, which will support Massport in its desire to examine and improve ground-access options.

Approach

Activities may include support for Logan International Airport ground-access planning and related data collection and analysis. This work may be redirected or modified in response to emerging issues.

FFY 2021 Anticipated Outcomes

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

OTHER TECHNICAL SUPPORT WORK

The contracts and technical analysis in this section are being undertaken for other clients and agencies.

COMMUTER RAIL NEIGHBORHOOD MAPS

Project ID Number	11162
Funding Source	Keolis
Total Contract	\$45,229
FFY 2021 Total Budget	\$5,000

Purpose

Keolis, the operator of the MBTA Commuter Rail system, has asked CTPS to create neighborhood maps for a number of commuter rail stations in the style of the neighborhood maps CTPS has previously produced for MBTA rapid transit stations.

Approach

CTPS will create new neighborhood maps for the Beverly, Norwood Central, West Natick, North Billerica, Stoughton, Middleboro/Lakeville, Reading, East Weymouth, and Roslindale Village commuter rail stations, and update the neighborhood maps for the Fairmount, Forest Hills, Ruggles, Porter Square, and JFK/UMass stations.

FFY 2021 Anticipated Outcomes

New and updated maps for the designated stations.

DEDHAM ROUTE 1 CORRIDOR STUDY

Project ID Number	23330
Funding Source	Town of Dedham
Total Contract	\$120,594
FFY 2021 Total Budget	\$50,000

Purpose

The town of Dedham has been awarded a grant by the Massachusetts Office of Travel and Tourism to fund a study of Route 1 (VFW Parkway and Providence Highway) in West Roxbury, Boston, and Dedham. The study area for this corridor study is Route 1 from the intersection of Route 109/Spring Street and VFW Parkway in Boston to the Marine Rotary at Washington Street in Dedham. This section of Route 1 was designed primarily as a relatively high-speed vehicle corridor. The existing development, future potential development, and redevelopment adjacent to the corridor requires a re-evaluation of the corridor's design to address multimodal transportation and safety needs.

Approach

CTPS will develop short- and long-term recommendations for improvements within the roadway's right-of-way. The intent is to improve the roadway corridor so that it is safe for people to access shops, schools, transit stations, and recreational areas; support existing and future development; and help the community meet its broader transportation and growth goals.

FFY 2021 Anticipated Outcomes

Over the course of the study, CTPS will perform the following tasks:

- establish an advisory committee with the Town of Dedham and the City of Boston
- identify corridor issues and identify problem locations
- collect and gather data
- analyze data
- recommend improvements
- document results

MWRTA SUNDAY SERVICE STUDY

Project ID Number	11493
Funding Source	MWRTA
Total Contract	\$75,000
FFY 2021 Total Budget	\$42,000

Purpose

The purpose of this study is to assist the MetroWest Regional Transit Authority (MWRTA) in evaluating the potential for initiating Sunday fixed-route bus service. MWRTA presently only provides fixed-route service Monday through Saturday.

Approach

Staff will work with MWRTA to review ridership and survey data collected by the agency to determine which currently existing routes or combination of routes would have the greatest potential to support Sunday service. Staff may develop potential schedules, operating plans, and cost estimates for Sunday service.

FFY 2021 Anticipated Outcomes

The study will determine the MWRTA routes that have the greatest potential to support Sunday service. The results will be summarized in a memorandum.





INTRODUCTION

To support core Metropolitan Planning Organization (MPO) activities and studies, staff conduct various ongoing computer and data resource management 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) 2021 work products. The budget tables at the head of each project description provide the salary and overhead costs associated with the projects. Any direct costs associated with the projects are included in the section on Direct Support (page 6-7).

Table 6-1 summarizes the funding assigned to each of the activities in this chapter that were also assigned in FFY 2020, a summary of the work products and/or progress made in FFY 2020, the funding proposed for each of these activities in FFY 2021, and the anticipated work products and/or progress in FFY 2021.

Although many of the activities in this chapter generally comprise the same type of 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 data collection and/or analysis 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 2020–21

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Products and Progress	FFY 2021 Funding	FFY 2021 Planned Work Progress and Products
CTPS Activities					
Computer Resource Management	Varies by Task	\$326,000	<p>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.</p>	\$334,000	<p>Tasks and work products generally remain the same every year.</p>
Data Resources Management	Varies by Task	\$280,120	<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 Office of Transportation Planning, and other agencies.</p> <p>Created GIS maps, computer map files, tables of socioeconomic and travel-related data, and databases.</p> <p>Analyzed data.</p>	\$320,100	<p>Tasks and work products generally remain the same every year.</p>

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 2021 Total Budget	\$334,000

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.

6021 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 2021 Anticipated Outcomes

Work on these tasks will continue as described above.

DATA RESOURCES MANAGEMENT

Project ID Number	See Individual Tasks Below
FFY 2021 Total Budget	\$320,100

Purpose

CTPS provides travel data and analyses at regional, corridor, and site-specific levels to support transportation planning and decision-making in the Boston Region MPO area.

Approach

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

5021 Data Resources Management

01 Socioeconomic Data

CTPS will maintain and keep current its database of statistics from the US Census Bureau's Decennial Census and American Community Survey, and products derived from these sources.

02, 03 Response to Data Requests

CTPS will process or analyze data upon request to meet the needs of local, state, and federal agencies, and private institutions and firms. The 02 project number is used for data requests handled by CTPS's Data Resources group; the 03 number is used for data requests handled by all other groups.

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

CTPS will continue to develop and enhance its stores of spatial and tabular reference data, along with associated tools. CTPS will coordinate data development and distribution internally and cooperate with Massachusetts Department of Transportation (MassDOT), the Commonwealth's Office of Geographic Information (MassGIS), Metropolitan Area Planning Council (MAPC), and other agencies to prevent duplication of effort, ensure quality, and reduce costs. CTPS's GIS (spatial) database will be available to staff through both Esri and open-source GIS software, web services, and web applications.

05 Boston Region MPO Website

CTPS will continue to develop and maintain a website that provides information regarding the MPO's activities, reports and studies produced by MPO staff, a data catalogue, and self-service data exploration applications. CTPS will continue to improve the site's design, content, and accessibility to those who are visually impaired. The website plays a critical role in the MPO's public participation program by providing information and eliciting public comment. CTPS posts all announcements for MPO and Regional Transportation Advisory Council (Advisory Council) meetings and committee meetings, as well as their related materials, on the website.

06 Liaison with Other Agencies

Work with other public agencies, including MAPC, MassDOT's Office of Performance Management and Innovation, MassDOT's Office of Transportation Planning, and MassGIS to encourage sharing of computer and data resources and techniques.

FFY 2021 Anticipated Outcomes

As described above, work will continue on spatial and tabular reference databases, including socioeconomic data, Registry of Motor Vehicles data, and travel data; data processing tools; data analyses; web services and web applications; and responses to data requests.

DIRECT SUPPORT

Project ID Number	Varies
MPO 3C Planning Funds	\$75,000
Extended FFY 2019 FTA Section 5303 Funds	\$50,000
3C-Funded Work Direct Support Total	\$125,000
SPR Funds	\$0
MassDOT Other Funds	\$300
MBTA Funds	\$1,125
Massport Funds	\$0
Agency-Funded Work Direct Support Total	\$1,425

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.

Printing

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

Travel

Periodically, the US Department of Transportation and other organizations sponsor courses and seminars that enhance staff's ability to do project work; the costs of registration, travel, and lodging associated with attending such programs are direct-support expenditures. Mileage, tolls, and parking expenses associated with project work also are charged as direct-support expenditures.

Other

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

FFY 2021 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.



INTRODUCTION

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 2021**

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Products and Progress	FFY 2021 Funding	FFY 2021 Planned Work Products and Progress
MAPC Planning Studies and Technical Analyses					
Corridor/Subarea Planning Studies	MAPC1	\$187,186	Parking management plan for downtown Medford, multimodal transportation recommendations for the Route 1 and Route 1A corridor from Dedham to Foxborough, planning to support the development of a new West Station commuter rail stop in Allston.	\$191,768	Local parking management plans, repurposed on-street parking spaces for dedicated bus lanes, plans for increased parking at commuter rail stations, multimodal transportation plans for select corridors.
Alternative-Mode Planning and Coordination	MAPC2	\$194,713	Technical memo on ridehailing fee structures nationwide, implementation of the Lime dockless bicycle share system, the expansion of Blue Bike bicycle share system, coordinated dispatching of community transportation services in MAGIC subregion, update to LandLine regional greenway map and website.	\$204,713	Planning to support the advancement of zero emission vehicles, expansion of the Blue Bikes system, advancement of the LandLine regional greenway system, expansion of separated bicycle facilities and other high-quality cycling infrastructure.
MetroCommon 2050	MAPC3	\$95,000	Process to engage the public, municipalities and other stakeholders in the development of the updated regional plan. Research to determine major factors affecting the region, including demographic changes, climate change, and technology.	\$95,000	Final updated plan with policy recommendations and identification of planning needs to mitigate impacts of scenarios.
Land Use Development Project Reviews	MAPC4	\$88,820	Detailed review and technical letter regarding transportation mitigation of Suffolk Downs in Boston, Riverside in Newton, I-90 Interchange in Boston, and numerous other development sites in the region triggered by the Massachusetts Environmental Policy Act and/or the City of Boston's local public development review process.	\$89,696	Technical memos with transportation recommendations for development projects and large transportation infrastructure projects with a land use component.
Community Transportation Technical Assistance Program*	MAPC5, 2421	\$48,156	Support for dedicated bus lanes on select corridors in Boston and Everett.	\$48,156	Continue to support local technical assistance requests
MAPC Administration and Support Activities					
MPO/MAPC Liaison and Support Activities	MAPC6	\$167,000	Interagency coordination: Includes developing work scopes and agendas, and participating in advisory and corridor committees. Support for MPO elections and public participation, TIP project evaluations; attend relevant meetings.	\$167,000	Continue work in support of the operational land use model.

(Table 7-1 cont.)

Project Name	ID	FFY 2020 Funding	FFY 2020 Work Products and Progress	FFY 2021 Funding	FFY 2021 Planned Work Products and Progress
UPWP Support	MAPC7	\$10,000	Support the UPWP development process and attend relevant meetings.	\$10,000	Tasks and work products generally remain the same from year to year.
Land Use Data and Forecasts for Transportation Modeling	MAPC8	\$95,000	Continued work in support of operational land use allocation model including data development and analysis, documentation, and mapping products for advanced transportation modeling.	\$95,000	Tasks and work products generally remain the same from 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.	\$187,000	Tasks and work products generally remain the same from year to year.

* This program is shared between MAPC and CTPS and is described in Chapter 4.

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 2021 Total Budget	\$191,768

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 (\$83,186)

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 both 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.

Transit Station Area Parking Planning (\$33,582)

MAPC will work with municipal and MassDOT/Massachusetts Bay Transportation Authority (MBTA) staff to identify opportunities to expand parking at MBTA station areas and auxiliary lots, and to understand where additional parking demand is high versus locations where infill development would be more meaningful to support higher transit ridership. This work will lead to increased access to public transit, greater transit ridership, and infill development.

Corridor/Subarea Multimodal Transportation Planning (\$75,000)

MAPC will work in one or two selected subregions or roadway corridors to coordinate multimodal transportation planning and transit service operations to be implemented by MassDOT, MBTA, Regional Transit Authorities (RTA), Transportation Management Authorities, the Department of Conservation and Recreation (DCR), and/or municipalities with local land use planning to achieve livability and smart growth goals. This work could also include supporting the MBTA in expanding its bus maintenance garages to provide additional bus service. The goal is to provide more mobility options for a variety of different users and trip types.

FFY 2021 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 Transit Station Area Parking Planning include data collection, zoning recommendations, and coordination between MassDOT/MBTA and municipalities.
- 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.

ALTERNATIVE-MODE PLANNING AND COORDINATION

Project ID Number	MAPC2
FFY 2021 Total Budget	\$204,713

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 (ZEVs). This work benefits bicycle and pedestrian transportation, encourages transit in areas that currently are underserved by existing RTAs, 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 (\$30,000)

MAPC will support municipalities in planning for ZEVs, such as electric vehicle infrastructure, transitioning or retrofitting municipal fleets, advancing electric school buses, promoting zero emission car sharing, 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 (\$34,713)

MAPC will work with municipalities to identify local bicycle and pedestrian improvements with a focus on closing sidewalk gaps, implementing separated bicycle facilities, and other improvements at the local level. This work will lead to better infrastructure and increase the rate of cycling and walking in the region.

Bike Share and Micro-mobility Support (\$40,000)

MAPC will continue to support municipalities in the region to implement bicycle sharing programs, including analyzing data to understand trip patterns. MAPC will also support municipalities, MassDOT, MBTA, DCR, and other agencies in the safe deployment of micro-mobility devices such as electric scooters. This work will increase non-automobile mode share.

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 better develop and implement portions of a regional bicycle and pedestrian network of off-road and on-road connections (a greenway) that form a contiguous system around greater Boston. In 2015, MAPC, working with the above-cited partners, developed the branding of this system, called the LandLine. Trail development is increasingly

frequent in most communities in the Boston region. The trails consist of shared-use paths along former railroad rights-of-way, hiking trails through conservation land, and historic corridors that connect points of interest. The binding theme of the proposed and completed corridors is creating attractive places to walk, bike, or otherwise travel through low-traffic or no-traffic green areas.

FFY 2021 Anticipated Outcomes

- Planning to support deployment of ZEV 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 for bicycle sharing programs
- Regulatory framework for safe deployment of micro-mobility devices
- Research and recommendations to support first- and last-mile connections

METROCOMMON 2050: GREATER BOSTON'S NEXT REGIONAL VISION

Project ID Number	MAPC3
FFY 2021 Total Budget	\$95,000

Purpose

This UPWP study area will continue to support the update of MetroFuture, the Boston region's 30-year comprehensive plan (through the year 2030) for sustainable growth and development. The new plan will be called "MetroCommon 2050" and will have two plan horizons, 2030 and 2050. MAPC began planning for the update in 2017. During the winter of 2019/2020, MAPC began Phase 1, which is updating the vision and goals for the region. Phase 2 will focus on the strategic challenges and opportunities of the plan, and Phase 3 is scenario planning, where MAPC will test various scenarios for the future of the region. Phase 4 is recommendation selection, and Phase 5 is launching MetroCommon 2050.

Approach

This area of work is accomplished through the following subtasks:

Creating MetroCommon 2050 (\$35,000)

MAPC is halfway through the planning process for creating its next comprehensive regional plan. Transportation will be a significant component of the plan. 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. Through the plan update, staff will explore the implications of these emerging technologies, and develop recommendations for improving mobility, reducing GHG emissions from the transportation sector, and expanding access to and capacity of public and active transportation.

Building Constituencies for Local, Regional, and State Decisions that Enable Livable Communities and Sustainable Transportation (\$30,000)

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 have regional discussions about challenges and opportunities in making long-term improvements to the Boston region's transportation system, including electrification and integration of new technologies into the existing system. Task outputs are expected to include engaging at least 500 people in at least 10 different events or activities.

Research and Policy Development that Support Livable Communities and Sustainable Transportation (\$30,000)

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

FFY 2021 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 recommendations for local, regional, and state actions.

LAND USE DEVELOPMENT PROJECT REVIEWS

Project ID Number	MAPC4
FFY 2021 Total Budget	\$89,696

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 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 the Secretary of Energy and Environmental Affairs for all developments considered to have significant impact. Special attention is given to local zoning ordinances and regulations that serve to reduce auto travel by encouraging carpooling, transit, parking regulations, and other travel demand management techniques. MAPC also will recommend appropriate mitigation measures. 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 2021 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 2021 Total Budget	\$167,000

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 Coordination Councils; Global Warming Solutions Act Implementation Advisory Committee; and MassDOT and MBTA board meetings, in addition to 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) (\$5,000)

MAPC will review PBPP targets and follow progress toward meeting targets and objectives.

TIP Evaluation and Criteria (\$20,000)

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 (\$27,000)

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

FFY 2021 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 2021 Total Budget	\$10,000

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 2021 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 provide assistance to communities in identifying and developing studies to be included in the UPWP through community liaison and subregional support activities.

LAND USE DATA AND FORECASTS FOR TRANSPORTATION MODELING

Project ID Number	MAPC8
FFY 2021 Total Budget	\$95,000

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 projections) for transportation modeling and project evaluation.

Approach

Land Use Allocation Model Development

MAPC will focus on improvements to the land use allocation model to better assign population and employment forecasts at the transportation analysis zone and Census Block level. This assignment is based on changes to the transportation network as well as demographic and employment projections. MAPC will also focus on sensitivity testing of the land use allocation model to better understand its use in different planning applications. MAPC will use the model to support land use scenarios for MAPC's MetroCommon plan, as well as scenarios relating to specific project work.

Development Database

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 in applying these data for project evaluation or updates to the regional travel demand model.

FFY 2021 Anticipated Outcomes

Anticipated outcomes include an improved land use allocation model; multiple land use alternatives for use in the MetroCommon process and project work; updated development data and analysis; documentation; and mapping products to support advanced transportation modeling.

SUBREGIONAL SUPPORT ACTIVITIES (MAPC)

Project ID Number	MAPC9
FFY 2021 Total Budget	\$187,000

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 engage in the MPOs PBPP initiative.

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 2021 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.



This chapter contains overall budget information for the Boston Region Metropolitan Planning Organization’s (MPO) federal fiscal year (FFY) 2021 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	\$2,974,930
Continuing Metropolitan Planning Organization (MPO) Planning Studies and Technical Analyses	\$306,240
Metropolitan Area Planning Council (MAPC) Planning Studies and Technical Analyses	\$629,333
New MPO-Funded Discrete Studies	\$710,100
Agency and Other Client Planning Studies and Technical Support	\$1,575,845
Central Transportation Planning Staff (CTPS) Administration, Resource Management, and Support Activities	\$654,100
MAPC Resource Management and Support Activities	\$459,000
Direct Costs (3C)	\$125,000
Total	\$7,482,738

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
Federal Highway Administration (FHWA) continuing, comprehensive, and cooperative (3C) Planning (PL)/Massachusetts Department of Transportation (MassDOT) Local Match	\$3,785,331
MPO Federal Transit Administration (FTA) 3C PL (Section 5303)/MassDOT Local Match	\$2,106,937
Exended FFY 2019 FTA 3C PL (Section 5303)/MassDOT Local Match	\$50,000
FHWA Statewide Planning and Research (SPR)/MassDOT Local Match	\$523,320
MassDOT	\$335,000
Massachusetts Bay Transportation Authority (MBTA)	\$615,525
Massachusetts Port Authority (Massport)	\$5,000
Other	\$97,000

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 CTPS, one for each UPWP category of work conducted by 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 \$5,923,303. All federal funds programmed in the UPWP are awarded to the Boston Region MPO by MassDOT as FHWA 3C PL funds. 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 2021 3C PL funding allocation for the Boston region, including state matching funds, is \$3,785,331. The total Boston region 3C PL allocation is split between CTPS, which receives \$3,066,118, and MAPC, which receives \$719,213.

- FTA 3C Planning (Section 5303): FTA provides 3C planning funds for transit projects to MPOs and DOTs 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 2021 FTA allocation for the Boston region, including a total local match, is \$2,106,937. This allocation 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 \$1,737,817.
 - MAPC FTA 3C Planning (Section 5303): A portion of the Boston region's FTA allocation is distributed 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 2021 is \$369,120.

In addition, this UPWP includes \$50,000 in carryover FFY 2019 FTA Section 5303 funds that support the CTPS Strategic Plan and MPO Operations Plan tasks.

This budget also reflects projects funded with SPR and other funds from MassDOT; projects funded with MBTA funds; and projects funded from other sources. These projects are listed in Table 8-5.

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

**Table 8-1
UPWP Budget—Certification Requirements for FFY 2021**

Project ID	Name	FFY 2020 CTPS UPWP Budget	Expected Project Status as of 10/1/2020	Proposed FFY 2021 CTPS Budget
9121	Support to the MPO and its Committees	\$218,200	Ongoing	\$229,920
9321	Regional Transportation Advisory Council Support	\$44,550	Ongoing	\$45,960
9621	Public Participation Process	\$157,400	Ongoing	\$182,290
9221	General Graphics	\$87,440	Ongoing	\$85,290
3121	Provision of Materials in Accessible Formats	\$105,770	Ongoing	\$102,040
9521	Professional Development	\$28,996	Ongoing	\$52,720
Support to the MPO Subtotal		\$642,356		\$698,220
8121	Long-Range Transportation Plan	\$330,920	Ongoing	\$324,120
8221	Transportation Improvement Program	\$262,660	Ongoing	\$278,890
8821	Performance-Based Planning and Programming	\$142,040	Ongoing	\$153,570
8421	Air Quality Conformity Determinations and Support	\$31,260	Ongoing	\$34,690
8321	Unified Planning Work Program	\$116,050	Ongoing	\$127,480
8521	Transportation Equity Program	\$171,850	Ongoing	\$174,100
2121	Congestion Management Process	\$112,060	Ongoing	\$118,240
2221	Freight Planning Support	\$56,730	Ongoing	\$68,340
7121	Regional Model Enhancement	\$827,650	Ongoing	\$875,370

(Table 8-1 cont.)

Project ID	Name	FFY 2020 CTPS UPWP Budget	Expected Project Status as of 10/1/2020	Proposed FFY 2021 CTPS Budget
7221	Research Next Generation Data and Tools	n/a	Ongoing	\$57,790
8921	Transit Working Group Support	\$46,630	Ongoing	\$64,120
3C Planning and Other Certification Requirements Activities Subtotal		\$2,097,850		\$2,276,710
Certification Requirements Subtotal		\$2,740,206		\$2,974,930

**Table 8-2
UPWP Budget—Ongoing and Continuing MPO Planning Studies
and Technical Analyses for FFY 2021**

Project ID	Name	FFY 2020 CTPS UPWP Budget	Expected Project Status/Completion as of 10/1/2020	Proposed FFY 2021 CTPS Budget
13293	Locations with High Bicycle and Pedestrian Crash Rates in the Boston Region MPO Area	\$70,000	90% complete	\$960
13420	Addressing Safety, Mobility, and Access on Subregional Priority Roadways FFY 2020	\$115,000	95% complete	\$13,400
13520	Addressing Priority Corridors from the LRTP Needs Assessment FFY 2020	\$120,000	90% complete	\$13,400
13720	Safety and Operations Analysis at Selected Intersections FFY 2020	\$80,000	95% complete	\$7,420
13294	TIP Before and After Studies	\$60,000	90% complete	\$22,480
13299	Exploring Resilience in MPO-Funded Corridor and Intersection Studies	\$90,000	90% complete	\$960
Planning Studies Subtotal (Continuing FFY 2020 Initiated Work)		\$535,000		\$58,620
2321	Roadway Safety Audits	\$14,920	Ongoing	\$13,740
2721	Traffic Data Support	\$15,340	Ongoing	\$18,180
4221	Transit Data Support	\$11,170	Ongoing	\$13,730
2421	Community Transportation Technical Assistance	\$73,330	Ongoing	\$69,190
2521	Bicycle and Pedestrian Support Activities	\$71,810	Ongoing	\$77,420

(Table 8-2 cont.)

Project ID	Name	FFY 2020 CTPS UPWP Budget	Expected Project Status/Completion as of 10/1/2020	Proposed FFY 2021 CTPS Budget
4121	Regional Transit Service Planning Technical Support	\$56,470	Ongoing	\$55,360
Technical Analysis and Support Subtotal		\$243,040		\$247,620
MPO-Funded Planning Studies and Technical Analyses Subtotal		\$778,040		\$306,240

**Table 8-3
UPWP Budget—MPO New Discrete Studies for FFY 2021**

Universe ID	Project ID	Study or Program	Proposed FFY 2021 CTPS Budget
A-1	13302	Improving Pedestrian Variables in the Travel Demand Model	\$25,000
L-1	13303	Regional TDM Strategies	\$10,000
M-1	13421	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	\$127,900
M-2	13521	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	\$137,000
M-3	13621	Low-Cost Improvements to Express-Highway Bottleneck Locations	\$64,500
M-4	13304	Trip Generation Rate Research	\$45,000
M-5	13305	Intersection Improvement Program	\$75,000
T-2	14370	Access to CBDs Phase 2	\$75,000
T-3	14371	The Future of the Curb Phase 2	\$60,000
R-1	13306	Multimodal Resilience and Emergency Planning	\$30,000
O-1	20905	Staff-Generated Research and Technical Assistance	\$20,000
O-2	13307	Mapping Major Transportation Infrastructure Projects in the Boston Region	\$20,000
O-3	13308	Informing the Big Ideas Behind the MPO's Scenario Planning Process	\$20,700
Total for New Discrete and Recurring Studies			\$710,100

NOTE: This information may be updated as the FFY 2021 UPWP budget continues to develop.

**Table 8-4
UPWP Budget—New and Continuing Agency Transportation Planning Studies and
Technical Analyses for FFY 2021**

Project ID	Name	Total Contract ^a	Funding Source	FFY 2021 Agency Funds	Direct Support	Proposed FFY 2021 CTPS Budget
Varies by project	MassDOT SPR Program Support ^b	\$614,427	SPR	\$523,320	\$0	\$523,320
Varies by project	MassDOT On-call Projects	\$600,000	MassDOT	\$299,700	\$300	\$300,000
13155	MassDOT Title VI Program	\$95,000	MassDOT	\$35,000	\$0	\$35,000
13309	MassDOT Transit Planning Assistance ^c	n/a	MPO 3C	\$48,190	\$0	\$48,190
MassDOT Subtotal				\$858,020	\$300	\$858,320
14362	MBTA 2020 NTD	\$127,835	MBTA	\$6,500	\$0	\$6,500
14366	MBTA SFY 2021 NTD	\$120,000	MBTA	\$102,000	\$150	\$102,150
14372	MBTA SFY 2022 NTD	\$125,000	MBTA	\$35,000	\$250	\$35,250
11426	MBTA 2021 Title VI Program Monitoring	\$85,000	MBTA	\$45,000	\$250	\$45,250
11424	MBTA 2020 Triennial Title VI Report	\$139,632	MBTA	\$37,500	\$350	\$37,850
11422	MBTA Bus Service Data Collection X	\$540,000	MBTA	\$185,000	\$125	\$185,125
14355	MBTA Rider Oversight Committee Support III	\$24,500	MBTA	\$6,000	\$0	\$6,000
14358	Service Plan Equity Analysis Support	\$115,000	MBTA	\$60,000	\$0	\$60,000
11491	MBTA Mapping Support	\$12,000	MBTA	\$4,000	\$0	\$4,000

(Table 8-4 cont.)

Project ID	Name	Total Contract ^a	Funding Source	FFY 2021 Agency Funds	Direct Support	Proposed FFY 2021 CTPS Budget
74021	Diversity Committee Support	\$6,000	MBTA	\$2,400	\$0	\$2,400
11492	Haymarket Station Redevelopment Study	\$65,000	MBTA	\$15,000	\$0	\$15,000
11425	Prioritization of Dedicated Bus Lanes II	\$82,245	MBTA	\$16,000	\$0	\$16,000
11495	Silver Line Extension Ridership Projections	\$130,000	MBTA	\$130,000	\$0	\$130,000
MBTA Subtotal				\$644,400	\$1,125	\$645,525
221xx	Massport Technical Assistance	\$75,000	Massport	\$5,000	\$0	\$5,000
Massport Subtotal				\$5,000	\$0	\$5,000
11162	Keolis Neighborhood Maps	\$45,229	Keolis	\$5,000	\$0	\$5,000
23330	Dedham Route 1 Corridor	\$120,594	Dedham	\$50,000	\$0	\$50,000
11493	MWRTA Sunday Service Study	\$75,000	MWRTA	\$42,000	\$0	\$42,000
Other Subtotal				\$97,000	\$0	\$97,000
Agency-Funded and Client-Funded Subtotal				\$1,604,420	\$1,425	\$1,605,845

^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 term of the MassDOT SPR Contract is from July 1 through June 30. Therefore, 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 2021 and FY 2022 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 2021

Project ID	Name	FFY 2020 CTPS UPWP Budget	Expected Project Status as of 10/1/2020	Proposed FFY 2021 CTPS Budget
6020	Computer Resource Management	\$326,000	Ongoing	\$334,000
5020	Data Resources Management	\$280,120	Ongoing	\$320,100
Resource Management and Support Activities Subtotal*		\$606,120		\$654,100

*Does not include Direct Support

Table 8-6
UPWP Budget—MAPC Planning Studies and Technical Analyses for FFY 2021

Project ID	Name	FFY 2020 MAPC UPWP Budget	Proposed FFY 2021 MAPC Budget
MAPC1	Corridor/Subarea Planning Studies	\$194,713	\$191,768
MAPC2	Alternative-Mode Planning and Coordination	\$165,480	\$204,713
MAPC3	MetroCommon 2050	\$45,000	\$95,000
MAPC4	Land Use Development Project Reviews	\$88,820	\$89,696
MAPC5, 2421	Community Transportation Technical Assistance Program*	\$90,000	\$48,156
MAPC Planning Studies and Technical Analyses Subtotal		\$584,013	\$629,333

*This project also receives funding from CTPS; these additional funds are accounted for in the CTPS budget.

**Table 8-7
UPWP Budget—MAPC Resource Management and Support Activities for FFY 2021**

Project ID	Name	FFY 2020 MAPC UPWP Budget	Proposed FFY 2021 MAPC Budget
MAPC6	MPO/MAPC Liaison and Support Activities	\$167,000	\$167,000
MAPC7	UPWP Support	\$10,000	\$10,000
MAPC8	Land Use Data and Forecasts for Transportation Modeling	\$95,000	\$95,000
MAPC9	Subregional Support Activities	\$187,000	\$187,000
MAPC Resource Management and Support Activities		\$459,000	\$459,000

Table 8-8
UPWP Budget—Summary of FFY 2021 Budgets for CTPS

3C Studies and Programs by Budget Categories	Proposed FFY 2021 CTPS Budget
Resource management and support activities	\$654,100
MPO Certification Requirements	\$2,974,930
Continuing MPO-funded planning studies and technical analyses	\$306,240
New MPO-funded discrete studies	\$710,100
MassDOT Transit Planning Assistance*	\$48,190
Direct support	\$125,000
Total for CTPS 3C Studies and Programs	\$4,818,560

Agency-Funded CTPS Work	Proposed FFY 2021 CTPS Budget
MassDOT SPR Funds	\$523,320
MassDOT Other Funds	\$335,000
MBTA Funds	\$615,525
Massport Funds	\$5,000
Other	\$97,000
Total for Agency-Funded CTPS Project Work	\$1,575,845

Total FFY 2021 CTPS Budget (3C + Agency Work)	\$6,394,405
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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 2021 Budgets for MAPC**

3C Studies and Programs by MAPC Budget Categories	Proposed FFY 2021 MAPC Budget
MAPC Planning Studies and Technical Analyses	\$629,333
MAPC Administration, Resource Management, and Support Activities	\$459,000
Total MAPC FFY 2021 UPWP Programmed Funds	\$1,088,333

**Table 8-10
UPWP Budget—3C Budget and Overall Budget for FFY 2021**

Agency Supporting MPO/3C Work	Proposed FFY 2021 Budget
CTPS	\$4,818,560
MAPC	\$1,088,333
3C Budget Subtotal	\$5,906,893
Agency-Funded CTPS Work	\$1,575,845
FFY 2021 UPWP Budget	\$7,482,738

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) 2021. 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 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 July 9, 2020.

MULTIMODAL OR ROADWAY STUDIES

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, and cost, as well as the resulting economic, social, and cultural impacts.

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 about 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 (I-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.

Neighborhood Slow Streets

Each year, Boston residents, neighborhood associations, and other community-based organizations can apply to have traffic-calming measures implemented in a specific neighborhood. Selected neighborhoods will work with the Boston Transportation Department and Public Works Department to plan and implement their Neighborhood Slow Streets project. Rather than planning and implementing changes one street at a time, the city will address an entire zone within a neighborhood. A typical zone will consist of 10 to 15 blocks. The Slow Streets program emphasizes quick-install, low-cost fixes, such as signage, pavement markings, speed humps, and daylighting (that is, repositioning obstacles at street corners so that drivers' sight lines are clearer). More than a dozen zones have been constructed, and the City continues to design and construct Slow Streets zones in 2020. <https://www.boston.gov/transportation/neighborhood-slow-streets>

Green Links

The goal for Boston Green Links is to create a connected network of paths and low-stress corridors that people of all ages and abilities can use, whether on foot, bicycle, or assisted mobility device. The citywide plan will connect people in every Boston neighborhood to the city's greenway network by installing new paths and bike facilities, and creating safer road crossings. The plan includes projects in progress by the city, the Department of Conservation and Recreation, community groups, and others, as well as new projects developed with local input. The plan will be implemented over time, through grants, partnerships, and city-funded projects. For more information, visit <https://www.boston.gov/transportation/boston-green-links>

The Blue Hill Avenue Transportation Action Plan

Blue Hill Avenue is a vital arterial. The avenue houses community organizations of education, worship, and recreation. It is also a commercial corridor home to many minority-owned businesses. The corridor provides access to and from the City's major employment centers for Roxbury, Dorchester, and Mattapan residents—largely by supporting the highest bus ridership in the entire MBTA system. The initiative and study will reimagine how the avenue functions, with an emphasis on transportation-related equity, and will examine transportation, public space, and safety. The scope of this project stretches from Mattapan Square to the intersection of Blue Hill Avenue and Warren Street in Grove Hall. For more information, visit <https://www.boston.gov/departments/transportation/blue-hill-avenue>

TRANSIT STUDIES

STATEWIDE STUDIES

MassDOT

East-West Passenger Rail Study

The East-West Passenger Rail Study is a conceptual planning study of alternatives for improved rail connections and mobility in the East-West corridor. The Study is assessing service options, which feature a range of travel times, speeds, frequencies, and potential station stops to provide passenger service to communities between Boston, Springfield, and Pittsfield. The Study is examining the benefits, costs, impacts, and investments necessary to implement each alternative. The Study is being conducted in the context of several previous statewide and interstate rail studies.

REGIONAL OR SUBREGIONAL STUDIES

MassDOT/MBTA

MBTA Rail Vision

This study will identify cost-effective strategies to transform the existing Commuter Rail system into one that better supports improved mobility and economic competitiveness in the Greater Boston region. A thorough evaluation of costs, ridership potential, and operational feasibility of various alternatives, as well as broad public conversation, will inform the ultimate vision for the future of the Commuter Rail—one that the MBTA will then begin to turn into a reality.

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 will be 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 will feature 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 will also involve meeting with a range of municipal, business, and advocacy representatives. The consultant will develop concepts for a redesigned MBTA bus network and recommend one final proposed network. The final network will be based on a phased implementation approach. 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.

Alewife Access Study

The MBTA Alewife parking garage is beyond its useful life and will likely need a major overhaul in the future. This need to bring the facility into a state of good repair provides the opportunity to consider how to serve the station most effectively with parking and other multimodal access opportunities. This study will seek to answer the question of how much parking to build and how to serve other modes of access at Alewife Station.

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 from Chelsea through Everett to Glendale Square and on to Sullivan Square, North Station, Lechmere, or Kendall Square. The analysis will include the development of conceptual designs for alternatives, as well as 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.

Lynn Transit Action Plan

The Lynn Transit Action Plan is an initiative to develop solutions to improve transit for the residents and workers of Lynn. The Focus40 process identified Lynn as a Priority Place, where existing population/employment density suggests an ability to leverage transit investments in support of housing creation and economic growth. Work under this task will involve recommending a range of short- to long-term strategies to improve transit within Lynn and enhance its connectivity with Boston.

Green Line Corridor Capacity Study

The goal of this task is to support the long-term planning of the Green Line Transformation Program in line with Focus40 recommendations. More information on the Green Line Transformation Program can be found at <https://www.mbta.com/projects/green-line-transformation>.

MUNICIPAL STUDIES

City of Boston

Boston Transit Improvement Projects

In partnership with the MBTA, the Boston Transportation Department is focused on increasing ridership on the MBTA's bus system by implementing bus lanes along key corridors. Timelines vary depending on the complexity of each project.

- A number of dedicated bus lanes were implemented in 2019, including Roslindale, Brighton, North End, and Downtown. The lanes were the result of a City-State collaboration and features change of regulations and bus- and bike-only lane marking. New, additional dedicated lanes

are being evaluated. For more information, visit <https://www.boston.gov/departments/transportation/summer-street-multimodal-corridor-improvements> and <https://www.boston.gov/departments/transportation/hyde-park-avenue-multimodal-corridor>

- More complicated construction projects require a larger amount of interagency and public outreach coordination for design, review, and approvals. For example, the Warren Street Bus Priority Corridor planning initiative and study is targeting serious bus delays that affect the corridor's 20,250 daily MBTA riders. For more information, visit <https://www.boston.gov/departments/transportation/warren-street-bus-priority-corridor>

Seaport Transit Strategic Plan

The mission of the Seaport Transit Strategic Plan is to study key transit connections to and within the Seaport District and recommend improvements that can be implemented in the short-term, over the next 15 years, and beyond. The recommendations will build on a comprehensive transit vision for the district and an understanding of the demand from existing and future development. The recommendations will focus on improvements to the Seaport's bus and shuttle network and will include consideration of other potential transit services such as rail, ferry, ride-share, and private-sector sponsored initiatives. This initiative will build on work done for the South Boston Waterfront Sustainable Transportation Project, the ongoing Silver Line Capacity Study, subsequent transit analysis done for public and private projects, and integration of transportation improvements currently in implementation. The goal of the Plan will be an actionable universe of short-, medium-, and long-term mobility improvements that will form the basis for future development mitigation and transportation investments for the Seaport District. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/south-boston-seaport-strategic-transit-plan>

CORRIDOR, AREA, OR GENERAL STUDIES

MUNICIPAL STUDIES

Town of Arlington

Sustainable Transportation Plan

The 2019 Annual Town Meeting approved \$80,000 to fund the creation of a Sustainable Transportation Plan (STP) for the Town of Arlington: \$60,000 from town funds in the Department of Public Works budget and \$20,000 from the Community Development Block Grant. The STP will provide a vision for the development of the transportation system in Arlington over the next 20 years, building upon the Traffic and Circulation section of the Master Plan and its recommendations. Goals and recommendations will be developed to prioritize next steps for projects, programs, and policies to achieve this vision. It will focus on all aspects of transportation and mobility in Arlington, including walking, bicycling, public transportation, driving, shared mobility, and micro-mobility.

In January 2020, the town contracted with Nelson\Nygaard Consulting Associates to complete the STP, and a kickoff meeting was held on January 13, 2020.

As part of the development of the STP, the Town will conduct robust public outreach in the form of public forums, surveys, focus groups, and other methods. To read the Public Engagement Strategy for the plan, visit <https://www.arlingtonma.gov/town-governance/all-boards-and-committees/sustainable-transportation-advisory-committee>.

City of Boston

I-90 Allston Interchange Placemaking Study

Major infrastructure changes around the I-90 Allston Interchange will unlock the potential for a large, new mixed-use district in North Allston. The sprawling railyards and existing I-90 Massachusetts Turnpike interchange in this area of Boston will be replaced by a streamlined interchange and multimodal network of streets, paths, rail, and transit facilities. The placemaking report provides guidance and recommendations for redesign of the transportation infrastructure in and around the I-90 Allston Interchange. The goal is to enable outstanding urban places and spaces to emerge as plans for the area are implemented. For more information, visit www.bostonplans.org/planning/planning-initiatives/i-90-allston-interchange

Allston-Brighton Mobility Study

The Allston and Brighton neighborhoods are experiencing significant growth in new development. While this growth adds economic opportunity and vibrancy, it also raises questions and concerns about how the existing and future multimodal network will accommodate new development. To address these concerns, the Allston-Brighton Mobility Study is fully assessing existing conditions while analyzing the effects of pending and approved (but not yet built) development in Allston-Brighton to identify strategies to improve the transportation network, for example streets, bike infrastructure, sidewalks, transit, parking, and mitigate the effects of development. Building on previous studies, the primary goal of the Allston-Brighton Mobility Study will be to identify and develop an actionable list of options to improve mobility, safety for all modes, and quality of life for the Allston-Brighton neighborhood. These items will form the basis for future development mitigation and transportation investments for the Allston-Brighton neighborhood. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/allston-brighton-mobility-study>

Fairmount Planning Initiatives

State transportation agencies are collaborating with federal agencies, the City of Boston, and neighborhood-based organizations on a number of planning initiatives designed to improve access to transit and promote sustainable development in the Fairmount Corridor. These initiatives, which are underway as the MBTA has completed major infrastructure improvements and four new stations on the Fairmount Line, include the following:

- **Fairmount Corridor Business Development and Transit Ridership Growth Strategy.** The Fairmount Indigo CDC Collaborative, along with the MBTA, has received a Transportation, Community, and System Preservation grant to improve the transit service connection to job development sites in the Fairmount Corridor.

- **Fairmount Indigo Corridor Planning Initiative.** The Boston Planning and Development Agency is spearheading this planning process, which involves participation of community and agency stakeholders. The agency is developing a vision for corridor land use and neighborhood change that is focused on enhanced transit, and an action plan for targeted redevelopment and public infrastructure upgrades at station areas.

PLAN: Glover's Corner, Dorchester

The study area at Glover's Corner in Dorchester (between the Savin Hill and Fields Corner stations) is increasing in density and this growth is expected to affect the transportation system. This initiative will prepare for future economic development and transportation demands by creating a future vision and physical plan, focusing on locations where the multimodal transportation network is currently limited and constrained. The future network envisioned includes enhancements to existing Red Line station access and comprehensive bus services. Just as important, a safe and effective network for cyclists and pedestrians is proposed. Transportation network capacity constraints will influence and inform land uses and build-out scenarios. For more information, visit www.bostonplans.org/planning/planning-initiatives/plan-dorchester-glovers-corner

PLAN: Jamaica Plain/Roxbury (JP/ROX)

The PLAN: JP/ROX initiative provided recommendations and strategies for affordable housing, jobs, and businesses; guidelines for urban design; and improvements to transportation connections, open space, sustainability, and the public realm. The study examined the compatibility of different land uses, including housing, commercial, and light industrial, while studying the impacts of traffic and other forms of mobility in the study area. Of particular focus was the recent wave of mixed-use residential projects in the area, and determining the implications of redevelopment and areas of opportunity. The two-and-a-half year planning process engaged the communities between Forest Hills, Egleston Square, and Jackson Square, generally bounded by Washington Street, Columbus Avenue, and Amory Street. Some aspects of PLAN: JP/ROX are ongoing, including transportation planning. For more information, visit www.bostonplans.org/planning/planning-initiatives/plan-jp-rox

JP/Rox Transportation Action Plan

This plan, which looks at getting around by walking, biking, transit, and car, will cover the same geographical area as [PLAN: JP/Rox](#). The City will use that initiative's recommendations as a starting point for its work. The City will also use the development scenarios created in [PLAN: JP/Rox](#), which will guide the City as it improves the transportation system.

PLAN: South Boston Dorchester Avenue Transportation Plan

The Boston Planning & Development Agency (BPDA) and the Boston Transportation Department are furthering a main recommendation from the 2016 approved PLAN: South Boston Dorchester Avenue Plan. The purpose of the Transportation Plan is to further analyze, refine, and advance the proposed multimodal network recommendations of the 2016 Plan. The area of focus is along the two main corridors of Dorchester and Old Colony avenues between Broadway and Andrew Square. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/plan-south-boston-dorchester-ave>

PLAN: East Boston

PLAN: East Boston is a community-driven, neighborhood-wide planning initiative in East Boston. The plan is guided by Imagine Boston 2030 and several citywide strategic plans. PLAN: East Boston will produce a framework to predictably shape the future of East Boston and identify opportunities to preserve, enhance, and grow. The effort is organized by the BPDA in partnership with several City agencies and relies on the participation of the East Boston community to be both meaningful and sustainable.

PLAN: East Boston will

- update the East Boston Master Plan (2000);
- recommend updates to Article 53 (East Boston zoning article);
- produce urban design guidelines; and
- recommend immediate to long-term improvement projects for the neighborhood's transportation network.

For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/plan-east-boston>

PLAN: Mattapan

PLAN: Mattapan is guided by Imagine Boston 2030. It is a planning initiative that seeks to ensure that Boston preserves wisely, enhances equitably, and grows inclusively. Through these three principles, the City's planning team will work with the community to create a comprehensive vision for the Mattapan planning area and guide future growth and investment.

PLAN: Mattapan will work closely with the community to review past planning efforts and identify needs and opportunities for improvements that will support the long-term equitable growth and sustainability of the neighborhood. Focuses will include, though are not limited to, economic development (jobs and business) and the creation of transit-oriented, market-rate, and affordable housing growth while preserving the neighborhood's character and unique attributes. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/plan-mattapan>

PLAN: Downtown

Over the last decade, downtown Boston has transformed from primarily a business district into a vibrant mixed-use neighborhood. Associated with this transformation and the marked increase in development proposals is a clear need to plan for the future of downtown comprehensively.

Building on past studies, the primary goal of the study will be to develop a new framework for the preservation, enhancement, and growth of the downtown area of the City of Boston, while balancing the importance of livability, walkability, access to open space, affordability, and a dynamic mix of uses, among others. As one of the most diverse places in the City, due in part to its accessibility, it is necessary to encourage growth that is inclusive for all. Supporting a thriving Downtown environment that is responsive to the twenty-first century needs of residents, businesses, and visitors is critical to Boston's continued success as an important American city. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/plan-downtown>

PLAN Newmarket: The 21st Century Economy Initiative

This plan will look at the needs of Boston's industrial Newmarket neighborhood. The Initiative will work closely with the community to develop a vision for the area that incorporates a strategy for job retention and growth. Identified by Imagine Boston 2030 as one of the expanded neighborhoods, focuses will include land use, jobs, climate resilience, transportation, and public realm. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/plan-newmarket-the-21st-century-economy-initiativ>

PLAN: Charlestown

PLAN: Charlestown is a comprehensive planning initiative in partnership with the community, staffed by a planning team consisting of an interdepartmental working group from across city departments and state transportation agencies. Through this process, the entire neighborhood will be examined comprehensively to determine a shared vision for the future of Charlestown. Community discussions will focus on future land use, current development, and strategies to enhance the existing community and preserve its historic assets. The process seeks to establish a comprehensive and coordinated plan to ensure the equitable provision of infrastructure to support neighborhood needs in the areas of transportation, parks and open space, climate resilience, education, and affordable housing. For more information, visit <http://www.bostonplans.org/planning/planning-initiatives/plan-charlestown>

Southwest Corridor Crossing Project

The project objective is to improve and upgrade street crossings *along* the Southwest Corridor in Roxbury, Mission Hill, and Jamaica Plain. The Southwest Corridor is one of the busiest walking and bicycling routes in Boston. The study will look at all street crossings on the Southwest Corridor between Ruggles Street in Roxbury and McBride Street in Jamaica Plain. Some of these crossings are also near busy MBTA stations, with heavy bus traffic. The work will be limited to streets and sidewalks owned by the City of Boston. For more information, visit <https://www.boston.gov/departments/transportation/southwest-corridor-crossings-project>

Connect Downtown: Southwest Corridor Extension Project

The vision of the initiative and study is to improve the connection of the Southwest Corridor to Downtown centers for people—residents, commuters, and tourists—in a redesign of iconic streets in downtown neighborhoods. Objectives are to improve pedestrian crossings along the route, provide comfortable and reasonably direct routes for bicyclists, and enhance pedestrian access to the Public Garden and the Boston Common. One goal is to design the project in a way that allows for faster construction. For more information, visit <https://www.boston.gov/departments/transportation/connect-downtown>

MISCELLANEOUS

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/>.

MUNICIPAL STUDIES

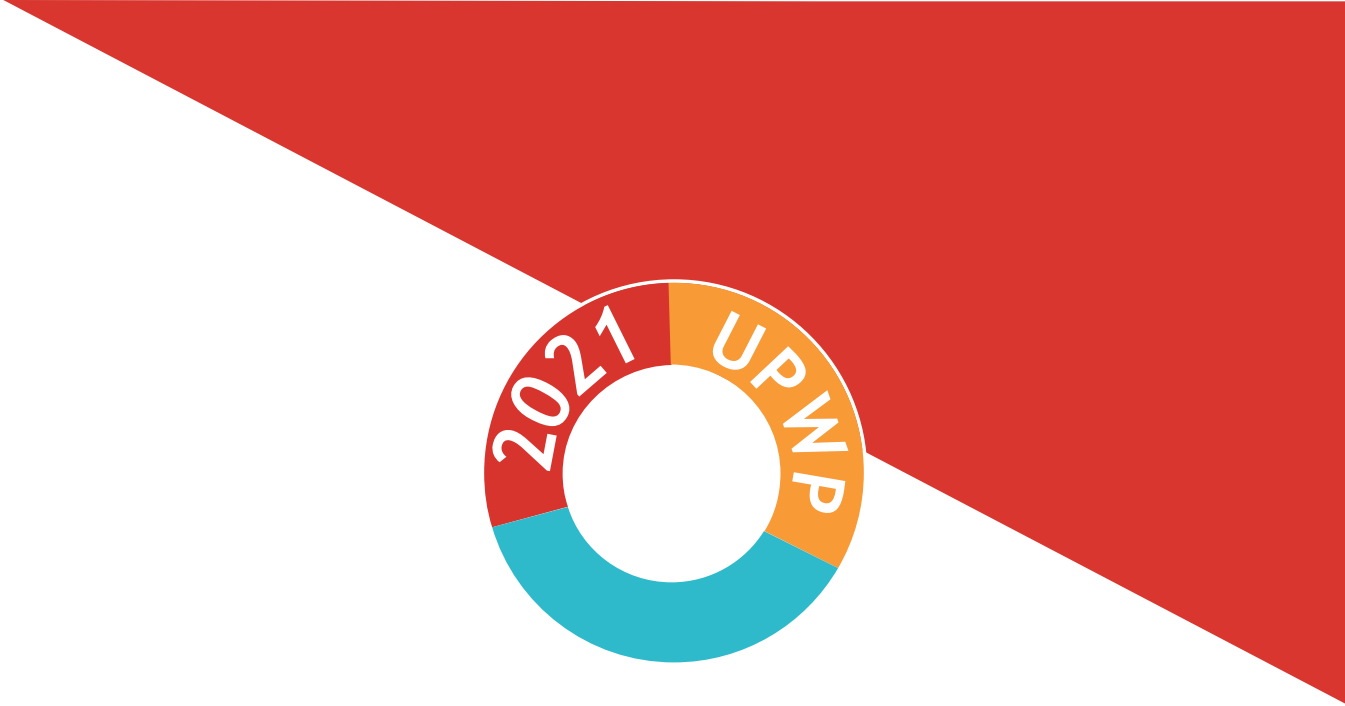
City of Boston

Neighborhood Bike Projects

A City of Boston goal is to build a complete bicycle network that will connect residents to jobs, open space, educational opportunities, and shops. In accordance with citywide planning efforts, Imagine Boston and Go Boston 2030, the city's departments continue to work together to plan, design, and fund transportation projects that improve streets for all users, including by identifying neighborhood connections that help complete the bike network. Boston typically adds or improves several miles of its bike routes each year. For more information, visit www.boston.gov/departments/boston-bikes/neighborhood-bike-projects

Autonomous Vehicles

Autonomous vehicles offer the promise of helping to achieve the goal of zero deaths and injuries from traffic crashes. On the other hand, these vehicles could displace an important workforce (that is, professional drivers of various service vehicles) and encourage both sprawl and traffic congestion. In cooperation with MassDOT, the City of Boston launched an autonomous-vehicle testing program to try to shape the development of this technology, and create policies to deliver on autonomous vehicles' potential promise while minimizing their drawbacks. Recently, testing has been expanded to include local streets. For more information, visit <https://www.boston.gov/departments/new-urban-mechanics/autonomous-vehicles-bostons-approach>



APPENDIX B

PUBLIC PARTICIPATION AND RESPONSE TO PUBLIC COMMENTS

The Boston Region Metropolitan Planning Organization (MPO) staff followed the procedures set forth in the MPO's adopted Public Participation Plan while developing the Unified Planning Work Program (UPWP). These procedures are designed to ensure early, active, and continuous public involvement in the transportation-planning process.

The Federal Fiscal Year (FFY) 2021 UPWP development process began in October 2019. Staff solicited topics for study through outreach at Metropolitan Area Planning Council (MAPC) subregional municipal group meetings. Staff also sought suggestions and public input from other sources:

- Regional Transportation Advisory Council (Advisory Council) meetings
- Outreach to transportation advocacy and community groups
- Comments received during the FFY 2020 UPWP's public review period
- Topics generated from recently completed planning studies and documents

The document development process, described in Chapter 2, culminated in the MPO UPWP Committee's recommendation for the FFY 2021 UPWP, including a set of new discrete studies. On May 28, 2020, the MPO approved a draft document for public circulation.

After receiving the MPO's approval to circulate the public-review draft FFY 2021 UPWP, staff posted the document on the MPO's website (<https://www.bostonmpo.org/upwp>) and used the MPO's contact list (MPOinfo) and Twitter account to notify the public of the document's availability and the opening of the 30-day period for public review and comment.

During the review period, reflecting the restrictions imposed by the COVID-19 emergency situation, staff presented the draft UPWP and this set of new studies to the Advisory Council; hosted a pair of digital open houses; and made themselves available to interested parties who wanted to discuss the draft FFY 2021 UPWP.

The following pages contain the comments received about the UPWP during the public comment period. All correspondents have received a response from the UPWP Manager.

MPO Liaison UPWP Review Checklist

Completeness

ID	Review Item	Comments	Reference
A1	✗ * Table of Contents is accurate and internally-linked.	Please ensure all pages of the Tables of Contents are accurately hyperlinked.	
A2	✓ * Document has no broken links.	Please consider more consistently using either ctps.org or bostonmpo.org in hyperlinks and link text.	
A3	✓ * Document has no text or image placeholders.	Please ensure that project IDs are entered into the final document when available.	
A4	✓ * Charts, tables, and maps are legible and properly annotated.		
A5	✗ * Document passes an accessible check.	Please ensure Appendix title hero images and decorate figures are properly annotated with alt text or noted as decorative.	
A6	✓ * Document is available in relevant languages per the MPO's Title VI Plan.		
A7	✓ * List of MPO members is current.		
A8	✗ * Signatory sheet is included and accurate.	Please ensure signature sheets are included in the final document once endorsed by the MPO Board.	
A9	✓ * Acronyms and partner agency lists are up to date.		

Narrative

ID	Review Item	Comments	Reference
B1	✓ * UPWP is comprehensible to the general public.		
B2	✓ * UPWP refers directly to vision, goals, and objectives from RTP.		
B3	✓ * UPWP Amendment/Adjustment procedures are explicit.		
B4	✓ * Governing MOUs between MassDOT, MPO, RTAs, and neighboring MPOs have been reviewed for potential improvements or updates.	Please note under the 3C Planning tasks that staff will work to update governing MOUs between the Boston MPO and partner agencies when necessary.	
B5	✓ * Planning efforts are coordinated with MassDOT modal plans.		https://www.mass.gov/statewide-plans

UPWP Tasks

ID	Review Item	Comments	Reference
C1	✓ * Individual tasks include detailed scopes, budgets, and schedules.		
C2	✓ * Individual tasks outline community beneficiaries.		
C3	✓ * Transit-related tasks are specific.		
C4	✓ * Includes a task on performance-based planning.		
C5	✓ * Includes a task for an update to any congestion mitigation planning efforts.		Required for TMA MPOs if current CMP is out of date.
C6	✓ * UPWP includes a summary of available staff hours.		

C7	✓	Individual tasks anticipate needed staff-hours / consulting resources.		
C8	✓	Tasks from previous UPWPs have been analyzed for past utilization.		

Impacts Analysis

ID		Review Item	Comments	Reference
D1	✓ *	UPWP includes a geographic equity distribution table showing 2015–2019 and current UPWP-funded studies by municipality and number of tasks.	Please consider inclusion of percentages by subregion in table D-1.	
D2	✓ *	UPWP includes a social equity distribution table of past and current UPWP-funded studies considering language access and EJ populations.		
D3	✓ *	Public involvement and comment are explicitly documented and in line with MPO's Public Participation Plan.		

* indicates required by state or federal regulation.

REGIONAL TRANSPORTATION ADVISORY COUNCIL



June 11, 2020

David Mohler, Chair
Boston Region Metropolitan Planning Organization
10 Park Plaza, Suite 4150
Boston, MA 02116

Re: Draft Federal Fiscal Year 2021 Unified Planning Work Program

Dear Mr. Mohler,

The Regional Transportation Advisory Council (RTAC) is an independent group of citizen and regional advocacy groups, municipal officials, and agencies charged to provide advice to the Boston Region Metropolitan Planning Organization (MPO) on transportation planning and programming.

The RTAC has reviewed and discussed the public review draft FFY 2021 Unified Planning Work Program (UPWP) and offers the following comments:

1. The RTAC appreciates the MPO staff's consideration of the feedback provided by the RTAC on the initial UPWP project list and notes that a number of the RTAC's priority projects are recommended for funding.
2. We are pleased that the MPO is already working to integrate equity considerations into all projects during the scoping process. Especially in light of recent events highlighting disparities in our society, we encourage the MPO to continue to include a strong focus on equity in the studies as they are scoped.
3. We understand the MPO is considering providing the opportunity for public input into UPWP study scopes as they are developed. We would welcome the opportunity to comment on draft versions of the study scopes, if this could be done without overly burdening staff or delaying the implementation of the studies.

Once again, we appreciate the opportunity to express our thoughts to the MPO.

Sincerely,

Lenard Diggins
Chair, Regional Transportation Advisory Council

MBTA Rider Oversight Committee

June 23, 2019

RE: FFY 2021 Draft Unified Planning Work Program (UPWP)

Dear Members of the Boston MPO,

Below are comments from the MBTA Rider Oversight Committee (ROC):

1. Though we didn't offer any suggestions to include in the universe of proposed studies this cycle, we nonetheless support the MPO's selected studies. Specifically, we are enthusiastic about the following studies:

- Improving Pedestrian Variables in the Travel Demand Model
- Trip Generation Rate Research
- Access to CBDs Phase 2
- The Future of the Curb Phase 2
- Informing the Big Ideas Behind the MPO's Scenario Planning Process Disparate Impact Metrics Analysis
- MPO Staff-Generated Research and Technical Assistance

2. We continue to be impressed with the various ways in which the MPO reaches out to the public – especially during the earliest stages the UPWP development cycle.

3. Finally, given our interest in and support of the MBTA, we appreciate the continuing commitment to the MBTA as evidenced in the following:

- MBTA National Transit Database: Data Collection and Analysis
- MBTA Title VI Program Monitoring
- MBTA Transit Service Data Collection
- MBTA Rider Oversight Committee Support
- Service Equity Analysis Support to the MBTA
- MBTA Mapping Support
- Diversity Posters
- Haymarket Station Redevelopment Analysis
- Prioritization of Dedicated Bus Lanes II
- Silver Line Extension Ridership Projection

As always, we look forward to seeing the results the studies!

Respectfully,
MBTA Rider Oversight Committee
mbtaroc@gmail.com



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WESTBOROUGH, MA 01581
774-760-0495
495PARTNERSHIP.ORG

June 30, 2020

Mr. Sandy Johnston
UPWP Manager, Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116

Re: Boston Region Unified Planning Work Program (UPWP) FFY2021

Dear Mr. Johnson:

On behalf of the 495/MetroWest Partnership, please accept the following as our comments regarding the draft *Unified Planning Work Program* (UPWP) for FFY 2021 for the Boston Region Metropolitan Planning Organization (MPO).

The 495/MetroWest Partnership is a non-profit advocacy organization serving thirty-five communities, which is home to over 600,000 residents and approximately 1 in 10 jobs in the Commonwealth. Through a unique private-public collaboration with businesses, municipal governments and other stakeholders, the Partnership seeks to address regional needs by working to enhance economic vitality, improve quality of life and foster sustainable growth. The Partnership focuses on helping to alleviate regional constraints, and conducts numerous initiatives on transportation, economic development, workforce housing, and water resources.

The Partnership appreciates the importance of the 3C planning process and understands that the long-term benefits achieved by transportation and transit projects always start with a transparent and interdisciplinary planning approach. We thank the MPO for its diligent work, including recently completed studies from FY19 and FY20 such as New and Emerging Metrics for Roadway Usage, Transit Mitigation for New Development Sites, and Operating a Successful Shuttle Program.

The Boston Region MPO includes twenty-six of the Partnership's thirty-five communities. We greatly appreciate the number of planning projects that have been completed in our region in recent years, including several planning projects in Acton and Foxborough this year. We find Appendix D a helpful resource in determining the distribution of regional UPWP planning tasks since 2010. It is worth noting that out of the four subregions in 495/MetroWest, SWAP has the lowest number of UPWP work products in the entire Boston MPO region. Of the 39 work products completed in the SWAP region since 2010, 37 occurred between 2010 and 2015. The SWAP and MWRC subregions, which comprise a combined 12% of the MPO's population, received zero work products this year. Furthermore, the Framingham NECTA Division, which employs 172,890 workers, only received one work product in Sudbury. We understand that resources are limited but regional equity is essential to ensure the entire Greater Boston region is benefiting from

the planning process. We hope that you will give regional equity consideration when advancing some of the studies we are supporting in FFY 2021.

The Partnership welcomes the addition of the **Access to Commercial Business Districts - Phase 2** project as a follow up to the study programmed in FY19. Commercial Business Districts are leading economic and social drivers for their municipalities. As a hub for dynamic localized clusters and large national employers, CBDs also serve as citizen-oriented locales built for social interactions and broad cultural exchanges. In addition to our advocacy on first/last mile connections, the Partnership has long supported intraregional mobility through the expansion of localized public transit services and network-wide multimodal road configurations. Expanding access to CBDs shares a synergistic relationship with the **Future of the Curb - Phase 2** study. Curbside and streetscape improvements to accommodate enhanced transit service, promote bike/pedestrian usage and demarcate commercial and drop-off zones will undoubtedly enhance pedestrian flow and walkability of CBDs. Improving access and curb management within mixed-use neighborhoods goes hand in hand with many of the downtown revitalization and visioning projects across our region.

The Partnership also welcomes programmed funds for the **MetroWest Regional Transit Authority - Sunday Service Study**. Having played a lead role in founding the MWRTA, we can attest to its effectiveness and innovativeness as a regional transit service provider. In FY19 the MWRTA was awarded discretionary funding by MassDOT to develop and launch the Catch App, which allows riders of the MWRTA's commuter shuttles to alert drivers when Commuter Rail trains are running late, thus improving last mile connections. A Sunday Service Study will allow the MWRTA to analyze travel demand to locations such as places of worship, retail centers, and entertainment complexes.

The Partnership is concerned that the **Project M-8, Downtown Framingham Mobility Study** has been removed entirely from UPWP study universe, after being proposed, but unfunded in FY20. Framingham is the most populous community in the 495/MetroWest region, and its downtown area is a multi-modal crossroads. We know that the Route 126/Route 135 intersection suffers from congestion, especially when a train passes across the roadway and halts vehicles in downtown Framingham. This study's evaluation of grade separation of the MBTA Commuter Rail would provide insight in to one potential solution. We appreciate the Framingham Downtown Parking Management plan conducted as part of the MAPC Corridor/Subarea Planning Studies.

The Partnership greatly appreciates the work of CTPS and values the planning projects proposed in this year's Unified Planning Work Program. We hope you will strongly consider our comments regarding regional and subregional equity in deciding areas to study within individual projects and analyses.

We thank you for your consideration of our comments. If there are any questions regarding our commentary on the UPWP, please contact us at 774-760-0495, or by email at jeremy@495partnership.org. Thank you for your time and consideration.

Sincerely,



Jason Palitsch
Executive Director



Jeremy Thompson
Manager of Policy & Planning



June 30, 2020

To: Sandy Johnston
Boston Region Metropolitan Planning Organization
10 Park Plaza, Suite 2150
Boston MA, 02116

From: The Institute for Transportation and Development Policy (ITDP)

Re: Draft Uniform Planning Work Program, 2021-2025

Dear Mr. Johnston,

Thank you for this opportunity to provide public comment on this draft of the Boston Region's Metropolitan Planning Organization (MPO) 2021 Uniform Planning Work Program (UPWP). ITDP is a non-profit that works in seven countries around the world to design and implement high quality transport systems and policy solutions that make cities more livable, equitable, and sustainable. Since 2013, we have been working in Boston to explore, demonstrate and promote the potential for bus rapid transit (BRT) as a solution to the region's transportation, economic, and environmental challenges while effectively achieving the goals of GoBoston 2030 and the Global Warming Solutions Act.

We are pleased to see that several of the projects in the UPWP will address congestion, transit and the use of our roadways. We would suggest that these steps be even bolder, incorporating not just mentions of transit, but looking at how major changes to our roadways, including upgrades to buses which result in Bus Rapid Transit (BRT) can help to create more efficient, safe and resilient transportation networks. This is a strategy used across the country and the world, and which should be part of the UPWP.

In particular, we would like to highlight three projects to make sure that full attention is given to improving facilities and rider experience for bus passengers:

- Addressing Safety, Mobility, and Access on Subregional Priority Roadways
- The Future of the Curb Phase 2
- Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment

Regarding Safety, Mobility and Access, we would suggest that if corridors studied include frequent bus service, care is given to how bus improvements, including the potential to convert bus routes to full bus rapid transit can help to enhance the safety of all users in the corridor. Roads with BRT are often designed to be safer not just for buses, but for bicyclists, pedestrians accessing bus stops and motorists, who no longer have to contend with buses pulling in and out of stops.

Regarding the Future of the Curb, buses, which carry more curb-users than any other use on most corridors, should be given top priority. In addition to curb management strategies, we would suggest that the curb space manual output of this project include information about how BRT can improve the use of the curb. This should include both information about how BRT can make use of curb space, as well as how a center-running BRT can allow more access for other vehicles and uses at the curb by taking buses away from the curb entirely.

Regarding Priority Corridors in the LRTP, we suggest that special consideration be given to routes where buses carry a high proportion of the overall number of people using the roadway which for some roadways in the region can approach or surpass 50 percent. Often, these roadways can see throughput as high or higher than wider roads or highways. This will help to inform MassDOT and municipalities where they can make changes to roadways to prioritize bus traffic in order to provide a more efficient transit experience.

We commend the MPO on its efforts to plan for a modern, well-maintained transportation system that supports a sustainable, healthy, livable, and economically vibrant region. As a blueprint defining the goals, vision, and objectives for transportation planning in the region for the next two decades, the UPWP is also an excellent opportunity to study not just bus priority but full scale BRT into the fabric of our projects and investment programs.

Thank you for considering our comments and please do not hesitate to reach out to us with any questions.

Sincerely,

A handwritten signature in cursive script that reads "Julia Prange Wallerice". The signature is written in dark ink and is positioned above the typed name and email address.

Julia Wallerice, Boston Program Manager
Julia.wallerice@itdp.org

Old Colony corridor from South Bay to Braintree

4 messages

Clark Frazier

Tue, Jun 30, 2020 at 10:48 AM

To: "sjohnston@ctps.org" <sjohnston@ctps.org>

Hello.

The Old Colony railroad corridor paralleling the Southeast Expressway between South Bay and Braintree is the only commuter rail corridor between Boston and Route 128 that is not double track. Adding trains to mitigate congestion on the Southeast Expressway will not be possible until some way is found to double track the line. Planned rail service to New Bedford and Fall River will also be constrained.

Is there any money available to study the corridor and identify right of way options and insure that other projects like MBTA station reconstruction or new street overpasses do not further complicate efforts to increase capacity in the corridor?

Also, the "Zipper" lane on the Southeast Expressway obstructs access for reverse commuters and individuals accessing public events in Boston, in part because commuter rail schedules are too sparse). Will it be necessary to widen the expressway right of way in the Savin Hill area to balance capacity and smooth traffic flow at poorly designed interchanges at South Bay, Columbia Road and Neponset? Would ramp metering and small-scale interchange modifications reduce congestion?

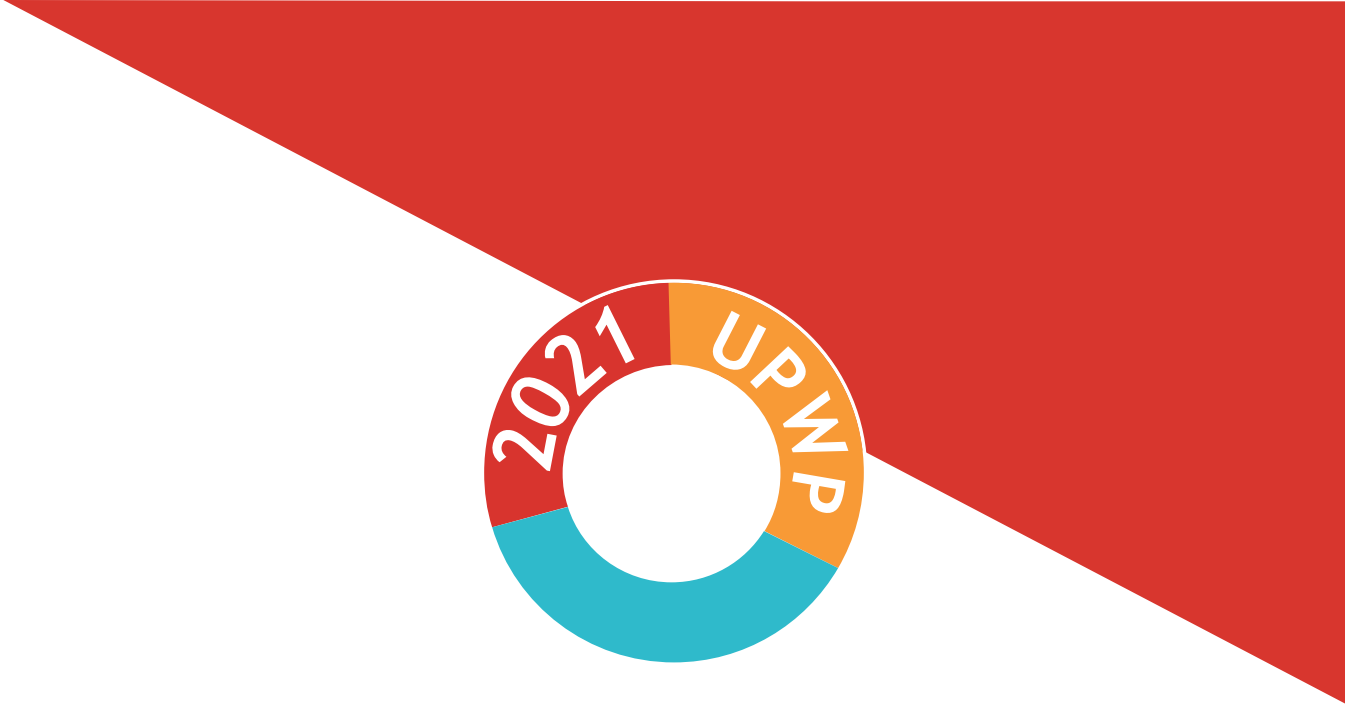
The amounts of money for projects listed seems inadequate. Is anyone paying attention to the future travel needs of older residents who may prefer transit, but who may be left out of the transportation planning process?

Thank you,

Clark Frazier

PO Box

Hingham, MA



APPENDIX C

UNIVERSE OF PROPOSED NEW STUDIES FOR FEDERAL FISCAL YEAR 2021 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 2021 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 2021**

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
ACTIVE TRANSPORTATION				Key: 5 = most relevant, 1 = least relevant					
A-1	Improving Pedestrian Variables in the Travel Demand Model	<p>Purpose: Several important variables would be incorporated into the regional travel demand model for considering pedestrian activity. The Pedestrian Environmental Variable (PEV) is used in CTPS's travel demand forecasting model as a metric to gauge the quality of the pedestrian environment at transit stations and stops. The PEV, calculated at the model's transportation analysis zone (TAZ) geographic level, is presently composed of three weighted and indexed elements: pedestrian level of service (based on physical characteristics in the TAZ), geographic characteristics of the station/stop (such as presence of sidewalks), and pedestrian hindrances (such as designated truck routes).</p> <p>Anticipated Outcome: This research would enrich the indices of the three aforementioned PEV elements by incorporating new variables, such as roadway density, level of mixed land use, density, number of intersections, safety measures represented by crash rates at the TAZ level, and other land use characteristics. Once new PEVs are developed for each TAZ, the travel model's mode choice component would be recalibrated.</p> <p>Estimated Budget: \$25,000</p>	This effort is approximately six weeks of work, which includes research, implementation, and review of results.	5	2	5	3	3	2
A-2	Cost/Benefit Analysis for Pedestrian and Bicycle Safety Measures	<p>Purpose: This study would collect data on the cost of pedestrian and bicycle safety measures constructed through MPO-funded projects, and possibly other capital projects in the Boston region, and analyze their safety benefits in a before-and-after fashion relative to their costs.</p> <p>Anticipated Outcome: Cost/benefit analyses of capital projects intended to improve safety for pedestrians and bicyclists.</p> <p>Estimated Budget: \$45,000</p>		5	3	3	4	4	2
LAND USE, ENVIRONMENT, AND ECONOMY									
L-1	Regional Travel Demand Management Strategies	<p>Purpose: Travel demand management, or TDM, is a hot topic around the country, but TDM ordinances and practices are relatively rare in Massachusetts. Staff will review TDM best practices around the country and make recommendations about how to apply them in the Boston region.</p> <p>Anticipated Outcome: Possible outputs from this study include a toolkit for municipalities, TMAs, and transit providers; recommendations for collaboration between planning entities; and an evaluation to determine the value of the MPO creating a TDM technical assistance program.</p> <p>Estimated Budget: Scalable. Staff estimate \$30,000 for literature review and an additional \$30,000 to produce a guidebook.</p>		2	3	5	3	5	5

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
ROADWAY AND MULTIMODAL MOBILITY									
M-1	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	<p>Purpose: During MPO outreach, MAPC subregional groups identify transportation problems and issues that concern them, often those relating to bottlenecks or lack of safe access to transportation facilities in their areas. These issues can affect livability, quality of life, crash incidence, and air quality along an arterial roadway and its side streets. If problems are not addressed, mobility, access, safety, economic development, and air quality are compromised. Tasks in these studies include data collection, technical analysis, development of recommendations, and documentation for selected corridors.</p> <p>Anticipated Outcome: Recommendations for addressing safety, mobility, and access for the selected subregional priority roadways.</p> <p>Estimated Budget: \$125,000</p>	Recurring study (every year)	5	5	5	3	3	3
M-2	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	<p>Purpose: These studies develop conceptual design plans that address regional multimodal transportation needs along priority corridors identified in the LRTP, Destination 2040. MPO staff would recommend conceptual improvements for one or more corridors, or several small sections within a corridor, that are identified by the CMP or the LRTP's Needs Assessment process. These studies provide cities and towns with the opportunity to review the requirements of a specific arterial segment, starting at the conceptual level, before committing design and engineering funds to a project. If the project qualifies for federal funds for construction of the recommended upgrades, the study's documentation also might be useful to MassDOT and the municipalities.</p> <p>Anticipated Outcome: Conceptual design plans for the selected priority corridors.</p> <p>Estimated Budget: \$125,000</p>	Recurring study (every year)	5	5	5	3	3	3
M-3	Low-Cost Improvements to Express Highway Bottleneck Locations	<p>Purpose: Recurring bottlenecks, the subject of this study, are influenced by the design or operation present at the point where the bottleneck begins (e.g. locations where traffic merges, diverges, or weaves, or where there are lane drops or abrupt changes in highway alignment). Low-cost infrastructure solutions, as opposed to major construction projects, could involve changes in the design of roadway locations where traffic merges, traffic operations, or highway alignment. The previous two studies of express-highway bottlenecks were very well received by MassDOT and the FHWA. Some of the recommendations from those studies already have been executed. The MPO has been conducting these studies to identify low-cost methods to reduce congestion, increase safety, and improve traffic operations in the Boston region.</p> <p>Anticipated Outcome: This study would select additional express-highway bottleneck locations and produce reports documenting low-cost solutions to existing traffic congestion issues at the selected locations. A before-and-after analysis of previous work may be included, depending on the final scope of the study.</p> <p>Estimated Budget: \$60,000</p>	Recurring study (every other year)	5	4	5	2	2	2

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
M-4	Trip Generation Rate Research	<p>Purpose: According to the Massachusetts Environmental Policy Act (MEPA) and National Environmental Policy Act (NEPA) any proposed land use development project (exceeding certain traffic and environmental thresholds) is required to prepare a traffic/transportation impact analysis. This analysis shows the transportation system impacts associated with the proposed action. Key to this analysis are the trip generation rates. Standard practice for this type of land use analysis is to use the Institute of Transportation Engineers' (ITE) trip generation rate manual to estimate the trip generation rates for the proposed development.</p> <p>However, ITE rates are based on national averages for different states in the US, suburban locations, and smaller sample sizes. So, ITE lacks the regional/local transportation characteristics to consider factors such as transit availability, transit usage, bicycle and pedestrian facilities, and economic growth centers. For these reasons, using ITE rates for all land use projects may lead to unrealistic trip generation estimation. In addition, ITE rates are known for giving wide ranges of rates and also very low sample sizes, thus resulting in a high degree of variability and interpretability in their application. As a result, the use of these rates varies considerably and this can affect the mitigation of transportation-related impacts of proposed land use projects and possibly change the scale of the development.</p> <p>Anticipated Outcome: For this research, CTPS will examine recently completed development impact studies in the greater Boston area. For these projects, CTPS will review available travel monitoring data; trip generation rates used in MEPA/NEPA submissions; and the statewide travel model's trip generation results as a point of comparison. This research can greatly aid in the MPO's understanding of the appropriateness of the ITE rates, model trip generation rates to support corridor studies, environmental processes such as NEPA and MEPA filings, and the relationship between land use and trip activity.</p> <p>Estimated Budget: \$60,000</p>	Related to FFY 2018 UPWP study, Transportation Mitigation of Major Developments, and FFY 2020 study, Transit Mitigation for New Development Sites	2	2	5	2	3	4
M-5	Intersection Improvement Program	<p>Purpose: Staff will select 10 to 15 intersections in the region based on CMP performance metrics and then consult with planners/engineers from these respective communities to verify the congestion issues at the preselected locations. Staff will then survey the selected intersections and determine recommended low-cost improvements for the locations. These recommendations will be presented to each community. The communities can acknowledge the recommended improvements to each intersection and create their own project to improve traffic operations.</p> <p>Anticipated Outcomes: Recommendations for low-cost improvements for the selected intersections that local planners and engineers can use to develop projects.</p> <p>Estimated Budget: \$75,000</p>		3	4	5	2	2	3

(Table C-1 cont.)

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
TRANSIT									
T-1	Regional Safe Routes to Transit Principles	<p>Purpose: Staff would produce a set of principles to help guide municipalities and transit providers when implementing infrastructure that can help transit riders access transit comfortably and safely. This study may examine first- and last-mile shuttles, drawing on the FFY 2020 UPWP study Operating a Successful Shuttle Program.</p> <p>Anticipated Outcomes: Documentation of principles for implementing infrastructure improvements and operational projects to improve access to transit, including first- and last-mile connections.</p> <p>Estimated Budget: \$40,000–60,000</p>		5	2	4	3	4	2
T-2	Access to Commercial Business Districts Phase 2	<p>Purpose: This study would follow up on the Transportation Access Studies of Central Business Districts study conducted in FFY 2019. The methodology would follow that of the FFY 2019 study—surveying business owners and their customers, inventorying existing curb-lane designations, and identifying off-street parking—but with a larger sample size.</p> <p>Anticipated Outcomes: A toolbox that CTPS will make available to municipalities and other partners for conducting CBD-access studies.</p> <p>Estimated Budget: \$75,000</p>	Follow-up on FFY 2019 UPWP study	2	3	4	3	4	5

(Table C-1 cont.)

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
T-3	The Future of the Curb Phase 2	<p>Purpose: This study would develop a guidebook for municipalities about ways to approach the process of planning and implementing curb management strategies. Building off the Future of the Curb study undertaken in FFY 2019, which compiled nationwide examples of municipalities that repurposed their curb lanes in response to changing demands and conflicts, this study would explore a wide range of issues related to implementing such changes.</p> <p>This study would provide guidance about several key topic areas:</p> <ul style="list-style-type: none"> • Engaging the public, including equity populations, in developing curb management plans and strategies • Evaluating how the benefits and potential adverse effects of changes to curb management may affect equity populations • Developing a plan for monitoring and enforcing compliance with the curb management strategy • Establishing metrics to evaluate the success of curb management changes, which may have effects on congestion, emissions, accessibility, parking turnover, impacts to businesses, safety, bus reliability, travel times, and other factors • Developing high-level curb management plans to provide policy guidance that is consistent with the municipality's larger transportation goals • Considering the broader context of curb space changes, such as land use, density, and existing activities at the curb <p>The study would include outreach to municipalities in the Boston region to learn about the process that they took to implement curb management strategies. The study would document these municipalities' considerations, successes, challenges, and best practices.</p> <p>Anticipated Outcomes: A guidebook for planning and implementing curb management strategies.</p> <p>Estimated Budget: \$60,000</p>	Follow-up on FFY 2019 UPWP study	5	4	4	4	3	4

(Table C-1 cont.)

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
T-4	TOD Resident Survey	<p>Purpose: CTPS will conduct surveys of residents of a representative sample of new residential developments near transit stations across the Boston region, with an emphasis on making sure developments from a variety of built environments are included. Surveys will ask about resident behavior, including</p> <ul style="list-style-type: none"> • whether they moved to the development explicitly for the ability to use transit; • the frequency and purpose of their transit usage (before moving to the TOD, currently, and anticipated in the future); • other travel behavior; • car ownership; and • demographic details. <p>Staff will also compile available data on parking availability at stations and demand from previous CTPS counts, and analyze the changes over time relative to developments and possibly reported resident behavior.</p> <p>Anticipated Outcome: A dataset documenting survey responses and a memorandum or web page presenting analysis. Data will be made available to agency partners and municipalities throughout the region.</p> <p>Estimated Budget: \$60,000</p>	This study draws on work currently being conducted in MassDOT's MBTA Station Access Study (which is expected to be finished by summer 2020), MAPC's Perfect Fit Parking Program, and the MPO's Congestion Management Program.	2	3	5	2	4	4
RESILIENCE									
R-1	Multimodal Resilience and Emergency Planning	<p>Purpose: CTPS would use existing data to create a "story" of climate change and to better visualize options in the event of an emergency situation for the entire transportation network. CTPS can build upon its existing All-Hazards Planning tool and incorporate open data sets, multiple transportation modes, vulnerable population information and high-quality design. The resulting tool would be designed to be user-friendly and geared towards municipal planners (especially those concerned with network resiliency) and residents.</p> <p>Anticipated Outcomes: An interactive tool for visualizing risks to the transportation network from the impacts of climate change and current emergency plans.</p> <p>Estimated Budget: \$30,000 to update the CTPS All-Hazards Planning Tool, plus an additional \$10,000–20,000 to produce a StoryMap or interactive GIS map.</p>	There is potential to scale up this work to model how the transportation network will react to various emergency or disaster scenarios, perhaps through the LRTP scenario planning process or a future UPWP study.	5	5	3	4	5	3

(Table C-1 cont.)

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
TECHNICAL SUPPORT and OTHER									
O-1	Staff-Generated Research and Technical Assistance	<p>Purpose: This program supports work by MPO staff members on topics that relate to the Boston Region MPO's metropolitan transportation-planning process, that staff members have expressed interest in, and that are not covered by an ongoing UPWP study or discrete project. This program brings forth valuable information for the MPO's consideration and would support staff's professional development. The opportunities afforded to staff through this program could yield highly creative solutions to transportation-planning problems.</p> <p>Starting in FFY 2020, the range of projects that could be funded through this budget line was expanded to include small technical assistance projects in addition to research. Individual MPO staff are able to identify small-scale needs in the diverse communities within the MPO region and work with partner entities make recommendations to solve the problems. This budget line allows staff to then use some of their time to study the problem—involving their colleagues with specialty skills if staff resources and availability allow—and make recommendations to solve it.</p> <p>Anticipated Outcomes: Reports on staff-proposed innovative research and small technical assistance projects.</p> <p>Estimated Budget: Typically \$20,000-\$40,000.</p>	Recurring study (every year)	n/a*	n/a*	n/a*	n/a*	n/a*	n/a*
O-2	Mapping Major Transportation Infrastructure Projects in the Boston Region	<p>Purpose: In 2005, MPO staff created a map of the historical development of transportation infrastructure in the region, covering highway and transit networks. While some work has been done to update it in the interim, staff believe that an up-to-date, comprehensive, and truly multimodal map would be a valuable, cost-effective resource to transportation planning in the region. Depending on resources, the map could be produced either in print or in interactive online format, or both.</p> <p>Anticipated Outcomes: Comprehensive, multimodal map of the historical development of transportation infrastructure in the Boston region.</p> <p>Estimated Budget: \$20,000 to produce an updated print map and simple online tool.</p>		1	3	2	3	2	2

(Table C-1 cont.)

Study Information				LRTP Goals					
ID	Project Name	Project Purpose and Outcome	Notes	S	SP/M	CM/M	TE	CA/SC	EV
O-3	Informing the Big Ideas Behind the MPO's Scenario Planning Process	<p>Purpose: This task would supplement upcoming outreach efforts for the development of the MPO's new LRTP. To support development of "big picture" items to be tested through scenario planning, staff would conduct a thorough program of outreach to stakeholders—including MPO member municipalities, other agencies, community groups, and advocacy groups—to determine priorities for possible analyses. Possible scenario elements to discuss with stakeholders include congestion pricing; free transit fares on some or all services; implementation of the Transportation Climate Initiative or another funding mechanism; and large-scale regional zoning changes.</p> <p>Anticipated Outcomes: Identification and prioritization of ideas for scenario analysis.</p> <p>Estimated Budget: \$20,000</p>		3	5	5	5	5	3

Notes: *this study proposed by MAPC

* = Relationship to Goals and Objectives depends on the individual project(s) selected

16 Total study concepts

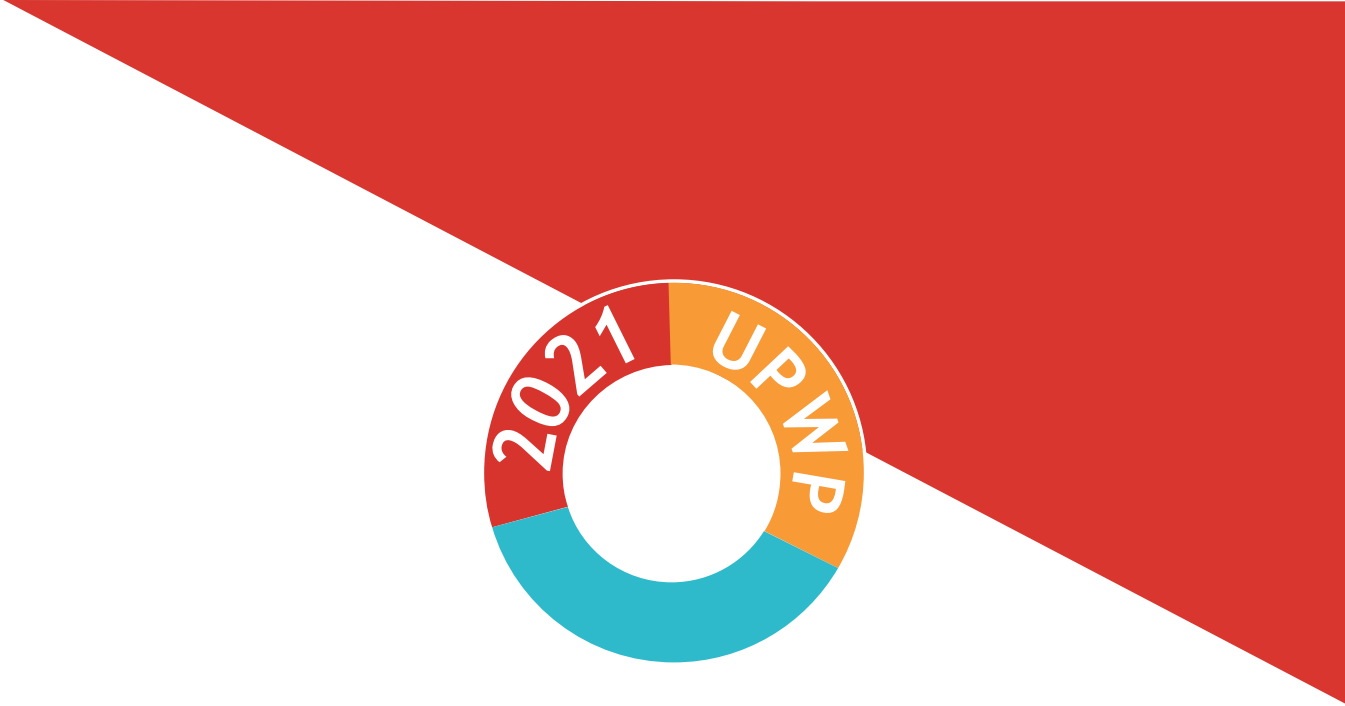
LRTP Goal Area Acronyms:

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 2016–21

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

*Category introduced in FFY 2020 UPWP



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 2019, as well as work products expected to be completed by the end of FFY 2020. 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 our 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 households, and people with limited English proficiency in each municipality. This is an initial approach to assessing the extent to which MPO studies may benefit

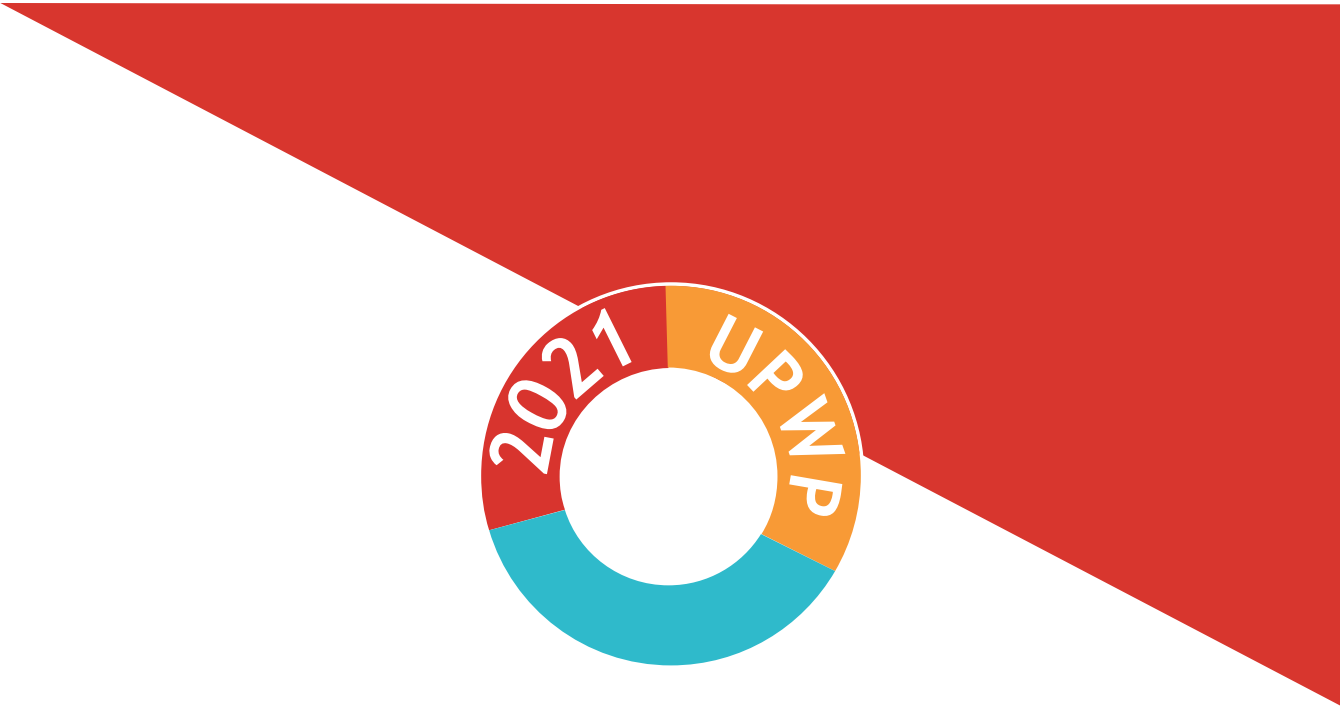
these populations; further development of the UPWP Study Recommendations Tracking Database, including geocoding of studies and creation of an interactive online interface, will eventually allow a more precise analysis of where and how study and analysis funds are spent.

Table D-1 presents a summary of UPWP tasks completed from FFY 2010 through FFY 2020 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 as well as 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

Subregional Totals	Number of Work Products							Demographics					
	2010–15 Total	2016	2017	2018	2019	2020	2010–20 Total	Total Population	Percent of Regional Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents Age 5+ with Low English Proficiency	Household Median Income
ICC	155	19	21	32	26	17	270	1,741,332	52.56%	37.06%	26.82%	15.11%	\$76,970
MAGIC	78	2	5	16	16	9	126	179,873	5.43%	19.81%	8.93%	5.21%	\$134,667
MWRC	72	5	12	2	2	0	93	244,780	7.39%	20.95%	14.02%	8.62%	\$104,153
NSPC	50	10	10	2	3	1	76	216,385	6.53%	13.48%	10.74%	4.91%	\$107,094
NSTF	35	2	23	10	7	4	81	294,070	8.88%	8.78%	18.67%	4.60%	\$80,291
SSC	35	1	0	5	3	3	47	220,039	6.64%	9.97%	14.05%	3.19%	\$93,735
SWAP	37	0	0	2	0	0	39	151,221	4.56%	10.84%	10.17%	3.53%	\$113,415
TRIC	44	2	2	6	15	14	83	265,547	8.01%	22.04%	11.22%	5.90%	\$111,398
Grand Total	509	41	74	76	72	48	820	3,313,247		26.68%	20.27%	10.43%	\$88,830



METHODOLOGY

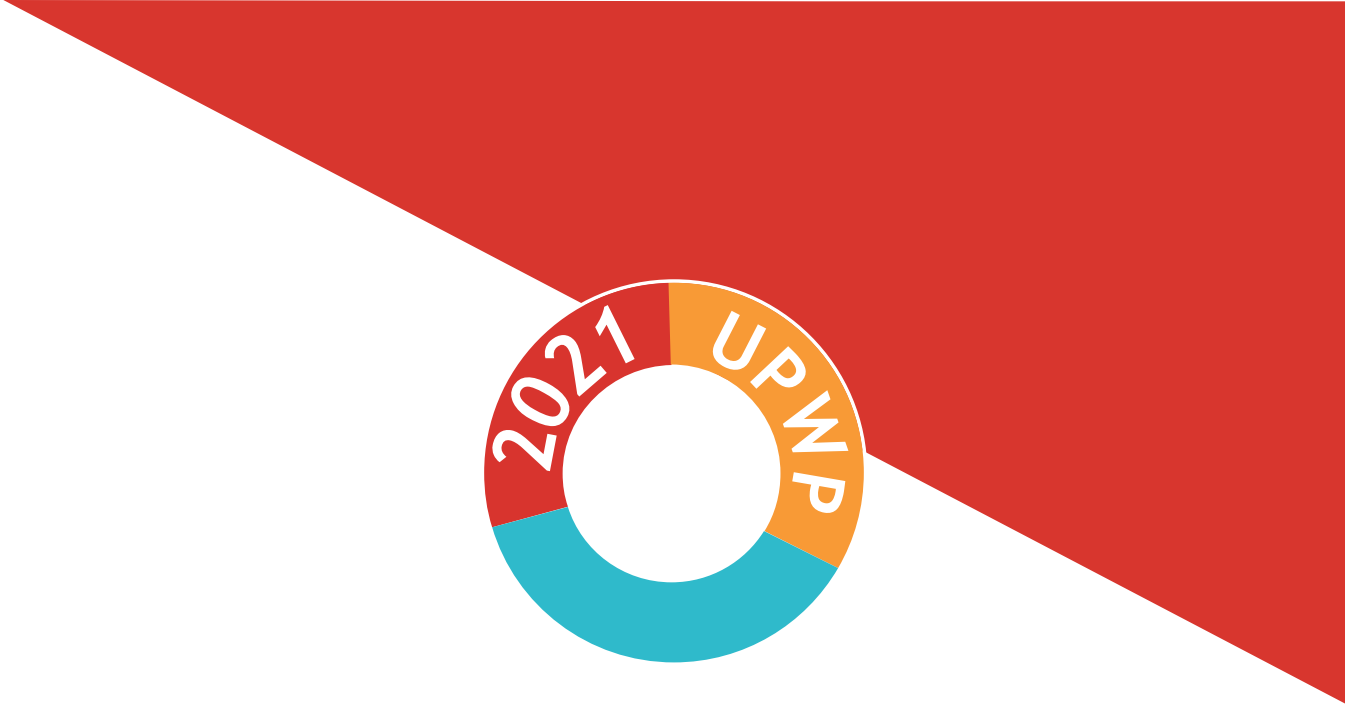
As noted above, this analysis examined FFYs 2010 through 2020. To generate information on the number of UPWP studies produced during these FFYs that benefited specific cities and towns in the Boston region, MPO staff performed the following tasks:

- reviewed all work products listed as complete in UPWPs from FFYs 2010 through 2020
- excluded all agency and other client-funded studies and technical analyses to focus the analysis on MPO-funded work only
- excluded all work products that had 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 American Community Survey 2014–18 five-year estimates. In response to Federal Highway Administration guidance, this year’s analysis includes a breakdown of median income by municipality.

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 2020 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



**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	2010–20 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents Age 5+ with Low English Proficiency	Household Median Income
Arlington	3	1	3	3	2	1	12	45,147	19.44%	11.30%	5.98%	\$107,085
Belmont	3	2	1	2	0	0	8	26,043	21.42%	10.96%	7.86%	\$120,208
Boston	22	3	2	5	9	3	41	679,413	47.42%	33.48%	17.57%	\$65,883
Brookline	5	1	2	0	1	3	9	59,234	25.90%	18.50%	9.67%	\$113,515
Cambridge	9	4	5	2	1	1	21	115,665	33.01%	19.63%	7.92%	\$95,404
Chelsea	10	0	2	1	1	2	14	39,852	49.24%	42.60%	39.21%	\$53,280
Everett	13	2	1	3	1	2	20	45,856	40.78%	34.29%	28.74%	\$60,482
Lynn	7	1	0	1	1	0	10	93,617	51.87%	36.17%	25.32%	\$54,598
Malden	10	0	2	2	1	0	15	61,094	46.05%	31.37%	26.38%	\$64,178
Medford	6	1	0	3	0	1	10	57,771	25.01%	19.48%	9.70%	\$92,363
Melrose	6	0	1	1	0	0	8	28,116	11.15%	11.88%	4.61%	\$103,743
Nahant	0	0	0	0	0	0	0	3,495	4.26%	16.02%	3.71%	\$90,741
Newton	12	0	0	1	0	1	13	88,660	22.99%	9.54%	6.83%	\$139,696
Quincy	11	0	0	0	2	1	13	94,121	39.63%	25.08%	21.08%	\$74,180
Revere	7	0	0	2	2	1	11	53,966	20.97%	34.67%	27.32%	\$55,020
Saugus	3	0	0	1	0	0	4	28,158	10.32%	18.75%	6.25%	\$80,341
Somerville	13	1	1	1	3	0	19	80,434	24.00%	23.08%	11.10%	\$91,168
Waltham	12	3	1	2	1	0	19	62,979	27.67%	18.73%	12.31%	\$85,677
Watertown	1	0	0	1	0	1	2	35,103	16.37%	13.86%	7.78%	\$97,929
Winthrop	2	0	0	1	1	0	4	18,535	6.65%	21.12%	7.00%	\$68,322
ICC Subtotals	155	19	21	32	26	17	270	1,741,332	37.06%	26.82%	15.11%	\$76,970
Acton	6	1	0	1	3	3	11	23,561	30.42%	8.14%	7.44%	\$137,910

(Table D-2 cont.)

Municipality	Number of Work Products							Demographics				
	2010–15 Total	2016	2017	2018	2019	2020	2010–20 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents Age 5+ with Low English Proficiency	Household Median Income
Bedford	7	0	0	2	2	0	11	14,126	21.17%	10.70%	5.82%	\$129,726
Bolton	4	0	1	2	1	0	8	5,236	6.46%	4.39%	0.77%	\$155,093
Boxborough	4	0	0	1	1	0	6	5,794	27.46%	12.15%	4.51%	\$108,207
Carlisle	2	0	0	1	1	0	4	5,186	13.52%	5.82%	2.84%	\$171,625
Concord	6	1	3	1	1	1	12	19,323	16.78%	7.02%	4.30%	\$141,293
Hudson	7	0	0	1	1	0	9	19,868	7.13%	12.81%	10.60%	\$87,806
Lexington	10	0	0	1	1	1	12	33,480	34.62%	7.99%	6.97%	\$172,750
Lincoln	9	0	0	1	1	1	11	6,726	16.04%	12.33%	2.06%	\$122,778
Littleton	5	0	0	1	1	1	7	9,935	10.62%	10.70%	3.22%	\$120,638
Maynard	7	0	1	2	1	1	11	10,600	8.95%	11.04%	4.62%	\$101,324
Stow	4	0	0	1	1	0	6	7,098	8.23%	7.93%	0.83%	\$145,967
Sudbury	7	0	0	1	1	1	9	18,940	15.48%	6.34%	2.96%	\$176,570
MAGIC Subtotals	78	2	5	16	16	9	126	179,873	19.81%	8.93%	5.21%	\$134,667
Ashland	3	0	1	0	0	0	4	17,576	17.10%	10.02%	7.39%	\$121,406
Framingham	14	1	2	1	2	0	20	71,649	28.57%	22.62%	15.95%	\$79,136
Holliston	4	0	1	0	0	0	5	14,634	8.22%	6.61%	1.92%	\$125,625
Marlborough	6	0	2	0	0	0	8	39,776	21.09%	18.71%	12.56%	\$79,228
Natick	9	1	1	0	0	0	11	36,083	18.22%	9.55%	5.56%	\$109,490
Southborough	8	0	1	0	0	0	9	10,074	16.96%	7.89%	3.41%	\$145,079
Wayland	3	0	1	0	0	0	4	13,720	15.35%	5.65%	3.84%	\$174,330
Wellesley	11	1	1	0	0	0	13	29,201	18.90%	5.90%	3.88%	\$188,908
Weston	14	2	2	1	0	0	19	12,067	19.05%	9.85%	3.15%	\$181,667
MWRC Subtotals	72	5	12	2	2	0	93	244,780	20.95%	14.02%	8.62%	\$104,153

(Table D-2 cont.)

Municipality	Number of Work Products							Demographics				
	2010–15 Total	2016	2017	2018	2019	2020	2010–20 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents Age 5+ with Low English Proficiency	Household Median Income
Burlington	11	1	1	0	1	0	14	27,059	24.55%	10.75%	7.88%	\$105,443
Lynnfield	4	1	1	0	0	0	6	12,847	8.73%	6.30%	2.84%	\$132,632
North Reading	2	1	1	0	0	0	4	15,642	9.12%	7.01%	2.50%	\$126,818
Reading	10	1	1	0	0	0	12	25,100	7.49%	10.23%	2.02%	\$112,634
Stoneham	4	1	1	0	0	0	6	22,144	7.87%	11.45%	4.49%	\$94,835
Wakefield	3	1	1	0	0	0	5	26,960	7.02%	11.89%	4.28%	\$95,302
Wilmington	5	1	1	0	1	1	8	23,658	10.63%	10.30%	3.35%	\$122,813
Winchester	4	2	1	1	0	0	8	22,677	16.79%	6.83%	5.77%	\$159,536
Woburn	7	1	2	1	1	0	12	40,298	20.18%	15.19%	8.89%	\$88,745
NSPC Subtotals	50	10	10	2	3	1	76	216,385	13.48%	10.74%	4.91%	\$107,094
Beverly	5	0	1	1	1	1	8	41,731	6.64%	17.39%	2.96%	\$79,483
Danvers	6	0	1	0	1	0	8	27,631	6.17%	15.00%	2.39%	\$84,842
Essex	0	0	1	0	1	0	2	3,713	1.02%	13.60%	0.86%	\$113,469
Gloucester	2	0	1	0	0	0	3	30,049	5.46%	23.82%	3.62%	\$65,377
Hamilton	1	0	1	0	1	0	3	8,020	6.70%	16.03%	2.62%	\$133,333
Ipswich	1	0	1	0	0	0	2	13,901	4.20%	16.67%	2.45%	\$90,557
Manchester	0	0	2	1	1	0	4	5,370	0.97%	10.19%	2.74%	\$124,025
Marblehead	2	0	2	0	0	0	4	20,488	4.40%	12.13%	3.87%	\$115,511
Middleton	0	1	2	0	0	0	3	9,779	8.02%	6.27%	2.27%	\$102,604
Peabody	4	0	2	2	1	1	9	52,865	9.96%	22.87%	8.49%	\$68,387
Rockport	3	0	1	2	0	0	6	7,212	2.47%	15.35%	0.76%	\$81,681
Salem	7	1	3	2	1	1	14	43,302	22.83%	29.15%	9.28%	\$65,565
Swampscott	3	0	2	1	0	1	6	14,755	4.84%	8.64%	3.98%	\$113,422

(Table D-2 cont.)

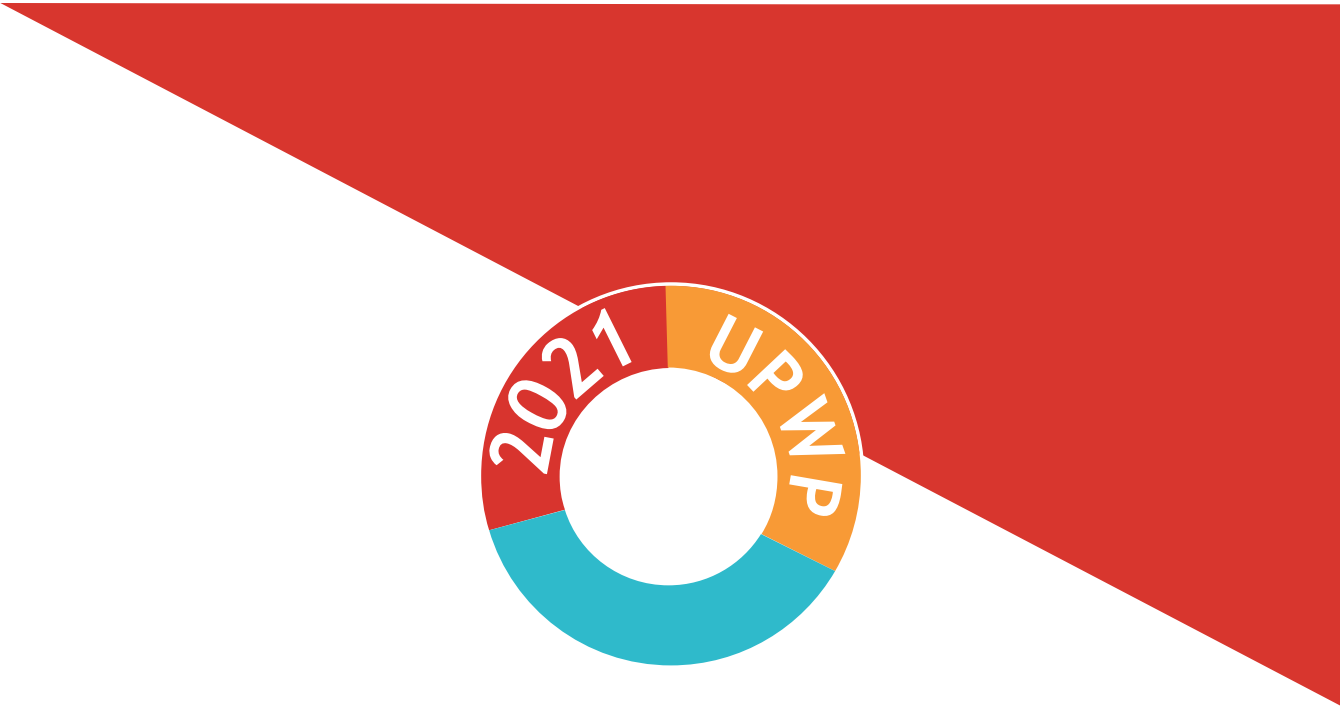
Municipality	Number of Work Products							Demographics				
	2010–15 Total	2016	2017	2018	2019	2020	2010–20 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents Age 5+ with Low English Proficiency	Household Median Income
Topsfield	0	0	2	0	0	0	2	6,551	3.18%	9.92%	1.75%	\$136,812
Wenham	1	0	1	1	0	0	3	5,208	7.78%	5.49%	2.37%	\$109,712
NSTF Subtotals	35	2	23	10	7	4	81	294,070	8.78%	18.67%	4.60%	\$80,291
Braintree	9	1	0	0	0	1	10	37,207	18.12%	13.41%	7.02%	\$94,945
Cohasset	3	0	0	0	0	0	3	8,449	2.53%	9.37%	0.24%	\$132,204
Hingham	2	0	0	1	2	1	7	23,298	3.59%	9.53%	1.19%	\$133,596
Holbrook	3	0	0	0	0	0	3	11,036	20.42%	14.79%	5.31%	\$70,364
Hull	1	0	0	0	0	0	1	10,424	3.84%	15.37%	1.67%	\$85,573
Marshfield	2	0	0	0	0	0	2	25,754	4.59%	15.35%	1.88%	\$96,514
Norwell	2	0	0	1	1	1	5	10,987	3.73%	6.29%	0.61%	\$151,306
Rockland	1	0	0	1	0	0	2	17,909	6.42%	15.50%	2.82%	\$79,807
Scituate	3	0	0	1	0	0	4	18,591	4.69%	9.43%	1.14%	\$116,750
Weymouth	6	0	0	1	0	0	7	56,384	13.98%	18.63%	4.37%	\$79,034
SSC Subtotals	35	1	0	5	3	3	47	220,039	9.97%	14.05%	3.19%	\$93,735
Bellingham	3	0	0	1	0	0	4	17,016	6.52%	9.84%	2.82%	\$99,569
Franklin	3	0	0	0	0	0	3	33,022	9.59%	8.64%	1.61%	\$115,355
Hopkinton	7	0	0	0	0	0	7	17,178	13.96%	6.47%	2.34%	\$166,156
Medway	4	0	0	0	0	0	4	13,244	7.69%	9.46%	1.37%	\$119,450
Milford	8	0	0	1	0	0	9	28,789	17.03%	19.33%	10.81%	\$82,129
Millis	3	0	0	0	0	0	3	8,202	5.93%	10.11%	3.29%	\$106,336
Norfolk	2	0	0	0	0	0	2	11,748	14.14%	4.22%	2.22%	\$146,607
Sherborn	4	0	0	0	0	0	4	4,301	8.65%	6.18%	2.49%	\$180,769
Wrentham	3	0	0	0	0	0	3	11,734	3.49%	10.24%	1.17%	\$113,017

(Table D-2 cont.)

Municipality	Number of Work Products							Demographics				
	2010–15 Total	2016	2017	2018	2019	2020	2010–20 Total	Total Population	Percent Minority	Percentage of Residents in Poverty	Percentage of Residents Age 5+ with Low English Proficiency	Household Median Income
SWAP Subtotals	37	0	0	2	0	0	39	151,221	10.84%	10.17%	3.53%	\$113,415
Canton	2	0	2	2	1	3	7	23,134	18.36%	9.28%	6.27%	\$105,371
Dedham	5	1	0	0	1	2	7	25,377	16.38%	13.91%	5.52%	\$96,992
Dover	4	0	0	0	1	0	5	5,987	14.48%	2.09%	3.78%	\$224,784
Foxborough	4	0	0	0	1	2	5	17,535	10.04%	13.19%	2.08%	\$98,374
Medfield	1	0	0	0	1	0	2	12,748	6.61%	9.93%	1.59%	\$155,039
Milton	5	0	0	2	2	1	9	27,568	25.93%	9.12%	4.38%	\$127,448
Needham	7	1	0	1	2	0	11	30,735	14.55%	5.69%	5.08%	\$153,032
Norwood	2	0	0	0	2	2	4	29,201	16.82%	14.55%	6.72%	\$90,511
Randolph	4	0	0	0	1	0	5	33,924	61.91%	21.90%	16.59%	\$73,697
Sharon	0	0	0	0	1	0	1	18,400	22.99%	5.30%	6.39%	\$138,396
Walpole	4	0	0	0	1	2	5	25,075	11.63%	10.09%	2.74%	\$112,897
Westwood	6	0	0	1	1	2	8	15,863	12.34%	6.01%	4.67%	\$155,706
TRIC Subtotals	44	2	2	6	15	14	83	265,547	22.04%	11.22%	5.90%	\$111,398
Grand Total	509	41	74	76	72	48	820	3,313,247	26.68%	20.27%	10.43%	\$88,830

Notes:

- Demographic data is from American Community Survey (ACS) five-year estimates, 2014–18. Margins of error are at the 90 percent confidence level.
- MPO staff tabulates limited English proficiency (LEP) for the population age five and older, and minority and poverty status for the entire population. People in the MPO region are considered low income if their annual family income is 200 percent or less of the national poverty level based on family size.
- People with LEP are those that speak English less than very well, according to the ACS.
- People who identify as minority are those who identify as Hispanic or Latino/a/x and/or Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or other Pacific Islander.
- Duxbury, Hanover, Pembroke, and Stoughton transitioned out of the Boston Region MPO in Federal Fiscal Year 2018, so work product totals for some subregions may have changed from previous UPWPs.



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 2020 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 Sandy Johnston, UPWP Manager, at sjohnston@ctps.org.

**Table D-3
Regionally Focused MPO Funded UPWP Studies**

FFY 2020	
CTPS	MAPC
<ul style="list-style-type: none"> • Transit Mitigation for New Development Sites • Operating a Successful Shuttle Program • Further Development of the MPO’s Community Transportation Program • Disparate Impact Metrics Analysis • Pedestrian Report Card Assessment Dashboard 	<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

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.

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
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
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

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

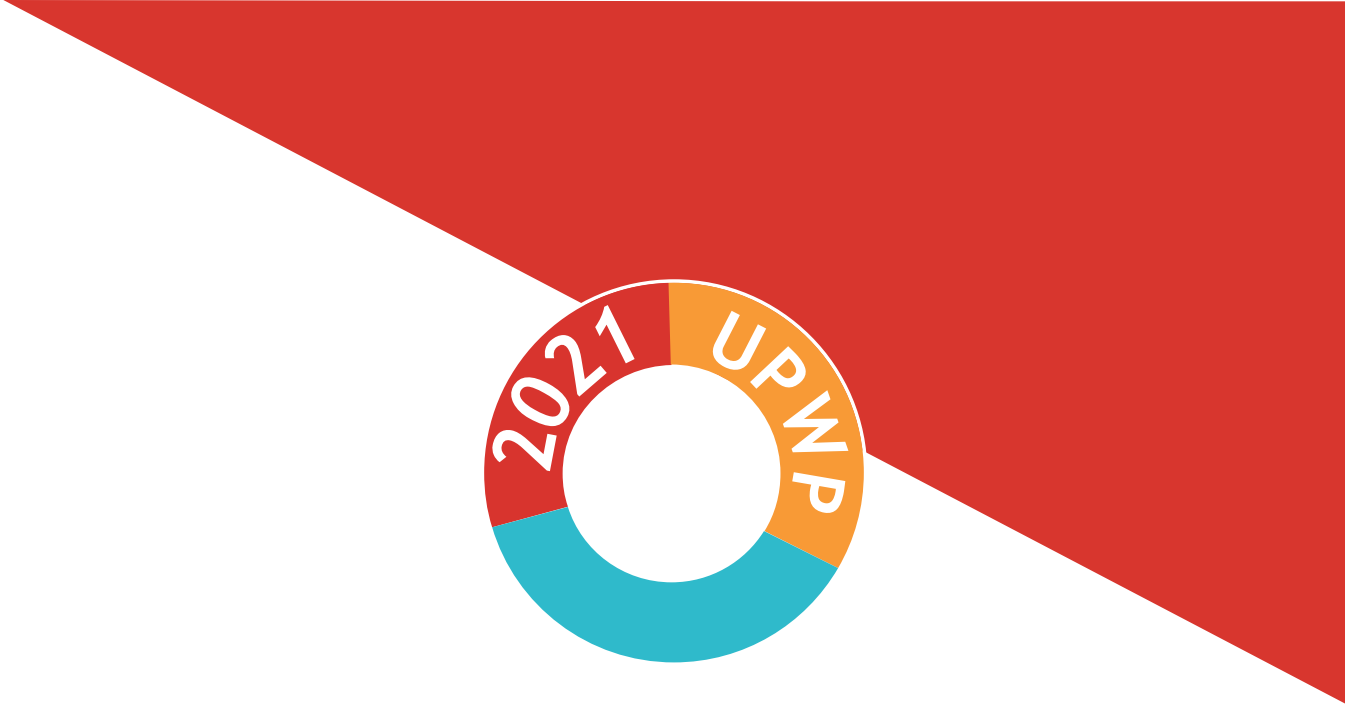
USES FOR THE DATA

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 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 plays a critical role in helping the region move closer to achieving federal, state, and regional transportation goals. Therefore, an important part of the MPO's core work is to ensure that the MPO's planning activities align with federal and state regulatory guidance. 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) 2021.

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 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.

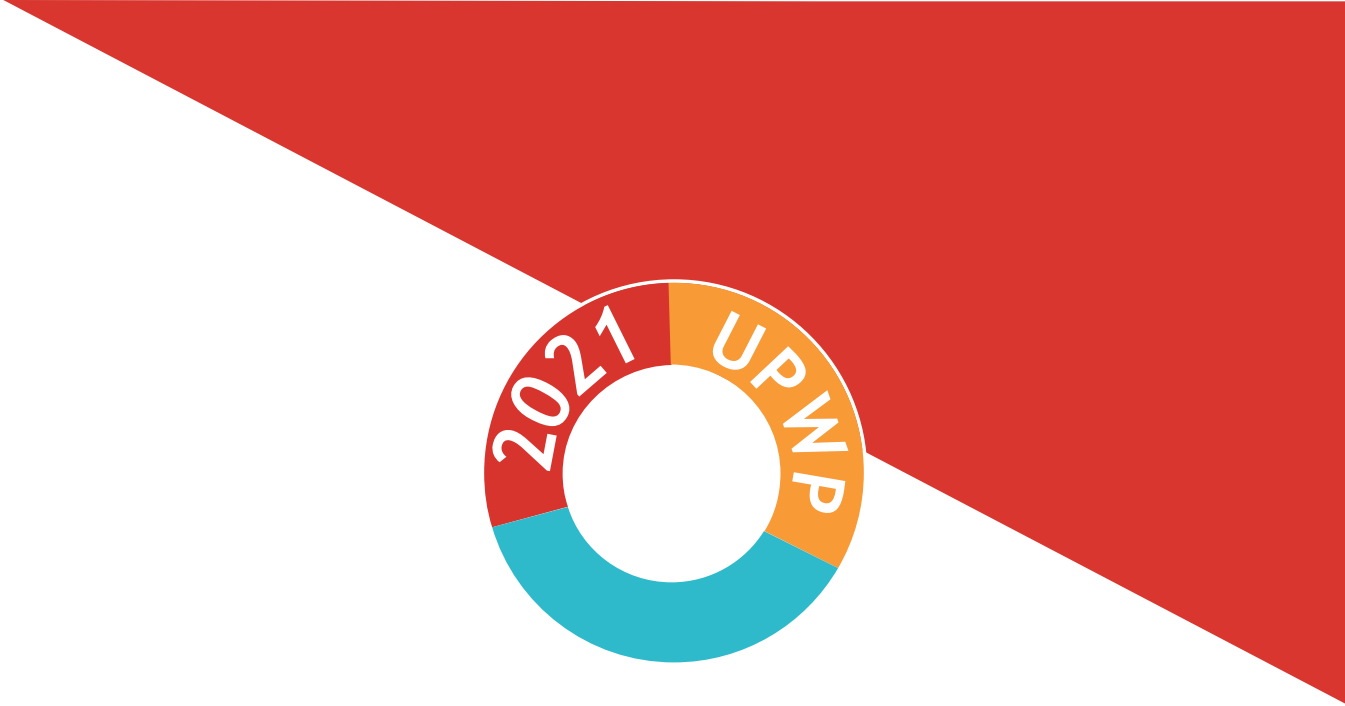
FAST Act: Planning Factors

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. The FAST Act added two new planning factors to the eight factors established in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) transportation legislation. In accordance with the legislation, studies and strategies undertaken by the MPO shall

1. Support the economic vitality of the metropolitan area, especially by enabling global 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 2021 MPO studies and activities and these federal planning factors.



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.

1990 Clean Air Act Amendments

The Clean Air Act, most recently amended in 1990, forms the basis of the US air pollution control policy. This 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 MPO regions 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 EPA's revocation of the 1997 ozone NAAQS. Massachusetts was designated as an attainment area for 2008 ozone NAAQS, but as a nonattainment or maintenance area for 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 (TCMs) 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. TCMs in the SIP 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 projects (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 (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), the 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 considers distribution of the potential beneficial and adverse effects to populations covered by these mandates when making project programming decisions. The MPO conducts activities as part of its Transportation Equity Program to ensure that the MPO meets these requirements. The MPO's TIP development process accounts for transportation equity when developing project selection criteria, evaluating and selecting projects, and analyzing their impacts.

The MPO staff also supports the Massachusetts Department of Transportation (MassDOT) as it conducts its Title VI Program. 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 persons who, as a result of national origin, have limited English proficiency (LEP). Specifically, it calls for improved access to federally assisted programs and activities, and requires MPOs to develop and implement a system through which people with LEP 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 ways for people with LEP to access services and programs.

Environmental Justice Executive Order

Executive Order 12898, dated February 11, 1994, requires each federal agency to achieve 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, 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 Americans with Disabilities Act (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 buildings 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 Boston Region 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 by 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 Boston region.

Massachusetts Strategic Highway Safety Plan (SHSP)

The *Massachusetts 2018 SHSP* identifies the Commonwealth'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 Commonwealth's safety challenges collectively. The Boston Region MPO considers SHSP goals, emphasis areas, and strategies when developing its plans, programs, and activities.

MassDOT's 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 also 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 Global Warming Solutions Act (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, 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

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 utilize investment programs—particularly its Complete Streets and Bicycle and Pedestrian programs—that support the implementation of Complete Streets projects. In the Unified Planning Work Program (UPWP), the MPO programs support for 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 National Highway System (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 (PMT), 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

RailVision plan, which will inform the vision for the future of the MBTA's commuter rail system; the Better Bus Project, the plan to 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.

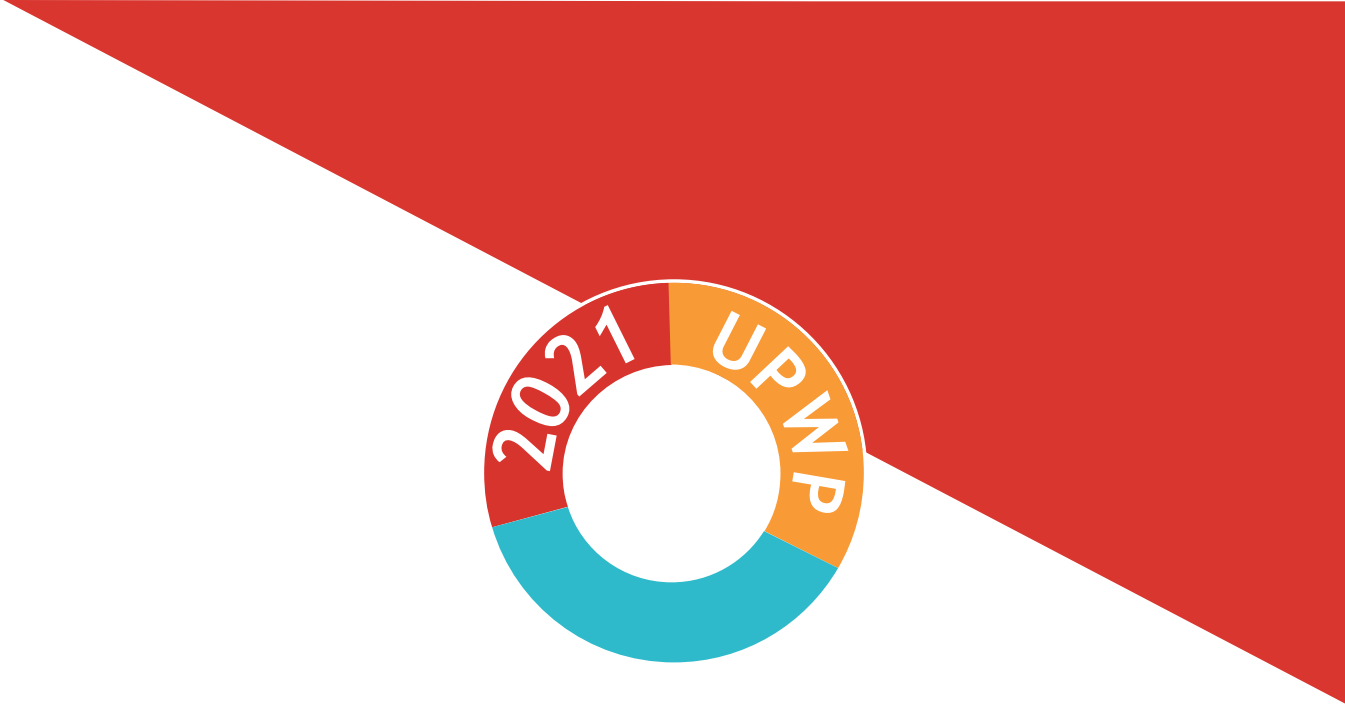
MetroFuture

MetroFuture, which was developed by the Metropolitan Area Planning Council (MAPC) and adopted in 2008, is the long-range plan for land use, housing, economic development, and environmental preservation for the Boston region. It includes a vision for the region's future and a set of strategies for achieving that vision, and is the foundation for land use projections used in the Boston Region MPO's LRTP, *Destination 2040*.

MAPC is now developing *MetroCommon*, the next regional plan, which will build off of *MetroFuture* and include an updated set of strategies for achieving sustainable growth and equitable prosperity. The MPO will continue to consider *MetroFuture's* goals, objectives, and strategies in its planning and activities, and monitor *MetroCommon* as it develops. See Chapter 7 for more information about *MetroCommon* development activities.

The Boston Region MPO's Congestion Management Process

The purpose of the Congestion Management Process (CMP) is to monitor and analyze performance of highway 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.



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

The **MBTA**, created in 1964, is a body politic and corporate, and a political subdivision of the Commonwealth. Under the provisions of Chapter 161A of the Massachusetts General Laws (MGL), it has the statutory responsibility within its district of operating the public transportation system, preparing the engineering and architectural designs for transit development projects, and constructing and operating transit development projects. The MBTA district comprises 175 communities, including all of the 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. As of this writing, the FMCB's mandate has not been extended further.

The FMCB's goals target governance, finance, and agency structure and operations through recommended executive and legislative actions that embrace transparency and develop stability in order to earn public trust. By statute, the FMCB consists of five members, one with experience in transportation finance, one with experience in mass transit operations, and three who are also members of the MassDOT Board of Directors.

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, 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 MGL. It is the Boston Metropolitan Clearinghouse under Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966 and Title VI of the Intergovernmental Cooperation Act of 1968. Also, its region has been designated an economic development district under Title IV of the Public Works and Economic Development Act of 1965, as amended. MAPC's responsibilities for comprehensive planning 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 Woburn**), and six elected towns (currently **Acton, Arlington, Lexington, 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.

