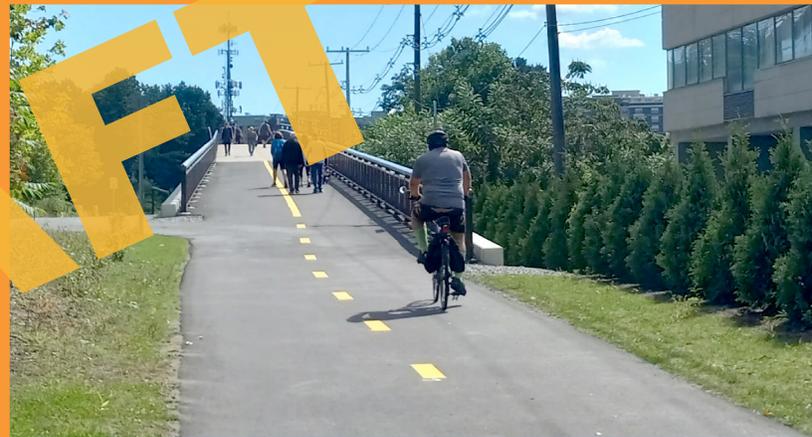




TRANSPORTATION IMPROVEMENT PROGRAM FFYS 2023-27



TRANSPORTATION IMPROVEMENT PROGRAM

Federal Fiscal Years 2023–27

Boston Region MPO
DRAFT FOR PUBLIC REVIEW, MAY 2, 2022

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

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

Massachusetts Department of Transportation

Metropolitan Area Planning Council

Massachusetts Bay Transportation Authority

MBTA Advisory Board

Massachusetts Port Authority

Regional Transportation Advisory Council

City of Boston

City of Beverly

City of Everett

City of Framingham

City of Newton

City of Somerville

Town of Arlington

Town of Acton

Town of Brookline

Town of Burlington

Town of Medway

Town of Norwood

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[CERTIFICATION STATEMENT]

These pages will list the eleven requirements of the transportation planning process to be conducted by Metropolitan Planning Organizations (MPOs) and certify that the Boston Region MPO complies with these requirements. The certification of the Transportation Planning Process will be signed by the chair of the Boston Region MPO after the final endorsement of the FFYs 2023–27 TIP.

[GLOBAL WARMING SOLUTION ACT]

These pages will list the eleven requirements of State Regulation 310 CMR 60.05: Global Warming Solutions Act to be conducted by Metropolitan Planning Organizations (MPOs) and certifies that the Boston Region MPO complies with these requirements. The certification of State Regulation 310 CMR 60.05: Global Warming Solutions Act will be signed by the chair of the Boston Region MPO after the final endorsement of the FFYs 2023–27 TIP.

ABBREVIATIONS

Acronym	Definition
3C	continuous, comprehensive, cooperative [metropolitan transportation planning process]
AAB	Massachusetts Architectural Access Board
AADT	average annual daily traffic
ABP	Accelerated Bridge Program [MassDOT program]
AC	advance construction
ACS	American Community Survey [US Census Bureau data]
ADA	Americans with Disabilities Act of 1990
AFC	automated fare collection
ARPA	American Rescue Plan Act
BIL	Bipartisan Infrastructure Law
BFP	Bridge Formula Program [federal funding program]
BRT	bus rapid transit
CA/T	Central Artery/Tunnel [project also known as “the Big Dig”]
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
CATA	Cape Ann Transportation Authority
CECP	Massachusetts Clean Energy and Climate Plan
CFR	Code of Federal Regulations
CIP	Capital Investment Plan [MassDOT]
CMAQ	Congestion Mitigation and Air Quality [federal funding program]
CMR	Code of Massachusetts Regulations

Acronym	Definition
CMP	Congestion Management Process
CNG	compressed natural gas
CO	carbon monoxide
CO ₂	carbon dioxide
CPT–HST	Coordinated Public Transit–Human Services Transportation Plan
CRRSAA	Coronavirus Response and Relief Supplemental Appropriations Act
CTPS	Central Transportation Planning Staff
CY	calendar year
DCR	Department of Conservation and Recreation
DEP	Department of Environmental Protection [Massachusetts]
DOD	United States Department of Defense
DOT	department of transportation
EB	eastbound
EDTTT	excessive delay threshold travel time
EJ	environmental justice
EO	executive order
EOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
EOHED	Massachusetts Executive Office of Housing and Economic Development
EPA	United States Environmental Protection Agency
EPDO	equivalent property damage only [a traffic-related index]
EV	electric vehicle
FARS	Fatality Analysis and Reporting System [FHWA]
FAST Act	Fixing America’s Surface Transportation Act

Acronym	Definition
FEMA	Federal Emergency Management Agency
FFY	federal fiscal year
FHWA	Federal Highway Administration
FMCB	MBTA Fiscal and Management Control Board
FMLA	Federal Land Management Agency
FR	Federal Register
FTA	Federal Transit Administration
GANS	grant anticipation notes [municipal bond financing]
GHG	greenhouse gas
GWSA	Global Warming Solutions Act of 2008 [Massachusetts]
HIP	Highway Infrastructure Program [federal funding program]
HOV	high-occupancy vehicle
HSIP	Highway Safety Improvement Program [federal funding program]
ICC	Inner Core Committee [MAPC municipal subregion]
IRI	International Roughness Index
ITS	intelligent transportation systems
LED	light-emitting diode
LEP	limited English proficiency
LOTTR	level of travel time ratio
L RTP	Long-Range Transportation Plan [MPO certification document]
MAGIC	Minuteman Advisory Group on Interlocal Coordination [MAPC municipal subregion]
MAP-21	Moving Ahead for Progress in the 21st Century Act
MAPC	Metropolitan Area Planning Council

Acronym	Definition
MARPA	Massachusetts Association of Regional Planning Agencies
MART	Montachusett Regional Transit Authority
MassDOT	Massachusetts Department of Transportation
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MCRT	Mass Central Rail Trail
MOVES	Motor Vehicle Emissions Simulator [EPA air quality model]
MPO	metropolitan planning organization
MOU	memorandum of understanding
MWRC	MetroWest Regional Collaborative [MAPC municipal subregion]
MWRTA	MetroWest Regional Transit Authority
NAAQS	National Ambient Air Quality Standards
NB	northbound
NBI	National Bridge Inventory
NEVI	National Electric Vehicle Infrastructure Program [federal funding program]
NFA	Non-federal aid
NGBP	Next Generation Bridge Program [MassDOT program]
NH DOT	New Hampshire Department of Transportation
NHFP	National Highway Freight Program [federal funding program]
NHPP	National Highway Performance Program [federal funding program]
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NMCOG	Northern Middlesex Council of Governments

Acronym	Definition
NO _x	nitrogen oxides
NPMRDS	National Performance Measure Research Data Set [FHWA]
NSPC	North Suburban Planning Council [MAPC municipal subregion]
NSTF	North Shore Task Force [MAPC municipal subregion]
NTD	National Transit Database
O&M	operations and management
PBPP	performance-based planning and programming
PHED	peak hours of excessive delay
PL	metropolitan planning funds [FHWA] or public law funds
PM	particulate matter
PNF	project need form [MassDOT]
ppm	parts per million
PRC	Project Review Committee [MassDOT]
PSAC	Project Selection Advisory Council [MassDOT]
PSI	Pavement Serviceability Index
PTASP	Public Transportation Agency Safety Plan
RITIS	Regional Integrated Transportation Information System
RRIF	Railroad Rehabilitation and Improvement Financing
RTA	regional transit authority
RTAC	Regional Transportation Advisory Council [of the Boston Region MPO]
SB	southbound
SFY	state fiscal year

Acronym	Definition
SHSP	Strategic Highway Safety Plan
SIP	State Implementation Plan
SMS	safety management systems
SOV	single-occupant vehicle
SPR	Statewide Planning and Research
SRTS	Safe Routes to School [federal program]
SSC	South Shore Coalition [MAPC municipal subregion]
STRAHNET	Strategic Highway Network
STBGP	Surface Transportation Block Grant Program [federal funding program]
STIP	State Transportation Improvement Program
SWAP	South West Advisory Planning Committee [MAPC municipal subregion]
TAM	Transit Asset Management Plan
TAMP	Transportation Asset Management Plan
TAP	Transportation Alternatives Program [federal funding program]
TAZ	transportation analysis zone
TBD	to be determined
TCM	transportation control measure
TE	transportation equity
TERM	Transit Economic Requirements Model [FTA]
TIFIA	Transportation Infrastructure and Innovation Act
TIP	Transportation Improvement Program [MPO certification document]
TMA	transportation management association
TRIC	Three Rivers Interlocal Council [MAPC municipal subregion]

Acronym	Definition
TSP	transit signal priority
TTTR	Truck Travel Time Reliability Index
ULB	useful life benchmark
UPWP	Unified Planning Work Program [MPO certification document]
USC	United States Code
USDOT	United States Department of Transportation
UZA	urbanized area
WB	westbound
VPI	virtual public involvement
VMT	vehicle-miles traveled
VOCs	volatile organic compounds
VRM	vehicle revenue-miles

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EXECUTIVE SUMMARY

INTRODUCTION

The Boston Region Metropolitan Planning Organization's (MPO) five-year capital investment plan, the Federal Fiscal Years (FFYs) 2023–27 Transportation Improvement Program (TIP), is the near-term investment program for the region's transportation system. Guided by the Boston Region MPO's vision, goals, and objectives, the TIP prioritizes investments that preserve the current transportation system in a state of good repair, provide safe transportation for all modes, enhance livability, promote equity and sustainability, and improve mobility throughout the region. These investments fund arterial roadway and intersection improvements, maintenance and expansion of the public transit system, bicycle path construction, infrastructure improvements for pedestrians, and major highway reconstruction.

The Boston Region MPO is guided by a 22-member board with representatives of state agencies, regional organizations, and municipalities. Its jurisdiction extends roughly from Boston north to Ipswich, south to Marshfield, and west to municipalities along Interstate 495. Each year, the MPO conducts a process to decide how to spend federal transportation funds for capital projects. The Central Transportation Planning Staff (CTPS), which is the staff to the MPO, manages the TIP development process.

MPO staff coordinates the evaluation of project funding requests, proposes programming of current and new projects based on anticipated funding levels, supports the MPO board in developing a draft TIP document, and facilitates a public review of the draft before the MPO board endorses the final document.

FFYS 2023–27 TIP INVESTMENTS

The complete TIP program is available in Chapter 3 of this document and online at bostonmpo.org/tip. The TIP tables provide details of how funding is allocated to each programmed project and capital investment program. These tables are organized by federal fiscal year and are grouped by highway and transit programs.

Highway Program

The Highway Program of the TIP funds the priority transportation projects advanced by the Massachusetts Department of Transportation (MassDOT) and the cities and towns within the Boston region. The program is devoted primarily to preserving and modernizing the existing roadway network by reconstructing arterial roadways, resurfacing highways, and replacing bridges.

In Massachusetts, Federal-Aid Highway Program funding is apportioned by MassDOT, which allocates funding to Grant Anticipation Notes (GANs) payments, various statewide programs, and Regional Targets for the state's MPOs. In the FFYs 2023–27 TIP, roadway, bridge, and bicycle and pedestrian programs account for more than \$2.5 billion in funding to the Boston region. The Regional Target funding provided to the MPOs may be programmed for projects at the discretion of each MPO, whereas MassDOT has discretion to propose its recommended projects for statewide programs, such as those related to bridge repairs and interstate highway maintenance.

Transit Program

The Transit Program of the TIP provides funding for projects and programs that address the capital needs prioritized by the three transit authorities in the region: the Massachusetts Bay Transportation Authority (MBTA), the Cape Ann Transportation Authority (CATA), and the MetroWest Regional Transit Authority (MWRTA). The Transit Program is predominantly dedicated to achieving and maintaining a state of good repair for all assets throughout the transit system.

The FFYs 2023–27 TIP includes nearly \$4 billion in transit investments by the transit authorities that will support state of good repair, modernize transit systems, and increase access to transit. Additionally, beginning in FFY 2025, the MPO will allocate five percent of its annual Regional Target funds to its new Transit Modernization investment program. This program aims to build on the investments made through the Transit Program by using a portion of Highway Program funding to fulfill unmet transit project needs in the region. The MPO has already begun to fund discrete projects through this program prior to FFY 2025 based on a surplus of available funding in FFYs 2023 and 2024, as detailed below.

REGIONAL TARGET PROGRAM DETAILS

During FFYs 2023–27, the Boston Region MPO plans to fund 51 projects with its Regional Target funding. In total, 23 new projects were added to the MPO’s Regional Target program during this TIP cycle. Details on these projects are available in table ES-1.

Table ES-1
New Regional Target Projects Funded in the FFYs 2023–27 TIP

Project Name	Municipality (Proponent)	MPO Investment Program	FFYs of Funding	Regional Target Dollars Programmed in FFYs 2023–27
Lynn Station Improvements Phase II	Lynn (MBTA)	Transit Modernization	2023–24	\$48,100,000
Rehabilitation of Washington Street	Brookline	Complete Streets	2027	\$30,030,812
Bridge Rehabilitation, Commonwealth Avenue (Route 30) over the Charles River	Newton and Weston (MassDOT)	Complete Streets	2024	\$22,725,820
Community Path, Belmont Component of the MCRT (Phase 1)	Belmont	Bicycle and Pedestrian	2026	\$21,034,382

(Table ES-1 continued, 2)

Project Name	Municipality (Proponent)	MPO Investment Program	FFYs of Funding	Regional Target Dollars Programmed in FFYs 2023–27
McGrath Boulevard Construction*	Somerville (MassDOT)	Major Infrastructure	2027	\$20,000,000
Reconstruction on Route 30	Weston	Complete Streets	2026	\$17,028,272
Reconstruction of Western Avenue*	Lynn	Complete Streets	2027	\$15,000,000
Boston Street Improvements	Salem	Complete Streets	2026	\$13,977,600
Park and Pearl Street Reconstruction	Chelsea	Complete Streets	2027	\$12,123,769
Rail Trail Construction	Swampscott	Bicycle and Pedestrian	2027	\$8,932,000
Forest Hills Station Improvement Project**	Boston (MBTA)	Transit Modernization	2024	\$6,400,000
Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	Weston	Intersection Improvements	2026	\$2,681,330
Montachusett RTA Microtransit Service	Bolton, Boxborough, Littleton, and Stow (MART)	Community Connections	2023–25	\$1,316,061
Pleasant Street Shuttle Service Expansion	Watertown	Community Connections	2023–25	\$1,002,198
NewMo Microtransit Service Expansion	Newton	Community Connections	2023–25	\$890,574
CATA On Demand Microtransit Service Expansion	Gloucester and Rockport (CATA)	Community Connections	2023–25	\$813,291
Stoneham Shuttle Service	Stoneham	Community Connections	2023–25	\$796,817

(Table ES-1 continued, 3)

Project Name	Municipality (Proponent)	MPO Investment Program	FFYs of Funding	Regional Target Dollars Programmed in FFYs 2023–27
CatchConnect Microtransit Service Expansion	Hudson and Marlborough (MWRTA)	Community Connections	2023–25	\$450,163
Bluebikes Station Replacement and System Expansion	Cambridge	Community Connections	2023	\$349,608
Bluebikes System Expansion	Malden and Medford	Community Connections	2023	\$145,821
Bluebikes System Expansion	Salem	Community Connections	2023	\$119,629
Bicycle Parking along the Bruce Freeman Rail Trail	Acton	Community Connections	2023	\$8,017
Chenery Middle School Bicycle Parking	Belmont	Community Connections	2023	\$4,376
Total	N/A	N/A	N/A	\$223,930,540

Note: Funding amounts in this table include both federal and non-federal funds, including matching funds.

*Funding in this table represents the first year of funding, with additional funding anticipated to be allocated to these projects by the Boston Region MPO in future fiscal years.

**Funding in this table represents partial funding. Additional funding sources will be identified for the Forest Hills Station Improvement Project in future fiscal years. The total project cost is \$68,000,000.
CATA = Cape Ann Transportation Authority. FFY = federal fiscal year. MART = Montachusett Area Regional Transit. MCRT = Mass Central Rail Trail. MWRTA = MetroWest Regional Transit Authority. N/A = not applicable. RTA = regional transit authority.

Source: Boston Region MPO.

The event that drove the development of the FFYs 2023–27 TIP was the signing of the Bipartisan Infrastructure Law (BIL), on November 15, 2021. The BIL is the new five-year federal funding authorization for transportation projects and programs, replacing the Fixing America’s Surface Transportation Act as the primary governing legislation for the TIP process. The BIL increased the amount of Regional Target funding available to the Boston Region MPO for the development of the FFYs 2023–27 TIP by approximately 20 percent from the funding levels in the FFYs 2022–26 TIP. These additional funds allowed the MPO to program a significantly greater number of new projects in this TIP cycle (23) than in the FFYs 2022–26 TIP cycle (10) or the FFYs 2021–25 TIP cycle (8).

As in most years, the majority of the funding available for allocation by the MPO during the FFYs 2023–27 TIP cycle was in the fifth and final year of the TIP, FFY 2027. Unlike in most years, however, the addition of approximately \$20 million in new BIL funding annually beginning in FFY 2023 created new funding surpluses in the early federal fiscal years of the TIP (FFYs 2023 and 2024). These surpluses were compounded by programming delays for two projects already funded by the MPO (project #606453—Improvements on Boylston Street and project #606226—Reconstruction of Rutherford Avenue, both in Boston). Together, these dynamics led to a funding surplus in excess of \$90 million in FFYs 2023 and 2024.

The MPO did not have any currently funded Regional Target projects that could be accelerated to make use of these funds, so the MPO worked with MassDOT and the MBTA to identify projects that could be funded in these fiscal years. Jointly, MassDOT and the MBTA brought more than a dozen projects to the MPO for consideration, from which the MPO selected three projects for funding in FFYs 2023 and 2024:

- Lynn Station Improvements Phase II (Lynn)
- Bridge Rehabilitation, Commonwealth Avenue (Route 30) over the Charles River (Newton and Weston)
- Forest Hills Station Improvement Project (Boston)

These projects were not formally evaluated using the MPO’s project selection criteria prior to the MPO making draft funding decisions, as MPO staff did not have sufficient time to score the projects prior to the deadline for MPO decision-making. Despite not being scored, the projects generally align well with many of the MPO’s goals, including enhancing bicycle and pedestrian safety and access, and maintaining a state of good repair for the region’s transit system and critical roadways. Scoring information will be included for these projects when it is available.

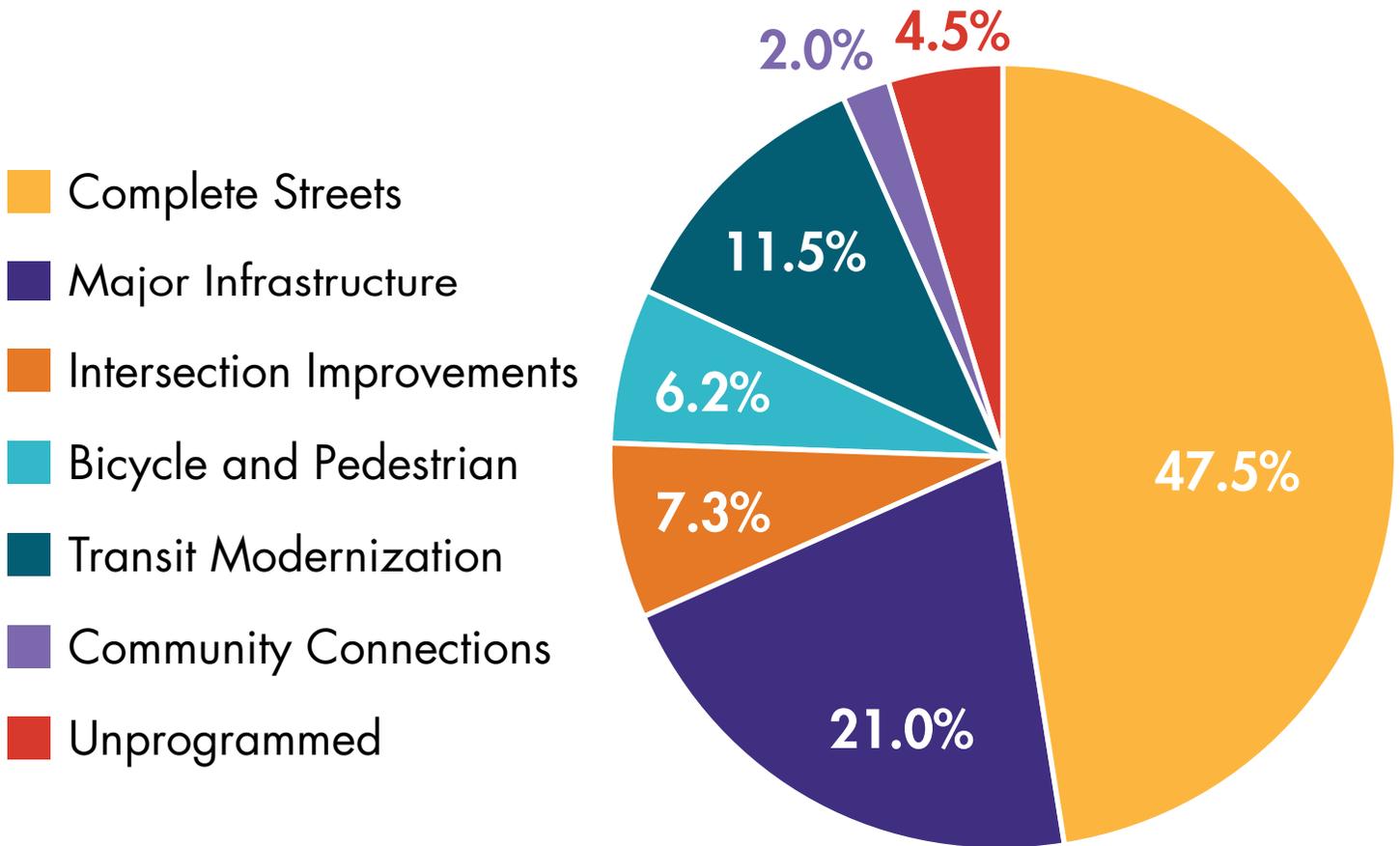
Several other key decisions were made by the MPO in the drafting of the FFYs 2023–27 Regional Target Program, including the following:

- Annual funding for the MPO’s Community Connections Program was increased from \$2 million to \$2.5 million, bringing this program’s funding level closer to the MPO’s two percent goal, after taking into account new funding available through the BIL.
- Annual funding for the MPO’s Transit Modernization Program was increased from \$5.5 million to \$6.5 million, bringing this program’s funding level closer to the MPO’s five percent goal, after taking into account new funding available through the BIL.
- Approximately \$29 million in Regional Target funding was left unallocated by the MPO, primarily in FFY 2024. The MPO will determine specific uses for these funds in a future TIP cycle.

Figure ES-1 shows how the Regional Target funding for FFYs 2023–27 is distributed across the MPO’s investment programs. As the chart shows, the Boston Region MPO’s Regional Target Program is devoted primarily to enhancing mobility and safety for all travel modes through significant investments in Complete Streets projects. A large portion of the MPO’s funding also supports the modernization of key regional roadways and transit infrastructure through

investments in Major Infrastructure and Transit Modernization projects. The MPO also elected to leave approximately \$29.2 million unprogrammed, preferring to retain these funds for use in future TIP cycles in support of a more flexible overall program in the coming fiscal years.

Figure ES-1
FFYs 2023–27 TIP Regional Target Funding by MPO Investment Program



FFY = federal fiscal year. MPO = metropolitan planning organization. TIP = Transportation Improvement Program.

Source: Boston Region MPO.

In addition to the distribution of funding across the MPO’s investment programs listed above, Table ES-2 further details the number of projects and the allocation of funds across each program in the FFYs 2023–27 TIP. As noted in Figure ES-1, the MPO has programmed more than 95 percent of its available funding over five years. More details about every project funded through the MPO’s Regional Target program are available in Chapter 3.

Table ES-2
FFYs 2023–27 Boston Region MPO Regional Target Investment Summary

MPO Investment Program	Number of Projects	Regional Target Dollars Programmed
Bicycle Network and Pedestrian Connections	4	\$40,222,704
Community Connections (allocated to projects)	13	\$6,374,274
Community Connections (not yet allocated to projects)	N/A	\$6,716,799
Complete Streets*	22	\$306,251,630
Intersection Improvements	7	\$47,175,058
Major Infrastructure—Roadway	3	\$135,371,843
Transit Modernization (allocated to projects)	2	\$54,500,000
Transit Modernization (not yet allocated to projects)	N/A	\$19,500,000
Unprogrammed	N/A	\$29,243,530
Total	51	\$645,355,838

Note: Funding amounts in this table include both federal and non-federal funds, including matching funds.

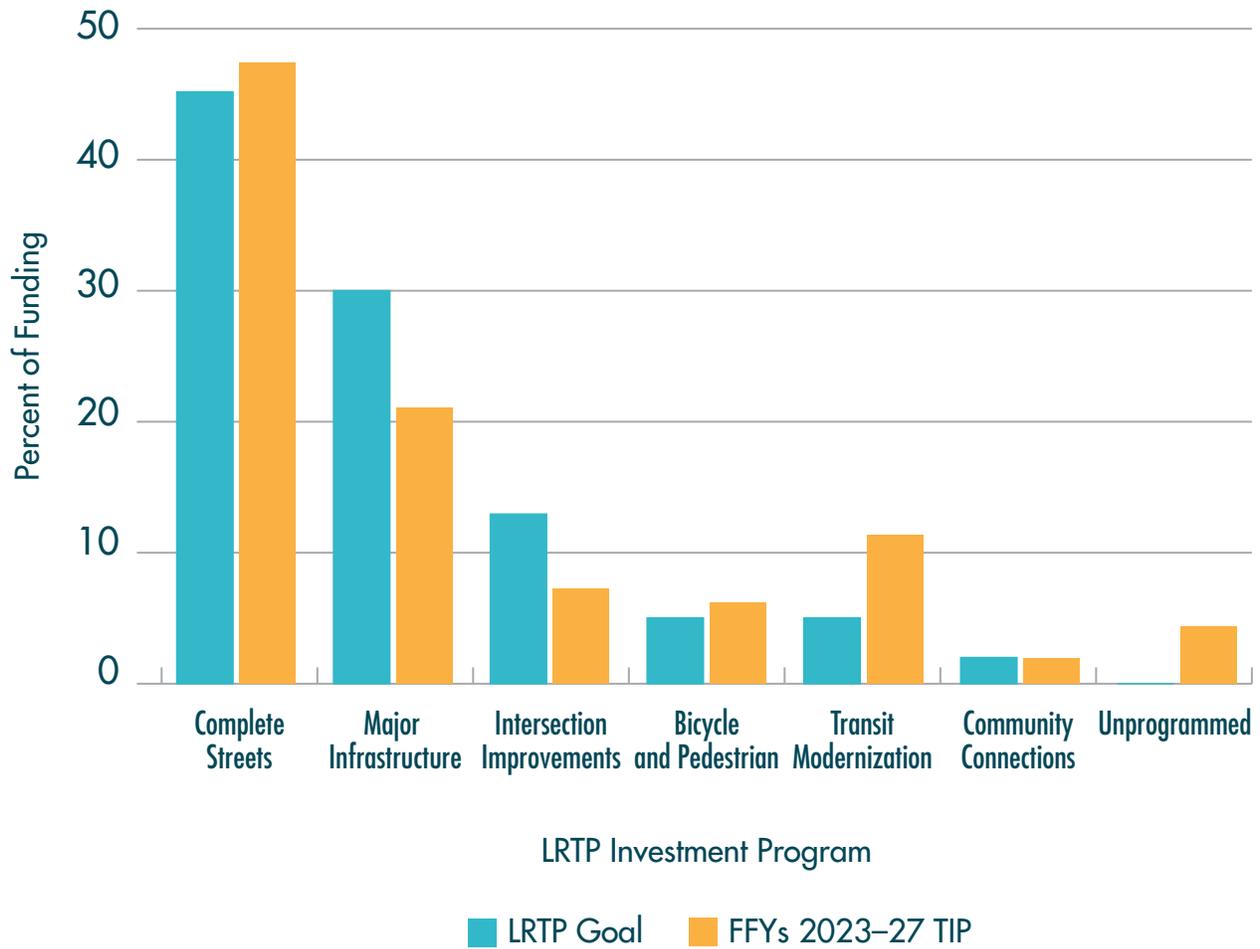
*One MPO-funded Complete Streets project (608348—Bridge Street) is partially funded through MassDOT’s Earmark Discretionary Program.

FFY = federal fiscal year. MPO = metropolitan planning organization. N/A = not applicable.

Source: Boston Region MPO.

When making decisions about which projects to fund, the MPO considers not only the relative distribution of funds across projects and investment programs, but also how the allocation of funds to each investment program compares to the funding goals outlined in the MPO’s Long-Range Transportation Plan (LRTP), *Destination 2040*. The investment program sizes set forth in the LRTP reflect the types of projects the MPO seeks to fund to help it achieve its goals and objectives for the region, from enhancing safety for all users to promoting mobility and accessibility across the region. More information on the MPO’s goals and objectives are available in Chapter 1, and a comparison between LRTP investment program sizes and program funding levels in the FFYs 2023–27 TIP is shown in Figure ES-2.

Figure ES-2
FFYs 2023–27 TIP: Regional Target Funding Levels Relative
to LRTP Investment Program Goals

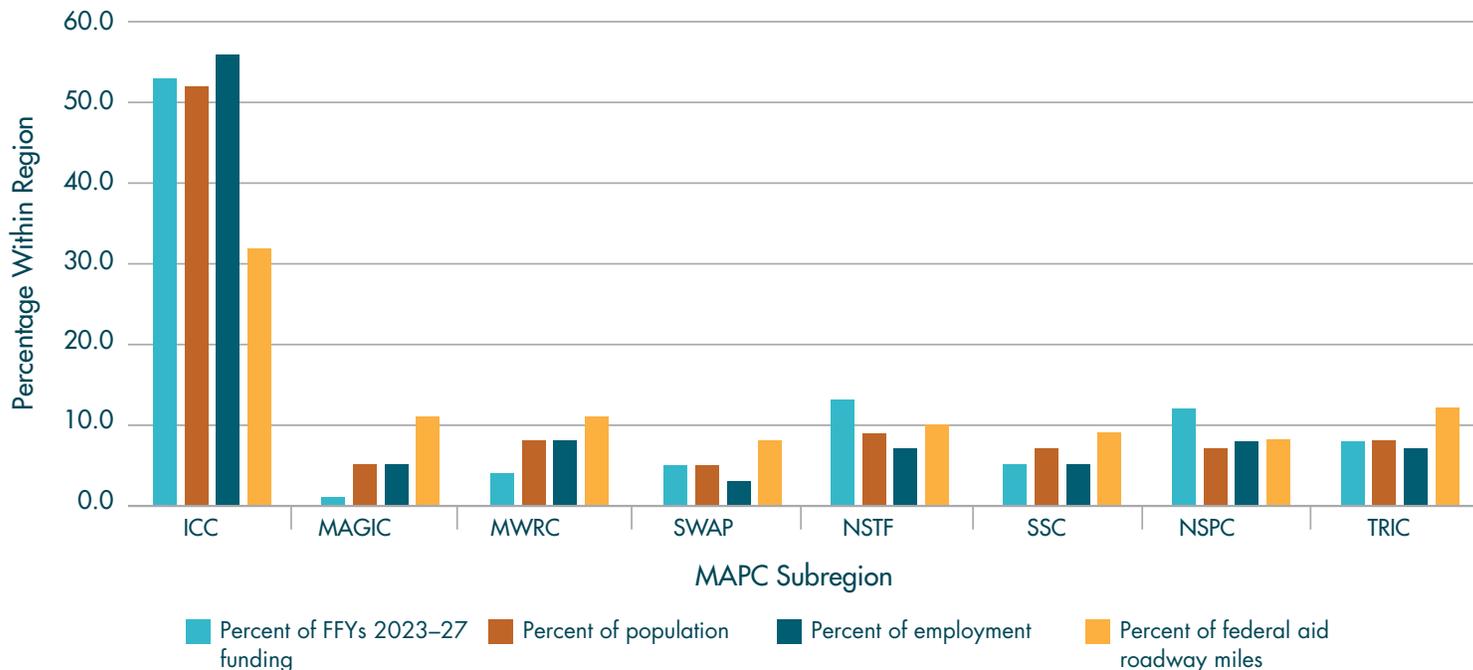


FFY = federal fiscal year. LRTP = Long-Range Transportation Plan. TIP = Transportation Improvement Program.

Source: Boston Region MPO.

The investments made in the FFYs 2023–27 TIP will be implemented in 47 cities and towns throughout the Boston region, ranging from dense inner core communities to developing suburbs further from the urban center. Figure ES-3 illustrates the distribution of Regional Target funding among the eight subregions within the Boston Region MPO’s jurisdiction, as defined by the Metropolitan Area Planning Council (MAPC). This figure also includes information about how the distribution of funds compares to key metrics for measuring the need for funding by subregion, including the percent of regional population, employment, and Federal-Aid roadway miles within each subregion.

Figure ES-3
FFYs 2023–27 TIP: Regional Target Funding Levels Relative to Key Indicators



Note: Unprogrammed funds and funds held for the MPO’s Transit Modernization and Community Connections Programs are not included in this figure.

FFY = federal fiscal year. MAGIC = Minuteman Advisory Group on Interlocal Coordination. MAPC = Metropolitan Area Planning Council. MetroWest = MetroWest Regional Collaborative. NSPC = North Suburban Planning Council. NSTF = North Shore Task Force. SSC = South Shore Coalition. SWAP = South West Advisory Committee. TIP = Transportation Improvement Program. TRIC = Three Rivers Interlocal Council.

Source: Boston Region MPO.

Additional information on the geographic distribution of Regional Target funding across the region, including a breakdown of funding by municipality, is included in Appendix D.

FINANCING THE FFYs 2023–27 TIP

Highway Program

The TIP Highway Program was developed with the assumption that federal funding for the state would range between \$789 million and \$850 million annually over the next five years. These amounts include the funds that would be set aside initially by MassDOT as payments for the Accelerated Bridge Program and exclude required matching funds. The funding levels for the FFYs 2023–27 TIP’s Highway Program represent an increase of approximately 18 percent over those in the FFYs 2022–26 TIP. This is a direct result of the broad increase in federal formula funding resulting from the passage of the BIL in November 2021.

The process of deciding how to use this federal funding in the Boston region follows several steps. First, MassDOT reserves funding for GANs debt service payments for the Accelerated Bridge Program; annual GANs payments range between \$89 million and \$134 million annually over the five years of this TIP.

The remaining Federal-Aid Highway Program funds are budgeted to support state and regional (i.e., MPO) priorities. In the FFYs 2023–27 TIP, \$870 million to \$895 million annually was available for programming statewide, including both federal dollars and the local match. MassDOT customarily provides the local match (which can also be provided by other entities); thus, projects are typically funded with 80 percent federal dollars and 20 percent state dollars, depending on the funding program. Costs for project design are borne by the proponent of the project.

Next, MassDOT allocates funding across the following funding categories:

- **Reliability Programs:** These programs include the Bridge Program—comprising inspections, systematic maintenance, and National Highway System (NHS) and non-NHS improvements—the Pavement Program, the Roadway Improvements Program, and the Safety Improvements Program.
- **Modernization Programs:** These programs include the Americans with Disabilities Act (ADA) Retrofit Program, the Intersection Improvement Program, the Intelligent Transportation Systems (ITS) Program, and the Roadway Reconstruction Program.
- **Expansion Programs:** These programs include the Bicycle and Pedestrian Program and the Capacity Program.

Finally, once these needs have been satisfied, MassDOT allocates the remaining funding among the state's 13 MPOs for programming. This discretionary funding for MPOs is sub-allocated by formula to determine the Regional Target amounts. The Boston Region MPO receives the largest portion of MPO funding in the state, with approximately 43 percent of Massachusetts' Regional Target funds allocated to the region. MassDOT develops these targets in consultation with the Massachusetts Association of Regional Planning Agencies (MARPA). This TIP was programmed with the assumption that the Boston Region MPO will have between \$129 million and \$132 million annually for Regional Target amounts, which consist of federal funding and state funding for the local match.

Each MPO may decide how to prioritize its Regional Target funding. Given that the Regional Target funding is a subset of the Highway Program, the MPO typically programs the majority of funding for roadway projects; however, the MPO has flexed portions of its highway funding to the Transit Program for transit expansion projects and through its Transit Modernization and Community Connections Programs. The TIP Highway Program details the projects that will receive Regional Target funding from the Boston Region MPO and statewide infrastructure projects within the Boston region. Details on these investments are outlined in Chapter 3.

Transit Program

The Federal Transit Administration (FTA) allocates the funds programmed in the TIP Transit Program according to formula. The three regional transit authorities in the Boston Region MPO area that are recipients of these funds are the MBTA, CATA, and MWRTA. The MBTA, with its extensive transit program and infrastructure, is the recipient of the preponderance of the region's federal transit funds.

As the current federal transportation legislation, the BIL allocates funding to transit projects through the following formula programs:

- **Section 5307 (Urbanized Area Formula Grants):** Provides grants to urbanized areas to support public transportation based on levels of transit service, population, and other factors
- **Section 5337 (Fixed Guideway/Bus):** Seeks to maintain public transportation systems in a state of good repair through replacement and rehabilitation capital projects
- **Section 5309 (Fixed Guideway Capital Investment Grants):** Provides grants for new and expanded rail, bus rapid transit, and ferry systems that reflect local priorities to improve transportation options in key corridors
- **Section 5339 (Bus and Bus Facilities):** Provides funding to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities
- **Section 5310 (Enhanced Mobility of Seniors and Individuals with Disabilities):** Provides funding to support transportation to meet the special needs of older adults and persons with disabilities

THE TIP DEVELOPMENT PROCESS

Overview

When determining which projects to fund through the Regional Target funding process, MPO members collaborate with municipalities, state agencies, members of the public, advocacy groups, and other stakeholders. The MPO board uses evaluation criteria in its project selection process to help identify and prioritize projects that advance progress on the MPO's six goal areas:

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

Additionally, the MPO has established investment programs, which are designed to direct Regional Target funding towards MPO priority areas over the next 20 years, to help meet these goals. The investment programs are as follows:

- Intersection Improvements
- Complete Streets
- Major Infrastructure
- Bicycle Network and Pedestrian Connections
- Community Connections
- Transit Modernization

Projects that the MPO selects to receive Regional Target funding through the TIP development process are included in one of the six investment programs listed above. More information on the MPO's investment programs is available in Chapter 2.

In recent years, the MPO has been incorporating performance-based planning and programming (PBPP) practices into its TIP development and other processes. These practices are designed to help direct MPO funds towards achieving specific outcomes for the transportation system. The MPO's goals and investment programs are key components of its PBPP framework. In FFY 2018, the MPO began to set targets for specific performance measures. Over time, the MPO will more closely link its performance targets, investment decisions, and monitoring and evaluation activities. More information on PBPP is available in Chapter 4 as well as in Appendix A (Table A-2).

Outreach and Data Collection

The outreach process begins early in the federal fiscal year, when cities and towns designate TIP contacts and begin developing a list of priority projects to be considered for federal funding, and the MPO staff asks the staffs of cities and towns in the region to identify their priority projects. MPO staff compiles the project funding requests into a *Universe of Projects*, a list of all Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure projects identified as potential candidates to receive funding through the TIP. Projects seeking funding through the MPO's Community Connections Program are not included in the *Universe*, as all projects that apply for this program's discrete application process are considered for funding. The MPO does not currently list Transit Modernization projects in the *Universe*, as the project intake process for this program is currently being developed. The *Universe* includes projects at varying levels of readiness, from those with significant engineering and design work complete to those still early in the conceptual or planning stage. MPO staff collects data on each project in the *Universe* so that the projects may be evaluated.

Project Evaluation

MPO staff evaluates projects based on how well they address the MPO's goals. For MPO staff to conduct a complete project evaluation, Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure projects must have a functional design report or the project plans must include the level of detail defined in a functional design report, a threshold typically reached when a project nears the 25 percent design stage. To complete an evaluation for projects under consideration through the MPO's Community Connections Program, project proponents must submit a completed application to MPO staff.

In response to significant cost increases in recent TIP cycles for projects already programmed for funding, the MPO board created a committee in the wake of the FFYs 2022–26 TIP cycle to further explore the causes of project cost increases and devise MPO policy changes to support more reliable project delivery. The TIP Project Cost Ad Hoc Committee began its work in June 2021 and advanced a set of policy recommendations to the full MPO board in September 2021. These changes were formally adopted by the MPO on November 4, 2021, and were in effect for the development of the FFYs 2023–27 TIP.

Among other changes, the MPO elected to codify its policy of requiring that project proponents submit 25 percent designs and obtain an updated cost estimate for their projects prior to being programmed in the TIP. While this new policy was formally in effect for the FFYs 2023–27 TIP cycle, the MPO desired to keep this threshold flexible in its first year of implementation, given that the policy was not adopted until after the start of TIP development. Furthermore, projects may still be scored before reaching the 25 percent design stage in order to provide proponents with a sense for the extent to which their projects align with the MPO's goals and scoring criteria.

The evaluation results for all projects are presented to the MPO board members for their consideration for programming in the TIP. Draft scores are shared directly with project proponents, at which point proponents are encouraged to review the scores and provide feedback so that MPO staff may make any warranted adjustments to arrive at accurate final results. Once proponents review their scores, final scoring results are posted on the MPO's website where MPO members, municipal officials, and members of the public may review them.

TIP Readiness Day

An important step toward TIP programming takes place midway through the TIP development cycle at a meeting—referred to as TIP Readiness Day—that both MassDOT and MPO staff attend. At this meeting, MassDOT project managers provide updates about cost and schedule changes related to currently programmed projects. These cost and schedule changes must be taken into account as MPO staff helps the MPO board consider updates to the already programmed years of the TIP, as well as the addition of new projects in the outermost year of the TIP.

Among the other new policies advanced by the TIP Project Cost Ad Hoc Committee, the MPO board adopted a policy requiring proponents of projects that experienced a cost increase of 25 percent or more (for projects costing less than \$10 million) or \$2.5 million or more (for

projects costing more than \$10 million) to present to the MPO board on the reasons for these cost increases. The MPO would then compare these projects—at the new costs—to other projects based on a cost-effectiveness evaluation before making a decision on whether or not to fund the projects at the higher costs. These cost changes are most often revealed through conversations between MassDOT staff and MPO staff during TIP Readiness Day, making this new policy especially relevant at this stage of TIP development.

Staff Recommendation and Draft TIP

Using the evaluation results and information about project readiness (that is, the extent to which a project is fully designed and ready for construction), MPO staff prepares a recommendation or a series of programming scenarios for how to program the Regional Target funding in the TIP. Other considerations, such as whether a project was included in the LRTP, addresses an identified transportation need, or promotes distribution of transportation investments across the region, are also incorporated into these programming scenarios. The staff recommendation is always financially constrained—meaning, subject to available funding. There was approximately \$645 million of Regional Target funding available to the Boston Region MPO for FFYs 2023–27. In this TIP cycle, the MPO board members discussed several scenarios for the Regional Target Program for highway projects and selected a preferred program in March 2022.

In addition to prioritizing the Regional Target funding, the MPO board reviews and endorses the statewide highway program that MassDOT recommends for programming. The board also reviews and endorses programming of funds for the MBTA's, CATA's, and MWRTA's transit capital programs.

APPROVING THE TIP

After selecting a preferred programming scenario, usually in late March, the MPO board votes to release the draft TIP for a 21-day public review period. The comment period typically begins in late April or early May, and during this time the MPO invites members of the public, municipal officials, and other stakeholders in the Boston region to review the proposed program and submit feedback. During the public review period, MPO staff hosts public meetings to discuss the draft TIP document and elicit additional comments.

After the public review period ends, the MPO board reviews all municipal and public comments and may change elements of the document or its programming. The MPO board then endorses the TIP and submits it to the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) for approval. MassDOT incorporates the MPO-endorsed TIP into the State Transportation Improvement Program (STIP). The FHWA, FTA, and United States Environmental Protection Agency review the STIP for certification by September 30, the close of the federal fiscal year.

UPDATES TO THE TIP

Even after the TIP has been finalized, administrative modifications, amendments, and adjustments often must be introduced because of changes in project schedule, project cost, funding sources, or available revenues. This may necessitate reprogramming a project in a different funding year or programming additional funds for a project.

Notices of administrative modifications and amendments are posted on the MPO's website. If an amendment is necessary, the MPO notifies affected municipalities, stakeholders, and members of the public via email. The MPO typically holds a 21-day public review period before taking final action on an amendment. In extraordinary circumstances, the MPO may vote to shorten the public comment period to a minimum of 15 days. Administrative modifications and adjustments are minor and usually do not warrant a public review period.

STAY INVOLVED WITH THE TIP

Public engagement is an important aspect of the transportation planning process. Please visit bostonmpo.org for more information about the MPO, to view the entire TIP, and to submit your comments. You also may wish to sign up for email news updates and notices by visiting bostonmpo.org/subscribe and submitting your contact information. To request a copy of the TIP in accessible formats, please contact the MPO staff by any of the following means:

Mail: Boston Region MPO c/o CTPS Certification Activities Group, 10 Park Plaza, Suite 2150, Boston, MA 02116-3968

Telephone: 857.702.3702 (voice)

For people with hearing or speaking difficulties, connect through the state MassRelay service:

Relay Using TTY or Hearing Carry-over: 800.439.2370

Relay Using Voice Carry-over: 866.887.6619

Relay Using Text to Speech: 866.645.9870

Fax: 617.570.9192

Email: publicinfo@ctps.org

The Executive Summary of the FFYs 2022–26 TIP is also available as a translation:

- 執行總結 (PDF)
- 执行总结 (PDF)
- Rezime Egzekitif (PDF)
- Resumen Ejecutivo (PDF)
- Resumo Ejecutivo (PDF)



CHAPTER 1

3C Planning and The Boston Region MPO

Decisions about how to allocate transportation funds in a metropolitan area are guided by information and ideas gathered from a broad group of people, including elected officials, municipal planners and engineers, transportation advocates, and interested residents. Metropolitan planning organizations (MPO) are the bodies responsible for providing a forum for this decision-making process. Each metropolitan area in the United States with a population of 50,000 or more, also known as an urbanized area, is required by federal legislation to establish an MPO, which decides how to spend federal transportation funds for capital projects and planning studies for the area.

THE TRANSPORTATION PLANNING PROCESS

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

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

3C Transportation Planning

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

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

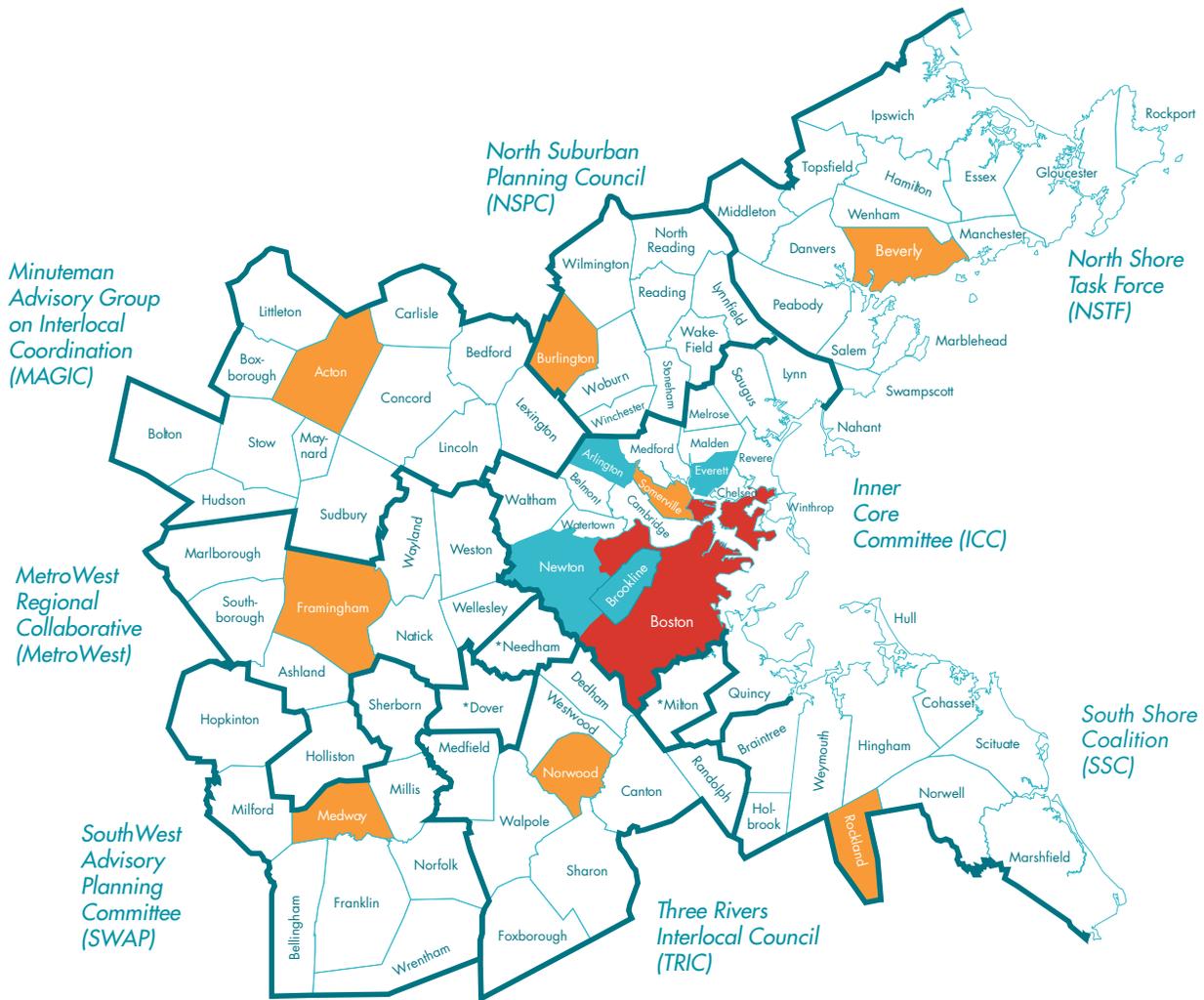
More information about the federal, state, and regional guidance governing the transportation planning process, and about the regulatory framework in which the MPO operates can be found in Appendix E.

THE BOSTON REGION MPO

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

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

Figure 1-1
Municipalities in the Boston Region



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

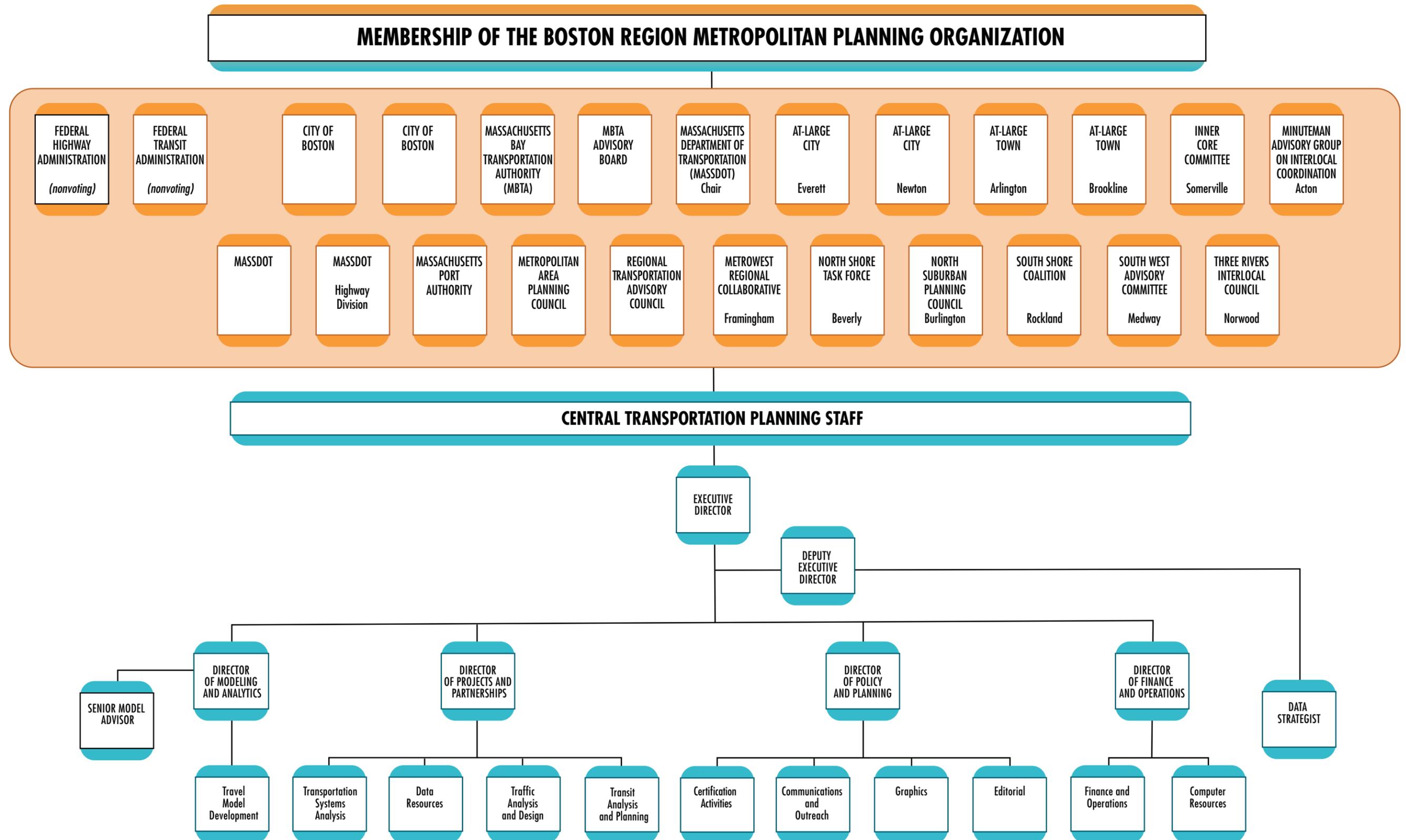
- 97 Cities and towns
- Subregion boundary
- MPO representative from subregion
- MPO city or town at-large representative
- Boston has two permanent MPO representatives

Source: Boston Region MPO

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



JANUARY 2022



22 ASHMONT

1725

TRANSIT SIGNAL

NO TURN ON RED

SLOW

ENTER HERE

ONLY BUS

ONLY BUS

MPO Central Vision Statement

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

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

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

Certification Documents

As part of its 3C process, the Boston Region MPO annually produces the Transportation Improvement Program (TIP) and the Unified Planning Work Program (UPWP). These documents, along with the quadrennial LRTP, are referred to as *certification documents* and are required for the federal government to certify the MPO's planning process. This federal certification is a prerequisite for the MPO to receive federal transportation funds. In addition to the requirement to produce the LRTP, TIP, and UPWP, the MPO must establish and conduct an inclusive public participation process, and maintain transportation models and data resources to support air quality conformity determinations and long- and short-range planning work and initiatives.

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

- The LRTP guides decision-making on investments that will be made in the Boston region's transportation system over the next two decades. It defines an overarching vision of the future of transportation in the region, establishes goals and objectives that will lead to achieving that vision, and allocates projected revenue to transportation projects and programs consistent with established goals and objectives. The Boston Region MPO produces an LRTP every four years. *Destination 2040*, the current LRTP, was endorsed by the MPO board in August 2019 and went into effect on October 1, 2019. Figure 1-3 shows the MPO's goals and objectives as adopted by the MPO board in *Destination 2040*.
- The TIP is a multiyear, multimodal program of transportation improvements that is consistent with the LRTP. It describes and prioritizes transportation projects that are expected to be implemented during a five-year period. The types of transportation projects funded include major highway reconstruction and maintenance, arterial and intersection improvements, public transit expansion and maintenance, bicycle paths and facilities, improvements for pedestrians, and first- and last-mile connections to transit or

other key destinations. The TIP contains a financial plan that shows the revenue sources, current or proposed, for each project. The TIP serves as the implementation arm of the MPO's LRTP, and the Boston Region MPO updates the TIP annually. An MPO-endorsed TIP is incorporated into the State Transportation Improvement Program for submission to the FHWA, FTA, United States Environmental Protection Agency, and the Massachusetts Department of Environmental Protection for approval.

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

Figure 1-3
LRTP Goals and Objectives

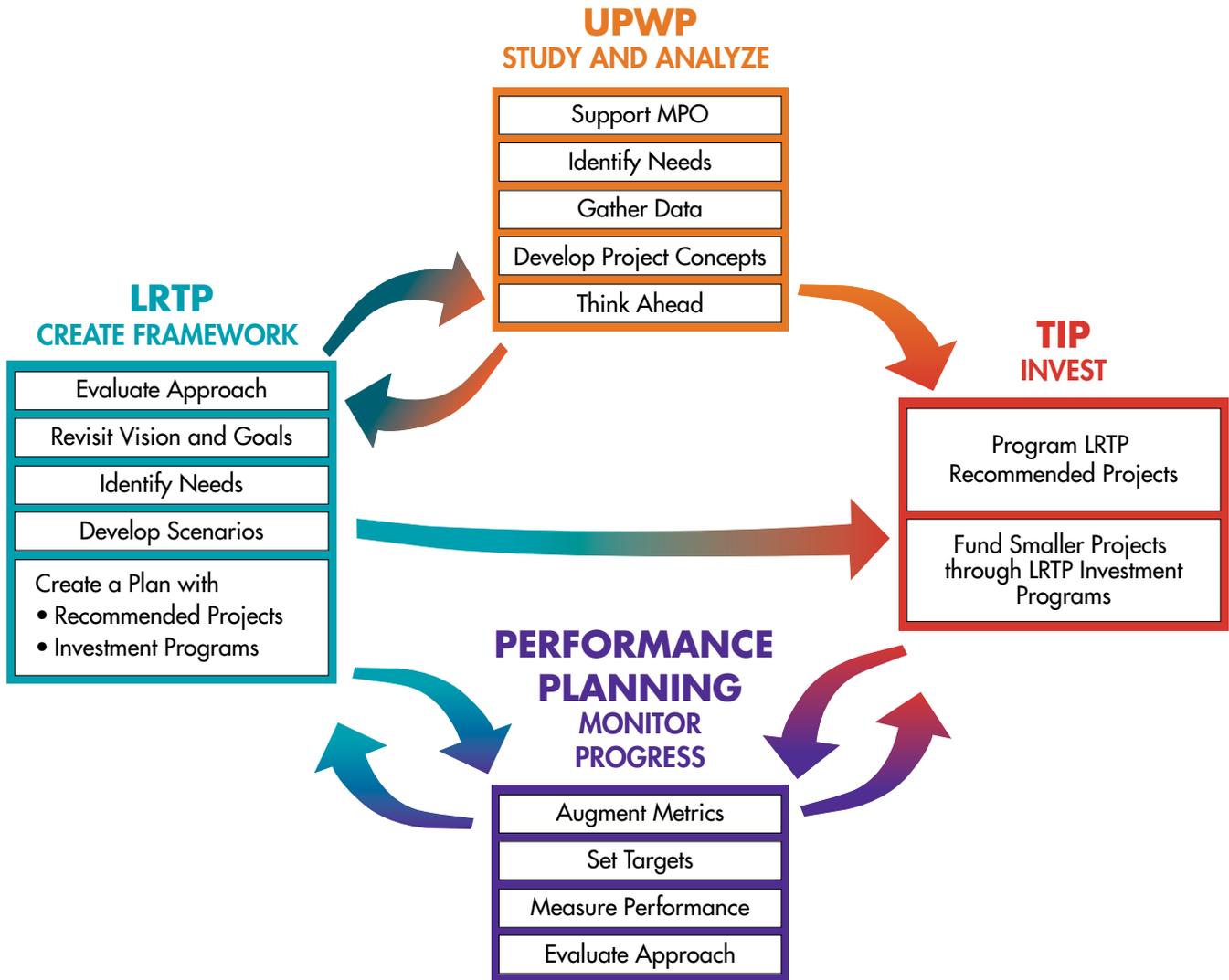
CENTRAL VISION STATEMENT	
The Boston Region Metropolitan Planning Organization envisions a modern, well-maintained transportation system that supports a sustainable, healthy, livable, and economically vibrant region. To achieve this vision, the transportation system must be safe and resilient; incorporate emerging technologies; and provide equitable access, excellent mobility, and varied transportation options.	
GOALS	OBJECTIVES
SAFETY	
Transportation by all modes will be safe	<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 AND MODERNIZATION	
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)

(Figure 1-3 continued)

GOALS	OBJECTIVES
CAPACITY MANAGEMENT AND MOBILITY	
Use existing facility capacity more efficiently and increase transportation options	<ul style="list-style-type: none">• Improve access to and accessibility of all modes, especially transit and active transportation• Support implementation of roadway management and operations strategies to improve travel reliability, mitigate congestion, and support non-single-occupant vehicle travel options• Emphasize capacity management through low-cost investments; prioritize projects that focus on lower-cost operations/management-type improvements such as intersection improvements, transit priority, and Complete Streets solutions• Improve reliability of transit• Increase percentage of population and employment within one-quarter mile of transit stations and stops• Support community-based and private-initiative services and programs to meet first- last-mile, reverse commute, and other nontraditional transit and 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 and 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 and improve freight reliability• Enhance freight intermodal connections
TRANSPORTATION EQUITY	
Ensure that all people receive comparable benefits from, and are not disproportionately burdened by, MPO investments, regardless of race, color, national origin, age, income, ability, or sex	<ul style="list-style-type: none">• Prioritize MPO investments that benefit equity populations*• Minimize potential harmful environmental, health, and safety effects of MPO funded projects for all equity populations*• Promote investments that support transportation for all ages (age-friendly communities)• Promote investments that are accessible to all people regardless of ability <p>*Equity populations include people who identify as minority, have limited English proficiency, are 75 years old or older or 17 years old or younger, or have a disability; or are members of low-income households.</p>
CLEAN AIR/SUSTAINABLE COMMUNITIES	
Create an environmentally friendly transportation system	<ul style="list-style-type: none">• Reduce greenhouse gases generated in Boston region by all transportation modes• Reduce other transportation-related pollutants• Minimize negative environmental impacts of the transportation system• Support land use policies consistent with smart, healthy, and resilient growth
ECONOMIC VITALITY	
Ensure our transportation network provides a strong foundation for economic vitality	<ul style="list-style-type: none">• Respond to mobility needs of the workforce population• Minimize burden of housing and 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 depicts the relationship between the three certification documents and the MPO’s performance-based planning and programming process, which is a means to monitor progress towards the MPO’s goals and to evaluate the MPO’s approach to achieving those goals.

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



Source: Boston Region MPO



CHAPTER 2

The TIP Process

INTRODUCTION TO THE TIP PROCESS

One of the most important decisions a metropolitan planning organization (MPO) faces is deciding how to allocate limited funds for transportation projects and programs. Transportation improvements are part of the solution to many critical regional, state, national, and even global problems, such as traffic congestion, air pollution, fatalities and injuries on roadways, climate change, and environmental injustice. Because there is not nearly enough funding available for all of the necessary and worthy projects that would address these problems, an MPO's investment choices must be guided by policies that help identify the most viable and effective solutions.

As described in Chapter 1, the Boston Region MPO develops a Long-Range Transportation Plan (LRTP) and a Transportation Improvement Program (TIP) to prioritize the expenditure of federal funds on transportation projects. The MPO staff manages the development of both plans. The annual development process for the TIP involves evaluating project funding requests from municipalities and state transportation agencies. The MPO staff then proposes a range of alternative scenarios for the programming of new and ongoing projects based on anticipated yearly funding levels, supports the MPO board by creating a draft TIP document, and facilitates a public involvement process that affords the public an opportunity to comment on proposed projects and review the draft TIP before the MPO board endorses the final document.

FUNDING THE TIP

Federal Funding Framework

The first step in allocating federal transportation funds is the passage by the United States Congress of a multi-year act that establishes a maximum level of federal transportation funding per federal fiscal year (FFY). The establishment of this level of funding is referred to as an *authorization*. The most recent authorization act, the Bipartisan Infrastructure Law (BIL), was signed into law on November 15, 2021. The BIL governs the development of the FFYs 2023–27 TIP, including establishing new formula funding levels, creating new and reauthorizing existing discretionary grant programs, and setting policy priorities. More information about the impacts of the BIL on the development of the FFYs 2023–27 TIP is available throughout this report, with specific guidance on new BIL Planning Emphasis Areas available in Appendix E.

After the authorization level has been established, the United States Department of Transportation annually allocates funding among the states according to various federal formulas. This allocation is referred to as an *apportionment*. The annual apportionment rarely represents the actual amount of federal funds that are ultimately committed to a state because of federally imposed limitations on spending in a given fiscal year, referred to as the *obligation authority*. In Massachusetts, TIPs are developed based on the estimated obligation authority.

Federal Highway Program

The FFYs 2023–27 TIP’s Highway Program was developed with the assumption that funding from the Federal-Aid Highway Program for the Commonwealth of Massachusetts would range between approximately \$789 million and \$850 million annually over the next five years. These amounts include the funds that would be set aside initially by the Massachusetts Department of Transportation (MassDOT) as payments for the Accelerated Bridge Program and exclude required matching funds. The funding levels for the FFYs 2023–27 TIP’s Highway Program represent an increase of approximately 18 percent over those in the FFYs 2022–26 TIP. This is a direct result of the broad increase in federal formula funding resulting from the passage of the BIL in November 2021.

The process of deciding how to use this federal funding in the Boston region follows several steps. MassDOT first reserves funding for Grant Anticipation Notes (GANs) debt service payments for the Accelerated Bridge Program; annual GANs payments range between approximately \$89 million and \$134 million annually over the five years of this TIP.

The remaining Federal-Aid Highway Program funds are budgeted to support state and regional (i.e., MPO) priorities. In the FFYs 2023–27 TIP, there is a total of approximately \$870 million to \$895 million assumed to be annually available statewide for programming (these amounts include both federal dollars and the state-provided local match). MassDOT customarily provides the local match (which can also be provided by other entities); thus, the capital costs of projects are typically funded with 80 percent federal dollars and 20 percent state dollars, depending on the funding program. Costs for project design are borne by the proponent of the project.

Regional Targets

The Regional Targets are discretionary funds for MPOs, sub-allocated by formula to each metropolitan planning region. The Boston Region MPO receives about 43 percent of the total funds available statewide for Regional Targets. MassDOT developed the target formula for determining this distribution of funds in consultation with the Massachusetts Association of Regional Planning Agencies (MARPA).

Each MPO in the state can decide how to prioritize its Regional Target funding. Given that the Regional Target funding originates from the Federal-Aid Highway Program, the Boston Region MPO board typically programs the majority of its target funding on roadway projects; however, the MPO board has flexed portions of its TIP Highway Program funding to the TIP’s Transit Program, most notably when the MPO board provided funding in support of the Green Line Extension transit expansion project. Additionally, the FFYs 2023–27 TIP includes an annual allotment of funding to the MPO’s Transit Modernization Program beginning in FFY 2025. This represents the MPO’s first formalized effort to flex Federal-Aid Highway funds to transit projects on a yearly basis, an affirmation of the region’s goals to support multimodal transportation options in a meaningful way. More information on the MPO’s investment strategy is discussed later in this chapter.

During the next five years, the Boston Region MPO’s total Regional Target funding will be approximately \$645 million, an average of \$129 million per year. As with the overall increase in funding for the Highway Program from the BIL, the MPO’s Regional Target funds increased

nearly 20 percent per year in the FFYs 2023–27 TIP relative to the levels planned for in the development of the FFYs 2022–26 TIP. To decide how to spend its Regional Target funding, the MPO engages its 97 cities and towns in an annual TIP development process.

Federal Highway Administration Programs

The Federal-Aid Highway Program dollars discussed in this chapter come through several Federal Highway Administration (FHWA) funding programs, each of which has unique requirements. Table 2-1 lists these programs, which come from the BIL and fund projects in the FFYs 2023–27 TIP.

Table 2-1
Federal Highway Administration Programs Applicable to the FFYs 2023–27 TIP

BIL Program	Eligible Uses
Bridge Formula Program (BFP)	Efforts to replace, rehabilitate, preserve, protect, and construct highway bridges
Congestion Mitigation and Air Quality Improvement (CMAQ)	A wide range of projects to reduce congestion and improve air quality in nonattainment and maintenance areas for ozone, carbon monoxide, and particulate matter
Highway Safety Improvement Program (HSIP)	Implementation of infrastructure-related highway safety improvements
Metropolitan Planning	Facilities that contribute to an intermodal transportation system, including intercity bus, pedestrian, and bicycle facilities
National Electric Vehicle Infrastructure (NEVI) Program	Projects that support the strategic deployment of electric vehicle (EV) charging infrastructure and establish an interconnected EV network to facilitate data collection, access, and reliability
National Highway Freight Program (NHFP)	Projects that improve the efficient movement of freight on the National Highway Freight Network
National Highway Performance Program (NHPP)	Improvements to interstate routes, major urban and rural arterials, connectors to major intermodal facilities, and the national defense network; replacement or rehabilitation of any public bridge; and resurfacing, restoring, and rehabilitating routes on the Interstate Highway System
Surface Transportation Block Grant Program (STBGP)	A broad range of surface transportation capital needs, including roads; transit, sea, and airport access; and vanpool, bicycle, and pedestrian facilities
Transportation Alternatives Program (TAP)	A set-aside from the STBGP that funds the construction of infrastructure-related projects (for example, sidewalk, crossing, and on-road bicycle facility improvements)

Source: Federal Highway Administration

Federal Transit Program

Federal aid for public transit authorities is allocated by formula to urbanized areas (UZAs). MassDOT is the recipient of this federal aid in the Boston MA-NH-RI UZA. In UZAs with populations greater than 200,000, such as the Boston MA-NH-RI UZA, the distribution formula factors in passenger-miles traveled, population density, and other factors associated with each transit provider. The three regional transit authorities (RTAs) in the Boston Region MPO area are the Massachusetts Bay Transportation Authority (MBTA), MetroWest Regional Transit Authority (MWRTA), and Cape Ann Transportation Authority (CATA). The MBTA, with its extensive transit program and infrastructure, is the recipient of the preponderance of federal transit funds in the region.

The Federal Transit Administration (FTA) distributes funding to transit agencies through several different programs. Table 2-2 shows FTA programs that come from the BIL and support transit investments in the FFYs 2023–27 TIP.

**Table 2-2
Federal Transit Administration Programs Applicable to the FFYs 2023–27 TIP**

BIL Program	Eligible Uses
Urbanized Area Formula Grants (Section 5307)	Transit capital and operating assistance in urbanized areas
Fixed Guideway/Bus (Section 5337)	Replacement, rehabilitation, and other state-of-good-repair capital projects
Bus and Bus Facilities (Section 5339)	Capital projects to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities
Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310)	Capital expenses that support transportation to meet the special needs of older adults and persons with disabilities
Fixed-Guideway Capital Investment Grants (Section 5309)	Grants for new and expanded rail, bus rapid transit, and ferry systems that reflect local priorities to improve transportation options in key corridors

BIL = Bipartisan Infrastructure Law.

Source: Federal Transit Administration

INVESTMENT FRAMEWORKS

MPO Investment Framework

As mentioned previously, each MPO in the state can decide how to prioritize the Regional Target funding it receives through the processes established by FHWA and MassDOT. The Boston Region MPO's LRTP defines the investment framework that informs the specific investment decisions made in the TIP by establishing

- the MPO's transportation vision, goals, and objectives, which shape the MPO's project evaluation criteria;
- MPO investment programs; and
- other guidelines that help the MPO determine how to allocate funding across its investment programs.

MPO Goals and Objectives

The MPO's goals and objectives provide the foundation for the evaluation criteria the MPO board uses when selecting transportation projects to be funded with Regional Target dollars. MPO staff compares candidate projects' characteristics to these criteria to evaluate whether individual projects can help the MPO advance its various goals. The criteria used to select projects for this TIP are based on the MPO's goals and objectives, adopted as part of *Destination 2040*, which is the LRTP the MPO endorsed in August 2019. These goals and objectives are listed in Chapter 1.

MPO Investment Programs

In *Destination 2040*, the MPO strengthened the link between its spending and improvements to transportation performance by revising its investment programs to include a broader range of prospective projects. These investment programs focus on specific types of projects that the MPO expects will help achieve its goals and objectives for the transportation system. The MPO created these programs to give municipalities the confidence that if they design these types of projects the MPO will be willing to fund them through the TIP:

- Complete Streets
- Intersection Improvements
- Bicycle Network and Pedestrian Connections
- Major Infrastructure (including highway funds flexed to major transit infrastructure)
- Community Connections
- Transit Modernization

Figure 2-1 provides details about the *Destination 2040* investment programs and their relationship to the MPO's goals. When developing the FFYs 2023–27 TIP, the MPO allocated its Regional Target dollars to these investment programs by assigning them to projects that meet the investment programs' criteria.

Figure 2-1
Destination 2040 Investment Programs

Intersection Improvements



Funds projects to modernize intersection geometry and signalization to improve safety and mobility.

Improvements may include:

- Modernizing existing signals, adding signals or implementing transit signal priority
- Adding turning lanes
- Shortening crossing distances for pedestrians
- Adding or improving sidewalks, ramps or curb cuts
- Adding or improving bicycle lanes

Complete Streets



Funds projects that modernize roadways to improve safety and mobility for all users.

Improvements may include:

- Providing continuous sidewalks or shared-use paths
- Providing continuous bicycle lanes, cycle tracks or other bicycle facilities
- Updating signals at intersections along a corridor
- Improving other corridor infrastructure, such as bridges, pavement and roadway geometry
- Adding dedicated bus lanes and other associated roadway, signal and stop improvements
- Implementing climate resiliency improvements, including stormwater management measures

KEY: MPO GOALS

 Safety

 System Preservation and Modernization

 Capacity Management and Mobility

 Clean Air/ Sustainable Communities

 Transportation Equity

 Economic Vitality

(Figure 2-1 continued, 2)

Transit Modernization Program



Funds projects that modernize transit infrastructure and promote the enhanced ridership, accessibility or resiliency of transit services.

Improvements may include:

- Enhancing customer amenities or increasing capacity at transit stations
- Enhancing the accessibility of transit stations, including installing high-level platforms or replacing or installing elevators
- Investing in climate resiliency to support the future security of transit infrastructure
- Making state-of-good-repair improvements to transit assets, including to tracks, signals and power systems
- Modernizing transit fleets through the purchase of vehicles
- Upgrading or expanding parking at transit stations
- Upgrading bus maintenance facilities

Community Connections Program



Funds a variety of project types, including first- and last-mile solutions and other small, nontraditional transportation projects to enhance mobility and improve air quality.

Improvements may include:

- Closing gaps in the transit network through first- and last-mile solutions and needs not covered by existing fixed-route transit or paratransit service, including new fixed-route shuttle operations or new or expanded microtransit service operations
- Constructing infrastructure that supports bicycling, including the installation of new bicycle lanes, bicycle racks, and bicycle shelters
- Supporting bikeshare through the purchase of new bicycles, installation of new docks, or the replacement of existing docks to maintain a state of good repair across the bikeshare system
- Improving bus service through the installation of new dedicated bus lanes or transit signal priority equipment

KEY: MPO GOALS

 Safety

 System Preservation and Modernization

 Capacity Management and Mobility

 Clean Air/Sustainable Communities

 Transportation Equity

 Economic Vitality

(Figure 2-1 continued, 3)

Major Infrastructure Program



Funds projects that enhance major arterials for all users and modernize or expand transit systems to increase capacity. Projects in this program cost more than \$50 million; are on major roadways including Interstate Highways, Principal Arterial Freeways and Expressways, or all sections of roadways classified as Principal Arterial "Other" that have fully or partially controlled access; or add new connections to or extend the rail or fixed guideway transit network or the bus rapid transit network. Improvements may include

- Expanding or modernizing transit infrastructure, including extending rail lines or making large-scale facility or station improvements
- Implementing large-scale Complete Streets projects
- Reconstructing bridges or other critical infrastructure

Bicycle Network and Pedestrian Connections



Funds projects to expand bicycle and pedestrian networks to improve safe access to transit, schools, employment centers, and shopping destinations.

Improvements may include:

- Constructing new, off-road bicycle or shared-use paths
- Improving bicycle and pedestrian crossings
- Building new sidewalks
- Providing traffic calming improvements or other Complete Street upgrades
- Enhancing signage, lighting, or signals for bicycles and pedestrians

KEY: MPO GOALS



Safety



System Preservation
and Modernization



Capacity Management
and Mobility



Clean Air/
Sustainable Communities



Transportation
Equity



Economic
Vitality

Newly created in *Destination 2040*, the Transit Modernization Program represents a significant shift in the MPO's investment strategy, as funding will be allocated to transit projects on an annual basis beginning in FFY 2025. In prior years, the MPO only funded transit projects on a one-off basis when funding was requested for specific projects in the region. By creating the programming infrastructure to flex Regional Target highway funds to transit projects annually, the Boston Region MPO has established itself as a leader among MPOs nationally by crafting an investment strategy that is truly multimodal. The MPO has taken a clear stance that investing in transit is central to improving the region's broader transportation system. The MPO's five other investment programs were created during the development of prior LRTPs.¹

¹ The Community Connections Program was formerly referred to as the Community Transportation/Parking/Clean Air and Mobility Program when it was originally created in the MPO's 2015 LRTP, *Charting Progress to 2040*.

During this TIP cycle, the MPO funded multiple Transit Modernization projects in FFYs 2023 and 2024 in order to make use of funding surpluses in these years. The MPO has also continued to reserve funding in each fiscal year beginning in FFY 2025 for future allocation. In the FFYs 2023–27 TIP, the MPO made the decision to increase the funding allocated to this program from \$5.5 million to \$6.5 million annually, as the MPO’s overall Regional Target funding increased with the passage of the BIL in November 2021. In the coming years, the MPO will continue to work with municipalities and transit providers in the region to identify transit needs and determine the most effective use of this funding to address those needs.

Destination 2040 also reflects an updated set of priorities for the MPO’s Complete Streets investment program, adding dedicated bus lanes and climate resiliency measures to the types of projects targeted for funding through this program. As with the Transit Modernization Program, the MPO will continue to work with municipalities in future TIP cycles to develop and fund projects in these new areas of emphasis.

Finally, while the MPO’s Community Connections investment program was created through the 2015 LRTP, *Charting Progress to 2040*, the FFYs 2021–25 TIP represented the first TIP cycle that allocated this funding to specific projects. In prior TIP cycles, the \$2 million in annual funding for this program was reserved for future use but not allocated, as the development timeline for the first- and last-mile projects funded through this program is much shorter than for other TIP projects. In the FFYs 2023–27 TIP, the MPO built on the success of the first two rounds of the Community Connections Program, funding 11 additional projects on top of the 14 projects funded in the previous two TIP cycles.

Funding for the Community Connections Program continues to be reserved in FFYs 2024–27 for allocation in future TIP cycles. As with the Transit Modernization Program above, the MPO made the decision in the FFYs 2023–27 TIP to increase the funding allocated to the Community Connections Program from \$2 million to \$2.5 million annually beginning in FFY 2023, as the MPO’s overall Regional Target funding increased with the passage of the BIL in November 2021. More information on the projects selected for funding in each of the MPO’s investment programs can be found in Chapter 3.

Other Funding Guidelines

When creating investment program guidelines for *Destination 2040*, the MPO elected to decrease the amount of funding allocated to large-scale projects that would be included in its Major Infrastructure Program in order to focus a larger percentage of funding on lower cost, operations-and-maintenance projects. Such a funding mix will help the MPO address its goals and provide more opportunities for the MPO to distribute federal transportation dollars to projects throughout the region, as opposed to concentrating it on a few large-scale projects.

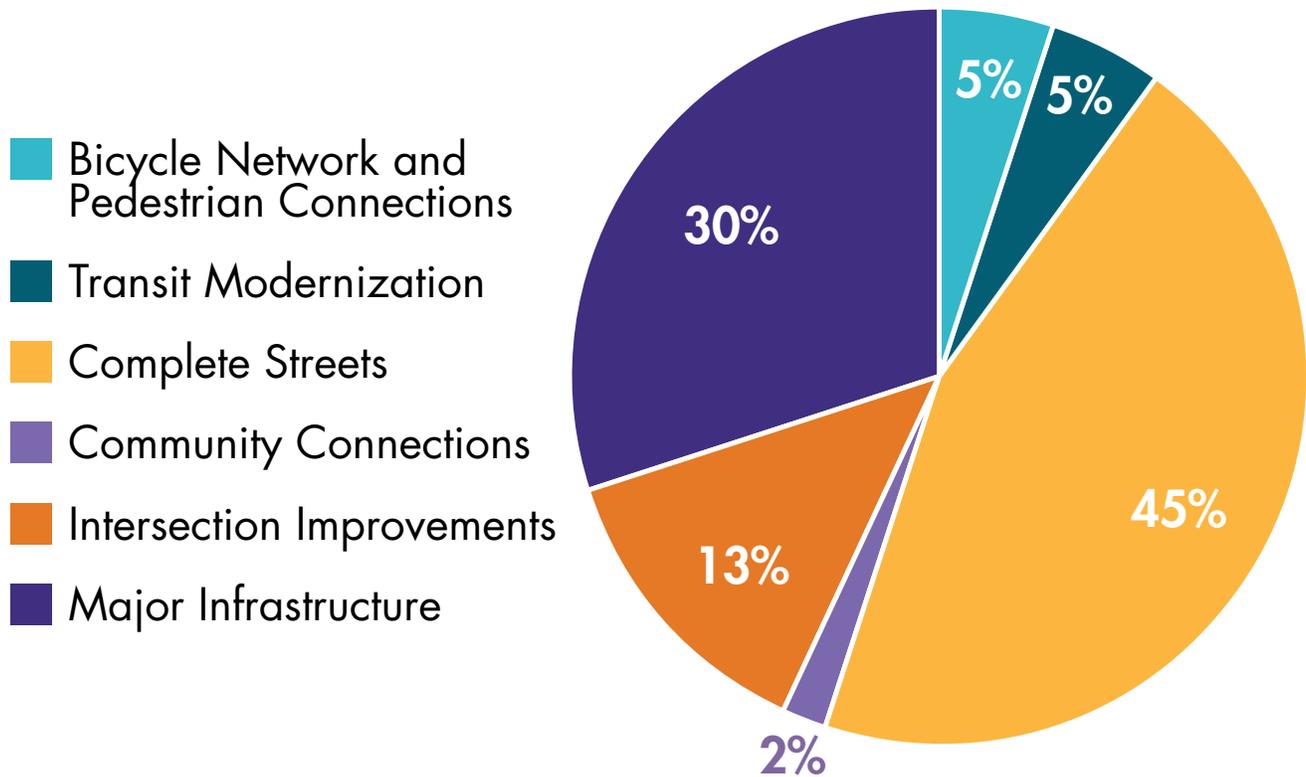
Early in the development of the FFYs 2022–26 TIP, the MPO reassessed its definition of Major Infrastructure projects, adopting a new definition through sequential votes on August 20, 2020, and October 1, 2020. This revised definition carried through to the development of the FFYs 2023–27 TIP. The MPO previously defined Major Infrastructure projects as those that cost more than \$20 million or that add capacity to the transportation network. The MPO’s new definition classifies Major Infrastructure projects as those that meet any of the following criteria:

- Roadway projects:
 - Capital projects that improve facilities that are important to regional travel, which include
 - ◊ interstate highways;
 - ◊ principal arterial freeways and expressways; and
 - ◊ and all sections of roadways classified as principal arterial “other” that have fully or partially controlled access.
 - Projects that cost \$50 million or more
- Transit projects:
 - Capital projects that add new connections to or extend the rail or fixed guideway transit network
 - Projects that cost \$50 million or more

Under the MPO’s prior Major Infrastructure definition, the relatively low cost threshold caused several large-scale Complete Streets projects to be classified as Major Infrastructure projects although they were more local in nature. The changes outlined above are intended to focus the Major Infrastructure investment program on those projects that are of significant scale or that are truly important for the broader MPO region. This allows the MPO to better compare like projects when conducting project evaluations. Because the MPO considers the five-year distribution of TIP funds across its investment programs relative to the goals set forth in the LRTP (as shown in Figure 2-2), properly categorizing projects is a critical component of the MPO’s decision-making process.

Funding allocation goals like these are some of the LRTP-based guidelines the MPO employs to ensure limited Regional Target funding is programmed in ways that best achieve the MPO’s goals for transportation in the region. As the MPO continues the development of its next LRTP, *Destination 2050*, it will assess the efficacy of each of its six investment programs to ensure these programs are structured to best support progress on the MPO’s goals and objectives for the region.

Figure 2-2
Destination 2040 Funding Goals by MPO Investment Program



Source: Boston Region MPO.

In addition to evolving policies for specific investment programs, the MPO also made other policy changes prior to the development of the FFYs 2023–27 TIP to guide future funding decisions. Most notably, the MPO elected to codify its policy of requiring that project proponents submit 25 percent designs and obtain an updated cost estimate for their projects prior to being programmed in the TIP. This new standard was set by the MPO as part of a multi-pronged effort to reduce the prevalence of cost increases for projects that have already been selected for funding in the TIP.

This change is part of a larger suite of policy changes recommended by the TIP Project Cost Ad Hoc Committee, which was created in the wake of the FFYs 2022–26 TIP cycle and completed its work in November 2021. While this new policy was formally in effect for the FFYs 2023–27 TIP cycle, the MPO desired to keep this threshold flexible in its first year of implementation, given that the policy was not adopted until after the start of TIP development. More information on the work of this committee is available on the following pages of this chapter.

MassDOT and Transit Agency Investment Frameworks

MassDOT and the MBTA each update their rolling five-year Capital Investment Plans (CIP) on an annual basis. Historically, these agencies have produced a unified CIP, but for the FFYs 2023–27 capital planning cycle, MassDOT and the MBTA have opted to produce separate plans. Though separate, these plans take similar approaches. MassDOT’s CIP identifies

priority roadway, bridge, and statewide infrastructure projects for the five MassDOT divisions and includes funding for specific transit projects such as the South Coast Rail and Green Line Extension projects. The MBTA's CIP outlines the agency's five-year investment strategy for transit projects in its service area.

Both CIP processes use a similar framework that prioritizes funding according to statewide strategic goals for the transportation system. Reliability is the top priority for MassDOT and the MBTA, followed by modernization and then expansion. Both agencies have created investment programs for their respective CIPs that relate to these strategic goals, and allocate funding to these programs in ways that emphasize their priority. These goals and investment programs are as follows:

- **Reliability:** These investments are oriented toward maintaining and improving the overall condition and reliability of the transportation system. They include capital maintenance projects, state-of-good-repair projects, and other asset management and system preservation projects. The MassDOT Highway Division programs in this area include the Bridge Program—including inspections, systematic maintenance, and National Highway System (NHS) and non-NHS improvements—the Pavement Program, the Roadway Improvements Program, and the Safety Improvements Program. MBTA reliability programs include its Revenue Vehicles Program; Track, Signals, and Power Program; Bridge and Tunnel Program; Stations Program; Facilities Program; and Systems Upgrade/Other investments.
- **Modernization:** These investments enhance the transportation system to make it safer and more accessible and to accommodate growth. These projects address compliance with federal mandates or other statutory requirements for safety and/or accessibility improvements; exceed state-of-good-repair thresholds to substantially modernize existing assets; and provide expanded capacity to accommodate current or anticipated demand on transportation systems. The MassDOT Highway Division programs in this area include the Americans with Disabilities Act (ADA) Retrofit Program, the Intersection Improvement Program, the Intelligent Transportation System (ITS) Program, and the Roadway Reconstruction Program. MBTA programs in this area include the Red and Orange Line Improvements Program, the Commuter Rail Safety and Resiliency Program, the Accessibility Program, the Risk Management and Mitigation Program, the Automated Fare Collection (AFC) Program, and the Customer Experience and Technology Improvements Program.
- **Expansion:** These investments provide more diverse transportation options for communities throughout the Commonwealth. They expand highway, transit, and rail networks and/or services, or they expand bicycle and pedestrian networks to provide more transportation options and address health and sustainability objectives. The MassDOT Highway Division programs in this area include the Bicycle and Pedestrian Program and the Capacity Program. The MBTA's major expansion program is for the Green Line Extension.

DEVELOPING THE TIP

Project Selection Process

Overview

The MPO applies its investment framework when developing the TIP. The MPO board's process for selecting projects to receive highway discretionary—or Regional Target—funding relies on evaluation criteria to help identify and prioritize projects that advance the MPO's goals. The criteria are based on the MPO's goals and objectives outlined in the LRTP. All projects are required to show consistency with the LRTP and other statewide and regional plans. Other considerations include the readiness of a project for construction and municipal support for the project. Background information about the TIP project evaluation process is presented in Appendix A.

In the wake of the adoption of *Destination 2040* in August 2019, the MPO began the process of revising the TIP evaluation criteria to enhance alignment with the MPO's updated goals, objectives, and investment programs. These new criteria were adopted by the MPO on October 1, 2020, and were employed during the project selection process for the FFYs 2022–26 and 2023–27 TIPs. The final criteria were the result of a 15-month process that engaged nearly 1,100 members of the public through surveys and focus groups. This process also prioritized the inclusion of significant direct input from MPO members, which was gathered from more than a dozen presentations, discussions, and focus groups. The outcomes of this process are discussed further in the Project Evaluation section on the following pages.

Because of the limitations on in-person gatherings caused by the COVID-19 pandemic, a vast majority of the surveys, focus groups, and presentations discussed above were conducted virtually, with participation options both online and over the telephone. These virtual engagement opportunities allowed MPO staff to pursue new ways of building relationships with members of the public and other key stakeholders in the region. Given the increase in access to the TIP criteria revision process afforded by these virtual events, MPO staff intend to develop a hybrid outreach model that would support both in-person and virtual engagement when it is safe to resume in-person meetings.

In addition to the process outlined above, which focused on developing new criteria for five of the MPO's investment programs (Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, Major Infrastructure, and Transit Modernization), the MPO also adjusted the project selection criteria used to evaluate and fund projects through the Community Connections Program in the FFYs 2022–26 and 2023–27 TIPs. These revisions were made based on the lessons learned by MPO staff through the pilot round of this program, which took place during the FFYs 2021–25 TIP cycle. More information on these criteria is available in the Project Evaluation section of this chapter, as well as in Appendix A.

Outreach and Data Collection (October–November)

The TIP development process begins early in the federal fiscal year when cities and towns in the region designate staff as TIP contacts and begin developing a list of priority projects to be considered for federal funding. Each fall, the MPO staff asks these TIP contacts to identify their city or town’s priority projects and then MPO staff elicits input from interested parties and members of the general public.

These discussions on municipalities’ priority projects mark the start of a robust dialogue between MPO staff and project proponents that continues through the duration of the TIP cycle. As noted above, the COVID-19 pandemic forced the transition of all of these conversations for the FFYs 2023–27 TIP cycle to take place virtually. During the fall of 2021, MPO staff held two virtual workshops for municipalities in the region to develop an understanding of the TIP process. MPO staff provided additional one-on-one virtual office hours throughout the fall for proponents to ask more detailed questions about advancing specific projects for funding, with several office hour sessions booked for this purpose during the early stages of developing the FFYs 2023–27 TIP.

Once project proponents have decided to pursue federal funding, they must begin the formal project initiation process. All new Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure projects must be initiated with the MassDOT Highway Division before they can be considered for programming in the TIP. MassDOT details this process on its project initiation webpage, mass.gov/info-details/massdot-highway-initiating-a-project. To be considered for programming, proponents of Community Connections projects must submit an application for funding directly to MPO staff, as these projects do not need to be initiated by MassDOT.

The MPO staff compiles project funding requests for projects into a *Universe of Projects list*, which consists of all identified projects being advanced for possible funding in the Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure investment programs. The *Universe* includes projects that are at advanced stages of project design, those that are undergoing preliminary engineering and design, and projects still in the conceptual planning stage. Those projects that are active municipal priorities and that are feasibly ready to be programmed in the current TIP cycle continue forward into the MPO’s project evaluation process. Projects that are not ready for programming remain in the *Universe* for consideration in future TIP cycles. A project *Universe* is not developed for Community Connections projects, as all eligible projects within this program will be considered for funding during the TIP cycle in which project proponents apply.

Project Evaluation (December-February)

The MPO staff uses its project evaluation criteria to logically and transparently evaluate and select projects for programming in the TIP that advance the MPO’s vision for transportation in the region. This process favors projects that support the following goals:

- Transportation by all modes will be safe
- Maintain and modernize the transportation system and plan for its resiliency
- Use existing facility capacity more efficiently and increase transportation options

- 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
- Create an environmentally friendly transportation system
- Ensure our transportation network provides a strong foundation for economic vitality

As noted previously, the MPO undertook a process of revising the TIP evaluation criteria prior to the launch of the FFYs 2022–26 TIP to enhance the alignment between the TIP project selection process and the MPO’s updated goals, objectives, and investment programs outlined in *Destination 2040*. In terms of the overall structure of the criteria, this process resulted in the following outcomes:

- The creation of criteria for the MPO’s Transit Modernization Program, as well as for scoring transit expansion projects through the MPO’s Major Infrastructure Program
- Revisions to the existing criteria for the MPO’s Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure (Roadway) investment programs, allowing for each program to have a distinct set of criteria that better evaluates the specific aspects of each type of project
- The transition to an overall scoring scale of 100 points (from 134 points under the former scoring system)
- The reconfiguration of the way in which Transportation Equity is scored, from simply being a measure of equity populations in a project area to additionally considering how the most vulnerable people who use the transportation system would benefit from the investments made by a project

In addition to these broader structural changes, a number of updates were made to individual criteria to better accomplish the MPO’s goals in the LRTP:

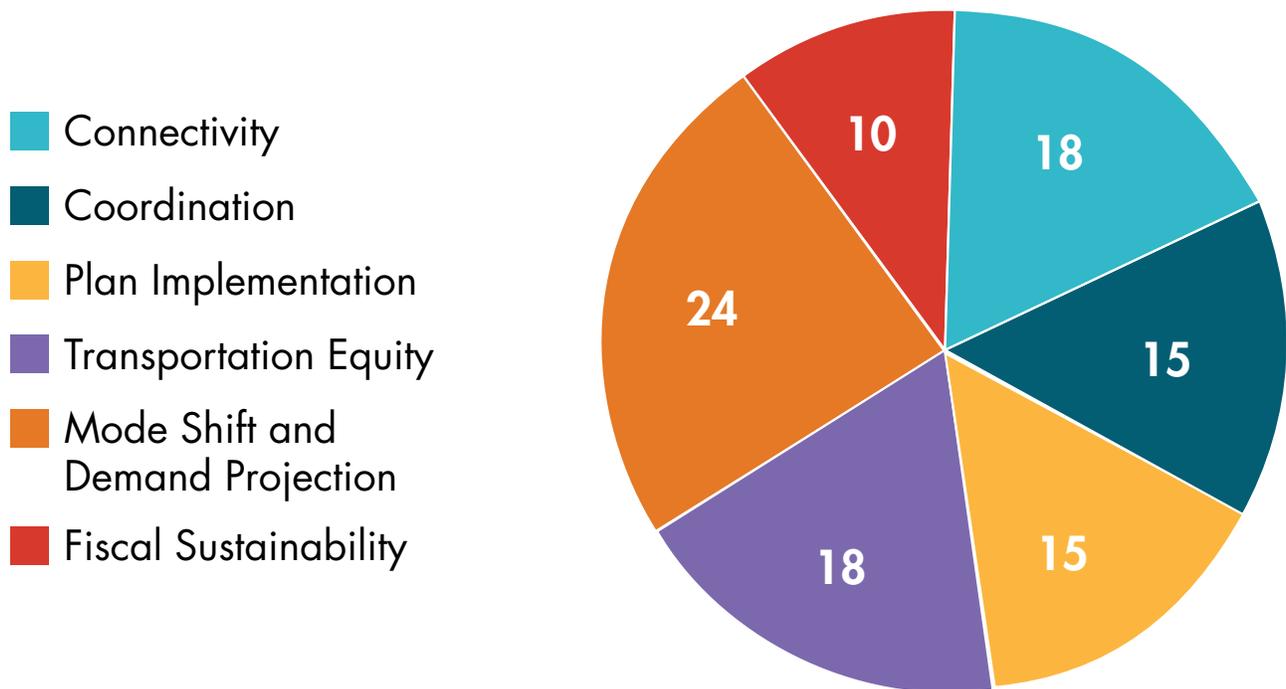
- The percentage of the overall score allocated to Transportation Equity was more than doubled, from nine percent to 20 percent.
- The multimodal nature of the criteria was enhanced through more fully measuring investments in transit-supporting infrastructure, such as dedicated bus lanes and transit-signal-priority equipment.
- The ways in which the MPO considers resiliency in project selection was broadened by expanding the types of resiliency investments awarded points.
- A new criterion was added that considers the intersection of equity and health through the measurement of the expected emissions impacts of a project in areas with high concentrations of certain air pollutants.

Several other changes were made to the project evaluation criteria, which are detailed in Appendix A. The point distributions, categorized by MPO investment program and LRTP goal area, are also available in Figure 2-4. Projects scored using both sets of criteria are programmed in each of these four investment programs in the FFYs 2023–27 TIP, so both sets of criteria are referenced throughout this document.

Though many of the adjustments listed above were in development prior to the onset of the COVID-19 pandemic, the emerging lessons from this event reinforced the importance of making such changes. These changes include emphasizing criteria that award points to projects that invest in walking, bicycling, and transit infrastructure. Also, the need for new criteria that more directly address existing disparities in health and transportation access for minorities and low-income households has been put into stark relief throughout the pandemic. While the MPO did not elect to rescore any currently programmed projects with these new criteria, the revised criteria will be employed in coming TIP cycles to support the funding of transportation projects that act on the lessons learned from COVID-19.

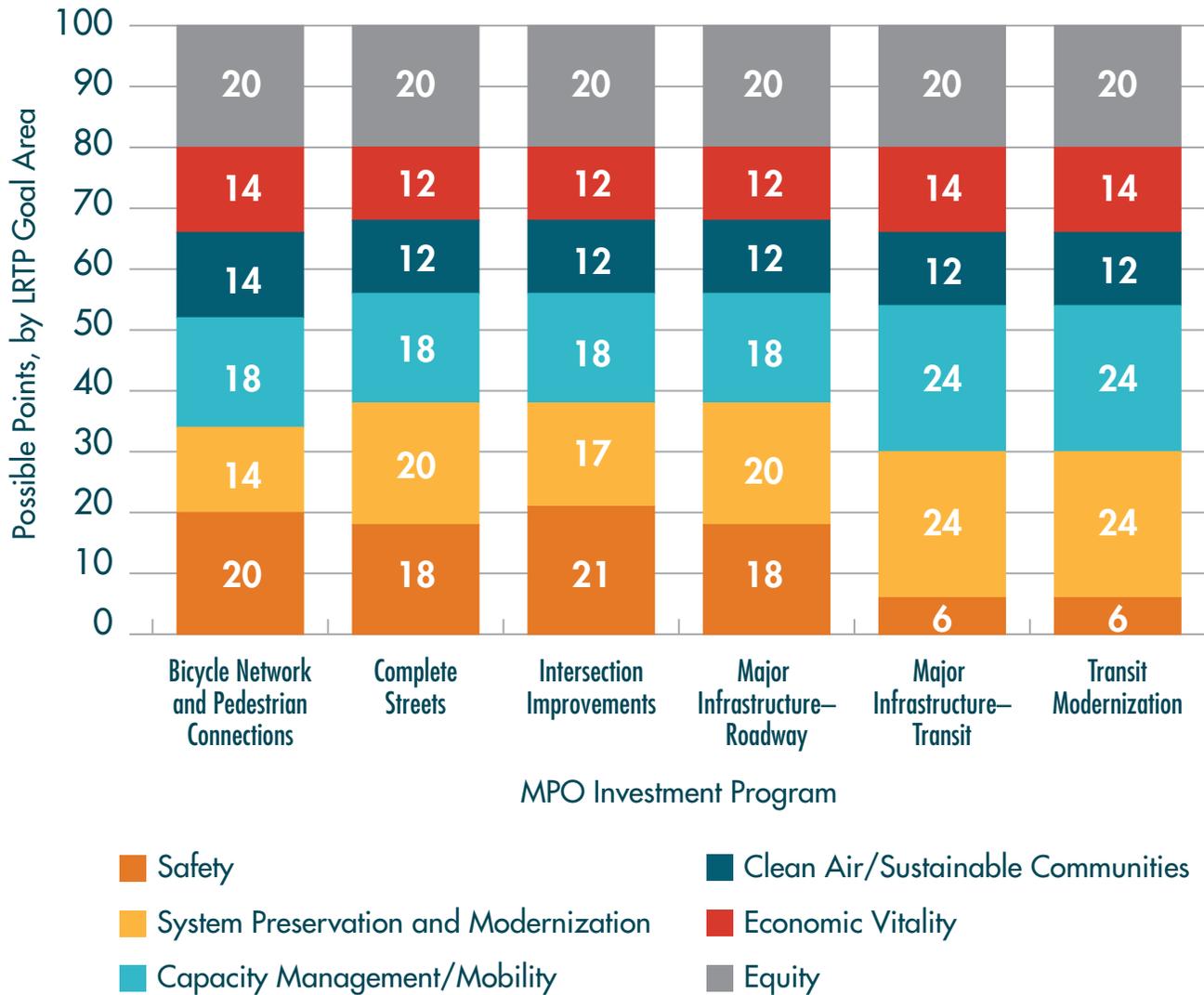
Prior to the FFYs 2022–26 TIP cycle, the MPO also undertook a parallel process to update its evaluation criteria for the smaller-scale, first- and last-mile projects considered for funding through the Community Connections Program. These adjustments were based on the lessons learned from the pilot round of this program during the FFYs 2021–25 TIP cycle. In these revisions, MPO staff aimed to create a more focused set of criteria that better aligned with the types of projects pursuing funding through this program. Revisions to the Community Connections criteria also addressed the discrepancies between capital and operating projects, as the pilot criteria more heavily favored operating projects. These adjustments resulted in more balanced scores that better reflected the goals of the program when implemented for the FFYs 2022–26 TIP cycle. More information on the scoring areas for these criteria is available in Figure 2-3, and all the criteria are available in Appendix A. Projects scored using both sets of criteria are programmed in the Community Connections Program in the FFYs 2023–27 TIP, so both sets of criteria are referenced throughout this document.

Figure 2-3
TIP Project Evaluation Criteria:
Point Distribution for Community Connections Projects



Source: Boston Region MPO.

Figure 2-4
TIP Project Evaluation Criteria: Point Distributions by Project Type
(All Other Investment Programs)



Source: Boston Region MPO.

In order for the MPO staff to conduct a complete project evaluation, each project proponent must provide enough information to meaningfully apply the criteria listed above. Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure projects must have a functional design report or be near the 25 percent design stage, or its plans must include the level of detail defined in a functional design report. (See MassDOT’s *Project Development and Design Guide* for information about the contents of a functional design report. This guide is available at mass.gov/lists/design-guides-and-manuals.) For Community Connections projects, proponents must submit a complete application to the MPO, including required supporting documentation.

After MPO staff have completed an initial round of project scoring, draft scores are distributed to project proponents for their review. The MPO's goal is to fairly and accurately assess all projects, making this review a critical component of the TIP process. Proponents are encouraged to submit feedback to MPO staff on their scores if they feel any criteria have been applied inaccurately. Proponents are also encouraged to submit additional supporting documentation on their projects if doing so would help clarify or correct any elements of the draft scoring. MPO staff take all proponent feedback into consideration and make any warranted adjustments to project scores before considering the evaluation process final and preparing the scores for presentation to the MPO.

For more details about the criteria used to score projects and project evaluation results for projects considered for programming in this TIP, see Appendix A.

TIP Readiness Day (February)

On TIP Readiness Day, the MPO staff meets with members of the MassDOT Highway Division to review cost and schedule changes related to currently programmed projects, which are undergoing design review, permitting, and right-of-way acquisition. The MPO board then considers these updated project construction costs and changes to the expected dates for construction advertisement when making decisions about changes to TIP programming. These changes have an impact on the ability of the MPO to program its target funds for new projects in the five-year TIP.

Between the development of the FFYs 2021–25 TIP and the FFYs 2022–26 TIP, more than half of the projects programmed by the MPO experienced cost increases, many of which represented significant increases in percentage terms or in absolute cost. These changes placed severe limitations on the MPO's ability to consider new projects for funding during the FFYs 2022–26 TIP cycle. As a partner to MassDOT's Highway Division and Office of Transportation Planning, the MPO recognizes its role in supporting the on-time and on-budget delivery of projects by proponents. For this reason, the MPO board created a committee in the wake of the FFYs 2022–26 TIP cycle to further explore the causes of project cost increases and devise MPO policy changes to support more reliable project delivery by all parties.

The TIP Project Cost Ad Hoc Committee began its work in June 2021 and advanced a set of policy recommendations to the full MPO board in September 2021. These changes were formally adopted by the MPO on November 4, 2021, and were in effect for the development of the FFYs 2023–27 TIP. In addition to the requirement that project proponents submit 25 percent design plans and obtain an updated cost estimate for their project prior to obtaining funding in the TIP, as detailed previously, the committee's work resulted in several other policy changes.

Most notably, the MPO board adopted a policy that proponents of any projects that experienced a cost increase of 25 percent or greater (for projects costing less than \$10 million) or of greater than \$2.5 million (for projects costing more than \$10 million) would be required to present to the MPO board on the reasons for these cost increases. The MPO would then compare this project—at its new cost—to other projects based on a cost-effectiveness evaluation before making a decision on whether or not to fund the project at its higher cost. These cost changes are most often revealed through conversations between MassDOT staff and MPO staff during TIP Readiness Day, making this new policy especially relevant at this stage of TIP development.

Staff Recommendation and Project Selection (March-April)

Using the evaluation scores and information gathered about project readiness (when a project likely would be fully designed and ready for advertisement) and cost, staff prepares possible TIP project programming scenarios for the MPO's consideration. When developing these scenarios, MPO staff also considers whether a project was programmed in the LRTP, LRTP-based guidelines for allocating funds to different programs or project types, the distribution of investments across the region, and availability of sufficient funding. The MPO staff gather feedback from board members, project proponents, and the public to inform a final staff recommendation, which is then presented to the MPO for approval before it is included in the draft TIP for public review.

Given the significant increase in Regional Target funding in the FFYs 2023–27 TIP resulting from the passage of the BIL, the MPO selected a significant number of new projects for funding during this TIP cycle, including

- 11 Community Connections projects;
- 6 Complete Streets projects;
- 2 Bicycle Network and Pedestrian Connections projects;
- 2 Transit Modernization projects;
- 1 Intersection Improvement project; and
- 1 Major Infrastructure project.

In total, the MPO allocated more than \$236 million in this TIP cycle to projects not previously funded in the Regional Target program. More information on the projects funded in the FFYs 2023–27 TIP is available in Chapter 3.

Selection Process for Projects Prioritized by the State and Transit Agencies

As discussed above, the selection of transit, bridge, and statewide infrastructure projects for programming in the TIP draws primarily from the CIPs produced by MassDOT and the MBTA. These agencies evaluate projects for inclusion in CIP programs using criteria established by the independent Project Selection Advisory Council (PSAC). The following criteria from the PSAC process guide project evaluation:

- **System Preservation:** Projects should contribute to a state of good repair on the system and align with asset management goals.
- **Mobility:** Projects should provide efficient and effective modal options for all users.
- **Cost Effectiveness:** Projects should result in benefits commensurate with costs and should be aimed at maximizing the return on the public's investment.
- **Economic Impact:** Projects should support strategic economic growth in the Commonwealth.

- **Safety:** Projects should contribute to the safety and security of people and goods in transit.
- **Social Equity:** Projects should equitably distribute the social, economic, and health benefits of investments among all communities.
- **Environmental and Health Effects:** Projects should advance state goals of improving air quality and reducing greenhouse gas emissions and pollution.
- **Policy Support:** Projects should get credit if they support local or regional policies or plans or state policies not addressed through the other criteria.

Projects that receive the highest priority are those that meet each agency’s goals for maintaining and improving the overall condition and reliability of the system; modernizing the system to make it safer and more accessible and to accommodate growth; and expanding and diversifying transportation options for communities. These project-prioritization processes may also reflect other planning initiatives, such as *Focus40*, the MBTA’s 25-year investment plan, or MassDOT’s modal plans. More information on regulatory and planning guidance governing TIP project prioritization is available in Appendix E. Once project prioritization is complete, programming decisions are made based on these evaluations and information regarding project readiness, program sizing, and existing asset management plans.

As discussed above, the transit element of the TIP also includes the Federal-Aid Programs of the other two RTAs in the region, CATA and MWRTA. Once selection processes are complete for all four agencies, these agencies submit their lists of bridge and roadway projects, bicycle and pedestrian improvements, statewide infrastructure items, and transit capital projects to the MPO for review.

APPROVING THE TIP

Approval of the Draft TIP for Public Review

The MPO board considers the project evaluation results and staff recommendation when prioritizing projects for Regional Target funding. The board also considers public comments, the regional importance of projects, and other factors. In addition to prioritizing the Regional Target funding, the MPO board reviews MassDOT’s proposed statewide highway programming and the proposed capital programs for the MBTA, CATA, and MWRTA before voting to release a draft TIP for public review.

The MPO board votes to release the draft document for public review and invites members of the public, municipal and elected officials, and other stakeholders in the Boston region to review the proposed TIP. The MPO staff hosts outreach events during the public review period to elicit comments on the draft document. (See Appendix C for a full list of public comments submitted on the draft TIP.)

Approval of the Draft TIP

After the public review period ends, the MPO staff and board review all public comments, and the board may change the programming or the document as appropriate before endorsing the TIP. MassDOT staff incorporates the MPO-endorsed TIP into the State Transportation Improvement Program (STIP) and submits it to the FHWA and FTA for approval. The FHWA, FTA, and US Environmental Protection Agency review the STIP and certify it by September 30, the end of the federal fiscal year.

UPDATING THE TIP

The TIP is a dynamic program that may be amended and adjusted throughout the year. Administrative modifications and amendments are often introduced because of changes in project status (advertisement readiness), project cost, project design scope, or available revenue. An amendment is a revision that requires public review and a demonstration of fiscal constraint.

Consistent with federal guidelines, the Boston Region MPO must release an amendment if there is (1) a change in project cost of \$500,000 or more for projects valued at \$5 million or less, or (2) a change of 10 percent or more of the project cost for projects valued greater than \$5 million. TIP amendments are also released if there is a proposal to add or remove a project from the TIP or if the programming year of a project is changed. Cost changes that are less than the above threshold amounts may be considered in the form of administrative modifications or adjustments, which must still undergo MPO board action for approval. Administrative modifications or adjustments are also undertaken in the event that a project's funding source changes. Although a public review period is not required for administrative modifications or adjustments, one may be offered at the MPO board's discretion.

Regardless of the nature of an amendment, all proposed TIP amendments are presented in a public setting at an MPO meeting, and details are posted on the MPO's website, bostonmpo.org. Public notices are distributed through the MPO's email contact list, which members of the public may join by signing up on the MPO's website. Municipal staff who are TIP contacts at the affected municipalities and the public are notified of pending amendments at the start of an amendment's public review period.

Public Notice

Notices of draft TIP amendments include a summary of the amendment's contents, dates of the public review period, contact information for submitting a comment to the MPO, and the date, time, and location that the MPO will vote on that amendment. Municipal representatives and members of the public are invited to submit written or oral testimony at the MPO meetings at which amendments are discussed or voted upon.

The MPO typically holds a 21-day public review period before taking final action on an amendment. In extraordinary circumstances, the MPO may vote to shorten the public review period to a minimum of 15 days. (These circumstances are detailed in the MPO's *Public Engagement Plan*.)

The MPO's website is the best place to find current information about the TIP. All changes to the draft TIP and changes to the endorsed TIP, such as amendments and modifications that have been approved by the MPO, are available on the TIP webpage, bostonmpo.org/tip.

Comments or questions about the draft TIP materials may be submitted directly to the MPO staff via the website, email, or US mail, or voiced at MPO meetings and other public MPO events.



CHAPTER 3

Summary of Highway and Transit Programming

The Transportation Improvement Program (TIP) tables included in this chapter present a listing of all the projects and programs funded with federal highway and transit aid in the Boston region during federal fiscal years (FFYs) 2023–27. These funding tables are also included as part of the State Transportation Improvement Program (STIP).

Table 3-1 presents a summary of the Boston Region Metropolitan Planning Organization’s (MPO) share of Regional Target funds from the Federal-Aid Highway Program. The allocation of these funds is constrained by projections of available federal aid. As shown in Table 3-1, the MPO has programmed much of the available discretionary funds within the limits of projected funding for highway funding programs. As such, the FFYs 2023–27 TIP Regional Target Program complies with financial constraint requirements.

Table 3-1
Boston Region MPO Regional Target Program Funding Summary

	FFY 2023	FFY 2024	FFY 2025	FFY 2026	FFY 2027	Total
Regional Target Obligation Authority	\$128,950,081	\$130,647,095	\$128,427,689	\$125,285,688	\$132,045,285	\$645,355,838
Regional Target Funds Programmed	\$125,515,245	\$114,218,512	\$124,612,902	\$123,179,070	\$128,586,581	\$616,112,310
Regional Target Funds Unprogrammed	\$3,434,836	\$16,428,583	\$3,814,787	\$2,106,618	\$3,458,704	\$29,243,528

Source: Boston Region MPO.

As discussed in Chapter 2, the signing of the Bipartisan Infrastructure Law (BIL), on November 15, 2021, increased the amount of Regional Target funding available to the Boston Region MPO for the development of the FFYs 2023–27 TIP by approximately 20 percent from the funding levels in the FFYs 2022–26 TIP. These additional funds allowed the MPO to program a significantly greater number of new projects in this TIP cycle (23) than in the FFYs 2022–26 TIP cycle (10) or the FFYs 2021–25 TIP cycle (8).

In the development of the FFYs 2023–27 TIP, the cost-increase issues for projects already programmed in the TIP were not as pervasive as they were in the development of the prior two TIPs. This allowed the MPO to retain a vast majority of its new funding for the programming of additional projects. The projects selected by the MPO for funding for the first time in the FFYs 2023–27 TIP are listed in Table 3-2.

As in most years, the majority of the funding available for allocation by the MPO during the FFYs 2023–27 TIP cycle was in the fifth and final year of the TIP, FFY 2027. Unlike in most years, however, the addition of approximately \$20 million in new BIL funding annually beginning in FFY 2023 created new funding surpluses in the early federal fiscal years of the TIP (FFYs 2023 and 2024). These surpluses were compounded by programming delays for two projects already funded by the MPO (project #606453—Improvements on Boylston Street and project #606226—Reconstruction of Rutherford Avenue, both in Boston). Together, these dynamics led to a funding surplus in excess of \$90 million in FFYs 2023 and 2024.

The MPO did not have any currently funded Regional Target projects that could be accelerated to make use of these funds, so the MPO worked with MassDOT and the MBTA to identify projects that could be funded in these fiscal years. Jointly, MassDOT and the MBTA brought more than a dozen projects to the MPO for consideration, from which the MPO selected three projects for funding in FFYs 2023 and 2024:

- Lynn Station Improvements Phase II (Lynn)
- Bridge Rehabilitation, Commonwealth Avenue (Route 30) over the Charles River (Newton and Weston)
- Forest Hills Station Improvement Project (Boston)

These projects were not formally evaluated using the MPO’s project selection criteria prior to the MPO making draft funding decisions, as MPO staff did not have sufficient time to score the projects prior to the deadline for MPO decision-making. Despite not being scored, they generally align well with many of the MPO’s goals, including enhancing bicycle and pedestrian safety and access, and maintaining a state of good repair for the region’s transit system and critical roadways. Scoring information will be included for these projects when it is available.

**Table 3-2
New Regional Target Projects Funded in the FFYs 2023–27 TIP**

Project Name	Municipality (Proponent)	MPO Investment Program	FFYs of Funding	Regional Target Dollars Programmed in FFYs 2023–27
Lynn Station Improvements Phase II	Lynn (MBTA)	Transit Modernization	2023–24	\$48,100,000
Rehabilitation of Washington Street	Brookline	Complete Streets	2027	\$30,030,812
Bridge Rehabilitation, Commonwealth Avenue (Route 30) over the Charles River	Newton and Weston (MassDOT)	Complete Streets	2024	\$22,725,820
Community Path, Belmont Component of the MCRT (Phase 1)	Belmont	Bicycle and Pedestrian	2026	\$21,034,382
McGrath Boulevard Construction*	Somerville (MassDOT)	Major Infrastructure	2027	\$20,000,000
Reconstruction on Route 30	Weston	Complete Streets	2026	\$17,028,272
Reconstruction of Western Avenue*	Lynn	Complete Streets	2027	\$15,000,000
Boston Street Improvements	Salem	Complete Streets	2026	\$13,977,600
Park and Pearl Street Reconstruction	Chelsea	Complete Streets	2027	\$12,123,769
Rail Trail Construction	Swampscott	Bicycle and Pedestrian	2027	\$8,932,000

(Table 3-2, continued, 2)

Project Name	Municipality (Proponent)	MPO Investment Program	FFYs of Funding	Regional Target Dollars Programmed in FFYs 2023–27
Forest Hills Station Improvement Project**	Boston (MBTA)	Transit Modernization	2024	\$6,400,000
Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	Weston	Intersection Improvements	2026	\$2,681,330
Montachusett RTA Microtransit Service	Bolton, Boxborough, Littleton, and Stow (MART)	Community Connections	2023–25	\$1,316,061
Pleasant Street Shuttle Service Expansion	Watertown	Community Connections	2023–25	\$1,002,198
NewMo Microtransit Service Expansion	Newton	Community Connections	2023–25	\$890,574
CATA On Demand Microtransit Service Expansion	Gloucester and Rockport (CATA)	Community Connections	2023–25	\$813,291
Stoneham Shuttle Service	Stoneham	Community Connections	2023–25	\$796,817
CatchConnect Microtransit Service Expansion	Hudson and Marlborough (MWRTA)	Community Connections	2023–25	\$450,163
Bluebikes Station Replacement and System Expansion	Cambridge	Community Connections	2023	\$349,608
Bluebikes System Expansion	Malden and Medford	Community Connections	2023	\$145,821
Bluebikes System Expansion	Salem	Community Connections	2023	\$119,629
Bicycle Parking along the Bruce Freeman Rail Trail	Acton	Community Connections	2023	\$8,017
Chenery Middle School Bicycle Parking	Belmont	Community Connections	2023	\$4,376
Total	N/A	N/A	N/A	\$223,930,540

Note: Funding amounts in this table include both federal and non-federal funds, including matching funds.

* Funding in this table represents the first year of funding, with additional funding anticipated to be allocated to these projects by the Boston Region MPO in future fiscal years.

** Funding in this table represents partial funding. Additional funding sources will be identified for the Forest Hills Station Improvement Project in future fiscal years. The total project cost is \$68,000,000.

CATA = Cape Ann Transportation Authority. FFY = federal fiscal year. MART = Montachusett Area Regional Transit. MCRT = Mass Central Rail Trail. MWRTA = MetroWest Regional Transit Authority. N/A = not applicable. RTA = regional transit authority.

Source: Boston Region MPO.

In addition to the above, several other key decisions were made by the MPO in the drafting of the FFYs 2023–27 Regional Target Program, including:

- Annual funding for the MPO’s Community Connections Program was increased from \$2 million to \$2.5 million, bringing this program’s funding level closer to the MPO’s two percent goal, after taking into account new funding available through the BIL
- Annual funding for the MPO’s Transit Modernization Program was increased from \$5.5 million to \$6.5 million, bringing this program’s funding level closer to the MPO’s five percent goal, after taking into account new funding available through the BIL
- Approximately \$29 million in Regional Target funding was left unallocated by the MPO, primarily in FFY 2024. The MPO will determine specific uses for these funds in a future TIP cycle.

Additional details of the specific projects programmed with Regional Target funding are shown in Section 1A of each annual element of the TIP tables (Table 3-7). The other sections in Table 3-7 (Sections 1B, 2A, 2B, 2C, and 3B) list the following:

- Projects funded with earmarks or discretionary grant funds
- State-prioritized bridge repairs and rehabilitation, pavement maintenance, safety improvements, retrofits for accessibility (as required by the Americans with Disabilities Act), intersection improvements, roadway reconstruction, and bicycle and pedestrian projects

Tables 3-8, 3-9, 3-10, and 3-11 list the federally funded transit projects and programs in the Boston region that the Massachusetts Bay Transportation Authority (MBTA), MetroWest Regional Transit Authority (MWRTA), and Cape Ann Transportation Authority (CATA) plan to undertake.

The second part of this chapter includes detailed descriptions of projects funded through both the Regional Target and statewide portions of the Highway Program, including evaluation scores (for MPO-funded projects), project proponents, and funding details. The pages are organized alphabetically by the municipality in which each project is located.

INVESTMENT SUMMARY

This section summarizes the investments made by the Boston Region MPO, Massachusetts Department of Transportation (MassDOT), MBTA, CATA, and MWRTA in the FFYs 2023–27 TIP. Table 3-3 shows the Boston Region MPO’s investments of Regional Target funding—including both the number of projects and the dollar amount—by investment program. These investments are aimed at making progress towards the MPO’s goals for the region, including enhancing safety for all users, preserving and modernizing the transportation system, promoting mobility and reducing congestion, supporting clean air and sustainability, ensuring all have equitable access to the transportation system, and fostering economic vitality in the region through investments in transportation.

Due to the passage of the BIL, the MPO’s Regional Target Program increased in size by approximately \$106 million between the FFYs 2022–26 TIP and the FFYs 2023–27 TIP to a total program size of more than \$645 million.

Table 3-3
FFYs 2023–27 Boston Region MPO Regional Target Investment Summary

MPO Investment Program	Number of Projects	Regional Target Dollars Programmed
Bicycle Network and Pedestrian Connections	4	\$40,222,704
Community Connections (allocated to projects)	13	\$6,374,274
Community Connections (not yet allocated to projects)	N/A	\$6,716,799
Complete Streets*	22	\$306,251,630
Intersection Improvements	7	\$47,175,058
Major Infrastructure—Roadway	3	\$135,371,843
Transit Modernization (allocated to projects)	2	\$54,500,000
Transit Modernization (not yet allocated to projects)	N/A	\$19,500,000
Unprogrammed	N/A	\$29,243,530
Total	51	\$645,355,838

Note: Funding amounts in this table include both federal and non-federal funds, including matching funds.

*One MPO-funded Complete Streets project (608348—Bridge Street) is partially funded through MassDOT’s Earmark Discretionary Program.

N/A = not applicable.

Source: Boston Region MPO.

Table 3-4 shows MassDOT’s FFYs 2023–27 TIP investments—including both the number of projects or programs and the dollar amount—organized by MassDOT program. MassDOT’s investments are distributed across a variety of programs and will support bridge and pavement improvements, roadway improvements and reconstruction, new bicycle and pedestrian infrastructure, and safety improvements. More details on these investments are available on the project summary pages that comprise the second section of this chapter.

As detailed above for the MPO’s Regional Target Program, the BIL significantly increased the funding available to MassDOT for programming projects in the statewide Highway Program. Most notably, the BIL’s new Bridge Formula Program allowed MassDOT to more than triple the amount of funding allocated to federal-aid bridge projects in the region. Furthermore, FFY 2026 represents the conclusion of grant anticipation notes (GANS) payments for MassDOT’s Accelerated Bridge Program (ABP). The winding down of this program, combined with the passage of the 2021 Massachusetts Transportation Bond Bill and the new federal funding available through the BIL, allowed for the creation of MassDOT’s Next Generation Bridge Program (NGBP).

Like the ABP, the NGBP will leverage state bonding capacity to accelerate the rehabilitation and replacement of critical or structurally deficient bridges across Massachusetts. In the FFYs 2023–27

TIP, 28 bridge projects are funded by MassDOT through the NGBP using state bond bill funds. These projects are shown in the TIP because the debt payments on these bonds will be paid using future federal formula funding.

In addition to higher levels of investment in bridges, the new funding available through the BIL has also supported increased investment across MassDOT’s other programs in the FFYs 2023–27 TIP, including the Bicycle and Pedestrian Program, the Intersection Improvements Program, the Interstate and Non-Interstate Pavement Programs, the Roadway Reconstruction Program, and the Safety Improvements Program. The passage of the BIL and the addition of new state bonding capacity have collectively supported an increase in MassDOT’s Highway Program of more than \$1.1 billion between the FFYs 2022–26 TIP and the FFYs 2023–27 TIP to a total program size of more than \$1.8 billion.

Table 3-4
FFYs 2023–27 MassDOT Highway Program Investment Summary

MassDOT Program	Number of Projects	MassDOT Dollars Programmed
Bicycle and Pedestrian	9	\$46,668,222
Federal-Aid Bridge Program	27	\$544,133,685
Next Generation Bridge Program	28	\$553,337,190
Earmarks or Discretionary Grants*	6	\$94,623,709
Intersection Improvements†	7	\$33,530,370
Interstate Pavement	5	\$98,117,990
Non-Interstate Pavement	8	\$98,281,156
Roadway Reconstruction	18	\$233,829,517
Safety Improvements	8	\$49,121,035
Non-Federal Aid (NFA)	1	\$106,720,000
Total	111	\$1,858,362,874

Note: Funding amounts in this table include both federal and non-federal funds, including matching funds.

* Four projects receiving earmark funding are also receiving funding through other sources: 606476—Sumner Tunnel Improvements is funded through MassDOT’s Roadway Reconstruction Program; 608348—Bridge Street is funded through the MPO’s Complete Streets Program; 608562—Mystic Avenue and McGrath Highway is funded through MassDOT’s Intersection Improvements Program; and 607977—Interstates 90/495 Interchange Reconstruction is funded through MassDOT’s Roadway Reconstruction and NFA Programs. Each project is counted in the tally for each funding category but is only counted once in the total number of projects funded.

† Two projects are funded through this program while also receiving funding through MassDOT’s Safety Improvements Program (607748—Intersection and Signal Improvements on Massachusetts Avenue at Piper Road and Taylor Road in Acton and 611969—Intersection Improvements on Route 16 in Everett). These projects are both counted in the tally for the Intersection Improvements and Safety Improvements categories but are each only counted once in the total number of projects funded.

Sources: MassDOT and the Boston Region MPO.

Table 3-5 shows the MBTA's programs and associated FFYs 2023–27 TIP funding amounts, with additional details on the MBTA's programs and projects in Tables 3-8 and 3-9 on the following pages. The passage of the BIL has helped support an increase in the MBTA's federal capital program of nearly \$400 million between the FFYs 2022–26 TIP and the FFYs 2023–27 TIP to a total program size of more than \$3.9 billion. Investments made through these programs allow the MBTA to continue to maintain and modernize its infrastructure in support of the agency's role as the largest transit provider in the Commonwealth of Massachusetts.

The MBTA caters to a wide range of needs, serving the Boston region with commuter rail, light rail, subway, fixed-route bus, and paratransit services. The MBTA prioritizes projects that keep the existing transit system in a state of good repair, including the purchase of new rolling stock, accessibility and resiliency improvements to stations, the rehabilitation of bridges and tunnels, and the replacement of tracks and signals to support system-wide reliability. Limited system expansion projects are also undertaken through the MBTA's federal capital program. Further information on how the MBTA's investments support system safety and condition is available in Chapter 4.

Table 3-5
FFYs 2023–27 MBTA Transit Program Investment Summary

Federal Transit Administration Program	MBTA Program	MBTA Dollars Programmed
Section 5307: Urbanized Area Formula Grants	Bridge and Tunnel Program	\$50,000,000
Section 5307: Urbanized Area Formula Grants	Revenue Vehicle Program	\$677,862,747
Section 5307: Urbanized Area Formula Grants	Signals/Systems Upgrade Program	\$255,488,653
Section 5307: Urbanized Area Formula Grants	Stations and Facilities Program	\$254,651,320
Section 5337: Fixed Guideway/Bus Funds	Bridge and Tunnel Program	\$478,403,439
Section 5337: Fixed Guideway/Bus Funds	Revenue Vehicle Program	\$240,364,516
Section 5337: Fixed Guideway/Bus Funds	Signals/Systems Upgrade Program	\$215,250,862
Section 5337: Fixed Guideway/Bus Funds	Stations and Facilities Program	\$558,530,687
Section 5339: Bus and Bus Facilities Funds	Bus Program	\$40,418,259
Other Federal Funds	Positive Train Control*	\$469,150,000
Other Federal Funds	RRIF/TIFIA Financing Program†	\$692,500,000
Total	N/A	\$3,932,620,483

Note: Federal Transit Administration formula funds (Sections 5307, 5337 and 5339) are based on estimated apportionments for FFYs 2023-27. These apportionments include additional funding to be made available through the Bipartisan Infrastructure Law, based on current estimates. TIP programs and projects are based on a preliminary draft CIP as of April 2022. Adjustments will be made to federal projects and budgets as the CIP process is finalized. Funding amounts in this table include both federal and non-federal funds, including matching funds.

* Positive Train Control investments are funded with RRIF funds.

† RRIF/TIFIA financing program funding is an initial estimate and will be refined as projects are identified and loans are finalized with the Build America Bureau.

CIP = Capital Investment Plan. FFY = federal fiscal year. N/A = not applicable. RRIF = Railroad Rehabilitation and Improvement Financing. TIFIA = Transportation Infrastructure Finance and Innovation Act. TIP = Transportation Improvement Program.

Sources: MBTA and the Boston Region MPO.

Table 3-6 summarizes CATA and MWRTA investments included in the FFYs 2023–27 TIP, and more information is available on each agency’s investments in Tables 3-10 and 3-11. Though the MBTA provides commuter rail service to the Cape Ann communities of Rockport and Gloucester, CATA provides additional paratransit and fixed-route bus services to these communities and to Danvers, Peabody, Ipswich, Essex, and Beverly. CATA’s federal capital program supports its role in providing critical transportation alternatives to residents and visitors of the area, including through the replacement of buses, the modernization of facilities, and the maintenance of assets.

MWRTA similarly complements MBTA commuter rail service, operating fixed-route bus, on-demand microtransit, and commuter shuttle services to a number of communities in the MetroWest subregion. MWRTA’s federal capital program supports this mission by funding vehicle replacements, station and facility maintenance and improvements, and operating assistance for paratransit services, among other efforts. Other projects funded in MWRTA’s 2023–27 TIP include the electrification of the agency’s paratransit fleet and investments in technology to support travel training and customer service efforts.

Overall program sizes for CATA and MWRTA are substantially similar in the FFYs 2023–27 TIP to those in the FFYs 2022–26 TIP. These agencies collectively received an approximately \$3.2 million increase in funding levels in this TIP for a total program size of more than \$55.6 million.

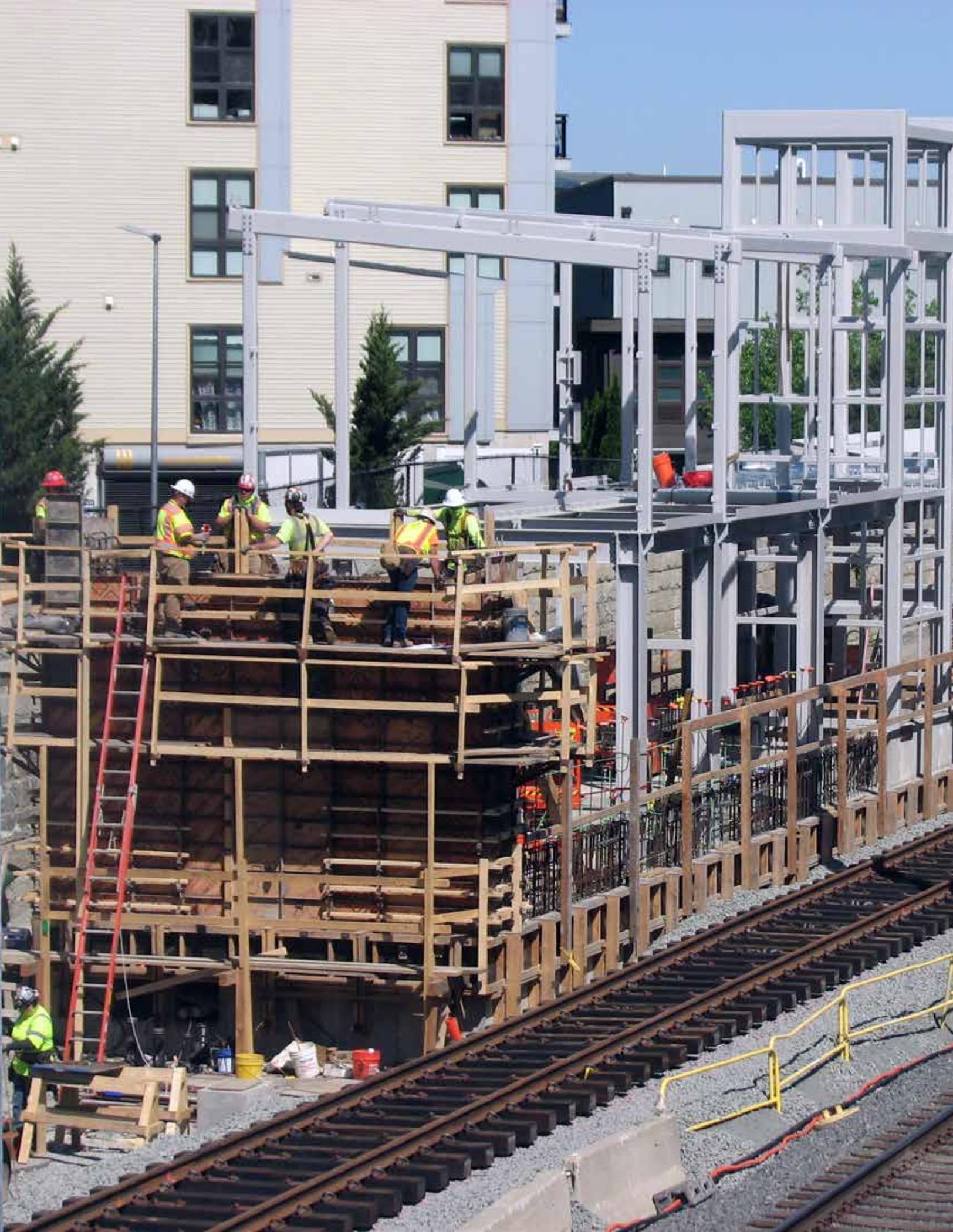
Table 3-6
FFYs 2023–27 CATA and MWRTA Transit Program Investment Summary

Regional Transit Authority	Federal Transit Administration Program	RTA Dollars Programmed
CATA	Section 5307: Urbanized Area Formula Funding	\$4,155,000
CATA	State Transportation Bond Capital Assistance	\$3,065,000
CATA	Municipal and Local Assessments	\$356,250
MWRTA	Section 5307: Urbanized Area Formula Funding	\$12,339,700
MWRTA	Section 5339: Bus and Bus Facilities	\$3,022,063
MWRTA	State Transportation Bond Capital Assistance	\$3,417,258
MWRTA	Other Federal	\$27,302,259
MWRTA	Other Non-Federal	\$2,000,000
Total	N/A	\$55,657,530

Note: Funding amounts in this table include both federal and non-federal funds, including matching funds.

CATA = Cape Ann Transportation Authority. FFY = federal fiscal year. MWRTA = Metro West Regional Transit Authority. N/A = not applicable. RTA = regional transit authority
Sources: CATA, MWRTA, and the Boston Region MPO.

Tables 3-7 through 3-11 build on the summary tables listed above by detailing investments made through both the Highway and Transit Programs by project, program, and funding year.



**Table 3-7
FFYs 2023-27 TIP Highway Programming**

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Federal Fiscal Year 2023								\$393,036,161	\$301,597,787	\$91,438,374	
Section 1A / Regionally Prioritized Projects								\$125,515,245	\$101,066,332	\$24,448,913	
Intersection Improvements								\$16,878,342	\$13,806,809	\$3,071,533	
2023	606130	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1A & UPLAND ROAD/WASHINGTON STREET & PROSPECT STREET/FULTON STREET	5	CMAQ	\$7,952,280	\$3,000,000	\$2,400,000	\$600,000	Construction; CMAQ+STBG Total Cost = \$7,952,280; MPO Evaluation Score = 53.
2023	606130	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1A & UPLAND ROAD/WASHINGTON STREET & PROSPECT STREET/FULTON STREET	5	STBG	\$7,952,280	\$4,952,280	\$3,961,824	\$990,456	Construction; CMAQ+STBG Total Cost = \$7,952,280; MPO Evaluation Score = 53.
2023	608889	Boston Region	Framingham	FRAMINGHAM- TRAFFIC SIGNAL INSTALLATION AT EDGELL ROAD AT CENTRAL STREET	3	CMAQ	\$2,484,704	\$2,484,704	\$1,987,763	\$496,941	Construction; CMAQ Total Cost = \$2,484,704; MPO Evaluation Score = 41.
2023	609253	Boston Region	Wilmington	WILMINGTON- INTERSECTION IMPROVEMENTS AT LOWELL STREET (ROUTE 129) AND WOBURN STREET	4	CMAQ	\$6,441,358	\$3,400,000	\$2,720,000	\$680,000	Construction; CMAQ+HSIPTotal Cost = \$6,441,358; MPO Evaluation Score = 53.
2023	609253	Boston Region	Wilmington	WILMINGTON- INTERSECTION IMPROVEMENTS AT LOWELL STREET (ROUTE 129) AND WOBURN STREET	4	HSIP	\$6,441,358	\$3,041,358	\$2,737,222	\$304,136	Construction; CMAQ+HSIPTotal Cost = \$6,441,358; MPO Evaluation Score = 53.
Roadway Reconstruction								\$71,045,830	\$57,186,664	\$13,859,166	
2023	607244	Boston Region	Winthrop	WINTHROP- RECONSTRUCTION & RELATED WORK ALONG WINTHROP STREET & REVERE STREET CORRIDOR	6	CMAQ	\$6,617,959	\$4,000,000	\$3,200,000	\$800,000	Construction; CMAQ+STBG+TAP Total Cost = \$6,617,959; MPO Evaluation Score = 54; TAP Proponent = Winthrop.
2023	607244	Boston Region	Winthrop	WINTHROP- RECONSTRUCTION & RELATED WORK ALONG WINTHROP STREET & REVERE STREET CORRIDOR	6	STBG	\$6,617,959	\$2,057,959	\$1,646,367	\$411,592	Construction; CMAQ+STBG+TAP Total Cost = \$6,617,959; MPO Evaluation Score = 54; TAP Proponent = Winthrop.
2023	607244	Boston Region	Winthrop	WINTHROP- RECONSTRUCTION & RELATED WORK ALONG WINTHROP STREET & REVERE STREET CORRIDOR	6	TAP	\$6,617,959	\$560,000	\$448,000	\$112,000	Construction; CMAQ+STBG+TAP Total Cost = \$6,617,959; MPO Evaluation Score = 54; TAP Proponent = Winthrop.
2023	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	CMAQ	\$27,250,087	\$12,000,000	\$9,600,000	\$2,400,000	Construction; HSIP+CMAQ+STBG Total Cost = \$27,250,087; MPO Evaluation Score = 75
2023	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	HSIP	\$27,250,087	\$2,000,000	\$1,800,000	\$200,000	Construction; HSIP+CMAQ+STBG Total Cost = \$27,250,087; MPO Evaluation Score = 75
2023	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	STBG	\$27,250,087	\$13,250,087	\$10,600,070	\$2,650,017	Construction; HSIP+CMAQ+STBG Total Cost = \$27,250,087; MPO Evaluation Score = 75
2023	607899	Boston Region	Dedham	DEDHAM- PEDESTRIAN IMPROVEMENTS ALONG BUSSEY STREET, INCLUDING SUPERSTRUCTURE REPLACEMENT, D-05-010, BUSSEY STREET OVER MOTHER BROOK	6	STBG	\$6,314,855	\$5,787,659	\$4,630,127	\$1,157,532	Construction; STBG+TAP Total Cost = \$6,314,855; MPO Evaluation Score = 35; TAP Proponent = Dedham.

(Table 3-7, continued, 2)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2023	607899	Boston Region	Dedham	DEDHAM- PEDESTRIAN IMPROVEMENTS ALONG BUSSEY STREET, INCLUDING SUPERSTRUCTURE REPLACEMENT, D-05-010, BUSSEY STREET OVER MOTHER BROOK	6	TAP	\$6,314,855	\$527,196	\$421,757	\$105,439	Construction; STBG+TAP Total Cost = \$6,314,855; MPO Evaluation Score = 35; TAP Proponent = Dedham.
2023	608348	Boston Region	Beverly	BEVERLY- RECONSTRUCTION OF BRIDGE STREET	4	CMAQ	\$12,594,932	\$6,000,000	\$4,800,000	\$1,200,000	Construction; CMAQ+STBG+Earmark Total Cost = \$12,594,932; MPO Evaluation Score = 66.
2023	608348	Boston Region	Beverly	BEVERLY- RECONSTRUCTION OF BRIDGE STREET	4	STBG	\$12,594,932	\$3,590,507	\$2,872,406	\$718,101	Construction; CMAQ+STBG+Earmark Total Cost = \$12,594,932; MPO Evaluation Score = 66.
2023	608707	Boston Region	Quincy	QUINCY- RECONSTRUCTION OF SEA STREET	6	STBG	\$6,052,562	\$5,826,308	\$4,661,046	\$1,165,262	Construction; STBG+TAP Total Cost = \$6,052,562; MPO Evaluation Score = 40; TAP Project Proponent = Quincy.
2023	608707	Boston Region	Quincy	QUINCY- RECONSTRUCTION OF SEA STREET	6	TAP	\$6,052,562	\$226,254	\$181,003	\$45,251	Construction; STBG+TAP Total Cost = \$6,052,562; MPO Evaluation Score = 40; TAP Project Proponent = Quincy.
2023	608933	Boston Region	Peabody	PEABODY- REHABILITATION OF CENTRAL STREET	4	CMAQ	\$15,219,860	\$6,000,000	\$4,800,000	\$1,200,000	Construction; CMAQ+HSIP+STBG Total Cost = \$15,219,860; MPO Evaluation Score = 61.
2023	608933	Boston Region	Peabody	PEABODY- REHABILITATION OF CENTRAL STREET	4	HSIP	\$15,219,860	\$1,500,000	\$1,350,000	\$150,000	Construction; CMAQ+HSIP+STBG Total Cost = \$15,219,860; MPO Evaluation Score = 61.
2023	608933	Boston Region	Peabody	PEABODY- REHABILITATION OF CENTRAL STREET	4	STBG	\$15,219,860	\$7,719,860	\$6,175,888	\$1,543,972	Construction; CMAQ+HSIP+STBG Total Cost = \$15,219,860; MPO Evaluation Score = 61.
Transit Grant Program								\$2,137,307	\$1,709,846	\$427,461	
2023	S12114	Boston Region	Canton	ROYALL STREET SHUTTLE		CMAQ	\$534,820	\$177,177	\$141,742	\$35,435	Operations; CMAQ Total Cost = \$534,820; MPO Evaluation Score = 51; Project funded through MPO's Community Connections Program.
2023	S12125	Boston Region	Newton	NEWTON MICROTRANSIT SERVICE	6	CMAQ	\$427,000	\$152,000	\$121,600	\$30,400	Operations; CMAQ Total Cost = \$727,000; MPO Evaluation Score = 53; Project funded over three fiscal years (2021-2023) through MPO's Community Connections Program.
2023	S12694	Boston Region	Newton	NEWMO MICROTRANSIT SERVICE EXPANSION	6	CMAQ	\$890,574	\$412,665	\$330,132	\$82,533	Operations; CMAQ Total Cost = \$890,574; MPO Evaluation Score = 87; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2023	S12695	Boston Region	Cambridge	BLUEBIKES STATION REPLACEMENT AND SYSTEM EXPANSION	6	CMAQ	\$349,608	\$349,608	\$279,686	\$69,922	Construction; CMAQ Total Cost = \$349,608; MPO Evaluation Score = 78; Project funded through MPO's Community Connections Program.
2023	S12696	Boston Region	Multiple	BLUEBIKES SYSTEM EXPANSION	4	CMAQ	\$145,821	\$145,821	\$116,657	\$29,164	Construction; CMAQ Total Cost = \$145,821; MPO Evaluation Score = 78; Project funded through MPO's Community Connections Program.

(Table 3-7, continued, 3)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2023	S12697	Boston Region	Watertown	PLEASANT STREET SHUTTLE SERVICE EXPANSION	6	CMAQ	\$1,002,198	\$437,825	\$350,260	\$87,565	Operations; CMAQ Total Cost = \$1,002,198; MPO Evaluation Score = 78; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2023	S12698	Boston Region	Salem	BLUEBIKES SYSTEM EXPANSION	4	CMAQ	\$119,629	\$119,629	\$95,703	\$23,926	Construction; CMAQ Total Cost = \$119,629; MPO Evaluation Score = 77; Project funded through MPO's Community Connections Program.
2023	S12699	Boston Region	Stoneham	STONEHAM SHUTTLE SERVICE	4	CMAQ	\$796,817	\$330,189	\$264,151	\$66,038	Operations; CMAQ Total Cost = \$796,817; MPO Evaluation Score = 72; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2023	S12702	Boston Region	Acton	BICYCLE PARKING ALONG THE BRUCE FREEMAN RAIL TRAIL	3	CMAQ	\$8,017	\$8,017	\$6,414	\$1,603	Construction; CMAQ Total Cost = \$8,017; MPO Evaluation Score = 58; Project funded through MPO's Community Connections Program.
2023	S12704	Boston Region	Belmont	CHENERY MIDDLE SCHOOL BICYCLE PARKING	4	CMAQ	\$4,376	\$4,376	\$3,501	\$875	Construction; CMAQ Total Cost = \$4,376; MPO Evaluation Score = 49.75; Project funded through MPO's Community Connections Program.
Flex to FTA								\$35,453,766	\$28,363,013	\$7,090,753	
2023	S12700	Boston Region	Multiple	CATA ON DEMAND MICROTRANSIT SERVICE EXPANSION	4	CMAQ	\$813,291	\$333,450	\$266,760	\$66,690	Operations; CMAQ Total Cost = \$813,291; MPO Evaluation Score = 61.75; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to CATA.
2023	S12701	Boston Region	Multiple	MWRTA CATCHCONNECT MICROTRANSIT SERVICE EXPANSION	3	CMAQ	\$450,163	\$141,250	\$113,000	\$28,250	Operations; CMAQ Total Cost = \$450,163; MPO Evaluation Score = 59; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to MWRTA.
2023	S12703	Boston Region	Multiple	MONTACHUSETT RTA MICROTRANSIT SERVICE	3	CMAQ	\$1,316,061	\$479,066	\$383,253	\$95,813	Operations; CMAQ Total Cost = \$1,316,061; MPO Evaluation Score = 57; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to MART.
2023	S12705	Boston Region	Lynn	LYNN STATION IMPROVEMENTS PHASE II	4	STBG	\$48,100,000	\$34,500,000	\$27,600,000	\$6,900,000	Construction; CMAQ Total Cost = \$48,100,000; Project not scored by MPO; Project funded over two fiscal years (2023-2024) through MPO's Transit Modernization Program. Flex to MBTA.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$103,745,784	\$82,996,627	\$20,749,157	
Bridge On-System NHS NB								\$27,356,262	\$21,885,010	\$5,471,252	
2023	603722	Boston Region	Lexington	LEXINGTON- BRIDGE REPLACEMENT, L-10-010, ROUTE 2A (MARRETT ROAD) OVER I-95/ROUTE 128	4	HIP-BR	\$20,456,262	\$20,456,262	\$16,365,010	\$4,091,252	

(Table 3-7, continued, 4)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2023	608208	Boston Region	Multiple	QUINCY- MILTON- BOSTON- INTERSTATE MAINTENANCE & RELATED WORK ON I-93	6	HIP-BR	\$38,671,350	\$6,900,000	\$5,520,000	\$1,380,000	
Earmark Discretionary								\$14,612,233	\$11,689,786	\$2,922,447	
2023	606476	Boston Region	Boston	BOSTON- ROADWAY, CEILING, ARCH & WALL RECONSTRUCTION AND OTHER CONTROL SYSTEMS IN SUMNER TUNNEL	6	NHPP-E	\$136,722,750	\$11,607,808	\$9,286,246	\$2,321,562	Construction; NHPP+HSIP+Other Federal Aid Total Cost = \$136,722,750; Total MPO Contribution = \$22,115,687; AC schedule over 3 years (2021-2023). MPO funding has 2-year AC schedule (2021-22).
2023	608348	Boston Region	Beverly	BEVERLY- RECONSTRUCTION OF BRIDGE STREET	4	HPP	\$12,594,932	\$3,004,425	\$2,403,540	\$600,885	Construction; CMAQ+STBG+Earmark Total Cost = \$12,594,932; MPO Evaluation Score = 66.
Bridge On-system Non-NHS NB								\$52,384,032	\$41,907,226	\$10,476,806	
2023	608009	Boston Region	Boxborough	BOXBOROUGH- BRIDGE REPLACEMENT, B-18-002, ROUTE 111 OVER I-495	3	HIP-BR	\$12,763,392	\$12,763,392	\$10,210,714	\$2,552,678	
2023	608929	Boston Region	Wilmington	WILMINGTON- BRIDGE REPLACEMENT, W-38-003, BUTTERS ROW OVER MBTA	4	HIP-BR	\$10,225,199	\$10,225,199	\$8,180,159	\$2,045,040	
2023	612624	Boston Region	Boston	BOSTON- DECK REPLACEMENT, B-16-056, CAMBRIDGE STREET OVER I-90, INCLUDES PRESERVATION OF B-16-057, LINCOLN STREET PED OVERPASS OVER I-90	6	HIP-BR	\$30,045,441	\$29,395,441	\$23,516,353	\$5,879,088	
Bridge Systematic Maintenance NB								\$9,393,257	\$7,514,606	\$1,878,651	
2023	608609	Boston Region	Multiple	BOSTON- WESTWOOD- STEEL SUPERSTRUCTURE CLEANING (FULL REMOVAL) AND PAINTING OF 2 BRIDGES: B-16-118 & W-31-006	6	HIP-BR	\$2,142,857	\$2,142,857	\$1,714,286	\$428,571	
2023	612662	Boston Region	Boston	BOSTON- BRIDGE PRESERVATION, B-16-235 (39T & 3A0), ROUTE 1A OVER CHELSEA STREET/BREMEN STREET & RAILROAD	6	HIP-BR	\$3,000,000	\$3,000,000	\$2,400,000	\$600,000	
2023	612663	Boston Region	Boston	BOSTON- BRIDGE PRESERVATION, B-16-053 (4T3), BROOKLINE AVENUE OVER I-90 & RAILROAD	6	HIP-BR	\$750,000	\$750,000	\$600,000	\$150,000	
2023	612664	Boston Region	Boston	BOSTON- BRIDGE PRESERVATION, B-16-179, AUSTIN STREET OVER I-93 AND B-16-281, I-93 UPPER/LOWER DECK	6	HIP-BR	\$3,500,400	\$3,500,400	\$2,800,320	\$700,080	
Section 2A / State Prioritized Reliability Projects								\$98,077,409	\$84,536,088	\$13,541,321	
Bridge On-system NHS								\$19,011,177	\$15,208,942	\$3,802,235	
2023	606902	Boston Region	Boston	BOSTON- BRIDGE RECONSTRUCTION/REHAB, B-16-181, WEST ROXBURY PARKWAY OVER MBTA	6	NHPP	\$6,388,740	\$6,388,740	\$5,110,992	\$1,277,748	

(Table 3-7, continued, 5)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2023	607327	Boston Region	Wilmington	WILMINGTON- BRIDGE REPLACEMENT, W-38-002, ROUTE 38 (MAIN STREET) OVER THE B&M RAILROAD	4	NHPP	\$12,622,437	\$12,622,437	\$10,097,950	\$2,524,487	
Safety Improvements								\$10,863,619	\$9,397,170	\$1,466,449	
2023	607342	Boston Region	Milton	MILTON- INTERSECTION & SIGNAL IMPROVEMENTS @ ROUTE 28 (RANDOLPH AVENUE) & CHICKATAWBUT ROAD	6	HSIP	\$7,062,751	\$7,062,751	\$6,356,476	\$706,275	
2023	609053	Boston Region	Multiple	CANTON- DEDHAM- NORWOOD- HIGHWAY LIGHTING IMPROVEMENTS AT I-93 & I-95/128	6	NHPP	\$3,800,868	\$3,800,868	\$3,040,694	\$760,174	
Interstate Pavement								\$53,678,861	\$48,310,975	\$5,367,886	
2023	608208	Boston Region	Multiple	QUINCY- MILTON- BOSTON- INTERSTATE MAINTENANCE & RELATED WORK ON I-93	6	NHPP-I	\$38,671,350	\$31,771,350	\$28,594,215	\$3,177,135	
2023	610726	Boston Region	Multiple	MEDFORD- WINCHESTER- STONEHAM- INTERSTATE PAVEMENT PRESERVATION ON I-93	4	NHPP-I	\$21,907,511	\$21,907,511	\$19,716,760	\$2,190,751	
Bridge Off-system								\$3,454,408	\$2,763,526	\$690,882	
2023	608255	Boston Region	Stow	STOW- BRIDGE REPLACEMENT, S-29-011, BOX MILL ROAD OVER ELIZABETH BROOK	3	STBG-BR-Off	\$3,454,408	\$3,454,408	\$2,763,526	\$690,882	
Non-Interstate Pavement								\$11,069,344	\$8,855,475	\$2,213,869	
2023	608480	Boston Region	Foxborough	FOXBOROUGH- RESURFACING AND RELATED WORK ON ROUTE 1	5	NHPP	\$9,442,596	\$6,894,080	\$5,515,264	\$1,378,816	
2023	608818	Boston Region	Multiple	DANVERS- MIDDLETON- RESURFACING AND RELATED WORK ON ROUTE 114	4	NHPP	\$4,175,264	\$4,175,264	\$3,340,211	\$835,053	
Section 2B / State Prioritized Modernization Projects								\$23,107,606	\$20,270,646	\$2,836,960	
Roadway Reconstruction								\$17,694,205	\$15,398,585	\$2,295,620	
2023	606476	Boston Region	Boston	BOSTON- ROADWAY, CEILING, ARCH & WALL RECONSTRUCTION AND OTHER CONTROL SYSTEMS IN SUMNER TUNNEL	6	NHPP	\$136,722,750	\$5,261,993	\$4,209,594	\$1,052,399	Construction; NHPP+HSIP+Other Federal Aid Total Cost = \$136,722,750; Total MPO Contribution = \$22,115,687; AC schedule over 3 years (2021-2023). MPO funding has 2-year AC schedule (2021-22).
2023	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$300,942,837	\$12,432,212	\$11,188,991	\$1,243,221	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
Intersection Improvements								\$5,413,401	\$4,872,061	\$541,340	
2023	609254	Boston Region	Lynn	LYNN- INTERSECTION IMPROVEMENTS AT TWO INTERSECTIONS ON BROADWAY	4	HSIP	\$5,413,401	\$5,413,401	\$4,872,061	\$541,340	

(Table 3-7, continued, 6)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Section 2C / State Prioritized Expansion Projects								\$15,910,117	\$12,728,094	\$3,182,023	
Bicycle and Pedestrian								\$15,910,117	\$12,728,094	\$3,182,023	
2023	610674	Boston Region	Newton	NEWTON- RECONSTRUCTION OF COMMONWEALTH AVENUE (ROUTE 30), FROM EAST OF AUBURN STREET TO ASH STREET	6	CMAQ	\$6,546,367	\$6,546,367	\$5,237,094	\$1,309,273	
2023	610919	Boston Region	Multiple	LYNN- NAHANT- NORTHERN STRAND EXTENSION	4	CMAQ	\$9,363,750	\$9,363,750	\$7,491,000	\$1,872,750	
Section 3B / Non-Federal Aid Funded								\$26,680,000	\$0	\$26,680,000	
NFA								\$26,680,000	\$0	\$26,680,000	
2023	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFA	\$300,942,837	\$26,680,000	\$0	\$26,680,000	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding

(Table 3-7, continued, 7)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Federal Fiscal Year 2024								\$362,978,298	\$226,750,768	\$136,227,530	
Section 1A / Regionally Prioritized Projects								\$114,218,512	\$92,174,810	\$22,043,702	
Bridge On-system NHS								\$22,725,820	\$18,180,656	\$4,545,164	
2024	110980	Boston Region	Multiple	NEWTON- WESTON- BRIDGE REHABILITATION, N-12-010=W-2a9-005, COMMONWEALTH AVENUE (ROUTE 30) OVER THE CHARLES RIVER	6	NHPP	\$22,725,820	\$22,725,820	\$18,180,656	\$4,545,164	Construction; NHPP Total Cost = \$22,725,820; Project not scored by MPO.
Roadway Reconstruction								\$63,848,255	\$51,878,604	\$11,969,651	
2024	603739	Boston Region	Wrentham	WRENTHAM- CONSTRUCTION OF ROUTE I-495/ ROUTE 1A RAMPS	5	HSIP	\$15,587,884	\$2,500,000	\$2,250,000	\$250,000	Construction; HSIP+STBG+TAP Total Cost = \$15,587,884; MPO Evaluation Score = 55; TAP Proponent = MassDOT.
2024	603739	Boston Region	Wrentham	WRENTHAM- CONSTRUCTION OF ROUTE I-495/ ROUTE 1A RAMPS	5	STBG	\$15,587,884	\$12,587,884	\$10,070,307	\$2,517,577	Construction; HSIP+STBG+TAP Total Cost = \$15,587,884; MPO Evaluation Score = 55; TAP Proponent = MassDOT.
2024	603739	Boston Region	Wrentham	WRENTHAM- CONSTRUCTION OF ROUTE I-495/ ROUTE 1A RAMPS	5	TAP	\$15,587,884	\$500,000	\$400,000	\$100,000	Construction; HSIP+STBG+TAP Total Cost = \$15,587,884; MPO Evaluation Score = 55; TAP Proponent = MassDOT.
2024	605743	Boston Region	Ipswich	IPSWICH- RESURFACING & RELATED WORK ON CENTRAL & SOUTH MAIN STREETS	4	STBG	\$5,490,888	\$4,971,338	\$3,977,070	\$994,268	Construction; STBG+TAP Total Cost = \$5,490,888; MPO Evaluation Score = 47; TAP Proponent = Ipswich
2024	605743	Boston Region	Ipswich	IPSWICH- RESURFACING & RELATED WORK ON CENTRAL & SOUTH MAIN STREETS	4	TAP	\$5,490,888	\$519,550	\$415,640	\$103,910	Construction; STBG+TAP Total Cost = \$5,490,888; MPO Evaluation Score = 47; TAP Proponent = Ipswich
2024	606453	Boston Region	Boston	BOSTON- IMPROVEMENTS ON BOYLSTON STREET, FROM INTERSECTION OF BROOKLINE AVENUE & PARK DRIVE TO IPSWICH STREET	6	CMAQ	\$8,665,052	\$5,000,000	\$4,000,000	\$1,000,000	Construction; CMAQ+TAP+STBG Total Cost = \$8,665,052; MPO Evaluation Score = 58; TAP Proponent = Boston.
2024	606453	Boston Region	Boston	BOSTON- IMPROVEMENTS ON BOYLSTON STREET, FROM INTERSECTION OF BROOKLINE AVENUE & PARK DRIVE TO IPSWICH STREET	6	STBG	\$8,665,052	\$2,852,620	\$2,282,096	\$570,524	Construction; CMAQ+TAP+STBG Total Cost = \$8,665,052; MPO Evaluation Score = 58; TAP Proponent = Boston.
2024	606453	Boston Region	Boston	BOSTON- IMPROVEMENTS ON BOYLSTON STREET, FROM INTERSECTION OF BROOKLINE AVENUE & PARK DRIVE TO IPSWICH STREET	6	TAP	\$8,665,052	\$812,432	\$649,946	\$162,486	Construction; CMAQ+TAP+STBG Total Cost = \$8,665,052; MPO Evaluation Score = 58; TAP Proponent = Boston.
2024	608007	Boston Region	Multiple	COHASSET- SCITUATE- CORRIDOR IMPROVEMENTS AND RELATED WORK ON JUSTICE CUSHING HIGHWAY (ROUTE 3A), FROM BEECHWOOD STREET TO HENRY TURNER BAILEY ROAD	5	HSIP	\$12,509,786	\$1,500,000	\$1,350,000	\$150,000	Construction; HSIP+STBG+TAP Total Cost = \$12,509,786; MPO Evaluation Score = 37; TAP Proponent = MassDOT.

(Table 3-7, continued, 8)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2024	608007	Boston Region	Multiple	COHASSET- SCITUATE- CORRIDOR IMPROVEMENTS AND RELATED WORK ON JUSTICE CUSHING HIGHWAY (ROUTE 3A), FROM BEECHWOOD STREET TO HENRY TURNER BAILEY ROAD	5	STBG	\$12,509,786	\$10,869,554	\$8,695,643	\$2,173,911	Construction; HSIP+STBG+TAP Total Cost = \$12,509,786; MPO Evaluation Score = 37; TAP Proponent = MassDOT.
2024	608007	Boston Region	Multiple	COHASSET- SCITUATE- CORRIDOR IMPROVEMENTS AND RELATED WORK ON JUSTICE CUSHING HIGHWAY (ROUTE 3A), FROM BEECHWOOD STREET TO HENRY TURNER BAILEY ROAD	5	TAP	\$12,509,786	\$140,232	\$112,186	\$28,046	Construction; HSIP+STBG+TAP Total Cost = \$12,509,786; MPO Evaluation Score = 37; TAP Proponent = MassDOT.
2024	609054	Boston Region	Littleton	LITTLETON- RECONSTRUCTION OF FOSTER STREET	3	CMAQ	\$3,992,645	\$1,000,000	\$800,000	\$200,000	Construction; CMAQ+TAP+STBG Total Cost = \$3,992,645; MPO Evaluation Score = 38; TAP Proponent = Littleton.
2024	609054	Boston Region	Littleton	LITTLETON- RECONSTRUCTION OF FOSTER STREET	3	STBG	\$3,992,645	\$2,492,645	\$1,994,116	\$498,529	Construction; CMAQ+TAP+STBG Total Cost = \$3,992,645; MPO Evaluation Score = 38; TAP Proponent = Littleton.
2024	609054	Boston Region	Littleton	LITTLETON- RECONSTRUCTION OF FOSTER STREET	3	TAP	\$3,992,645	\$500,000	\$400,000	\$100,000	Construction; CMAQ+TAP+STBG Total Cost = \$3,992,645; MPO Evaluation Score = 38; TAP Proponent = Littleton.
2024	609252	Boston Region	Lynn	LYNN- REHABILITATION OF ESSEX STREET	4	CMAQ	\$17,602,000	\$9,000,000	\$7,200,000	\$1,800,000	Construction; CMAQ+HSIP+STBG Total Cost = \$17,602,000; MPO Evaluation Score = 66.
2024	609252	Boston Region	Lynn	LYNN- REHABILITATION OF ESSEX STREET	4	HSIP	\$17,602,000	\$4,000,000	\$3,600,000	\$400,000	Construction; CMAQ+HSIP+STBG Total Cost = \$17,602,000; MPO Evaluation Score = 66.
2024	609252	Boston Region	Lynn	LYNN- REHABILITATION OF ESSEX STREET	4	STBG	\$17,602,000	\$4,602,000	\$3,681,600	\$920,400	Construction; CMAQ+HSIP+STBG Total Cost = \$17,602,000; MPO Evaluation Score = 66.
Intersection Improvements								\$1,222,315	\$977,852	\$244,463	
2024	608436	Boston Region		ASHLAND- REHABILITATION AND RAIL CROSSING IMPROVEMENTS ON CHERRY STREET	3	STBG	\$1,222,315	\$1,222,315	\$977,852	\$244,463	Construction; STBG Total Cost = \$1,222,315; MPO Evaluation Score = 38.
Bicycle and Pedestrian								\$3,922,122	\$3,137,698	\$784,424	
2024	609211	Boston Region	Peabody	PEABODY- INDEPENDENCE GREENWAY EXTENSION	4	CMAQ	\$3,922,122	\$2,000,000	\$1,600,000	\$400,000	Construction; CMAQ+TAP Total Cost = \$3,922,122; MPO Evaluation Score = 34; TAP Proponent = Peabody.
2024	609211	Boston Region	Peabody	PEABODY- INDEPENDENCE GREENWAY EXTENSION	4	TAP	\$3,922,122	\$1,922,122	\$1,537,698	\$384,424	Construction; CMAQ+TAP Total Cost = \$3,922,122; MPO Evaluation Score = 34; TAP Proponent = Peabody.

(Table 3-7, continued, 9)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Transit Grant Program								\$1,655,156	\$1,324,125	\$331,031	
2024	S12114	Boston Region	Canton	ROYALL STREET SHUTTLE		CMAQ	\$534,820	\$148,542	\$118,834	\$29,708	Operations; CMAQ Total Cost = \$534,820; MPO Evaluation Score = 51; Project funded through MPO's Community Connections Program.
2024	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM		CMAQ	\$6,716,799	\$641,495	\$513,196	\$128,299	Planning, Design, or Construction; Set Aside for L RTP Community Connections Program.
2024	S12694	Boston Region	Newton	NEWMO MICROTRANSIT SERVICE EXPANSION	6	CMAQ	\$890,574	\$268,246	\$214,597	\$53,649	Operations; CMAQ Total Cost = \$890,574; MPO Evaluation Score = 87; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2024	S12697	Boston Region	Watertown	PLEASANT STREET SHUTTLE SERVICE EXPANSION	6	CMAQ	\$1,002,198	\$335,434	\$268,347	\$67,087	Operations; CMAQ Total Cost = \$1,002,198; MPO Evaluation Score = 78; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2024	S12699	Boston Region	Stoneham	STONEHAM SHUTTLE SERVICE	4	CMAQ	\$796,817	\$261,439	\$209,151	\$52,288	Operations; CMAQ Total Cost = \$796,817; MPO Evaluation Score = 72; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
Flex to FTA								\$20,844,844	\$16,675,875	\$4,168,969	
2024	S12700	Boston Region	Multiple	CATA ON DEMAND MICROTRANSIT SERVICE EXPANSION	4	CMAQ	\$813,291	\$265,065	\$212,052	\$53,013	Operations; CMAQ Total Cost = \$813,291; MPO Evaluation Score = 61.75; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to CATA.
2024	S12701	Boston Region	Multiple	MWR TA CATCHCONNECT MICROTRANSIT SERVICE EXPANSION	3	CMAQ	\$450,163	\$149,425	\$119,540	\$29,885	Operations; CMAQ Total Cost = \$450,163; MPO Evaluation Score = 59; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to MWR TA.
2024	S12703	Boston Region	Multiple	MONTACHUSETT RTA MICROTRANSIT SERVICE	3	CMAQ	\$1,316,061	\$430,354	\$344,283	\$86,071	Operations; CMAQ Total Cost = \$1,316,061; MPO Evaluation Score = 57; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to MART.
2024	S12705	Boston Region	Lynn	LYNN STATION IMPROVEMENTS PHASE II	4	STBG	\$48,100,000	\$13,600,000	\$10,880,000	\$2,720,000	Construction; CMAQ Total Cost = \$48,100,000; Project not scored by MPO; Project funded over two fiscal years (2023-2024) through MPO's Transit Modernization Program. Flex to MBTA.
2024	S12706	Boston Region	Boston	FOREST HILLS IMPROVEMENT PROJECT	6	STBG	\$6,400,000	\$6,400,000	\$5,120,000	\$1,280,000	Construction; CMAQ Total Cost = \$6,400,000; Project not scored by the MPO; Funded through the MPO's Transit Modernization Program. Flex to MBTA.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$58,297,800	\$56,499,219	\$1,798,581	

(Table 3-7, continued, 10)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Earmark Discretionary								\$50,011,476	\$49,870,160	\$141,316	
2024	605313	Boston Region	Natick	NATICK- BRIDGE REPLACEMENT, N-03-020, ROUTE 27 (NORTH MAIN STREET) OVER ROUTE 9 (WORCESTER STREET) AND INTERCHANGE IMPROVEMENTS	3	CRRSAA	\$46,901,244	\$46,901,244	\$46,901,244	\$0	
2024	608562	Boston Region	Somerville	SOMERVILLE- SIGNAL AND INTERSECTION IMPROVEMENT ON I-93 AT MYSTIC AVENUE AND MCGRATH HIGHWAY (TOP 200 CRASH LOCATION)	4	HPP	\$6,122,559	\$706,581	\$565,265	\$141,316	
2024	608955	Boston Region	Milton	MILTON- INTERSECTION IMPROVEMENTS SQUANTUM STREET @ ADAMS STREET	6	CRRSAA	\$2,403,651	\$2,403,651	\$2,403,651	\$0	
Bridge On-system Non-NHS NB								\$8,286,324	\$6,629,059	\$1,657,265	
2024	608197	Boston Region	Boston	BOSTON- BRIDGE REHABILITATION, B-16-107, CANTERBURY STREET OVER AMTRAK RAILROAD	6	HIP-BR	\$4,504,926	\$4,504,926	\$3,603,941	\$900,985	
2024	608522	Boston Region	Middleton	MIDDLETON- BRIDGE REPLACEMENT, M-20-003, ROUTE 62 (MAPLE STREET) OVER IPSWICH RIVER	4	HIP-BR	\$3,781,398	\$3,781,398	\$3,025,118	\$756,280	
Section 2A / State Prioritized Reliability Projects								\$60,864,298	\$42,558,710	\$18,305,588	
Bridge On-system NHS								\$5,279,051	\$4,223,241	\$1,055,810	
2024	610782	Boston Region	Multiple	DANVERS-MIDDLETON - BRIDGE REPLACEMENT, D-03-009=M-20-005, ANDOVER STREET (SR 114) OVER IPSWICH RIVER	4	NHPP	\$5,279,051	\$5,279,051	\$4,223,241	\$1,055,810	
Bridge On-system Non-NHS								\$11,732,339	\$0	\$11,732,339	
2024	606901	Boston Region	Boston	BOSTON- BRIDGE REPLACEMENT, B-16-109, RIVER STREET BRIDGE OVER MBTA/AMTRAK	6	NGBP	\$11,732,339	\$11,732,339	\$0	\$11,732,339	
Interstate Pavement								\$29,031,429	\$26,128,286	\$2,903,143	
2024	612034	Boston Region	Multiple	BURLINGTON- WOBURN- INTERSTATE MAINTENANCE AND RELATED WORK ON I-95	4	NHPP-I	\$12,947,687	\$12,948,687	\$11,653,818	\$1,294,869	
2024	612048	Boston Region	Waltham	WALTHAM- INTERSTATE MAINTENANCE AND RELATED WORK ON I-95	4	NHPP-I	\$16,680,742	\$16,082,742	\$14,474,468	\$1,608,274	
Non-Interstate Pavement								\$6,000,522	\$4,800,418	\$1,200,104	
2024	608498	Boston Region	Multiple	QUINCY- WEYMOUTH- BRAintree- RESURFACING AND RELATED WORK ON ROUTE 53	6	NHPP	\$6,000,522	\$6,000,522	\$4,800,418	\$1,200,104	
Bridge Off-system								\$5,320,957	\$4,256,766	\$1,064,191	

(Table 3-7, continued, 11)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2024	609438	Boston Region	Canton	CANTON- BRIDGE REPLACEMENT, C-02-042, REVERE COURT OVER WEST BRANCH OF THE NEPONSET RIVER	6	STBG-BR-Off	\$2,185,168	\$2,185,168	\$1,748,134	\$437,034	
2024	609467	Boston Region	Multiple	HAMILTON- IPSWICH- SUPERSTRUCTURE REPLACEMENT, H-03-002=I-01-006, WINTHROP STREET OVER IPSWICH RIVER	4	STBG-BR-Off	\$3,135,789	\$3,135,789	\$2,508,631	\$627,158	
Safety Improvements								\$3,500,000	\$3,150,000	\$350,000	
2024	S12640	Boston Region		FRAMINGHAM-HIGH RISK AT-GRADE RAILROAD CROSSING COUNTERMEASURES ON ROUTE 126		HSIP	\$3,500,000	\$3,500,000	\$3,150,000	\$350,000	
Section 2B / State Prioritized Modernization Projects								\$37,059,238	\$31,777,141	\$5,282,097	
Roadway Reconstruction								\$28,563,030	\$24,130,554	\$4,432,477	
2024	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$300,942,837	\$12,801,295	\$11,521,166	\$1,280,130	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
2024	609516	Boston Region	Burlington	BURLINGTON- IMPROVEMENTS AT I-95 (ROUTE 128)/ROUTE 3 INTERCHANGE	4	NHPP	\$3,121,560	\$3,121,560	\$2,497,248	\$624,312	
2024	609530	Boston Region	Medway	MEDWAY- HOLLISTON STREET AND CASSIDY LANE IMPROVEMENTS (SRTS)	3	TAP	\$2,807,468	\$2,807,468	\$2,245,974	\$561,494	
2024	609531	Boston Region	Arlington	ARLINGTON- STRATTON SCHOOL IMPROVEMENTS (SRTS)	4	TAP	\$1,302,209	\$1,302,209	\$1,041,767	\$260,442	
2024	610537	Boston Region	Boston	BOSTON- ELLIS ELEMENTARY TRAFFIC CALMING (SRTS)	6	TAP	\$2,361,218	\$2,361,218	\$1,888,974	\$472,244	
2024	610541	Boston Region	Canton	CANTON- INTERIM INTERCHANGE IMPROVEMENTS AT I-95/ROUTE 128/I-93	6	NHPP	\$6,169,280	\$6,169,280	\$4,935,424	\$1,233,856	
Intersection Improvements								\$8,496,208	\$7,646,587	\$849,621	
2024	608562	Boston Region	Somerville	SOMERVILLE- SIGNAL AND INTERSECTION IMPROVEMENT ON I-93 AT MYSTIC AVENUE AND MCGRATH HIGHWAY (TOP 200 CRASH LOCATION)	4	HSIP	\$6,122,559	\$5,415,978	\$4,874,380	\$541,598	
2024	608564	Boston Region	Watertown	WATERTOWN- INTERSECTION IMPROVEMENTS AT ROUTE 16 AND GALEN STREET	6	HSIP	\$3,080,230	\$3,080,230	\$2,772,207	\$308,023	
Section 2C / State Prioritized Expansion Projects								\$4,676,111	\$3,740,889	\$935,222	
Bicycle and Pedestrian								\$4,676,111	\$3,740,889	\$935,222	
2024	611982	Boston Region	Medford	MEDFORD- SHARED USE PATH CONNECTION AT THE ROUTE 28/WELLINGTON UNDERPASS	4	CMAQ	\$4,676,111	\$4,676,111	\$3,740,889	\$935,222	

(Table 3-7, continued, 12)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFCP	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Section 3B / Non-Federal Aid Funded								\$87,862,339	\$0	\$87,862,339	
Bridge On-system NHS								\$49,450,000	\$0	\$49,450,000	
2024	606496	Boston Region	Boston	BOSTON- BRIDGE REHABILITATION, B-16-052, BOWKER OVERPASS OVER MASS PIKE, MBTA/CSX, & IPSWICH STREET AND RAMPS (BINS 4FD, 4FG, 4FE, 4FF & 4FJ)	6	NGBP	\$51,428,000	\$49,450,000	\$0	\$49,450,000	
Bridge On-system Non-NHS								\$11,732,339	\$0	\$11,732,339	
2024	606901	Boston Region	Boston	BOSTON- BRIDGE REPLACEMENT, B-16-109, RIVER STREET BRIDGE OVER MBTA/AMTRAK	6	NGBP	\$11,732,339	\$11,732,339	\$0	\$11,732,339	
NFA								\$26,680,000	\$0	\$26,680,000	
2024	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFA	\$300,942,837	\$26,680,000	\$0	\$26,680,000	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding

(Table 3-7, continued, 13)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Federal Fiscal Year 2025								\$469,296,950	\$213,649,526	\$255,647,424	
Section 1A / Regionally Prioritized Projects								\$124,612,902	\$100,253,494	\$24,359,408	
Roadway Reconstruction								\$98,723,502	\$79,478,802	\$19,244,700	
2025	605168	Boston Region	Hingham	HINGHAM- IMPROVEMENTS ON ROUTE 3A FROM OTIS STREET/COLE ROAD INCLUDING SUMMER STREET AND ROTARY; ROCKLAND STREET TO GEORGE WASHINGTON BOULEVARD.	5	STBG	\$15,596,550	\$14,096,550	\$11,277,240	\$2,819,310	Construction; TAP+STBG Total Cost = \$15,596,549; MPO Evaluation Score = 55; TAP Proponent = Hingham
2025	605168	Boston Region	Hingham	HINGHAM- IMPROVEMENTS ON ROUTE 3A FROM OTIS STREET/COLE ROAD INCLUDING SUMMER STREET AND ROTARY; ROCKLAND STREET TO GEORGE WASHINGTON BOULEVARD.	5	TAP	\$15,596,550	\$1,500,000	\$1,200,000	\$300,000	Construction; TAP+STBG Total Cost = \$15,596,549; MPO Evaluation Score = 55; TAP Proponent = Hingham
2025	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	NHPP	\$190,696,612	\$12,000,000	\$9,600,000	\$2,400,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2025	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	STBG	\$190,696,612	\$18,783,959	\$15,027,167	\$3,756,792	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2025	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	TAP	\$190,696,612	\$2,000,000	\$1,600,000	\$400,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2025	608051	Boston Region	Wilmington	WILMINGTON- RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.	4	CMAQ	\$24,644,177	\$2,000,000	\$1,600,000	\$400,000	Construction; CMAQ+HSIP+STBG Total Cost = \$24,644,177; MPO Evaluation Score = 59
2025	608051	Boston Region	Wilmington	WILMINGTON- RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.	4	HSIP	\$24,644,177	\$1,000,000	\$900,000	\$100,000	Construction; CMAQ+HSIP+STBG Total Cost = \$24,644,177; MPO Evaluation Score = 59
2025	608051	Boston Region	Wilmington	WILMINGTON- RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.	4	STBG	\$24,644,177	\$21,644,177	\$17,315,342	\$4,328,835	Construction; CMAQ+HSIP+STBG Total Cost = \$24,644,177; MPO Evaluation Score = 59
2025	609257	Boston Region	Everett	EVERETT- RECONSTRUCTION OF BEACHAM STREET	4	HSIP	\$10,168,416	\$1,000,000	\$900,000	\$100,000	Construction; HSIP+TAP+STBG Total Cost = \$10,168,416; MPO Evaluation Score = 54; TAP Proponent = Everett.

(Table 3-7, continued, 14)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2025	609257	Boston Region	Everett	EVERETT- RECONSTRUCTION OF BEACHAM STREET	4	STBG	\$10,168,416	\$7,668,416	\$6,134,733	\$1,533,683	Construction; HSIP+TAP+STBG Total Cost = \$10,168,416; MPO Evaluation Score = 54; TAP Proponent = Everett.
2025	609257	Boston Region	Everett	EVERETT- RECONSTRUCTION OF BEACHAM STREET	4	TAP	\$10,168,416	\$1,500,000	\$1,200,000	\$300,000	Construction; HSIP+TAP+STBG Total Cost = \$10,168,416; MPO Evaluation Score = 54; TAP Proponent = Everett.
2025	610662	Boston Region	Woburn	WOBURN- ROADWAY AND INTERSECTION IMPROVEMENTS AT WOBURN COMMON, ROUTE 38 (MAIN STREET), WINN STREET, PLEASANT STREET AND MONTVALE AVENUE	4	HSIP	\$15,530,400	\$3,000,000	\$2,700,000	\$300,000	Construction; HSIP+STBG Total Cost = \$15,530,400; MPO Evaluation Score = 75.
2025	610662	Boston Region	Woburn	WOBURN- ROADWAY AND INTERSECTION IMPROVEMENTS AT WOBURN COMMON, ROUTE 38 (MAIN STREET), WINN STREET, PLEASANT STREET AND MONTVALE AVENUE	4	STBG	\$15,530,400	\$12,530,400	\$10,024,320	\$2,506,080	Construction; HSIP+STBG Total Cost = \$15,530,400; MPO Evaluation Score = 75.
Intersection Improvements								\$10,555,200	\$8,507,332	\$2,047,868	
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	CMAQ	\$24,837,870	\$3,000,000	\$2,400,000	\$600,000	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$24,837,870; 2-year AC schedule (2025-26); MPO Evaluation Score = 55.
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	HSIP	\$24,837,870	\$631,724	\$568,552	\$63,172	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$24,837,870; 2-year AC schedule (2025-26); MPO Evaluation Score = 55.
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	NHPP	\$24,837,870	\$2,873,029	\$2,298,423	\$574,606	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$24,837,870; 2-year AC schedule (2025-26); MPO Evaluation Score = 55.
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	STBG	\$24,837,870	\$2,495,247	\$1,996,198	\$499,049	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$24,837,870; 2-year AC schedule (2025-26); MPO Evaluation Score = 55.
2025	608067	Boston Region	Woburn	WOBURN- INTERSECTION RECONSTRUCTION AT ROUTE 3 (CAMBRIDGE ROAD) & BEDFORD ROAD AND SOUTH BEDFORD STREET	4	CMAQ	\$1,555,200	\$1,555,200	\$1,244,160	\$311,040	Construction; CMAQ Total Cost = \$1,555,200; MPO Evaluation Score = 52.
Bicycle and Pedestrian								\$6,334,200	\$5,067,360	\$1,266,840	
2025	610544	Boston Region	Peabody	PEABODY- MULTI-USE PATH CONSTRUCTION OF INDEPENDENCE GREENWAY AT I-95 AND ROUTE 1	4	CMAQ	\$6,334,200	\$4,000,000	\$3,200,000	\$800,000	Construction; CMAQ+TAP Total Cost = \$6,334,200; MPO Evaluation Score = 53; TAP Proponent = Peabody.
2025	610544	Boston Region	Peabody	PEABODY- MULTI-USE PATH CONSTRUCTION OF INDEPENDENCE GREENWAY AT I-95 AND ROUTE 1	4	TAP	\$6,334,200	\$2,334,200	\$1,867,360	\$466,840	Construction; CMAQ+TAP Total Cost = \$6,334,200; MPO Evaluation Score = 53; TAP Proponent = Peabody.
Flex to FTA								\$7,280,905	\$5,824,724	\$1,456,181	

(Table 3-7, continued, 15)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2025	S12113	Boston Region	Multiple	TRANSIT MODERNIZATION PROGRAM		CMAQ	\$19,500,000	\$6,500,000	\$5,200,000	\$1,300,000	Construction; Flex to FTA; Set aside for LRTP Transit Modernization Program.
2025	S12700	Boston Region	Multiple	CATA ON DEMAND MICROTRANSIT SERVICE EXPANSION	4	CMAQ	\$813,291	\$214,776	\$171,821	\$42,955	Operations; CMAQ Total Cost = \$813,291; MPO Evaluation Score = 61.75; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to CATA.
2025	S12701	Boston Region	Multiple	MWRTA CATCHCONNECT MICROTRANSIT SERVICE EXPANSION	3	CMAQ	\$450,163	\$159,488	\$127,590	\$31,898	Operations; CMAQ Total Cost = \$450,163; MPO Evaluation Score = 59; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to MWRTA.
2025	S12703	Boston Region	Multiple	MONTACHUSETT RTA MICROTRANSIT SERVICE	3	CMAQ	\$1,316,061	\$406,641	\$325,313	\$81,328	Operations; CMAQ Total Cost = \$1,316,061; MPO Evaluation Score = 57; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program. Flex to MART.
Transit Grant Program								\$1,719,095	\$1,375,276	\$343,819	
2025	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM		CMAQ	\$6,716,799	\$1,075,304	\$860,243	\$215,061	Planning, Design, or Construction; Set Aside for LRTP Community Connections Program.
2025	S12694	Boston Region	Newton	NEWMO MICROTRANSIT SERVICE EXPANSION	6	CMAQ	\$890,574	\$209,663	\$167,730	\$41,933	Operations; CMAQ Total Cost = \$890,574; MPO Evaluation Score = 87; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2025	S12697	Boston Region	Watertown	PLEASANT STREET SHUTTLE SERVICE EXPANSION	6	CMAQ	\$1,002,198	\$228,939	\$183,151	\$45,788	Operations; CMAQ Total Cost = \$1,002,198; MPO Evaluation Score = 78; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
2025	S12699	Boston Region	Stoneham	STONEHAM SHUTTLE SERVICE	4	CMAQ	\$796,817	\$205,189	\$164,151	\$41,038	Operations; CMAQ Total Cost = \$796,817; MPO Evaluation Score = 72; Project funded over three fiscal years (2023-2025) through MPO's Community Connections Program.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$30,000,000	\$24,000,000	\$6,000,000	
Earmark Discretionary								\$30,000,000	\$24,000,000	\$6,000,000	
2025	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	HIP-BR	\$300,942,837	\$30,000,000	\$24,000,000	\$6,000,000	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
Section 2A / State Prioritized Reliability Projects								\$141,723,502	\$40,998,765	\$100,724,737	

(Table 3-7, continued, 16)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Bridge On-system NHS								\$77,249,316	\$23,500,972	\$53,748,344	
2025	604564	Boston Region	Maynard	MAYNARD- BRIDGE REPLACEMENT, M-10-004, ROUTE 62 (MAIN STREET) OVER THE ASSABET RIVER	3	NGBP	\$1,848,258	\$1,520,953	\$0	\$1,520,953	
2025	607684	Boston Region	Braintree	BRAINTREE- BRIDGE REPLACEMENT, B-21-017, WASHINGTON STREET (ST 37) OVER MBTA/CSX RAILROAD	6	NGBP	\$7,681,489	\$7,681,489	\$0	\$7,681,489	
2025	608703	Boston Region	Wilmington	WILMINGTON- BRIDGE REPLACEMENT, W-38-029 (2KV), ST 129 LOWELL STREET OVER I 93	4	NHPP	\$15,951,816	\$15,951,816	\$12,761,453	\$3,190,363	
2025	610776	Boston Region	Cambridge	CAMBRIDGE- SUPERSTRUCTURE REPLACEMENT, C-01-031, US ROUTE 3/ROUTE 16/ROUTE 2 OVER MBTA REDLINE	6	NHPP	\$13,424,399	\$13,424,399	\$10,739,519	\$2,684,880	
2025	612028	Boston Region	Stoneham	STONEHAM- DECK REPLACEMENT & SUPERSTRUCTURE REPAIRS, S-27-006 (2L2), (ST 28) FELLSWAY WEST OVER I-93	4	NGBP	\$3,240,000	\$3,240,000	\$0	\$3,240,000	
2025	612182	Boston Region	Newton	NEWTON- BRIDGE REPLACEMENT, N-12-040, BOYLSTON STREET OVER GREEN LINE D	6	NGBP	\$15,186,854	\$15,186,854	\$0	\$15,186,854	
2025	612184	Boston Region	Revere	REVERE- BRIDGE REPLACEMENT, R-05-015, REVERE BEACH PARKWAY OVER BROADWAY	4	NGBP	\$20,243,805	\$20,243,805	\$0	\$20,243,805	
Bridge On-system Non-NHS								\$43,421,682	\$0	\$43,421,682	
2025	608952	Boston Region	Chelsea	CHELSEA- BRIDGE SUPERSTRUCTURE REPLACEMENT C-09-013, WASHINGTON AVENUE, CARTER STREET & COUNTY ROAD/ROUTE 1	6	NGBP	\$10,584,000	\$10,584,000	\$0	\$10,584,000	
2025	612173	Boston Region	Bellingham	BELLINGHAM- BRIDGE REPLACEMENT, B-06-022, MAPLE STREET OVER I-495	3	NGBP	\$14,249,535	\$14,249,535	\$0	\$14,249,535	
2025	612178	Boston Region	Natick	NATICK- BRIDGE REPLACEMENT, N-03-010, SPEEN STREET OVER RR MBTA/CSX	3	NGBP	\$6,711,629	\$6,711,629	\$0	\$6,711,629	
2025	612196	Boston Region	Braintree	BRAINTREE- BRIDGE REPLACEMENT, B-21-067, JW MAHER HIGHWAY OVER MONATIQUOT RIVER	6	NGBP	\$11,876,518	\$11,876,518	\$0	\$11,876,518	
Non-Interstate Pavement								\$14,494,606	\$11,595,685	\$2,898,921	
2025	609399	Boston Region	Randolph	RANDOLPH- RESURFACING AND RELATED WORK ON ROUTE 28	6	NHPP	\$6,930,814	\$6,930,814	\$5,544,651	\$1,386,163	
2025	610722	Boston Region	Multiple	ACTON- BOXBOROUGH- LITTLETON- PAVEMENT PRESERVATION ROUTE 2	3	NHPP	\$7,563,792	\$7,563,792	\$6,051,034	\$1,512,758	
Safety Improvements								\$6,557,898	\$5,902,108	\$655,790	

(Table 3-7, continued, 17)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2025	609532	Boston Region	Chelsea	CHELSEA- TARGETED SAFETY IMPROVEMENTS AND RELATED WORK ON BROADWAY, FROM WILLIAMS STREET TO CITY HALL AVENUE	6	HSIP	\$6,557,898	\$6,557,898	\$5,902,108	\$655,790	
Section 2B / State Prioritized Modernization Projects								\$46,307,763	\$41,454,867	\$4,852,896	
Roadway Reconstruction								\$46,307,763	\$41,454,867	\$4,852,896	
2025	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NHPP-I	\$300,942,837	\$15,000,000	\$13,500,000	\$1,500,000	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
2025	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$300,942,837	\$29,086,566	\$26,177,909	\$2,908,657	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
2025	611997	Boston Region	Newton	NEWTON- HORACE MANN ELEMENTARY SCHOOL IMPROVEMENTS (SRTS)	6	TAP	\$861,962	\$861,962	\$689,570	\$172,392	
2025	612001	Boston Region	Medford	MEDFORD- MILTON FULLER ROBERTS ELEMENTARY SCHOOL (SRTS)	4	TAP	\$1,020,854	\$1,020,854	\$816,683	\$204,171	
2025	612100	Boston Region	Revere	REVERE- IMPROVEMENTS AT BEACHMONT VETERANS ELEMENTARY (SRTS)	4	TAP	\$338,381	\$338,381	\$270,705	\$67,676	
Section 2C / State Prioritized Expansion Projects								\$8,678,000	\$6,942,400	\$1,735,600	
Bicycle and Pedestrian								\$8,678,000	\$6,942,400	\$1,735,600	
2025	610680	Boston Region	Natick	NATICK- LAKE COCHITUATE PATH	3	CMAQ	\$3,582,995	\$3,582,995	\$2,866,396	\$716,599	
2025	612523	Boston Region	Revere	REVERE- STATE ROAD BEACHMONT CONNECTOR	4	CMAQ	\$5,095,005	\$5,095,005	\$4,076,004	\$1,019,001	
Section 3B / Non-Federal Aid Funded								\$117,974,783	\$0	\$117,974,783	
Bridge On-system NHS								\$47,873,101	\$0	\$47,873,101	
2025	604564	Boston Region	Maynard	MAYNARD- BRIDGE REPLACEMENT, M-10-004, ROUTE 62 (MAIN STREET) OVER THE ASSABET RIVER	3	NGBP	\$1,848,258	\$1,520,953	\$0	\$1,520,953	
2025	607684	Boston Region	Braintree	BRAINTREE- BRIDGE REPLACEMENT, B-21-017, WASHINGTON STREET (ST 37) OVER MBTA/CSX RAILROAD	6	NGBP	\$7,681,489	\$7,681,489	\$0	\$7,681,489	
2025	612028	Boston Region	Stoneham	STONEHAM- DECK REPLACEMENT & SUPERSTRUCTURE REPAIRS, S-27-006 (2L2), (ST 28) FELLSWAY WEST OVER I-93	4	NGBP	\$3,240,000	\$3,240,000	\$0	\$3,240,000	
2025	612182	Boston Region	Newton	NEWTON- BRIDGE REPLACEMENT, N-12-040, BOYLSTON STREET OVER GREEN LINE D	6	NGBP	\$15,186,854	\$15,186,854	\$0	\$15,186,854	

(Table 3-7, continued, 18)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2025	612184	Boston Region	Revere	REVERE- BRIDGE REPLACEMENT, R-05-015, REVERE BEACH PARKWAY OVER BROADWAY	4	NGBP	\$20,243,805	\$20,243,805	\$0	\$20,243,805	
								\$26,680,000	\$0	\$26,680,000	
2025	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFA	\$300,942,837	\$26,680,000	\$0	\$26,680,000	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
Bridge On-system Non-NHS								\$43,421,682	\$0	\$43,421,682	
2025	608952	Boston Region	Chelsea	CHELSEA- BRIDGE SUPERSTRUCTURE REPLACEMENT C-09-013, WASHINGTON AVENUE, CARTER STREET & COUNTY ROAD/ROUTE 1	6	NGBP	\$10,584,000	\$10,584,000	\$0	\$10,584,000	
2025	612173	Boston Region	Bellingham	BELLINGHAM- BRIDGE REPLACEMENT, B-06-022, MAPLE STREET OVER I-495	3	NGBP	\$14,249,535	\$14,249,535	\$0	\$14,249,535	
2025	612178	Boston Region	Natick	NATICK- BRIDGE REPLACEMENT, N-03-010, SPEEN STREET OVER RR MBTA/CSX	3	NGBP	\$6,711,629	\$6,711,629	\$0	\$6,711,629	
2025	612196	Boston Region	Braintree	BRAINTREE- BRIDGE REPLACEMENT, B-21-067, JW MAHER HIGHWAY OVER MONATIQUOT RIVER	6	NGBP	\$11,876,518	\$11,876,518	\$0	\$11,876,518	

(Table 3-7, continued, 19)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Federal Fiscal Year 2026								\$500,400,443	\$386,100,866	\$114,299,577	
Section 1A / Regionally Prioritized Projects								\$123,179,070	\$98,911,389	\$24,267,681	
Intersection Improvements								\$18,519,200	\$15,083,493	\$3,435,707	
2026	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	STBG	\$24,837,870	\$15,837,870	\$12,670,296	\$3,167,574	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$24,837,870; 2-year AC schedule (2025-26); MPO Evaluation Score = 55.
2026	608940	Boston Region	Weston	WESTON- INTERSECTION IMPROVEMENTS BOSTON POST ROAD (ROUTE 20) @ WELLESLEY STREET	6	HSIP	\$2,681,330	\$2,681,330	\$2,413,197	\$268,133	Construction; HSIP Total Cost = \$2,681,330; MPO Evaluation Score = 50.6.
Roadway Reconstruction								\$74,625,488	\$59,800,390	\$14,825,098	
2026	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	NHPP	\$190,696,612	\$12,000,000	\$9,600,000	\$2,400,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2026	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	STBG	\$190,696,612	\$19,500,000	\$15,600,000	\$3,900,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2026	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	TAP	\$190,696,612	\$2,000,000	\$1,600,000	\$400,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2026	608045	Boston Region	Milford	MILFORD- REHABILITATION ON ROUTE 16, FROM ROUTE 109 TO BEAVER STREET	3	HSIP	\$10,119,616	\$1,000,000	\$900,000	\$100,000	Construction; HSIP+STBG Total Cost = \$10,119,616; MPO Evaluation Score = 43.
2026	608045	Boston Region	Milford	MILFORD- REHABILITATION ON ROUTE 16, FROM ROUTE 109 TO BEAVER STREET	3	STBG	\$10,119,616	\$9,119,616	\$7,295,693	\$1,823,923	Construction; HSIP+STBG Total Cost = \$10,119,616; MPO Evaluation Score = 43.
2026	608954	Boston Region	Weston	WESTON- RECONSTRUCTION ON ROUTE 30	6	STBG	\$17,028,272	\$13,028,272	\$10,422,618	\$2,605,654	Construction; STBG+TAP Total Cost = \$17,028,272; MPO Evaluation Score = 49.2. TAP Proponent = Weston.
2026	608954	Boston Region	Weston	WESTON- RECONSTRUCTION ON ROUTE 30	6	TAP	\$17,028,272	\$4,000,000	\$3,200,000	\$800,000	Construction; STBG+TAP Total Cost = \$17,028,272; MPO Evaluation Score = 49.2. TAP Proponent = Weston.
2026	609437	Boston Region	Multiple	SALEM- PEABODY- BOSTON STREET IMPROVEMENTS	4	STBG	\$13,977,600	\$13,977,600	\$11,182,080	\$2,795,520	Construction; STBG Total Cost = \$13,977,600; MPO Evaluation Score = 67.8.

(Table 3-7, continued, 20)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Bicycle and Pedestrian								\$21,034,382	\$16,827,506	\$4,206,876	
2026	609204	Boston Region	Belmont	BELMONT- COMMUNITY PATH, BELMONT COMPONENT OF THE MCRT (PHASE I)	4	CMAQ	\$21,034,382	\$7,000,000	\$5,600,000	\$1,400,000	Construction; TAP+CMAQ+STBG Total Cost = \$21,034,382; MPO Evaluation Score = 64.6; TAP Proponent = Belmont.
2026	609204	Boston Region	Belmont	BELMONT- COMMUNITY PATH, BELMONT COMPONENT OF THE MCRT (PHASE I)	4	STBG	\$21,034,382	\$9,034,382	\$7,227,506	\$1,806,876	Construction; TAP+CMAQ+STBG Total Cost = \$21,034,382; MPO Evaluation Score = 64.6; TAP Proponent = Belmont.
2026	609204	Boston Region	Belmont	BELMONT- COMMUNITY PATH, BELMONT COMPONENT OF THE MCRT (PHASE I)	4	TAP	\$21,034,382	\$5,000,000	\$4,000,000	\$1,000,000	Construction; TAP+CMAQ+STBG Total Cost = \$21,034,382; MPO Evaluation Score = 64.6; TAP Proponent = Belmont.
Flex to FTA								\$6,500,000	\$5,200,000	\$1,300,000	
2026	S12113	Boston Region	Multiple	TRANSIT MODERNIZATION PROGRAM		CMAQ	\$19,500,000	\$6,500,000	\$5,200,000	\$1,300,000	Construction; Flex to FTA; Set aside for LRTP Transit Modernization Program.
Transit Grant Program								\$2,500,000	\$2,000,000	\$500,000	
2026	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM		CMAQ	\$6,716,799	\$2,500,000	\$2,000,000	\$500,000	Planning, Design, or Construction; Set Aside for LRTP Community Connections Program.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$210,463,772	\$168,371,018	\$42,092,754	
Bridge On-system Non-NHS NB								\$7,204,512	\$5,763,610	\$1,440,902	
2026	612075	Boston Region	Salem	SALEM- BRIDGE REPLACEMENT, S-01-024, JEFFERSON AVENUE OVER PARALLEL STREET	4	HIP-BR	\$3,239,040	\$3,239,040	\$2,591,232	\$647,808	
2026	612099	Boston Region		ASHLAND- BRIDGE REPLACEMENT, A-14-006, CORDAVILLE ROAD OVER SUDBURY RIVER	3	HIP-BR	\$3,965,472	\$3,965,472	\$3,172,378	\$793,094	
Bridge On-System NHS NB								\$203,259,260	\$162,607,408	\$40,651,852	
2026	612496	Boston Region	Somerville	SOMERVILLE- BRIDGE PRESERVATION, S-17-031, I-93 (NB & SB) FROM ROUTE 28 TO TEMPLE STREET (PHASE 2)	4	HIP-BR	\$203,259,260	\$203,259,260	\$162,607,408	\$40,651,852	
Section 2A / State Prioritized Reliability Projects								\$45,807,583	\$37,247,438	\$8,560,145	
Bridge On-system NHS								\$18,484,426	\$14,787,541	\$3,696,885	
2026	605321	Boston Region	Norwood	NORWOOD- BRIDGE PRESERVATION, N-25-026, PROVIDENCE HIGHWAY (STATE ROUTE 1) OVER THE NEPONSET RIVER	5	NHPP	\$3,588,426	\$3,588,426	\$2,870,741	\$717,685	
2026	606449	Boston Region	Cambridge	CAMBRIDGE- BRIDGE REPLACEMENT, C-01-008, FIRST STREET BRIDGE & C-01-040, LAND BOULEVARD/BROAD CANAL BRIDGE	6	NHPP	\$14,896,000	\$14,896,000	\$11,916,800	\$2,979,200	
Safety Improvements								\$6,013,718	\$5,412,346	\$601,372	

(Table 3-7, continued, 21)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2026	607748	Boston Region	Acton	ACTON- INTERSECTION & SIGNAL IMPROVEMENTS ON SR 2 & SR 111 (MASSACHUSETTS AVENUE) AT PIPER ROAD & TAYLOR ROAD	3	HSIP	\$4,231,214	\$3,500,214	\$3,150,193	\$350,021	
2026	611954	Boston Region	Boston	BOSTON- GUIDE AND TRAFFIC SIGN REPLACEMENT ON I-90/I-93 WITHIN CENTRAL ARTERY/TUNNEL SYSTEM	6	HSIP	\$2,513,504	\$2,513,504	\$2,262,154	\$251,350	
Non-Interstate Pavement								\$18,051,320	\$14,441,056	\$3,610,264	
2026	612049	Boston Region	Randolph	RANDOLPH- RESURFACING AND RELATED WORK ON ROUTE 24	6	NHPP	\$9,466,800	\$9,466,800	\$7,573,440	\$1,893,360	
2026	612050	Boston Region	Multiple	BRAINTREE- WEYMOUTH- RESURFACING AND RELATED WORK ON ROUTE 3	6	NHPP	\$8,584,520	\$8,584,520	\$6,867,616	\$1,716,904	
Bridge Off-system								\$3,258,119	\$2,606,495	\$651,624	
2026	612076	Boston Region	Topsfield	TOPSFIELD- BRIDGE REPLACEMENT, T-06-013, PERKINS ROW OVER MILE BROOK	4	STBG-BR-Off	\$3,258,119	\$3,258,119	\$2,606,495	\$651,624	
Section 2B / State Prioritized Modernization Projects								\$70,717,002	\$62,728,608	\$7,988,394	
Intersection Improvements								\$15,120,761	\$13,608,685	\$1,512,076	
2026	607748	Boston Region	Acton	ACTON- INTERSECTION & SIGNAL IMPROVEMENTS ON SR 2 & SR 111 (MASSACHUSETTS AVENUE) AT PIPER ROAD & TAYLOR ROAD	3	HSIP	\$4,231,214	\$731,000	\$657,900	\$73,100	
2026	610665	Boston Region	Stoneham	STONEHAM- INTERSECTION IMPROVEMENTS AT ROUTE 28 (MAIN STREET), NORTH BORDER ROAD AND SOUTH STREET	4	HSIP	\$4,872,001	\$4,872,001	\$4,384,801	\$487,200	
2026	611974	Boston Region	Medford	MEDFORD- INTERSECTION IMPROVEMENTS AT MAIN STREET AND SOUTH STREET	4	HSIP	\$9,517,760	\$9,517,760	\$8,565,984	\$951,776	
Roadway Reconstruction								\$55,596,241	\$49,119,923	\$6,476,318	
2026	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$300,942,837	\$46,429,306	\$41,786,375	\$4,642,931	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
2026	S12205	Boston Region	Framingham	FRAMINGHAM - IMPROVEMENTS AT HARMONY GROVE ELEMENTARY SCHOOL (SRTS)	3	TAP	\$1,467,987	\$1,644,145	\$1,315,316	\$328,829	SRTS infrastructure project awarded in 2022. To be updated with project ID once approved by PRC. 12% inflation applied for FFY 2026.
2026	S12209	Boston Region	Sharon	SHARON - IMPROVEMENTS AT COTTAGE STREET ELEMENTARY SCHOOL (SRTS)	5	TAP	\$1,282,960	\$1,436,915	\$1,149,532	\$287,383	SRTS infrastructure project awarded in 2022. To be updated with project ID once approved by PRC. 12% inflation applied for FFY 2026.

(Table 3-7, continued, 22)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2026	S12210	Boston Region	Brookline	BROOKLINE - IMPROVEMENTS AT WILLIAM H. LINCOLN SCHOOL (SRTS)	6	TAP	\$1,165,913	\$1,305,823	\$1,044,658	\$261,165	SRTS infrastructure project awarded in 2022. To be updated with project ID once approved by PRC. 12% inflation applied for FFY 2026.
2026	S12211	Boston Region	Chelsea	CHELSEA - IMPROVEMENTS AT MARY C ELEMENTARY ELEMENTARY (SRTS)	6	TAP	\$2,592,188	\$2,903,250	\$2,322,600	\$580,650	SRTS infrastructure project awarded in 2022. To be updated with project ID once approved by PRC. 12% inflation applied for FFY 2026.
2026	S12212	Boston Region	Dedham	DEDHAM - IMPROVEMENTS AT AVERY ELEMENTARY SCHOOL (SRTS)	6	TAP	\$1,675,716	\$1,876,802	\$1,501,442	\$375,360	SRTS infrastructure project awarded in 2022. To be updated with project ID once approved by PRC. 12% inflation applied for FFY 2026.
Section 2C / State Prioritized Expansion Projects								\$23,553,016	\$18,842,413	\$4,710,603	
Bicycle and Pedestrian								\$23,553,016	\$18,842,413	\$4,710,603	
2026	607329	Boston Region	Multiple	WAKEFIELD- LYNNFIELD- RAIL TRAIL EXTENSION, FROM THE GALVIN MIDDLE SCHOOL TO LYNNFIELD/PEABODY T.L.	4	CMAQ	\$12,360,675	\$12,360,675	\$9,888,540	\$2,472,135	
2026	612499	Boston Region	Medford	MEDFORD- SOUTH MEDFORD CONNECTOR BIKE PATH	4	CMAQ	\$7,903,743	\$7,903,741	\$6,322,993	\$1,580,748	
2026	612607	Boston Region	Danvers	DANVERS- RAIL TRAIL WEST EXTENSION (PHASE 3)	4	CMAQ	\$3,288,600	\$3,288,600	\$2,630,880	\$657,720	
Section 3B / Non-Federal Aid Funded								\$26,680,000	\$0	\$26,680,000	
NFA								\$26,680,000	\$0	\$26,680,000	
2026	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFA	\$300,942,837	\$26,680,000	\$0	\$26,680,000	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding

(Table 3-7, continued, 23)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Federal Fiscal Year 2027								\$759,436,355	\$377,704,991	\$381,731,364	
Section 1A / Regionally Prioritized Projects								\$128,586,581	\$103,769,265	\$24,817,316	
Roadway Reconstruction								\$110,654,581	\$89,423,665	\$21,230,916	
2027	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	NHPP	\$190,696,612	\$12,000,000	\$9,600,000	\$2,400,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2027	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	STBG	\$190,696,612	\$19,500,000	\$15,600,000	\$3,900,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2027	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	TAP	\$190,696,612	\$2,000,000	\$1,600,000	\$400,000	Construction; NHPP+STBG+TAP Total Cost = \$190,696,612; AC schedule over 5 years (2025-2029); Total funding in this TIP = \$99,783,959; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston.
2027	607981	Boston Region	Somerville	SOMERVILLE- MCGRATH BOULEVARD CONSTRUCTION	4	STBG	\$102,370,000	\$20,000,000	\$16,000,000	\$4,000,000	Construction; STBG Total Cost = \$102,370,000; AC schedule anticipated over 4 years (2027-2030); Total funding in this TIP = \$20,000,000; MPO Evaluation Score = 72.2.
2027	609246	Boston Region	Lynn	LYNN- REHABILITATION OF WESTERN AVENUE (ROUTE 107)	4	HSIP	\$47,536,800	\$3,000,000	\$2,700,000	\$300,000	Construction; STBG+HSIP Total Cost = \$47,536,800; AC schedule anticipated over 3 years (2027-2029); Total funding in this TIP = \$15,000,000; MPO Evaluation Score = 74.9.
2027	609246	Boston Region	Lynn	LYNN- REHABILITATION OF WESTERN AVENUE (ROUTE 107)	4	STBG	\$47,536,800	\$12,000,000	\$9,600,000	\$2,400,000	Construction; STBG+HSIP Total Cost = \$47,536,800; AC schedule anticipated over 3 years (2027-2029); Total funding in this TIP = \$15,000,000; MPO Evaluation Score = 74.9.
2027	610932	Boston Region	Brookline	BROOKLINE- REHABILITATION OF WASHINGTON STREET	6	HSIP	\$30,030,812	\$5,000,000	\$4,500,000	\$500,000	Construction; HSIP+STBG Total Cost = \$30,030,812; MPO Evaluation Score = 62.4.
2027	610932	Boston Region	Brookline	BROOKLINE- REHABILITATION OF WASHINGTON STREET	6	STBG	\$30,030,812	\$25,030,812	\$20,024,650	\$5,006,162	Construction; HSIP+STBG Total Cost = \$30,030,812; MPO Evaluation Score = 62.4.
2027	611983	Boston Region	Chelsea	CHELSEA- PARK STREET & PEARL STREET RECONSTRUCTION	6	HSIP	\$12,123,769	\$1,000,000	\$900,000	\$100,000	Construction; STBG+HSIP Total Cost = \$12,123,769; MPO Evaluation Score = 69.9.
2027	611983	Boston Region	Chelsea	CHELSEA- PARK STREET & PEARL STREET RECONSTRUCTION	6	STBG	\$12,123,769	\$11,123,769	\$8,899,015	\$2,224,754	Construction; STBG+HSIP Total Cost = \$12,123,769; MPO Evaluation Score = 69.9.

(Table 3-7, continued, 24)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Bicycle and Pedestrian								\$8,932,000	\$7,145,600	\$1,786,400	
2027	610666	Boston Region	Swampscott	SWAMPSCOTT- RAIL TRAIL CONSTRUCTION	4	CMAQ	\$8,932,000	\$8,932,000	\$7,145,600	\$1,786,400	Construction; CMAQ Total Cost = \$8,932,000; MPO Evaluation Score = 66.4.
Flex to FTA								\$6,500,000	\$5,200,000	\$1,300,000	
2027	S12113	Boston Region	Multiple	TRANSIT MODERNIZATION PROGRAM		CMAQ	\$19,500,000	\$6,500,000	\$5,200,000	\$1,300,000	Construction; Flex to FTA; Set aside for LRTP Transit Modernization Program.
Transit Grant Program								\$2,500,000	\$2,000,000	\$500,000	
2027	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM		CMAQ	\$6,716,799	\$2,500,000	\$2,000,000	\$500,000	Planning, Design, or Construction; Set Aside for LRTP Community Connections Program.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$152,065,685	\$121,652,548	\$30,413,137	
Bridge On-System NHS NB								\$152,065,685	\$121,652,548	\$30,413,137	
2027	606728	Boston Region	Boston	BOSTON- BRIDGE REPLACEMENT B-16-365, STORROW DRIVE OVER BOWKER RAMPS	6	HIP-BR	\$116,058,000	\$116,058,000	\$92,846,400	\$23,211,600	
2027	612519	Boston Region	Boston	BOSTON- BRIDGE REPLACEMENT, B-16-165, BLUE HILL AVENUE OVER RAILROAD	6	HIP-BR	\$36,007,685	\$36,007,685	\$28,806,148	\$7,201,537	
Section 2A / State Prioritized Reliability Projects								\$187,483,619	\$72,372,661	\$115,110,958	
Bridge On-system Non-NHS								\$48,290,800	\$0	\$48,290,800	
2027	607420	Boston Region	Natick	NATICK- SUPERSTRUCTURE REPLACEMENT, N-03-012, BODEN LANE OVER CSX/MBTA	3	NGBP	\$8,270,800	\$8,270,800	\$0	\$8,270,800	
2027	608514	Boston Region	Beverly	BEVERLY- BRIDGE REPLACEMENT, B-11-001, BRIDGE STREET OVER BASS RIVER (HALL-WHITAKER DRAWBRIDGE)	4	NGBP	\$40,020,000	\$40,020,000	\$0	\$40,020,000	
Non-Interstate Pavement								\$48,665,364	\$38,932,291	\$9,733,073	
2027	609402	Boston Region	Multiple	FRAMINGHAM- NATICK- RESURFACING AND RELATED WORK ON ROUTE 9	3	NHPP	\$48,665,364	\$48,665,364	\$38,932,291	\$9,733,073	
Safety Improvements								\$22,185,800	\$19,573,440	\$2,612,360	
2027	611969	Boston Region	Everett	EVERETT- INTERSECTION IMPROVEMENTS ON ROUTE 16	4	HSIP	\$17,748,000	\$13,248,000	\$11,923,200	\$1,324,800	
2027	612599	Boston Region	Lynn	LYNN- TARGETED SAFETY AND MULTIMODAL IMPROVEMENTS (PLAYBOOK PRIORITY CORRIDORS)	4	HSIP	\$8,937,800	\$5,000,000	\$4,500,000	\$500,000	
2027	612599	Boston Region	Lynn	LYNN- TARGETED SAFETY AND MULTIMODAL IMPROVEMENTS (PLAYBOOK PRIORITY CORRIDORS)	4	STBG	\$8,937,800	\$3,937,800	\$3,150,240	\$787,560	

(Table 3-7, continued, 25)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
Bridge On-system NHS								\$52,933,955	\$0	\$52,933,955	
2027	611987	Boston Region	Cambridge	CAMBRIDGE- BRIDGE REPLACEMENT, C-01-026, MEMORIAL DRIVE OVER BROOKLINE STREET	6	NGBP	\$52,933,955	\$52,933,955	\$0	\$52,933,955	
Interstate Pavement								\$15,407,700	\$13,866,930	\$1,540,770	
2027	612051	Boston Region	Multiple	CANTON- MILTON- RANDOLPH- INTERSTATE MAINTENANCE AND RELATED WORK ON I-93	6	NHPP-I	\$15,407,700	\$15,407,700	\$13,866,930	\$1,540,770	
Section 2B / State Prioritized Modernization Projects								\$90,168,278	\$76,291,316	\$13,876,962	
Roadway Reconstruction								\$85,668,278	\$72,691,316	\$12,976,962	
2027	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NHPP-I	\$300,942,837	\$41,566,934	\$37,410,241	\$4,156,693	Other FA - SW HIP: \$6,784,226 (FY 2022); HIP Boston: \$5,176,619 (FY 2022); BUILD Grant: \$26,250,000 (FY 2022); HIP BR: \$40,000,000 (FY 2023); \$111,166,667 WT Funding
2027	609527	Boston Region	Reading	READING- IMPROVEMENTS ON I-95	4	NHPP	\$17,376,800	\$17,376,800	\$13,901,440	\$3,475,360	
2027	610543	Boston Region	Multiple	REVERE- MALDEN- IMPROVEMENTS AT ROUTE 1 (NB)	4	NHPP	\$8,363,600	\$8,363,600	\$6,690,880	\$1,672,720	
2027	612615	Boston Region	Multiple	CANTON- MILTON- ROADWAY RECONSTRUCTION ON ROUTE 138, FROM ROYALL STREET TO DOLLAR LANE	6	NHPP	\$18,360,944	\$18,360,944	\$14,688,755	\$3,672,189	
Intersection Improvements								\$4,500,000	\$3,600,000	\$900,000	
2027	611969	Boston Region	Everett	EVERETT- INTERSECTION IMPROVEMENTS ON ROUTE 16	4	NHPP	\$17,748,000	\$4,500,000	\$3,600,000	\$900,000	
Section 2C / State Prioritized Expansion Projects								\$4,524,001	\$3,619,201	\$904,800	
Bicycle and Pedestrian								\$4,524,001	\$3,619,201	\$904,800	
2027	610660	Boston Region	Multiple	SUDBURY- WAYLAND- MASS CENTRAL RAIL TRAIL (MCRT)	3	CMAQ	\$4,524,001	\$4,524,001	\$3,619,201	\$904,800	
Section 3B / Non-Federal Aid Funded								\$196,608,191	\$0	\$196,608,191	
Bridge On-system Non-NHS NB								\$95,383,436	\$0	\$95,383,436	
2027	605276	Boston Region	Multiple	BEVERLY- SALEM- DRAWBRIDGE REPLACEMENT/ REHABILITATION OF B-11-005=S-01-013, KERNWOOD AVENUE OVER DANVERS RIVER	4	NGBP	\$95,383,436	\$95,383,436	\$0	\$95,383,436	
Bridge On-system Non-NHS								\$48,290,800	\$0	\$48,290,800	
2027	607420	Boston Region	Natick	NATICK- SUPERSTRUCTURE REPLACEMENT, N-03-012, BODEN LANE OVER CSX/MBTA	3	NGBP	\$8,270,800	\$8,270,800	\$0	\$8,270,800	

(Table 3-7, continued,, 26)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFPC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2027	608514	Boston Region	Beverly	BEVERLY- BRIDGE REPLACEMENT, B-11-001, BRIDGE STREET OVER BASS RIVER (HALL-WHITAKER DRAWBRIDGE)	4	NGBP	\$40,020,000	\$40,020,000	\$0	\$40,020,000	
Bridge On-system NHS								\$52,933,955	\$0	\$52,933,955	
2027	611987	Boston Region	Cambridge	CAMBRIDGE- BRIDGE REPLACEMENT, C-01-026, MEMORIAL DRIVE OVER BROOKLINE STREET	6	NGBP	\$52,933,955	\$52,933,955	\$0	\$52,933,955	

**Table 3-8
FFYs 2023–27 TIP Transit Table (MBTA Federal Capital Program)**

Federal Funding Program	ALI	2023	2024	2025	2026	2027	FFY23-27 Total (Federal)	FFY23-27 Total (Incl. Match)
5307		\$188,718,272	\$193,663,464	\$197,677,960	\$202,720,389	\$207,622,091	\$990,402,177	\$1,238,002,721
Bridge & Tunnel Program	12.24.05	\$0	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$40,000,000	\$50,000,000
Revenue Vehicle Program	12.12.00	\$88,612,555	\$106,661,899	\$110,676,395	\$115,718,824	\$120,620,526	\$542,290,198	\$677,862,747
Signals/Systems Upgrade Program	12.63.01	\$6,070,405	\$49,580,129	\$49,580,129	\$49,580,129	\$49,580,129	\$204,390,923	\$255,488,653
Stations and Facilities Program	12.34.00	\$94,035,312	\$27,421,436	\$27,421,436	\$27,421,436	\$27,421,436	\$203,721,056	\$254,651,320
5337		\$229,289,490	\$234,344,881	\$238,400,903	\$243,546,639	\$248,457,689	\$1,194,039,602	\$1,492,549,503
Bridge & Tunnel Program	12.24.05	\$17,263,690	\$84,522,118	\$88,578,140	\$93,723,876	\$98,634,926	\$382,722,751	\$478,403,439
Revenue Vehicle Program	12.12.00	\$103,904,747	\$21,876,517	\$21,876,517	\$21,876,517	\$22,757,316	\$192,291,613	\$240,364,516
Signals/Systems Upgrade Program	12.63.01	\$27,746,281	\$36,113,602	\$36,113,602	\$36,113,602	\$36,113,602	\$172,200,689	\$215,250,862
Stations and Facilities Program	12.34.00	\$80,374,771	\$91,832,644	\$91,832,644	\$91,832,644	\$90,951,845	\$446,824,549	\$558,530,687
5339		\$6,016,454	\$6,253,263	\$6,445,503	\$6,686,969	\$6,932,418	\$32,334,607	\$40,418,259
Bus Program	11.14.00	\$6,016,454	\$6,253,263	\$6,445,503	\$6,686,969	\$6,932,418	\$32,334,607	\$40,418,259
FFY23-27 FTA Formula Funding		\$424,024,215	\$434,261,608	\$442,524,367	\$452,953,997	\$463,012,199	\$2,216,776,386	\$2,770,970,483
Other Federal		\$147,500,000	\$147,500,000	\$516,564,667	\$225,085,333	\$125,000,000	\$1,161,650,000	\$1,161,650,000
RRIF Financing - PTC/ATC/Fiber	12.63.01	\$0	\$0	\$369,064,667	\$100,085,333	\$0	\$469,150,000	\$469,150,000
RRIF/TIFIA Financing Program	12.24.05	\$147,500,000	\$147,500,000	\$147,500,000	\$125,000,000	\$125,000,000	\$692,500,000	\$692,500,000
FFY23-27 Total Federal Funding		\$571,524,215	\$581,761,608	\$959,089,034	\$678,039,330	\$588,012,199	\$3,378,426,386	\$3,932,620,483

Notes:

FTA formula funds (5307, 5337 and 5339) are based on estimated apportionments for FFYs 2023-27. This includes additional funding to be made available through the Bipartisan Infrastructure Law (BIL), based on current estimates.

TIP programs and projects are based on the draft FYs 2023-27 CIP and planned federal obligations as of April 22, 2022. Adjustments will be made to federal projects and budgets as the FYs 2023-27 CIP is finalized.

The Activity Line Item (ALI) codes are preliminary only and generally reflect the bulk of the TIP program. Within a program there may be several different ALI codes used.

RRIF loan funding for the PTC/ATC/Fiber Resiliency project is based on the currently planned drawdown schedule and is subject to change.

RRIF/TIFIA financing program funding is an initial estimate and will be refined as projects are identified and loans are finalized with the Build America Bureau.

Table 3-9
FFYs 2023–27 TIP Transit Table (MBTA Federal Capital Program – Project List and Descriptions [80% Federal Share])

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
FTA Formula Funds (5307, 5337, 5339)							
5307 - Bridge and Tunnel							
5307	Bridge and Tunnel	P0912	Systemwide Tunnel Flood Mitigation Program	\$0	\$40,000,000	\$40,000,000	Planning, training, and infrastructure improvements to make the tunnel network more resilient to flooding exposures due to storm surge, precipitation, and sea level rise.
				\$0	\$40,000,000	\$40,000,000	
5307 - Revenue Vehicles							
5307	Revenue Vehicles	P0369	Green Line Type 10 Light Rail Fleet Replacement	\$0	\$264,584,510	\$264,584,510	Procurement of 102 new fully-accessible light rail vehicles (LRV) fleet to replace the existing Type 7 and Type 8 fleets and increase system capacity.
5307	Revenue Vehicles	P0618	Procurement of 40ft Enhanced Electric Hybrid Buses	\$154,316,086	\$127,577,551	\$281,893,637	Procurement of 460 40ft Enhanced Electric Hybrid (EEH) buses to replace 310 40ft diesel buses purchased in 2006-2008 and support more reliable, efficient, and sustainable operations. Includes vehicle testing, warranty, and inspection.
5307	Revenue Vehicles	P0633	MBTA Catamaran Overhauls	\$0	\$5,773,824	\$5,773,824	Overhaul of two 149-passenger subchapter "T" ferries. Includes end products as well as capital spare parts, manuals, diagnostic test equipment, tools, training, training aids, warranty, and associated materials, equipment, and services.
5307	Revenue Vehicles	P0649	Option Order Procurement of New Flyer Hybrid 40ft Buses	\$0	\$7,135,142	\$7,135,142	Procurement of 194 40ft buses with hybrid propulsion to replace an aging fleet and improve fuel economy.
5307	Revenue Vehicles	P0652	Procurement of 100 Bi-Level Commuter Rail Coaches	\$0	\$35,076,265	\$35,076,265	Procurement of 100 Bi-Level Commuter Rail coaches to replace aging single-level coaches, expand capacity from 120 to 180 passengers per coach, reduce number of coaches required, and mitigate operational bottlenecks.
5307	Revenue Vehicles	P0653	Procurement of 40ft Battery Electric Buses and Related Infrastructure	\$0	\$37,454,168	\$37,454,168	Purchase of 80 40ft battery electric buses (BEBs) to replace fleets currently running diesel bus service out of Quincy and trolleybus service out of North Cambridge.
5307	Revenue Vehicles	P0860	Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881)	\$0	\$10,400,000	\$10,400,000	Midlife overhaul of major systems and components (engine, drive unit, cooling systems, axles, brakes, among others) of 60 40ft BAE Hybrid buses to ensure reliable and safe operations and to meet FTA service life requirements.
5307	Revenue Vehicles	P0911	Hybrid and CNG Bus Overhaul	\$0	\$20,800,000	\$20,800,000	Midlife overhaul of major systems and components of 156 40ft hybrid buses, 175 40ft CNG buses, and 45 60ft hybrid buses to ensure reliable and safe operations that meet FTA requirements.
5307	Revenue Vehicles	P1016	Mattapan Trolley Select System Upgrade	\$0	\$2,768,739	\$2,768,739	Overhaul of the 75+ year old PCC cars operating on the Mattapan Line to improve reliability of the fleet. Includes work on the propulsion system, trucks, auxiliary electrical power system, wiring, lighting, doors, car body, and paint.

(Table 3-9, continued, 2)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5307	Revenue Vehicles	P1151	Blue Line Vehicle Mid-Life Overhaul	\$0	\$800,000	\$800,000	Planning for the midlife overhaul of 94 Blue Line heavy rail vehicles built by Siemens. The project will address systems at or nearing the end of their intended service lives, obsolete components and functional improvements.
5307	Revenue Vehicles	P1154	CNG Bus Overhaul (New Flyer XN40 - SR 1982)	\$0	\$800,000	\$800,000	Planning for the midlife overhaul of 175 forty-foot New Flyer CNG buses delivered in 2016-2017. These buses require overhaul of major systems and components to ensure continued reliable and safe operations and to meet FTA service life requirements.
5307	Revenue Vehicles	P1155	Hybrid Bus Overhaul (New Flyer XDE40 - SR 2011)	\$0	\$800,000	\$800,000	Planning for the midlife overhaul of 44 sixty-foot New Flyer hybrid buses delivered in 2016-2017. These buses require overhaul of major systems and components to ensure continued reliable and safe operations and to meet FTA service life requirements.
5307	Revenue Vehicles	P1162	Reliability Centered Maintenance - Blue, Orange and Red Line	\$0	\$28,320,000	\$28,320,000	Improvements to trucks, brakes, motors, current collectors, propulsion and auxiliary fuses on the Blue Line and improvements to propulsion, brakes, HVAC, and doors on the Red and Orange Lines.
				\$154,316,086	\$542,290,198	\$696,606,284	
5307 - Signals and Systems							
5307	Signals and Systems	P0285	Signal Program - Red/Orange Line	\$0	\$112,762,427	\$112,762,427	Replacement and upgrade of signal equipment on the Red and Orange Lines. Includes renewal of track circuit modules using latest digital audio frequency technology and replacement of wayside equipment on the Orange Line south of Haymarket.
5307	Signals and Systems	P0857	Mattapan HSL Transformation	\$0	\$91,628,495	\$91,628,495	State of good repair and accessibility improvements, power upgrades, and other infrastructure investments on the Mattapan Line.
				\$0	\$204,390,923	\$204,390,923	
5307 - Stations and Facilities							
5307	Stations and Facilities	P0075	Elevator Program Multiple Location Design	\$0	\$43,778,268	\$43,778,268	Design and some construction work for the replacement of elevators and/or addition of new, redundant elevators and related wayfinding amenities at transit stations.
5307	Stations and Facilities	P0078	Hingham Ferry Dock Modification	\$0	\$6,239,134	\$6,239,134	Replacement of existing floating dock, access gangway, canopy, and walkways; extension of canopy structure to the Hingham Intermodal Center; and upgraded lighting, safety, and security systems.
5307	Stations and Facilities	P0631	Blue Line Infrastructure Improvements	\$0	\$21,790,908	\$21,790,908	Includes rebuilding of the Long Wharf Emergency Egress; track and tunnel infrastructure improvements between Aquarium and Maverick; communication rooms improvements; and Suffolk Downs station reconstruction.

(Table 3-9, continued, 3)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5307	Stations and Facilities	P0671a	Quincy Bus Facility Modernization	\$29,515,360	\$48,437,287	\$77,952,647	Relocation and replacement of the Quincy bus maintenance facility. The new, modernized facility will expand capacity and include the infrastructure necessary to support the MBTA's first battery-electric bus fleet (BEBs).
5307	Stations and Facilities	P0671b	Arborway Bus Facility - Design Funding	\$0	\$28,800,000	\$28,800,000	Design funding to support the construction of a new Arborway bus facility to accommodate battery electric bus (BEB) infrastructure.
5307	Stations and Facilities	P0671c	North Cambridge Bus Facility Modernization	\$0	\$20,000,000	\$20,000,000	Renovation of North Cambridge facility to support conversion to battery electric bus (BEB) fleets.
5307	Stations and Facilities	P0679	Codman Yard Expansion and Improvements	\$45,762,897	\$25,555,459	\$71,318,356	Improvements to Codman Yard including in-kind replacement of existing infrastructure and expansion of storage capacity to support the new Red Line fleet.
5307	Stations and Facilities	P1113	Bus Priority Project Construction	\$0	\$9,120,000	\$9,120,000	Funding to support construction of bus priority infrastructure. This may include side or center-running bus lanes, transit signal priority, pavement markings, and stop upgrades.
				\$75,278,257	\$203,721,056	\$278,999,313	
5337 - Bridge and Tunnel							
5337	Bridge and Tunnel	P0006	Gloucester Drawbridge Replacement	\$12,402,981	\$0	\$12,402,981	Replacement of Gloucester Drawbridge on the Rockport Line. The new bridge will consist of a moveable bascule span with two independent barrels, two spans of precast concrete box beams, a new steel superstructure, and a new micro-pile abutment.
5337	Bridge and Tunnel	P0008	Emergency Bridge Design / Inspection & Rating	\$222,194	\$1,975,145	\$2,197,339	Funding to support emergency design, inspection, and rating of bridges as needed.
5337	Bridge and Tunnel	P0009	Bridges - Design	\$0	\$8,293,339	\$8,293,339	Design funding to support the repair, rehabilitation, and replacement of bridges across the system.
5337	Bridge and Tunnel	P0018	North Station Draw 1 Bridge Replacement	\$0	\$141,131,308	\$141,131,308	Replacement of North Station Draw 1 bridge structure and control tower. Includes expansion of bridge capacity from 4 to 6 tracks, expansion of station platform capacity from 10 to 12 tracks, and a pedestrian path across the Charles River.
5337	Bridge and Tunnel	P0037	Emergency Bridge Repair	\$5,014,180	\$0	\$5,014,180	Funding to support emergency bridge repairs on an on-call basis.
5337	Bridge and Tunnel	P0182	Tunnel Rehabilitation	\$268,383	\$0	\$268,383	Construction and professional services relating to tunnel repair and inspection.
5337	Bridge and Tunnel	P0495	Bridge Bundling Contract	\$47,357,564	\$0	\$47,357,564	Replacement of six commuter rail bridges at Intervale Rd. in Weston; Bacon St. in Wellesley; High Line Bridge in Somerville; Lynn Fells Parkway in Melrose; Parker St. in Lawrence; and Commercial St. in Lynn.

(Table 3-9, continued, 4)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5337	Bridge and Tunnel	P0551	Longfellow Approach	\$0	\$151,681,341	\$151,681,341	Rehabilitation of Longfellow Approach viaduct, Span 1 of the Longfellow Bridge, and station platforms at Charles/MGH Station. Includes new track, power, communication and signal systems, and additional emergency egress and redundant elevators.
5337	Bridge and Tunnel	P0552	Dorchester Avenue Bridge	\$29,700,062	\$0	\$29,700,062	Replacement of Dorchester Avenue Bridge and installation of a new tunnel roof beneath the bridge.
5337	Bridge and Tunnel	P0627	Systemwide Bridge Inspection and Rating	\$15,987,600	\$31,092,600	\$47,080,200	Program to support in-depth inspection and load rating of MBTA-owned bridges at regular intervals. Load ratings are used to establish a systemwide priority list of bridge repairs, rehabilitation, and replacement.
5337	Bridge and Tunnel	P0892	Saugus Drawbridge Replacement	\$8,000,000	\$0	\$8,000,000	Design of Saugus Drawbridge replacement on the Newburyport/Rockport Line. The new bridge would include a widened approach embankment, a new control house, signal upgrades, and relocation of submerged utilities.
5337	Bridge and Tunnel	P0907	East Street Bridge Replacement (Dedham)	\$0	\$14,400,000	\$14,400,000	Replacement of East Street bridge carrying the Franklin Line in Dedham. The new bridge will feature improved vertical and horizontal clearance, improved roadway features, and improved pedestrian and vehicle access to East Street.
5337	Bridge and Tunnel	P1107	Bridge Program Pipeline - Rehabilitation, Repair and Replacement	\$0	\$16,000,000	\$16,000,000	This program uses information provided through the bridge inspection and load rating program to design and construct prioritized bridge rehabilitation, repair, or replacement projects.
5337	Bridge and Tunnel	P1115	South Elm Street Bridge Replacement	\$12,154,290	\$0	\$12,154,290	Replacement of South Elm Street bridge on the Haverhill Line serving Commuter Rail, Downeaster, and Pan Am freight trains.
5337	Bridge and Tunnel	P1116	Systemwide Culvert Inspection and Load Rating	\$0	\$8,400,000	\$8,400,000	Inventory, inspection, and load rating of the MBTA's approximately 1,300 culverts supporting in-service structures systemwide. The scope of work includes an initial inspection to establish baseline condition, followed by inspection every five years.
5337	Bridge and Tunnel	R0074	Tunnel Inspection Systemwide	\$7,130,983	\$9,749,018	\$16,880,000	Ongoing inspection and rating of Red Line, Orange Line, Green Line, and Blue Line tunnels.
				\$138,238,238	\$382,722,751	\$520,960,989	
5337 - Revenue Vehicles							
5337	Revenue Vehicles	P0239	F40 Commuter Rail Locomotive Overhaul	\$33,670,671	\$0	\$33,670,671	Overhaul of 37 F40 Commuter Rail locomotives to improve reliability and reduce risk of unplanned maintenance.
5337	Revenue Vehicles	P0370	Green Line Train Protection	\$80,100,555	\$13,035,090	\$93,135,645	Procurement and installation of on-board and wayside equipment for a train protection and information system on the Green Line to mitigate red signal violations, train-to-train collisions, derailments, and intrusions into work zones.

(Table 3-9, continued, 5)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5337	Revenue Vehicles	P0918	Future Rolling Stock Fleet	\$0	\$40,000,000	\$40,000,000	Planning funds to support future procurement of 25 electrified or multi-mode Commuter Rail rolling stock to replace the oldest vehicles in the fleet.
5337	Revenue Vehicles	P0927	Rolling Stock - Locomotive and Coach State of Good Repair and Resiliency	\$0	\$139,256,523	\$139,256,523	Upgrades to improve system reliability, correct deficiencies, standardize procedures, and increase equipment availability for Commuter Rail rolling stock. Includes vehicle procurement, testing support, service life enhancement, and overhauls.
				\$113,771,226	\$192,291,613	\$306,062,839	
5337 - Signals and Systems							
5337	Signals and Systems	P0146	SCADA Upgrades	\$1,600,000	\$0	\$1,600,000	Upgrades to the Power Supervisory Control and Data Acquisition (SCADA) communication network from leased lines to the Security Wide Area Network (SWAN) to provide high-speed ethernet connection at traction power substations and unit substations.
5337	Signals and Systems	P0212	North Station Terminal Signal	\$4,000,000	\$0	\$4,000,000	Upgrade of signal system at North Station including new microprocessor technology, nine new signal houses, two new crossovers, and the relocation of critical signal equipment above the 500-year floodplain.
5337	Signals and Systems	P0261	Worcester Line Track and Station Accessibility Improvements	\$0	\$25,885,743	\$25,885,743	New third track and realignment of existing tracks on the Framingham and Worcester Commuter Rail lines between Weston and Framingham. Includes upgrades to Wellesley Farms, Wellesley Hills, Wellesley Square, and West Natick Stations.
5337	Signals and Systems	P0283	Green Line Central Tunnel Signal - 25 Cycle	\$0	\$4,000,000	\$4,000,000	Replacement of 25Hz track circuits with 100Hz track circuits in the Green Line central tunnel. Includes replacement of track circuit cable, trough, messenger, cases, relays, rectifiers, and signal power equipment.
5337	Signals and Systems	P0301	Systemwide Radio	\$60,333,511	\$0	\$60,333,511	Upgrade of the MBTA's existing two-way radio system used by MBTA Transit Police and operations personnel. This project includes mobile radios for heavy rail, light rail, and bus vehicles.
5337	Signals and Systems	P0591	Green Line Central Tunnel Track and Signal Replacement	\$10,270,834	\$85,729,166	\$96,000,000	Rehabilitation and upgrades to signal and track infrastructure within the Green Line Central Tunnel. Includes central instrumentation houses and signal, track, and power systems at Copley, Park Street, and Government Center.
5337	Signals and Systems	P0675	Orange Line Southwest Corridor Track Replacement	\$0	\$12,500,806	\$12,500,806	Reconstruction of track and support systems on the Southwest Corridor of the Orange Line between Chinatown and Forest Hills Stations.
5337	Signals and Systems	P0705	Power Systems Resiliency Program	\$2,689,311	\$8,727,333	\$11,416,644	Replacement of damaged power cable duct banks that energize areas of the Red, Orange, Blue, and Green Line. Includes excavation, demolition, conduit replacement, manhole replacement, surface restoration, and power cable installation.

(Table 3-9, continued, 6)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5337	Signals and Systems	P0904	Systemwide Asset Management Program Phase 3	\$9,107,291	\$0	\$9,107,291	Implementation of the Asset Management Program in accordance with FTA requirements. Includes professional services, audit, inventory, condition assessments, updates to the National Transit Database (NTD), and Transit Asset Management Plan (TAMP).
5337	Signals and Systems	P1104	Traction Power Substation Upgrades	\$0	\$5,760,000	\$5,760,000	Complete replacement of electrical systems and structural, mechanical, and plumbing improvements at nine aging traction power substations (TPSS). This scope also includes a TPSS Design Guide to standardize future improvements.
5337	Signals and Systems	P1114	South Boston to Forest Hills Duct Bank Replacement	\$0	\$12,946,281	\$12,946,281	Replacement of duct banks and cables which carry AC power from the South Boston power complex to Forest Hills.
5337	Signals and Systems	P1132	Ashmont Branch Track Replacement	\$0	\$4,000,000	\$4,000,000	Design and construction for partial reconstruction of track and track support systems on the Ashmont Branch of the Red Line. This is part of a series of Red Line track replacement projects.
5337	Signals and Systems	P1133	Braintree Line Track Replacement	\$0	\$1,200,000	\$1,200,000	Design and construction for partial reconstruction of track and track support systems on the Braintree Branch of the Red Line. This is part of a series of Red Line track replacement projects.
5337	Signals and Systems	P1139	Systemwide Asset Management Program Phase 4	\$0	\$9,600,000	\$9,600,000	Implementation of the Asset Management Program in accordance with FTA requirements. Includes professional services; audit, inventory, condition assessments, updates to the National Transit Database (NTD), and Transit Asset Management Plan (TAMP).
5337	Signals and Systems	P1149	Unit Substation Replacement Project	\$0	\$1,851,360	\$1,851,360	Development of unit substation (USS) Design Guide and replacement of existing power and electrical equipment at unit substation locations (USS), including AC feeder disconnect switches.
				\$88,000,946	\$172,200,689	\$260,201,636	
5337 - Stations and Facilities							
5337	Stations and Facilities	P0066	Elevator Program	\$0	\$641,008	\$641,008	This program funds design and construction for elevator improvements on the rapid transit system. Individual elevator projects are separated into child projects once they reach the construction stage.
5337	Stations and Facilities	P0074	Downtown Crossing Vertical Transportation Improvements Phase 2	\$0	\$62,208,880	\$62,208,880	Design and construction of 3 new elevators to provide vertical transfers from the Red Line northbound to the Orange Line southbound platform, and from the Orange Line northbound to the Red Line southbound platform at Downtown Crossing.
5337	Stations and Facilities	P0076	Oak Grove Station Vertical Transportation Improvements	\$800,000	\$0	\$800,000	Accessibility upgrades at Oak Grove station including 3 new elevators, replacement of one existing elevator, sidewalk repairs, and wayfinding and station brightening improvements.

(Table 3-9, continued, 7)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5337	Stations and Facilities	P0078	Hingham Ferry Dock Modification	\$400,000	\$0	\$400,000	Replacement of existing floating dock, access gangway, canopy, and walkways; extension of canopy structure to the Hingham Intermodal Center; and upgraded lighting, safety, and security systems.
5337	Stations and Facilities	P0087	Braintree and Quincy Adams Garage Rehabilitation	\$3,396,000	\$0	\$3,396,000	Repairs to existing Braintree and Quincy Adams station garages. Includes upgrades to mechanical, electrical, plumbing, life safety systems, wayfinding, traffic circulation and parking layout. Also includes two new elevators at the Braintree garage.
5337	Stations and Facilities	P0129	Newton Highlands Green Line Station Accessibility Project	\$0	\$25,642,762	\$25,642,762	Accessibility improvements at Newton Highlands on the Green Line D Branch. Includes 3 ramps with canopies, 2 staggered 4-car 300' raised platforms, 2 at-grade pedestrian crossings, site lighting, heated platform shelters, and covered bike racks.
5337	Stations and Facilities	P0163	Forest Hills Improvement Project	\$0	\$26,089,763	\$26,089,763	Accessibility and state of good repair improvements at Forest Hills Station. Includes elevator replacement, new elevator/stair tower to connect upper and lower busway, accessibility upgrades, station brightening, wayfinding, and platform repairs.
5337	Stations and Facilities	P0168	Symphony Station Improvements	\$35,665,778	\$0	\$35,665,778	Upgrade Symphony Station to a modern and fully accessible passenger facility. Includes construction of four new elevators, raised platforms, accessible restrooms, installation of egress stairs, and upgraded fire alarm systems.
5337	Stations and Facilities	P0169	Wollaston Station / Quincy Center Garage Demolition	\$473,433	\$0	\$473,433	Complete modernization of Wollaston Station, demolition of the top 3 levels of the Quincy Center parking garage, replacement of one elevator at Quincy Center, and construction of an accessible walkway to Quincy Center.
5337	Stations and Facilities	P0179	Winchester Center Station	\$5,145,827	\$0	\$5,145,827	Renovation of Winchester Station on the Lowell Line to provide code compliant new level-boarding height, fiber resin platforms, lighting system, accessibility ramps, elevators, walkways, variable message signs, public address system and CCTV.
5337	Stations and Facilities	P0395	Worcester Union Station Accessibility and Infrastructure Improvements	\$2,841,410	\$0	\$2,841,410	Includes high-level center platform with elevators, ramps, and stairs, replacement and realignment of station tracks, and construction of a new rail crossover to improve accessibility, operations, and service capacity at Worcester Union Station.
5337	Stations and Facilities	P0496	Silver Line Gateway - Phase 2	\$4,654,573	\$0	\$4,654,573	Construction of new Chelsea Commuter Rail station with a direct connection to the Silver Line. Includes new platforms, canopies, foundation systems, signage, track infrastructure, train signals, power cable duct banks, and BRT grade crossings.
5337	Stations and Facilities	P0856	Ruggles Station Improvements Phase 2	\$0	\$66,059,036	\$66,059,036	Continuation of improvements under P0175 focused on travel paths, alternate egress of Orange Line subway and Commuter Rail platforms, accessible restrooms, public address systems, electrical and fire protection upgrades, and roof replacement.

(Table 3-9, continued, 8)

Funds	TIP Program	CIP ID#	Project Name	FFY 2022	FFY 2023-2027	Total (Federal)	Project Description
5337	Stations and Facilities	P0923	E Branch Accessibility & Capacity Improvements	\$0	\$66,050,285	\$66,050,285	Improvements to surface track and stations on the E-Branch of the Green Line, extending from the Northeastern Station portal to Heath Street Station.
5337	Stations and Facilities	P0924	B Branch Accessibility & Capacity Improvements	\$0	\$46,269,972	\$46,269,972	Track realignments, accessibility improvements, potential consolidation, and station and traction power upgrades along the Green Line B Branch, between Blandford St and Warren St stations.
5337	Stations and Facilities	P1010	Riverside Vehicle Maintenance Facility Modifications & Upgrades	\$0	\$39,480,004	\$39,480,004	Upgrades to existing hoists, pits, and mezzanines at the Riverside Vehicle Maintenance Facility to accommodate the future Type 10 fleet.
5337	Stations and Facilities	P1011	Green Line Extension Vehicle Maintenance Facility Modifications & Upgrades	\$0	\$9,943,730	\$9,943,730	Design and installation of a new hoist at the Green Line Extension (GLX) Vehicle Maintenance Facility to accommodate the future Type 10 fleet.
5337	Stations and Facilities	P1101	Lake Street Complex Demolition and Reconfiguration	\$0	\$5,242,850	\$5,242,850	Demolition of the Lake Street facility and reconfiguration into an expanded yard. The site will be designed to maximize train storage, streamline yard operations, and eliminate a sharp curve in anticipation of the larger Type 10 light rail fleet.
5337	Stations and Facilities	P1103	Reservoir Yard and Non-Revenue Track Optimization and Reconfiguration	\$0	\$23,005,694	\$23,005,694	Reconfiguration of various track elements at Reservoir including: the lower west yard, East/West Wye, Chestnut Hill Avenue connection, B-Branch connection, and non-revenue track around Cleveland Circle.
5337	Stations and Facilities	P1144	Commuter Rail Facilities State of Good Repair	\$0	\$62,960,000	\$62,960,000	Funding to support Commuter Rail facilities improvements including design support contracts, roof and roof equipment replacement, WiFi and IT infrastructure, fluid systems, and maintenance of way facilities.
5337	Stations and Facilities	R0071	Lynn Station Improvements Phase II	\$0	\$13,230,566	\$13,230,566	Design funding for new elevators, stairs, platform, canopy, and architectural improvements to the station and the intent to acquire and demolish structures under station's viaduct. Existing parking garage will also be replaced by surface parking.
				\$53,377,021	\$446,824,549	\$500,201,570	
5339 - Bus and Bus Facility							
5339	Bus and Bus Facilities	P0653	Procurement of 40ft Battery Electric Buses and Related Infrastructure	\$11,155,225	\$32,334,607	\$43,489,832	Purchase of 80 40ft battery electric buses (BEBs) to replace fleets currently running diesel bus service out of Quincy and trolleybus service out of North Cambridge.
				\$11,155,225	\$32,334,607	\$43,489,832	

Note: Project descriptions and dollar amounts are preliminary only and are provided for informational purposes. In many cases, the scopes of work and project budgets will become more fully developed as the design process proceeds and is completed. The MBTA may also opt to fund a project from a different FTA funding source based on the timing of projects and the availability of FTA funds.

(Table 3-9, continued, 9)

RRIF/TIFIA Financing Program		
Projects Potentially Funded by Federal RRIF/TIFIA Loans		
RRIF/TIFIA Financing	P0671a	Bus Facility Modernization Program - Quincy Bus Facility
RRIF/TIFIA Financing	P0952	Future Regional Rail Layover Planning
RRIF/TIFIA Financing	P0018	North Station Draw 1 Bridge Replacement
RRIF/TIFIA Financing	P0170	Newton Commuter Rail Stations
RRIF/TIFIA Financing	P0178	South Attleboro Station Improvements
RRIF/TIFIA Financing	P0863	South-Side CR Maintenance Facility

Note: The MBTA is exploring the use of federal loans through the Build America Bureau to finance certain capital projects at a lower interest rate than traditional tax-exempt bonds. This includes loans under the Railroad Rehabilitation & Improvement Financing (RRIF) and Transportation Infrastructure Finance and Innovation Act (TIFIA) programs. The projects listed above are being considered for this program, subject to the approval of funding through the CIP process. Additional project and funding information will be provided through a future TIP/Amendment if federal grant funds or loans are utilized.

**Table 3-10
FFYs 2023–27 TIP Transit Table (MWRTA)**

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
FFY 2023													
RTD0011099	MWRTA	Operating	Operating Assistance Non-Fixed Route ADA Paratransit Service	Operating assistance for non-fixed route ADA paratransit service	2023	\$2,000,000	\$0	\$0	\$1,600,000	\$0	\$0	\$400,000	\$0
RTD0011100	MWRTA	Transit RTA Facility and Vehicle Maintenance	Acquisition of Bus Support Equipment/Facilities	Acquire after-market vehicle accessories (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2023	\$150,000	\$30,000	\$0	\$120,000	\$0	\$0	\$0	\$0
RTD0011101	MWRTA	Transit RTA Facility and System Modernization	Technology Support/Capital Outreach	Mobility management; IT; Call center; Travel training enhancements/improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2023	\$200,000	\$40,000	\$0	\$160,000	\$0	\$0	\$0	\$0
RTD0011102	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Blandin	MWRTA will utilize these funds to maintain a state-of-good-repair value of at least 3.5 for the operations and administration facility along with all amenities and support equipment located at 15 Blandin Ave, Framingham, MA."	2023	\$425,000	\$85,000	\$0	\$340,000	\$0	\$0	\$0	\$0
RTD0011108	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station (FCRS)	Intermodal at the Framingham Commuter Rail Station (FCRS) enhancements/improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2023	\$5,000	\$1,000	\$0	\$4,000	\$0	\$0	\$0	\$0
RTD0011113	MWRTA	Transit RTA Vehicle Replacement	5339 Competitive Revenue Vehicle Replacement - Discretionary	Buy replacement vehicles; 6 D(b)CNGs + 6 E2s Gas	2023	\$731,500	\$146,300	\$0	\$0	\$0	\$585,200	\$0	\$0
RTD0011127	MWRTA	Transit RTA Facility and Vehicle Maintenance	Back Entrance Project - Discretionary	Enlarge the operations center of dispatch, administration offices, and driver training rooms of revenue service contractor. Installation of HVAC ERU (energy recovery unit).	2023	\$2,000,000	\$0	\$400,000	\$0	\$0	\$1,600,000	\$0	\$0
RTD0011128	MWRTA	Transit RTA Facility and System Modernization	Electronic Sign Board	Install electronic sign boards at high demand locations and enhance accessibility of digital rider tools.	2023	\$200,000	\$40,000	\$0	\$160,000	\$0	\$0	\$0	\$0

(Table 3-10, continued, 2)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Federal Transit Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
RTD0011129	MWRTA	Transit RTA Facility and System Modernization	CRT North Framingham Bike/Pedestrian Connectivity - Cochituate Rail Trail North Framingham Feasibility Study - Discretionary	Cochituate Rail Trail North Framingham Feasibility Study - Expand bike/pedestrian connectivity and emerging technologies to support last-mile connections.	2023	\$95,000	\$0	\$19,000	\$0	\$0	\$76,000	\$0	\$0
RTD0011122	MWRTA	Transit RTA Fleet Upgrades	2023 Electric Vehicle Migration	Modernization fleet electrification - Vehicle migration - Purchase of 5 paratransit (Type A) electric vehicles. MWRTA is seeking an 8-year migration to fully electric vehicles. This request is supported in MWRTA's TAM to maintain useful life benchmarks of the agency's paratransit fleet and is in support of Gov. Baker's 2020 Transportation Climate Initiative (TCI).	2023	\$100,000	\$20,000	\$0	\$80,000	\$0	\$0	\$0	\$0
RTD0011135	MWRTA	Transit RTA Vehicle Replacement	Vehicle Replacement - Cutaways (12) #2 of 2	FY23 #1 of 2 5339 \$330k + RTACAP \$165k; FY23 #2 of 2 5307 \$330k + RTACAP \$165k for 6 D(b) w/CNG + 6 E2s Gasoline.	2023	\$495,000	\$165,000	\$0	\$0	\$330,000	\$0	\$0	\$0
FFY 2024													
RTD0011103	MWRTA	Operating	Operating Assistance Non-Fixed Route ADA Paratransit Service	Operating assistance for non-fixed route ADA paratransit service	2024	\$2,000,000	\$0	\$0	\$1,600,000	\$0	\$0	\$400,000	\$0
RTD0011104	MWRTA	Transit RTA Facility and Vehicle Maintenance	Acquisition of Bus Support Equipment/Facilities	Acquire after-market vehicle accessories (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2024	\$150,000	\$30,000	\$0	\$120,000	\$0	\$0	\$0	\$0
RTD0011105	MWRTA	Transit RTA Facility and System Modernization	Technology Support/Capital Outreach	Mobility management; IT; Call center; Travel training enhancements/improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2024	\$250,000	\$50,000	\$0	\$200,000	\$0	\$0	\$0	\$0
RTD0011106	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Blandin	MWRTA will utilize these funds to maintain a state-of-good-repair value of at least 3.5 for the operations and administration facility along with all amenities and support equipment located at 15 Blandin Ave, Framingham, MA."	2024	\$500,000	\$100,000	\$0	\$400,000	\$0	\$0	\$0	\$0

(Table 3-10, continued, 3)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Federal Transit Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
RTD0011107	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station (FCRS)	Intermodal at the Framingham Commuter Rail Station (FCRS) enhancements/improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2024	\$5,000	\$1,000	\$0	\$4,000	\$0	\$0	\$0	\$0
RTD0011114	MWRTA	Transit RTA Vehicle Replacement	5339 Competitive Revenue Vehicle Replacement - Discretionary	Buy replaceent vehicles; 11 D(b) - CNGs + 4 E2s - Gas	2024	\$627,000	\$0	\$125,400	\$0	\$0	\$501,600	\$0	\$0
RTD0011267	MWRTA	Transit RTA Fleet Upgrades	2027 Electric Vehicle (EV) Additional Electrification Costs	Modernization fleet electrification - vehicle migration	2024	\$200,000	\$100,000	\$0	\$100,000	\$0	\$0	\$0	\$0
RTD0011123	MWRTA	Transit RTA Fleet Upgrades	5339 Competitive 2024 Electric Vehicle (EV) Infrastructure - Discretionary	Modernization fleet electrification - Vehicle migration - Purchase of 5 electric vehicles	2024	\$200,000	\$0	\$20,000	\$0	\$0	\$180,000	\$0	\$0
RTD0011130	MWRTA	Transit RTA Facility and System Modernization	FCRS Intermodal Hub - Discretionary	Explore opportunities for Framingham Commuter Rail Station (FCRS) for the expansion of Intermodal transportation opportunities.	2024	\$8,000,000	\$0	\$0	\$0	\$0	\$8,000,000	\$0	\$2,000,000
RTD0011131	MWRTA	Transit RTA Facility and System Modernization	East Street Garage Project - Discretionary	Construct two-story garage with solar PV array rooftop panels.	2024	\$7,000,000	\$0	\$0	\$0	\$0	\$7,000,000	\$0	\$1,750,000
RTD0011132	MWRTA	Transit RTA Facility and Vehicle Maintenance	Body Shop - Discretionary	Procure adjacent property to Blandin Hub and construct in-house body shop for the efficient and cost effective repair of vehicles.	2024	\$3,000,000	\$0	\$0	\$0	\$0	\$3,000,000	\$0	\$750,000
RTD0011136	MWRTA	Transit RTA Vehicle Replacement	Vehicle Replacement - Cutaways (15) #2 of 2	FY24 #1 of 2 5339 \$450k + RTACAP \$225k; FY24 #2 of 2 5307 \$450k + RTACAP \$225k for 11 D(b) w/CNG + 4 E2s - Gasoline.	2024	\$454,037	\$90,807	\$0	\$0	\$363,230	\$0	\$0	\$0
FFY 2025													
RTD0011109	MWRTA	Transit RTA Facility and Vehicle Maintenance	Acquisition of Bus Support Equipment/ Facilities	Acquire after-market vehicle accessories (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2025	\$113,750	\$22,750	\$0	\$91,000	\$0	\$0	\$0	\$0

(Table 3-10, continued, 4)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Federal Transit Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
RTD0011110	MWRTA	Transit RTA Facility and System Modernization	Technology Support/ Capital Outreach	Mobility management; IT; Call center; Travel training enhancements/ improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2025	\$200,000	\$40,000	\$0	\$160,000	\$0	\$0	\$0	\$0
RTD0011111	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Blandin	MWRTA will utilize these funds to maintain a state-of-good-repair value of at least 3.5 for the operations and administration facility along with all amenities and support equipment located at 15 Blandin Ave, Framingham, MA."	2025	\$562,500	\$112,500	\$0	\$450,000	\$0	\$0	\$0	\$0
RTD0011112	MWRTA	Operating	Operating Assistance Non-Fixed Route ADA Paratransit Service	Operating assistance for non-fixed route ADA paratransit service	2025	\$2,000,000	\$0	\$0	\$1,600,000	\$0	\$0	\$400,000	\$0
RTD0011115	MWRTA	Transit RTA Vehicle Replacement	5339 Competitive Revenue Vehicle Replacement - Discretionary	Buy replacement vehicles; 3 D(b) - CNGs + 5 E2s - Gas	2025	\$641,500	\$0	\$128,300	\$0	\$0	\$513,200	\$0	\$0
RTD0011121	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station (FCRS)	Framingham intermodal enhancements/ improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2025	\$5,000	\$1,000	\$0	\$4,000	\$0	\$0	\$0	\$0
RTD0011124	MWRTA	Transit RTA Fleet Upgrades	5339 Competitive 2025 Electric Vehicle (EV) Additional Electrification Costs - Discretionary	Modernization fleet electrification - Vehicle migration - Purchase of 5 paratransit (Type A) electric vehicles. MWRTA is seeking an 8-year migration to fully electric vehicles. This request is supported in MWRTA's TAM to maintain useful life benchmarks of the agency's paratransit fleet and is in support of Gov. Baker's 2020 Transportation and Climate Initiative (TCI).	2025	\$300,000	\$0	\$45,000	\$0	\$0	\$255,000	\$0	\$0
RTD0011137	MWRTA	Transit RTA Vehicle Replacement	Vehicle Replacement - Cutaways (8) #2 of 2	FY25 #1 of 2 5339 \$250k + RTACAP \$125k; FY25 #2 of 2 5307 \$250k + RTACAP \$125k for 3 D(b) w/CNG + 5 E2s - Gas	2025	\$471,968	\$94,394	\$0	\$0	\$377,574	\$0	\$0	\$0

(Table 3-10, continued, 5)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Federal Transit Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
RTD0011133	MWRTA	Transit RTA Facility and System Modernization	AFC Transition - Mobile Fare Collection Equipment	Develop API to work with CharlieCard 2.0	2025	\$100,000	\$50,000	\$0	\$50,000	\$0	\$0	\$0	\$0
RTD0011134	MWRTA	Transit RTA Facility and Vehicle Maintenance	Public Restrooms at Blandin & Framingham Commuter Rail Station Hubs - Discretionary	Provide safe, clean, well-ventilated public restrooms at the Blandin Hub and FCRS (Framingham Commuter Rail Station) Intermodal Hub.	2025	\$200,000	\$0	\$40,000	\$0	\$0	\$160,000	\$0	\$0
FFY 2026													
RTD0011116	MWRTA	Operating	Operating Assistance Non-Fixed Route ADA Paratransit Service	Operating assistance for non-fixed route ADA paratransit service	2026	\$2,000,000	\$0	\$0	\$1,600,000	\$0	\$0	\$400,000	\$0
RTD0011117	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Blandin	MWRTA will utilize these funds to maintain a state-of-good-repair value of at least 3.5 for the operations and administration facility along with all amenities and support equipment located at 15 Blandin Ave, Framingham, MA."	2026	\$687,500	\$137,500	\$0	\$550,000	\$0	\$0	\$0	\$0
RTD0011118	MWRTA	Transit RTA Facility and System Modernization	Technology Support/ Capital Outreach	Mobility management; IT; Call center; Travel training enhancements/ improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2026	\$200,000	\$40,000	\$0	\$160,000	\$0	\$0	\$0	\$0
RTD0011119	MWRTA	Transit RTA Facility and Vehicle Maintenance	Acquisition of Bus Support Equipment/ Facilities	Acquire after-market vehicle accessories (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2026	\$113,750	\$22,750	\$0	\$91,000	\$0	\$0	\$0	\$0
RTD0011120	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station (FCRS)	Intermodal at the Framingham Commuter Rail Station (FCRS) enhancements/ improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2026	\$5,000	\$1,000	\$0	\$4,000	\$0	\$0	\$0	\$0

(Table 3-10, continued, 6)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Federal Transit Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
RTD0011125	MWRTA	Transit RTA Fleet Upgrades	2026 Electric Vehicle (EV) Additional Electrification Costs	Modernization fleet electrification - Vehicle migration - Purchase of 5 paratransit (Type A) electric vehicles. MWRTA is seeking an 8-year migration to fully electric vehicles. This request is supported in MWRTA's TAM to maintain useful life benchmarks of the agency's paratransit fleet and is in support of Gov. Baker's 2020 Transportation and Climate Initiative (TCI).	2026	\$600,000	\$300,000	\$0	\$0	\$300,000	\$0	\$0	\$0
RTD0011126	MWRTA	Transit RTA Vehicle Replacement	5339 Competitive Revenue Vehicle Replacement - Discretionary	Buy replacement vehicles; 6 D(b) - CNGs + 2 E2s - Gas	2026	\$573,436	\$0	\$114,688	\$0	\$0	\$458,748	\$0	\$0
RTD0011138	MWRTA	Transit RTA Vehicle Replacement	Vehicle Replacement - Cutaways (8) #2 of 2	FY26 #1 of 2 5339 \$250k + RTACAP \$125k; FY26 #2 of 2 5307 \$250k + RTACAP \$125k for 6 D(b) w/CNG + 2 E2s - Gas	2026	\$573,436	\$114,688	\$0	\$0	\$458,748	\$0	\$0	\$0
FFY 2027													
RTD0011195	MWRTA	Operating	Operating Assistance Non-Fixed Route ADA Paratransit Service	Operating assistance for non-fixed route ADA paratransit service	2027	\$2,000,000	\$0	\$0	\$1,600,000	\$0	\$0	\$400,000	\$0
RTD0011196	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Blandin	MWRTA will utilize these funds to maintain a state-of-good-repair value of at least 3.5 for the operations and administration facility along with all amenities and support equipment located at 15 Blandin Ave, Framingham, MA."	2027	\$708,125	\$141,625	\$0	\$566,500	\$0	\$0	\$0	\$0
RTD0011197	MWRTA	Transit RTA Facility and Vehicle Maintenance	Technology Support/ Capital Outreach	Mobility management; IT; Call center; Travel training enhancements/ improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2027	\$200,000	\$40,000	\$0	\$160,000	\$0	\$0	\$0	\$0
RTD0011198	MWRTA	Transit RTA Facility and Vehicle Maintenance	Acquisition of Bus Support Equipment/ Facilities	Acquire after-market vehicle accessories (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2027	\$450,000	\$90,000	\$0	\$360,000	\$0	\$0	\$0	\$0

(Table 3-10, continued, 7)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Bond Cap Match Federal Transit Discretionary Grant	Federal FTA Section 5307	Federal FTA Section 5339 Statewide	Federal FTA Federal Transit Discretionary Grant	Operating Additional State Assistance State Contract Assistance	Federal FHWA Transportation Development Credits
RTD0011199	MWRTA	Transit RTA Facility and Vehicle Maintenance	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station (FCRS)	Intermodal at the Framingham Commuter Rail Station (FCRS) enhancements/improvements; MWRTA applies for competitive funding for this line item and will reduce the RTACAP request upon award of additional federal funds.	2027	\$6,500	\$1,300	\$0	\$5,200	\$0	\$0	\$0	\$0
RTD0011200	MWRTA	Transit RTA Vehicle Replacement	5339 Competitive Revenue Vehicle Replacement - Discretionary	Buy replacement vehicles; 5 E2(a)s	2027	\$590,639	\$0	\$118,128	\$0	\$0	\$472,511	\$0	\$0
RTD0011201	MWRTA	Transit RTA Fleet Upgrades	2027 Electric Vehicle (EV) Additional Electrification Costs	Modernization fleet electrification - vehicle migration - purchase of paratransit (Type A) electric vehicles. MWRTA is seeking an 8-year migration to fully electric vehicles. This request is supported in MWRTA's TAM to maintain useful life benchmarks of the agency's paratransit fleet and is in support of Gov. Baker's 2020 Transportation and Climate Initiative (TCI).	2027	\$900,000	\$180,000	\$0	\$0	\$720,000	\$0	\$0	\$0
RTD0011202	MWRTA	Transit RTA Vehicle Replacement	Vehicle Replacement - Cutaways #2 of 2	Vehicle replacement - cutaways #2 of 2	2027	\$590,639	\$118,128	\$0	\$0	\$472,511	\$0	\$0	\$0

**Table 3-11
FFYs 2023–27 TIP Transit Table (CATA)**

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Federal FTA Section 5307	Other Municipal and Local Transit
FFY 2023									
RTD0010578	CATA	Transit RTA Facility and Vehicle Maintenance	Preventive Maintenance	Preventive maintenance	2023	\$356,250	\$0	\$285,000	\$71,250
RTD0010585	CATA	Transit RTA Facility and Vehicle Maintenance	Acquire Shop Equipment/Small Capital Items	IT equipment, shop equipment, etc.	2023	\$37,500	\$7,500	\$30,000	\$0
RTD0010582	CATA	Transit RTA Facility and Vehicle Maintenance	Buy Miscellaneous Small Capital Items	Misc. small capital items	2023	\$15,000	\$15,000	\$0	\$0
RTD0010589	CATA	Transit RTA Vehicle Replacement	Revenue Vehicle Replacement	<p>This project is the replacement of two 2010 30-ft low-floor buses that reached the end of their useful life in 2020 (10-year useful life benchmark), 15GGE2717A1091427 and 15GGE2719A1091428. The vehicles purchased with these fund will be off the 2020 MVRTA Heavy-Duty Bus Procurement, which CATA participated in.</p> <p>The project supports CATA's Transit Asset Management Program by keeping assets in a state of good repair and investing in assets before the asset's condition deteriorates to an unacceptable level.</p> <p>CATA has included a 50/50 5307/RTACAP match for this project. CATA typically receives approximately \$500,000 in 5307 funds each year and \$285k is programmed for preventive maintenance, leaving a balance of \$215,000 for all other capital projects.</p>	2023	\$1,320,000	\$450,000	\$870,000	\$0
TBD	CATA	Transit RTA Vehicle Replacement	Buy Replacement 35-ft Bus		2023	\$1,415,000	\$450,000	\$965,000	\$0
FFY 2024									
RTD0010579	CATA	Transit RTA Facility and Vehicle Maintenance	Preventive Maintenance	Preventive maintenance	2024	\$356,250	\$0	\$285,000	\$71,250
RTD0010584	CATA	Transit RTA Facility and Vehicle Maintenance	Acquire Shop Equipment/Small Capital Items		2024	\$37,500	\$7,500	\$30,000	\$0
RTD0010583	CATA	Transit RTA Facility and Vehicle Maintenance	Buy Miscellaneous Small Capital Items	Misc. small capital items	2024	\$15,000	\$15,000	\$0	\$0
RTD0010587	CATA	Transit RTA Facility and Vehicle Maintenance	Repave Administration/ Operations Facility Parking Lot	Repave parking lot at administration and operations facility. Lot was last paved in the early 2000s during building rehabilitation.	2024	\$400,000	\$80,000	\$320,000	\$0
FFY 2025									
RTD0010580	CATA	Transit RTA Facility and Vehicle Maintenance	Preventive Maintenance	Preventive maintenance	2025	\$356,250	\$0	\$285,000	\$71,250
RTD0010586	CATA	Transit RTA Facility and Vehicle Maintenance	Acquire Shop Equipment/Small Capital Items		2025	\$37,500	\$7,500	\$30,000	\$0

(Table 3-11, continued, 2)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Federal FTA Section 5307	Other Municipal and Local Transit
				This project is the replacement of one 2012 30-ft low-floor bus that reached the end of its useful life in 2022 (10-year useful life benchmark). 15GGE271XC1091778. The vehicle purchased with these funds will be off the MVRTA Heavy-Duty Bus Procurement, which CATA participated in.					
RTD0010588	CATA	Transit RTA Vehicle Replacement	Revenue Vehicle Replacement	<p>The project supports CATA's Transit Asset Management Program by keeping assets in a state of good repair and investing in assets before the asset's condition deteriorates to an unacceptable level.</p> <p>CATA has included a 50/50 5307/RTACAP match for this project. CATA typically receives approximately \$500,000 in 5307 funds each year and \$285k are programmed for preventive maintenance, leaving a balance of \$215,000 for all other capital projects.</p>	2025	\$680,000	\$225,000	\$455,000	\$0
				Replacement of 2015 International body-on-chassis vehicles.					
				This project is the replacement of two 2015 29-ft body-on-chassis buses that reached the end of their useful life in 2022 (7 year life) 4DRASAAN2GH103250 and 4DRASAAN9GH090299.					
RTD0010591	CATA	Transit RTA Vehicle Replacement	Revenue Vehicle Replacement	<p>CATA has not identified a procurement for the purchase of the vehicles. The project supports CATA's Transit Asset Management Program by keeping assets in a state of good repair and investing in assets before the asset's condition deteriorates to an unacceptable level. CATA has included 100% RTACAP funding for this project as a placeholder until funding availability is more concrete, which depends on CARES Act, SCA, and 5307. CATA typically receives approximately \$500,000 in 5307 funds each year and \$285,000 is programmed for preventive maintenance, leaving a balance of \$215,000 for all other capital projects.</p>	2025	\$600,000	\$600,000	\$0	\$0
FFY 2026									
RTD0010581	CATA	Transit RTA Facility and Vehicle Maintenance	Preventive Maintenance	Preventive maintenance	2026	\$356,250	\$0	\$285,000	\$71,250

(Table 3-11, continued, 3)

Project Number	RTA	Program	Project Name	Notes	Federal Fiscal Year	Total Cost	Bond Cap State 100% State	Federal FTA Section 5307	Other Municipal and Local Transit
				Replacement of 2016 International body-on-chassis vehicles. This project is the replacement of four 2016 29-ft body-on-chassis buses that reached the end of their useful life in 2023 (7 year life) 4DRASAAN9GH413718, 4DRASAAN9GH413719, 4DRASAAN7GH413720, 4DRASAAN9GH413721					
RTD0010592	CATA	Transit RTA Vehicle Replacement	Revenue Vehicle Replacement	CATA has not identified a procurement for the purchase of the vehicles. The project supports CATA's Transit Asset Management Program by keeping assets in a state of good repair and investing in assets before the asset's condition deteriorates to an unacceptable level. CATA has included 100% RTACAP funding for this project as a placeholder until funding availability is more concrete, which depends on CARES Act, SCA, and 5307. CATA typically receives approximately \$500,000 in 5307 funds each year and \$285,000 is programmed for preventive maintenance, leaving a balance of \$215,000 for all other capital projects.	2026	\$1,200,000	\$1,200,000	\$0	\$0
FFY 2027									
RTD0011158	CATA	Transit RTA Facility and Vehicle Maintenance	Preventive Maintenance	Preventive maintenance	2027	\$356,250	\$0	\$285,000	\$71,250
RTD0011162	CATA	Transit RTA Facility and Vehicle Maintenance	Acquire Shop Equipment/Small Capital Items	Misc. small capital items	2027	\$37,500	\$7,500	\$30,000	\$0

DETAILED PROJECT DESCRIPTIONS

Field Definitions

Proponent: This field lists the primary advocate for each project, who is responsible for seeing the project through to completion.

ID Number: This number references the project's identification number in MassDOT's project-tracking system.

Project Type: This field provides the type of project programmed. For those projects programmed with Regional Target funds (projects listed in Section 1A of the TIP tables), the projects are categorized according to the MPO's six investment programs (Bicycle and Pedestrian, Complete Streets, Intersection Improvements, Major Infrastructure, Community Connections, and Transit Modernization). For those projects programmed directly by MassDOT (projects listed in Sections 1B, 2A, 2B, 2C, and 3B), MassDOT's STIP Program categories are applied.

Cost: This figure is the total project cost as programmed in the TIP across all fiscal years, including years outside of FFYs 2023–27.

Funding Source: The funding source indicates whether a project is funded using the MPO's Regional Target funds or MassDOT's statewide highway funds.

Scoring Summary: This table shows the number of points awarded to the project across each of the MPO's project evaluation categories. MPO staff has not evaluated all projects in the TIP; staff only evaluates projects that are being considered for funding with the MPO's Regional Target funds. The field definitions for the tables are as follows for all projects scored in the MPO's Bicycle and Pedestrian, Complete Streets, Intersection Improvements, Major Infrastructure, and Transit Modernization investment programs:

- **Safety:** Safety
- **Sys Pres:** System Preservation and Modernization
- **CM/M:** Capacity Management and Mobility
- **CA/SC:** Clean Air/Sustainable Communities
- **TE:** Transportation Equity
- **EV:** Economic Vitality
- **Total:** This figure is the summation of the project's scores across the above six categories (100 possible points)

Projects within the MPO's Community Connections Program are scored using different categories, given the unique nature of this program. The field definitions for those tables are as follows:

- **Conn:** Connectivity
- **Coord:** Coordination
- **Plan:** Plan Implementation
- **TE:** Transportation Equity
- **MS/DP:** Mode Shift and Demand Projection
- **FS:** Fiscal Sustainability
- **Total:** This figure is the summation of the project's scores across the above six categories (100 possible points)

As mentioned in Chapter 2, the MPO adopted a revised set of project selection criteria in October 2020. These new criteria were used to score new projects under consideration for funding using the MPO's Regional Target funds for both the FFYs 2022–26 and FFYs 2023–27 TIP cycles. For this reason, the scoring criteria and point allocations vary based on when a project was evaluated for funding and programmed in the TIP. Point allocations are specified for each project, and some project pages feature additional information in this section to provide context for how projects were evaluated. Further details on all of the MPO's project selection criteria are available in Appendix A.

Project Description: The description of the project is based, in part, on the written description of the project on MassDOT's Project Information website. In some cases, these descriptions have been modified to clarify the details of the projects. Projects evaluated by the MPO tend to have more detailed descriptions, as more complete project documentation was provided to MPO staff for these projects.

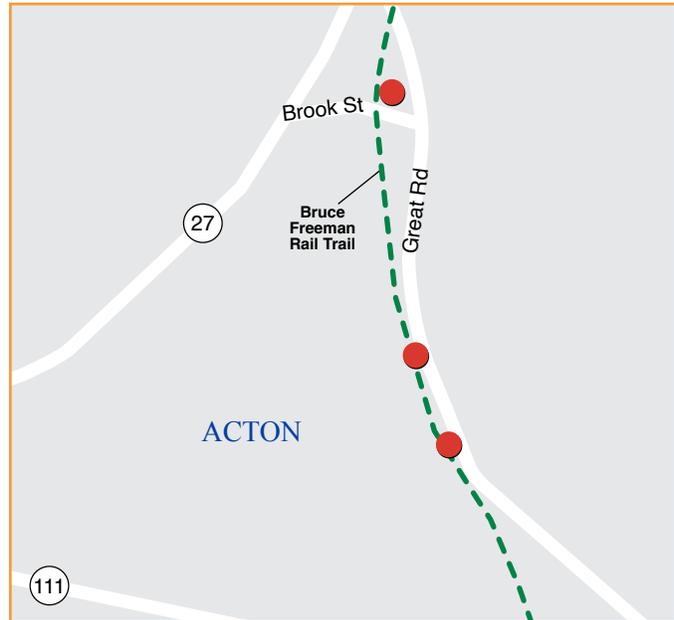
Funding Summary: Funding tables are included for each project and show the following information:

- **Year:** This field provides the federal fiscal year(s) during which the project is programmed for funding.
- **Federal and Non-Federal Funds:** These fields show a breakdown of project funding from federal and non-federal sources. Typically, these fields will show an 80/20 split, with federal funds accounting for 80 percent of project funding and a 20 percent state match accounting for the remaining funds.
- **Total Funds Programmed:** This field shows the total funding programmed for the project in the FFYs 2023–27 TIP by the year of expenditure. Information regarding TIP projects changes periodically, so funding amounts for all projects are subject to adjustment throughout the fiscal year.

For more information on all projects, please visit MassDOT's Project Information website, <https://hwy.massdot.state.ma.us/projectinfo/projectinfo.asp>, the Boston Region MPO's website, www.bostonmpo.org, or contact Matt Genova, TIP Manager, at mgenova@ctps.org.

Acton: Bicycle Parking along the Bruce Freeman Rail Trail

Proponent: Acton
ID Number: S12702
Project Type: Community Connections
Cost: \$8,017
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	6 out of 18	2 out of 15	9 out of 15	9 out of 18	22 out of 24	10 out of 10	58 out of 100

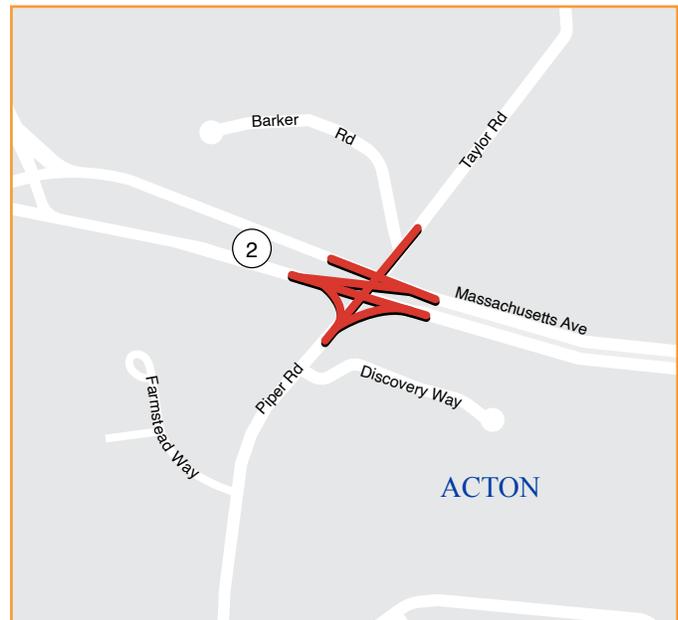
Project Description

This project involves the installation of three bicycle racks at key locations along Great Road in Acton, providing parking space for 18 bicycles. These racks will help enhance connections between the adjacent Bruce Freeman Rail Trail and local businesses along Great Road while supporting greater access to open space and transit, including MBTA commuter rail service at South Acton and CrossTown Connect bus service.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$6,414	—	—	—	—	\$6,414
Non-Federal Funds	\$1,603	—	—	—	—	\$1,603
Total Funds	\$8,017	---	---	---	---	\$8,017

Acton: Intersection and Signal Improvements on Routes 2 and 111 (Massachusetts Avenue) at Piper Road and Taylor Road

Proponent: MassDOT
ID Number: 607748
Project Type: Safety Improvements
Cost: \$4,231,214
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

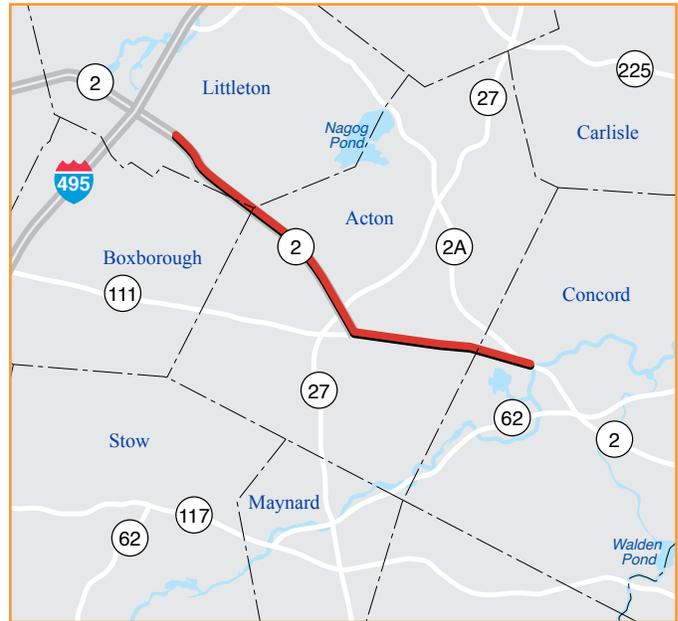
Project Description

The project will make upgrades at the intersection to improve safety. The upgrades will include signs, pavement markings, and traffic signals as identified through a Road Safety Audit process in the Town of Acton.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$3,808,093	—	\$3,808,093
Non-Federal Funds	—	—	—	\$423,121	—	\$423,121
Total Funds	---	---	---	\$4,231,214	—	\$4,231,214

Acton, Boxborough, and Littleton: Pavement Preservation on Route 2

Proponent: MassDOT
ID Number: 610722
Project Type: Non-Interstate Pavement
Cost: \$7,563,792
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

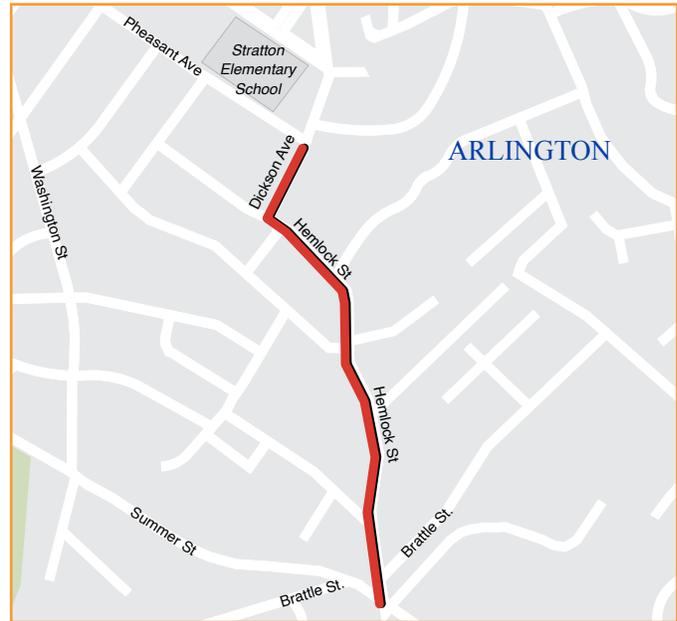
Project Description

This project includes pavement preservation work on Route 2 in Acton, Boxborough, and Littleton.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$6,051,034	—	—	\$6,051,034
Non-Federal Funds	—	—	\$1,512,758	—	—	\$1,512,758
Total Funds	---	---	\$7,563,792	---	---	\$7,563,792

Arlington: Stratton School Improvements (SRTS)

Proponent: Arlington
ID Number: 609531
Project Type: Roadway Reconstruction
Cost: \$1,302,209
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

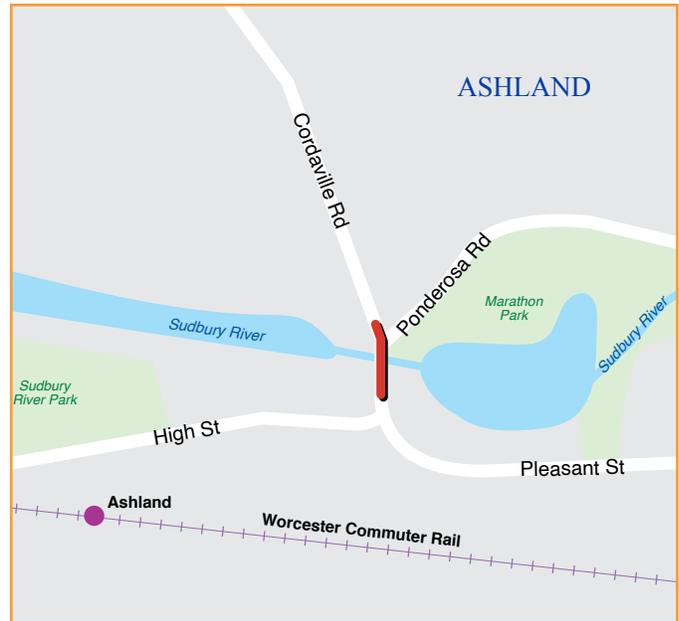
Project Description

This project will make upgrades to promote safety along the roadways surrounding Stratton Elementary School in Arlington through the Safe Routes to School program: Hemlock Street, between Brattle Street and Dickson Avenue, and Dickson Avenue, between Hemlock Street and Pheasant Avenue. Changes will include installing ADA-compliant curb ramps, repairing deficient sidewalks, installing new sidewalks, narrowing roadway intersections to slow vehicles and reduce pedestrian crossing distances, improving crosswalks, and adding new signs to the area.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	–	\$1,041,767	–	–	–	\$1,041,767
Non-Federal Funds	–	\$260,442	–	–	–	\$260,442
Total Funds	---	\$1,302,209	---	---	---	\$1,302,209

Ashland: Bridge Replacement, A-14-006, Cordaville Road over Sudbury River

Proponent: MassDOT
ID Number: 612099
Project Type: Bridge
Cost: \$3,965,472
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

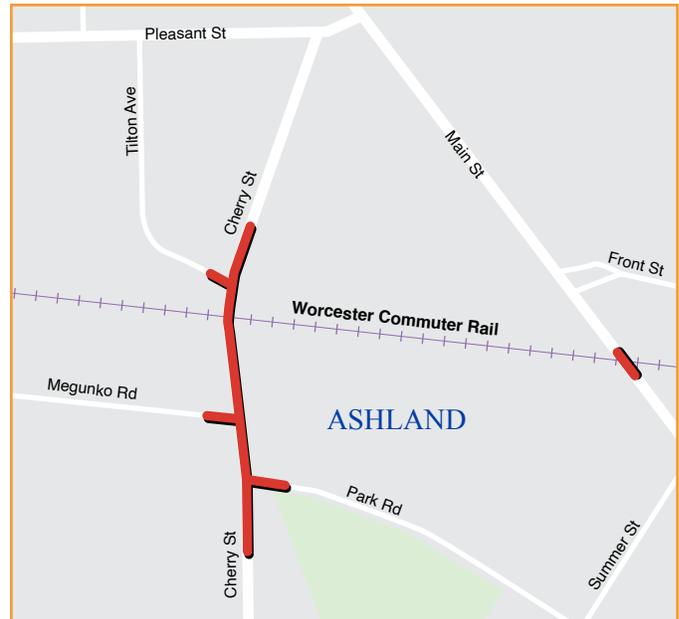
Project Description

This project will replace bridge A-14-006, which carries Cordaville Road over the Sudbury River in Ashland.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$3,172,378	—	\$3,172,378
Non-Federal Funds	—	—	—	\$793,094	—	\$793,094
Total Funds	---	---	---	\$3,965,472	---	\$3,965,472

Ashland: Rehabilitation and Rail Crossing Improvements on Cherry Street

Proponent: Ashland
ID Number: 608436
Project Type: Intersection Improvements
Cost: \$1,222,315
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	12 out of 30	10 out of 29	5 out of 29	2 out of 16	1 out of 12	8 out of 18	38 out of 134

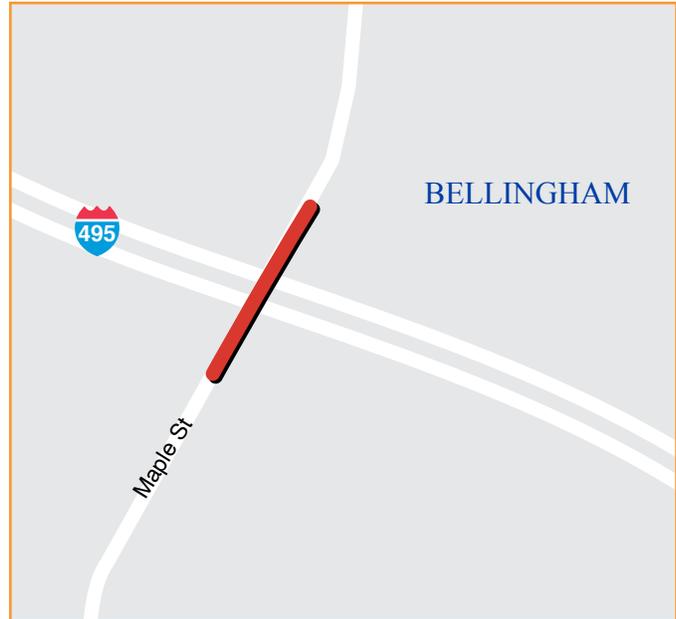
Project Description

The primary purpose of the project is to improve the safety features for the roadway corridors of Cherry Street and Main Street in order to establish a Federal Railroad Administration Quiet Zone surrounding the railroad crossings on those two roadways. This goal will primarily be accomplished through the installation of roadway medians and the enhancement of existing railroad crossing signals and gates. In addition, the project addresses a critical gap in the pedestrian sidewalk network through the construction of new sidewalks. The project's other goals include improving the existing roadway condition through pavement reconstruction and enhancing stormwater drainage in the project area.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$977,852	—	—	—	\$977,852
Non-Federal Funds	—	\$244,463	—	—	—	\$244,463
Total Funds	---	\$1,222,315	---	---	---	\$1,222,315

Bellingham: Bridge Replacement, B-06-022, Maple Street over Interstate 495

Proponent: MassDOT
ID Number: 612173
Project Type: Bridge
Cost: \$14,249,535
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

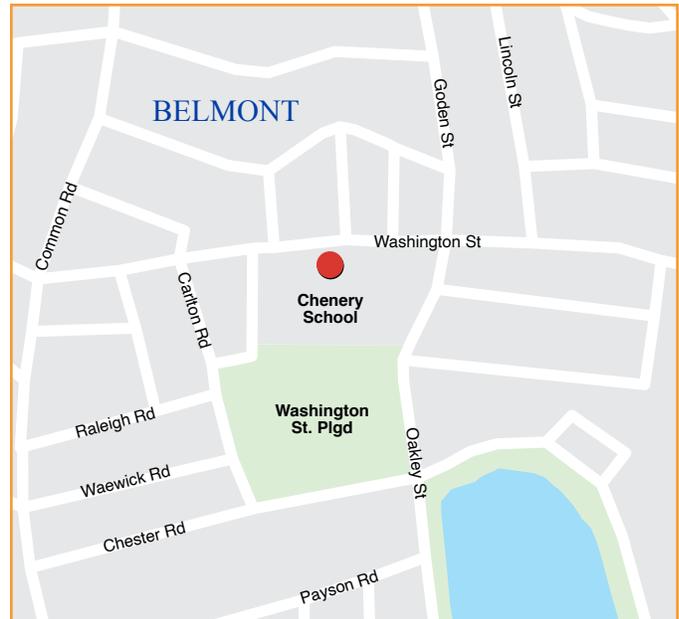
Project Description

This project will replace bridge B-06-022, which carries Maple Street over the Interstate 495 in Bellingham. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	\$0
Non-Federal Funds	—	—	\$14,249,535	—	—	\$14,249,535
Total Funds	---	---	\$14,249,535	---	---	\$14,249,535

Belmont: Chenery Middle School Bicycle Parking

Proponent: Belmont
ID Number: S12704
Project Type: Community Connections
Cost: \$4,376
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	4.75 out of 18	6 out of 15	5 out of 15	6 out of 18	18 out of 24	10 out of 10	49.75 out of 100

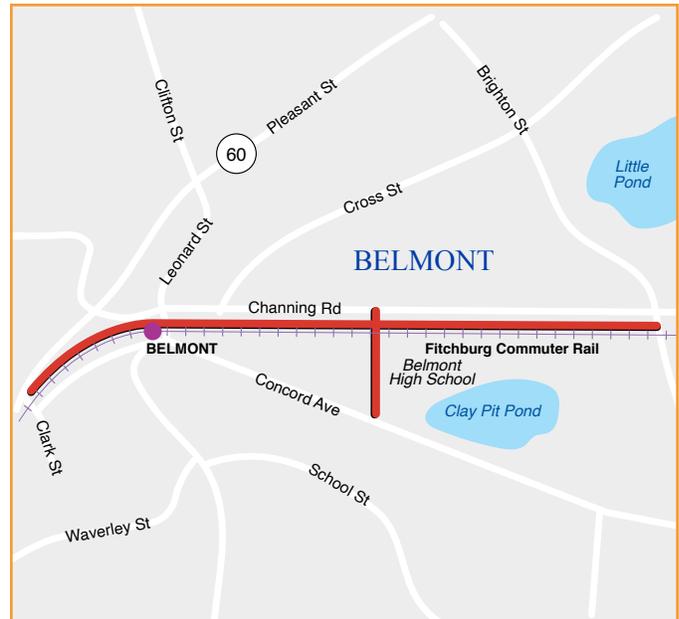
Project Description

This project involves the installation of one shelter for an existing bicycle rack at Chenery Middle School in Belmont, allowing enough space for 12 bicycles to park in a covered location. The goal of the project is to promote year-round bicycling to school for students as a means of decreasing single-occupancy vehicle traffic near the school while enhancing safety. This project supports Belmont’s town-wide effort to promote walking and bicycling as an alternative to driving in order to advance progress on local climate, safety, and public health goals. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$3,501	—	—	—	—	\$3,501
Non-Federal Funds	\$875	—	—	—	—	\$875
Total Funds	\$4,376	---	---	---	---	\$4,376

Belmont: Community Path, Belmont Component of the MCRT (Phase 1)

Proponent: Belmont
ID Number: 609204
Project Type: Bicycle and Pedestrian
Cost: \$21,034,382
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	15 out of 20	8 out of 14	18 out of 18	7 out of 14	7.6 out of 20	9 out of 14	64.6 out of 100

Project Description

This project will construct the Belmont Community Path between the existing Fitchburg Cutoff Path and Belmont Center, creating a direct off-street connection between the heart of Belmont, the Alewife MBTA station, and destinations beyond in Cambridge, Somerville, and Boston. The project proposes a 12-foot paved facility with two-foot grass shoulders and additional landscaping along the length of the path that will buffer the new facility from the adjacent railroad tracks and neighboring properties. The project includes an underpass beneath the commuter rail tracks at Channing Road and Alexander Avenue to provide a safe connection between the Winnbrook neighborhood that lies on the north side of the tracks with the bike lanes on Concord Avenue and the adjacent new school serving students in grades 7-12.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$16,827,506	—	\$16,827,506
Non-Federal Funds	—	—	—	\$4,206,876	—	\$4,206,876
Total Funds	---	---	---	\$21,034,382	---	\$21,034,382

Beverly: Bridge Replacement, B-11-001, Bridge Street over Bass River (Hall-Whitaker Drawbridge)

Proponent: MassDOT
ID Number: 608514
Project Type: Bridge
Cost: \$40,020,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

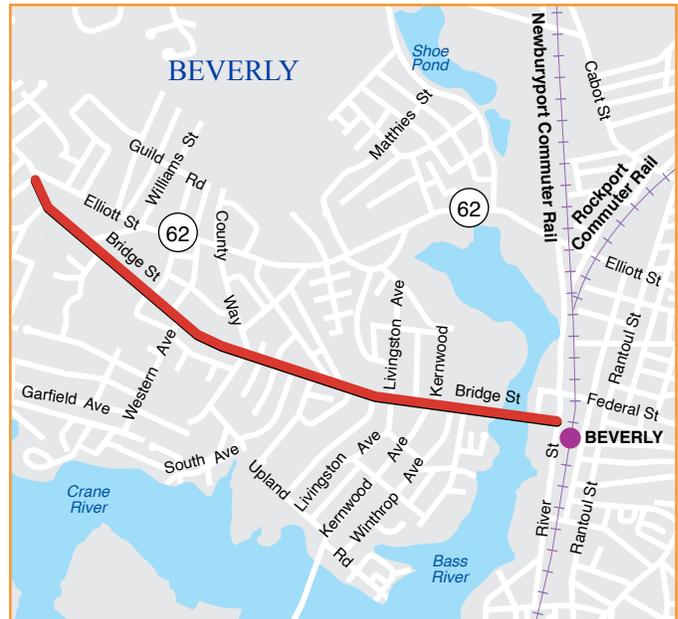
Project Description

This project will replace bridge B-11-001, which carries Bridge Street over the Bass River in Beverly. This bridge is also known as the Hall-Whitaker Drawbridge. This bridge is currently listed as structurally deficient and has load restrictions. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	--	\$0	\$0
Non-Federal Funds	--	--	--	--	\$40,020,000	\$40,020,000
Total Funds	---	---	---	---	\$40,020,000	\$40,020,000

Beverly: Reconstruction of Bridge Street

Proponent: Beverly
ID Number: 608348
Project Type: Complete Streets
Cost: \$12,594,932
Funding Source: Regional Target Funds and Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 30	14 out of 29	16 out of 29	9 out of 16	4 out of 12	10 out of 18	66 out of 134

Project Description

The project involves reconstruction of pavement and sidewalks along the Bridge Street corridor from the Danvers town line to River Street, excluding the Hall Whitaker drawbridge. The project includes cross section improvements to accommodate on-street parking and on-street bicycle accommodations. Existing traffic signal equipment at the intersection of Bridge Street at Livingstone Avenue will be upgraded, and new traffic signals will be installed at the intersection of Bridge Street with Kernwood Avenue and the intersection of Bridge Street with River Street. Continuous cement concrete sidewalks with vertical granite curb will be provided along both sides of the roadway for the full length of the project. A seven-foot wide parking shoulder will be provided on the eastbound side of the roadway to prevent vehicles from parking on the sidewalk. In addition, a five-foot wide shoulder for a bicycle lane will be provided along the corridor. Minor realignments will be performed at the intersections of Bridge Street with Cressy Street, County Way/Bates Park Avenue, and Eastern Avenue/Dolloff Avenue.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$10,075,946	—	—	—	—	\$10,075,946
Non-Federal Funds	\$2,518,986	—	—	—	—	\$2,518,986
Total Funds	\$12,594,932	---	---	---	---	\$12,594,932

Beverly and Salem: Drawbridge Replacement/ Rehabilitation of B-11-005=S-01-013, Kernwood Avenue over Danvers River

Proponent: MassDOT
ID Number: 605276
Project Type: Bridge
Cost: \$95,383,436
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

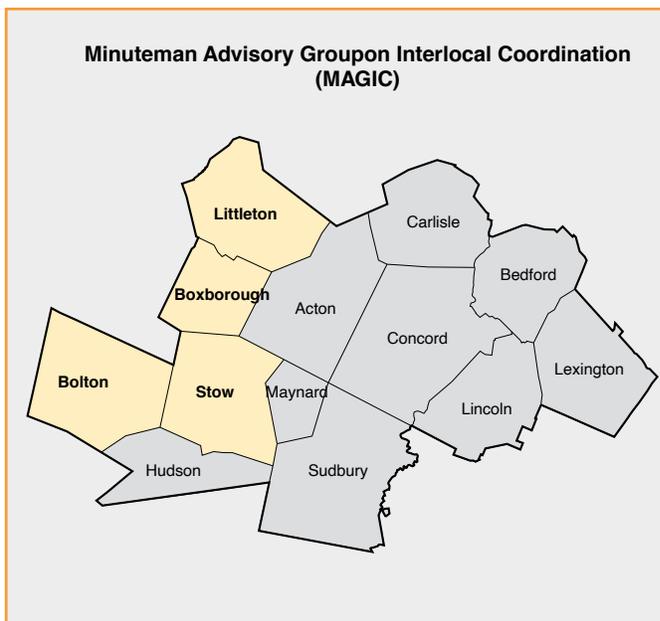
Project Description

This project will rehabilitate or replace bridge B-11-005=S-01-013, which carries Kernwood Avenue over the Danvers River between Beverly and Salem. A preliminary study will determine whether this bridge should be replaced or rehabilitated. If a replacement is pursued, then three options will be explored: a fixed high-span bridge; replacement of only the approach timber spans; and a complete bridge replacement with a movable span and fixed-approach spans. This bridge is currently listed as structurally deficient and has load restrictions. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$0	\$0
Non-Federal Funds	—	—	—	—	\$95,383,436	\$95,383,436
Total Funds	---	---	---	---	\$95,383,436	\$95,383,436

Bolton, Boxborough, Littleton, and Stow: Montachusett RTA Microtransit Service

Proponent: Montachusett RTA
ID Number: S12703
Project Type: Community Connections
Cost: \$1,316,061
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	7 out of 18	15 out of 15	3 out of 15	6 out of 18	16 out of 24	10 out of 10	57 out of 100

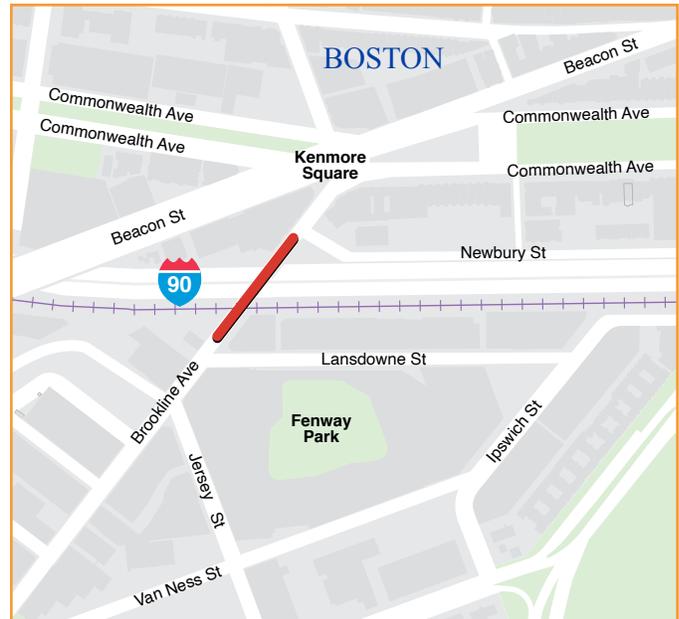
Project Description

This project will establish an on-demand microtransit service for the towns of Bolton, Boxborough, Littleton, and Stow, to be operated by the Montachusett Regional Transit Authority (MART). The primary goals of the project are to connect residents to employment centers and activity hubs in the region while providing a low-cost transportation alternative to single-occupancy vehicles. The service will utilize MART’s existing vehicle fleet and will allow riders to book trips through a mobile app. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$383,253	\$344,283	\$325,313	—	—	\$1,052,849
Non-Federal Funds	\$95,813	\$86,071	\$81,328	—	—	\$263,212
Total Funds	\$479,006	\$430,354	\$406,641	---	---	\$1,316,061

Boston: Bridge Preservation, B-16-053 (4T3), Brookline Avenue over Interstate 90 and Railroad

Proponent: MassDOT
ID Number: 612663
Project Type: Bridge
Cost: \$750,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

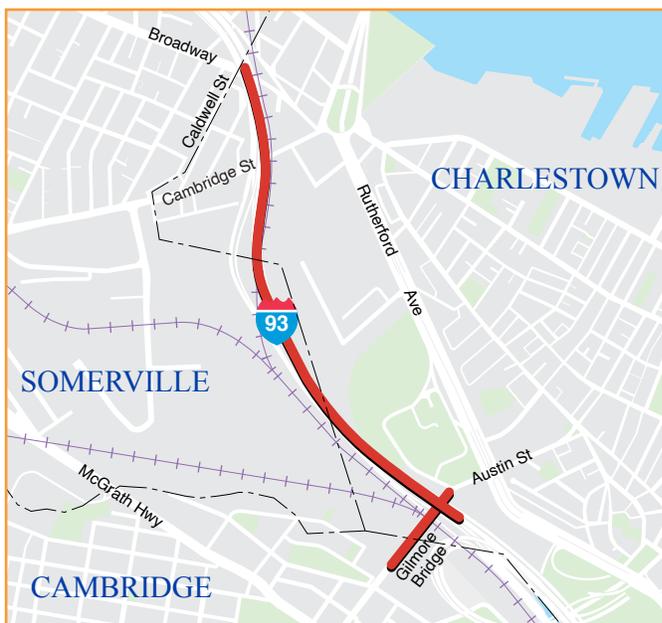
Project Description

This project will rehabilitate bridge B-16-053 (4T3), which carries Brookline Avenue over Interstate 90 and the MBTA Framingham/Worcester commuter rail line in Boston. This bridge is also known as the David Ortiz "Big Papi" Bridge.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$600,000	—	—	—	—	\$600,000
Non-Federal Funds	\$150,000	—	—	—	—	\$150,000
Total Funds	\$750,000	---	---	---	---	\$750,000

Boston: Bridge Preservation, B-16-179, Austin Street over Interstate 93, and B-16-281, Interstate 93 Upper and Lower Deck

Proponent: MassDOT
ID Number: 612664
Project Type: Bridge
Cost: \$3,500,400
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

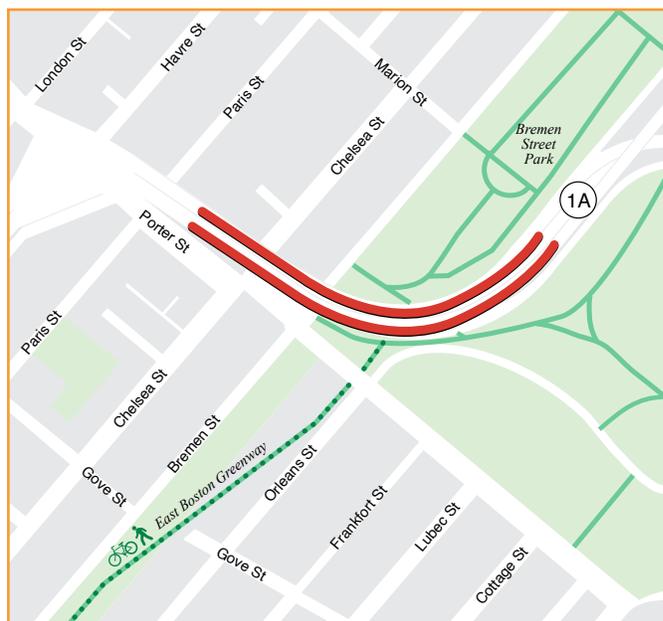
Project Description

This project will rehabilitate bridge B-16-179, which carries Austin Street over and under Interstate 93 in Boston, and bridge B-16-281, which carries Interstate 93 over the MBTA Orange Line near Sullivan Square in Boston.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$2,800,320	—	—	—	—	\$2,800,320
Non-Federal Funds	\$700,080	—	—	—	—	\$700,080
Total Funds	\$3,500,400	---	---	---	---	\$3,500,400

Boston: Bridge Preservation, B-16-235 (39T and 3A0), Route 1A over Chelsea Street/Bremen Street and Railroad

Proponent: MassDOT
ID Number: 612662
Project Type: Bridge
Cost: \$3,000,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

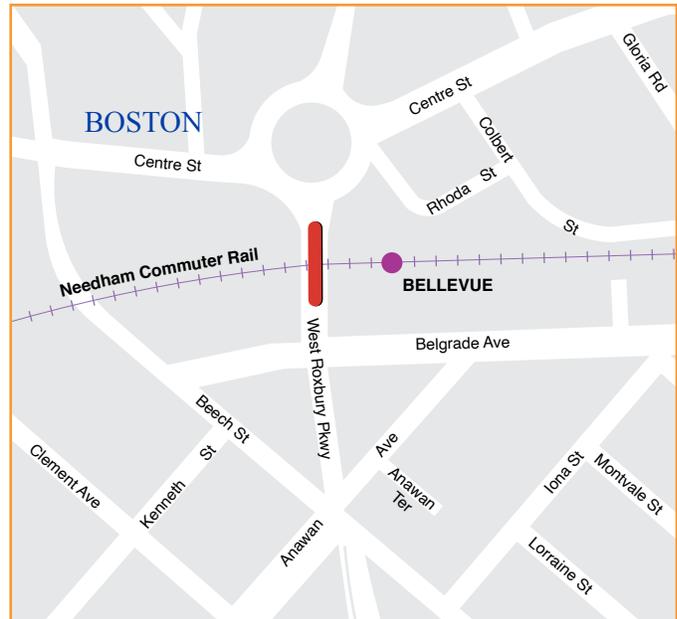
Project Description

This project will rehabilitate bridge B-16-235 (39T and 3A0), which carries Route 1A over Chelsea Street, Bremen Street, and the MBTA Blue Line in East Boston.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$2,400,000	—	—	—	—	\$2,400,000
Non-Federal Funds	\$600,000	—	—	—	—	\$600,000
Total Funds	\$3,000,000	---	---	---	---	\$3,000,000

Boston: Bridge Reconstruction/Rehabilitation, B-16-181, West Roxbury Parkway over MBTA

Proponent: MassDOT
ID Number: 606902
Project Type: Bridge
Cost: \$6,388,740
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

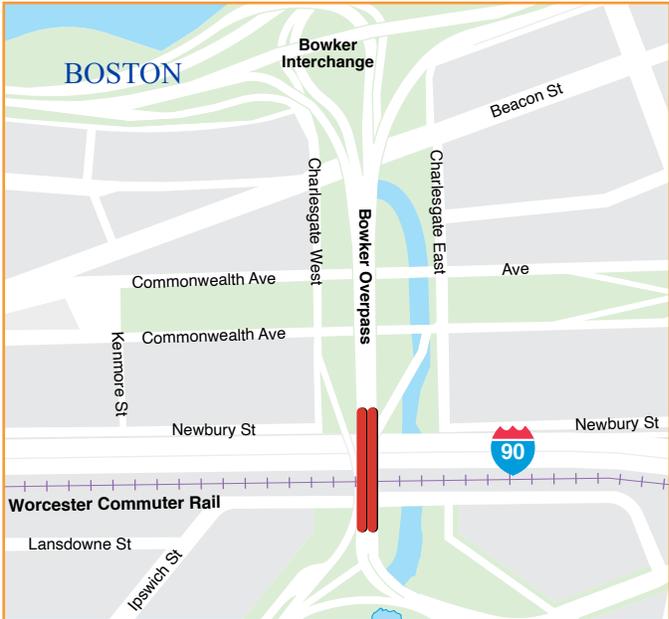
Project Description

This project will involve the reconstruction of bridge B-16-181, which carries West Roxbury Parkway over the MBTA Needham commuter rail line.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$5,110,992	—	—	—	—	\$5,110,992
Non-Federal Funds	\$1,277,748	—	—	—	—	\$1,277,748
Total Funds	\$6,388,740	---	---	---	---	\$6,388,740

Boston: Bridge Rehabilitation, B-16-052, Bowker Overpass over Mass. Pike, MBTA/CSX, and Ipswich Street and Ramps

Proponent: MassDOT
ID Number: 606496
Project Type: Bridge
Cost: \$51,248,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

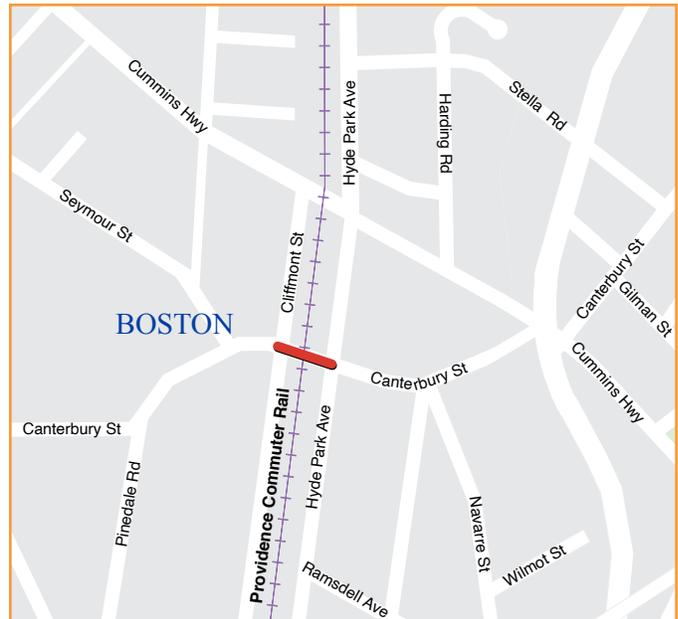
Project Description

This project will rehabilitate bridge B-16-052, which carries the Bowker Overpass over Interstate 90, Ipswich Street, and the MBTA Framingham/Worcester commuter rail line in Boston. This bridge is currently listed as structurally deficient. The project will also include rehabilitation of the adjacent ramps. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$0	—	—	—	\$0
Non-Federal Funds	—	\$49,450,000	—	—	—	\$49,450,000
Total Funds	---	\$49,450,000	---	---	---	\$49,450,000

Boston: Bridge Rehabilitation, B-16-107, Canterbury Street over Amtrak Railroad

Proponent: MassDOT
ID Number: 608197
Project Type: Bridge
Cost: \$4,504,926
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

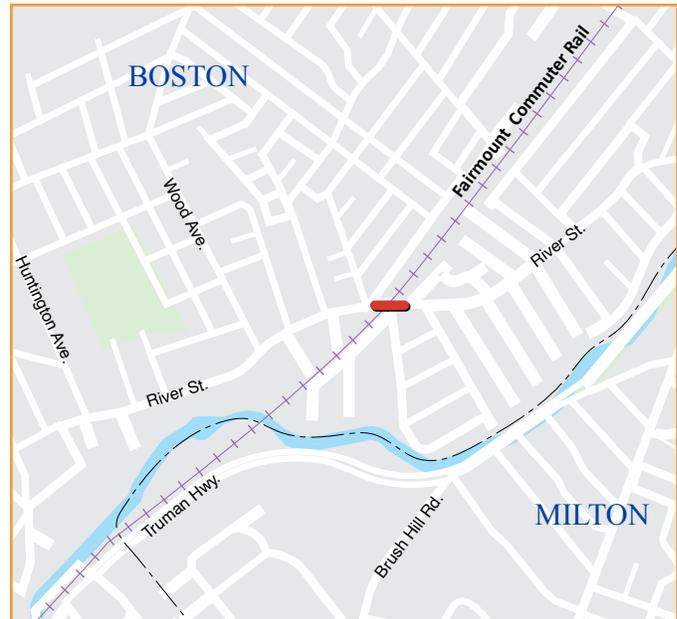
Project Description

This project will replace the superstructure of bridge B-16-107, which carries Canterbury Street over the Amtrak/MBTA tracks.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$3,603,942	—	—	—	\$3,603,942
Non-Federal Funds	—	\$900,985	—	—	—	\$900,985
Total Funds	---	\$4,504,926	---	---	---	\$4,504,926

Boston: Bridge Replacement, B-16-109, River Street Bridge over MBTA/AMTRAK

Proponent: MassDOT
ID Number: 606901
Project Type: Bridge
Cost: \$11,732,339
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

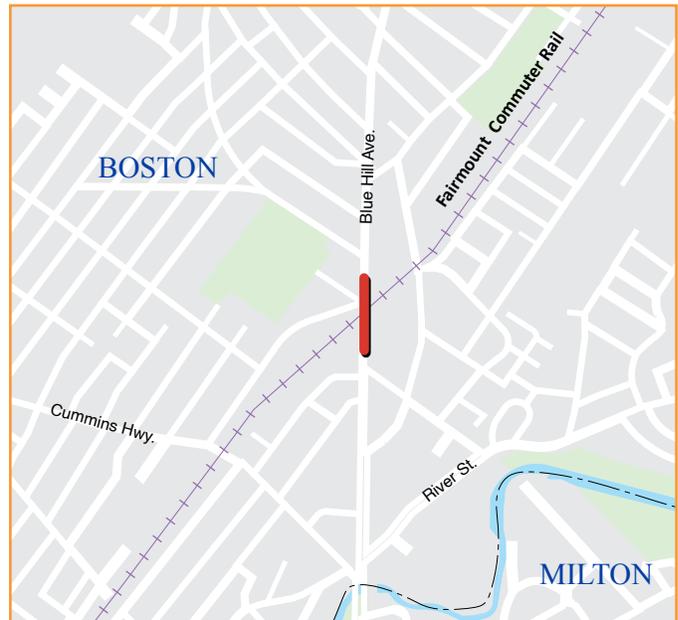
Project Description

This project will rehabilitate bridge B-16-109, which carries River Street the MBTA Franklin and Providence/Stoughton commuter rail lines in Boston. This bridge is currently listed as structurally deficient and has posted load restrictions. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$0	—	—	—	\$0
Non-Federal Funds	—	\$11,732,339	—	—	—	\$11,732,339
Total Funds	---	\$11,732,339	---	---	---	\$11,732,339

Boston: Bridge Replacement, B-16-165, Blue Hill Avenue over Railroad

Proponent: MassDOT
ID Number: 612519
Project Type: Bridge
Cost: \$36,007,685
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

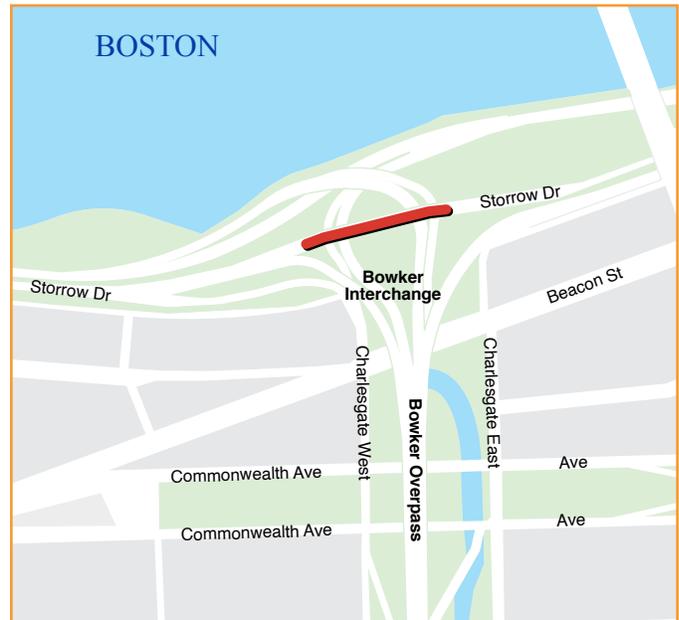
Project Description

This project will replace bridge B-16-165, which carries Blue Hill Avenue over the MBTA Fairmount Line and Franklin commuter rail lines in Boston.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	--	\$28,806,148	\$28,806,148
Non-Federal Funds	--	--	--	--	\$7,201,537	\$7,201,537
Total Funds	---	---	---	---	\$36,007,685	\$36,007,685

Boston: Bridge Replacement, B-16-365, Storrow Drive over Bowker Ramps

Proponent: MassDOT
ID Number: 606728
Project Type: Bridge
Cost: \$116,058,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will replace bridge B-16-365, which carries Storrow Drive over the Bowker Ramps and Muddy River in Boston. This bridge is currently listed as structurally deficient and has posted vehicle weight restrictions due to its poor condition.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$92,846,400	\$92,846,400
Non-Federal Funds	—	—	—	—	\$23,211,600	\$23,211,600
Total Funds	---	---	---	---	\$116,058,000	\$116,058,000

Boston: Deck Replacement, B-16-056, Cambridge Street over Interstate 90, includes Preservation of B-16-057, Lincoln Street Pedestrian Overpass over Interstate 90

Proponent: MassDOT
ID Number: 612624
Project Type: Bridge
Cost: \$30,045,441
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will replace bridge B-16-056, which carries Cambridge Street over Interstate 90 and the MBTA Framingham/Worcester commuter rail line in Boston. This project will also rehabilitate nearby bridge B-16-057, the Lincoln Street Pedestrian Overpass, which also runs over Interstate 90 and the MBTA commuter rail line. The Cambridge Street bridge is listed as structurally deficient and features partially limited pedestrian access due to its deteriorated condition.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$23,516,353	—	—	—	—	\$23,516,353
Non-Federal Funds	\$5,879,088	—	—	—	—	\$5,879,088
Total Funds	\$29,395,441	---	---	---	---	\$29,395,441

Boston: Ellis Elementary Traffic Calming (SRTS)

Proponent: Boston

ID Number: 610537

Project Type: Roadway Reconstruction

Cost: \$2,361,218

Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

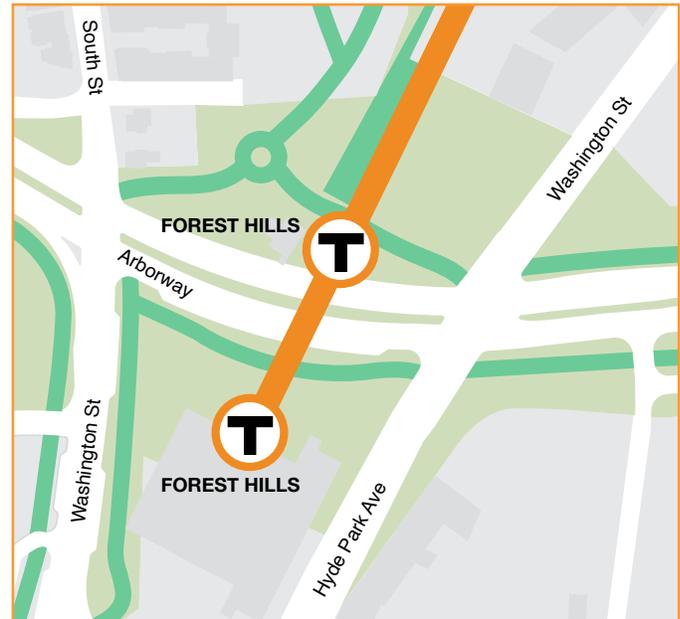
Project Description

This project will make upgrades to promote safety along the roadways surrounding Ellis Elementary School in Boston through the Safe Routes to School program. The project proposes traffic-calming measures throughout the project area, including speed humps and curb extensions at several locations. Along Humboldt Avenue, the project proposes signal timing adjustments, the addition of bicycle lanes, and the installation of bus bulbs and a crosswalk at the intersection of Humboldt Avenue and Monroe Street. Raised intersection treatments are also proposed at three locations along Walnut Avenue.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	\$888,974	--	--	--	\$888,974
Non-Federal Funds	--	\$472,244	--	--	--	\$472,244
Total Funds	---	\$2,361,218	---	---	---	\$2,361,218

Boston: Forest Hills Improvement Project

Proponent: MBTA
ID Number: S12706
Project Type: Transit Modernization
Cost: \$68,000,000
Funding Source: Regional Target Funds



Scoring Summary

This project was selected for funding by the MPO late in the FFYs 2023–27 TIP development cycle, so it has not yet been scored using the MPO’s project selection criteria. This section will be updated with the project’s final score when it is available.

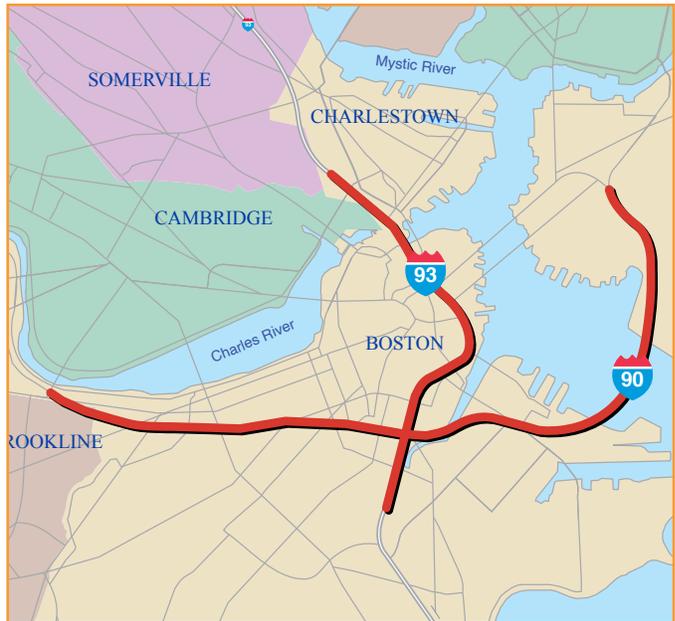
Project Description

This project will make a range of improvements to the MBTA Orange Line and commuter rail station in at Forest Hills in Boston, addressing existing accessibility issues within the station. The project will construct one new elevator and replace three existing elevators. Additional accessibility improvements include the installation of ADA-compliant ramps, repairs to the pedestrian path of travel, and the construction of accessible restrooms. This project also includes upgrades to life-safety infrastructure, wayfinding, signage, and the station roof. This project is partially funded by the MPO in FFY 2024, with the MBTA seeking other sources of funding to supplement the MPO’s contribution.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	–	\$5,120,000	–	–	–	\$5,120,000
Non-Federal Funds	–	\$1,280,000	–	–	–	\$1,280,000
Total Funds	---	\$6,400,000	---	---	---	\$6,400,000

Boston: Guide and Traffic Sign Replacement on Interstate 90 and 93 within Central Artery/Tunnel System

Proponent: MassDOT
ID Number: 611954
Project Type: Safety Improvements
Cost: \$2,513,504
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

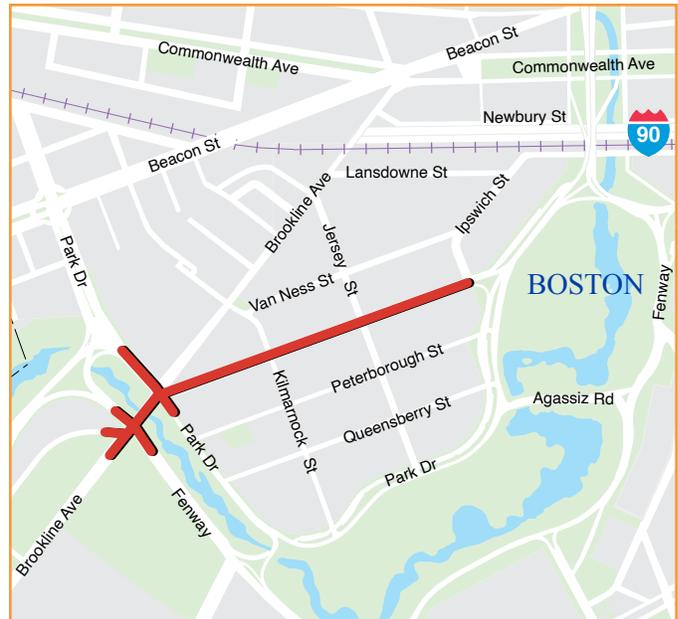
Project Description

This project involves the replacement of guide and traffic signs on Interstate 93 and Interstate 90 within the Central Artery/Tunnel system, including applicable signing on intersecting secondary roadways. The project covers approximately six miles along Interstate 90 (mile markers 132 to 138) and five miles along Interstate 93 (mile markers 15 to 20). The project area includes the Ted Williams Tunnel from the Interstate 90 terminus in East Boston westbound to the Brookline/Boston city line east of St. Mary’s Street. The project area along Interstate 93 runs between Southhampton Street north to the Mystic Avenue off ramp.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$2,262,154	—	\$2,262,154
Non-Federal Funds	—	—	—	\$251,350	—	\$251,350
Total Funds	---	---	---	\$2,513,504	---	\$2,513,504

Boston: Improvements on Boylston Street, from Intersection of Brookline Avenue and Park Drive to Ipswich Street

Proponent: Boston
ID Number: 606453
Project Type: Complete Streets
Cost: \$8,665,052
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	7 out of 30	6 out of 29	15 out of 29	12 out of 16	8 out of 12	12 out of 18	60 out of 134

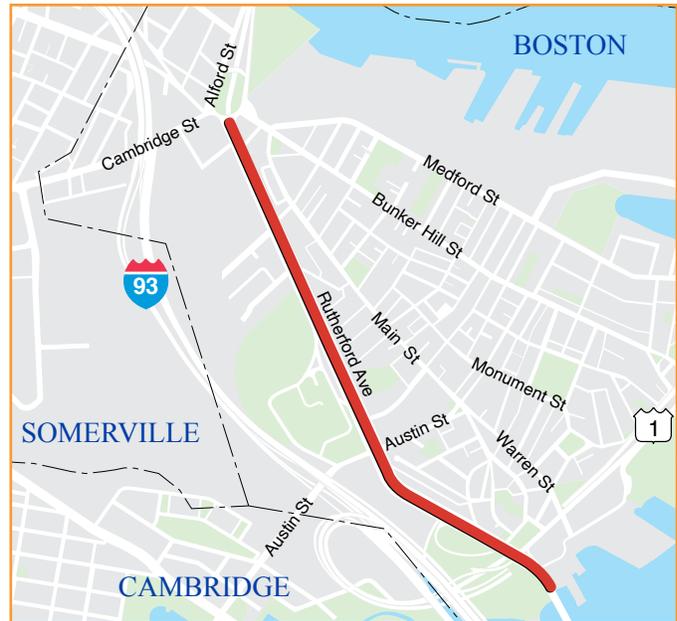
Project Description

This roadway improvement project will enhance safety and mobility for people walking and biking along the Boylston Street corridor. Short-term improvements are planned by the City of Boston in the fall of 2021 to provide a mix of buffered and parking-protected bicycle lanes on Boylston Street between Park Drive and Ipswich Street. This project will formalize these improvements while also improving traffic signals and crosswalks, replacing street lighting, and reconstructing sidewalks and ramps to achieve ADA compliance throughout the corridor. This project will also construct additional improvements to the Muddy River crossing at the western end of the corridor, including along Park Drive to the Landmark Center driveway and at the intersection of Brookline Avenue and Pilgrim Road. These improvements will include the addition of segments of separated bicycle lanes and cycle track, improved signals and crosswalks, and reconstructed sidewalks to shorten pedestrian crossings.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	---	\$6,932,042	---	---	---	\$6,932,042
Non-Federal Funds	---	\$1,733,010	---	---	---	\$1,733,010
Total Funds	---	\$8,665,052	---	---	---	\$8,665,052

Boston: Reconstruction of Rutherford Avenue, from City Square to Sullivan Square

Proponent: Boston
ID Number: 606226
Project Type: Major Infrastructure
Cost: \$190,696,612
Funding Source: Regional Target Funds



Scoring Summary

This project is funded using Regional Target funds, but was not scored using the MPO’s TIP project selection criteria. The project was evaluated through the MPO’s Long-Range Transportation Plan process.

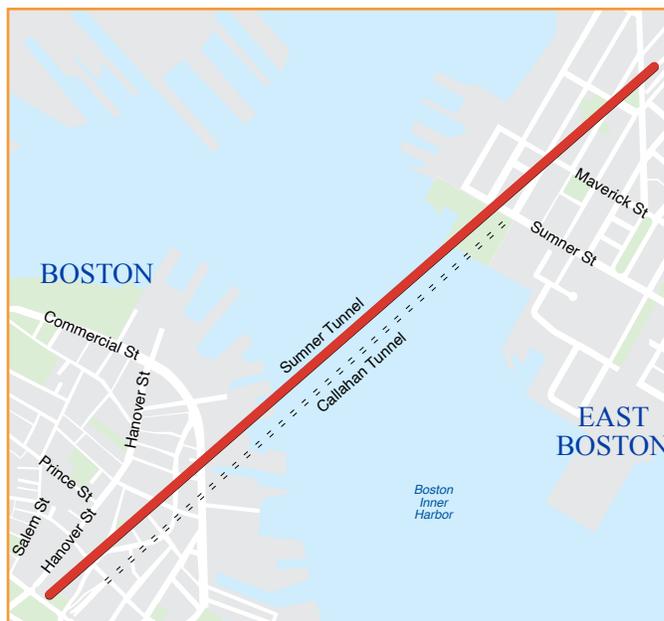
Project Description

The reconstruction of Rutherford Avenue from City Square to Sullivan Square will make the road a multimodal urban boulevard corridor. This project will be funded over five years, starting in FFY 2025. The total project cost is estimated to be \$190,696,612, and the total funding in the FFYs 2023-27 TIP is \$99,783,959. The City of Boston will contribute \$25,000,000 in local funding towards the project, leaving the MPO with a balance of \$65,912,653 to be funded in FFYs 2028 and 2029.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$26,227,167	\$26,800,000	\$26,800,000	\$79,827,167
Non-Federal Funds	—	—	\$6,556,792	\$6,700,000	\$6,700,000	\$19,956,792
Total Funds	---	---	\$32,783,959	\$33,500,000	\$33,500,000	\$99,783,959

Boston: Roadway, Ceiling, Arch, and Wall Reconstruction and other Control Systems in Sumner Tunnel

Proponent: MassDOT
ID Number: 606476
Project Type: Major Infrastructure
Cost: \$136,722,750
Funding Source: Regional Target and Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

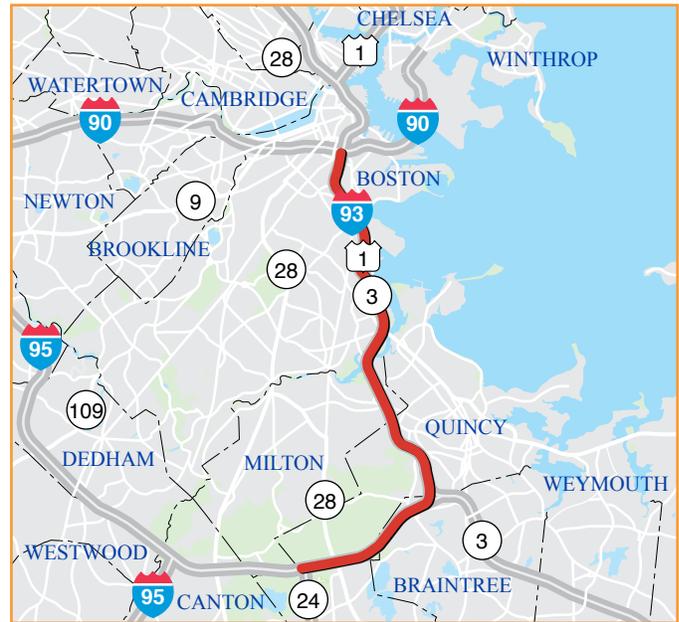
Project Description

This project aims to repair the existing deterioration in Sumner Tunnel by reconstructing the roadway pavement and repairing cracking and corrosion on the tunnel’s walls and ceiling. The total cost of this project is \$136,722,750, with \$22,115,687 in Regional Target funding allocated to the project. The rest of the project cost is funded using statewide highway funds. This project is funded over three years (FFYs 2021-23), with \$119,852,949 in funding allocated in FFYs 2021 and 2022. The remainder of the project’s funding is included in this TIP as shown below.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$13,495,840	—	—	—	—	\$13,495,840
Non-Federal Funds	\$3,373,961	—	—	—	—	\$3,373,961
Total Funds	\$16,869,801	---	---	---	---	\$16,869,801

Boston, Milton, and Quincy: Interstate Maintenance and Related Work on Interstate 93

Proponent: MassDOT
ID Number: 608208
Project Type: Interstate Pavement
Cost: \$38,671,350
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

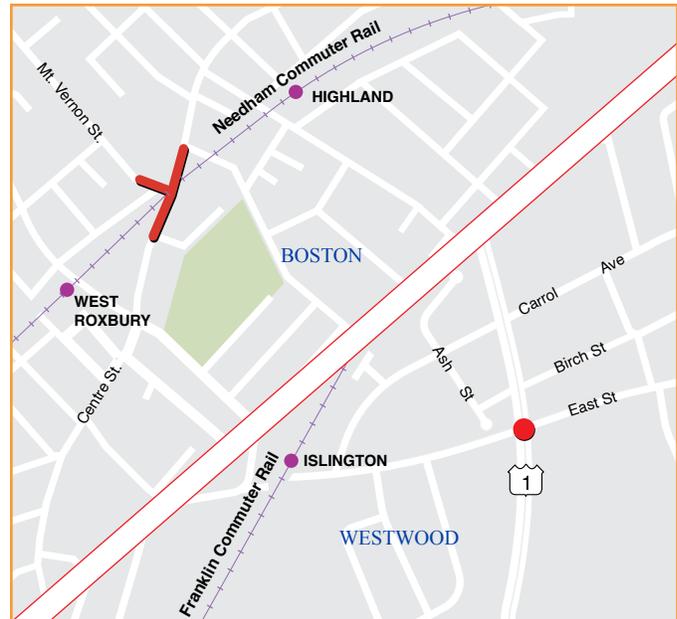
Project Description

The project is an interstate maintenance resurfacing project on the Southeast Expressway. A preservation treatment or thin-bonded overlay is proposed to extend the pavement service life and improve safety.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$34,114,215	—	—	—	—	\$34,114,215
Non-Federal Funds	\$4,557,135	—	—	—	—	\$4,557,135
Total Funds	\$38,617,350	---	---	---	---	\$38,617,350

Boston and Westwood: Steel Superstructure Cleaning (Full Removal) and Painting of Two Bridges: B-16-118 and W-31-006

Proponent: MassDOT
ID Number: 608609
Project Type: Bridge
Cost: \$2,142,857
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

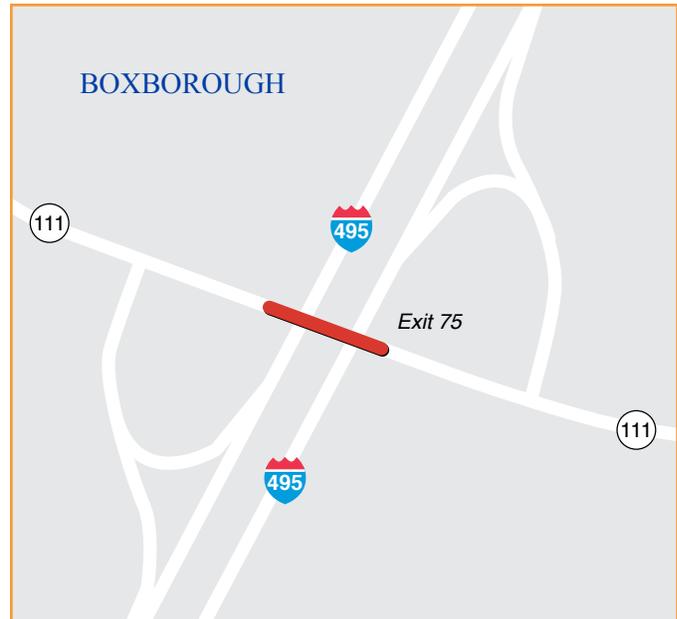
Project Description

The work consists of cleaning and painting of structural steel on bridges B-16-118 and W-31-006 in Boston and Westwood.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$1,714,286	--	--	--	--	\$1,714,286
Non-Federal Funds	\$428,571	--	--	--	--	\$428,571
Total Funds	\$2,142,857	---	---	---	---	\$2,142,857

Boxborough: Bridge Replacement, B-18-002, Route 111 over Interstate 495

Proponent: MassDOT
ID Number: 608009
Project Type: Bridge
Cost: \$12,763,392
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

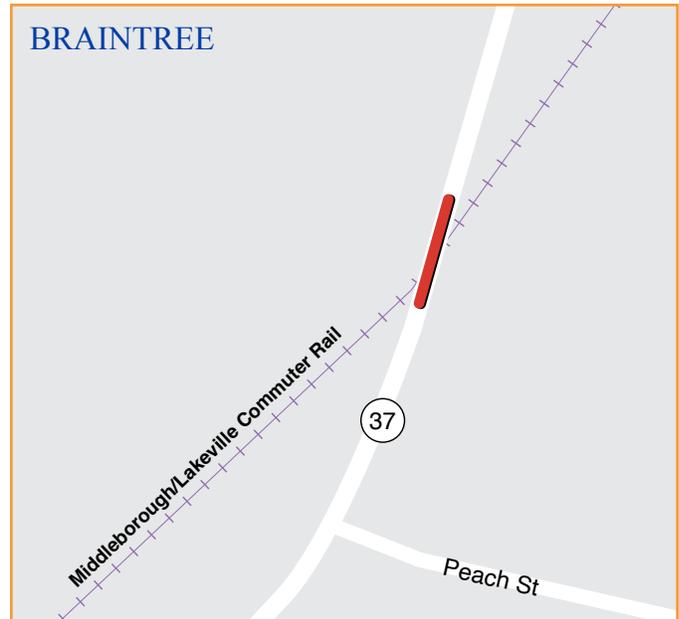
Project Description

This project will replace bridge B-18-002, which carries Route 111 over Interstate 495 in Boxborough. This bridge is currently listed as structurally deficient.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$10,210,714	—	—	—	—	\$10,210,714
Non-Federal Funds	2,552,678\$	—	—	—	—	2,552,678\$
Total Funds	\$12,763,392	---	---	---	---	\$12,763,392

Braintree: Bridge Replacement, B-21-017, Washington Street (Route 37) over MBTA/CSX Railroad

Proponent: MassDOT
ID Number: 607684
Project Type: Bridge
Cost: \$7,681,489
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

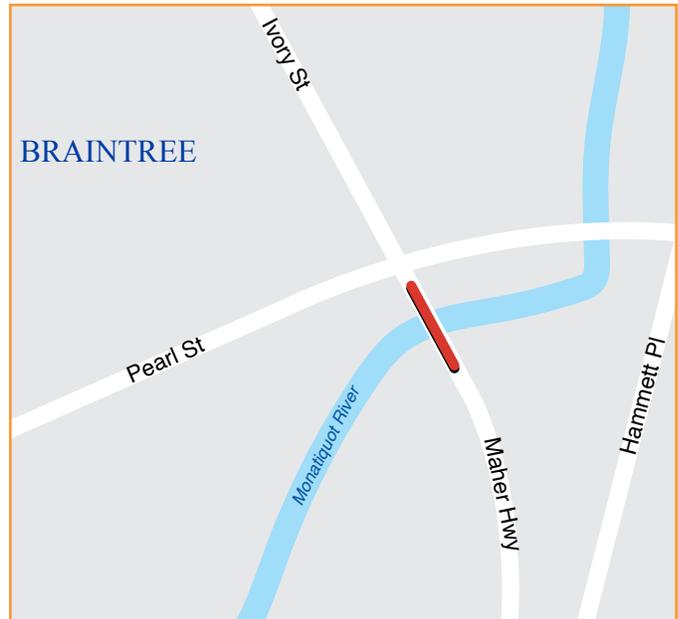
Project Description

This project will replace bridge B-21-017, which carries Washington Street over the MBTA Kingston and Middleborough/Lakeville commuter rail lines in Braintree. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	\$0	--	--	\$0
Non-Federal Funds	--	--	\$7,681,489	--	--	\$7,681,489
Total Funds	---	---	\$7,681,489	---	---	\$7,681,489

Braintree: Bridge Replacement, B-21-067, JW Maher Highway over Monatiquot River

Proponent: MassDOT
ID Number: 612196
Project Type: Bridge
Cost: \$11,867,518
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

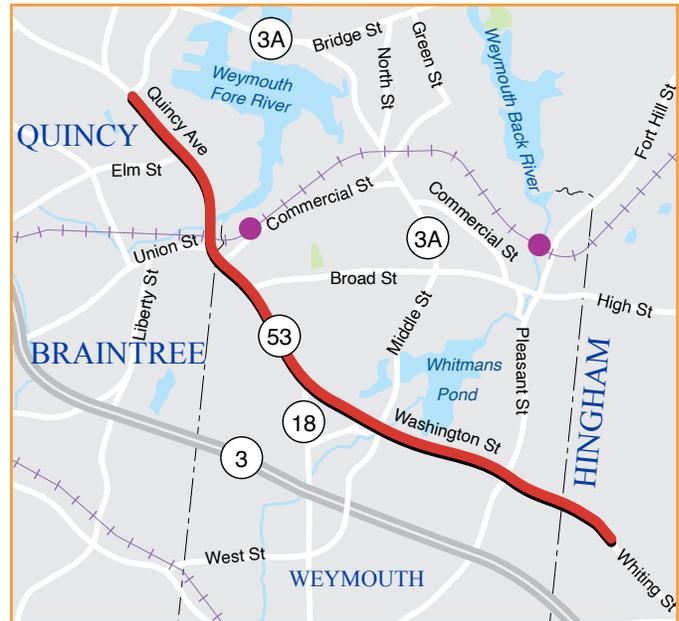
Project Description

This project will replace bridge B-21-067, which carries JW Maher Highway over the Monatiquot River in Braintree. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	\$0
Non-Federal Funds	—	—	\$11,867,518	—	—	\$11,867,518
Total Funds	---	---	\$11,867,518	---	---	\$11,867,518

Braintree, Quincy, and Weymouth: Resurfacing and Related Work on Route 53

Proponent: MassDOT
ID Number: 608498
Project Type: Non-Interstate Pavement
Cost: \$6,000,522
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

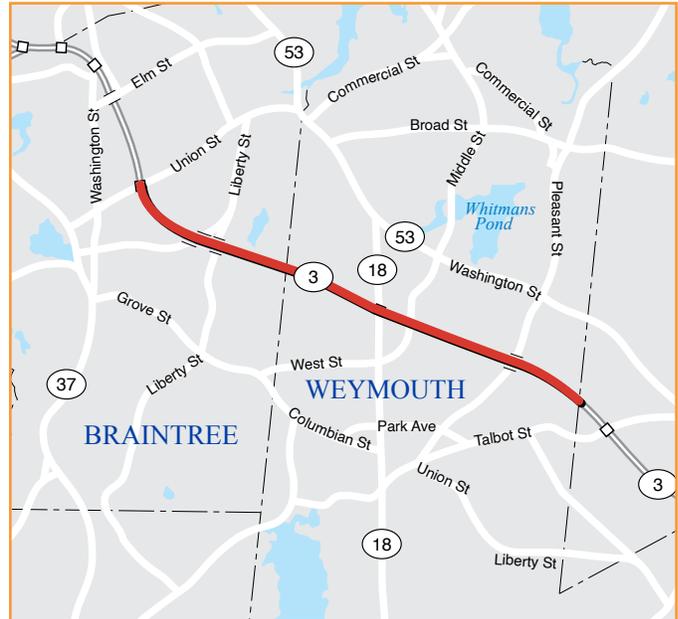
Project Description

This project involves resurfacing and related work on Route 53.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$4,800,418	—	—	—	\$4,800,418
Non-Federal Funds	—	\$1,200,104	—	—	—	\$1,200,104
Total Funds	---	\$6,000,522	---	---	---	\$6,000,522

Braintree and Weymouth: Resurfacing and Related Work on Route 3

Proponent: MassDOT
ID Number: 612050
Project Type: Non-Interstate Pavement
Cost: \$8,584,520
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

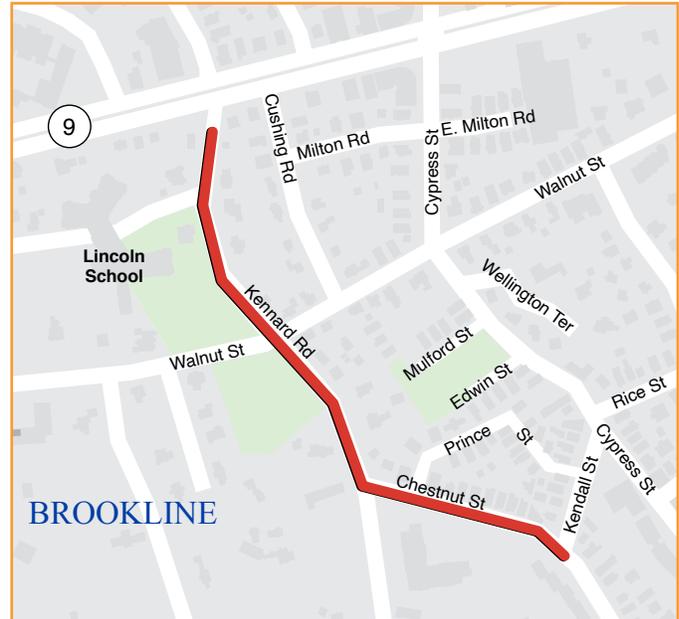
Project Description

This project includes resurfacing and related work on Route 3 in Braintree and Weymouth. The project’s extents run from mile marker 37.7 to mile marker 41.8 for a total of 4.1 miles, or from the Weymouth/Hingham town line to Union Street in Braintree.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	\$6,867,616	--	\$6,867,616
Non-Federal Funds	--	--	--	\$1,716,904	--	\$1,716,904
Total Funds	---	---	---	\$8,584,520	---	\$8,584,520

Brookline: Improvements at William H. Lincoln School (SRTS)

Proponent: Brookline
ID Number: S12210
Project Type: Roadway Reconstruction
Cost: \$1,305,823
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

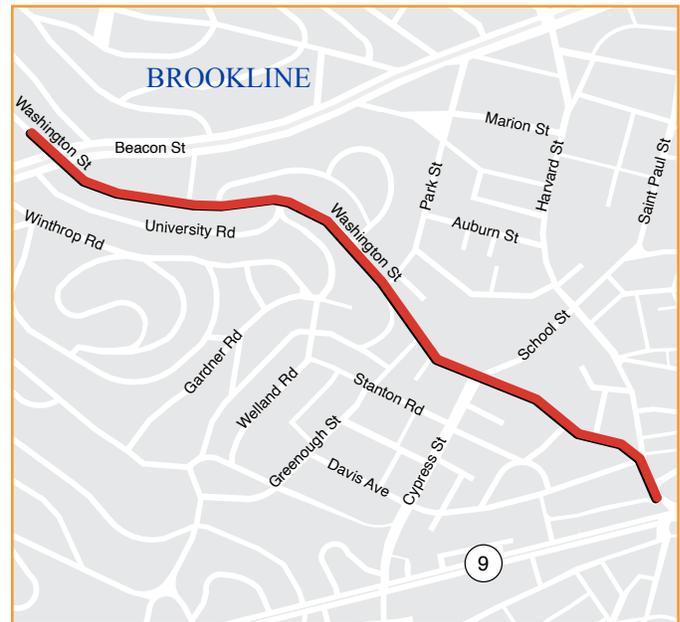
Project Description

This project will make upgrades to promote safety along the roadways surrounding William H. Lincoln School in Brookline through the Safe Routes to School program. The project will improve pedestrian and bicycle safety and access improvements on the one-way portion of Chestnut Street, including the installation of a two-way protected bike lane, new sidewalks, new ADA-compliant wheelchair ramps, related pavement markings, and signage. On Kennard Road, the project will construct a new raised intersection, crosswalks, ADA-compliant wheelchair ramps, related pavement markings, and signage at the school driveway to reduce motor vehicle speed and improve pedestrian safety and access.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$1,044,658	—	—	\$1,044,658
Non-Federal Funds	—	—	\$261,165	—	—	\$261,165
Total Funds	---	---	\$1,305,823	---	---	\$1,305,823

Brookline: Rehabilitation of Washington Street

Proponent: Brookline
ID Number: 610932
Project Type: Complete Streets
Cost: \$30,030,812
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	14 out of 18	13 out of 20	11 out of 18	7 out of 12	7.4 out of 20	10 out of 12	62.4 out of 100

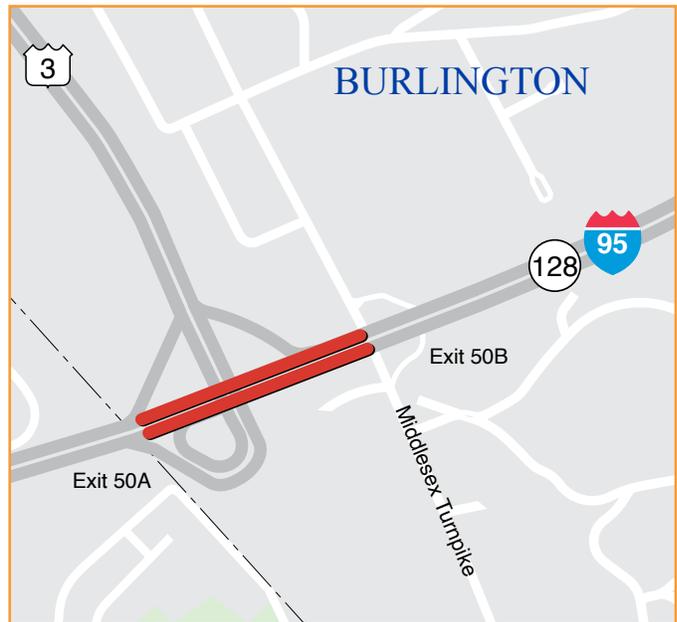
Project Description

This project will reconstruct Washington Street in Brookline between Boylston Street and Beacon Street. Washington Street is currently constrained, with a narrow right of way that accommodates two lanes of traffic, on-street parking in both directions, bicycling, and significant volumes of pedestrians. Sidewalks are currently in poor condition, and the area contains two HSIP bicycle crash clusters and one pedestrian crash cluster. The project will reconstruct sidewalks along both sides of the entire corridor and will provide protected bicycle facilities in both directions that are separated from vehicular traffic for a vast majority of the corridor. Other multimodal improvements include the provision of dedicated bus pull-out space outside of the travel lanes. The project will also replace the existing signals along Washington Street’s length and will reconstruct the roadway surface.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	--	\$24,524,650	\$24,524,650
Non-Federal Funds	--	--	--	--	\$5,506,162	\$5,506,162
Total Funds	---	---	---	---	\$30,030,812	\$30,030,812

Burlington: Improvements at Interstate 95 (Route 128)/ Route 3 Interchange

Proponent: MassDOT
ID Number: 609516
Project Type: Roadway Reconstruction
Cost: \$3,121,560
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will make improvements to the interchange at Interstate 95 (Route 128) and Route 3 in Burlington.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$2,497,248	—	—	—	\$2,497,248
Non-Federal Funds	—	\$624,312	—	—	—	\$624,312
Total Funds	---	\$3,121,560	---	---	---	\$3,121,560

Burlington and Woburn: Interstate Maintenance and Related Work on Interstate 95

- Proponent:** MassDOT
- ID Number:** 612034
- Project Type:** Interstate Pavement
- Cost:** \$12,947,687
- Funding Source:** Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

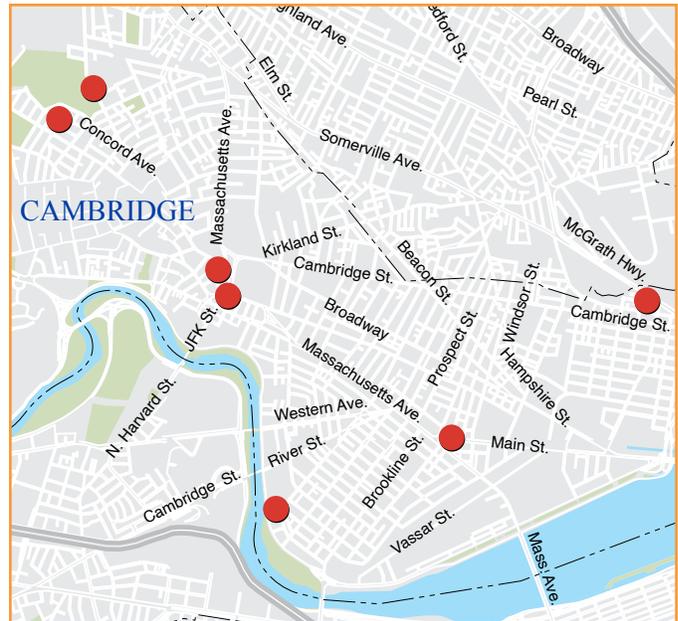
Project Description

This project is a pavement maintenance project that will repave 4.1 miles of Interstate 95 northbound and southbound between the Cambridge Street interchange in Burlington and the Interstate 93 interchange in Woburn.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$11,652,918	—	—	—	\$11,652,918
Non-Federal Funds	—	\$1,294,769	—	—	—	\$1,294,769
Total Funds	---	\$12,947,687	---	---	---	\$12,947,687

Cambridge: Bluebikes Station Replacement and System Expansion

Proponent: Cambridge
ID Number: S12695
Project Type: Community Connections
Cost: \$349,608
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	18 out of 18	4.5 out of 15	12.5 out of 15	9 out of 18	24 out of 24	10 out of 10	78 out of 100

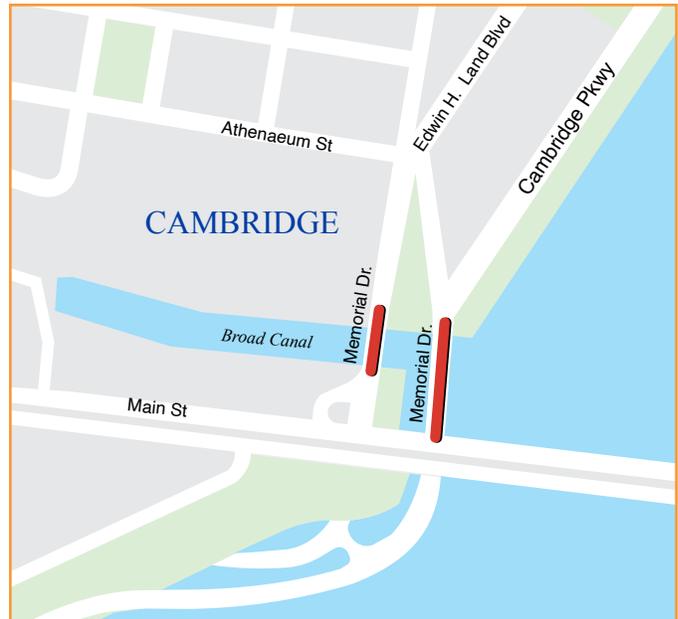
Project Description

This project will install two new Bluebikes stations in Cambridge, including at the Callanan Playground in West Cambridge and in Harvard Square at Church Street. This project will also replace five of Cambridge’s original Bluebikes stations, which are now approximately 10 years old. The replacement of these stations will help to maintain a state of good repair across the system, ensuring these stations continue to function as key nodes in the broader Bluebikes network. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$279,686	—	—	—	—	\$279,686
Non-Federal Funds	\$69,922	—	—	—	—	\$69,922
Total Funds	\$349,608	---	---	---	---	\$349,608

Cambridge: Bridge Replacement, C-01-008, First Street Bridge and C-01-040, Land Boulevard

Proponent: MassDOT
ID Number: 606449
Project Type: Bridge
Cost: \$14,896,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

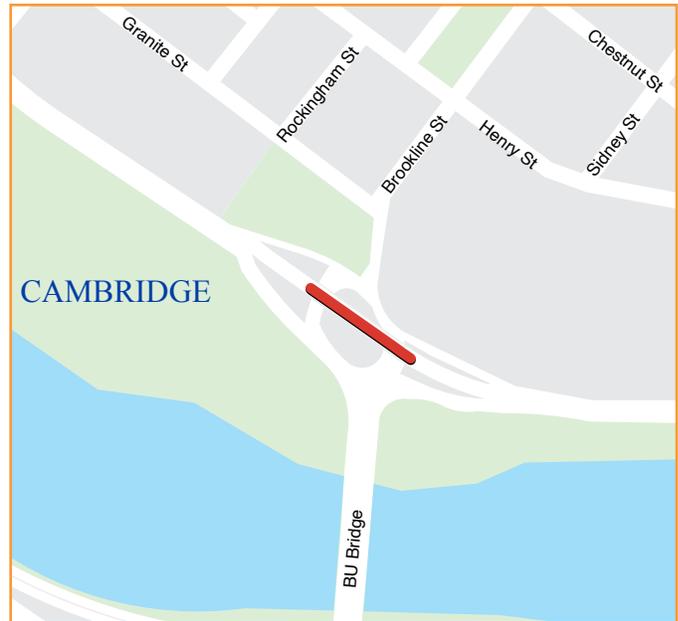
Project Description

This project will replace bridge C-01-008, which carries First Street over Broad Canal, and bridge C-01-040, which carries Land Boulevard over Broad Canal, in Cambridge. Both bridges are currently listed as structurally deficient and has posted load restrictions due to their poor condition.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$11,916,800	—	\$11,916,800
Non-Federal Funds	—	—	—	\$2,979,200	—	\$2,979,200
Total Funds	---	---	---	\$14,896,000	---	\$14,896,000

Cambridge: Bridge Replacement, C-01-026, Memorial Drive over Brookline Street

- Proponent:** MassDOT
- ID Number:** 611987
- Project Type:** Bridge
- Cost:** \$52,933,955
- Funding Source:** Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

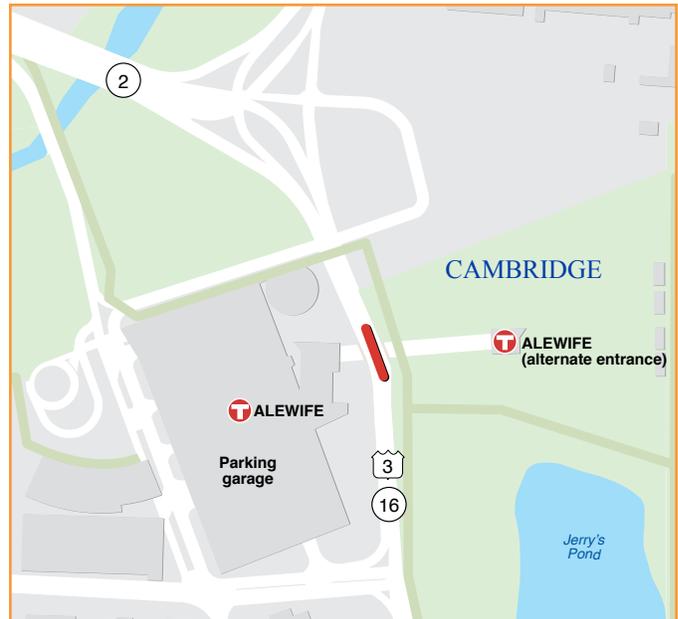
Project Description

This project will replace bridge C-01-026, which carries Memorial Drive over Brookline Street in Cambridge. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	–	–	–	–	\$0	\$0
Non-Federal Funds	–	–	–	–	\$52,933,955	\$52,933,955
Total Funds	---	---	---	---	\$52,933,955	\$52,933,955

Cambridge: Superstructure Replacement, C-01-031, US Route 3/Route 16/Route 2 over MBTA Red Line

Proponent: MassDOT
ID Number: 610776
Project Type: Bridge
Cost: \$13,424,399
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

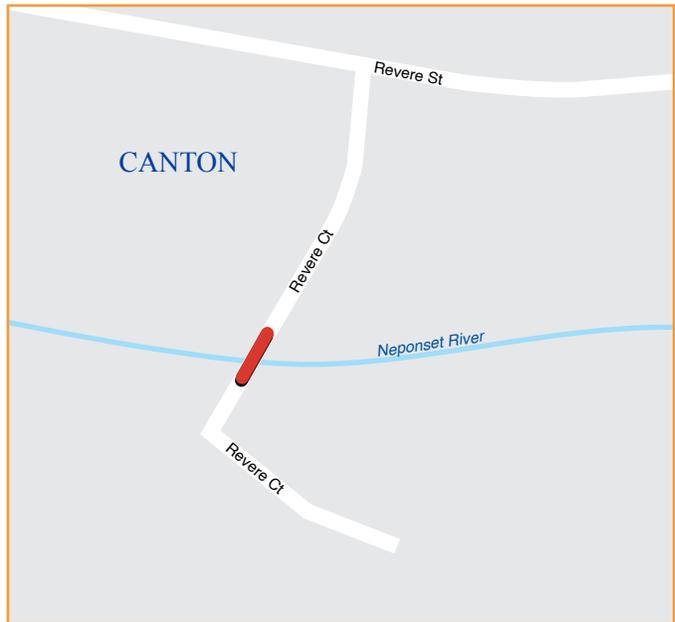
Project Description

This project will rehabilitate bridge C-01-031 in Cambridge.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$10,739,519	—	—	\$10,739,519
Non-Federal Funds	—	—	\$2,684,880	—	—	\$2,684,880
Total Funds	---	---	\$13,424,399	---	---	\$13,424,399

Canton: Bridge Replacement, C-02-042, Revere Court over West Branch of the Neponset River

Proponent: MassDOT
ID Number: 609438
Project Type: Bridge
Cost: \$2,185,168
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

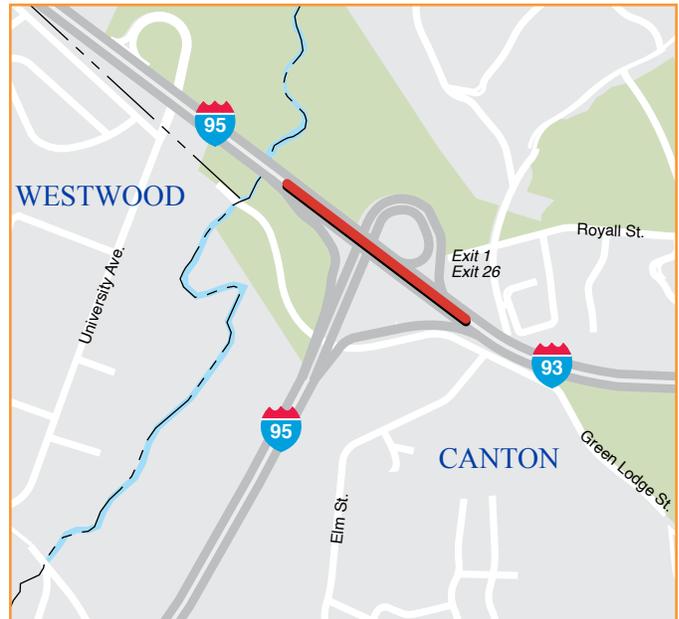
Project Description

This project will replace bridge C-02-042, which carries Revere Court over the west branch of the Neponset River.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$1,748,134	—	—	—	\$1,748,134
Non-Federal Funds	—	\$437,034	—	—	—	\$437,034
Total Funds	---	\$2,185,168	---	---	---	\$2,185,168

Canton: Interim Interchange Improvements at Interstate 95/Route 128/Interstate 93

Proponent: MassDOT
ID Number: 610541
Project Type: Roadway Reconstruction
Cost: \$6,169,280
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

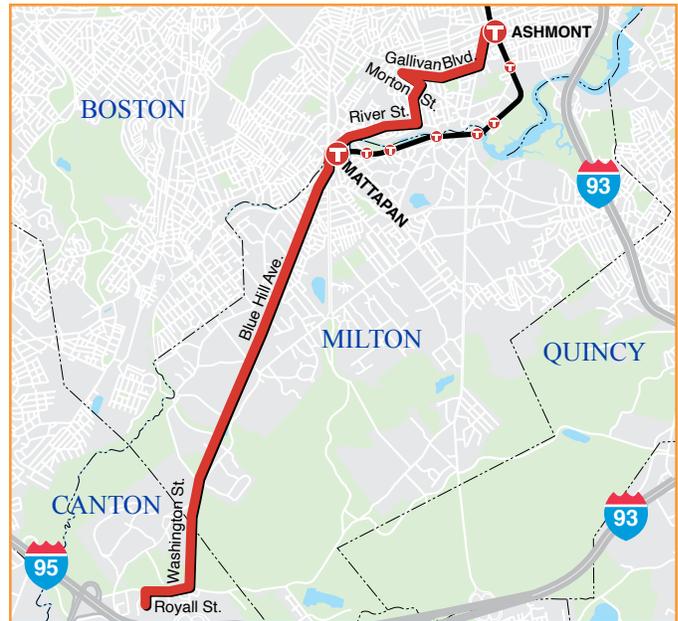
Project Description

This project will make improvements to the interchange at Interstate 95 (Route 128) and Interstate 93 in Canton.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$4,935,424	—	—	—	\$4,935,424
Non-Federal Funds	—	\$1,233,856	—	—	—	\$1,233,856
Total Funds	---	\$6,169,280	---	---	---	\$6,169,280

Canton: Royall Street Shuttle

- Proponent:** Canton
- ID Number:** S12114
- Project Type:** Community Connections
- Cost:** \$534,820
- Funding Source:** Regional Target Funds



Scoring Summary

This project received a total score of 51 points when evaluated using the criteria for the pilot round of the MPO’s Community Connections Program. These criteria are listed in Table A-14.

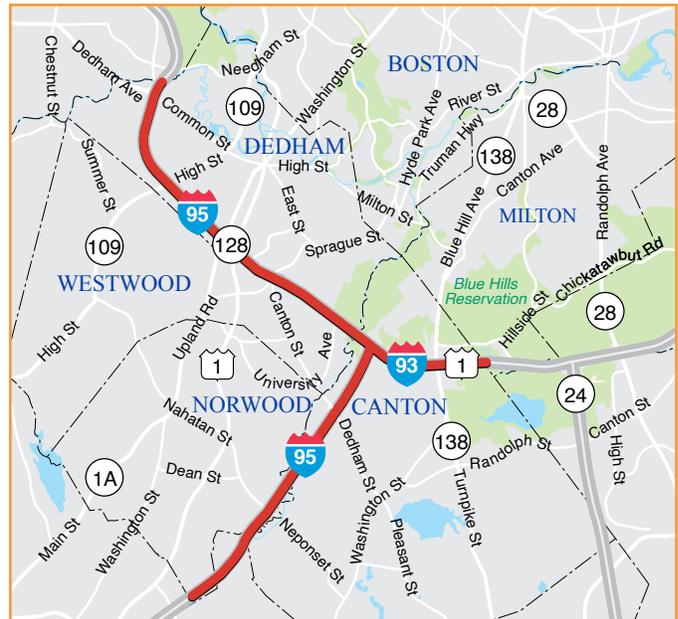
Project Description

This project will establish a shuttle service connecting Canton’s Royall Street employment cluster with the MBTA Route 128 commuter rail station and Ashmont, Mattapan Trolley, and Quincy Adams rapid transit stations. The goal of the project is to improve access to employment centers and major transit hubs by providing peak hour shuttle services for commuters and residents. The map above shows one of three planned routes for the shuttle, the precise details of which are under development. Funding for this project began in FFY 2022 with \$209,101 allocated in that federal fiscal year to begin operations.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$141,742	\$118,834	—	—	—	\$260,576
Non-Federal Funds	\$35,435	\$29,780	—	—	—	\$65,215
Total Funds	\$177,177	\$148,542	---	---	---	\$325,791

Canton, Dedham, Norwood, Sharon, and Westwood: Highway Lighting Improvements at Interstate 93 and Interstate 95/Route 128

- Proponent:** MassDOT
- ID Number:** 609053
- Project Type:** Safety Improvements
- Cost:** \$3,800,869
- Funding Source:** Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

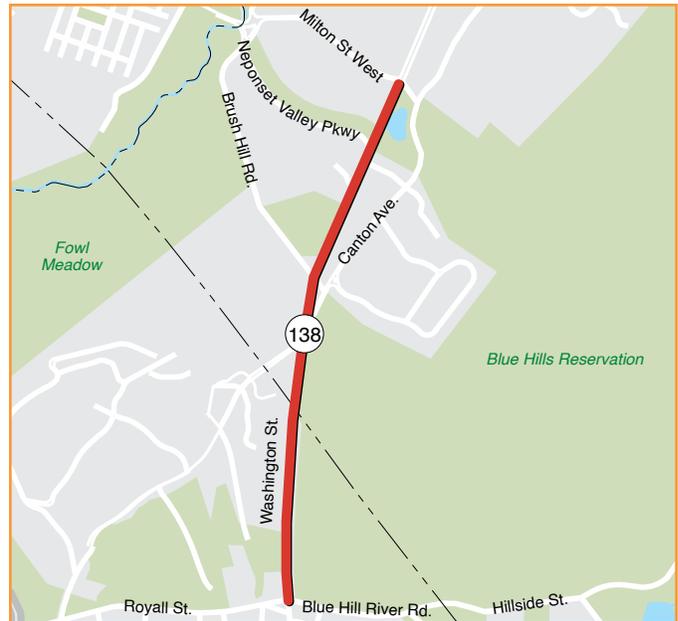
Project Description

This project will make highway lighting improvements on Interstate 93 and Interstate 95/Route 128.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$3,040,694	—	—	—	—	\$3,040,694
Non-Federal Funds	\$760,174	—	—	—	—	\$760,174
Total Funds	\$3,800,868	---	---	---	---	\$3,800,868

Canton and Milton: Roadway Reconstruction on Route 138, From Royall Street to Dollar Lane

Proponent: MassDOT
ID Number: 612615
Project Type: Roadway Improvements
Cost: \$18,360,944
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

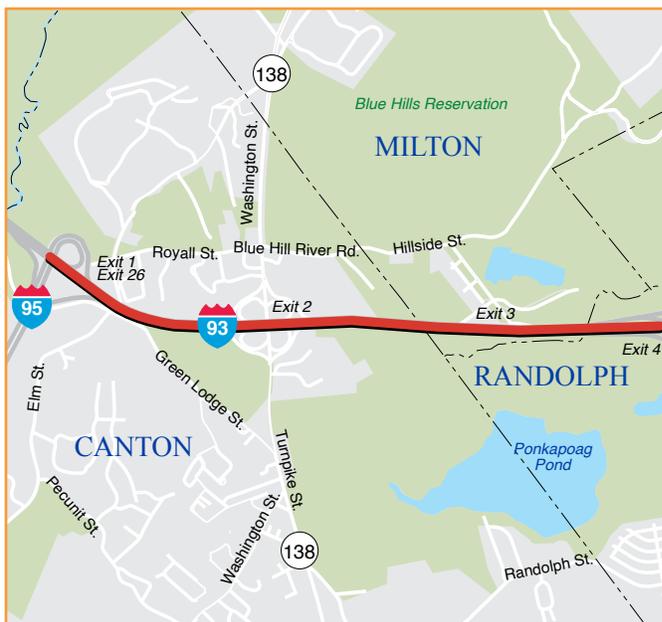
Project Description

This project will make improvements to a 1.7-mile segment of Route 138 between Royall Street in Canton and Dollar Lane in Milton. The primary focus of the project is the addition of a shared-use path along the eastern side of the roadway, along with the reconstructing of existing sidewalks along the western side of the corridor. The intersection at Route 138 and Dollar Lane will be reconstructed to improve turn lanes and signals in an effort to enhance safety, as this location was identified as a 2017–2019 top-200 crash location statewide.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$14,688,755	\$14,688,755
Non-Federal Funds	—	—	—	—	\$3,672,189	\$3,672,189
Total Funds	---	---	---	---	\$18,360,944	\$18,360,944

Canton, Milton, and Randolph: Interstate Maintenance and Related Work on Interstate 93

Proponent: MassDOT
ID Number: 612051
Project Type: Interstate Pavement
Cost: \$15,407,700
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

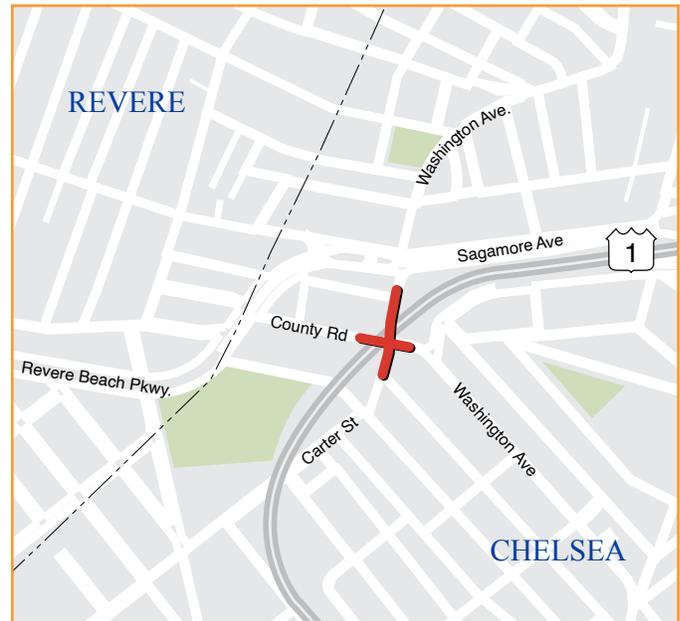
Project Description

This project will conduct pavement maintenance on Interstate 93 in Canton, Milton, and Randolph. The project will resurface the roadway between the Interstate 93/Interstate 95 interchange in Canton and the Interstate 93/Route 24 interchange in Randolph, a distance of approximately three miles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	--	\$13,866,930	\$13,866,930
Non-Federal Funds	--	--	--	--	\$1,540,770	\$1,540,770
Total Funds	---	---	---	---	\$15,407,700	\$15,407,700

Chelsea: Bridge Superstructure Replacement, C-09-013, Washington Avenue, Carter Street, and County Road/Route 1

Proponent: MassDOT
ID Number: 608952
Project Type: Bridge
Cost: \$10,584,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

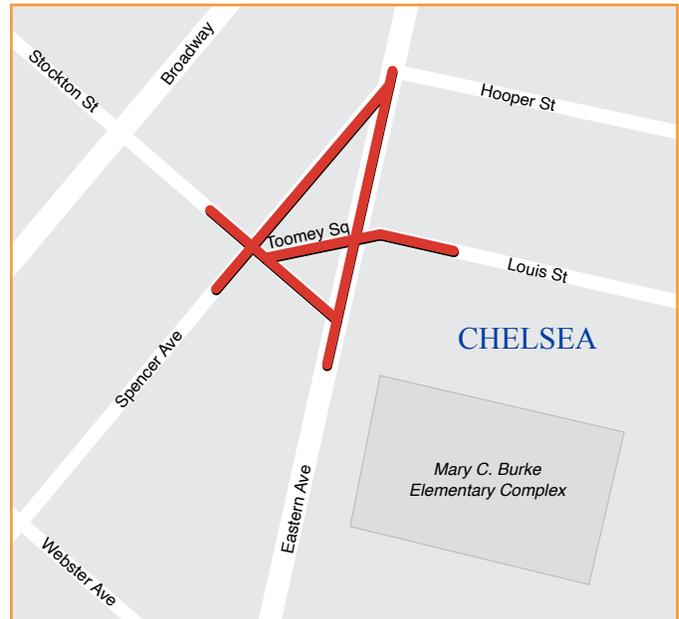
Project Description

This project will replace the superstructure of bridge C-09-013, which carries Washington Avenue, Carter Street, and County Road over Route 1 in Chelsea. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	\$0
Non-Federal Funds	—	—	\$10,584,000	—	—	\$10,584,000
Total Funds	---	---	\$10,584,000	---	---	\$10,584,000

Chelsea: Improvements at Mary C. Burke Elementary (SRTS)

Proponent: Chelsea
ID Number: S12211
Project Type: Roadway Reconstruction
Cost: \$2,903,250
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

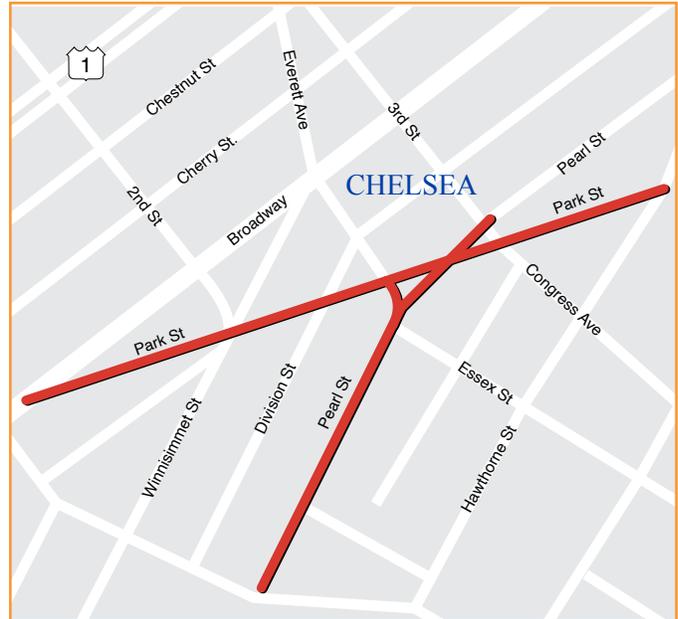
Project Description

This project will make upgrades to promote safety along the roadways surrounding Mary C. Burke Elementary School in Chelsea through the Safe Routes to School program. The project will serve the immediate needs of the students and staff by drastically improving pedestrian safety along Eastern Avenue, Stockton Street, and Spencer Avenue. Improvements include the addition of pedestrian signals, rehabilitation of pavement markings and roadway surfaces, construction of new ADA-compliant ramps, and reconstruction of existing traffic signal components. The project will also reduce the number of travel lanes on Eastern Avenue to add a pedestrian refuge. The roadway network will be simplified through the formal closure of a rarely used roadway in the project area, allowing for the creation of new open space in its place.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	\$2,322,600	--	\$2,322,600
Non-Federal Funds	--	--	--	\$580,650	--	\$580,650
Total Funds	---	---	---	\$2,903,250	---	\$2,903,250

Chelsea: Park and Pearl Street Reconstruction

Proponent: Chelsea
ID Number: 611983
Project Type: Complete Streets
Cost: \$12,123,769
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	14 out of 18	14 out of 20	11 out of 18	6 out of 12	14.9 out of 20	10 out of 12	69.9 out of 100

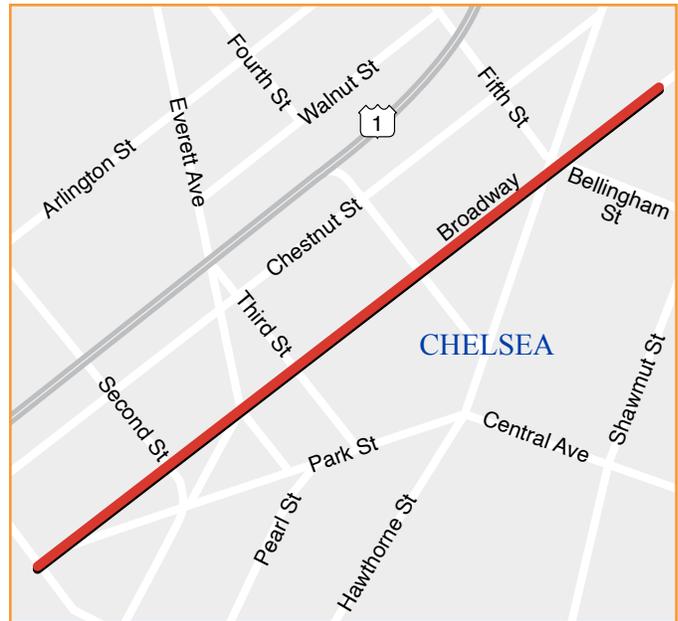
Project Description

This project will improve safety along Park and Pearl Streets for all users, with a specific emphasis on improving conditions for people walking and bicycling. Smart signalization and geometric reconstruction will mitigate vehicular congestion while providing clear pedestrian paths of travel and shorter crosswalk distances via newly constructed ramps and sidewalks. This project may implement a priority bus and bike lane, beginning along Park Street at Williams Street up to the eventual surface renovation of Upper Broadway to the Revere City Line, an MPO-funded project in FFY 2022. Signals will allow for preferential movements of safety vehicles and MBTA buses through each intersection.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$9,799,015	\$9,799,015
Non-Federal Funds	—	—	—	—	\$2,324,754	\$2,324,754
Total Funds	---	---	---	---	\$12,123,769	\$12,123,769

Chelsea: Targeted Safety Improvements and Related Work on Broadway, from Williams Street to City Hall Avenue

Proponent: Chelsea
ID Number: 609532
Project Type: Safety Improvements
Cost: \$6,557,898
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	23 out of 30	18 out of 29	14 out of 29	4 out of 16	10 out of 12	14 out of 18	83 out of 134

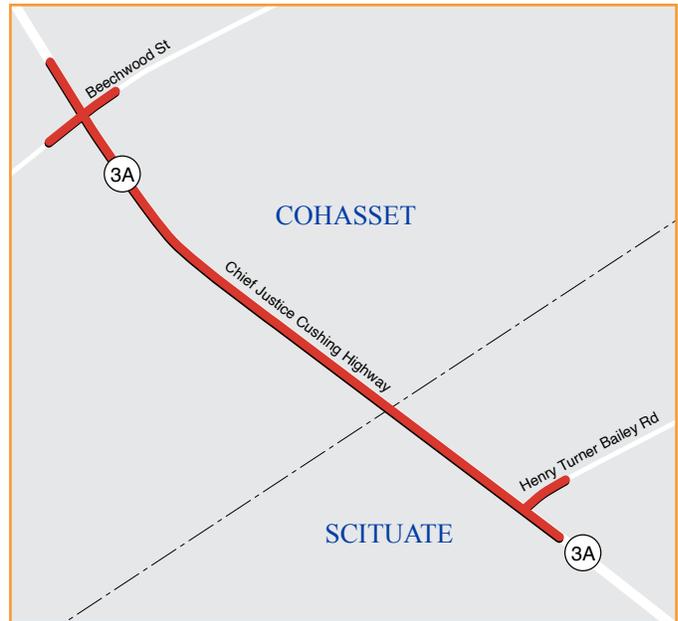
Project Description

This project aims to enhance the safety of all users of Broadway in Chelsea while promoting economic activity along the corridor. Improvements to pedestrian and bicycle infrastructure include the widening of sidewalks, installation of tree boxes, and the implementation of dedicated bike or combined bus and bike lanes with protective barrier options. In addition, the upgrading of signals and pavement markings at each intersection along the corridor will increase safety of pedestrians through higher levels of visual indication while allowing the implementation of transit signal priority for buses and emergency vehicles. This project will upgrade the entire corridor to ADA compliance and allow for more efficient on-boarding and off-boarding of MBTA bus patrons. This project was evaluated using the MPO’s scoring criteria because it was considered for funding using Regional Target Funds. MassDOT funded the project, however.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$5,902,108	—	—	\$5,902,108
Non-Federal Funds	—	—	\$655,790	—	—	\$655,790
Total Funds	---	---	\$6,557,898	---	---	\$6,557,898

Cohasset and Scituate: Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A), from Beechwood Street to Henry Turner Bailey Road

Proponent: MassDOT
ID Number: 608007
Project Type: Complete Streets
Cost: \$12,509,786
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	16 out of 30	4 out of 29	8 out of 29	5 out of 16	1 out of 12	3 out of 18	37 out of 134

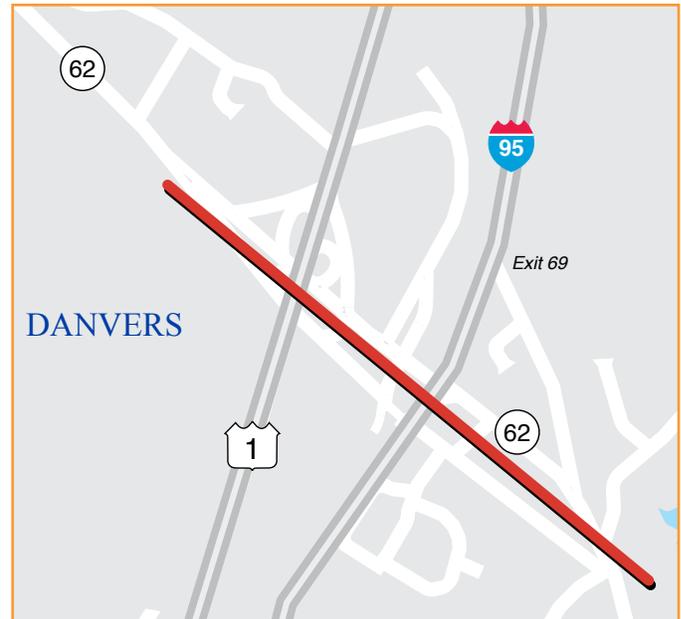
Project Description

Work on this project includes corridor improvements from the Beechwood Street intersection to the Cohasset/Scituate town line. The Route 3A/Beechwood Street intersection will be upgraded with new traffic signal equipment as well as minor geometric improvements. The Route 3A/Henry Turner Bailey Road intersection will be reviewed for meeting requirements for traffic signals as well as geometric improvements. Pedestrian and bicycle accommodation will be included along the corridor.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	\$10,157,829	--	--	--	\$10,157,829
Non-Federal Funds	--	\$2,351,957	--	--	--	\$2,351,957
Total Funds	---	\$12,509,786	---	---	---	\$12,509,786

Danvers: Rail Trail West Extension (Phase 3)

Proponent: MassDOT
ID Number: 612607
Project Type: Bicycle and Pedestrian
Cost: \$3,288,600
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

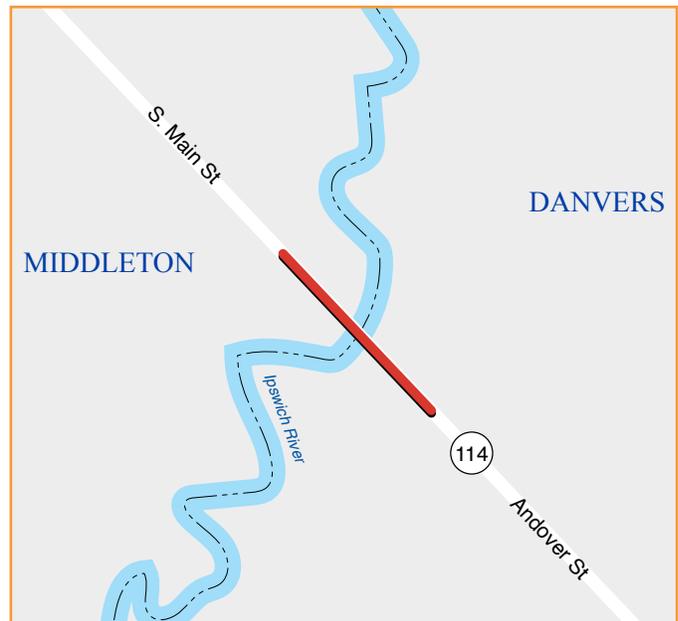
Project Description

This project will construct a 0.8-mile segment of the Danvers Rail Trail from Spring Street in the east to just west of Maple Street. The eastern end of this project will connect to earlier phases of the Danvers Rail Trail and to the larger Border to Boston Trail system further east.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$2,630,880	—	\$2,630,880
Non-Federal Funds	—	—	—	\$657,720	—	\$657,720
Total Funds	---	---	---	\$3,288,600	---	\$3,288,600

Danvers and Middleton: Bridge Replacement, D-03-009=M-20-005 Andover Street (Route 114) over Ipswich River

Proponent: MassDOT
ID Number: 610782
Project Type: Bridge
Cost: \$5,279,051
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

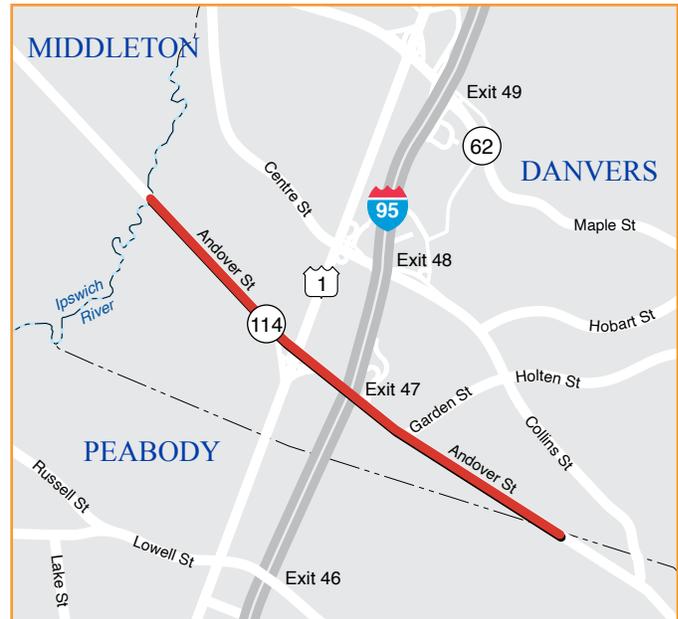
Project Description

This project will fund the replacement of bridge D-03-009=M-20-005, which carries Andover Street over the Ipswich River between Danvers and Middleton.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$4,223,241	—	—	—	\$4,223,241
Non-Federal Funds	—	\$1,055,810	—	—	—	\$1,055,810
Total Funds	---	\$5,279,051	---	---	---	\$5,279,051

Danvers and Middleton: Resurfacing and Related Work on Route 114

Proponent: MassDOT
ID Number: 608818
Project Type: Non-Interstate Pavement
Cost: \$4,175,264
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

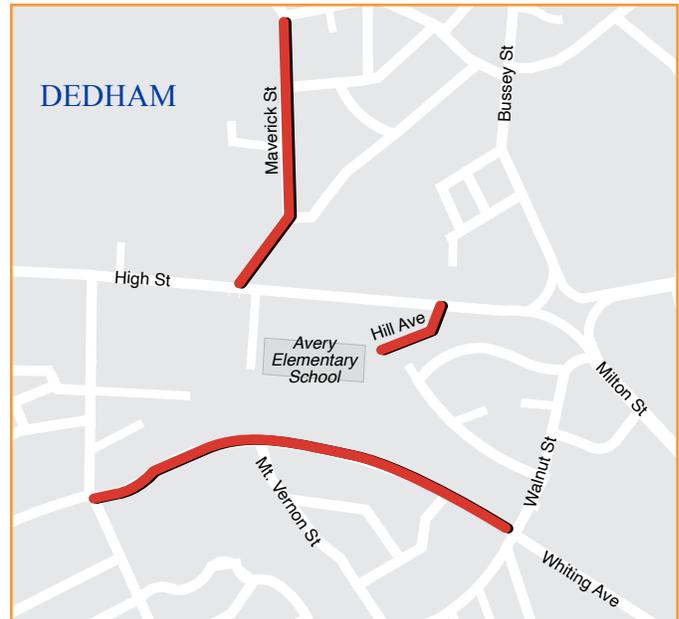
Project Description

The project consists of resurfacing and related work on Route 114.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$3,340,211	—	—	—	—	\$3,340,211
Non-Federal Funds	\$835,053	—	—	—	—	\$835,053
Total Funds	\$4,175,264	---	---	---	---	\$4,175,264

Dedham: Improvements at Avery Elementary School (SRTS)

Proponent: Dedham
ID Number: S12212
Project Type: Roadway Reconstruction
Cost: \$1,876,802
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

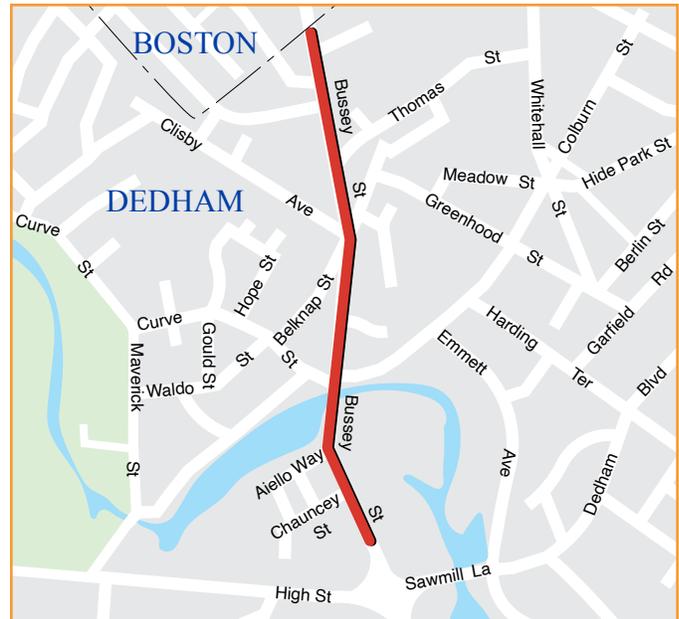
Project Description

This project will make upgrades to promote safety along the roadways surrounding Avery Elementary School in Dedham through the Safe Routes to School program. The project includes three areas of improvement designed to facilitate safe walking to the Avery campus. The project proposes adding sidewalks and granite curbing on Maverick Street, along with adding new granite curbing along Whiting Avenue. A new crosswalk with rectangular-rapid-flashing-beacons is also proposed for installation on Whiting Avenue at Recreation Road. Finally, Hill Avenue is frequently used as a cut-through for students who live East of Avery Elementary, but this route is currently a dead-end road ending in a wooded area with steep grade, a ledge, and fencing. This project proposes formalizing this connection with an ADA-accessible pedestrian walkway ramp to facilitate safe passage in what is currently an unmaintained student made path that is unsafe especially in winter months.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$1,501,442	—	\$1,501,442
Non-Federal Funds	—	—	—	\$375,360	—	\$375,360
Total Funds	---	---	---	\$1,876,802	---	\$1,876,802

Dedham: Pedestrian Improvements along Bussey Street, including Superstructure Replacement, D-05-010, Bussey Street over Mother Brook

Proponent: Dedham
ID Number: 607899
Project Type: Complete Streets
Cost: \$6,314,855
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	5 out of 30	8 out of 29	5 out of 29	5 out of 16	7 out of 12	5 out of 18	35 out of 134

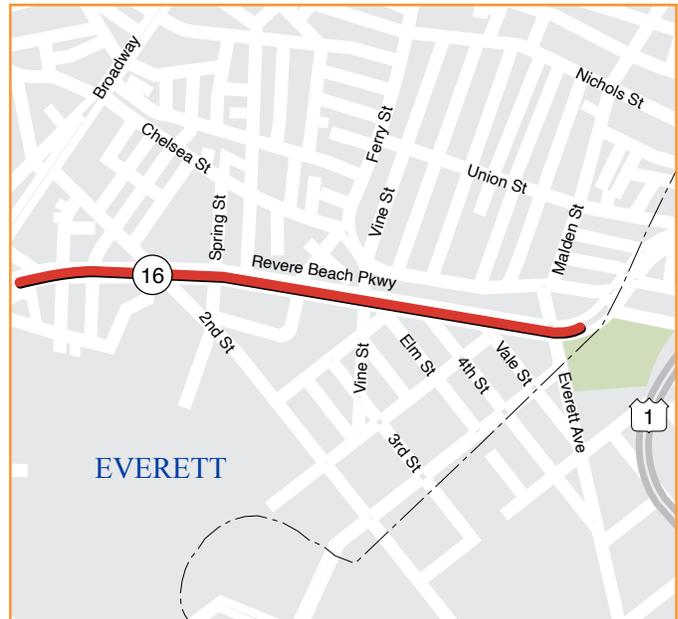
Project Description

Improvements along the Bussey Street corridor will include resetting and setting the curb and reconstructing ADA-compliant sidewalks and ramps on both sides of the roadway. Some pavement reconstruction may be necessary to obtain the necessary curb reveal. Minor geometric improvements are expected at the intersection with Colburn Street and Clisby Avenue to make them more pedestrian friendly, since current conditions include expansive pavement width. Shared bicycle accommodations are planned.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$5,051,884	—	—	—	—	\$5,051,884
Non-Federal Funds	\$1,262,971	—	—	—	—	\$1,262,971
Total Funds	\$6,314,855	---	---	---	---	\$6,314,855

Everett: Intersection Improvements on Route 16

Proponent: MassDOT
ID Number: 611969
Project Type: Intersection Improvements
Cost: \$17,748,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

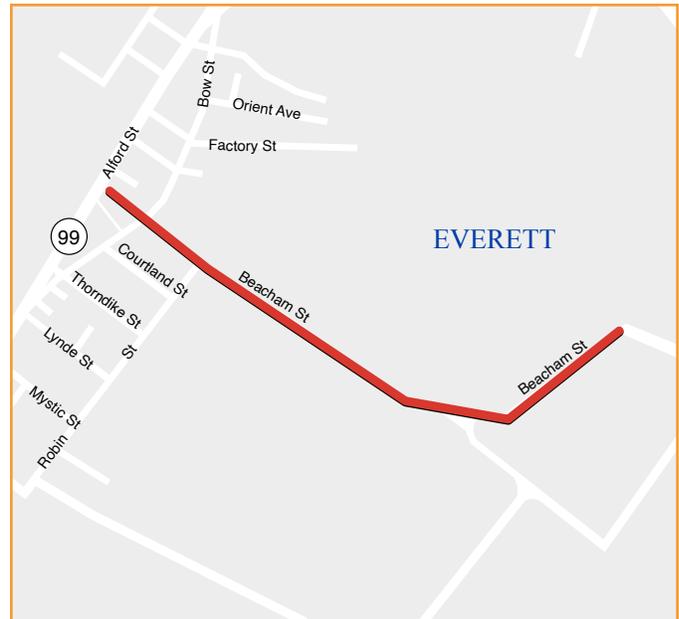
Project Description

This project will make safety improvements at seven intersections along Route 16 in Everett, from Gladstone Street to Everett Avenue. This key regional roadway features three 2017–2019 all-mode crash clusters and three of the state's top-200 crash locations, making it high-priority safety improvement location. This project includes rehabilitating or reconstructing the traffic signals at each intersection, adding pedestrian signal phases, and making improvements to sidewalks, ramps, crosswalks, and curbing. This project will also explore the feasibility of improved bicycle accommodations during the design phase.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$15,523,200	\$15,523,200
Non-Federal Funds	—	—	—	—	\$2,224,800	\$2,224,800
Total Funds	---	---	---	---	\$17,748,000	\$17,748,000

Everett: Reconstruction of Beacham Street

Proponent: Everett
ID Number: 609257
Project Type: Complete Streets
Cost: \$10,168,416
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	19 out of 30	10 out of 29	13 out of 29	4 out of 16	7 out of 12	1 out of 18	54 out of 134

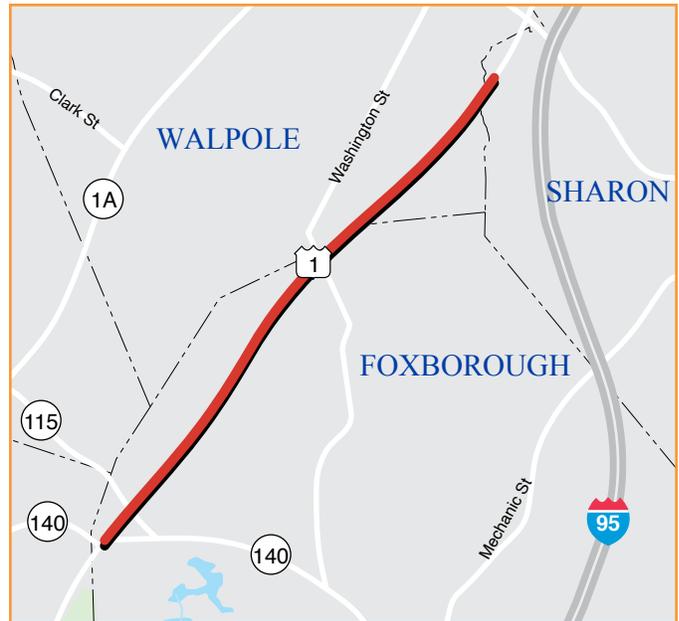
Project Description

This Complete Streets project involves the reconstruction of Beacham Street to reduce vehicular collisions and improve bicycle travel. This project also includes the implementation of a shared-use bike path with a buffer along 0.65 miles of the Beacham Street corridor, a major connection between Boston, Somerville, and Cambridge, and Chelsea and East Boston. To promote pedestrian safety, upgrades to traffic signals, pavement markings, and sidewalk conditions will be incorporated to reduce conflict with vehicular traffic and provide an ADA-compliant travel route.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	\$8,234,733	--	--	\$8,234,733
Non-Federal Funds	--	--	\$1,933,683	--	--	\$1,933,683
Total Funds	---	---	\$10,168,416	---	---	\$10,168,416

Foxborough: Resurfacing and Related Work on Route 1

Proponent: MassDOT
ID Number: 608480
Project Type: Non-Interstate Pavement
Cost: \$9,442,596
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

Project Description

The project consists of resurfacing on Route 1 in Foxborough, Sharon, and Walpole.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$5,515,264	—	—	—	—	\$5,515,264
Non-Federal Funds	\$1,378,816	—	—	—	—	\$1,378,816
Total Funds	\$6,894,080	---	---	---	---	\$6,894,080

Framingham: High-Risk At-Grade Railroad Crossing Countermeasures on Route 126

Proponent: MassDOT
ID Number: S12640
Project Type: Safety Improvements
Cost: \$3,500,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will make safety improvements at the at-grade railroad crossing in downtown Framingham, where the MBTA Framingham/Worcester commuter rail line crosses over Route 126. This location was identified as a 2017–2019 all-mode crash cluster and a 2010–2019 pedestrian crash cluster, making it a high-priority safety improvement location.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$3,150,000	—	—	—	\$3,150,000
Non-Federal Funds	—	\$350,000	—	—	—	\$350,000
Total Funds	---	\$3,500,000	---	---	---	\$3,500,000

Framingham: Improvements at Harmony Grove Elementary School (SRTS)

Proponent: Framingham
ID Number: S12205
Project Type: Roadway Reconstruction
Cost: \$1,644,145
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

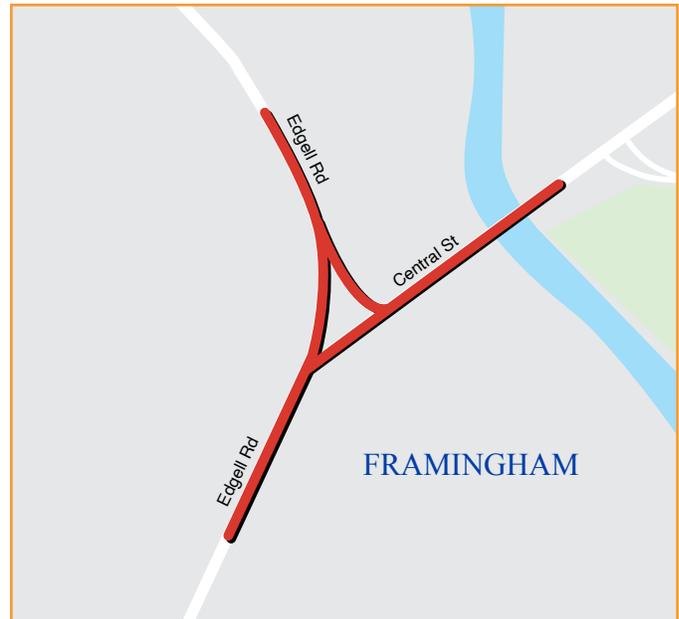
Project Description

This project will make upgrades to promote safety along the roadways surrounding Harmony Grove Elementary School in Framingham through the Safe Routes to School program. This project includes installing new and reconstructing existing sidewalk and curbing on Second Street, from Beaver Street to Waverly Street, and Taralli Terrace, from Second Street to Beaver Park Road. The project will also realign the intersection of Beaver Park Road and Taralli Terrace and install new pavement markings, ADA-compliant curb cuts, crosswalks, and shared bike lanes on Second Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$,315,316	—	\$,315,316
Non-Federal Funds	—	—	—	\$328,829	—	\$328,829
Total Funds	---	---	---	\$1,644,145	---	\$1,644,145

Framingham: Traffic Signal Installation at Edgell Road at Central Street

Proponent: Framingham
ID Number: 608889
Project Type: Intersection Improvements
Cost: \$2,484,704
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	9 out of 30	10 out of 29	7 out of 29	9 out of 16	2 out of 12	4 out of 18	41 out of 134

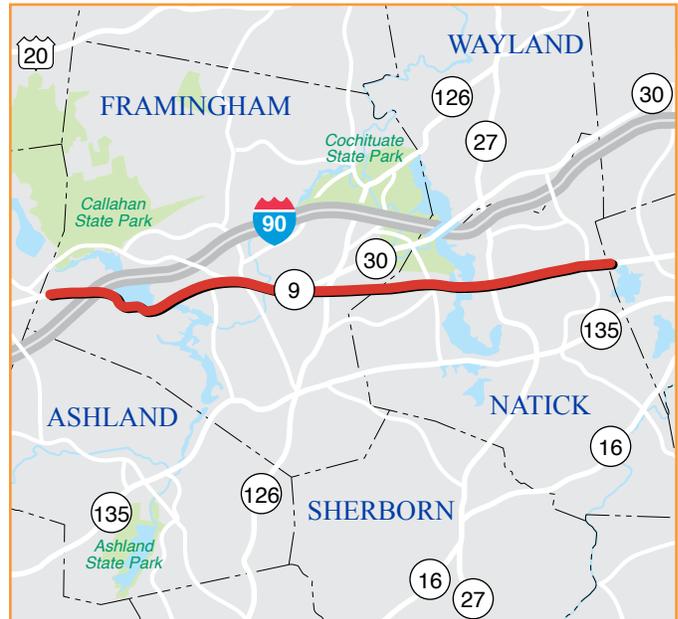
Project Description

This project will improve vehicular operations and safety by installing traffic signals and geometric improvements at the intersection of Edgell Road and Central Street. The geometric improvements include realigning and widening the roadway to provide a southbound left-turn lane and a northbound right-turn lane along Edgell Road. The project also addresses pedestrian and bicyclist safety through the addition of bike lanes, crosswalks, and a new traffic signal. Sidewalks along both sides of all roadways will be ADA/Architectural Access Board (AAB) compliant.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$1,987,763	—	—	—	—	\$1,987,763
Non-Federal Funds	\$496,941	—	—	—	—	\$496,941
Total Funds	\$2,484,704	---	---	---	---	\$2,484,704

Framingham and Natick: Resurfacing and Related Work on Route 9

Proponent: MassDOT
ID Number: 609402
Project Type: Non-Interstate Pavement
Cost: \$48,665,364
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

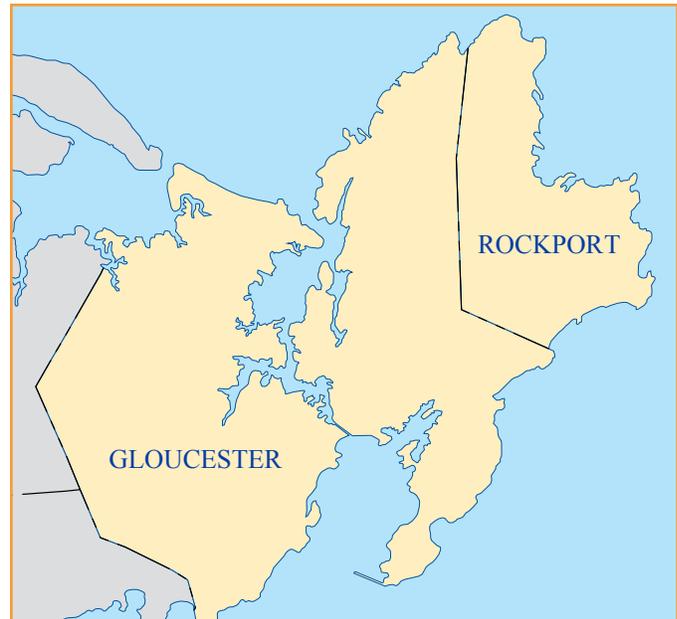
Project Description

This project consists of resurfacing and related work on Route 9.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$38,932,291	\$38,932,291
Non-Federal Funds	—	—	—	—	\$9,733,073	\$9,733,073
Total Funds	---	---	---	---	\$48,665,364	\$48,665,364

Gloucester and Rockport: CATA On Demand Microtransit Service Expansion

Proponent: CATA
ID Number: S12700
Project Type: Community Connections
Cost: \$813,291
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	10.75 out of 18	6 out of 15	9 out of 15	6 out of 18	20 out of 24	10 out of 10	61.75 out of 100

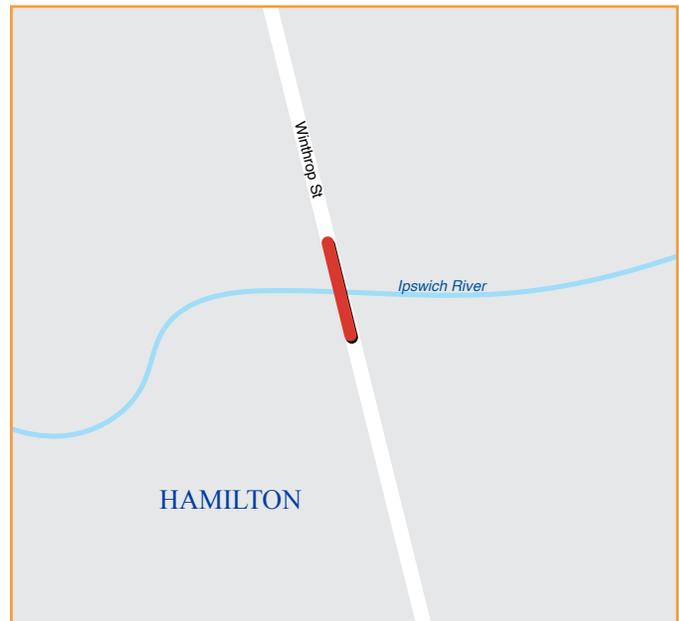
Project Description

This project will expand the existing CATA On Demand microtransit service in Gloucester to include Rockport and the Lanesville neighborhood of Gloucester. The existing operating zone includes two MBTA commuter rail stations, two industrial parks, a hospital, and the waterfront district. The original purpose of CATA On Demand was to address the first- and last-mile gaps for commuters between existing transit and employment centers. The service has evolved, however, to serve a broader group of riders, including students, families, people with disabilities, and older adults. The expansion of the service to include new locations aims to continue to broaden the appeal of CATA On Demand to this wider audience and to better meet their needs when accessing school, medical appointments, grocery stores, and other essential destinations. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$266,760	\$212,052	\$171,821	—	—	\$650,633
Non-Federal Funds	\$66,690	\$53,013	\$42,955	—	—	\$162,658
Total Funds	\$333,450	\$265,065	\$214,776	---	---	\$813,291

Hamilton and Ipswich: Superstructure Replacement, H-03-002=I-01-006, Winthrop Street over Ipswich River

Proponent: MassDOT
ID Number: 609467
Project Type: Bridge
Cost: \$3,135,789
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

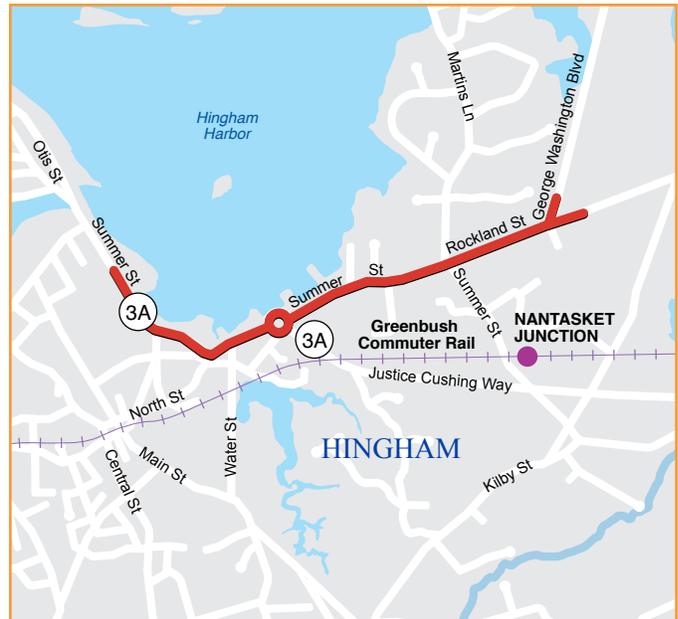
Project Description

This project will replace bridge H-03-002=I-01-006, which carries Winthrop Street over the Ipswich River.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	–	\$2,508,631	–	–	–	\$2,508,631
Non-Federal Funds	–	\$627,158	–	–	–	\$627,158
Total Funds	---	\$3,135,789	---	---	---	\$3,135,789

Hingham: Improvements on Route 3A from Otis Street/ Cole Road, including Summer Street and Rotary; Rockland Street to George Washington Boulevard

Proponent: Hingham
ID Number: 605168
Project Type: Complete Streets
Cost: \$15,596,550
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	10 out of 30	16 out of 29	17 out of 29	10 out of 16	0 out of 12	2 out of 18	55 out of 134

Project Description

The project improves multimodal access between Hingham Center, residential areas, and Hingham Harbor by extending the existing buffered, shared-use bike path from Rockland Street to the Hingham inner harbor. In addition, improvements to reduce vehicular accidents will be incorporated through the establishment of turn lanes and a small roundabout at the intersection of Route 3A and Summer Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$12,477,240	—	—	\$12,477,240
Non-Federal Funds	—	—	\$3,119,310	—	—	\$3,119,310
Total Funds	---	---	\$15,596,550	---	---	\$15,596,550

Hopkinton and Westborough: Reconstruction of Interstate 90/Interstate 495 Interchange

Proponent: MassDOT
ID Number: 607977
Project Type: Roadway Reconstruction
Cost: \$300,942,837
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

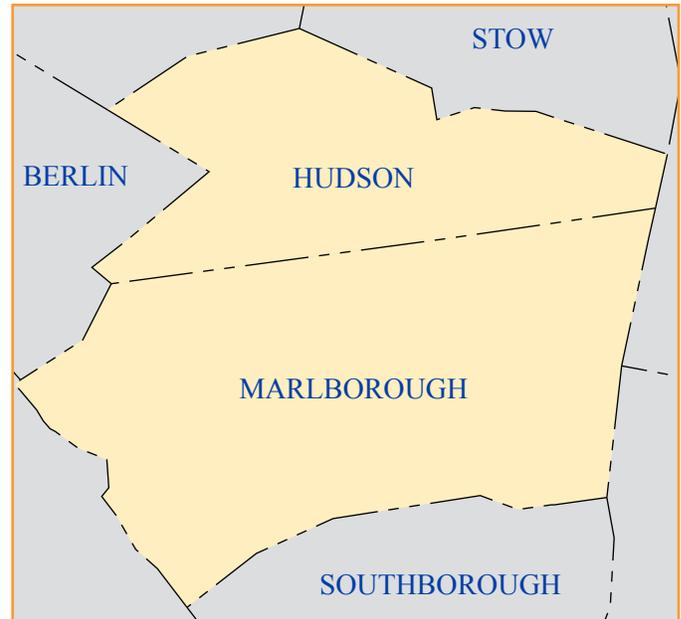
Project Description

The project will improve the interchange of Interstate 90 and Interstate 495. A number of alternatives are being developed and evaluated in a feasibility study. This project is funded over six federal fiscal years (FFYs 2022-27) for a total cost of \$300,942,837.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$11,188,991	\$11,521,166	\$63,677,909	\$41,786,375	\$37,410,241	\$165,584,682
Non-Federal Funds	\$27,923,221	\$27,960,130	\$37,088,657	\$31,322,931	\$43,156,693	\$108,451,632
Total Funds	\$39,112,212	\$39,481,295	\$100,766,566	\$73,109,306	\$41,566,934	\$274,036,314

Hudson and Marlborough: MWRTA CatchConnect Microtransit Service Expansion

Proponent: MWRTA
ID Number: S12701
Project Type: Community Connections
Cost: \$450,163
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	12 out of 18	3 out of 15	9 out of 15	9 out of 18	16 out of 24	10 out of 10	59 out of 100

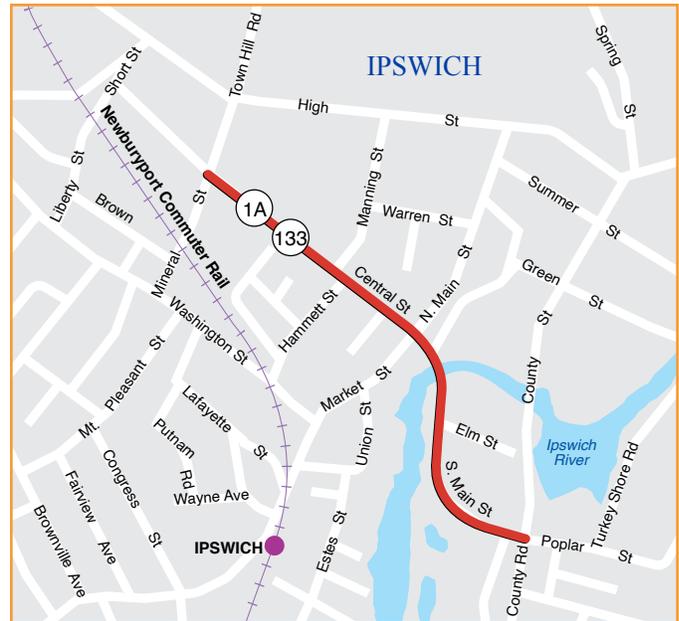
Project Description

This project will expand MetroWest RTA’s existing CatchConnect microtransit service in Framingham, Natick, and Wellesley to include the municipalities of Hudson and Marlborough. This added service region will allow consumers to connect to MWRTA fixed-route services in the area, including the Route 7 traveling north and south to Framingham and the Route 7C travelling east and west through downtown Marlborough. CatchConnect service allows riders to book on-demand trips via an existing mobile application or telephone. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$113,000	\$119,540	\$127,590	–	–	\$360,130
Non-Federal Funds	\$28,250	\$29,885	\$31,898	–	–	\$90,033
Total Funds	\$141,250	\$149,425	\$159,488	---	---	\$450,163

Ipswich: Resurfacing and Related Work on Central and South Main Streets

Proponent: Ipswich
ID Number: 605743
Project Type: Complete Streets
Cost: \$5,490,888
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	11 out of 30	10 out of 29	10 out of 29	6 out of 16	2 out of 12	8 out of 18	47 out of 134

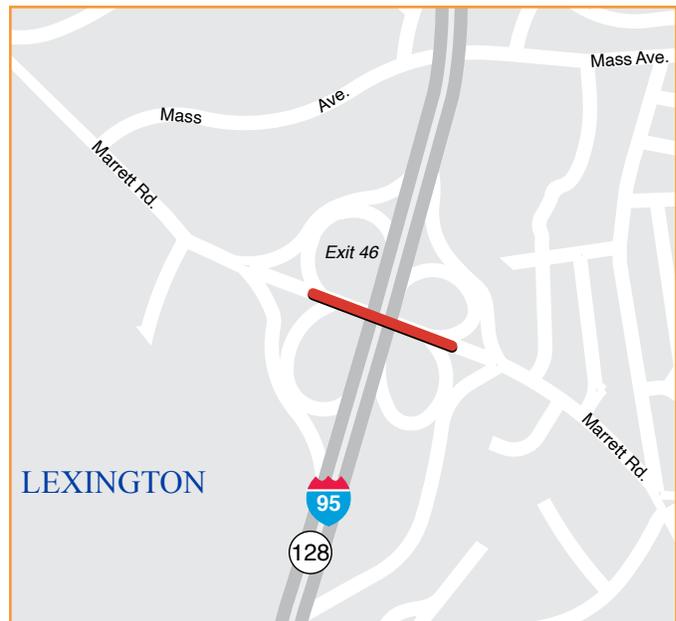
Project Description

In Ipswich, the project will reconstruct the roadway between Mineral Street and Poplar Street (3,200 feet) to improve the roadway surface. Minor geometric improvements at intersection and pedestrian crossings will be included. Sidewalks and wheelchair ramps will be improved in selected areas for ADA compliance. The drainage system is undersized and will be upgraded.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$4,392,710	—	—	—	\$4,392,710
Non-Federal Funds	—	\$1,098,178	—	—	—	\$1,098,178
Total Funds	---	\$5,490,888	---	---	---	\$5,490,888

Lexington: Bridge Replacement, L-10-010, Route 2A (Marrett Road) over Interstate 95/Route 128

Proponent: MassDOT
ID Number: 603722
Project Type: Bridge
Cost: \$20,456,262
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will replace bridge L-10-010, which carries Route 2A (Marrett Road) over Interstate 95 in Lexington. This bridge is currently listed as structurally deficient and has a posted load restriction due to its deteriorated condition.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$16,365,010	—	—	—	—	\$16,365,010
Non-Federal Funds	\$4,091,252	—	—	—	—	\$4,091,252
Total Funds	\$20,456,262	---	---	---	---	\$20,456,262

Littleton: Reconstruction of Foster Street

Proponent: Littleton
ID Number: 609054
Project Type: Complete Streets
Cost: \$3,992,645
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	12 out of 30	3 out of 29	11 out of 29	5 out of 16	1 out of 12	6 out of 18	38 out of 134

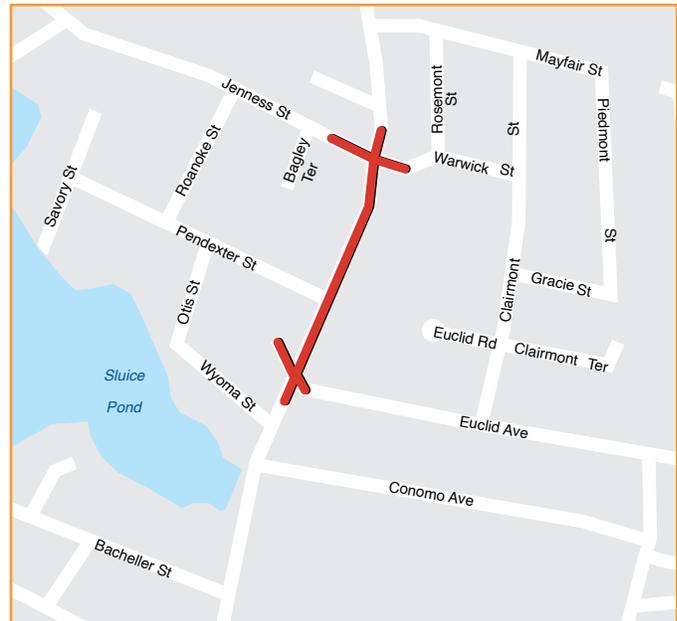
Project Description

This project involves improvements to address traffic congestion and the safety of pedestrians and bicyclists through the addition of turning lanes and the reduction and consolidation of curb cuts. Full accommodations for vehicular, bicycle, and pedestrian travel and upgraded signage and wayfinding will also be established to improve accessibility for all users who travel to and from the nearby businesses.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$3,194,116	—	—	—	\$3,194,116
Non-Federal Funds	—	\$798,529	—	—	—	\$798,529
Total Funds	---	\$3,992,645	---	---	---	\$3,992,645

Lynn: Intersection Improvements at Two Intersections on Broadway

Proponent: Lynn
ID Number: 609254
Project Type: Intersection Improvements
Cost: \$5,413,401
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 30	13 out of 29	7 out of 29	2 out of 16	1 out of 12	3 out of 18	39 out of 134

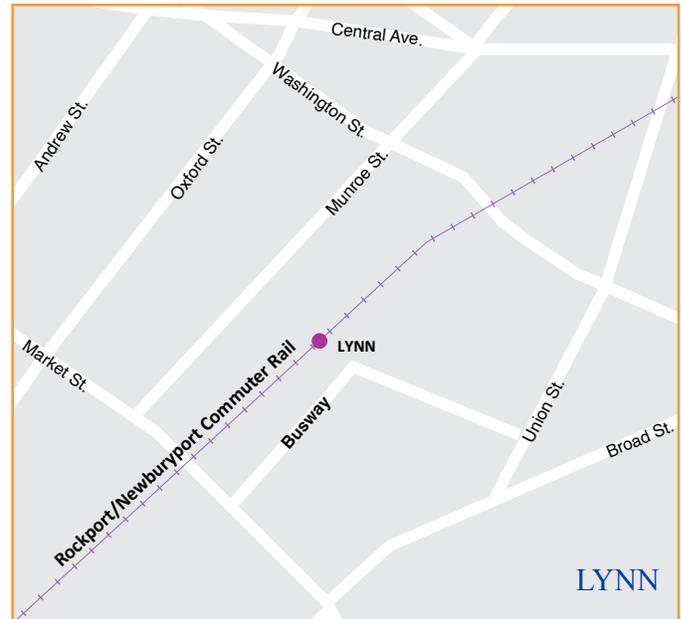
Project Description

This project involves multimodal safety and operational improvements at two locations on Broadway. Existing sidewalks will be reconstructed with the addition of on-street bicycle facilities close to connections to adjacent facilities. Operational improvements include traffic signal updates at Broadway’s intersections with Euclid Avenue and Jenness and Warwick Streets. Drainage improvements and pavement reconstruction will also be incorporated to improve access to businesses and schools. This project was evaluated using the MPO’s scoring criteria because it was considered for funding using Regional Target funds. MassDOT funded the project, however.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$4,872,061	—	—	—	—	\$4,872,061
Non-Federal Funds	\$541,340	—	—	—	—	\$541,340
Total Funds	\$5,413,401	---	---	---	---	\$5,413,401

Lynn: Lynn Station Improvements Phase II

Proponent: MBTA
ID Number: S12705
Project Type: Transit Modernization
Cost: \$48,100,000
Funding Source: Regional Target Funds



Scoring Summary

This project was selected for funding by the MPO late in the FFYs 2023–27 TIP development cycle, so it has not yet been scored using the MPO’s project selection criteria. This section will be updated with the project’s final score when it is available.

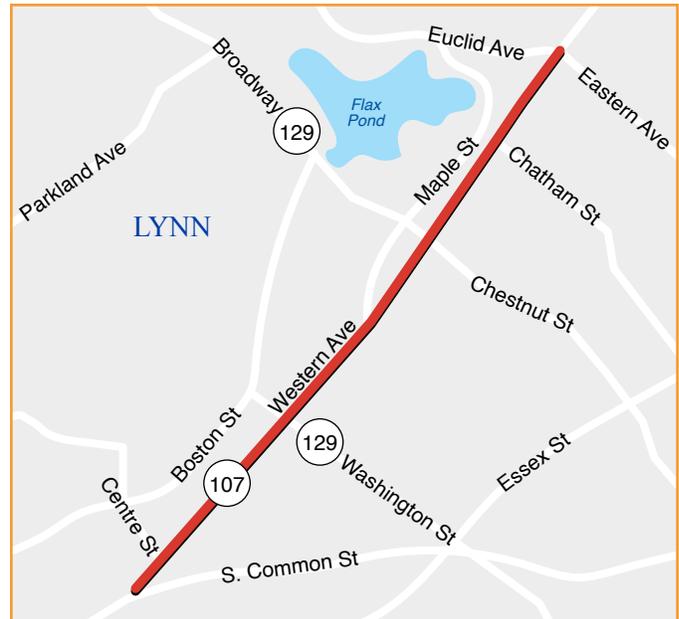
Project Description

This project will make a range of improvements to the MBTA commuter rail station in Lynn, addressing the existing deterioration within the station to bring it into a state of good repair. The project will reconstruct the existing platform, construct two new elevators, and rehabilitate existing stairways and lighting throughout the station, among other upgrades. This project also includes waterproofing and structural repairs to the viaduct northeast of the station.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$27,600,000	\$10,880,000	—	—	—	\$38,480,000
Non-Federal Funds	\$6,900,000	\$2,720,000	—	—	—	\$9,620,000
Total Funds	\$34,500,000	\$13,600,000	---	---	---	\$48,100,000

Lynn: Reconstruction of Western Avenue

Proponent: MassDOT
ID Number: 609246
Project Type: Complete Streets
Cost: \$47,536,800
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	18 out of 18	14 out of 20	10 out of 18	11 out of 12	11.9 out of 20	10 out of 12	74.9 out of 100

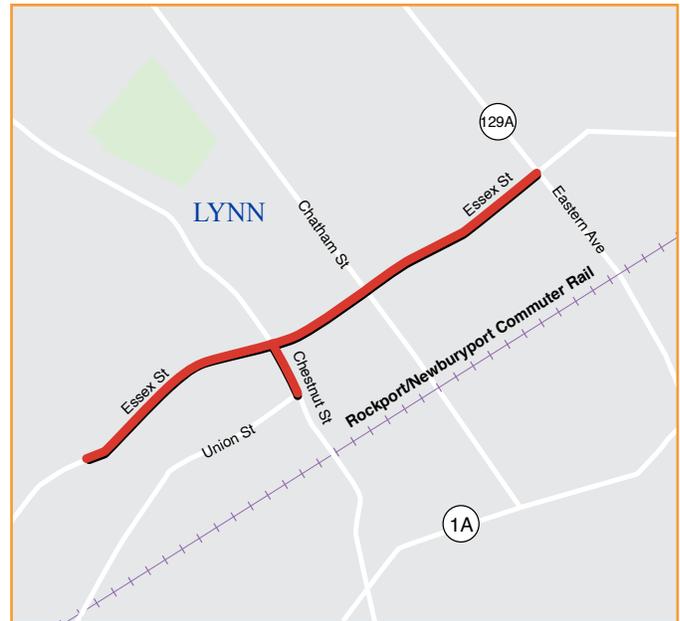
Project Description

This project will reconstruct 1.9 miles of Western Avenue (Route 107) in Lynn between Centre Street and Eastern Avenue. Work will include roadway pavement reconstruction, drainage improvements, improved design for traffic operations and safety, new signs and pavement markings, and bicycle and ADA-compliant pedestrian improvements. This project includes improvements to bus stop locations throughout the corridor and bus-priority elements will be considered during the design phase. A key goal of this project is to enhance safety along the corridor, as this segment of Western Avenue has three 2017–2019 top-200 crash clusters, four 2017–2019 all-mode crash clusters, one 2010–2019 bicycle crash cluster, and one 2010–2019 pedestrian crash cluster, making it a high-priority safety improvement location statewide. This project is anticipated to be funded over three fiscal years, with funding beginning in FFY 2027.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$12,300,000	\$12,300,000
Non-Federal Funds	—	—	—	—	\$2,700,000	\$2,700,000
Total Funds	---	---	---	---	\$15,000,000	\$15,000,000

Lynn: Rehabilitation of Essex Street

Proponent: Lynn
ID Number: 609252
Project Type: Complete Streets
Cost: \$17,602,000
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	19 out of 30	17 out of 29	9 out of 29	8 out of 16	10 out of 12	3 out of 18	66 out of 134

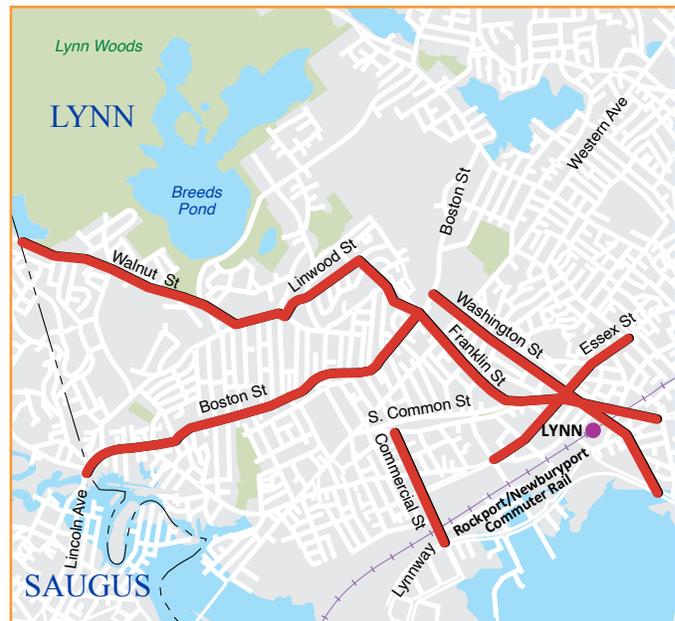
Project Description

This project is focused on making key safety improvements for pedestrians and bicyclists. Existing sidewalks on Essex Street will be reconstructed to ADA/AAB standards and will be complemented by the addition of new on-street bicycle facilities. Pedestrian safety will be improved through the construction of curb bump-outs at intersections to reduce crosswalk length. In addition, operational improvements such as signal updates and pavement markings will be established to enhance safety.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$14,481,600	—	—	—	\$14,481,600
Non-Federal Funds	—	\$3,120,400	—	—	—	\$3,120,400
Total Funds	---	\$17,602,000	---	---	---	\$17,602,000

Lynn: Targeted Safety and Multimodal Improvements (Playbook Priority Corridors)

Proponent: MassDOT
ID Number: 612599
Project Type: Safety Improvements
Cost: \$8,937,800
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will implement targeted safety improvements at key locations in Lynn as identified in the Lynn Safe Streets for People Playbook. This multimodal safety plan was created by the City of Lynn in partnership with MassDOT and identified priority streets for improvement and developed strategies to support the creation of a safe network for all users, with an emphasis on walking, biking, and taking transit. The project will involve the implementation of both corridor- and intersection-level treatments and amenities for street users on a systemic basis. The street corridors in this phase will include Walnut Street, Franklin Street, Linwood Street, Washington Street, Boston Street, Essex Street, Liberty Street, Tremont Street, Central Avenue, Exchange Street, and Commercial Street. Corridor treatments will include the installation of protected bicycle lanes, shared streets treatments, and traffic-calming measures such as speed cushions or humps. Intersection treatments will include curb ramps and extensions, geometric adjustments, raised crosswalks, installation of rectangular-rapid-flashing-beacons, and signal equipment and timing upgrades. Amenities for street users will include the installation of bicycle parking, improved bus shelters, signage, and benches, floating bus stops, and bus bulbs.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$7,650,240	\$7,650,240
Non-Federal Funds	—	—	—	—	\$1,287,560	\$1,287,560
Total Funds	---	---	---	---	\$8,937,800	\$8,937,800

Lynn and Nahant: Northern Strand Extension

Proponent: MassDOT
ID Number: 610919
Project Type: Bicycle and Pedestrian
Cost: \$9,363,750
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

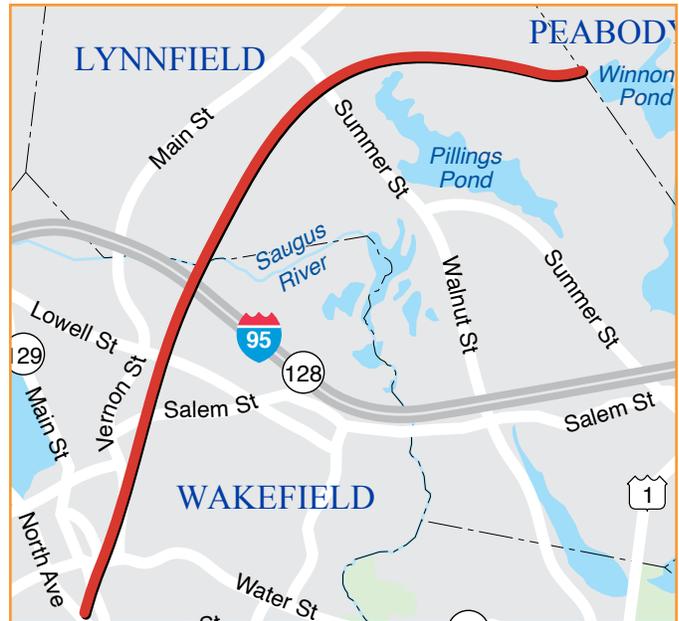
Project Description

This project will extend the Northern Strand trail an additional 1.92 miles from its current terminus at Western Ave in Lynn to Nahant Beach via a separated shared-use facility along existing roads. The proposed project seeks to improve pedestrian and bicycle safety and accessibility along the last segment of this regional trail network. In addition to creating a direct connection to Nahant Beach, the project will also enhance connections for people walking and bicycling to other key destinations, including the Lynn Common, Lynn City Hall, and the Central Square MBTA commuter rail station.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$7,491,000	—	—	—	—	\$7,491,000
Non-Federal Funds	\$1,872,750	—	—	—	—	\$1,872,750
Total Funds	\$9,363,750	---	---	---	---	\$9,363,750

Lynnfield and Wakefield: Rail Trail Extension, from the Galvin Middle School to Lynnfield/Peabody Town Line

- Proponent:** Lynnfield, Wakefield
- ID Number:** 607329
- Project Type:** Bicycle and Pedestrian
- Cost:** \$12,360,675
- Funding Source:** Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

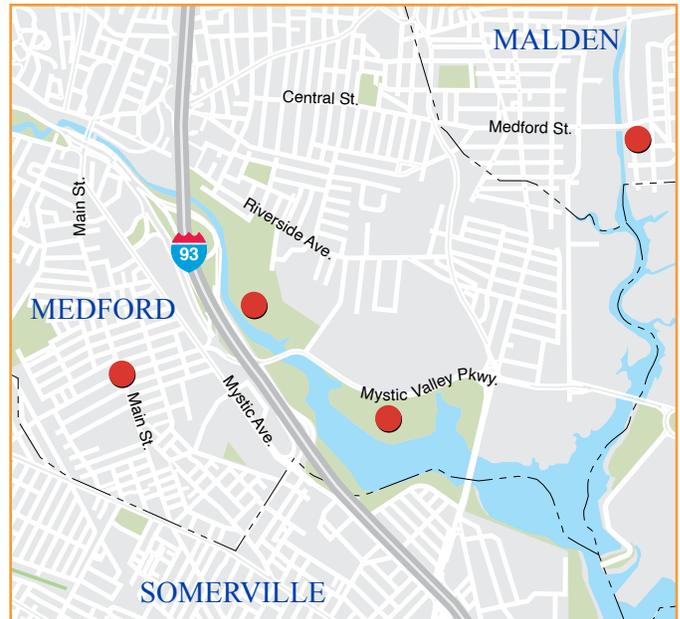
Project Description

The proposed Wakefield/Lynnfield Rail Trail extends from the Galvin Middle School in Wakefield north to the Lynnfield/Peabody town line, a distance of approximately 4.4 miles. Approximately 1.9 miles of the trail is located within Wakefield and 2.5 miles in Lynnfield. The corridor is the southern section of the former Newburyport Railroad and will connect to Peabody and the regional Border to Boston Trail.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$9,888,540	—	\$9,888,540
Non-Federal Funds	—	—	—	\$2,472,135	—	\$2,472,135
Total Funds	---	---	---	\$12,360,675	---	\$12,360,675

Malden and Medford: Bluebikes System Expansion

Proponent: Malden, Medford
ID Number: S12696
Project Type: Community Connections
Cost: \$145,821
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	17 out of 18	12 out of 15	6 out of 15	9 out of 18	24 out of 24	10 out of 10	78 out of 100

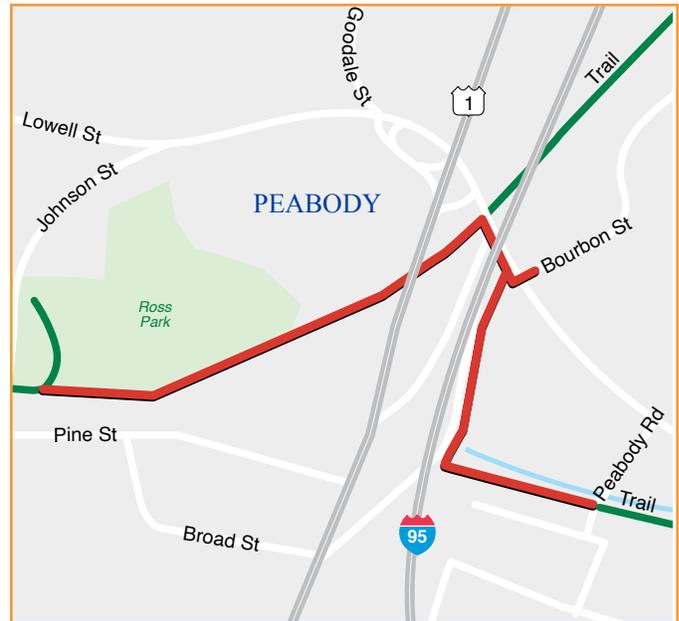
Project Description

This project will expand the Bluebikes system in Malden and Medford by adding four new stations, including three stations in Medford and one in Malden. These new stations will build upon the MPO’s FFY 2022 Community Connections grant, which supported the installation of six new Bluebikes stations in these same communities. Tentative station locations include: Medford Street in Malden, adjacent to the Northern Strand Community Trail; Main Street and Harvard Street in Medford, near the forthcoming College Avenue and Ball Square MBTA Green Line stations; and at two locations within the Mystic River State Reservation. These new stations will enhance the role of Medford and Malden in the regional Bluebikes network, supporting better connections across to the neighboring Bluebikes communities of Arlington, Somerville, and Everett. These stations will also create better first- and last-mile connectivity between the robust range of MBTA services in these communities (Orange Line, Green Line, Commuter Rail, and bus service) and key destinations such as Tufts University and local recreation areas. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$116,657	—	—	—	—	\$116,657
Non-Federal Funds	\$29,164	—	—	—	—	\$29,164
Total Funds	\$145,821	---	---	---	---	\$145,821

Malden and Revere: Improvements at Route 1 (Northbound)

Proponent: MassDOT
ID Number: 610543
Project Type: Roadway Reconstruction
Cost: \$ 8,363,600
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

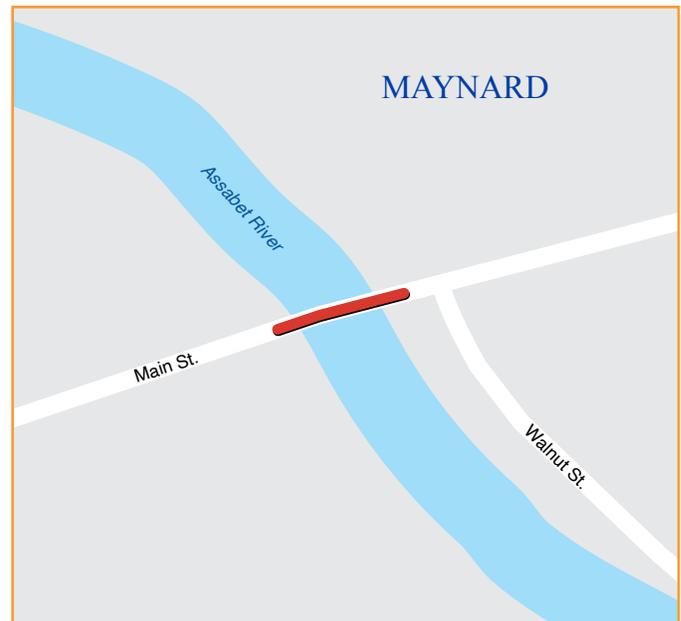
Project Description

This project will make improvements along Route 1 northbound in Malden and Revere over a distance of approximately 0.8 miles north of Squire Road.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$6,690,880	\$6,690,880
Non-Federal Funds	—	—	—	—	\$1,672,720	\$1,672,720
Total Funds	---	---	---	---	\$8,363,600	\$8,363,600

Maynard: Bridge Replacement, M-10-004, Route 62 (Main Street) over the Assabet River

Proponent: MassDOT
ID Number: 604564
Project Type: Bridge
Cost: \$1,848,258
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

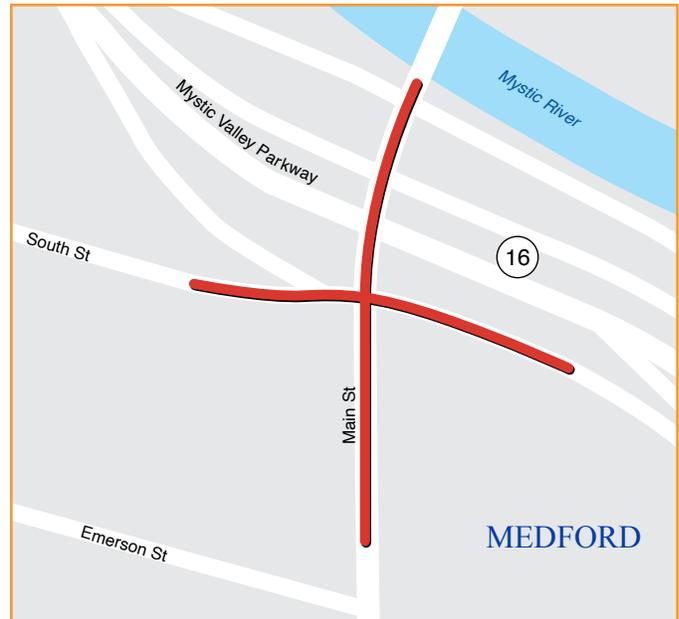
Project Description

This project will replace bridge M-10-004, which carries Route 62 (Main Street) over the Assabet River in Maynard. This bridge is currently listed as structurally deficient. This project is funded through MassDOT's Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	\$0
Non-Federal Funds	—	—	\$1,520,953	—	—	\$1,520,953
Total Funds	---	---	\$1,520,953	---	---	\$1,520,953

Medford: Intersection Improvements at Main Street and South Street

Proponent: MassDOT
ID Number: 611974
Project Type: Intersection Improvements
Cost: \$9,517,760
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will make safety improvements to the intersection of Main Street and South Street in Medford. This location has a 2010–2019 pedestrian crash cluster and a 2017–2019 top-200 crash location (statewide), making it a high-priority safety improvement location. The scope of this project involves reconstruction of the intersection either by constructing a roundabout or reconstructing and updating the signal control system and lane assignments. A detailed alternatives analysis will be conducted to identify the preferred traffic control for the intersection, in addition to improvements to accessibility, and bicycle and pedestrian accommodations. This project will build upon the analysis done in the Medford Square Priority Roadways Improvement Study published by the Boston Region MPO in December 2018.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$8,565,984	—	\$8,565,984
Non-Federal Funds	—	—	—	\$951,776	—	\$951,776
Total Funds	---	---	---	\$9,517,760	---	\$9,517,760

Medford: Milton Fuller Roberts Elementary School (SRTS)

Proponent: Medford
ID Number: 612001
Project Type: Roadway Reconstruction
Cost: \$1,020,854
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

Project Description

This project includes pedestrian improvements at three key intersections for students approaching Roberts Elementary School. Improvements include the following: a full pedestrian signal, curb extensions, and improved lighting at the intersection of Fellsway with Paris Street and Fern Road, and sidewalk improvements from this intersection to the Roberts School along Park Street; pedestrian realignment, curb bump-outs, and pedestrian rapid-flashing beacons at the intersection of Salem Street and Hadley Place; and pedestrian rapid-flashing beacons, curb extensions, and improved lighting at the intersection of Fellsway and Grant Avenue.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$816,683	—	—	\$816,683
Non-Federal Funds	—	—	\$204,171	—	—	\$204,171
Total Funds	---	---	\$1,020,854	---	---	\$1,020,854

Medford: Shared-Use Path Connection at the Route 28/Wellington Underpass

Proponent: MassDOT
ID Number: 611982
Project Type: Bicycle and Pedestrian
Cost: \$4,676,111
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

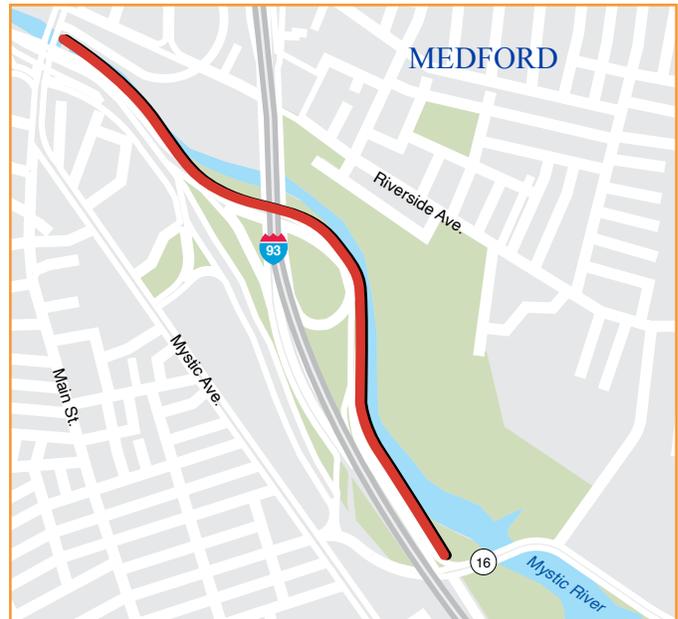
Project Description

This project will enhance bicycle and pedestrian travel in Medford by creating a shared-use path connection under Route 28 (Fellsway) along the Mystic River. This connection will be similar to a shared-use boardwalk on the opposite side of the Mystic River in Somerville, which also runs under Route 28. Once complete, this project will be a critical connection between existing riverfront pathways along the Mystic River in Medford, including the Wellington Greenway on the east side of Route 28 and the path system within the Mystic River State Reservation on the west side of Route 28.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$3,740,889	—	—	—	\$3,740,889
Non-Federal Funds	—	\$935,222	—	—	—	\$935,222
Total Funds	---	\$4,676,111	---	---	---	\$4,676,111

Medford: South Medford Connector Bike Path

Proponent: MassDOT
ID Number: 612499
Project Type: Bicycle and Pedestrian
Cost: \$7,903,741
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

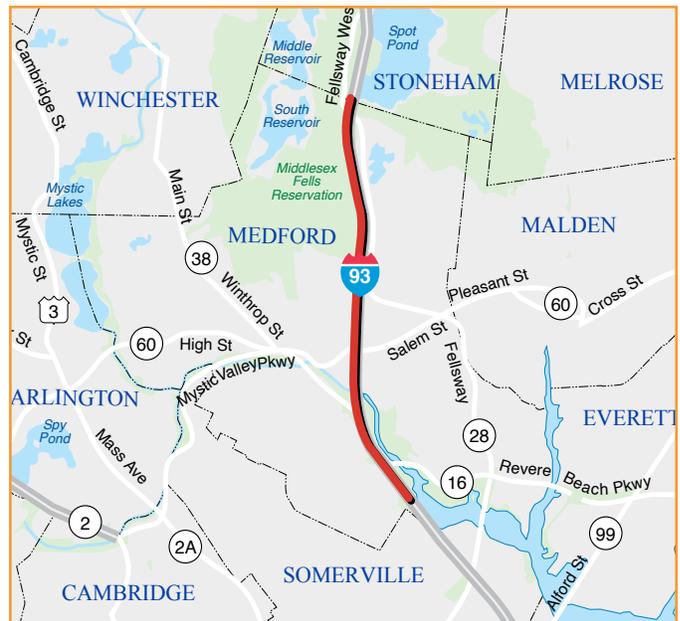
Project Description

This project will enhance bicycle and pedestrian connectivity in Medford by creating a shared-use path along the south side of the Mystic River. This project aims to provide a critical link in the regional transportation network by connecting two existing Department of Conservation and Recreation paths and supporting bicycle commuter access throughout the region. This project will construct an 8- to 10-foot wide pathway approximately one mile long primarily within the existing right of way of Route 16.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$6,322,993	—	\$6,322,993
Non-Federal Funds	—	—	—	\$1,580,748	—	\$1,580,748
Total Funds	---	---	---	\$7,903,741	---	\$7,903,741

Medford, Stoneham, and Winchester: Interstate Pavement Preservation on Interstate 93

Proponent: MassDOT
ID Number: 610726
Project Type: Interstate Pavement
Cost: \$21,907,511
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project includes pavement preservation work on Interstate 93 between Medford, Winchester, and Stoneham.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$19,716,760	—	—	\$19,716,760
Non-Federal Funds	—	—	\$2,190,751	—	—	\$2,190,751
Total Funds	---	---	\$21,907,511	---	---	\$21,907,511

Medway: Holliston Street and Cassidy Lane Improvements (SRTS)

Proponent: Medway
ID Number: 609530
Project Type: Roadway Reconstruction
Cost: \$2,807,468
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will make upgrades to promote safety along Holliston Street and Cassidy Lane in Medway through the Safe Routes to School program. These roadways are adjacent to Francis J. Burke Memorial Elementary School and Medway Middle School.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$2,245,974	—	—	—	\$2,245,974
Non-Federal Funds	—	\$561,494	—	—	—	\$561,494
Total Funds	---	\$2,807,468	---	---	---	\$2,807,468

Middleton: Bridge Replacement, M-20-003, Route 62 (Maple Street) over Ipswich River

Proponent: MassDOT
ID Number: 608522
Project Type: Bridge
Cost: \$3,781,398
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

The project will replace the bridge that carries Route 62 (Maple Street) over the Ipswich River in Middleton.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$3,025,118	—	—	—	\$3,025,118
Non-Federal Funds	—	\$756,280	—	—	—	\$756,280
Total Funds	---	\$3,781,398	---	---	---	\$3,781,398

Milford: Rehabilitation on Route 16, from Route 109 to Beaver Street

Proponent: MassDOT
ID Number: 608045
Project Type: Complete Streets
Cost: \$10,119,616
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	20 out of 30	7 out of 29	9 out of 29	-1 out of 16	3 out of 12	5 out of 18	43 out of 134

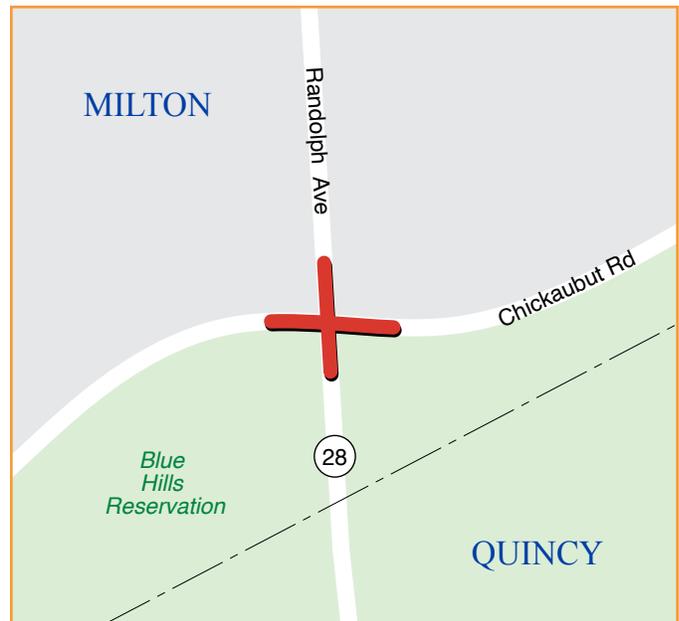
Project Description

This project supports enhanced vehicular safety and traffic flow through the implementation of a road diet, additional roadway reconstruction, and enhanced signalization on the Route 16 (East Main Street) corridor from Route 109 (Medway Road) to Beaver Street. In addition, the project also addresses pedestrian and bicyclist safety through the addition of pavement markings for shared-use bike lanes and the construction of new six-foot sidewalks along both sides of the roadway.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$8,195,693	—	\$8,195,693
Non-Federal Funds	—	—	—	\$1,923,923	—	\$1,923,923
Total Funds	---	---	---	\$10,119,616	---	\$10,119,616

Milton: Intersection and Signal Improvements at Route 28 (Randolph Avenue) and Chickatawbut Road

Proponent: MassDOT
ID Number: 607342
Project Type: Intersection Improvements
Cost: \$7,062,751
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

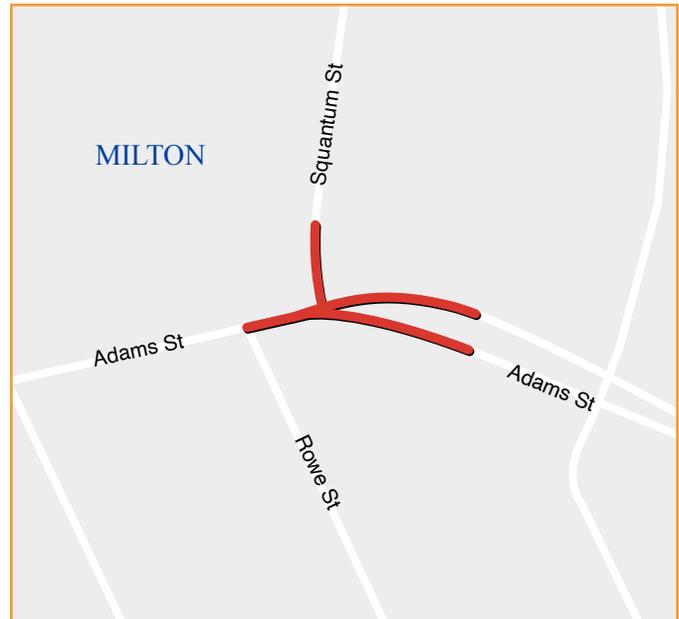
Project Description

This intersection ranked second in the 2008–10 Statewide Top 200 Intersection Crash List. This project addresses the high number and severity of crashes that occur at this intersection.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$6,356,476	--	--	--	--	\$6,356,476
Non-Federal Funds	\$706,275	--	--	--	--	\$706,275
Total Funds	\$7,062,751	---	---	---	---	\$7,062,751

Milton: Intersection Improvements, Squantum Street at Adams Street

Proponent: Milton
ID Number: 608955
Project Type: Intersection Improvements
Cost: \$2,403,651
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	9 out of 21	8 out of 17	5 out of 18	4 out of 12	4.4 out of 20	4 out of 12	34.4 out of 100

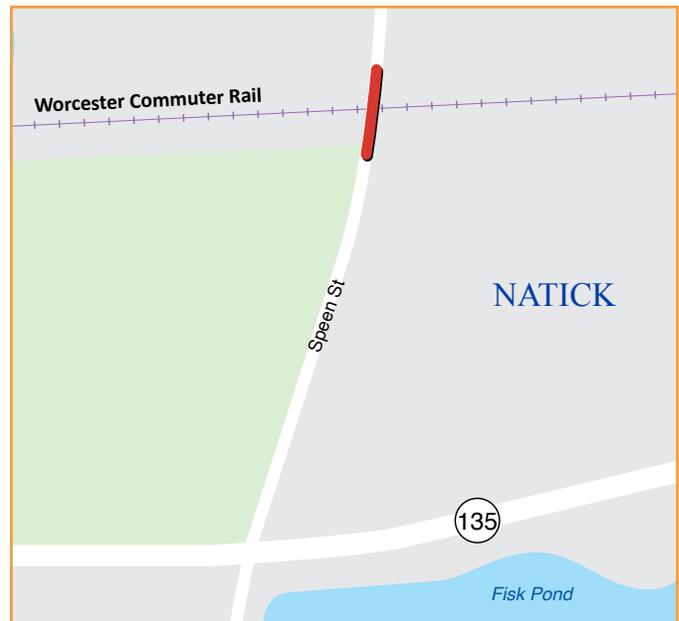
Project Description

This project aims to improve safety and operations for vehicles, bicyclists, and pedestrians where Adams Street and Squantum Street intersect, consequently reducing congestion and the occurrence of crashes. This project will introduce a traffic signal at the intersection to better regulate traffic flow from Squantum Street onto Adams Street, where significant delays currently exist during peak periods. Improvements will be made to sidewalks and curb ramps to meet ADA/AAB standards and shorter pedestrian crosswalks and restriping will be considered within the project limits. Dedicated bicycle facilities will be included with the project to connect to the existing bicycle network on Adams Street located west of the project area. This project was evaluated using the MPO’s scoring criteria because it was considered for funding using Regional Target Funds. MassDOT funded the project, however.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$2,403,651	—	—	—	\$2,403,651
Non-Federal Funds	—	\$0	—	—	—	\$0
Total Funds	---	\$2,403,651	---	---	---	\$2,403,651

Natick: Bridge Replacement, N-03-010, Speen Street over Railroad MBTA/CSX

Proponent: MassDOT
ID Number: 612178
Project Type: Bridge
Cost: \$6,711,629
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

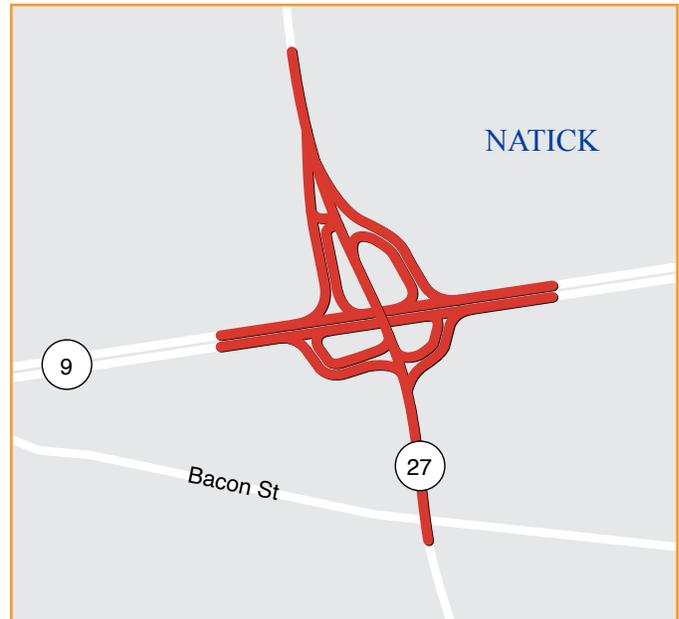
Project Description

This project will replace bridge N-03-010, which carries Speen Street over the MBTA Framingham/Worcester commuter rail line in Natick. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	\$0
Non-Federal Funds	—	—	\$6,711,629	—	—	\$6,711,629
Total Funds	---	---	\$6,711,629	---	---	\$6,711,629

Natick: Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements

Proponent: MassDOT
ID Number: 605313
Project Type: Bridge
Cost: \$46,901,224
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 18	13 out of 20	11 out of 18	8 out of 12	6.7 out of 20	6 out of 12	57.7 out of 100

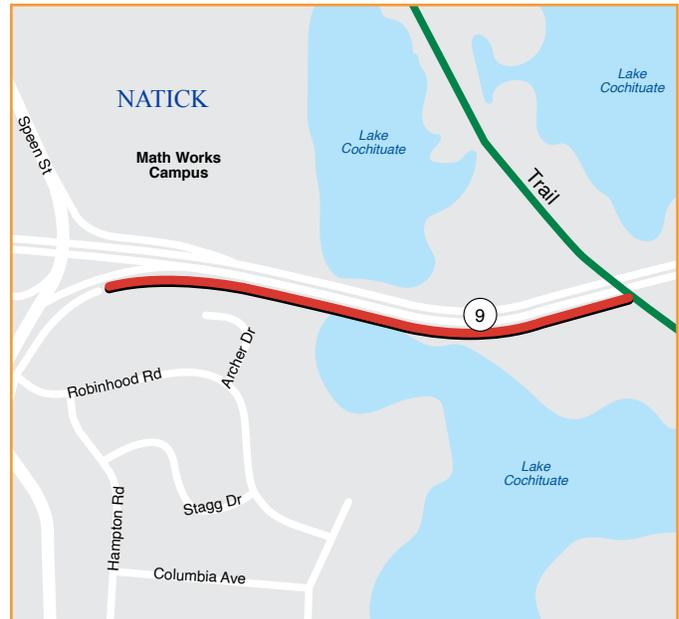
Project Description

This project will completely reconfigure and reconstruct the bridge that carries Route 27 over Route 9, creating a modified diverging diamond layout that aims to improve traffic flow and roadway geometry while enhancing safety for all users. There are currently no ADA-compliant sidewalks or bike lanes on the bridge. Only one side of the bridge has sidewalks, which are in poor condition. This project will create a dedicated bicycle and pedestrian bridge along with off-road facilities throughout the project area, providing a pedestrian and bicycle link between the neighborhoods north of Route 9 with Natick Center and the Cochituate Rail Trail. Additionally, the Route 27 bridge was built in 1931 and is currently listed as structurally deficient, so this project supports a return of this overpass to a state of good repair. This project was evaluated using the MPO’s scoring criteria because it was considered for funding using Regional Target Funds. MassDOT funded the project, however.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$46,901,224	—	—	—	\$46,901,224
Non-Federal Funds	—	\$0	—	—	—	\$0
Total Funds	---	\$46,901,224	---	---	---	\$46,901,224

Natick: Lake Cochituate Path

Proponent: MassDOT
ID Number: 610680
Project Type: Bicycle and Pedestrian
Cost: \$3,582,995
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

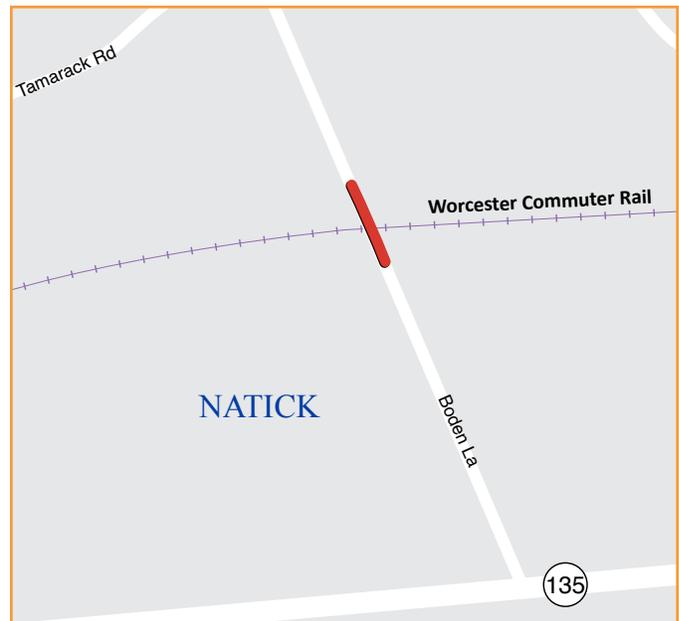
Project Description

This project includes a 0.4-mile segment of shared-used path along Route 9 in Natick. The project limits are from Archer Drive to the Cochituate Rail Trail. No roadway crossings are proposed and the shared-use path will provide a bicycle and pedestrian connection between the Cochituate Rail Trail and the robust residential and commercial area that is located in close proximity to the project's western terminus, filling a critical gap in the multimodal network.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$2,866,396	—	—	\$2,866,396
Non-Federal Funds	—	—	\$716,599	—	—	\$716,599
Total Funds	---	---	\$3,582,995	---	---	\$3,582,995

Natick: Superstructure Replacement, N-03-012, Boden Lane over CSX/MBTA

Proponent: MassDOT
ID Number: 607420
Project Type: Bridge
Cost: \$8,270,800
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

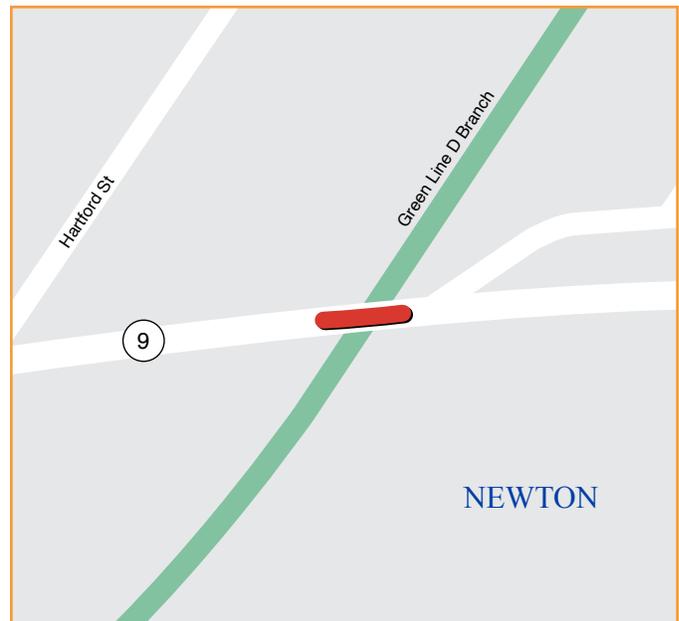
Project Description

This project will replace the superstructure of bridge N-03-012, which carries Boden Lane over the MBTA Framingham/Worcester commuter rail line in Natick. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$0	\$0
Non-Federal Funds	—	—	—	—	\$8,270,800	\$8,270,800
Total Funds	---	---	---	---	\$8,270,800	\$8,270,800

Newton: Bridge Replacement, N-12-040, Boylston Street over Green Line D Branch

Proponent: MassDOT
ID Number: 612182
Project Type: Bridge
Cost: \$15,186,854
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

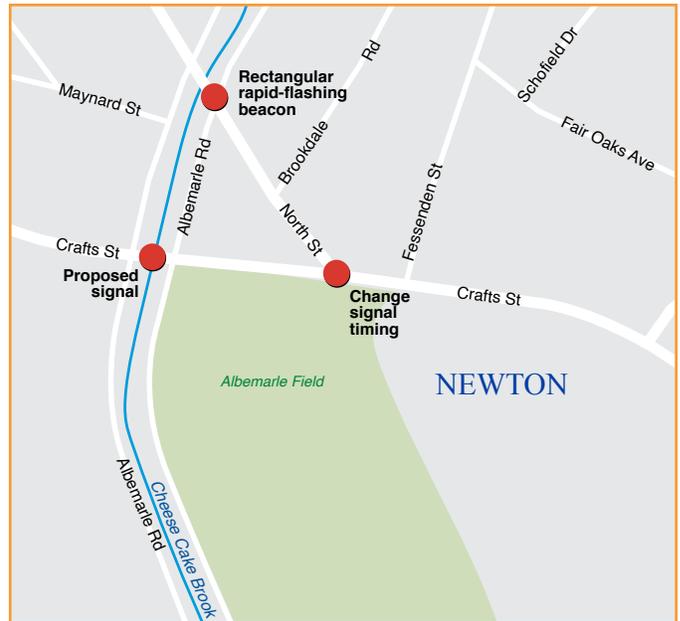
Project Description

This project will replace bridge N-12-040, which carries Boylston Street over the MBTA Green Line in Newton. This bridge is currently listed as structurally deficient. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	\$0
Non-Federal Funds	—	—	\$15,186,854	—	—	\$15,186,854
Total Funds	---	---	\$15,186,854	---	---	\$15,186,854

Newton: Horace Mann Elementary School Improvements (SRTS)

Proponent: Newton
ID Number: 611997
Project Type: Roadway Reconstruction
Cost: \$861,962
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

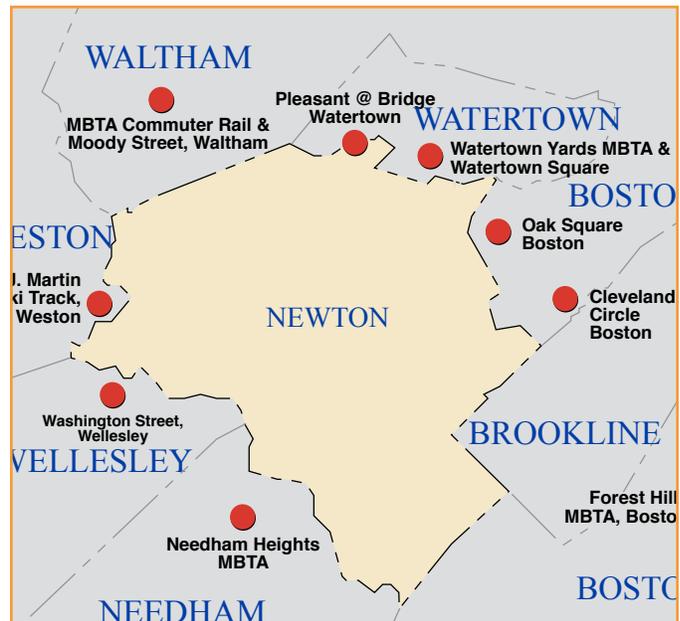
Project Description

This project will upgrade the intersections of Crafts Street and Albemarle Road and Albemarle Road and North Street, to improve bicycle and pedestrian accommodations near the Horace Mann Elementary School, FA Day Middle School, and the Newton Early Childhood Program. The project as proposed includes installing a fully actuated traffic signal at the Crafts Street and Albemarle Road intersection and a rapid-flashing-beacon crosswalk system at the Albemarle Road and North Street intersection. It will also require signal modifications to the existing traffic signal at Crafts Street at North Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	\$689,570	--	--	\$689,570
Non-Federal Funds	--	--	\$172,392	--	--	\$172,392
Total Funds	---	---	\$861,962	---	---	\$861,962

Newton: NewMo Microtransit Service Expansion

Proponent: Newton
ID Number: S12694
Project Type: Community Connections
Cost: \$890,574
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	18 out of 18	14 out of 15	12 out of 15	9 out of 18	24 out of 24	10 out of 10	87 out of 100

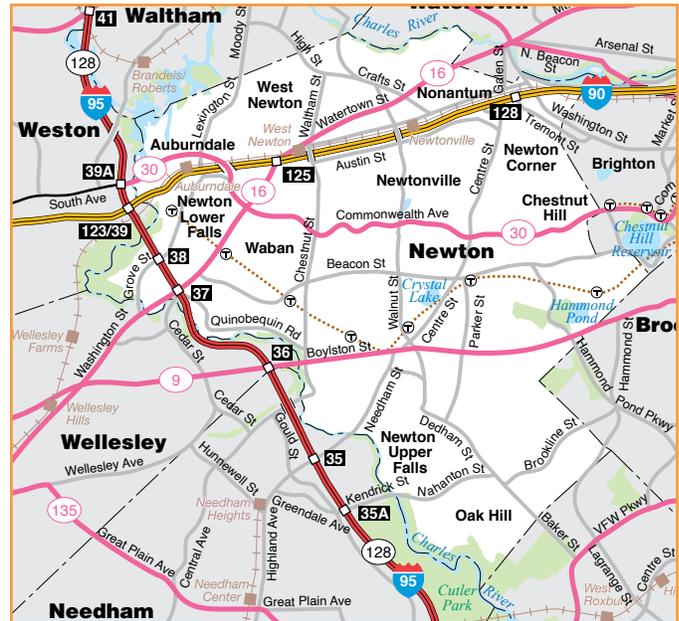
Project Description

This project will expand Newton’s existing city-wide microtransit service to include stops in Watertown, Waltham, Weston, Wellesley, Needham, and Boston, with the goal of connecting riders to an expanded network of employment centers, activity hubs, and public transportation options. NewMo is Newton’s on-demand rideshare system, operated by Via. The system uses state-of-the-art technology to cost-effectively deliver dynamically routed, shared rides using microtransit technology. The system is on track to provide 50,000 trips in its first year and sees significant ridership by low-income individuals, commuters, seniors, and students. The Boston Region MPO contributed funding to NewMo’s initial launch, with \$727,000 allocated to the project’s first phase in FFYs 2021–23. This second phase is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$330,132	\$214,597	\$167,730	–	–	\$712,459
Non-Federal Funds	\$82,533	\$53,649	\$41,933	–	–	\$178,115
Total Funds	\$412,665	\$268,246	\$209,663	---	---	\$890,574

Newton: Newton MicroTransit Service

- Proponent:** Newton
- ID Number:** S12125
- Project Type:** Community Connections
- Cost:** \$727,000
- Funding Source:** Regional Target Funds



Scoring Summary

This project received a total score of 53 points when evaluated using the criteria for the pilot round of the MPO’s Community Connections Program. These criteria are listed in table A-11.

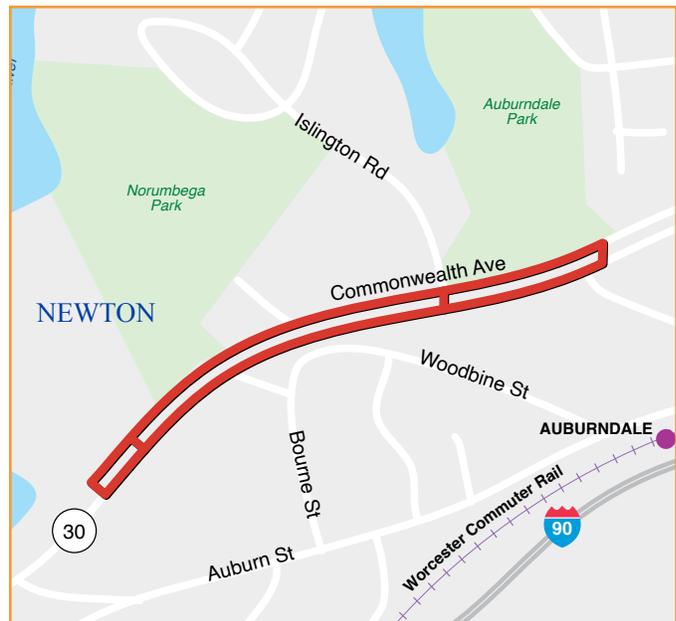
Project Description

This project funds a new technology-enabled transportation service that will serve all residents, students and employees in Newton. The system will provide shared, first- and last-mile rides between three MBTA rail lines and the Wells Avenue Business District before expanding citywide. The City will deliver the service using on-demand, dynamically routed microtransit technology. This system will build on Newton’s NewMo microtransit system, operated by Via, which will provide 25,000 rides to Newton seniors in its first year. This project is funded over three years (FFYs 2021-23) through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$121,600	—	—	—	—	\$121,600
Non-Federal Funds	\$30,400	—	—	—	—	\$30,400
Total Funds	\$152,000	---	---	---	---	\$152,000

Newton: Reconstruction of Commonwealth Avenue (Route 30), from East of Auburn Street to Ash Street

Proponent: Newton
ID Number: 610674
Project Type: Bicycle and Pedestrian
Cost: \$6,546,367
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	7 out of 30	16 out of 29	13 out of 29	6 out of 16	1 out of 12	8 out of 18	51 out of 134

Project Description

The project aims to create safe bicycle and pedestrian facilities to improve the City of Newton’s connectivity to green space, trails, and other recreation opportunities. The proposed improvements to Route 30 and the adjacent carriageway begin just east of Auburn Street and end at Ash Street. For the segment from Auburn Street to Woodbine Street, the project will narrow the existing median and repurpose the space on the north side of the roadway to either a shared-use path or separated bicycle and pedestrian facilities. East of Woodbine Street, the existing 22-foot carriageway will be converted to the shared-use path or separated bicycle and pedestrian facilities. The existing cross section of Route 30 will be maintained, but five-foot shoulders will be striped to allow for on-road bicycling facilities. There will be three mid-block crossings with pedestrian beacons installed at MBTA bus stops and the Blue Heron trail entrance. The intersection at Ash Street will be reconstructed to improve pedestrian and bicycle crossings and address circulation issues at Lyons Field. This project was evaluated using the MPO’s scoring criteria because it was considered for funding using Regional Target Funds. MassDOT funded the project, however.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$5,237,094	—	—	—	—	\$5,237,094
Non-Federal Funds	\$1,309,273	—	—	—	—	\$1,309,273
Total Funds	\$6,546,367	---	---	---	---	\$6,546,367

Newton and Weston: Bridge Rehabilitation, N-12-010=W-29-005, Commonwealth Avenue (Route 30) over the Charles River

Proponent: MassDOT
ID Number: 110980
Project Type: Bridge
Cost: \$22,725,820
Funding Source: Regional Target Funds



Scoring Summary

This project was selected for funding by the MPO late in the FFYs 2023–27 TIP development cycle, so it has not yet been scored using the MPO’s project selection criteria. This section will be updated with the project’s final score when it is available.

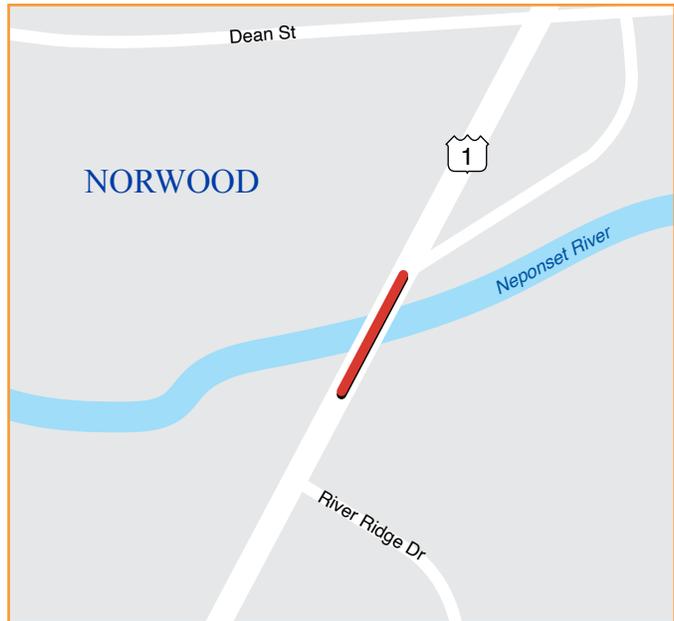
Project Description

This project will replace bridge N-12-010=W-29-005 that carries Commonwealth Avenue (Route 30) over the Charles River between Newton and Weston. The project aims to improve the existing poor condition of the bridge and improve safety at the interchange while adding new bicycle and pedestrian accommodations to the corridor. These new facilities for people walking and bicycling will connect to facilities being constructed as a part of adjacent projects on Route 30, including improvements in Newton that are funded by MassDOT in FFY 2023 (project number 610674) and the reconstruction of Route 30 in Weston, funded by the MPO in FFY 2026 (project number 608954).

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$18,180,656	—	—	—	\$18,180,656
Non-Federal Funds	—	\$4,545,164	—	—	—	\$4,545,164
Total Funds	---	\$22,725,821	---	---	---	\$22,725,821

Norwood: Bridge Preservation, N-25-026, Providence Highway (State Route 1) over the Neponset River

Proponent: MassDOT
ID Number: 605321
Project Type: Bridge
Cost: \$3,588,426
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

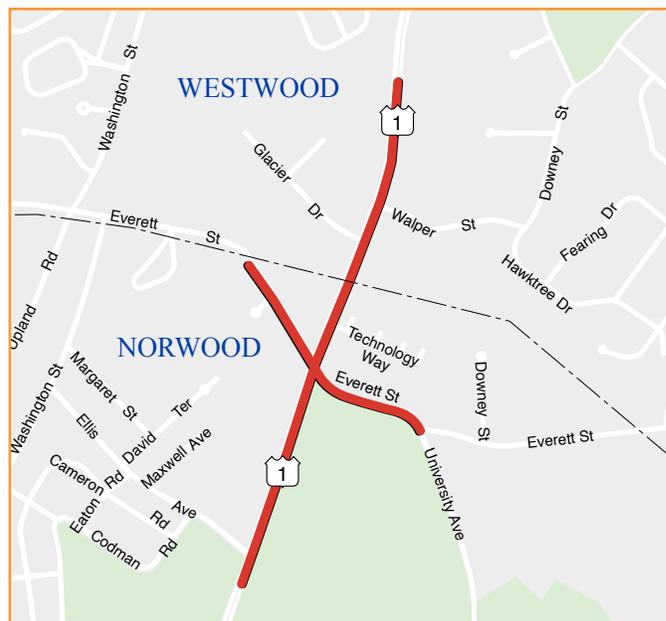
Project Description

This project will rehabilitate bridge N-25-026, which carries Providence Highway (State Route 1) over the Neponset River in Norwood.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	\$2,870,741	--	\$2,870,741
Non-Federal Funds	--	--	--	\$717,685	--	\$717,685
Total Funds	---	---	---	\$3,588,426	---	\$3,588,426

Norwood: Intersection Improvements at Route 1 and University Avenue/ Everett Street

Proponent: Norwood
ID Number: 605857
Project Type: Intersection Improvements
Cost: \$24,837,870
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	11 out of 30	12 out of 29	15 out of 29	11 out of 16	2 out of 12	4 out of 18	55 out of 134

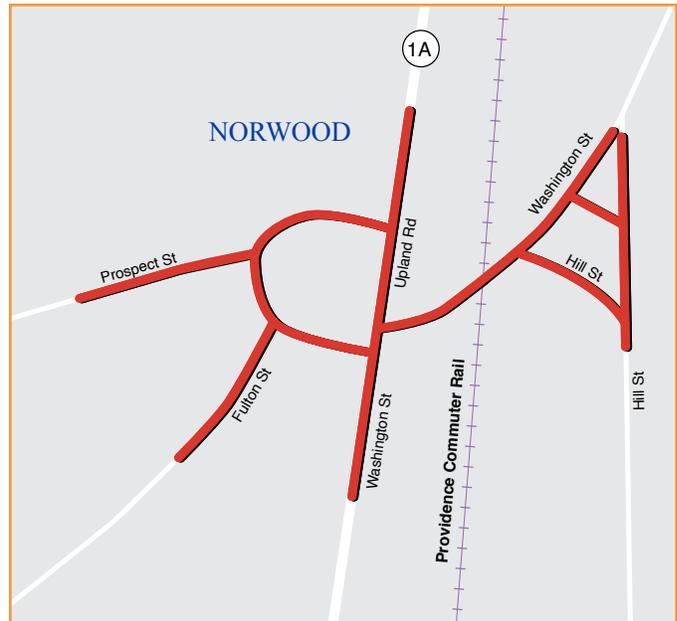
Project Description

This project includes traffic signal upgrades and associated geometric improvements at the intersection of Route 1 with University Avenue and Everett Street. Related improvements include constructing an additional travel lane in each direction on Route 1, upgrading of traffic signals, lengthening of left-turn lanes on Route 1, upgrading of pedestrian crossings at each leg of the intersection, and upgrading of bicycle amenities (loop detectors) at the intersection. Rehabilitation of sidewalks, curbing, median structures, lighting, and guard rails are also proposed.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	---	---	\$7,263,173	\$12,670,296	---	\$19,933,469
Non-Federal Funds	---	---	\$1,736,827	\$3,167,574	---	\$4,904,401
Total Funds	---	---	\$9,000,000	\$15,837,870	---	\$24,837,870

Norwood: Intersection Improvements at Route 1A and Upland Road/Washington Street and Prospect Street/Fulton Street

Proponent: Norwood
ID Number: 606130
Project Type: Intersection Improvements
Cost: \$7,952,280
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 30	7 out of 29	14 out of 29	3 out of 16	3 out of 12	7 out of 18	47 out of 134

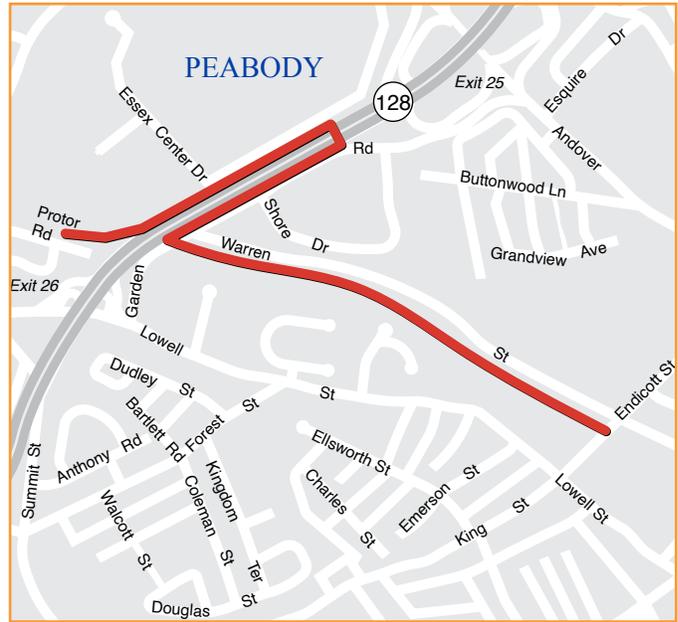
Project Description

This project involves intersection improvements at two locations on Route 1A through the installation of traffic and pedestrian signals to support vehicle flow and roadway safety. In addition, Washington Street and Upland Road will be widened to accommodate turning lanes and existing sidewalks will be reconstructed to meet ADA/AAB standards with upgraded pavement markings.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$6,361,824	—	—	—	—	\$6,361,824
Non-Federal Funds	\$1,590,456	—	—	—	—	\$1,590,456
Total Funds	\$7,952,280	---	---	---	---	\$7,952,280

Peabody: Independence Greenway Extension

Proponent: Peabody
ID Number: 609211
Project Type: Bicycle and Pedestrian
Cost: \$3,922,122
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	9 out of 30	4 out of 29	9 out of 29	4 out of 16	4 out of 12	4 out of 18	34 out of 134

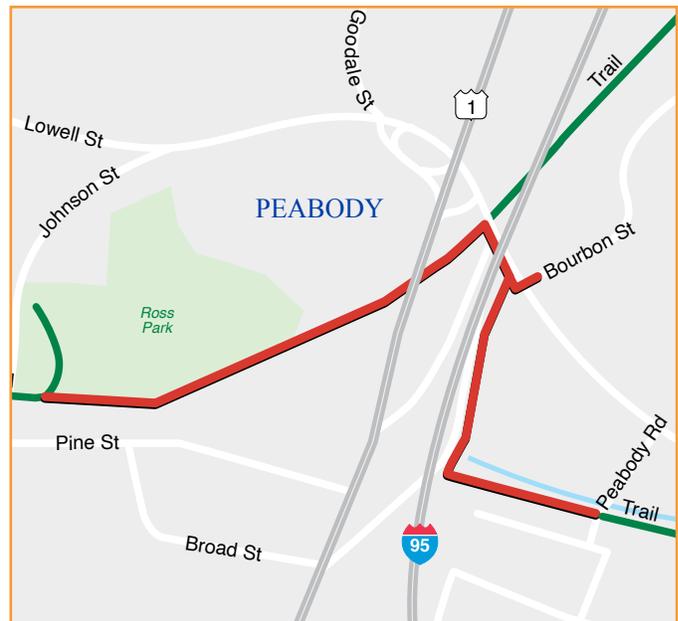
Project Description

This project will extend the Independence Greenway 1.3 miles east from its present terminus at the North Shore Mall to the intersection of the Warren Street Extension and Endicott Street in central Peabody. When complete, the project will bring the greenway’s total length to eight miles. This project makes use of an existing rail corridor as it runs parallel to Lowell Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$3,137,698	—	—	—	\$3,137,698
Non-Federal Funds	—	\$784,424	—	—	—	\$784,424
Total Funds	---	\$3,922,122	---	---	---	\$3,922,122

Peabody: Multi-Use Path Construction of Independence Greenway at Interstate 95 and Route 1

Proponent: Peabody
ID Number: 610544
Project Type: Bicycle and Pedestrian
Cost: \$6,334,200
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	15 out of 30	13 out of 29	11 out of 29	4 out of 16	4 out of 12	6 out of 18	53 out of 134

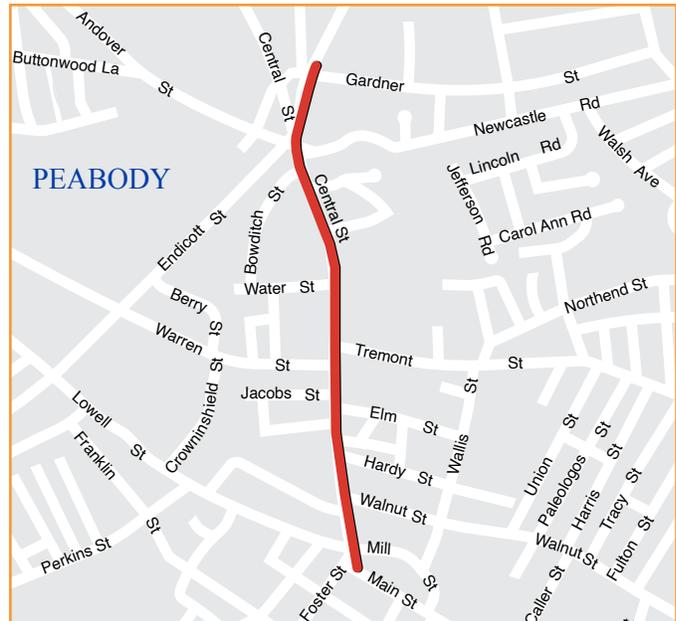
Project Description

The project includes construction of a new 12-foot wide multi-use paved path along the abandoned railbed between two existing segments of the Independence Greenway in Peabody. The project also includes a connection to the existing Border to Boston trailhead at Lowell Street. The work includes full-depth pavement construction, minor drainage improvements, vegetative privacy screening, new and reset granite curb, new cement concrete sidewalk and hot mix asphalt, signal upgrades at the intersections of Lowell and Bourbon Streets and Route 1 northbound and Lowell Street, a new two-span steel pedestrian bridge, and various curb, walking, and parking improvements to the existing parking lot at 215 Newbury Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$5,067,360	—	—	\$5,067,360
Non-Federal Funds	—	—	\$1,266,840	—	—	\$1,266,840
Total Funds	---	---	\$6,334,200	---	---	\$6,334,200

Peabody: Rehabilitation of Central Street

Proponent: Peabody
ID Number: 608933
Project Type: Complete Streets
Cost: \$15,219,860
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	21 out of 30	17 out of 29	9 out of 29	3 out of 16	7 out of 12	4 out of 18	61 out of 134

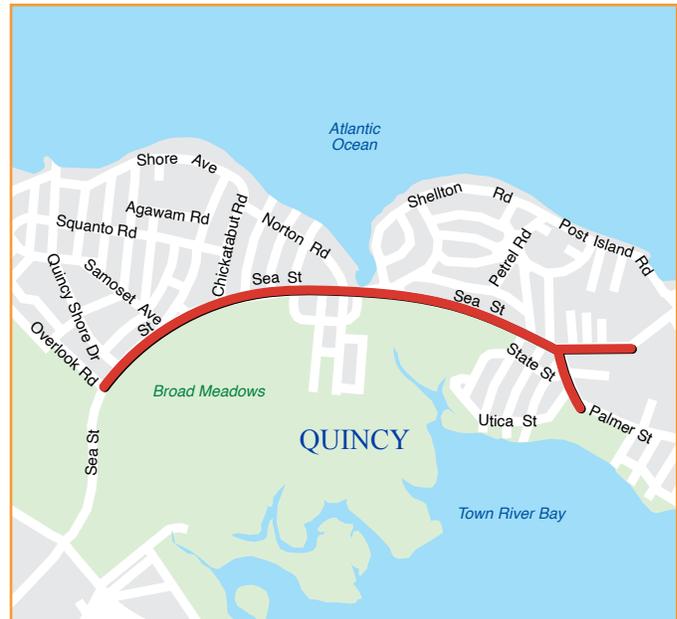
Project Description

Given the condition of the existing pavement based on a visual inspection, as well as the number of utility trenches that have exhibited signs of differential settlement, the project is currently proposed to reconstruct the pavement via full depth pavement reclamation. The project will also include the reconstruction of cement concrete sidewalks and crossings with curb extensions and new granite curbing, addition of dedicated bicycle accommodations (bike lane and/or sharrows), installation of new signage and pavement markings, streetscape enhancements and amenities, and drainage system improvements corridor-wide. For the reconstructed intersections noted, new signal equipment will be provided at all locations. All signal equipment proposed will be NEMA TS2 Type 1, with countdown pedestrian heads, vibrotactile pedestrian push buttons with audible speech messages, optical emergency vehicles preemption, and video vehicle detection.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$12,325,888	---	---	---	---	\$12,325,888
Non-Federal Funds	\$2,893,972	---	---	---	---	\$2,893,972
Total Funds	\$15,219,860	---	---	---	---	\$15,219,860

Quincy: Reconstruction of Sea Street

Proponent: Quincy
ID Number: 608707
Project Type: Complete Streets
Cost: \$6,052,562
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	10 out of 30	16 out of 29	7 out of 29	4 out of 16	2 out of 12	1 out of 18	40 out of 134

Project Description

This project involves traffic and safety improvements for all users along Sea Street through the reconstruction of sidewalks with ADA-compliant ramps, the provision of bicycle accommodations, and the construction of median islands. Geometric modifications of the roadway and upgraded traffic signal systems will also be established to enhance safety.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$4,842,049	—	—	—	—	\$4,842,049
Non-Federal Funds	\$1,210,513	—	—	—	—	\$1,210,513
Total Funds	\$6,052,562	---	---	---	---	\$6,052,562

Randolph: Resurfacing and Related Work on Route 24

Proponent: MassDOT
ID Number: 612049
Project Type: Non-Interstate Pavement
Cost: \$9,466,800
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

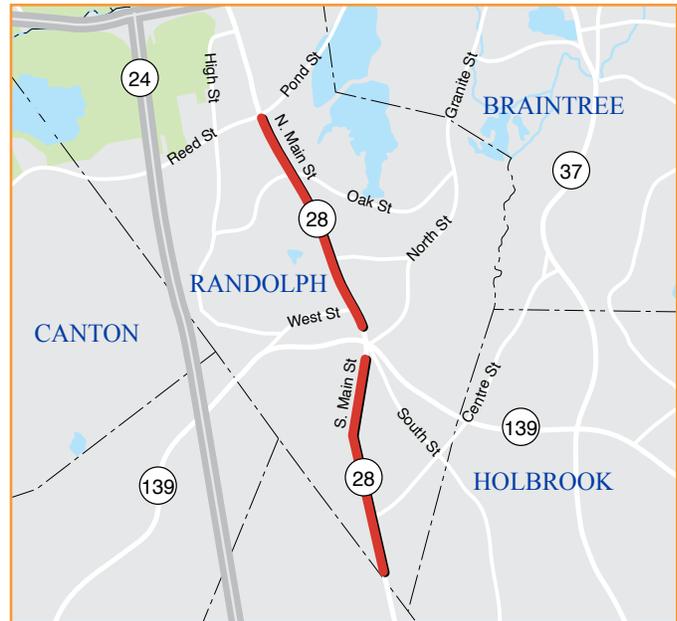
Project Description

This project will improve the pavement condition and make other associated improvements on Route 24 in Randolph between the Route 24 and Interstate 93 interchange and Page Street, a distance of approximately four miles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	--	\$7,573,440	--	\$7,573,440
Non-Federal Funds	--	--	--	\$1,893,360	--	\$1,893,360
Total Funds	---	---	---	\$9,466,800	---	\$9,466,800

Randolph: Resurfacing and Related Work on Route 28

Proponent: MassDOT
ID Number: 609399
Project Type: Non-Interstate Pavement
Cost: \$6,930,814
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

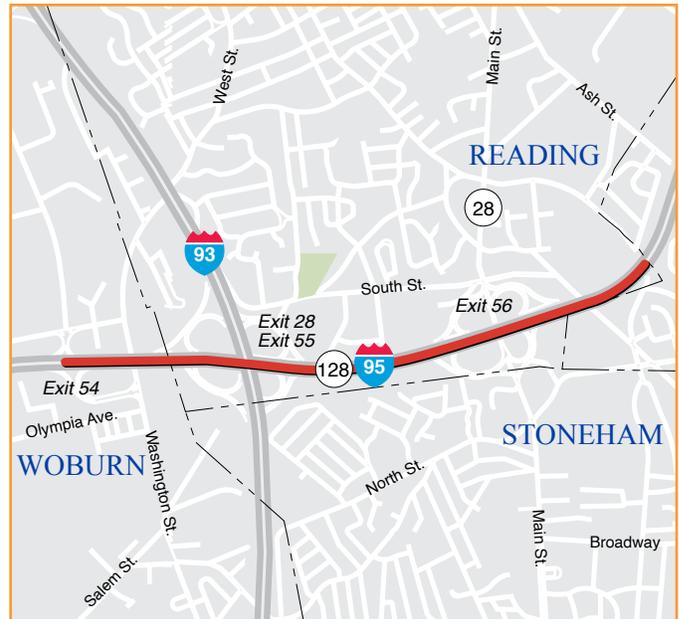
Project Description

This project involves the resurfacing of 13.2 lane miles of Route 28 in Randolph. The project includes two sections of Route 28, from mile marker 105.8 to 107.4 and from mile marker 107.6 to 109.3.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$5,544,651	—	—	\$5,544,651
Non-Federal Funds	—	—	\$1,386,163	—	—	\$1,386,163
Total Funds	---	---	\$6,930,814	---	---	\$6,930,814

Reading: Improvements on Interstate 95

Proponent: MassDOT
ID Number: 609527
Project Type: Roadway Reconstruction
Cost: \$17,376,800
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

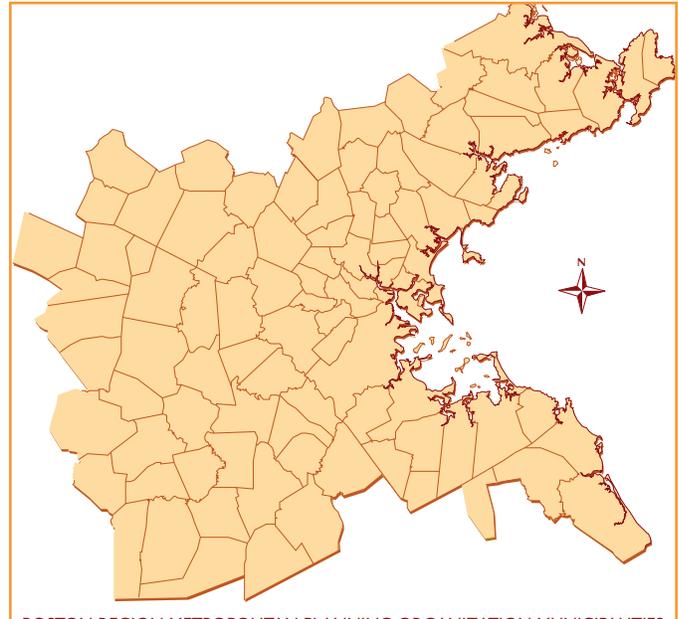
Project Description

This project will improve Interstate 95 in Reading between Commerce Way in Woburn and Ash Street in Reading, a distance of approximately two miles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$13,901,440	\$13,901,440
Non-Federal Funds	—	—	—	—	\$3,475,360	\$3,475,360
Total Funds	---	---	---	---	\$17,376,800	\$17,376,800

Regionwide: Community Connections Program

Proponent:	Regional
ID Number:	S12124
Project Type:	Community Connections
Cost:	\$6,716,799
Funding Source:	Regional Target Funds



Scoring Summary

The scoring criteria for the Community Connections Program are listed in Appendix A. Scores for projects funded in the FFYs 2023-27 TIP through this program are available on those projects' pages within this chapter.

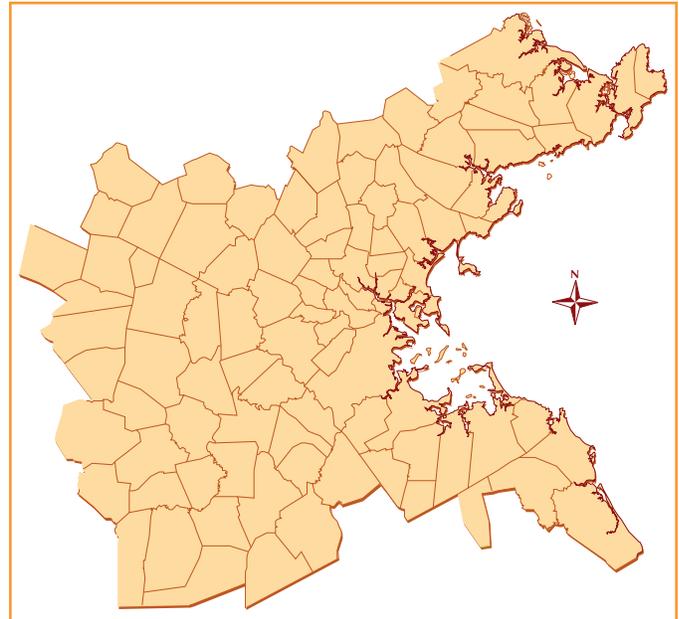
Project Description

The Community Connections Program is the MPO's funding program for first- and last-mile solutions, community transportation, and other small, nontraditional transportation projects such as those that update transit technology and improve bicycle and pedestrian facilities. The Community Connections Program is one of the investment programs included in the MPO's current Long-Range Transportation Plan, *Destination 2040*. The program was originally funded at a level of \$2 million per year in Regional Target funds beginning in FFY 2021. With the increase in funds available to the MPO through the Bipartisan Infrastructure Law, the funding level for this program has been increased to \$2.5 million annually beginning in FFY 2023. Thirteen projects are funded in the FFYs 2023-27 TIP through this program, the details of which are available in this chapter. Remaining funding in FFYs 2024 through 2027 will be allocated during future TIP cycles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$513,196	\$860,243	\$2,000,000	\$2,000,000	\$5,373,439
Non-Federal Funds	—	\$128,299	\$215,061	\$500,000	\$500,000	\$1,343,360
Total Funds	---	\$641,495	\$1,075,304	\$2,500,000	\$2,500,000	\$6,716,799

Regionwide: Transit Modernization Program

Proponent: Regional
ID Number: S12113
Project Type: Transit Modernization
Cost: \$19,500,000
Funding Source: Regional Target Funds



Scoring Summary

No projects have yet been scored using the Transit Modernization criteria. Projects will be evaluated by the MPO in future TIP cycles for funding within this investment program.

Project Description

The MPO's Transit Modernization Program was established in *Destination 2040*, the MPO's current Long-Range Transportation Plan. This program will allocate a portion of the MPO's Regional Target Highway funds to transit projects that advance the MPO's goals in the region, including upgrades to stations and facilities and the purchase of vehicles for transit providers. The MPO has begun allocating approximately five percent of its annual funding, or \$6,500,000 annually, to this program beginning in FFY 2025. Specific projects will be funded using these reserved funds in future TIP cycles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$5,200,000	\$5,200,000	\$5,200,000	\$15,600,000
Non-Federal Funds	—	—	\$1,300,000	\$1,300,000	\$1,300,000	\$3,900,000
Total Funds	---	---	\$6,500,000	\$6,500,000	\$6,500,000	\$19,500,000

Revere: Bridge Replacement, R-05-015, Revere Beach Parkway over Broadway

Proponent: MassDOT
ID Number: 612184
Project Type: Bridge
Cost: \$20,243,805
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

Project Description

This project will replace bridge R-05-015, which carries Revere Beach Parkway over Broadway in Revere. This bridge is currently listed as structurally deficient. This project is funded through MassDOT's Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	\$0	--	--	\$0
Non-Federal Funds	--	--	\$20,243,805	--	--	\$20,243,805
Total Funds	---	---	\$20,243,805	---	---	\$20,243,805

Revere: Improvements at Beachmont Veterans Elementary (SRTS)

Proponent: Revere
ID Number: 612100
Project Type: Roadway Reconstruction
Cost: \$338,381
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

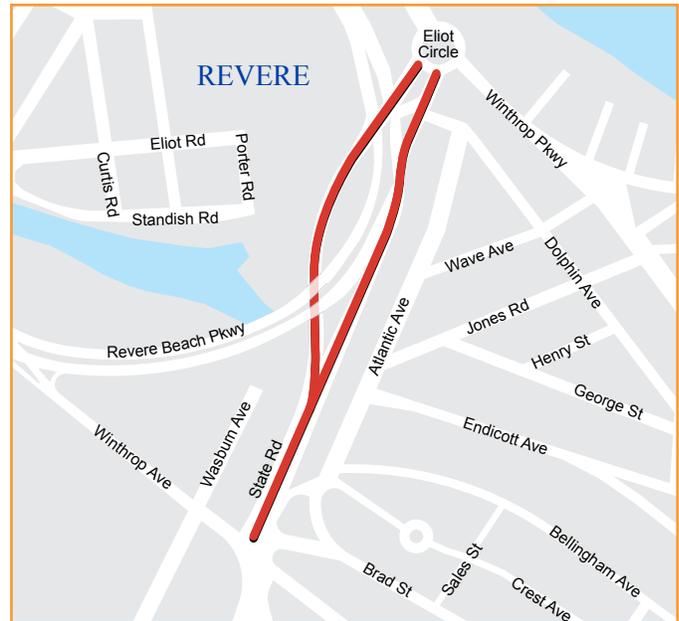
Project Description

This Safe Routes to School project proposes pedestrian improvements at several intersections surrounding Beachmont Veterans Elementary School in Revere. This project will reconstruct sections of sidewalk and curbing, improve markings at several crosswalks, and add tactile warning panels at some locations.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$270,705	—	—	\$270,705
Non-Federal Funds	—	—	\$67,676	—	—	\$67,676
Total Funds	---	---	\$338,381	---	---	\$338,381

Revere: State Road Beachmont Connector

Proponent: MassDOT
ID Number: 612523
Project Type: Bicycle and Pedestrian
Cost: \$5,095,005
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

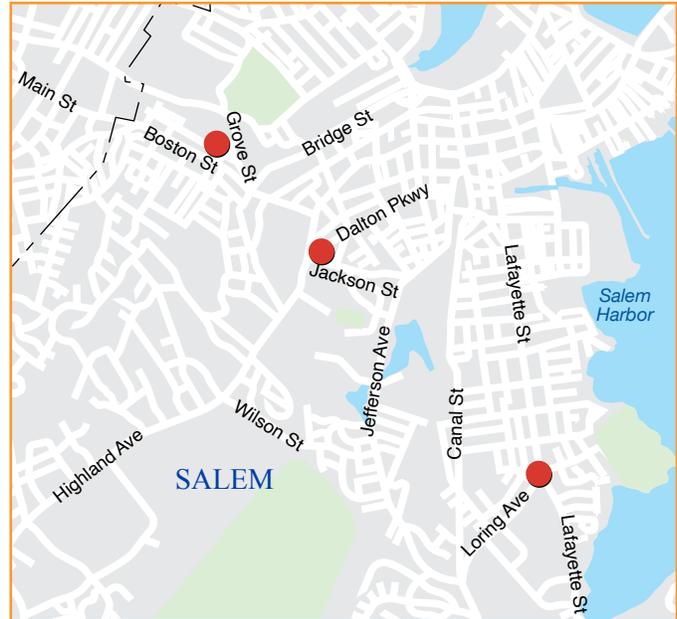
Project Description

The primary goal of this project is to provide a safe path for bicyclists and improve pedestrian and vehicular safety along State Road between Donnelly Square and Eliot Circle in Revere. The proposed scope will reduce both northbound and southbound travel on State Road from two lanes to a single lane to provide bicycle and pedestrian facilities, including a two-way separated bicycle lane on the west side of the corridor and a one-way parking-protected bicycle lane along the east side of the corridor. This project will improve the sidewalk along both sides of State Road, providing a direct connection for pedestrians to the Beachmont MBTA Blue Line station that is comfortable, safe, and accessible. Crosswalks with accessible ramps are proposed across all side streets and there is a proposed crossing of State Road just south of Ocean Avenue that will connect proposed facilities to the existing sidewalk on Revere Beach Parkway.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$4,076,004	—	—	\$4,076,004
Non-Federal Funds	—	—	\$1,019,001	—	—	\$1,019,001
Total Funds	---	---	\$5,095,005	---	---	\$5,095,005

Salem: Bluebikes System Expansion

Proponent: Salem
ID Number: S12698
Project Type: Community Connections
Cost: \$119,629
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	13 out of 18	15 out of 15	6 out of 15	9 out of 18	24 out of 24	10 out of 10	77 out of 100

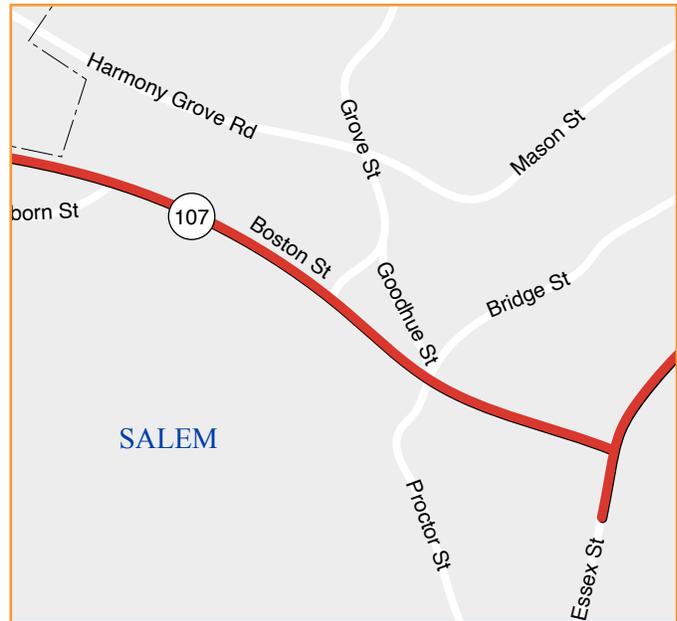
Project Description

This project supports the purchase of bikes and stations to expand Salem’s Bluebikes system to reach a critical mass that meets the mobility needs of the community’s residents, employees, students, and visitors. The City launched a 7- station, 44-bike system in June of 2020, funded in part by a MassDOT Shared Streets and Spaces grant, to serve the downtown core and select destinations. This project will add three additional stations, stations at Salem State University—North Campus; Goodhue Street and Grove Street, near the Bridge Street Multi-Use Path; and Essex Street and Dalton Parkway, near Salem’s middle and high schools and Salem Hospital. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$95,703	—	—	—	—	\$95,703
Non-Federal Funds	\$23,926	—	—	—	—	\$23,926
Total Funds	\$119,629	---	---	---	---	\$119,629

Salem: Boston Street Improvements

Proponent: Salem
ID Number: 609437
Project Type: Complete Streets
Cost: \$13,977,600
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	12 out of 18	15 out of 20	11 out of 18	8 out of 12	10.8 out of 20	11 out of 12	67.8 out of 100

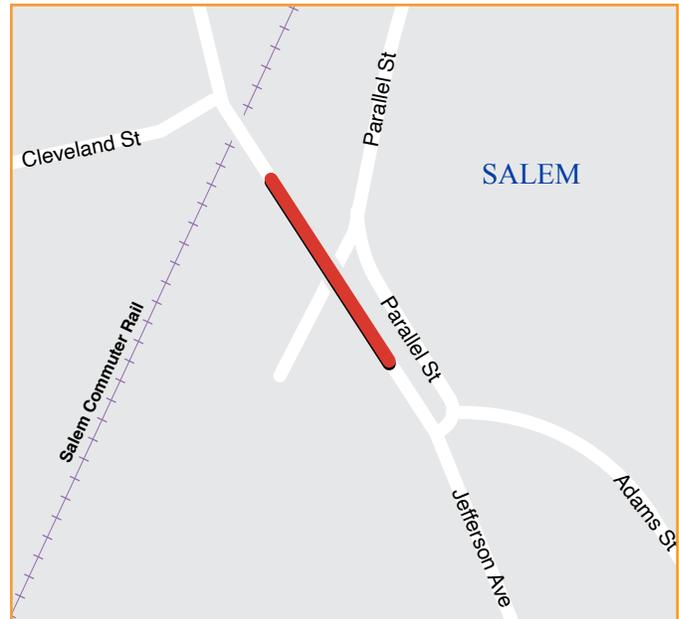
Project Description

This project aims to improve mobility for vehicles, bicycles, and pedestrians between Salem and Peabody and create separated bicycle facilities between the two municipalities that do not currently exist today. In addition to off-street bicycle facilities, major improvements to the corridor include incorporating Complete Streets design elements such as ADA/AAB-compliant sidewalks, pedestrian ramps, and crosswalks. This project will add a new traffic signal at the intersection of Boston Street and Aborn Street and will upgrade existing traffic signals at the intersections of Boston Street and Essex Street, Boston Street and Bridge Street/Proctor Street/Goodhue Street, and Boston Street and Grove Street/Nichols Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$11,182,080	—	\$11,182,080
Non-Federal Funds	—	—	—	\$2,795,520	—	\$2,795,520
Total Funds	---	---	---	\$13,977,600	---	\$13,977,600

Salem: Bridge Replacement, S-01-024, Jefferson Avenue over Parallel Street

Proponent: MassDOT
ID Number: 612075
Project Type: Bridge
Cost: \$3,239,040
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will replace bridge S-01-024, which carries Jefferson Avenue over Parallel Street in Salem.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$2,591,232	—	\$2,591,232
Non-Federal Funds	—	—	—	\$647,808	—	\$647,808
Total Funds	---	---	---	\$3,329,040	---	\$3,329,040

Sharon: Improvements at Cottage Street Elementary School (SRTS)

Proponent: Sharon
ID Number: S12209
Project Type: Roadway Reconstruction
Cost: \$1,436,915
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

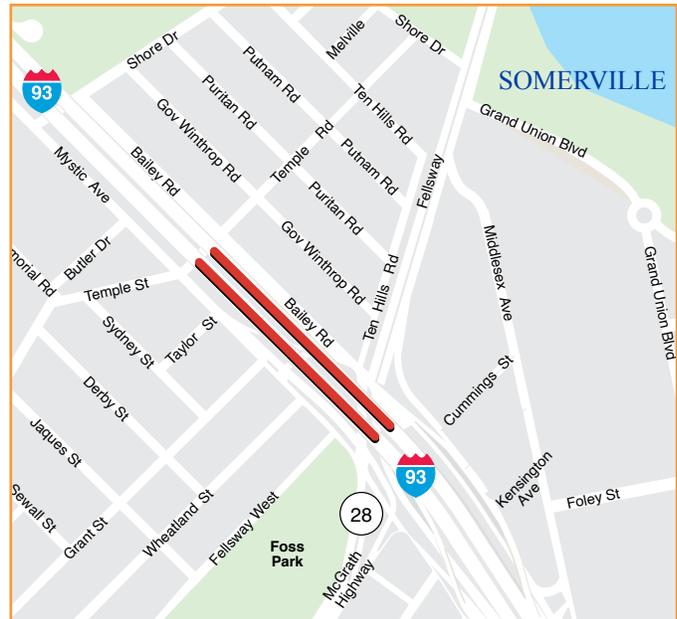
Project Description

This project will make upgrades to promote safety along the roadways surrounding Cottage Street Elementary School in Sharon through the Safe Routes to School program. This project proposes to create continuous sidewalks along the entirety of Cottage Street, from Billings Street to Ames Street. Work will involve reconstructing all existing sidewalks and adding new sidewalks where none exist today. The project also proposes the addition of rectangular-rapid-flashing-beacons at five crosswalks along Cottage Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$1,149,532	—	\$1,149,532
Non-Federal Funds	—	—	—	\$287,383	—	\$287,383
Total Funds	---	---	---	\$1,436,915	---	\$1,436,915

Somerville: Bridge Preservation, S-17-031, Interstate 93 (Northbound and Southbound) from Route 28 to Temple Street (Phase 2)

Proponent: MassDOT
ID Number: 612496
Project Type: Bridge
Cost: \$203,259,260
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

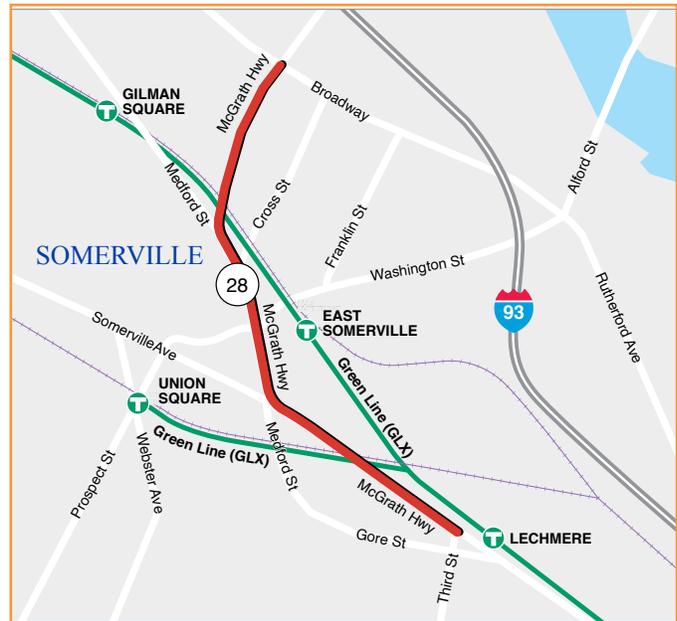
Project Description

This project will rehabilitate bridge S-17-031, which carries an elevated portion of Interstate 93 between Route 28 and Temple Street in Somerville. This is a continuation of a bridge preservation project on the same portion of Interstate 93 (project number 606528), which began construction in late 2021.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$162,607,408	—	\$162,607,408
Non-Federal Funds	—	—	—	\$40,651,852	—	\$40,651,852
Total Funds	---	---	---	\$203,259,260	---	\$203,259,260

Somerville: McGrath Boulevard Construction

Proponent: MassDOT
ID Number: 607981
Project Type: Major Infrastructure
Cost: \$102,370,000
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 18	19 out of 20	13 out of 18	8 out of 12	9.2 out of 20	10 out of 12	72.2 out of 100

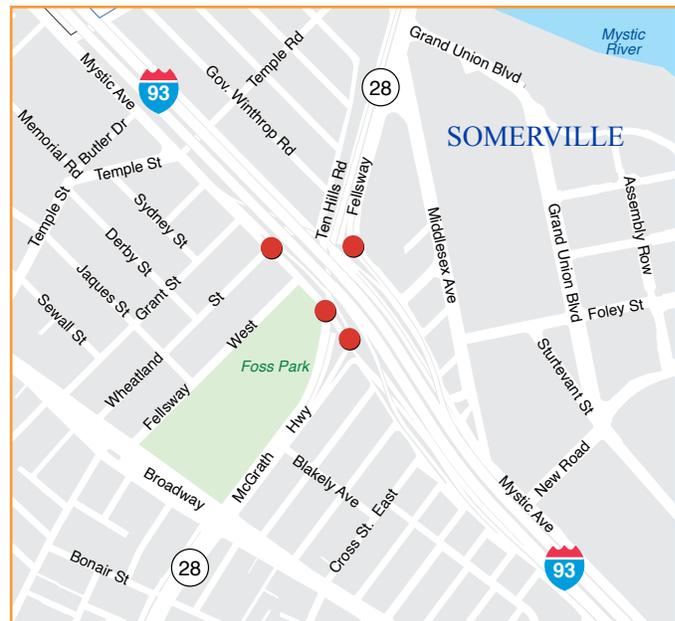
Project Description

This project will remove the existing McCarthy Viaduct along McGrath Boulevard in Somerville and replace it with an at-grade urban boulevard, approximately 1.5 miles long, from Broadway in the north to Third Street in the south. The project will result in more conventional intersection configurations at Washington Street and Somerville Avenue, which are currently under or next to the viaduct. Removing the viaduct will physically reconnect the neighborhoods of Somerville with more direct vehicle, pedestrian, bicycle, and transit networks. The project will enhance transit access along the corridor, improving bus operations and the bus rider experience with the installation of floating/in-lane bus stops, transit signal priority, and bus queue-jump lanes at key intersections. New sidewalks and bicycle facilities will be provided for the length of the proposed McGrath Boulevard and will connect with the extended Somerville Community Path, creating access to the regional bicycle network. The proposed facilities will provide direct intermodal connections to existing bus routes and the new Green Line station in East Somerville. This project is anticipated to be funded over four fiscal years, with the first year of funding in FFY 2027.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$16,000,000	\$16,000,000
Non-Federal Funds	—	—	—	—	\$4,000,000	\$4,000,000
Total Funds	---	---	---	---	\$20,000,000	\$20,000,000

Somerville: Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway (Top 200 Crash Locations)

Proponent: MassDOT
ID Number: 608562
Project Type: Intersection Improvements
Cost: \$6,122,559
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

The project includes traffic signal upgrades and safety improvements at the following locations: Mystic Avenue northbound and Route 28 (Fellsway); Route 38 (Mystic Avenue) southbound and Route 28 (McGrath Highway) southbound; Route 38 (Mystic Avenue) southbound and Route 28 (McGrath Highway) northbound; and Route 38 (Mystic Avenue) southbound at Wheatland Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$5,439,645	—	—	—	\$5,439,645
Non-Federal Funds	—	\$682,914	—	—	—	\$682,914
Total Funds	---	\$6,122,559	---	---	---	\$6,122,559

Stoneham: Deck Replacement and Superstructure Repairs, S-27-006 (2L2), Route 28 (Fellsway West) over Interstate 93

Proponent: MassDOT
ID Number: 612028
Project Type: Bridge
Cost: \$3,240,000
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

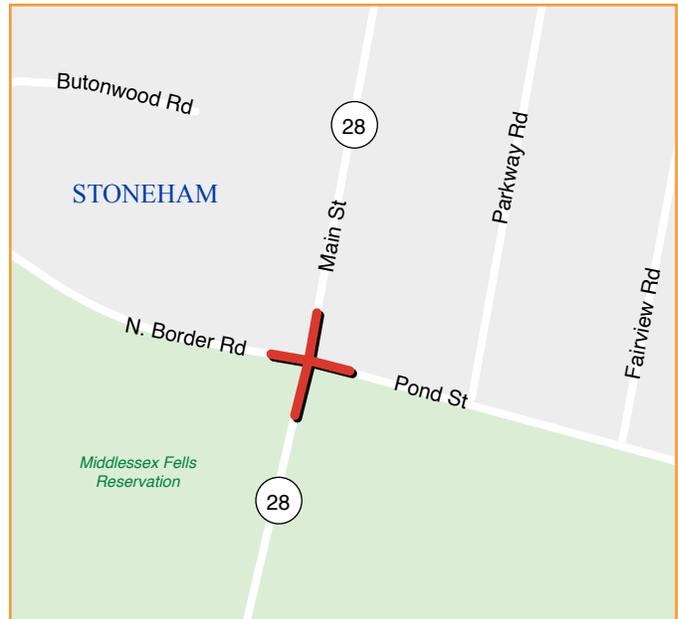
Project Description

This project will replace the bridge deck and repair the superstructure on bridge S-27-006 (2L2), carrying Fellsway West over Interstate 93 in Stoneham. This project is funded through MassDOT’s Next Generation Bridge Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$0	—	—	%0
Non-Federal Funds	—	—	\$3,240,000	—	—	\$3,240,000
Total Funds	---	---	\$3,240,000	---	---	\$3,240,000

Stoneham: Intersection Improvements at Route 28 (Main Street), North Border Road, and South Street

Proponent: MassDOT
ID Number: 610665
Project Type: Intersection Improvements
Cost: \$4,872,001
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will make intersection improvements at Route 28 (Main Street), North Border Road, and South Street in Stoneham.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$4,384,801	—	\$4,384,801
Non-Federal Funds	—	—	—	\$487,200	—	\$487,200
Total Funds	---	---	---	\$4,872,001	---	\$4,872,001

Stoneham: Stoneham Shuttle Service

Proponent: Stoneham
ID Number: S12699
Project Type: Community Connections
Cost: \$796,817
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	15 out of 18	12 out of 15	12 out of 15	6 out of 18	17 out of 24	10 out of 10	72 out of 100

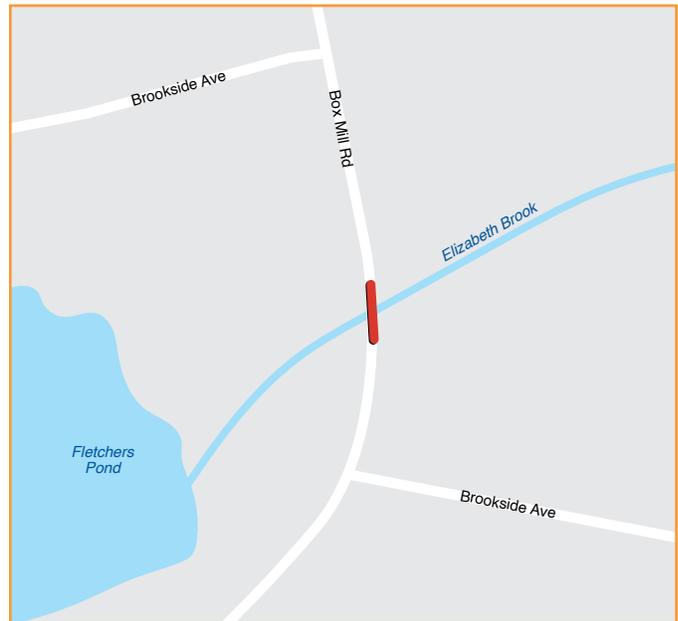
Project Description

This project will create a local shuttle service that will connect Stoneham residents and employees of Stoneham businesses to transportation options in surrounding communities during peak hours and within Stoneham during non-peak hours. The primary goal of this project is to fill gaps in the existing MBTA service network by creating an east-west connection across Stoneham where only north-south MBTA bus service exists today. The Town plans to use a 24-passenger bus that would operate on a 12-hour/day schedule Monday-Friday, with shorter hours on Saturday. During peak hours, the shuttle would stop at defined destinations along the route. During off-peak hours, the shuttle could go off-route based on the needs of riders. This project is funded through the third round of grants available through the MPO's Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$264,151	\$209,151	\$164,151	–	–	\$637,453
Non-Federal Funds	\$66,038	\$52,288	\$41,038	–	–	\$159,364
Total Funds	\$330,189	\$261,439	\$205,189	---	---	\$796,817

Stow: Bridge Replacement, S-29-11, Box Mill Road Over Elizabeth Brook

Proponent: MassDOT
ID Number: 608255
Project Type: Bridge
Cost: \$3,454,408
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

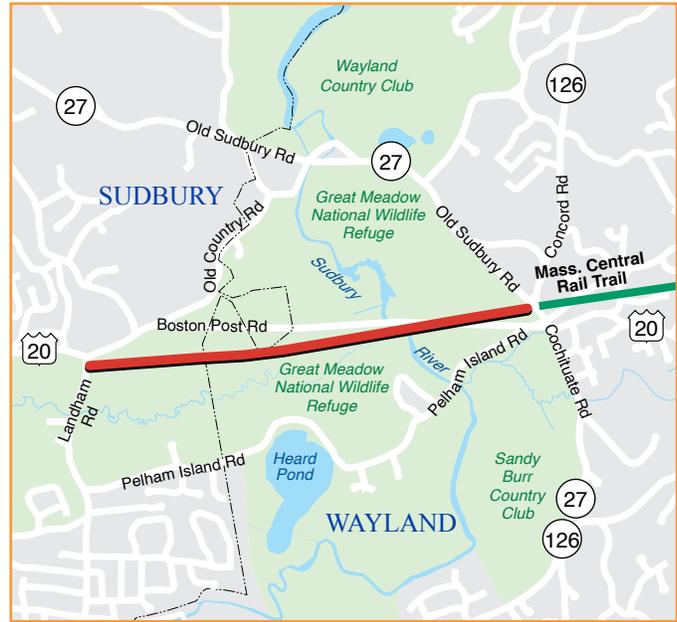
Project Description

Bridge S-29-11, which carries Box Mill Road over Elizabeth Brook, is a structurally deficient bridge. The full replacement will include new substructure, steel beams, and concrete deck. One sidewalk will be added to the structure.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$2,763,526	—	—	—	—	\$2,763,526
Non-Federal Funds	\$690,882	—	—	—	—	\$690,882
Total Funds	\$3,454,408	---	---	---	---	\$3,454,408

Sudbury and Wayland: Mass Central Rail Trail (MCRT)

Proponent: MassDOT
ID Number: 610660
Project Type: Bicycle and Pedestrian
Cost: \$4,524,001
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

Project Description

This project will extend the Mass Central Rail Trail from its existing terminus at Andrew Road in Wayland to Landham Road in Sudbury, a distance of approximately 1.6 miles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$3,619,201	\$3,619,201
Non-Federal Funds	—	—	—	—	\$904,800	\$904,800
Total Funds	---	---	---	---	\$4,524,001	\$4,524,001

Swampscott: Rail Trail Construction

Proponent: Swampscott
ID Number: 610666
Project Type: Bicycle and Pedestrian
Cost: \$8,932,000
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 20	5 out of 14	18 out of 18	12 out of 14	7.4 out of 20	11 out of 14	66.4 out of 100

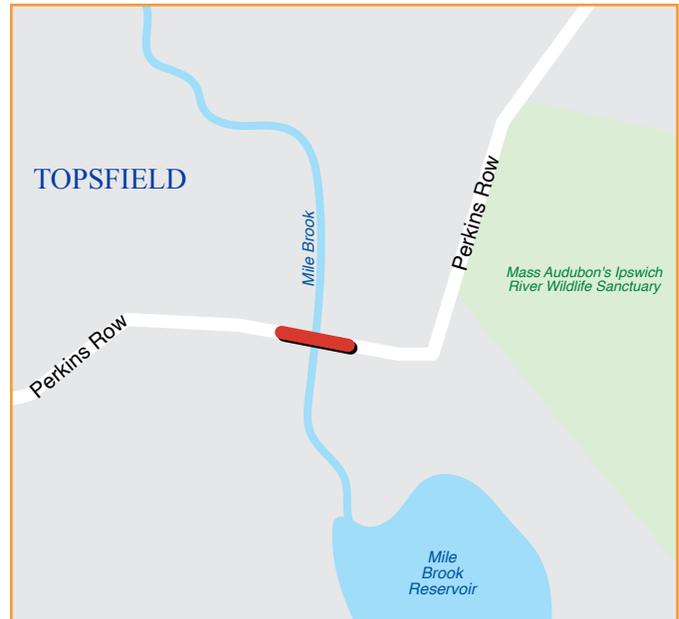
Project Description

This project will construct a new 2.1-mile-long multi-use linear park running the length of Swampscott and connecting with the existing Marblehead Rail Trail and the larger East Coast Greenway. This project will provide safe, accessible connections to the Town’s schools, recreation areas, MBTA commuter rail station, and natural resources for people walking and bicycling. The project will feature a 10-foot-wide trail with a two-foot sloping shoulder on each side. The trail will cross Paradise Road (Route 1A) with a pedestrian bridge using the existing railroad abutments from the former rail line. Trail amenities will be located at the Swampscott Middle School, including bathrooms, vehicle parking for trail users, bicycle parking, and a public bike repair station.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	—	\$7,145,600	\$7,145,600
Non-Federal Funds	—	—	—	—	\$1,786,400	\$1,786,400
Total Funds	---	---	---	---	\$8,932,000	\$8,932,000

Topsfield: Bridge Replacement, T-06-013, Perkins Row over Mile Brook

Proponent: MassDOT
ID Number: 612076
Project Type: Bridge
Cost: \$3,258,119
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO's TIP scoring criteria.

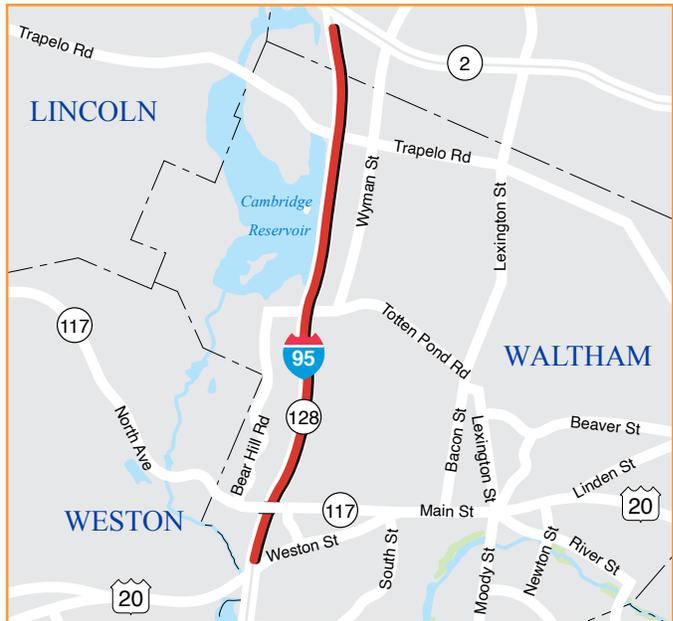
Project Description

This project will replace bridge T-06-013, which carries Perkins Row over Mile Brook in Topsfield.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$2,606,495	—	\$2,606,495
Non-Federal Funds	—	—	—	\$651,624	—	\$651,624
Total Funds	---	---	---	\$3,258,119	---	\$3,258,119

Waltham: Interstate Maintenance and Related Work on Interstate 95

Proponent: MassDOT
ID Number: 612048
Project Type: Interstate Pavement
Cost: \$16,082,742
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

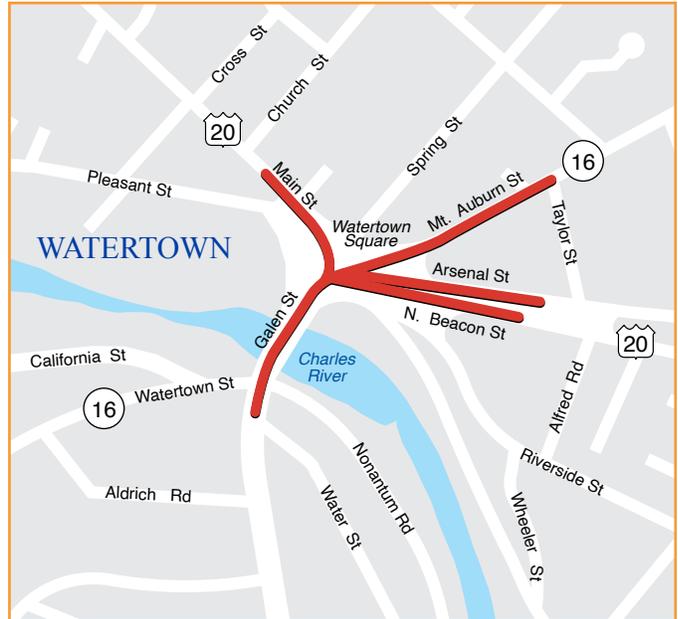
Project Description

This project will resurface Interstate 95 in Waltham between Route 2 and Route 20, a distance of approximately four miles.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$14,474,468	—	—	—	\$14,474,468
Non-Federal Funds	—	\$1,608,274	—	—	—	\$1,608,274
Total Funds	---	\$16,082,742	---	---	---	\$16,082,742

Watertown: Intersection Improvements at Route 16 and Galen Street

Proponent: MassDOT
ID Number: 608564
Project Type: Intersection Improvements
Cost: \$3,080,230
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

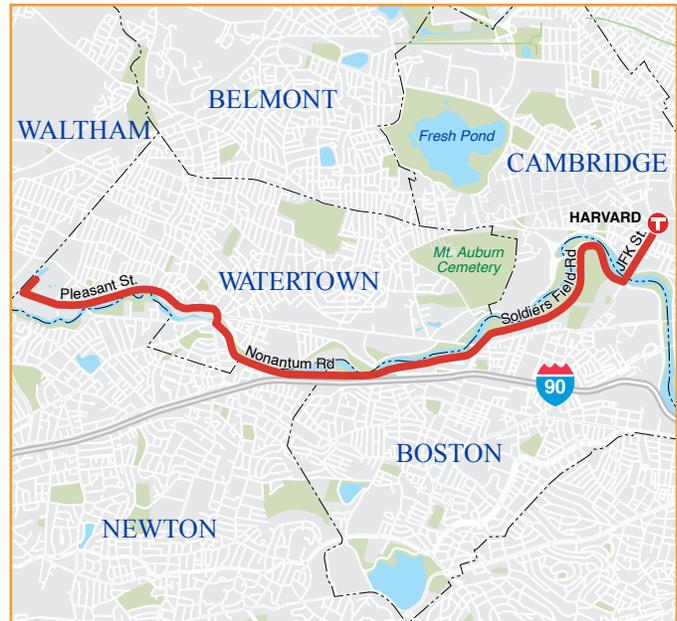
Project Description

This project will make safety improvements to the intersection of Route 16 and Galen Street in Watertown. This location features a 2010–2019 pedestrian crash cluster and a 2017–2019 all-mode crash cluster, making it a high-priority safety improvement location.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	–	\$2,772,207	–	–	–	\$2,772,207
Non-Federal Funds	–	\$308,023	–	–	–	\$308,023
Total Funds	---	\$3,080,230	---	---	---	\$3,080,230

Watertown: Pleasant Street Shuttle Service Expansion

Proponent: Watertown
ID Number: S12697
Project Type: Community Connections
Cost: \$1,002,198
Funding Source: Regional Target Funds



Scoring Summary

Category	Conn	Coord	Plan	TE	MS/DP	FS	Total
Score	18 out of 18	12 out of 15	9 out of 15	9 out of 18	20 out of 24	10 out of 10	78 out of 100

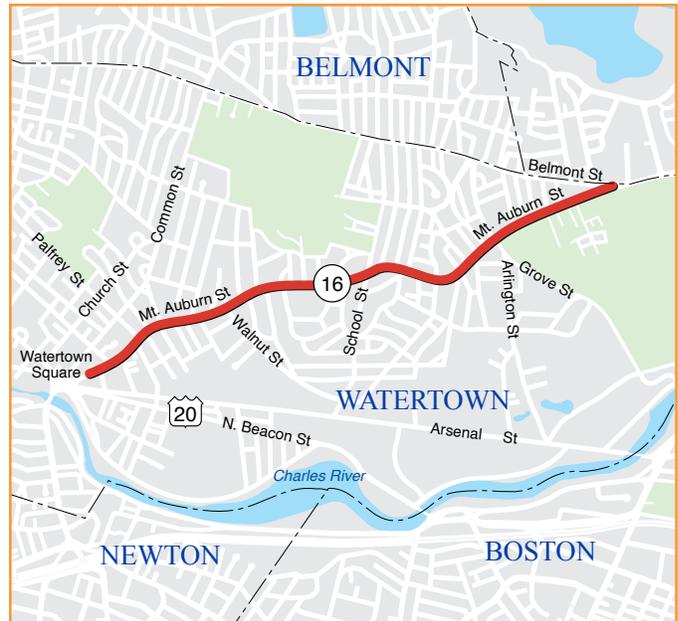
Project Description

This project will expand upon the existing Pleasant Street Shuttle in Watertown, which launched in September 2021 as a partnership between the Town of Watertown and the Watertown TMA. The service runs along a 1.5-mile stretch of Pleasant Street that has no transit service. The primary goal of the project is to provide peak-hour shuttle services connecting businesses and residential locations to major transit hubs in Watertown and Cambridge. This expansion will allow the existing 60-minute headways to be reduced to 30 minutes and will support the transition of the service to an all-electric vehicle fleet. This project is funded through the third round of grants available through the MPO’s Community Connections Program.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$350,260	\$268,347	\$183,151	—	—	\$801,758
Non-Federal Funds	\$87,565	\$67,087	\$45,788	—	—	\$200,440
Total Funds	\$437,825	\$335,434	\$228,939	---	---	\$1,002,198

Watertown: Rehabilitation of Mount Auburn Street (Route 16)

Proponent: Watertown
ID Number: 607777
Project Type: Complete Streets
Cost: \$27,250,087
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	18 out of 30	14 out of 29	18 out of 29	12 out of 16	3 out of 12	10 out of 18	75 out of 134

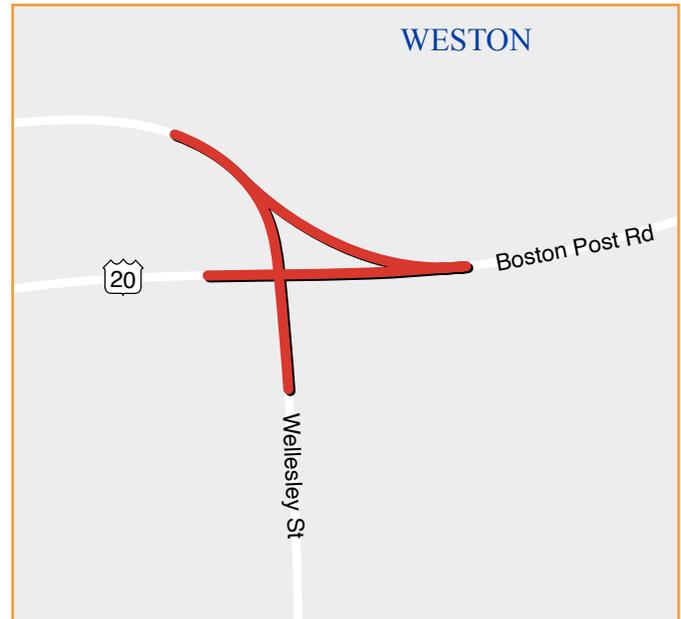
Project Description

The project will reconstruct approximately 9,300 feet of Mount Auburn Street, from the Cambridge city line to the intersection with Summer Street, just east of Watertown Square. The project involves revisions to the roadway geometry, including a roadway diet to reduce the number of lanes; safety improvements; multimodal accommodations, including shared or exclusive bike lanes; improvements to the existing traffic signal equipment; and improved ADA amenities at intersections.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$22,000,,70	—	—	—	—	\$22,000,,70
Non-Federal Funds	\$5,250,017	—	—	—	—	\$5,250,017
Total Funds	\$27,250,087	---	---	---	---	\$27,250,087

Weston: Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street

Proponent: Weston
ID Number: 608940
Project Type: Intersection Improvements
Cost: \$2,681,330
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	15 out of 21	9 out of 17	10 out of 18	8 out of 12	5.6 out of 20	3 out of 12	50.6 out of 100

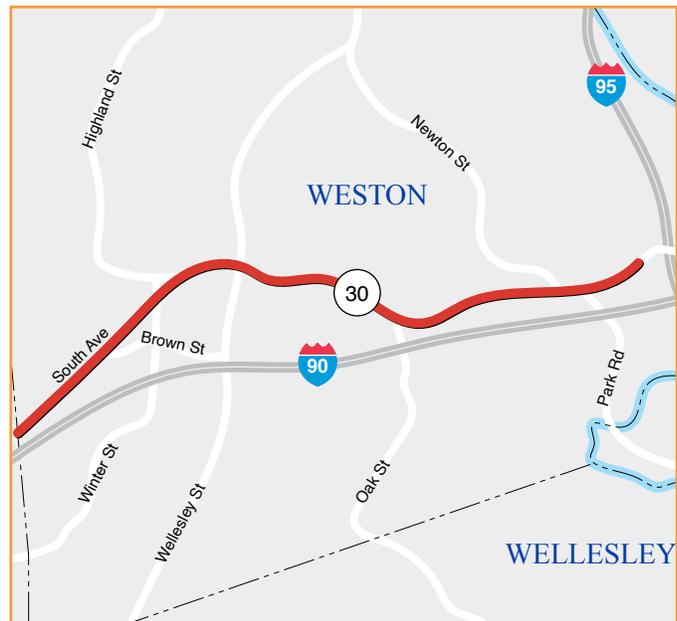
Project Description

This project aims to address the safety concerns and crash incidents that contribute to the intersection's inclusion on the state's HSIP eligibility list as a high-crash location while also seeking to alleviate traffic congestion in the area. The project scope includes the installation of a new traffic signal system, reconfiguring the intersection to address documented safety issues, consolidating pavement area, and the simplification of turning movements. Proposed pedestrian improvements include replacement of sidewalks along the north side of Route 20 and the east side of Boston Post Road. New sidewalk is proposed on the south side of Route 20, the west side of Boston Post Road, and on both sides of Wellesley Street within the immediate intersection limits. The proposed traffic signal system includes protected pedestrian crossings and crosswalks are proposed on all approaches to the intersection. The project also includes the addition of bicycle lanes and improvements to a school bus stop on adjacent Windsor Way.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$2,413,197	—	\$2,413,197
Non-Federal Funds	—	—	—	\$268,133	—	\$268,133
Total Funds	---	---	---	\$2,681,330	---	\$2,681,330

Weston: Reconstruction on Route 30

Proponent: Weston
ID Number: 608954
Project Type: Complete Streets
Cost: \$17,028,272
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	11 out of 18	10 out of 20	10 out of 18	9 out of 12	6.2 out of 20	3 out of 12	49.2 out of 100

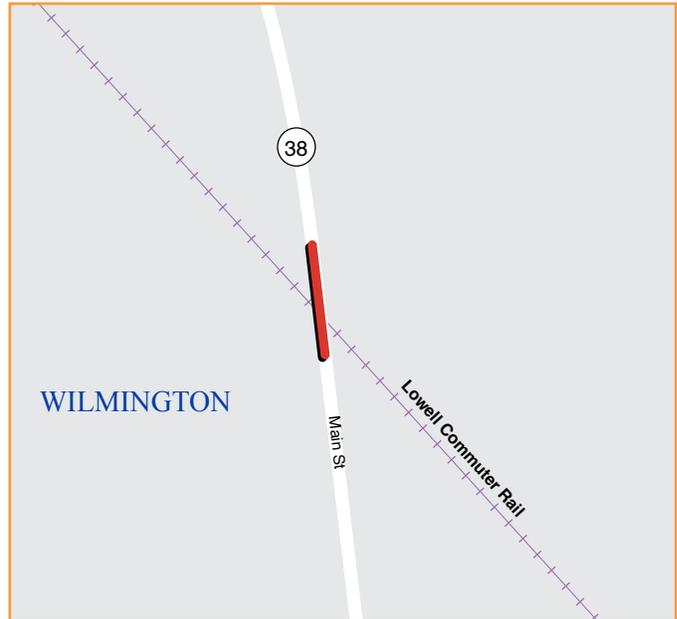
Project Description

This project will improve pavement and roadway conditions along a 3.7-mile segment of Route 30 and make geometric and safety improvements at intersections along the corridor. A key goal of the project is to create a corridor that better serves all users, especially those who are walking and bicycling. To that end, this project will construct a 10-foot off-road shared-use path along the full length of the project. The path will run along the south side of the roadway from the Natick town line to the intersection at Newton Street, crossing to the north side at Newton Street to continue to the end of the project limits. This path will connect with other proposed bicycle and pedestrian accommodations in the area, including on the Route 30 bridge over the Charles River (project number 110980, funded by the MPO in FFY 2024) and on Route 30 in Newton (project number 610674, funded by MassDOT in FFY 2023).

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	—	\$13,622,618	—	\$13,622,618
Non-Federal Funds	—	—	—	\$3,405,654	—	\$3,405,654
Total Funds	---	---	---	\$17,028,272	---	\$17,028,272

Wilmington: Bridge Replacement, W-38-002, Route 38 (Main Street) over the B&M Railroad

Proponent: MassDOT
ID Number: 607327
Project Type: Bridge
Cost: \$12,662,437
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

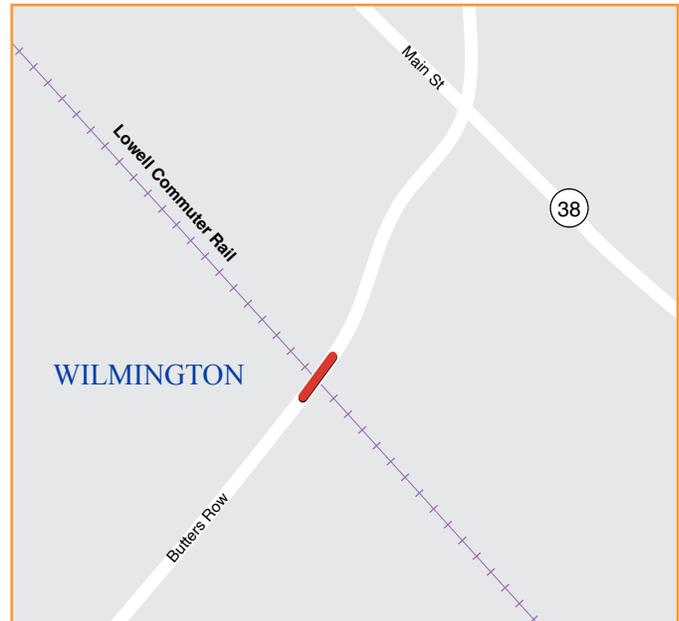
Project Description

This project will replace the bridge that carries Route 38 (Main Street) over the B&M Railroad in Wilmington. This project connects at its northern and southern ends with project number 608051, the Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn city line. This project is funded using \$24,644,177 in MPO Regional Target funds in FFY 2025.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$10,097,950	—	—	—	—	\$10,097,950
Non-Federal Funds	\$2,524,487	—	—	—	—	\$2,524,487
Total Funds	\$12,662,437	—	---	---	---	\$12,662,437

Wilmington: Bridge Replacement, W-38-003, Butters Row over MBTA

Proponent: MassDOT
ID Number: 608929
Project Type: Bridge
Cost: \$10,225,199
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

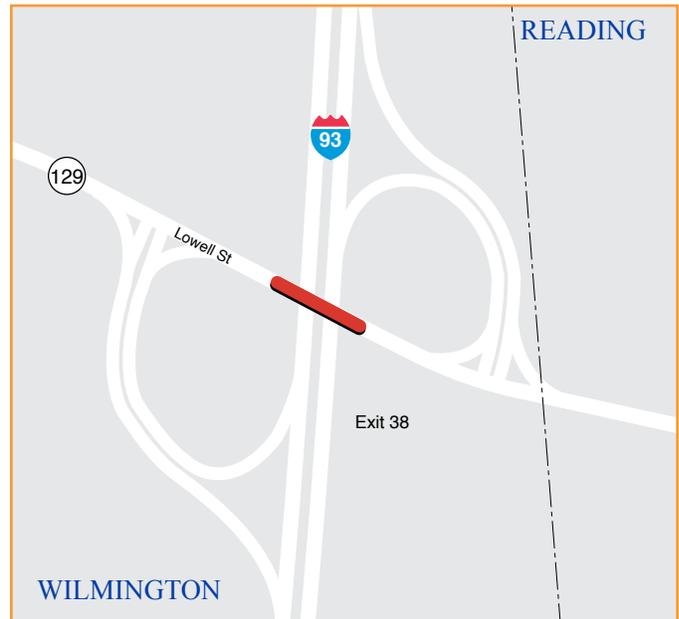
Project Description

This project will replace bridge W-38-003, which carries Butters Row over the MBTA commuter rail tracks.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$8,180,159	—	—	—	—	\$8,180,159
Non-Federal Funds	\$2,045,040	—	—	—	—	\$2,045,040
Total Funds	\$10,225,199	---	---	---	---	\$10,225,199

Wilmington: Bridge Replacement, W-38-029 (2KV), Route 129 (Lowell Street) over Interstate 93

Proponent: MassDOT
ID Number: 608703
Project Type: Bridge
Cost: \$15,951,816
Funding Source: Statewide Highway Funds



Scoring Summary

This is a MassDOT-prioritized project and is therefore not directly evaluated using the MPO’s TIP scoring criteria.

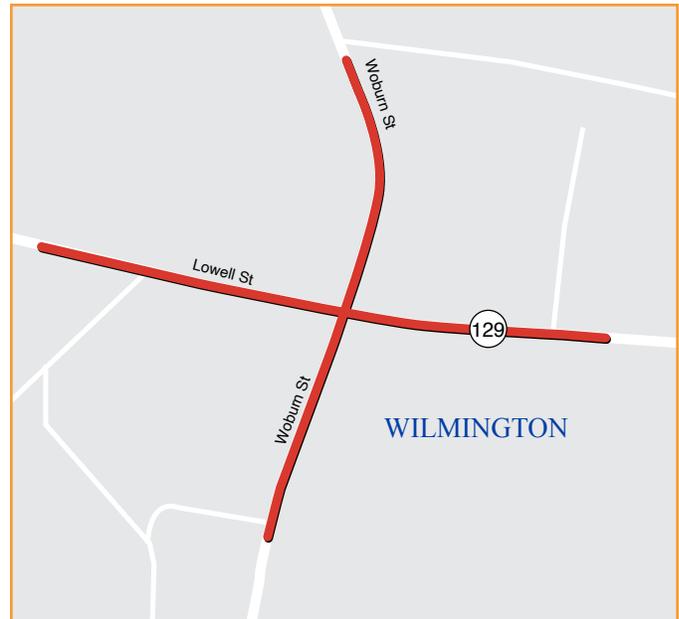
Project Description

This project will replace bridge W-38-029 (2KV), which carries Route 129 (Lowell Street) over Interstate 93.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$12,761,453	—	—	\$12,761,453
Non-Federal Funds	—	—	\$3,190,363	—	—	\$3,190,363
Total Funds	---	---	\$15,951,816	---	---	\$15,951,816

Wilmington: Intersection Improvements at Lowell Street (Route 129) and Woburn Street

Proponent: Wilmington
ID Number: 609253
Project Type: Intersection Improvements
Cost: \$6,441,358
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	13 out of 30	12 out of 29	16 out of 29	9 out of 16	1 out of 12	2 out of 18	53 out of 134

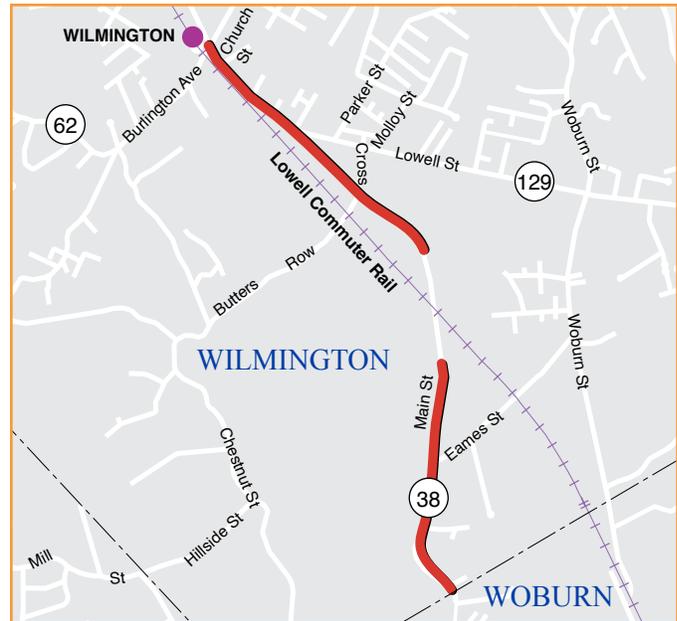
Project Description

This project involves traffic safety and efficiency improvements at the intersection of Lowell Street (Route 129) and Woburn Street. The improvements include geometric modification of the roadway along the eastbound approach of Lowell Street to improve intersection visibility. The construction of new pedestrian signals and crosswalks for all approaches will address current pedestrian safety issues in the intersection. In addition, bicycle lanes will be constructed on both roadways within the project limits.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$5,283,259	—	—	—	—	\$5,283,259
Non-Federal Funds	\$1,158,100	—	—	—	—	\$1,158,100
Total Funds	\$6,441,358	---	---	---	---	\$6,441,358

Wilmington: Reconstruction on Route 38 (Main Street), from Route 62 to the Woburn City Line

Proponent: MassDOT
ID Number: 608051
Project Type: Complete Streets
Cost: \$24,644,177
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	15 out of 30	12 out of 29	13 out of 29	10 out of 16	1 out of 12	8 out of 18	59 out of 134

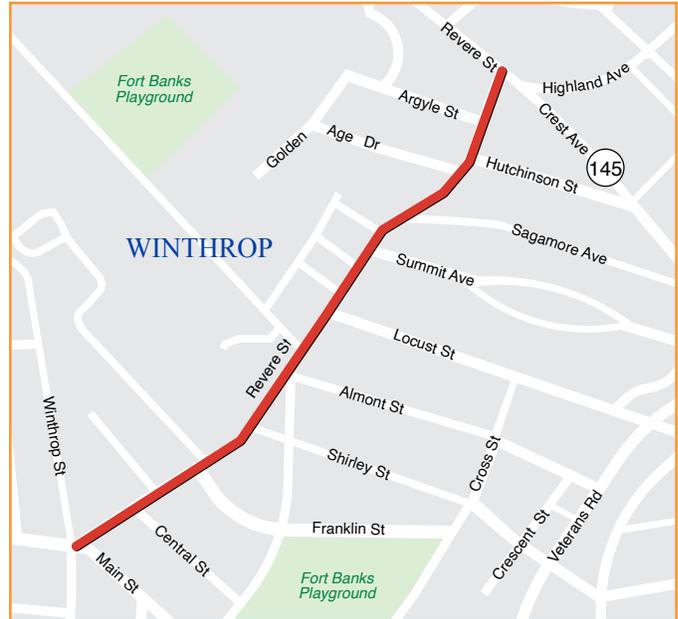
Project Description

This project includes the addition of five-foot bicycle lanes along both sides of the roadway along the Route 38 corridor. Sidewalks will also be provided along both sides of the roadway between Route 62 and Route 129. In addition, improved traffic signals and the reconstruction of turn lanes will enhance pedestrian safety and improve vehicular flow. This project is bisected at its midpoint by project number 607327, Bridge Replacement, W-38-002, Route 38 (Main Street) over the B&M Railroad. This project is funded using \$12,662,437 in statewide highway funds in FFY 2023.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$19,815,342	—	—	\$19,815,342
Non-Federal Funds	—	—	\$4,828,835	—	—	\$4,828,835
Total Funds	---	---	\$24,644,177	---	---	\$24,644,177

Winthrop: Reconstruction and Related Work along Winthrop Street and Revere Street Corridor

Proponent: Winthrop
ID Number: 607244
Project Type: Complete Streets
Cost: \$6,617,959
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	11 out of 30	14 out of 29	12 out of 29	8 out of 16	4 out of 12	5 out of 18	54 out of 134

Project Description

This project will include pavement reconstruction and reclamation, sidewalk reconstruction, and intersection improvements at key locations along the corridor. Improvements to the bicycle and pedestrian conditions will be implemented.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	\$5,294,367	—	—	—	—	\$5,294,367
Non-Federal Funds	\$1,323,592	—	—	—	—	\$1,323,592
Total Funds	\$6,617,959	---	---	---	---	\$6,617,959

Woburn: Roadway and Intersection Improvements at Woburn Common, Route 38 (Main Street), Winn Street, Pleasant Street, and Montvale Avenue

Proponent: Woburn
ID Number: 610622
Project Type: Complete Streets
Cost: \$15,530,400
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	22 out of 30	15 out of 29	16 out of 29	10 out of 16	4 out of 12	8 out of 18	75 out of 134

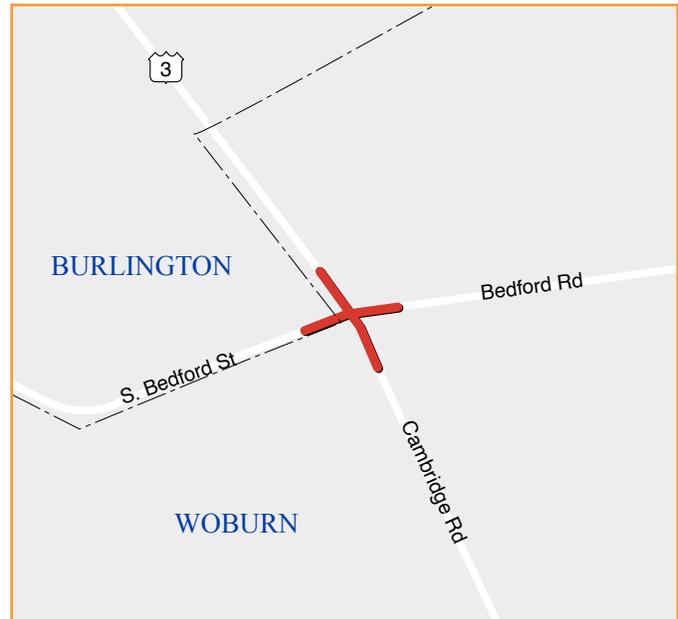
Project Description

The primary goals for this project are to improve safety for drivers, pedestrians, and bicyclists while improving congestion within the Woburn Common area. The project consists of safety and operational improvements and includes the reconfiguration of the Woburn Common rotary to a more traditional configuration. The project will include roadway reconstruction, roadway realignment, sidewalk reconstruction, and the addition of bicycle lanes. One new signal will be added and two existing signals will be replaced. The project will be consistent with Woburn’s adopted Complete Streets policy.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	—	\$12,724,320	—	—	\$12,724,320
Non-Federal Funds	—	—	\$2,806,080	—	—	\$2,806,080
Total Funds	---	---	\$15,530,400	---	---	\$15,530,400

Woburn and Burlington: Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street

Proponent: MassDOT
ID Number: 608067
Project Type: Intersection Improvements
Cost: \$1,555,200
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	9 out of 30	11 out of 29	19 out of 29	7 out of 16	2 out of 12	4 out of 18	52 out of 134

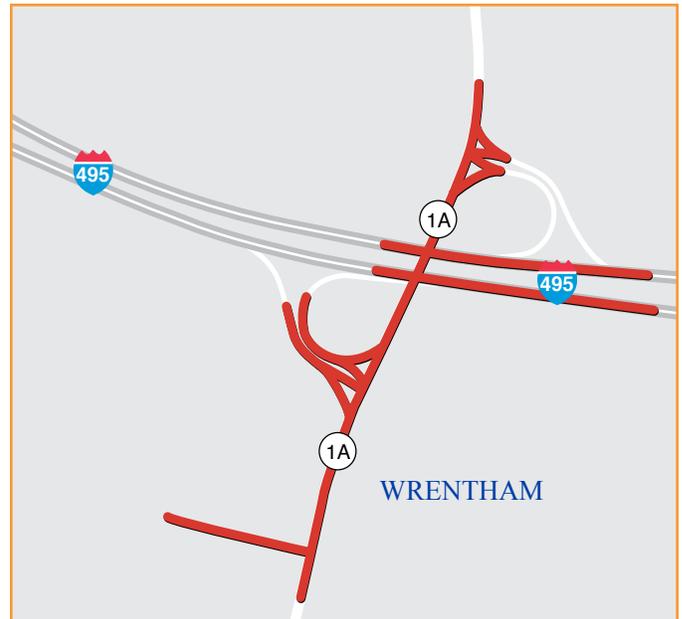
Project Description

The intersection of U.S. Route 3 (Cambridge Street) at South Bedford Street and Bedford Road has been identified as a high-crash location in the Boston region. The existing geometry and traffic operations can often present challenges for motorists, pedestrians, and bicyclists. This project will reconstruct the intersection and all traffic signal equipment. Geometry enhancements will be made to accommodate exclusive turn lanes for all approaches to the intersection. The project will include reconstruction of the sidewalk along the east side of Cambridge Street and both sides of the Bedford Road westbound approach, and new sidewalk will be constructed on the south side of South Bedford Street. Bicycle accommodations consisting of five-foot wide bicycle lanes (with two-foot wide buffers where feasible) will be provided, as will ADA-compliant MBTA bus stops on Cambridge Street.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	--	--	\$1,244,160	--	--	\$1,244,160
Non-Federal Funds	--	--	\$311,040	--	--	\$311,040
Total Funds	---	---	\$1,555,200	---	---	\$1,555,200

Wrentham: Construction of Interstate 495/Route 1A Ramps

Proponent: MassDOT
ID Number: 603739
Project Type: Major Infrastructure
Cost: \$15,587,884
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	23 out of 30	11 out of 29	12 out of 29	9 out of 16	0 out of 12	0 out of 18	55 out of 134

Project Description

This project consists of the construction of ramps at the interchange of Route 1A and Interstate 495 to accommodate increased volumes resulting from development at the interchange. The design may proceed by developers and, depending on cost and scale of development proposals, MassDOT may incorporate ramp construction into a highway project. Future mitigation packages for developers may involve a median island to meet MassDOT's and the Town of Wrentham's long-range plan for the interchange.

Source	(FFY) 2023	2024	2025	2026	2027	Total
Federal Funds	—	\$12,720,307	—	—	—	\$12,720,307
Non-Federal Funds	—	\$2,867,577	—	—	—	\$2,867,577
Total Funds	---	\$15,587,884	---	---	---	\$15,587,884



CHAPTER 4

Performance Analysis

PERFORMANCE-BASED PLANNING AND PROGRAMMING

A performance-based approach to making transportation investments can help metropolitan planning organizations (MPOs), states, and other entities achieve desired outcomes for the people and places they serve. Performance-based planning and programming (PBPP) applies data and performance management principles to inform decision-making. The purpose of PBPP is to ensure that transportation investment decisions—both for long-term planning and short-term funding—are oriented toward meeting established goals. Performance-based planning and programming activities include the following:

- 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 investment decisions
- Monitoring, analyzing, and reporting decision outputs and performance outcomes

The Boston Region MPO's PBPP process is shaped by both federal transportation performance management requirements and the MPO's goals and objectives, which are established as part of the MPO's Long-Range Transportation Plan (LRTP). This chapter discusses how these two frameworks shape the MPO's PBPP process and describes the MPO's current set of performance measures and targets. It also explains how the MPO anticipates the projects included in this Transportation Improvement Program (TIP) will support improvements in various performance areas and make progress toward performance targets

Federal Performance Management Requirements

The Moving Ahead for Progress in the 21st Century Act (MAP-21) directed states, MPOs, and public transportation providers to carry out a performance and outcome-based surface transportation program. These requirements have been continued under the current federal transportation funding law, the Bipartisan Infrastructure Law (BIL). MAP-21 identified seven national goals for the nation's highway system, which are described in detail in Appendix E. Table 4-1 shows the relationship between these national goal areas and the MPO's goal areas. The MPO's goals and related objectives, as approved by the MPO in the LRTP, *Destination 2040*, are described in more detail in Chapter 1 of this document.

Table 4-1
National and Boston Region MPO Goal Areas

National Goal Area	Boston Region MPO Goal Areas
Safety	Safety
Infrastructure Condition	System Preservation and Modernization
System Reliability	Capacity Management and Mobility
Congestion Reduction	Capacity Management and Mobility
Environmental Sustainability	Clean Air and Sustainable Communities
Freight Movement/Economic Vitality	Capacity Management and Mobility, Economic Vitality
Reduced Project Delivery Delays	Not Applicable
Not Applicable	Transportation Equity

Source: Boston Region Metropolitan Planning Organization staff.

The federal PBPP mandate first established through MAP-21 is also designed to help the nation’s public transportation systems provide high-quality service to all users, including people with disabilities, seniors, and individuals who depend on public transportation.

The US Department of Transportation (USDOT), in consultation with states, MPOs, and other stakeholders, has established measures in performance areas relevant to the aforementioned national goals through a series of federal rulemakings. Table 4-2 lists federally required performance measures for the transit system and Table 4-3 lists federally required performance measures for the roadway system.

Table 4-2
Federally Required Transit Performance Measures

National Goal Area	Transit Performance Area or Asset Category	Performance Measures	Relevant MPO Goal Area
Safety	Fatalities	<ul style="list-style-type: none"> • Total number of reportable fatalities • Fatality rate per total VRM by mode 	Safety
Safety	Injuries	<ul style="list-style-type: none"> • Total number of reportable injuries • Injury rate per total VRM by mode 	Safety
Safety	Safety Events	<ul style="list-style-type: none"> • Total number of reportable safety events • Safety event rate per total VRM by mode 	Safety
Safety	System Reliability	<ul style="list-style-type: none"> • Mean distance between major mechanical failures by mode 	Safety
Infrastructure Condition	Equipment	<ul style="list-style-type: none"> • Percent of vehicles that have met or exceeded their ULB 	System Preservation and Modernization
Infrastructure Condition	Rolling Stock	<ul style="list-style-type: none"> • Percent of revenue vehicles within a particular asset class that have met or exceeded their ULB 	System Preservation and Modernization
Infrastructure Condition	Infrastructure	<ul style="list-style-type: none"> • Percent of track segments with performance restrictions 	System Preservation and Modernization
Infrastructure Condition	Facilities	<ul style="list-style-type: none"> • Percent of facilities within an asset class rated below 3.0 on the Federal Transit Administration's Transit Economic Requirements Model scale 	System Preservation and Modernization

CFR = Code of Federal Regulations. MPO = metropolitan planning organization. ULB = useful life benchmark. VRM = vehicle-revenue miles.

Sources: National Public Transportation Safety Plan (January 2017), the Public Transportation Agency Safety Plan Rule (Title 49 CFR Part 673), and the Transit Asset Management Rule (49 CFR Part 625).

Table 4-3
Federally Required Roadway Performance Measures

National Goal Area	Roadway Performance Area	Performance Measures	Relevant MPO Goal Area
Safety	Injuries and Fatalities	<ul style="list-style-type: none"> • Number of fatalities • Fatality rate per 100 million vehicle-miles traveled • Number of serious injuries • Serious injury rate per 100 million vehicle-miles traveled • Number of non-motorized fatalities and non-motorized serious injuries 	Safety
Infrastructure Condition	Pavement Condition	<ul style="list-style-type: none"> • Percent of pavements on the Interstate System in good condition • Percent of pavements on the Interstate System in poor condition • Percent of pavements on the non-Interstate NHS in good condition • Percent of pavements on the non-Interstate NHS in poor condition 	System Preservation and Modernization
Infrastructure Condition	Bridge Condition	<ul style="list-style-type: none"> • Percent of NHS bridges by deck area classified as in good condition • Percent of NHS bridges by deck area classified as in poor condition 	System Preservation and Modernization
System Reliability	Performance of the National Highway System	<ul style="list-style-type: none"> • Percent of the person-miles traveled on the Interstate System that are reliable • Percent of the person-miles traveled on the non-Interstate NHS that are reliable 	Capacity Management/ Mobility
System Reliability, Freight Movement and Economic Vitality	Freight Movement on the Interstate System	<ul style="list-style-type: none"> • Truck Travel Time Reliability Index (for truck travel on Interstate highways) 	Capacity Management/ Mobility, Economic Vitality
Congestion Reduction	Congestion Mitigation and Air Quality	<ul style="list-style-type: none"> • Annual hours of peak hour excessive delay per capita (for travel on NHS roadways) • Percentage of non-single-occupant vehicle travel 	Capacity Management/ Mobility
Environmental Sustainability	Congestion Mitigation and Air Quality	<ul style="list-style-type: none"> • Total emissions reduction for applicable pollutants and precursors for CMAQ-funded projects in designated nonattainment and maintenance areas* 	Clean Air/ Sustainable Communities

* According to the Federal Highway Administration's 2021 CMAQ Program performance requirements applicability determination, the Boston Region MPO area contains an area designated as in maintenance for carbon monoxide, so the MPO is currently required to monitor and set targets for this performance measure

CFR = Code of Federal Regulations. CMAQ = Congestion Mitigation and Air Quality Improvement Program. MPO = metropolitan planning organization. NHS = National Highway System.

Sources: Highway Safety Improvement Program Rule (23 CFR 924), National Performance Management Measures Rule (23 CFR 490), and the Boston Region MPO staff.

These performance measures and relevant performance targets are discussed in more detail later in this chapter.

Other Performance-Based Planning and Programming Activities

The MPO's PBPP process must respond to the federal performance management requirements established in MAP-21, but it can also address other areas that pertain to its federally mandated responsibilities or relate to the MPO's goals and objectives. For example, federal performance requirements do not specify transportation equity performance measures for states and MPOs to monitor. However, the MPO has established a transportation equity goal and a set of objectives to 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.

To comply with relevant federal regulations, which are described in Chapter 6 and Appendix E, the MPO systematically addresses the concerns of populations that these regulations protect—referred to here as *transportation equity populations*—throughout the planning process, including when selecting projects through the TIP process. Regular equity performance monitoring enables the MPO to better understand how transportation equity populations in the region may be affected by transportation investment decisions, so that it can decide whether and how to adjust its investment approach. More details about transportation equity monitoring for projects in the Federal Fiscal Years (FFYs) 2023–27 TIP are included in Chapter 6.

To build a comprehensive PBPP practice, the MPO can also choose to monitor or set targets for additional performance measures, which are not federally required, that apply to its goal areas. For example, while the federally required travel time reliability measures discussed in Table 4-3 apply to the MPO's Capacity Management and Mobility goal, the MPO may wish to examine measures that account for roadways that are not on the National Highway System (NHS) or other travel modes. Over the coming years, the MPO will examine whether and how to incorporate other performance measures and practices into its PBPP process.

PERFORMANCE-BASED PLANNING AND PROGRAMMING PHASES

States, MPOs, and public transportation providers integrate federally required performance measures—and other measures, as desired—into their respective PBPP processes, which involve three key phases focused on (1) planning, (2) investing, and (3) monitoring and evaluating performance outcomes.

Planning Phase

In the planning phase, agencies set goals and objectives for the transportation system, identify performance measures, and set performance targets that will guide their decision-making. They identify and acquire data and conduct analyses necessary to support these processes. They also outline the frameworks they will use to make decisions in key planning documents.

The Commonwealth of Massachusetts creates performance-based plans, such as the Strategic Highway Safety Plan (SHSP) for improving roadway safety and the Transportation Asset Management Plan (TAMP) for improving infrastructure condition, particularly for NHS roads and bridges. Similarly transit providers—including the Massachusetts Bay Transportation Authority (MBTA), MetroWest Regional Transit Authority (MWRTA), and Cape Ann Transportation Authority (CATA)—create Transit Asset Management (TAM) plans and Public Transportation Agency Safety Plans (PTASPs) that describe the data and processes these agencies will use to address transit state of good repair and safety needs. The Commonwealth is responsible for setting performance targets for the federally required roadway performance measures described in Table 4-3, while transit agencies must set targets for the measures described in Table 4-2.

The Boston Region MPO's activities in the planning phase include creating a goals-and-objectives framework in its LRTP and other performance-based plans—such as Congestion Mitigation and Air Quality Improvement (CMAQ) Program Performance Plans—as necessary. MPOs integrate elements of state and transit agency performance plans, such as their goals and performance targets, into MPO planning processes. MPOs also establish targets for federally required performance measures. To set these targets, the Boston Region MPO may elect to support performance targets set by the Massachusetts Department of Transportation (MassDOT) or public transit providers (depending on the measure), or it may set separate targets for the MPO's planning area. MassDOT and the transit agencies will update their performance targets based on defined cycles, which vary for each measure. More information about the update cycles for these measures is included in the FFYs 2023–27 Performance Analysis section of this chapter.

Investing Phase

In the investing phase, agencies use the PBPP framework established in the planning phase to create strategies for investing transportation funding. When updating the LRTP, the MPO establishes investment programs and funding guidelines to help direct Regional Target funds to priority areas (see Chapter 2 for details). When updating the TIP, the MPO selects projects that it will fund through these programs. MPO members rely on several sets of information when making these decisions:

- **TIP Project Evaluation Criteria:** Project evaluations based on the MPO's TIP project evaluation criteria, which are described in detail in Chapter 2 and Appendix A, help the MPO understand the potential benefits and performance impacts of projects that are candidates for funding. This information helps the MPO direct its Regional Target dollars toward investments that will help achieve its goals. The MPO completed a comprehensive review and update of its project evaluation criteria in October 2020 and, as part of this process, MPO staff considered ways to incorporate federally required performance measures into revised criteria for the MPO's various goal areas and investment programs. Several of the MPO's criteria pertaining to its Safety, System Preservation and Modernization, Capacity Management and Mobility, and Clean Air/Sustainable Communities goals relate to federally required measures; more information is available in the FFYs 2023–27 Performance Analysis section. Information that the MPO gathers to support its project evaluations can be used to anticipate the impacts that its investments may have on performance in these areas.

- **Supporting Performance Information:** The MPO considers other information in concert with project evaluation results and investment program guidelines when it selects projects. This supplementary information may include data about how projects relate to federally required performance measures, details about how the MPO has distributed Regional Target funds to MPO municipalities in the past, or notes about how projects address location-specific issues, such as those identified in the MPO's LRTP Needs Assessment.

Meanwhile, MassDOT, the MBTA, CATA, and MWRTA follow their respective processes to select projects and programs for inclusion in the MassDOT Capital Investment Plan (CIP). The federally funded investments that are included in the CIP are also documented in the MPO's TIP and in the State Transportation Improvement Program (STIP).

Once the MPO board allocates its Regional Target dollars to specific investments and considers capital programs submitted by MassDOT, MBTA, and the region's RTAs, it documents the full set of investments for the Boston region in the TIP. The TIP describes links between these short-term capital investment priorities and performance measures and targets. It also discusses, to the extent practicable, how the MPO anticipates these investments will help the MPO achieve its targets. States must provide similar information in their STIPs.

Monitoring and Evaluating Phase

After making plans and investments, agencies take stock of their progress by reviewing and reporting on their performance outputs and outcomes. Activities in the monitoring and evaluating phase include tracking trends, collecting data to understand the results of investment decisions, and comparing targets to actual performance. For example, the MPO can compare information from the TIP about the expected performance outcomes of its investments with information about past and current performance, which is collected for the LRTP, to determine if its investments are helping it make progress towards its goals, objectives, and performance targets. The MPO may also conduct TIP Before-and-After studies to learn more about how the actual outcomes of TIP projects compare to expectations. These evaluation methods allow the MPO to make necessary trade-offs or adjust its investment approach in the future.

In addition to reporting measures, targets, and performance progress in its LRTP, the Boston Region MPO describes performance on various transportation metrics through its Congestion Management Process (CMP) and tools such as the MPO's Performance Dashboard. MassDOT reports performance targets and progress to the Federal Highway Administration (FHWA) through an online reporting tool, through the STIP and other required reports, and on the MassDOT Performance Management Tracker website. Public transit providers report their targets and performance progress information to the Federal Transit Administration (FTA), including through the National Transit Database (NTD).

Coordination

To support the activities discussed above, federal transportation agencies require states, public transit operators, and MPOs to coordinate with one another and to share information and data to ensure consistency across processes. In Massachusetts, these coordination responsibilities

are outlined in the 2019 Performance-Based Planning and Programming Agreement between MassDOT, Massachusetts MPOs and transportation planning organizations, the MBTA, and RTAs operating in Massachusetts.

Staff from Massachusetts MPOs, MassDOT staff, and other stakeholders coordinate on PBPP implementation through the Transportation Program Managers Group, including through its subcommittee on performance measures. For performance measures that states and MPOs track at the Boston MA-NH-RI Urbanized Area (UZA) level, coordination responsibilities are documented in the 2018 Boston MA-NH-RI UZA Memorandum of Understanding.¹ The Boston Region MPO is also a signatory to the Providence RI-MA UZA and the Worcester MA-CT UZA memoranda of understanding—these agreements define intergovernmental coordination responsibilities and activities that may support PBPP.

FFYS 2023–27 PERFORMANCE ANALYSIS

This section discusses investments in the FFYs 2023–27 TIP and how they may relate to elements of the MPO’s PBPP framework, including the MPO’s goals and performance measures and targets. For each goal area, existing performance targets are identified and information on relevant trends, performance measures, TIP investments, and related planning activities is provided. These descriptions generally focus on investments of the MPO’s Regional Target funds, although they may also describe MassDOT or transit agency-funded investments, where applicable. Information specific to the MPO’s Transportation Equity goal area is included in Chapter 6 and details about investments that will be made by the MPO, MassDOT, the MBTA, CATA, and MWRTA are included in Chapter 3. Appendix A includes a table summarizing the impacts each Regional Target project is expected to have on performance areas discussed in this chapter.

Safety Performance

Relevant Goals, Policies, and Plans

One of the MPO’s goals is that transportation by all modes will be safe. The MPO has committed to investing in projects and programs that aim to reduce the number and severity of crashes for all modes, and the number of serious injuries and fatalities occurring on the transportation system. Similarly, the Massachusetts SHSP includes a long-term goal to move “towards zero deaths” by eliminating fatalities and serious injuries on the Commonwealth’s roadways.²

The Massachusetts SHSP is a statewide, coordinated plan that addresses requirements for the federal Highway Safety Improvement Program (HSIP) and provides a comprehensive framework for improving safety on all public roads in the Commonwealth. It outlines interim and long-term goals for improving safety performance and identifies strategies and policies for addressing

¹ Urbanized Areas are defined by the US Census Bureau to represent the urban cores of metropolitan areas. The Boston MA-NH-RI UZA includes the 97 municipalities in the Boston Region MPO and includes portions of neighboring MPOs in eastern Massachusetts, New Hampshire, and Rhode Island.

² Massachusetts Department of Transportation, Massachusetts Strategic Highway Safety Plan (2018), pg. 1, accessed March 8, 2022. www.mass.gov/doc/massachusetts-shsp-2018/download

safety emphasis areas. The Commonwealth’s Bicycle Transportation and Pedestrian Transportation Plans also include initiatives and actions intended to make walking and biking safer.³

Similar to the SHSP, the major transit providers in the Boston region—the MBTA, MWRTA, and CATA—produce PTASPs that describe how they will implement safety management systems (SMS).⁴ SMS is a “formal, top-down, organization-wide data-driven approach to managing safety risks and assuring the effectiveness of safety risk mitigations [that] includes systematic procedures, practices, and policies for managing risks and hazards.”⁵ Transit providers support SMS through safety management policies, safety risk management strategies, safety assurance methods (which include performance monitoring), and safety promotion (including training and communication practices). These PTASPs also describe the performance targets these agencies set for measures outlined in the National Public Transportation Safety Plan.

Roadway Safety Performance Measures and Targets

The Commonwealth of Massachusetts and the Boston Region MPO track crashes, fatalities, and injuries involving motor vehicles using information from the Massachusetts Crash Data System and the National Highway Traffic Safety Administration’s (NHTSA’s) Fatality Analysis and Reporting System (FARS). These data inform the targets the Commonwealth and the MPO must set each calendar year (CY) for five federally required roadway safety performance measures, which are also listed in Table 4-3:

- Number of fatalities
- Fatality rate per 100 million vehicle-miles traveled (VMT)
- Number of serious injuries
- Serious injury rate per 100 million VMT
- Number of nonmotorized fatalities and nonmotorized serious injuries

These measures pertain to fatalities and serious injuries from traffic incidents and apply to all public roads. Values for these measures are expressed as five-year rolling annual averages. States and MPOs update targets for these measures annually. When establishing targets for these measures, the MPOs in Massachusetts can elect to support targets the Commonwealth has set or they can set separate targets for their respective MPO regions.

3 The Commonwealth of Massachusetts’ 2019 *Bicycle Transportation Plan* is available at www.mass.gov/service-details/bicycle-plan, and the 2019 *Pedestrian Transportation Plan* is available www.mass.gov/service-details/pedestrian-plan.

4 MBTA, CATA, and MWRTA 2021 PTASPs are available on the March 31, 2022, page of the MPO meeting calendar. See www.bostonmpo.org/calendar/day/20220331.

5 MBTA, *MBTA Transit Safety Plan (June 3, 2021)*, pg. 13.

The Commonwealth set its most current set of roadway safety performance targets to reflect a CY 2018–22 rolling annual average, as required by FHWA. When setting these targets, the Commonwealth considered the following factors:

- Historic trends for these measures and their component metrics (such as annual VMT)
- Draft 2019 and 2020 values for these measures and their component metrics along with 2021 year-to-date estimates of these measures at the time of target setting (spring and summer 2021)
- Changes in travel behavior and traffic volumes in response to the COVID-19 pandemic, which were considered in VMT projections for CYs 2021 and 2022
- Implementation of changes to meet data-reporting requirements, particularly those that would help law enforcement agencies report injury severity more easily and in a more objective manner
- Implementation of safety improvement policies and strategies, including those pertaining to engineering, enforcement, education, awareness, data collection, and emergency response.
(For example, MassDOT has adopted a speed management focus and safe systems focus, and it continues to implement strategies outlined in the 2018 SHSP and the Statewide Bicycle and Pedestrian Plans.)
- The Commonwealth’s long-term goals of eliminating fatalities and serious injuries on Massachusetts’ roadways

Table 4-4 shows the Commonwealth’s CY 2022 roadway safety performance targets and reiterates the Commonwealth’s long-term targets. MPO memoranda describing the Commonwealth’s safety targets from prior years are available at bostonmpo.org/performance-archive.

Table 4-4
Massachusetts Safety Performance Targets

Performance Measure	CY 2022 Target (2018–22 Average)*	MA Long-Term Target
Number of Fatalities	340.00	0.00
Fatality Rate (per 100M VMT)	0.56	0.00
Number of Serious Injuries	2,504.00	0.00
Serious Injury Rate (per 100M VMT)	4.11	0.00
Number of Nonmotorized Fatalities and Serious Injuries	471.00	0.00

* These targets are expressed as five-year rolling annual averages.

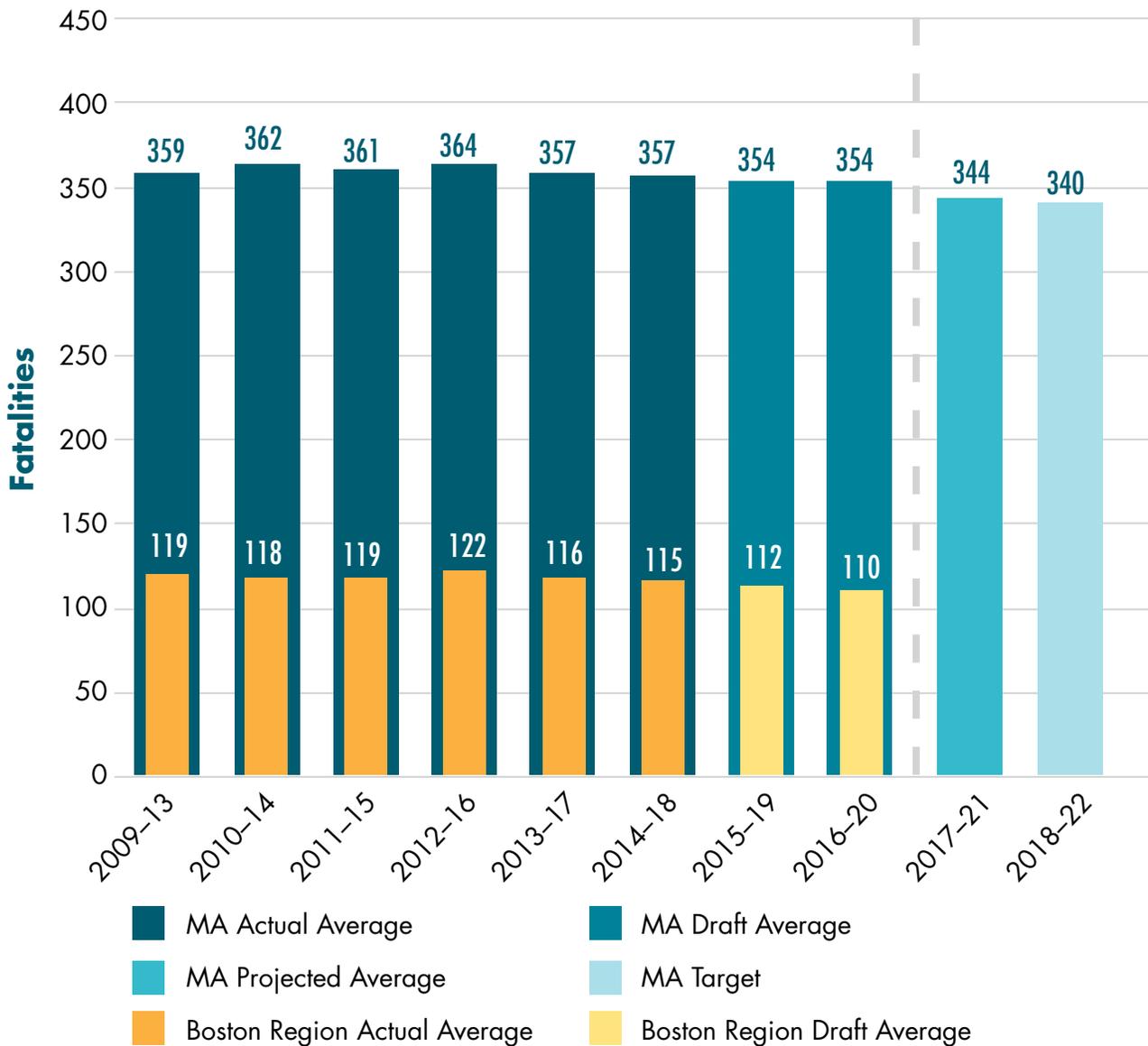
CY = calendar year. M = million. MA = Massachusetts. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.

Sources: Federal Highway Administration, Commonwealth of Massachusetts, Boston Region MPO staff.

Figures 4-1 through 4-5 display actual and draft data, projections, and CY 2022 targets for Massachusetts for each of the roadway safety performance measures. These figures show information that was available in spring and summer 2021, when the Commonwealth was setting CY 2022 targets. In February 2022, the Boston Region MPO reviewed and voted to support the Commonwealth's CY 2022 roadway safety performance targets. This approach reflects the way the MPO will need to collaborate with the Commonwealth on safety strategies to reduce fatalities and injuries in the Boston region, which include education campaigns and driver behavior laws, in addition to the infrastructure investments the MPO may make. Actual and draft data about safety outcomes in the Boston region are also shown in these figures.

Figure 4-1 shows data, projections, and the Commonwealth's CY 2022 target for the number of fatalities. As shown in this chart and in Figure 4-2, five-year rolling averages for fatality-oriented measures at both the Massachusetts level and the Boston region level through 2020 have decreased following a spike in fatalities in 2016. When developing projections and CY 2022 targets in spring and summer 2021, the Commonwealth chose not to incorporate fatality data from 2020, given the effects of the COVID-19 pandemic and related responses on travel behavior. Instead, the Commonwealth assumed that the number of fatalities from motor vehicle crashes that would occur in 2021 would equal the number that occurred in 2019 (336 fatalities). Next, the Commonwealth projected that fatalities would decrease by 2.5 percent between 2021 and 2022, to 328 fatalities. The Commonwealth set this percentage change because it reflected a reasonable but desirable percent change in annual fatalities. Using these projections, finalized fatality data for 2018, and draft data for 2019, the Commonwealth set a target average for 2018–22 of 340 fatalities. As previously mentioned, this target has been set to meet federal roadway safety performance requirements, but the Commonwealth has an overarching goal of zero fatalities and injuries on Massachusetts' roadways.

**Figure 4-1
Number of Fatalities**



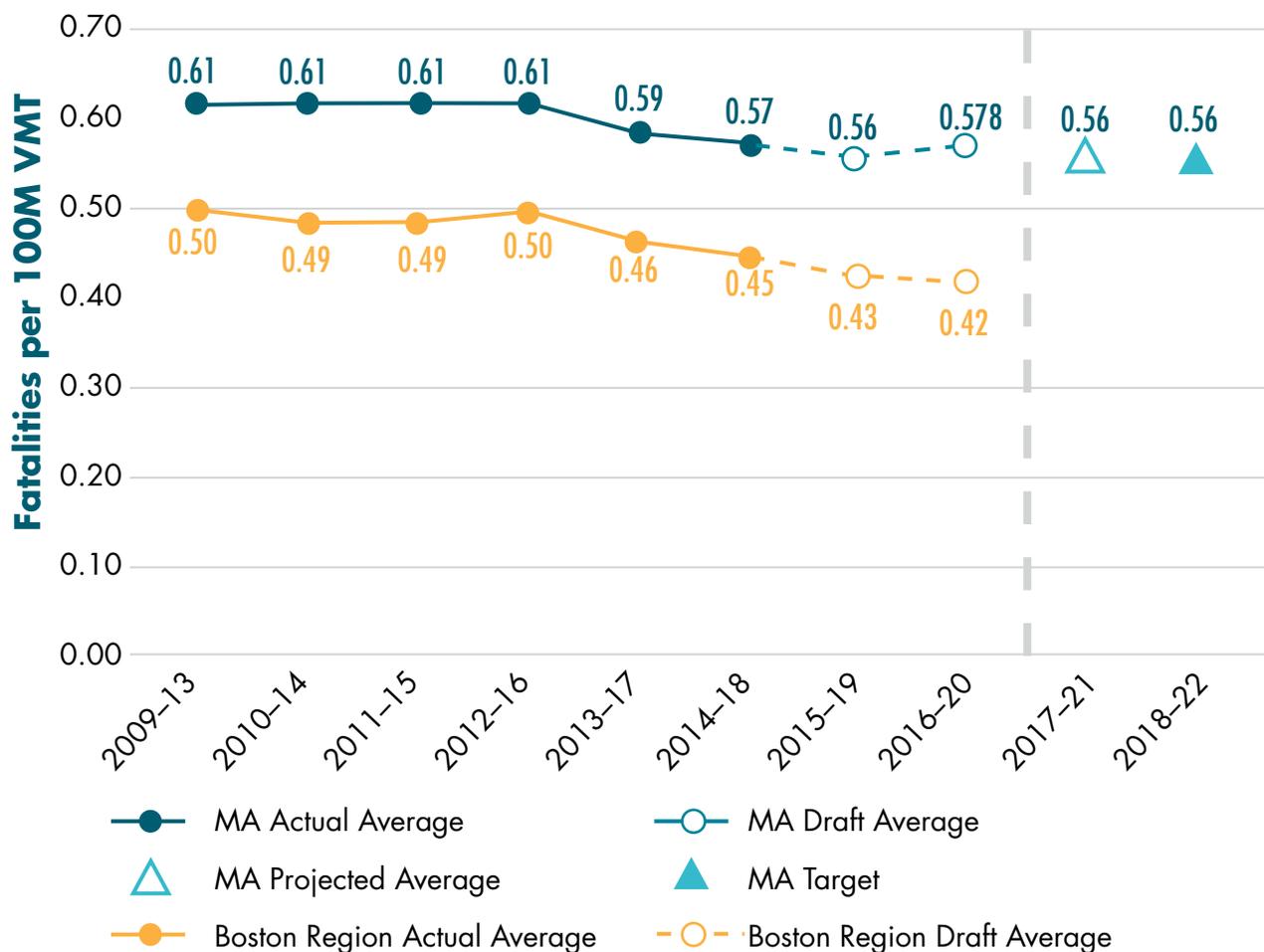
Notes: Values reflect five-year rolling annual averages and have been rounded to the nearest integer. The 2015-19 and 2016-20 averages were calculated in spring 2021 using draft data for 2019 and 2020.

MA = Massachusetts. MPO = metropolitan planning organization.

Sources: National Highway Traffic Safety Administration Fatality Analysis and Reporting System, Massachusetts Department of Transportation, and Boston Region MPO staff.

The Commonwealth estimated fatality rates per 100 million VMT using actual, estimated, or projected values for fatalities, as previously discussed, along with recent and projected values for VMT. Because of the pandemic and related responses, VMT decreased in CY 2020 compared to prior years, though the Commonwealth anticipated that 2021 and 2022 VMT values would be higher, reflecting a gradual return to pre-pandemic levels of travel. Figure 4-2 shows data and projections pertaining to the fatality rate per 100 million VMT, including the Commonwealth's target 2018-22 average of 0.56 fatalities per 100 million VMT.

Figure 4-2
Fatality Rate per 100 Million VMT



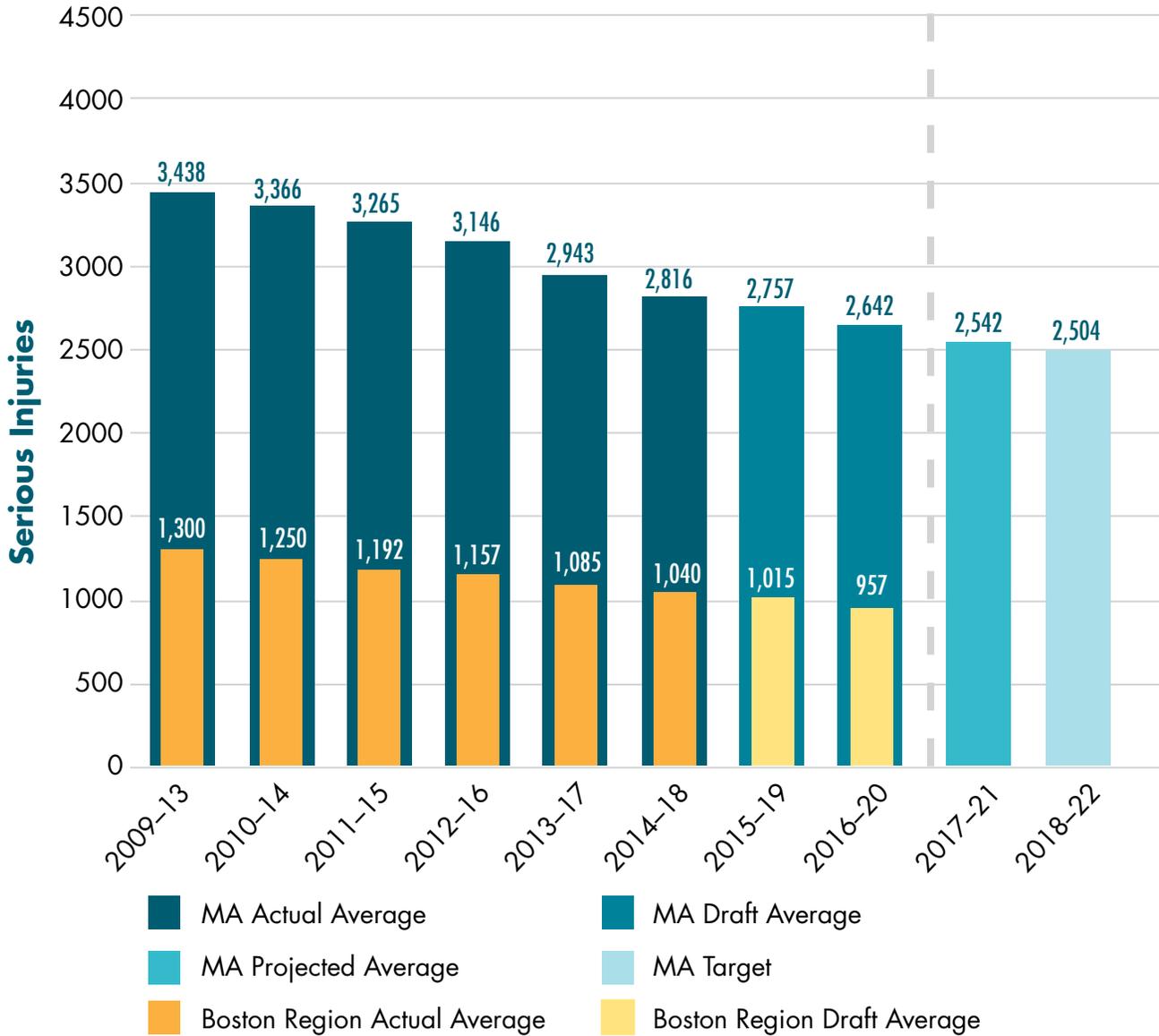
Notes: Values reflect five-year rolling annual averages and have been rounded to the hundredths decimal place. The 2015-19 and 2016-20 averages were calculated in spring 2021 using draft data for 2019 and 2020. MassDOT plans to revisit 2018 VMT data for future target-setting activities.

MA = Massachusetts. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.

Sources: National Highway Traffic Safety Administration Fatality Analysis and Reporting System, Massachusetts Department of Transportation, and Boston Region MPO staff.

Figure 4-3 shows data, projections, and the Commonwealth's CY 2022 target for the number of serious injuries. As shown in the chart and in Figure 4-4, five-year rolling averages for the serious injury-oriented measures have decreased over time at both the Massachusetts level and the Boston region level. To meet federal requirements, MassDOT updated its definition of serious injuries that are recorded in the Commonwealth's Crash Data System (CDS) as of January 2019. This data change may have affected the count of serious injuries for 2019, and some local agencies are still transitioning to the new definition. The number of serious injuries that occurred in 2020, which was lower than previous years, was likely affected by the pandemic and related travel behavior changes. Given the circumstances affecting these 2019 and 2020 serious injury data, the Commonwealth assumed a three percent decrease in serious injuries between 2018 and 2021, and another four percent decrease between 2021 and 2022. These values reflect reasonable but desirable changes in annual serious injuries. Based on these calculations, the Commonwealth set a target 2018-22 average of 2,504 serious injuries.

Figure 4-3
Number of Serious Injuries



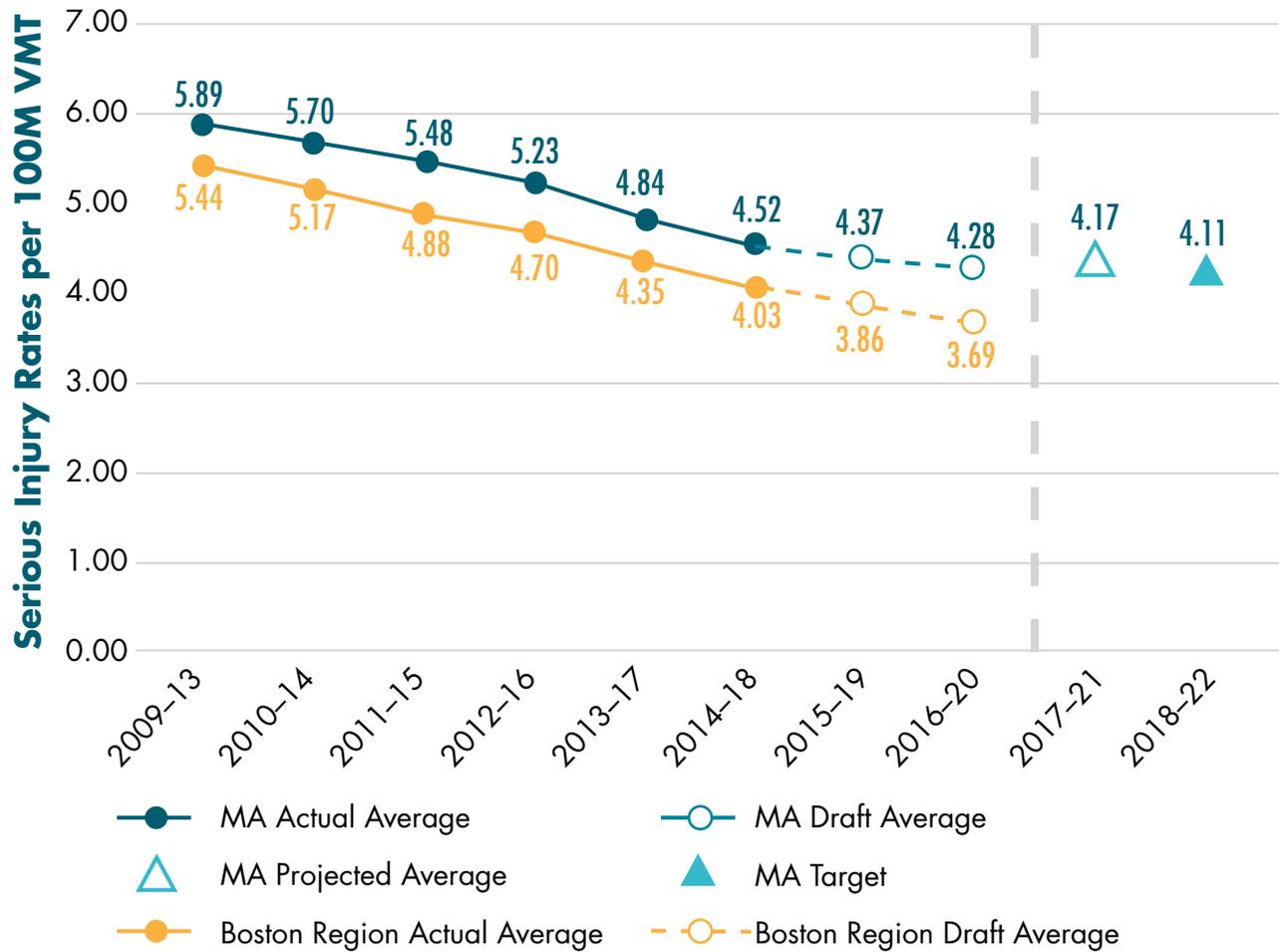
Notes: Values reflect five-year rolling annual averages and have been rounded to the nearest integer. The 2015-19 and 2016-20 averages were calculated in spring 2021 using draft data for 2019 and 2020.

MA = Massachusetts. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.

Sources: Massachusetts Department of Transportation and Boston Region MPO Staff.

Figure 4-4 shows data and projections pertaining to the serious injury rate per 100 million VMT, as well as the Commonwealth’s target 2018-22 average of 4.11 serious injuries per 100 million vehicle-miles traveled.

Figure 4-4
Serious Injury Rate per 100 Million VMT



Notes: Values reflect five-year rolling annual averages and have been rounded to the nearest integer. The 2015-19 and 2016-20 averages were calculated in spring 2021 using draft data for 2019 and 2020. MassDOT plans to revisit 2018 VMT data for future target-setting activities.

MA = Massachusetts. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.

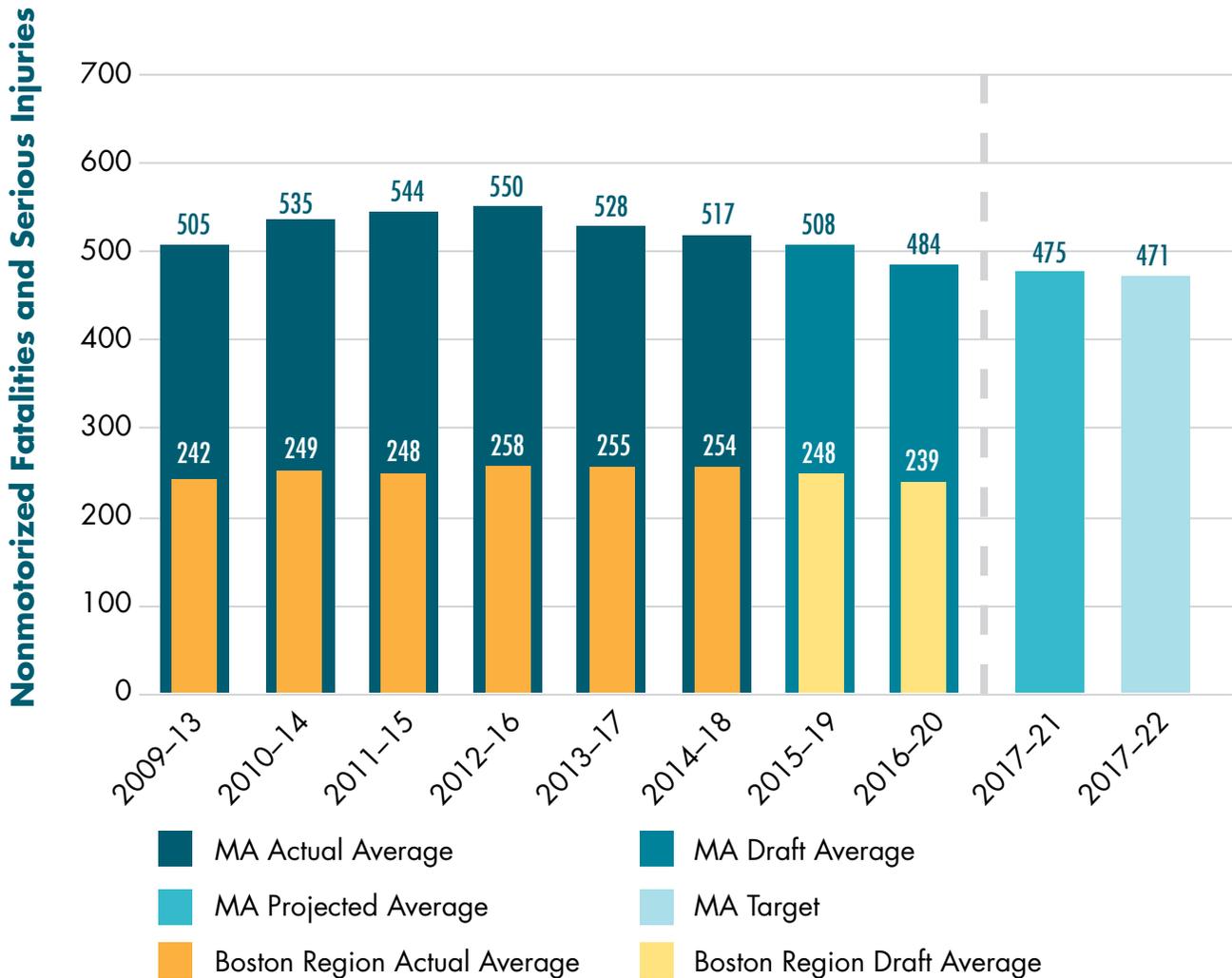
Sources: Massachusetts Department of Transportation and Boston Region MPO staff.

Figure 4-5 shows data, projections, and the CY 2022 target for the number of nonmotorized fatalities and serious injuries. This category includes fatalities and serious injuries of people who walk, bicycle, skate, or use wheelchairs or other mobility devices.⁶ When developing this target, the Commonwealth considered fluctuations in the annual number of nonmotorized fatalities and nonmotorized serious injuries, including the reduction in these crash outcomes that occurred in 2020. The Commonwealth assumed that the number of nonmotorized fatalities and serious injuries in 2021 would equal the 2017-19 average and assumed that this 2021 value would decrease by two percent between 2021 and 2022 (a reasonable but desirable change). Using these calculations, the Commonwealth set a target average for 2018-22 of 471 nonmotorized fatalities and serious injuries.

⁶ For this reporting cycle, the Commonwealth has adjusted its inclusion criteria for nonmotorists by excluding the nonmotorist type "not reported." By manually inspecting crash data, the Commonwealth found that many people in this category were not actually bicyclists or pedestrians but bystanders (such as people who were in a building when it was struck by a vehicle).

Figure 4-5 shows recent decreases in the five-year rolling average of nonmotorized fatalities and serious injuries for both Massachusetts and the Boston region. However, on average, the Boston region has made up a larger share of Massachusetts' nonmotorized fatalities than it has of total fatalities, and it has made up a larger share of Massachusetts' nonmotorized serious injuries than it has of total serious injuries. This safety performance area in particular should be addressed through coordinated planning, investment, and strategy implementation between MassDOT, the Boston Region MPO, the region's municipalities, and other stakeholders.

Figure 4-5
Number of Nonmotorized Fatalities and Serious Injuries



Notes: Values reflect five-year rolling annual averages and have been rounded to the nearest integer. The 2015-19 and 2016-20 averages were calculated in spring 2021 using draft data for 2019 and 2020.

MA = Massachusetts. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.
Sources: Massachusetts Department of Transportation and Boston Region MPO staff.

TIP Investments Supporting Roadway Safety Performance

By electing to support the Commonwealth's roadway safety targets, the MPO agreed to plan and program projects so that they contribute to achieving those targets. Anticipating the ability of transportation projects to reduce fatalities and serious injuries from motor-vehicle crashes is a challenge, as crashes may be a consequence of many factors other than infrastructure condition, such as driver behavior—including seatbelt use, driver distraction, or intoxication—and weather conditions. When investing its Regional Target funds, the MPO aims to identify projects likely to have maximum safety benefits by using its TIP project selection criteria, which account for crash activity within the project area and the types of safety countermeasures included in the proposed project. As part of its most recent criteria update, the MPO has tailored safety criteria for each of its investment programs. For more detail on these criteria, see Appendix A.

When conducting project evaluations, the MPO considers crash rates within the vicinity of projects and the Equivalent Property Damage Only (EPDO) value associated with those crashes. The EPDO index assesses the severity of crashes by assigning weighted values to crashes involving fatalities, injuries, and property damage. MassDOT has recently adjusted its formula for calculating EPDO to significantly increase the weights for crashes involving fatalities or injuries.⁷

All the corridor and intersection improvement projects included in the MPO's Regional Target Program include safety countermeasures or features that the MPO expects will improve safety for motorists, bicyclists, and pedestrians. The MPO's roadway investments in its Intersection Improvement, Complete Streets, and Major Infrastructure programs are expected to support safety improvements on roadways supporting multiple travel modes, while its Bicycle Network and Pedestrian Connections projects will support safety for those traveling by nonmotorized means by providing pedestrian signals and separated facilities for bicyclists and pedestrians.

The MPO also examines whether projects would improve safety at MassDOT-identified HSIP crash cluster locations. MassDOT identified crash clusters using a procedure for processing, standardizing, matching, and aggregating locations and data for crashes that have occurred at intersections.⁸ MassDOT's HSIP clusters are those that ranked in the top five percent of crash clusters within each regional planning agency area based on EPDO values. MassDOT created a set of HSIP clusters that include all crashes involving motor vehicles, as well as sets of clusters that reflect motor-vehicle crashes that involved bicyclists or pedestrians. Projects in locations with HSIP clusters are eligible for funding through MassDOT's HSIP program.

Table 4-5 shows values for MPO staff-identified metrics that relate to how FFYs 2023–27 Regional Target-funded corridor, intersection, and bicycle and pedestrian projects may address safety performance; similar tables for other MPO goal areas appear throughout this chapter.⁹ Table 4-5 shows that many of these projects are located in areas that overlap with HSIP clusters.

⁷ Commonwealth of Massachusetts, "Highway Safety Improvement Program," accessed March 25, 2022. www.mass.gov/service-details/highway-safety-improvement-program

⁸ For more information, see MassDOT's 2017 Top Crash Location Report (September 2020). www.mass.gov/doc/2017-top-crash-locations-report/download

⁹ The content of these tables is based on the project design information that was available to MPO staff when the FFYs 2023–27 TIP document was developed. Project extents and features may change as projects advance through the design development and review process.

The MPO expects that this combination of safety countermeasures and improvements focused on priority locations will help the MPO and the Commonwealth progress towards reducing fatalities and serious injuries on the roadway network. Table A-2 in Appendix A summarizes the impacts each Regional Target project is expected to have on performance areas discussed throughout this chapter, including safety performance.

Table 4-5
Regional Target Projects: Roadway Safety Performance Metrics

Metric	Value
Regional Target projects that address all-mode HSIP clusters ¹	14 projects
All-mode HSIP cluster locations addressed by Regional Target projects ¹	25 locations
Regional Target projects that address HSIP Pedestrian clusters ²	9 projects
HSIP pedestrian cluster locations addressed by Regional Target projects ²	13 locations
Regional Target projects that address HSIP bicycle clusters ²	5 projects
HSIP bicycle cluster locations addressed by Regional Target projects ²	6 locations
Project areas where fatal crashes have occurred ³	0 areas
Project areas where injury crashes have occurred ³	35 areas

Note: The group of projects reflected in this table does not include Community Connections investments or Transit Modernization investments.

1 All-mode HSIP clusters are based on crash data from 2017 to 2019.

2 HSIP bicycle clusters and HSIP pedestrian clusters are based on data from 2010 to 2019.

3 Analysis of crashes in Regional Target project areas is based on crash data from 2017 to 2019.

HSIP = Highway Safety Improvement Program. MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization.

Sources: Massachusetts Crash Data System, Massachusetts Department of Transportation, and the Boston Region MPO.

The projects in the FFYs 2023–27 TIP programmed by MassDOT, summarized in Chapter 3, will also support safety and are expected to reduce fatalities and serious injuries on the region’s roadways. The Reliability and Modernization programs included in MassDOT’s CIP focus on maintaining and upgrading infrastructure, which will help make travel safer on the region’s roadways. MassDOT’s Intersection Improvements, Roadway Improvements,

Roadway Reconstruction (which funds Safe Routes to School projects), and Safety Improvements programs most directly address safety considerations, though its various bridge and pavement improvement programs may also improve safety by supporting asset maintenance and state of good repair. Moreover, MassDOT's Bicycle and Pedestrian projects may reduce nonmotorized fatalities and injuries by improving separated facilities for bicyclists and pedestrians.

Transit System Safety Performance Measures and Targets

As previously mentioned, the National Public Transportation Safety Plan details performance measures for which transit agencies subject to the PTASP rule must set targets. These measures, which are also listed in Table 4-6, include the following:¹⁰

- The total number of reportable fatalities and the fatality rate per vehicle-revenue miles (VRM), by mode
- The total number of reportable injuries and the injury rate per VRM, by mode
- The total number of reportable safety events and the safety event rate per VRM, by mode
- System reliability, which is measured by the distance between major mechanical failures by mode

The FTA provides transit agencies with flexibility to set their targets to meet the specific context of their transit service. These agencies can choose (1) the reporting timeframe they use (calendar, fiscal, or NTD reporting year), (2) the VRM denominator values for the rate measures, and (3) the methodologies for picking target values. Transit agencies revisit their performance targets when updating their PTASPs each year.

MPOs have their own responsibilities pertaining to transit safety, as outlined in the PTASP rule (49 CFR Part 673) and the Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning rule, which defines MPOs' and states' planning and performance management responsibilities. In particular, MPOs must set regional targets for these transit safety performance measures in coordination with relevant transit agencies and states. MPOs document these targets in the LRTPs and TIPs and can consider proposed transit investments in the context of how they may improve transit safety.

The Boston Region MPO updated its set of transit safety performance targets on March 31, 2022. This 2022 set includes the MBTA's, MWRTA's, and CATA's safety targets and presents each agency's targets separately to reflect how each agency accounted for the factors that will affect safety outcomes in its service area. These factors include the characteristics of the local operating environments and contexts and the agency's planned investments, policies, and safety-management activities.

¹⁰ For more information about the definitions of these performance measures—including deaths, injuries, or events that may be excluded from totals—see Boston Region MPO staff, "Transit Safety Performance Requirements and Targets" (April 8, 2021). www.ctps.org/data/calendar/pdfs/2021/MPO_0408_Memo_Transit_Safety_Performance_Targets.pdf.

MBTA Safety Targets

The MBTA monitors performance and sets federally required targets for four modes: heavy rail (Red, Orange, and Blue Lines), light rail (Green Line and the Mattapan High Speed Line), bus, and The RIDE paratransit system. Based on CY 2018–20 averages, the MBTA runs approximately 23,036,000 VRM of service on its heavy rail system; 5,681,000 VRM on its light rail system; 22,882,000 VRM on its bus network; and 13,443,000 VRM for The RIDE. The MBTA’s commuter rail network and ferry service are not subject to these FTA requirements and are addressed outside of the PTASP process.

Table 4-6 shows past averages for the federally required transit safety measures for MBTA heavy rail, light rail, bus, and The RIDE, based on data provided by the MBTA. These averages reflect safety data from CYs 2018 to 2020.

Table 4-6
Past Safety Performance Data for MBTA Transit Services
(CYs 2018–20 Averages)

MBTA Mode	Average Fatalities	Average Fatality Rate ¹	Average Injuries	Average Injury Rate ¹	Average Safety Events	Average Safety Event Rate ¹	Average System Reliability Value ²
Heavy Rail	0.00	0.00	199.00	8.62	24.00	1.04	47,166.00
Light Rail	0.00	0.00	86.00	15.00	32.00	5.69	8,017.00
Bus	1.00	0.06	330.00	14.29	122.00	5.32	28,300.00
The RIDE	0.00	0.00	27.00	1.95	27.00	2.03	51,733.00

Notes: This table reflects data available at the time the MBTA developed its targets.

1 Fatality, injury, and safety event rates are expressed per one million VRM. Rate values have been rounded to the nearest hundredth.

2 The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

CY = calendar year. MBTA = Massachusetts Bay Transportation Authority. MPO = metropolitan planning organization. VRM = vehicle-revenue miles.

Source: MBTA and the Boston Region MPO staff.

The MBTA’s safety performance targets for CY 2022 are shown in Table 4-7. When setting targets, the MBTA varied its approach by measure:

- **Fatalities and Fatality Rates:** The MBTA notes that fatality rates vary across modes due to the distinct operating environments and the inherent safety risk exposure associated with each mode. The MBTA is committed to reducing the number of fatalities across its system to zero and continues to invest in proactive solutions to achieve this goal.¹¹

¹¹ MBTA, *MBTA Transit Safety Plan (Revision 1)*, pg. 34.

- **Injuries and Injury Rates:** The MBTA set its targets for these two injury measures by assuming a two percent decrease in the injury rate from the CYs 2018–20 average for each mode.
- **Safety Events and Safety Event Rates:** The MBTA established targets for these two measures by assuming a two percent decrease in the safety event rate from the CYs 2018–20 average. The MBTA uses both proactive and reactive safety risk management strategies to reduce the rate of safety events on its system.
- **System Reliability:** As previously mentioned, transit system reliability is measured by the mean number of VRM traveled between major mechanical failures. When setting system reliability targets, the MBTA reviewed CYs 2018–20 averages of major mechanical failures and VMT. The MBTA will continue to monitor these data as it introduces new or refurbished vehicles into its bus, heavy rail, and light rail fleets over the next few years. During this additional “burn-in” period, there may be a decrease in reliability. With this possibility in mind, the MBTA will strive to maintain the highest level of system reliability in CY 2022.¹²

Table 4-7
MBTA CY 2022 Safety Performance Targets

MBTA Mode	Fatalities Target	Fatality Rate Target¹	Injuries Target	Injury Rate Target¹	Safety Events Target	Safety Event Rate Target¹	System Reliability Target²
Heavy Rail	0.00	0.00	195.00	8.46	23.00	1.00	47,500.00
Light Rail	0.00	0.00	84.00	14.70	31.00	5.58	7,500.00
Bus	0.00	0.00	324.00	14.00	120.00	5.21	25,000.00
The RIDE ³	0.00	0.00	27.00	1.91	26.00	1.99	60,000.00

1 Fatality, injury, and safety event rates are expressed per one million VRM. Rate values have been rounded to the nearest hundredth.

2 The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

3 The injuries target for The RIDE remains the same as past averages due to rounding.

CY = calendar year. MBTA = Massachusetts Bay Transportation Authority. MPO = metropolitan planning organization. VRM = vehicle-revenue miles.

Source: MBTA and the Boston Region MPO staff.

¹² MBTA, *MBTA Transit Safety Plan (Revision 1)*, pg. 36.

CATA Safety Targets

CATA monitors safety performance and sets federally required targets for its fixed-route bus service and its demand response service. According to averages calculated using state fiscal years (SFYs) 2017–21 data, CATA’s demand response system runs about 125,000 VRM annually, and its fixed-route bus system runs about 245,000 VRM annually.¹³ Table 4-8 provides SFY 2017–21 averages for the fatality, injury, safety event, and system reliability measures for CATA’s fixed-route bus and demand response systems. MPO staff gathered this information from CATA as well as from the NTD’s Monthly Modal Time Series data files (for fatalities, injuries, and safety events), its Major Safety Events time series data files (for safety events), its Annual Database Vehicle Maintenance files (for major mechanical failures), and its Monthly Module Adjusted Data Release (for VRM).¹⁴

Table 4-8
Past Safety Performance Data for CATA Transit Services (SFY 2017–21 Averages)

CATA Mode	Average Fatalities	Average Fatality Rate ¹	Average Injuries	Average Injury Rate ¹	Average Safety Events	Average Safety Event Rate ¹	Average System Reliability Value ²
Fixed-Route Bus	0.00	0.00	0.80	0.37	0.60	0.28	72,781.31
Demand Response	0.00	0.00	0.00	0.00	0.20	0.15	124,718.00

Note: Values have been rounded to the nearest hundredth.

1 Fatality, injury, and safety event rates are expressed per one hundred thousand VRM.

2 The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

CATA = Cape Ann Transportation Authority. CY = calendar year. MPO = metropolitan planning organization. VRM = vehicle-revenue miles.

Sources: CATA, the National Transit Database, and the Boston Region MPO staff.

Table 4-9 provides a summary of CATA’s SFY 2022 performance targets, which cover the period from July 2021 to June 2022. Rate targets are expressed per one hundred thousand VRM. In general, CATA used past data and averages as the basis for determining its transit safety

¹³ MPO staff calculated these VRM estimate using the NTD’s January 2022 Monthly Module Adjusted Data release, available at www.transit.dot.gov/ntd/data-product/monthly-module-adjusted-data-release.

¹⁴ Specific data sources include the March 7, 2022, Monthly Modal Time Series file (available at data.transportation.gov/Public-Transit/Monthly-Modal-Time-Series/5ti2-5uiv), the March 7, 2022, Major Safety Events file (available at data.transportation.gov/Public-Transit/Major-Safety-Events/9ivb-8ae9), the 2016-20 Annual Database Vehicle Maintenance files (available at www.transit.dot.gov/ntd/ntd-data), and the January 2022 Monthly Module Adjusted Data Release file (available at www.transit.dot.gov/ntd/data-product/monthly-module-adjusted-data-release).

performance targets for SFY 2022. When developing targets related to safety events, CATA also accounted for the number of preventable accidents that occurred on its systems in SFY 2021 (10 on its fixed-route system, and four on its demand response system), in addition to incidents reported to the NTD. Preventable accidents, which are distinct from NTD-defined safety events, are defined by MassDOT as “those accidents in which the transit driver is typically deemed responsible or partly responsible for the occurrence of the accident.”¹⁵

**Table 4-9
CATA SFY 2022 Safety Performance Targets**

CATA Mode	Fatalities Target	Fatality Rate Target ¹	Injuries Target	Injury Rate Target ¹	Safety Events Target	Safety Event Rate Target ¹	System Reliability Target ²
Fixed-Route Bus	0.0	0.0	1.0	0.5	2.5	1.5	70,000.0
Demand Response	0.0	0.0	1.0	0.5	1.5	1.0	135,000.0

Note: Values have been rounded to the nearest tenth.

1 Fatality, injury, and safety event rates are expressed per one hundred thousand VRM.

2 The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

CATA = Cape Ann Transportation Authority. SFY = state fiscal year. MPO = metropolitan planning organization. VRM = vehicle-revenue miles.

Source: CATA and the Boston Region MPO staff.

MWRTA Safety Targets

Like CATA, MWRTA monitors performance and sets federally required targets for fixed-route bus service and demand response services. According to averages calculated using SFYs 2017–21 data, MWRTA’s demand response system runs about 909,000 VRM annually, and its fixed-route bus system runs about 1,149,000 VRM annually.¹⁶ Table 4-10 shows SFY 2017–21 averages for the federally required transit safety measures for MWRTA’s transit services. MPO staff gathered this information from the NTD’s Monthly Modal Time Series data files (for fatalities, injuries, and safety events), its Major Safety Events time series data files (for safety events), its

¹⁵ Massachusetts Department of Transportation, *Tracker 2017: MassDOT’s Annual Performance Report*, pg. 50, accessed March 17, 2022. www.mass.gov/doc/2017-annual-performance-report/download.

¹⁶ MPO staff calculated these VRM estimates using the NTD’s January 2022 Monthly Module Adjusted Data release, available at www.transit.dot.gov/ntd/data-product/monthly-module-adjusted-data-release.

Annual Database Vehicle Maintenance files (for major mechanical failures), and its Monthly Module Adjusted Data Release (for VRM).¹⁷

Table 4-10
Past Safety Performance Data for MWRTA Transit Services
(SFYs 2017–21 Averages)

MWRTA Mode	Average Fatalities	Average Fatality Rate ¹	Average Injuries	Average Injury Rate ¹	Average Safety Events	Average Safety Event Rate ¹	Average System Reliability Value ²
Fixed-Route Bus	0.00	0.00	0.00	0.00	0.60	0.05	101,030.13
Demand Response	0.00	0.00	0.60	0.06	1.40	0.14	145,324.63

Note: Values have been rounded to the nearest hundredth.

1 Fatality, injury, and safety event rates are expressed per one hundred thousand VRM.

2 The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

MPO = metropolitan planning organization. MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year. VRM = vehicle-revenue miles.

Sources: MWRTA, the National Transit Database, and the Boston Region MPO staff.

Table 4-11 provides a summary of MWRTA’s SFY 2022 performance targets, which include fatality, injury, and safety event rates expressed per one hundred thousand VRM. MWRTA set its transit safety performance targets by reviewing historic safety data for its fleet and by planning to operate as safely as possible and by proactively addressing hazards as they are identified. MWRTA’s review of past data also accounted for the number of preventable accidents on its system in recent years. On its fixed-route system, MWRTA had 16 preventable accidents in SFY 2019, 10 in SFY 2020, and nine in SFY 2021. On its demand response system, it had 18 preventable accidents in SFY 2019, 10 in SFY 2020, and three in SFY 2021. MWRTA also considered the risk potential for different types of injuries on its systems when setting targets.

¹⁷ Specific data sources include the March 7, 2022, Monthly Modal Time Series file (available at data.transportation.gov/Public-Transit/Monthly-Modal-Time-Series/5ti2-5uiv), the March 7, 2022, Major Safety Events file (available at data.transportation.gov/Public-Transit/Major-Safety-Events/9ivb-8ae9), the 2016-20 Annual Database Vehicle Maintenance files (available at www.transit.dot.gov/ntd/ntd-data) and the January 2022 Monthly Module Adjusted Data Release file (available at www.transit.dot.gov/ntd/data-product/monthly-module-adjusted-data-release).

Table 4-11
MWRTA SFY 2022 Safety Performance Targets

MWRTA Mode	Fatalities Target	Fatality Rate Target¹	Injuries Target	Injury Rate Target¹	Safety Events Target	Safety Event Rate Target¹	System Reliability Target²
Fixed-Route Bus	0.00	0.00	12.00	1.00	18.00	1.50	75,000.00
Demand Response	0.00	0.00	8.00	1.00	12.00	1.50	75,000.00

Note: Values have been rounded to the nearest hundredth.

1 Fatality, injury, and safety event rates are expressed per one hundred thousand VRM.

2 The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

MPO = metropolitan planning organization. MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year. VRM = vehicle-revenue miles.

Source: MWRTA and the Boston Region MPO.

Near-Term Investments Supporting Transit Safety Performance

During FFY 2022, the MBTA, MWRTA, and CATA plan to make a number of investments that may enhance transit safety performance, which could support their ability to meet current performance targets. The MBTA plans to overhaul locomotives and to improve facilities to support safety performance, including Oak Grove, Symphony, and Winchester Stations; the parking garages at Braintree and Quincy Adams Stations; Worcester’s Union Station; Wollaston Station and the Quincy Center Garage. It also plans to improve power and signal systems and rail infrastructure, particularly through its Green Line Train Protection project, which involves the installation of equipment for a train-monitoring system that will determine allowable separation and prevent vehicles from passing a red signal. Other safety-related MBTA investments include those in its Bridge and Tunnel Program, such as replacement of several bridges, including the Gloucester and Saugus drawbridges, and inspection and rehabilitation of MBTA tunnels.

Also during FFY 2022, CATA will use its federal and state dollars to fund preventative maintenance activities and capital maintenance items. MWRTA will replace revenue vehicles and invest in improvements to its Blandin terminal facility and the operations center at the commuter rail station in Framingham, which it manages and maintains under contract with the MBTA. These types of investments help keep RTA assets in a state of good repair, which in turn support safe and reliable transit service.

TIP Investments Supporting Transit Safety Performance

Undesirable safety outcomes on transit systems—such as fatalities, injuries, collisions or other unsafe events—can result from a variety of factors, such as human error and asset condition. As previously mentioned, the Safety Management Systems (SMS) that transit agencies implement rely upon a combination of strategies and processes, some of which relate to transit asset

management (TAM). For example, the asset condition data that agencies collect and the analyses they perform as part of TAM can help identify potential safety issues, assess risks, and develop proactive responses. Meanwhile, safety risk assessment and monitoring can inform the amount of resources transit agencies put towards TAM and the way they prioritize specific assets for repair or replacement.¹⁸

MassDOT and the transit agencies in the Boston region account for safety when selecting projects for capital investment programs, including the TIP. MassDOT includes safety as part of its Reliability priority area and sizes investment programs to support MBTA and RTA asset condition based on data on performance and asset condition. Safety issues are also considered at the level of individual investments. For example, members of the MBTA Safety team review all candidate projects to determine whether they may address documented existing or potential safety hazards, safety regulatory mandates, or corrective actions.

The Boston Region MPO's FFYs 2023–27 Regional Target investments include improvements at the MBTA's Lynn Station, which serves bus and commuter rail passengers and at the MBTA's Forest Hills Station, which serves Orange Line, bus, and commuter rail passengers. These projects are funded through the MPO's Transit Modernization investment program. The Lynn Station improvements include reconstruction of the existing rail platform, construction of two new elevators, new stairways, and lighting upgrades among other improvements. The Forest Hills Station improvements include construction of one new elevator; replacement of three existing elevators; accessibility improvements, such as compliant ramps and accessible restrooms; and upgrades to life safety infrastructure, wayfinding, signage, and the station roof. These improvements support safe conditions within these stations, which may support improved safety outcomes for MBTA modes.

In addition to these station improvements, MPO-funded corridor and intersection projects can also help improve safety outcomes for bus and paratransit services by making the region's roadways safer for all users. The MPO has also set aside \$5.5 million per year in its Transit Modernization investment program starting in FFY 2025. While the MPO continues to work with MassDOT and the region's transit agencies to define the scope of this program, in October 2020 the MPO established baseline transit safety evaluation criteria for this program, which mirror the evaluation criteria used by the MBTA. More details about these criteria are included in Appendix A.

The FFYs 2023–27 TIP also specifies the MBTA's, MWRTA's, and CATA's planned capital investments, which support improvements in safety outcomes, asset condition, and system reliability. Because of the timing of these investments, they are not expected to affect the MPO's current transit safety performance targets; however, they are expected to help improve performance on these measures over time. In addition to funding Lynn Station and Forest Hills Station improvements along with the Boston Region MPO, the MBTA plans to improve a number of its stations, as described in the System Preservation and Modernization section of this chapter. Other Blue Line improvements will include rebuilding the Long Wharf emergency egress and improving track and tunnel infrastructure and communication rooms.

¹⁸ Federal Transit Administration, "Nexus of Transit Asset Management and Safety Management Systems" accessed April 28, 2022.

<https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/safety/public-transportation-agency-safety-program/117291/nexus-transit-asset-management-and-safety-management-systems.pdf>

In addition to these investments, the MBTA will overhaul hybrid and compressed-natural-gas buses, Blue Line vehicles, and streetcar-type vehicles that serve the Mattapan High Speed Line; and it will fund maintenance for components of Red, Orange, and Blue Line vehicles. It will continue to support an ongoing overhaul program for its ferryboats. It also plans to improve rail infrastructure, particularly through its Green Line Train Protection project. Other planned MBTA investments include those in its Bridge and Tunnel Program, which will support bridge design, repair, inspection, rehabilitation, and replacement. This program also supports inspection and rehabilitation of tunnels systemwide. Collectively, these projects will help improve safety on multiple MBTA modes.

CATA and MWRTA also plan to make investments that will support safety. CATA will continue to use its federal and state dollars to fund preventative maintenance activities, improve its administration and maintenance facility, and purchase new revenue vehicles to replace those that have reached the end of their useful life. Similarly, MWRTA will continue to purchase replacement vehicles and invest in improvements to its Blandin terminal facility and the intermodal center at the commuter rail station in Framingham. MWRTA's planned facilities investments during the FFYs 2023–27 include a new body shop to support efficient and cost-effective repair of its vehicles. Transit agency investments are also discussed in the System Preservation and Modernization Performance section of this chapter and additional details about these investments are available in Chapter 3.

Future Activities to Improve and Monitor Safety Performance

Going forward, the MPO will work with its planning partners and other stakeholders to better understand and measure safety performance and to invest in projects that will reduce fatalities, injuries, and other negative safety outcomes as much as possible. In the future, the MPO will

- work with MassDOT, transit agencies, and the region's municipalities to improve the availability and quality of safety data and other supporting data, such as bicycle and pedestrian counts;
- improve methods for analyzing and estimating the impacts of TIP investments on reductions in crashes, fatalities, and injuries, safety events, and mechanical issues for transit systems;
- enhance methods for establishing targets for federally required roadway safety performance measures; and
- continue to refine the scope of the MPO's Transit Modernization program and to identify links between this and other MPO investment programs and the region's roadway and transit safety performance.

System Preservation and Modernization Performance

Relevant Goals, Policies, and Plans

Another of the MPO's goals is to maintain and modernize the transportation system and plan for its resiliency. System preservation and modernization policies for the Boston region apply to bridges, pavement, sidewalks, and transit system assets. They address existing maintenance and state-of-good-repair needs, necessary updates to infrastructure to meet customer needs, and preparations for existing or future extreme conditions such as sea level rise and flooding.

The MPO's Regional Target projects support asset condition improvements, which complement MassDOT's and transit agencies' more extensive state-of-good-repair and modernization projects. MassDOT uses information from its internal asset management systems to guide decisions about asset maintenance and modernization and considers investment priorities from its TAMP.¹⁹ The TAMP is a federally required risk-based asset management plan that includes asset inventories, condition assessments, and investment strategies to improve the condition and performance of the NHS, particularly its bridges and pavements. Similarly, transit agencies that receive FTA funding must produce TAM plans that describe transit system assets and their condition, along with the tools and investment strategies these agencies will use to improve these assets.²⁰

Roadway Asset Condition Performance Measures and Targets

Bridge Condition Measures and Targets

To meet federal performance monitoring requirements, states and MPOs must track and set performance targets for the condition of bridges on the NHS, a network that includes the Interstate Highway System and other roadways of importance to the nation's economy, defense, and mobility.

As noted in Table 4-3, FHWA bridge condition performance measures include the following:

- Percent of NHS bridges by deck area classified as in *good* condition
- Percent of NHS bridges by deck area classified as in *poor* condition

These performance measures classify NHS bridge condition as good or poor based on the condition ratings of three bridge components: the deck, the superstructure, and the substructure. The lowest rating of the three components determines the overall bridge condition. The measures express the share of NHS bridges in a certain condition by deck area, divided by the total deck area of NHS bridges in the applicable geographic area (calculated for state or MPO region).

¹⁹ Massachusetts Department of Transportation, *Transportation Asset Management Plan* (September 2019), accessed April 13, 2022. www.mass.gov/doc/2019-transportation-asset-management-plan/download

²⁰ The MBTA's, CATA's, and MWRTA's 2018 TAM Plans are available on the March 21, 2019, page of the MPO meeting calendar (www.ctps.org/calendar/day/20190321).

Table 4-12 shows performance baselines for NHS bridge condition in Massachusetts and the Boston region, which were calculated around the time that the Commonwealth set its initial targets in 2018. Using 2017 data, MassDOT determined that Massachusetts had 2,246 NHS bridges. MassDOT analyzed those bridges to understand their current condition with respect to the federal bridge-condition performance measures. In 2018, the Boston Region MPO performed a similar analysis on the 859 NHS bridges in the region at that time. According to these baseline values, the Boston region had a larger share of NHS bridge deck area considered to be in good condition and a slightly smaller share of NHS bridge deck area considered to be in poor condition, compared to Massachusetts overall.

Table 4-12
NHS Bridge Condition Baselines for Massachusetts and the Boston Region

Geographic Area	Total NHS Bridges	Total NHS Bridge Deck Area (square feet)	Percent of NHS Bridge Deck Area in Good Condition	Percent of NHS Bridge Deck Area in Poor Condition
Massachusetts ¹	2,246	29,457,351	15.2%	12.4%
Boston Region ²	859	14,131,094	19.2%	11.8%

1 Massachusetts baseline data is based on a MassDOT analysis conducted in 2018.

2 Boston region comparison data is based on a Boston Region MPO analysis conducted in 2018.

Massachusetts Department of Transportation = MassDOT. MPO = metropolitan planning organization. NHS = National Highway System.

Sources: Massachusetts Department of Transportation and the Boston Region MPO staff.

States must set performance targets for these NHS bridge and pavement condition measures at two-year and four-year intervals. Table 4-13 shows the baseline Massachusetts value discussed in Table 4-12 and MassDOT’s current NHS bridge performance targets, which it established in 2018. The two-year target reflects conditions as of the end of CY 2019, and the four-year target reflects conditions as of the end of CY 2021. These targets reflect the bridge condition MassDOT anticipated based on historic trends and planned bridge investments. As shown in the table, MassDOT anticipated that there would be a small increase in the share of NHS bridge deck area in good condition by the end of CY 2021, while it expected that the share of NHS bridge deck area in poor condition in CY 2021 would be slightly lower than the baseline.

Table 4-13 also shows 2019 bridge condition values that appear in MassDOT’s TAMP. The Massachusetts TAMP reported that as of 2019, Massachusetts had 2,263 bridges on the NHS, which had a combined deck area of approximately 29,660,000 square feet.²¹ These values account for changes in the total number and deck area of NHS bridges since MassDOT calculated its baseline values using 2017 data, which may be a function of bridge improvement activities or other factors. It states that “approximately 44 percent (2,263 bridges) of the Massachusetts National Bridge Inventory (NBI) are on the NHS; however, due to the geometric requirements of the higher speed and multilane facilities typified by the NHS, over 70 percent

²¹ Federal guidelines for bridge performance monitoring define bridges using National Bridge Inspection standards, which define a bridge as a structure with a span length of over 20 feet.

of the bridge area is located on the NHS.”²² The overwhelming majority of Massachusetts’ NHS bridges, by count, were owned by MassDOT (approximately 96 percent), followed by municipalities (three percent), and a combination of the MBTA, Massachusetts Port Authority (Massport), and the Massachusetts Department of Conservation and Recreation (DCR) (less than one percent). Using 2020 data from the MassDOT Highway Division Bridge Inspection Management System, MPO staff produced similar estimates pertaining to the 862 NHS bridges in the Boston region at that time (which account for changes in NHS bridge count and deck area since baseline values were calculated in 2018). Most of these bridges were owned by MassDOT (96 percent), about four percent were owned by municipalities, and less than one percent were owned by other entities. The MassDOT or municipally owned NHS bridges in the Boston region had a combined deck area of approximately 14,123,000 square feet, which accounted for 48 percent of NHS bridge deck area in Massachusetts.

Finally, Table 4-13 shows MassDOT’s long-term targets for these NHS bridge condition measures, which can be viewed as state-of-good-repair targets.²³ In its 2019 TAMP, MassDOT also set a long-term target of less than 10 percent for the percent of NBI bridges statewide whose overall condition would be considered poor. USDOT has established 10 percent as a threshold for NHS bridge deck area that is in poor condition, and departments of transportation for states that exceed that threshold must direct a defined minimum amount of National Highway Performance Program (NHPP) funding toward improving NHS bridges. Because more than 10 percent of Massachusetts NHS bridge deck area has been in poor condition, MassDOT continues to program this minimum amount.

Table 4-13
Massachusetts NHS Bridge Condition Targets

Federally Required Bridge Condition Performance Measure	Baseline	2019 Value*	Two-Year Target (CY 2019)	Four-Year Target (CY 2021)	MA Long Term Target
Percent of NHS Bridges [by deck area] that are in good condition	15.2%	16.1%	15.0%	16.0%	>18%
Percent of NHS Bridges [by deck area] that are in poor condition	12.4%	12.5%	13.0%	12.0%	< 10%

* The 2019 values for bridge condition are as of July 1, 2019. These values are published in the 2019 MassDOT Transportation Asset Management Plan.

MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization. NHS = National Highway System.

Sources: MassDOT and the Boston Region MPO staff.

²² Massachusetts Department of Transportation, *Transportation Asset Management Plan* (2019), pg. 8.

²³ Massachusetts Department of Transportation, *Transportation Asset Management Plan* (2019), pg. 18.

MPOs are required to set four-year NHS bridge performance targets by either electing to support state targets or setting separate quantitative targets for the region. The Boston Region MPO elected to support MassDOT's four-year targets for these measures in November 2018. This approach reflects the ways that each entity supports NHS and other bridge improvements in the Boston region. The MPO's Regional Target program typically makes modest contributions to bridge improvements in the Boston region, while the MassDOT Bridge Program remains the region's primary funding source for replacement or rehabilitation of substandard bridges.

Pavement Condition Performance and Targets

As with NHS bridges, USDOT's performance-management framework requires states and MPOs to monitor and set targets for the condition of pavement on NHS roadways. According to the 2020 Massachusetts' Road Inventory Year End Report, 10,468 lane-miles (about 14 percent of statewide lane mileage) are part of the NHS.²⁴ This includes 3,190 lane-miles on the Interstate System and 7,277 lane miles of non-Interstate NHS roadways. All Interstate roadways in Massachusetts are owned by MassDOT, which also owns 4,493 lane-miles (62 percent) of non-Interstate NHS roadways. Of the 2,781 lane-miles remaining, 2,567 lane-miles (92 percent) are owned by municipalities, while another 214 lane-miles (eight percent) are owned by a combination of DCR, Massport, state institutions (e.g., colleges and universities), and the federal government.

Within the Boston region, 3,706 lane-miles (16 percent all of roadway lane miles) are part of the NHS. Of these, 1,170 lane miles (32 percent) are on the Interstate System, which is owned by MassDOT. Of the 2,536 non-Interstate NHS roadway lane-miles, 1,223 lane-miles (48 percent) are owned by MassDOT, 1,104 lane miles (44 percent) are owned by municipalities, and 207 lane miles (eight percent) are owned by other entities.

Applicable federal performance measures for NHS pavements, which are also listed in Table 4-3, include the following:

- Percent of pavements on the Interstate System in *good* condition
- Percent of pavements on the Interstate System in *poor* condition
- Percent of pavements on the non-Interstate NHS in *good* condition
- Percent of pavements on the non-Interstate NHS in *poor* condition

MassDOT tracks the condition of roadways in Massachusetts, including NHS network, through its Pavement Management Program.

In 2018, MassDOT established performance targets for these NHS pavement condition performance measures. As with the NHS bridge condition performance targets, the two-year target reflects conditions as of the end of CY 2019, and the four-year target reflects conditions as of the end of CY 2021. While MassDOT has collected IRI data in past years, these federally required performance measures also require other types of distress data that have

²⁴ The roadway mileage values discussed in this section are from this report: Massachusetts Department of Transportation, *2020 Massachusetts Roadway Inventory Year End Report* (July 2021), pgs. 54, 55, 58 59, and 64, accessed April 23, 2021.

www.mass.gov/doc/2020-road-inventory-year-end-report/download

These values exclude unaccepted roads, which are open to public travel (and some private ways) but that have not been formally accepted by a city or town as part of its jurisdiction.

not previously been required as part of pavement-monitoring programs.²⁵ At the time of target setting, MassDOT noted that setting targets for these pavement-condition measures is challenging given the lack of complete historic data. MassDOT’s approach when setting targets was to use past pavement indicators to identify trends and to set conservative targets. Table 4-14 shows MassDOT’s performance targets for these measures along with baseline data as of 2017 and updated data as of early 2019.

Table 4-14
Massachusetts NHS Pavement Condition Targets

Federally Required Pavement Condition Performance Measure ¹	2017 Measure Value (Baseline)	2019 Value ²	Two-Year Target (CY 2019)	Four-Year Target (CY 2021)
Percent of Interstate Highway System pavements that are in good condition ¹	74.2%	70.1%	70.0%	70.0%
Percent of Interstate Highway System pavements that are in poor condition	0.1%	0.3%	4.0%	4.0%
Percent of non-Interstate NHS pavements that are in good condition	32.9%	32.9% ³	30.0%	30.0%
Percent of non-Interstate NHS pavements that are in poor condition	31.4%	31.4% ³	30.0%	30.0%

1 For the first federal performance monitoring period (CY 2018–21), the Federal Highway Administration only required states to report four-year targets for pavement condition on the Interstate Highway System. MassDOT developed both two-year and four-year targets for internal consistency.

2 The 2019 values for pavement condition are as of January 1, 2019. These values are published in the 2019 MassDOT Transportation Asset Management Plan (2019).

3 These values reflect the International Roughness Index only.

CY = calendar year. MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization. NHS = National Highway System.

Sources: MassDOT and the Boston Region MPO staff.

As with NHS bridge condition performance measures, MPOs are required to set four-year Interstate and non-Interstate NHS pavement-condition performance targets by either supporting state targets or setting separate quantitative targets for the region. The Boston Region MPO

²⁵ MassDOT continues to measure pavement quality and to set statewide short-term and long-term targets in the MassDOT Performance Management Tracker using the Pavement Serviceability Index (PSI), which is a different index than IRI.

elected to support MassDOT's four-year targets for these NHS pavement-condition measures in November 2018. The MPO will work with MassDOT to meet these targets through its Regional Target investments. This approach reflects the ways that each entity supports NHS and other pavement improvements in the Boston region. The MPO's policy has been to not use Regional Target funds for projects that only resurface pavement. MassDOT's pavement-improvement programs, along with its other corridor and intersection improvement programs, provide the majority of funding for pavement improvements in the Boston region. However, the MPO does fund roadway reconstruction projects that include pavement improvements in addition to other design elements, and through this process the MPO will work with MassDOT to make progress towards these NHS pavement-condition targets.

TIP Investments Supporting Roadway Asset Condition

When prioritizing capital investments for the TIP, the MPO uses its project-evaluation criteria to assess how well each project funded with Regional Target dollars may help maintain or modernize the Boston region's roadway infrastructure. The MPO's criteria award points to projects that improve substandard bridges, pavement, sidewalks, and signals, or that improve the network's ability to support emergency response and respond to extreme conditions.²⁶ In October 2020, the MPO adopted an updated set of project selection criteria that

- are tailored to each of the MPO's investment programs;
- use refined subcriteria to award points to projects that incorporate resiliency elements or that improve transit-supporting infrastructure at intersections or along corridors;
- award bonus points to projects that improve NHS bridges or pavements; and
- award one or more points to projects that improve signage, lighting, guardrails, pavement markings, or structures, in addition to signals.

More information about the MPO's current TIP criteria is available in Appendix A.

Table 4-15 displays metrics that describe how the MPO's FFYs 2023–27 Regional Target projects are expected to improve infrastructure on the region's roadways. MPO staff developed estimated values for these metrics using available data from MassDOT's Bridge Inventory and Road Inventory files; project proponent information such as functional design reports; results from TIP project evaluations; and other sources. The MPO expects that these FFYs 2023–27 investments will help make progress towards statewide NHS bridge and pavement condition targets and will also help improve the overall condition of the region's roadways and bridges and address resiliency needs.

²⁶ Under the TIP project selection criteria used before October 2020, staff awarded points to projects that were expected to improve a facility's ability to function in instances of flooding; protect a facility from sea level rise; strengthen infrastructure against seismic activity; address critical transportation infrastructure; protect freight network elements; or implement hazard mitigation or climate adaptation plans. Staff also awarded points to projects that were expected to improve evacuation or diversion routes or to improve access routes to or near emergency support locations. The MPO's current TIP evaluation criteria, which are described in Appendix A, also include elements focused on emergency response and resiliency, with an increased emphasis on regional coordination and nature-based solutions, as well as maintaining connections to an expanded set of critical facilities.

Table 4-15
Regional Target Projects: Roadway System Preservation and Modernization
Performance Metrics

Metric	Value
Bridge structures improved	9 structures
NHS bridge structures improved	6 structures
New bridge structures to be constructed	5 structures
Lane miles of substandard pavement improved ¹	73 lane miles
Lane miles of substandard NHS pavement improved ¹	42 lane miles
Miles of substandard sidewalk improved	35 miles
Projects that improve emergency response	25 projects
Projects that improve the ability to respond to extreme weather or climate conditions	17 projects
Transit stations improved	2 stations

Note: Community Connections projects do not include system preservation and modernization elements and are not included in this table.

1 Substandard pavement and sidewalk designations are based on data provided by MassDOT and project proponents and on MPO assessments conducted for TIP evaluations. The estimated lane miles of substandard NHS pavement improved is based on the pavement condition assessment for the project and the MPO's assessment of the portion of the project on the NHS. The IRI thresholds used to classify pavement are based on TIP criteria approved in October 2020: less than 95 (good), 95 to 170 (fair or substandard), greater than 170 (poor or substandard).

FFY = federal fiscal year. IRI = International Roughness Index. MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization. NHS = National Highway System.

Source: MassDOT and the Boston Region MPO staff.

Many of MassDOT's FFYs 2023–27 TIP investments address bridge and pavement condition. Through its bridge-related programs and earmark or discretionary sources, MassDOT's will fund 44 projects that will improve or replace 75 bridge structures, 48 of which are NHS bridge structures. This includes a project to rehabilitate the Commonwealth Avenue (Route 30) bridge over the Charles River, which is jointly funded by MassDOT and the Boston Region MPO.

In addition to the bridge investments, MassDOT will fund continued work to improve the Sumner Tunnel beneath Boston Harbor. Meanwhile, MassDOT's Interstate pavement investments will improve pavement on Interstate 93 in Boston, Canton, Milton, Quincy, Medford, Randolph, Stoneham, and Winchester; and on Interstate 95 in Burlington, Waltham, and Woburn. Meanwhile, its non-Interstate pavement investments includes eight projects that will improve pavements on MassDOT-owned NHS roadways in 11 Boston region municipalities. Overall,

these projects are expected to help MassDOT make progress toward its NHS bridge and pavement performance targets by addressing condition gaps identified in its 2019 TAMP, as well as generally improve the bridge and pavement condition in the Boston region.

Chapter 3 describes the funding that MassDOT will commit to the projects in the Boston region. Projects in MassDOT's other Reliability and Modernization programs—including its Intersection Improvements, Roadway Improvements, Roadway Reconstruction, and Safety Improvements programs—include elements that will improve pavement and roadway infrastructure condition in the Boston region.

Transit System Asset Condition Performance Measures and Targets

Through its Transit Asset Management rule, which focuses on achieving and maintaining a state of good repair for the nation's transit systems, FTA requires transit agencies to submit progress reports and updated performance targets for federally required TAM performance measures. These relate to transit rolling stock, nonrevenue service vehicles, facilities, and rail fixed-guideway infrastructure. Transit agencies develop these performance targets based on their most recent asset inventories and condition assessments, along with their capital investment and procurement expectations, which are informed by their TAM plans. MBTA, MWRTA, and CATA share their asset inventory and condition data and their performance targets with the Boston Region MPO, so that the MPO can monitor and set TAM targets for the Boston region. The MPO revisits its targets in these performance areas each year when updating its TIP.

The following sections discuss the MPO's current performance targets (adopted in March 2022) for each of the TAM performance measures, which are listed in Table 4-2. These performance targets reflect the MBTA's, CATA's, and MWRTA's SFY 2022 TAM performance targets (for July 2021 through June 2022). After consulting with the MBTA, CATA, and MWRTA, MPO staff has aggregated or reorganized some target information provided by these transit agencies for particular asset subgroups. When compared to SFY 2021 performance, the SFY 2022 TAM targets described in Tables 4-16 through 4-19 may reflect changes in the overall number of assets in each transit category, past or planned asset replacement or repair, other factors depending on the asset type, or a combination of these factors. These performance values and targets may also reflect some recent updates to data or the reclassification of assets into different categories.

Rolling Stock and Equipment Vehicles

FTA's TAM performance measure for evaluating whether rolling stock (vehicles that carry passengers) and equipment vehicles (service support, maintenance, and other nonrevenue vehicles) are in a state of good repair is the percent of vehicles that meet or exceed their useful life benchmark (ULB). This performance measure uses vehicle age as a proxy for state of good repair (which may not necessarily reflect actual asset condition or performance), with the goal being to bring this value as close to zero as possible. FTA defines ULB as "the expected lifecycle of a capital asset for a particular transit provider's operating environment, or the acceptable period of use in service for a particular transit provider's operating environment."²⁷ For example,

²⁷ Federal Transit Administration, "Performance Management" (January 8, 2020), accessed April 12, 2022. www.transit.dot.gov/PerformanceManagement

FTA’s default ULB value for a bus is 14 years.²⁸ For its SFY 2022 targets, the MBTA has used FTA default ULBs for all vehicle types except for paratransit autos and vans, some articulated buses, and some light rail vehicles, which are measured using MBTA-defined ULBs. The MWRTA uses FTA default ULBs for vans and equipment vehicles (excluding automobiles) and uses ULBs from MassDOT’s Fully Accessible Vehicle Guide for its cutaway vehicles and automobiles.²⁹ CATA uses useful life criteria as defined in FTA Circular 5010.1E (Award Management Requirements) for ULB values for its vehicles.³⁰

Table 4-16 describes SFY 2021 baselines and the MPO’s SFY 2022 targets for rolling stock. As shown below, the MBTA, CATA, and MWRTA are improving performance for a variety of rolling-stock-vehicle classes. Transit agencies can make improvements on this measure by expanding their rolling-stock fleets or replacing vehicles within those fleets.

Table 4-16
TAM Performance Values and SFY 2022 Targets for Transit Rolling Stock

Agency	Asset Type	SFY 2021 Performance (as of June 30, 2021)			SFY 2022 Targets (as of June 30, 2022)		
		Number of Vehicles	Number of Vehicles Meeting or Exceeding ULB	Percent of Vehicles Meeting or Exceeding ULB	Expected Number of Vehicles	Expected Number of Vehicles Meeting or Exceeding ULB	Target Percent of Vehicles Meeting or Exceeding ULB
MBTA	Buses ¹	1,198	300	25%	1,210	300	25%
MBTA	Light Rail Vehicles ¹	227	0	0%	223	0	0%
MBTA	Vintage Trolleys ²	7	7	100%	7	7	100%
MBTA	Heavy Rail Vehicles	472	252	53%	494	252	51%*
MBTA	Commuter Rail Locomotives	102	24	24%	102	20	20%*

28 Federal Transit Administration, “Default Useful Life Benchmark Cheat Sheet” (October 2021), accessed April 12, 2022. www.transit.dot.gov/TAM/ULBcheatsheet

29 Massachusetts Department of Transportation, *MassDOT Fully Accessible Vehicle Guide: An Overview of Accessible Vehicle Specifications* (May 2020), accessed February 28, 2022. www.mass.gov/doc/massdot-fully-accessible-vehicle-guide/download

30 FTA, FTA Circular 5010.E “Award Management Requirements” (July 16, 2018), accessed February 28, 2022. www.transit.dot.gov/regulations-and-guidance/fta-circulars/award-management-requirements-circular-50101e

(Table 4-16, continued, 2)

Agency	Asset Type	SFY 2021 Performance (as of June 30, 2021)			SFY 2022 Targets (as of June 30, 2022)		
		Number of Vehicles	Number of Vehicles Meeting or Exceeding ULB	Percent of Vehicles Meeting or Exceeding ULB	Expected Number of Vehicles	Expected Number of Vehicles Meeting or Exceeding ULB	Target Percent of Vehicles Meeting or Exceeding ULB
MBTA	Commuter Rail Coaches	401	33	8%	401	33	8%
MBTA	Ferry Boats ³	3	0	0%	3	0	0%
MBTA	Paratransit Vehicles ⁴	674	264	39%	728	138	19%
CATA	Buses	8	2	25%	8	2	25%
CATA	Cutaway Vehicles ⁵	21	0	0%	21	0	0%
CATA	Trolleys (simulated) ⁶	2	2	100%	2	2	100%
MWRTA	Automobiles ⁷	8	8	100%	0	0	0%*
MWRTA	Vans ⁸	3	0	0%	8	0	0%
MWRTA	Cutaway vehicles ^{5,7}	104	13	13%	104	26	25%

* The SFY 2022 target anticipates improved performance compared to SFY 2021 performance.

1 The ULBs for the Neoplan AN460L articulated bus fleet and Type 7 light rail vehicle fleet have been updated since the previous report due to life-extending overhauls.

2 MBTA vintage trolleys are used on the Ashmont-Mattapan High Speed Line.

3 One of the MBTA's four ferryboats will be out of active service and in overhaul into SFY 2023.

4 The MBTA's The RIDE paratransit vehicle data and target reflect automobiles and vans.

5 The NTD defines a cutaway vehicle as a vehicle in which a bus body is mounted on a van or light-duty truck chassis, which may be reinforced or extended. CATA uses these vehicles to provide fixed-route and demand response service.

6 Simulated trolleys, also known as trolley-replica buses, have rubber tires and internal combustion engines, as opposed to steel-wheeled trolley vehicles or rubber-tire trolley buses that draw power from overhead wires.

7 MWRTA uses cutaway vehicles to provide fixed-route and demand response service. Automobiles have been removed from MWRTA's rolling stock inventory.

8 MWRTA's vans are used to provide demand response service.

CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority.

MPO = metropolitan planning organization. MWRTA = MetroWest Regional Transit Authority. NTD = National Transit Database.

SFY = state fiscal year. ULB = Useful Life Benchmark.

Source: CATA, MBTA, MWRTA, and Boston Region MPO staff.

The MBTA's planned SFY 2022 investments in revenue vehicles include ongoing replacements for the bus fleet and The RIDE paratransit fleet, the continuation of its ferryboat overhaul program, commuter rail locomotive and coach overhauls, and continued procurement of Red and Orange Line (heavy rail) vehicles and Green Line Type 9 vehicles. During FFY 2022, MWRTA will receive federal funds to replace cutaway revenue vehicles.

Table 4-17 shows SFY 2021 baselines and the MPO's SFY 2022 targets for transit-equipment vehicles. MPO staff has aggregated targets for nonrevenue vehicle subtypes for each of the three transit agencies. Similar to transit rolling stock, transit agencies can make improvements on these measures by expanding their fleets or replacing vehicles within those fleets. The MBTA notes that some of its equipment vehicles are stored indoors and used sporadically, and therefore can perform adequately even well beyond their ULBs. Also, the MBTA's nonrevenue vehicle program focuses on replacing the vehicles that have the highest impact on service, including those used for winter response and track maintenance, which may not always be the oldest vehicles in the fleet.

Table 4-17
SFY 2021 Performance and SFY 2022 Targets for Equipment (Nonrevenue Vehicles)

Agency	Asset Type	SFY 2021 Performance (as of June 30, 2021)			SFY 2022 Targets (as of June 30, 2022)		
		Number of Vehicles	Number of Vehicles Meeting or Exceeding ULB	Percent of Vehicles Meeting or Exceeding ULB	Expected Number of Vehicles	Expected Number of Vehicles Meeting or Exceeding ULB	Target Percent of Vehicles Meeting or Exceeding ULB
MBTA	All Equipment	1,561	289	19%	1,527	328	21%
CATA	All Equipment	3	3	100%	3	3	100%
MWRTA	All Equipment	10	5	50%	10	5	50%

CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority. MPO = metropolitan planning organization. MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year. ULB = Useful Life Benchmark.

Source: CATA, MBTA, MWRTA, and Boston Region MPO staff.

The MBTA's planned SFY 2022 investments in non-revenue vehicles include procurement of truck or rubber tire vehicles to support South Coast Rail and replacement of some aging vehicles in the Transit Police fleet.

Facilities

FTA assesses the condition for passenger stations, parking facilities, and administrative and maintenance facilities to determine if they are in a state of good repair by using the FTA Transit Economic Requirements Model (TERM) scale, which generates a composite score based on

assessments of facility components. Facilities with scores below three are considered to be in marginal or poor condition (though this score is not a measure of facility safety or operational performance). The goal is to bring the share of facilities that meet this criterion to zero. Infrastructure projects focused on individual systems may improve performance gradually, while more extensive facility improvement projects may have a more dramatic effect on a facility's TERM scale score.

Table 4-18 shows SFY 2021 measures and the MPO's SFY 2022 targets for MBTA, CATA, and MWRTA facilities.

Table 4-18
SFY 2021 Performance and SFY 2022 Targets for Facilities

Agency	Asset Type	SFY 2021 Performance (as of June 30, 2021)			SFY 2022 Targets (as of June 30, 2022)		
		Number of Facilities	Number of Facilities Rated Less than 3 on the FTA's Term Scale	Percent of Facilities Rated Less than 3 on the FTA's Term Scale	Expected Number of Facilities	Expected Number of Facilities Rated Less than 3 on the FTA's Term Scale	Target Percent of Facilities Rated Less than 3 on the FTA's Term Scale
MBTA	Passenger/ Parking Facilities ^{1,2,3}	386	32	8%	390	30	8%
MBTA	Administrative/ Maintenance Facilities ^{1,3}	420	207	45%	420	184	44%*
CATA	Administrative/ Maintenance Facilities	1	0	0%	1	0	0%
MWRTA	Administrative/ Maintenance Facilities	1	0	0%	1	0	0%

* The SFY 2022 target anticipates improved performance compared to SFY 2021 performance.

1 The MBTA reports performance targets for facilities with a baseline consistent assessment, and continues to undertake physical condition assessments for all facilities.

2 The SFY 2022 targets for Passenger and Parking Facilities account for the consolidation of four existing Green Line passenger facilities into two new stations in late 2021, as well as the opening of six new stations associated with the Green Line Extension in spring 2022.

3 In response to FTA guidance, the SFY 2021 measure and SFY 2022 target reflect an expanded accounting of facilities compared to previous years, now including pump rooms and other facility assets that are sections of a larger facility.

CATA = Cape Ann Transportation Authority. FTA = Federal Transit Administration. MBTA = Massachusetts Bay Transportation Authority. MPO = metropolitan planning organization. MWRTA = MetroWest Regional Transit Authority. SFY = State Fiscal Year.

Source: CATA, MBTA, MWRTA, and Boston Region MPO staff.

The MBTA's activities in SFY 2022 to improve facilities include rehabilitating the Braintree and Quincy Adams garages; improving commuter rail stations, including Natick Center and Winchester Center Stations; implementing the Green Line Extension and B Branch Station Consolidation project; and making ongoing improvements to bus and rail facilities. CATA will continue to maintain and improve its facility, while MWRTA will continue to improve and enhance its Blandin terminal and the operations center at the commuter rail station in Framingham.

Fixed-Guideway Infrastructure

Table 4-19 describes SFY 2021 baselines and SFY 2022 targets for infrastructure condition, specifically rail fixed-guideway condition. The MBTA is the only transit agency in the Boston region with this asset type. The performance measure that applies to these assets is the percentage of track that is subject to performance or speed restrictions. The MBTA samples the rack segments with speed restrictions throughout the year. These performance restrictions reflect the condition of track, signal, and other supporting systems, which the MBTA can improve through maintenance, upgrades, and replacement and renewal projects. Again, the goal is to bring the share of MBTA track systems subject to performance restrictions to zero.

Table 4-19
SFY 2021 Performance and SFY 2022
MBTA Targets for Infrastructure (Fixed Guideway)

Asset Type	SFY 2021 Performance (as of June 30, 2021)			SFY 2022 Targets (as of June 30, 2022)		
	Number of Miles	Number of Miles with Performance Restrictions	Percent of Miles with Performance Restrictions	Expected Number of Miles	Expected Number of Miles with Performance Restrictions	Target Percent of Miles with Performance Restrictions
MBTA Transit Fixed Guideway ^{1,2}	130.23	4.53	3%	134.53	2.90	2%*
MBTA Commuter Rail Fixed Guideway	663.84	24.75	4%	663.84	15.50	2%*

Note: For this performance measure, the term "miles" refers to "directional route miles," which represents the miles managed and maintained by the MBTA with respect to each direction of travel (for example, northbound and southbound), and excludes nonrevenue tracks such as yards, turnarounds, and storage tracks. The baseline and target percentages represent the annual average number of miles meeting this criterion over the 12-month reporting period.

* The SFY 2022 target anticipates improved performance compared to SFY 2021 performance.

1 The MBTA's Transit Fixed Guideway information reflects light rail and heavy rail fixed guideway networks.

2 The SFY 2022 target for transit fixed guideway includes the 4.3 new miles of light rail route miles associated with the Green Line Extension project.

MBTA = Massachusetts Bay Transportation Authority. MPO = metropolitan planning organization. SFY = State Fiscal Year.

Source: CATA, MBTA, MWRTA, and Boston Region MPO staff.

The MBTA's SFY 2022 fixed-guideway infrastructure investments include continued implementation of the Positive Train Control and the Automated Train Control projects; Red and Orange Line track work, Green Line Extension and D Branch track improvements; and ongoing investment on the Framingham/Worcester, Newburyport/Rockport, and Haverhill commuter rail lines. Per the Federal Railroad Administration, Positive Train Control is a processor-based and communication based system capable of automatically controlling train speeds and movements should a train operator fail to take appropriate action for the conditions at hand.

TIP Investments Supporting Transit System Asset Condition

Many types of transit investments may affect the TAM vehicle, facility, and fixed-guideway performance measures described in the previous section, because these investments may either improve or replace assets already included in transit agency inventories, or because they may expand those inventories. These investments may improve assets gradually over time by upgrading specific asset subsystems, or they may generate more dramatic changes in performance by overhauling or replacing assets.

The FFYs 2023–27 TIP includes a variety of transit infrastructure improvement initiatives, funded both by the MPO's Regional Targets and dollars that the MBTA, MWRTA, and CATA program in coordination with MassDOT. Many of the MBTA and CATA investments appear in the priority investment lists these agencies include in their TAM plans. Because of the timing of these investments, they are not expected to affect the MPO's current (SFY 2022) TAM performance targets; however, they are expected to help improve performance on the TAM measures over time.

Vehicles

During FFYs 2023 to 2027, the MBTA will be investing in vehicles to replace or expand its fleets through its Revenue Vehicles and Bus Programs. These procurements will support more efficient, reliable, and sustainable operations and include the following:

- Type 10 Green Line light-rail vehicles to replace existing Type 7 and Type 8 fleets
- Buses, including hybrid and battery electric models, and supporting infrastructure.
- Bi-level commuter rail coaches

As mentioned in the Safety Performance section of this chapter, the MBTA will also overhaul hybrid and compressed-natural-gas (CNG) buses, Blue Line vehicles, and streetcar-type vehicles that serve the Mattapan High Speed Line. It will continue to support an ongoing overhaul program for its ferryboats. It will also fund activities and procurements to keep its commuter rail locomotives and coaches to ensure that these fleets are resilient and in a state of good repair. Finally, it will allocate funds to planning for future fleet procurements.

Meanwhile, CATA plans to purchase several buses, including both body-on-chassis and low-floor buses, to replace those that have reached the end of their useful life. The MWRTA plans to purchase cutaway vehicles to replace vehicles that have reached the end of their useful life. Expected purchases include CNG-powered vehicles and electric vehicles. MWRTA will also continue pursuing opportunities to migrate its demand response fleet to fully electric vehicles.

Collectively, these investments will help improve the condition of the fleets and make progress with respect to the TAM rolling stock performance measure.

Facilities

During FFYs 2023 to 2027, the MPO will provide Regional Target funding to support improvements to the Lynn and Forest Hills MBTA stations. Many elements of the Lynn Station project will improve its state of good repair, including reconstruction of the existing rail platform, construction of two new elevators, new stairways, and upgraded lighting. This project also includes repairs to the viaduct to the northeast of the station. The Forest Hills Station improvements include elevator replacements, construction of a new elevator and stair tower, accessibility upgrades, platform repairs, and station brightening and wayfinding.

During this timeframe, investments through the MBTA's Stations and Facilities program will improve specific subsystems or components of facilities, or they will make more extensive repairs or upgrades to bring the facilities into a state of good repair and address ADA accessibility, safety, or other needs. In addition to providing planning funding for the Lynn Station improvements and funding Forest Hills Station improvements along with the MPO, the MBTA will make improvements at

- the Wellesley Farms, Wellesley Hills, Wellesley Square, and West Natick Stations on Framingham/Worcester commuter rail lines;
- the Newton Highlands Green Line Station and stations along the B and E Branches of the Green Line;
- Ruggles Station, Charles/MGH Station (through the Longfellow Approach Viaduct project), and Suffolk Downs Station on its heavy rail network;
- the Hingham Ferry Dock, and supporting infrastructure, and systems and amenities at the Hingham Intermodal Center; and
- various stations by funding the design and installation of new redundant elevators and replacement of existing elevators.

The MBTA will also invest in its administration and maintenance facilities, including by

- modernizing the Quincy bus facility, renovating the North Cambridge bus facility, and designing a new Arborway bus facility, all of which will support the MBTA's transition to battery-electric buses;
- making infrastructure improvements at the MBTA's Codman Yard facility, in part to accommodate new Red Line vehicles;
- improving commuter rail facilities, including maintenance-of-way facilities;
- upgrading a Green Line Extension vehicle maintenance facility and the Riverside Vehicle Maintenance Facility to accommodate Type 10 vehicles; and
- demolishing the Lake Street Facility and reconfiguring the site into an expanded yard.

While MWRTA's and CATA's administration and maintenance facilities are currently in a state of good repair, these agencies will continue to maintain and upgrade those facilities during FFYs 2023 to 2027. CATA plans to repave the parking lot of its maintenance and operations facility. MWRTA plans to improve its Blandin Hub facility—including its amenities, back entrance, and support equipment. It plans to invest in a new garage and body shop at that location and enhance the facility's ability to maintain and manage vehicles. MWRTA will integrate solar energy arrays where possible throughout these projects. MWRTA will fund improvements and enhancements for the intermodal center at the commuter rail station in Framingham. It also plans to fund construction of a parking garage adjacent to this intermodal center, which will be added to its facility inventory in future years.

Fixed-Guideway Infrastructure

The MBTA's investments in track signals and systems through its Signals and System Upgrade Program during FFYs 2023 to 2027 will, over time, help reduce the need for performance restrictions on fixed guideways. Projects that address this area include the following:

- Framingham/Worcester commuter rail line track improvements and realignment
- Green Line Central Tunnel signal, track, and power system upgrades
- Track and system improvements on the B and E Branches of the Green Line
- Red and Orange Line signal Improvements
- Track replacements on the Southwest Corridor of the Orange Line
- Installation of new duct-bank systems as part of the Power Systems Resiliency Program, which serves the MBTA's Red, Orange, Blue, and Green Lines
- Mattapan High Speed Line transformation, including power infrastructure improvements
- Improvements to track and track support systems for the Ashmont and Braintree branches of the Red Line and at the Longfellow Approach Viaduct
- Replacement of electrical systems and improvements to mechanical plumbing, and other systems at traction power substations
- Replacement of duct banks and cables which carry alternating-current (AC) power from the South Boston power complex to Forest Hills
- Replacement of existing power and electrical equipment at unit substation locations

Other Transit Assets

Other planned MBTA investments during FFYs 2023 to 2027 include those in its Bridge and Tunnel Program, which will support bridge design, repair, inspection, rehabilitation, and replacement, along with tunnel inspection and rehabilitation. For example, this program will support the rehabilitation of the Longfellow Bridge Approach Viaduct, as well as the replacement of the North Station Draw 1 Bridge and the East Street Bridge that carries the Franklin

commuter rail line in Dedham. The MBTA will also fund several systemwide initiatives intended to improve the resiliency and state-of-good-repair of its assets, including culvert inspection and rating activities; tunnel flood mitigation, which will harden these assets against storm surges, precipitation, and sea level rise; and ongoing implementation of its Asset Management Program.

Meanwhile, CATA will invest in shop equipment, software, other capital maintenance items, while MWRTA will invest in bus support equipment, capital maintenance items, and information technology infrastructure. In addition, both agencies will also be funding improvements to their fare-collection systems.

Additional refinements may be made to MBTA, CATA, and MWRTA programming after MassDOT's CIP is finalized in summer 2022. For example, the MBTA may pursue funding through federal loan programs to support other projects. Also, CATA and MWRTA coordinate with MassDOT's Rail and Transit Division to maintain vehicle condition in a state of good repair through competitive grant applications, including to the Commonwealth's Community Transit Grant Program. The Rail and Transit Division awards funding, including FTA 5310 funds, through this program on an annual basis; award announcements are typically made in the third quarter of the calendar year. Vehicle purchases and other investments supported by this program may improve transit condition in the Boston region.

MPO Investment in Transit Asset Improvements

As mentioned previously, in addition to investing in the Lynn and Forest Hills Stations, the MPO has set aside \$5.5 million per year in its Transit Modernization investment program starting in FFY 2025. While the MPO continues to work with MassDOT and the region's transit agencies to define the scope of this program, in October 2020 the MPO established baseline transit system preservation and modernization evaluation criteria for this program. These include criteria that award points for

- bringing assets (including those covered by the TAM performance measures) into a state of good repair;
- modernizing transit system assets;
- improving safety-critical, operations-critical, or climate-sensitive assets;
- incorporating resiliency elements into transit projects; and
- improving pedestrian elements at transit stations.

The MPO's updated criteria for corridor and intersection projects also award points that improve or modernize transit supporting infrastructure. More details about these criteria are included in Appendix A. These new criteria will support the MPO as it explores opportunities to invest in maintaining transit assets in a state of good repair and in modernization in future years.

Future Activities to Improve and Monitor System Preservation and Modernization Performance

The MPO will continue to work to improve the links between transportation investments and

system preservation and modernization, and will coordinate with MassDOT, the MBTA, MWRTA, and CATA, and other stakeholders on that process. This work may include the following activities:

- Continue to implement the MPO's updated TIP project selection criteria pertaining to system preservation and modernization, and further integrate these criteria into the MPO's performance monitoring activities.
- Continue to refine the MPO's Transit Modernization investment program and to identify links between this program and improving the condition of the region's transit assets.
- Work with MassDOT and the region's transit agencies to better estimate the impacts of TIP investments on federally required and other performance measures and targets.

Capacity Management and Mobility Performance

Relevant Goals, Policies, and Plans

The MPO's capacity management and mobility goal focuses on using existing facility capacity more efficiently and increasing transportation options. The MPO's objectives in this area encompass a variety of modes and aspects of mobility, including access to and the accessibility of different transportation modes, connectivity between modes and systems, and support for reliable travel and congestion mitigation. Much of the Boston region is densely developed, which creates both opportunities and challenges to addressing these access, reliability, and congestion mitigation needs.

Several different planning processes come together to address capacity management and mobility performance, issues, and needs. Through its CMP, the MPO does extensive analysis of congestion and mobility constraints in the region. The MPO also produces periodic CMAQ Performance Plans and progress reports to address requirements related to the federal Congestion Mitigation and Air Quality Improvement Program; these describe other congestion-oriented measures and targets.³¹ The MPO combines this work with ongoing system-level analyses that support its long-range planning, which are documented in its LRTP Needs Assessment. MassDOT conducts its own analyses of mobility performance and needs, which it documents in modal plans such as its Freight Plan, Bicycle Transportation Plan, and Pedestrian Transportation Plan, its Congestion in the Commonwealth report and accompanying studies, and its MassDOT Performance Management Tracker tool.³² Meanwhile, the MBTA tracks and analyzes mobility metrics and uses these to support planning processes, such as Focus40, its current long-term investment plan.³³ The exchange and integration of these plans help agencies in the Boston region coordinate to improve mobility across modes.

31 The MPO's CMAQ Performance Plans and progress reports are available at bostonmpo.org/performance.

32 The 2017 Massachusetts Freight Plan is available at www.mass.gov/service-details/freight-plan. MassDOT's 2019 *Congestion in the Commonwealth* report and accompanying studies are available at www.mass.gov/service-details/congestion-in-the-commonwealth.

33 The MBTA's *Focus40 plan* is available at www.mbtafocus40.com.

Capacity Management and Mobility Performance Measures and Targets

The MPO examines a variety of different metrics to understand congestion and mobility issues, several of which are discussed below.

Travel Time Reliability

Table 4-3 highlights several federally required performance measures pertaining to the NHS system, including measures related to infrastructure condition and travel reliability. FHWA requires states and MPOs to monitor and set targets for two performance measures that pertain to all travelers on NHS roadways:

- Percent of the person-miles traveled on the Interstate System that are reliable
- Percent of the person-miles traveled on the non-Interstate NHS that are reliable

These measures capture (1) whether travel times on an NHS segment are consistent (reliability); and (2) the extent to which NHS users' travel may be affected by those conditions (percent of person miles). Several component metrics make up this measure:

- *Level of Travel Time Ratio (LOTTR)*. This ratio compares longer (80th percentile) travel times to average (50th percentile) travel times on an NHS segment. FHWA has determined that LOTTR values less than 1.5 indicate reliable travel on the NHS for a particular time period. Larger LOTTR values indicate greater differences between the 80th and 50th percentiles and, thus, less reliable travel times. An NHS segment must have LOTTR values of less than 1.5 for four designated day-and-time periods to be considered reliable.³⁴
- *Annual Number of Travelers*. States and MPOs calculate this figure using vehicle volumes and average vehicle-occupancy factors.
- *NHS segment length*. States and MPOs use this value and data on the annual number of travelers to estimate person-miles traveled on the NHS.

States and MPOs identify the person-miles of travel for each NHS segment and divide the total person-miles on the relevant NHS network that are reliable by the total person-miles on the relevant NHS network. To support this analysis, FHWA provides travel-time and traffic-volume data as part of the National Performance Management Research Data Set (NPMRDS), in which travel-time data are reported by traffic messaging channel (TMC) segments. These data, along with a set of analysis tools, are available through the Regional Integrated Transportation Information System (RITIS), which is developed and maintained by the Center for Advanced Transportation Technology Laboratory at the University of Maryland. MassDOT has obtained access to the RITIS platform and grants access to MPOs and transportation planning organizations in the Commonwealth.

States are required to set two-year and four-year targets for these measures. In 2018, MassDOT calculated baselines and established targets for these measures for the Massachusetts Interstate

³⁴ States and MPOs must calculate LOTTR values for four time periods: weekdays from 6:00 AM to 10:00 AM, weekdays from 10:00 AM to 4:00 PM, weekdays from 4:00 PM to 8:00 PM, and weekend days from 6:00 AM to 8:00 PM.

and non-Interstate NHS networks. When establishing baseline values, MassDOT only examined NPMRDS travel-time data from CY 2017 because the NPMRDS from prior years was assembled using different data collection methods and has some different features. MassDOT considered FHWA guidance and recommendations for establishing initial targets with this limited historic data, and it set initial targets for Massachusetts equal to CY 2017 baseline values.³⁵

Table 4-20 shows MassDOT's CY 2017 baselines and two-year and four-year targets for these measures. The Boston Region MPO, like all MPOs, was required to establish four-year targets for these measures by either supporting state targets or setting its own quantitative targets for the Boston region. In 2018, the MPO board voted to support the state's four-year targets. As noted in previous sections, MassDOT owns and manages the Interstate network in Massachusetts and implements strategies to improve its performance. As with the roadway safety performance targets previously discussed, this approach reflects the way the Commonwealth and the MPO will need to collaborate to make and keep the non-Interstate NHS in the region reliable. Some relevant strategies include designing and funding roadway infrastructure improvements and supporting signal retiming, which fall under the purview of both the MPO and MassDOT. Others include regulating vehicle volumes using approaches such as ramp metering or managed lanes, which would fall under the Commonwealth's purview.

Table 4-20 also shows CY 2017 baselines for the Boston region's Interstate and non-Interstate NHS networks for comparison. As the table shows, the Boston region's share of reliable person-miles traveled on its Interstate and non-Interstate NHS networks was lower than statewide values for Massachusetts in 2017.

³⁵ FHWA, "Frequently Asked Questions: Target Setting," accessed April 26, 2021. www.fhwa.dot.gov/tpm/faq.cfm#targ.

Table 4-20
Baseline Values and Targets for Travel Time Reliability

Network	Measure	Cumulative Traffic Message Channel Length (Miles)	2017 Measure Value (Baseline)	Two- Year Target (CY 2019)	Four- Year Target (CY 2021)
Massachusetts— Interstate Highway System	Percent of person- miles on the Interstate Highway System that are reliable	1,150	68.0%	68.0%	68.0%
Massachusetts— Non-Interstate NHS System	Percent of person-miles on the non-Interstate NHS that are reliable	5,257	80.0%	80.0%	80.0%
Boston Region— Interstate Highway System ¹	Percent of person- miles on the Interstate Highway System that are reliable	354	47.2%	N/A	N/A
Boston Region— Non-Interstate NHS System ¹	Percent of person-miles on the non-Interstate NHS that are reliable	1,799	69.0%	N/A	N/A

Note: The two-year target reflects conditions as of the end of CY 2019, and the four-year target reflects conditions as of the end of CY 2021.

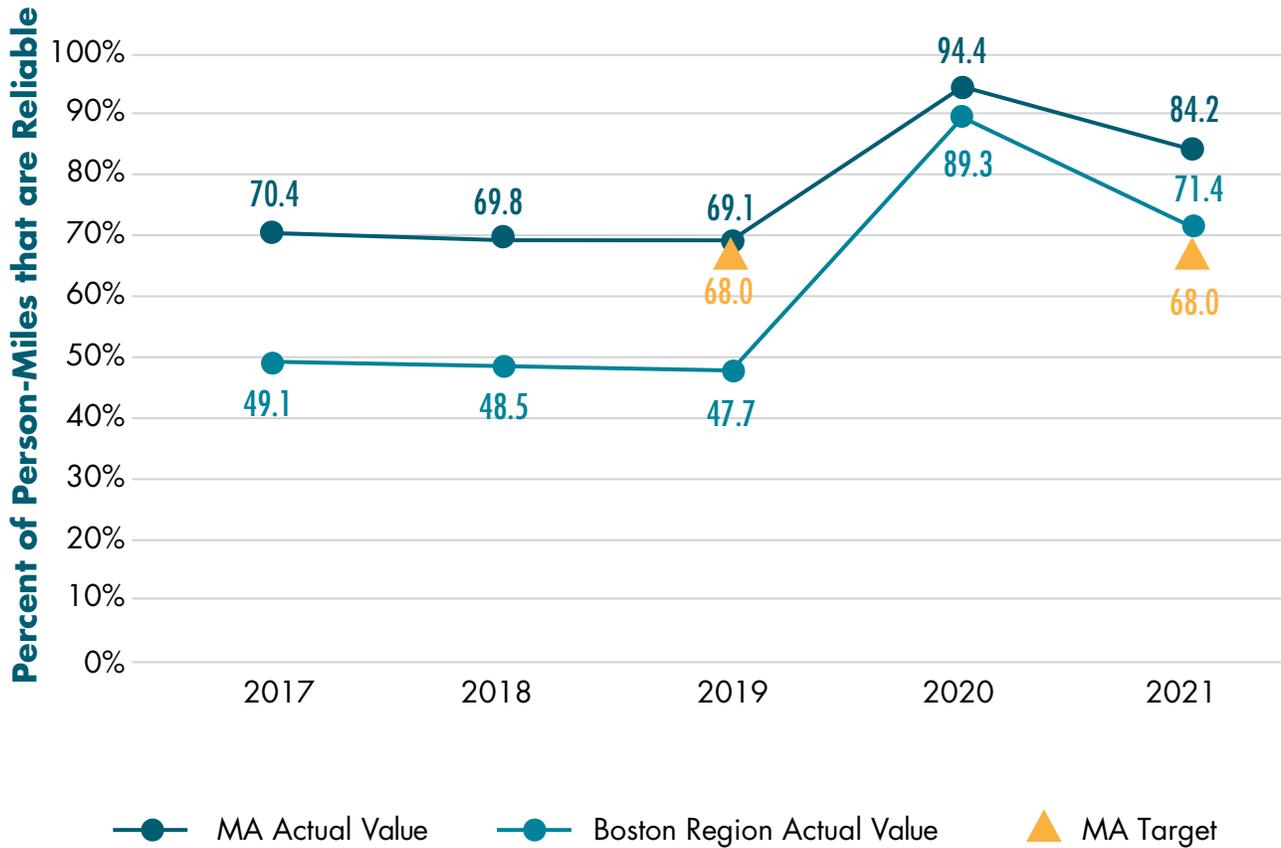
¹ The baseline values for the Boston region that are shown in this table were calculated in 2018.

CY = calendar year. MPO = metropolitan planning organization. N/A = not applicable. NHS = National Highway System.

Sources: National Performance Management Research Data Set, Cambridge Systematics, Massachusetts Department of Transportation, and the Boston Region MPO staff.

Figure 4-6 shows the change in the percent of person-miles on the Interstate Highway System that were reliable for both Massachusetts and the Boston region between 2017 and 2021. Figure 4-7 shows the change in the percent of person-miles on the non-Interstate NHS for the same time period and geographies. As shown in the charts, the travel time reliability measures for the Interstate Highway System and the non-Interstate NHS in Massachusetts were better than the Commonwealth’s two-year and four-year targets. The share of reliable person-miles on the NHS network increased significantly in 2020 for both the Boston region and Massachusetts as a whole, primarily because of reduced travel in response to the COVID-19 pandemic, though the percentage of reliable person-miles dropped for both geographies in 2021 as travel increased. As the region and the Commonwealth adjust to post-pandemic travel patterns and levels of demand, the MPO will work with the Commonwealth, municipalities, and other stakeholders to support reliable travel on the NHS and other roadways.

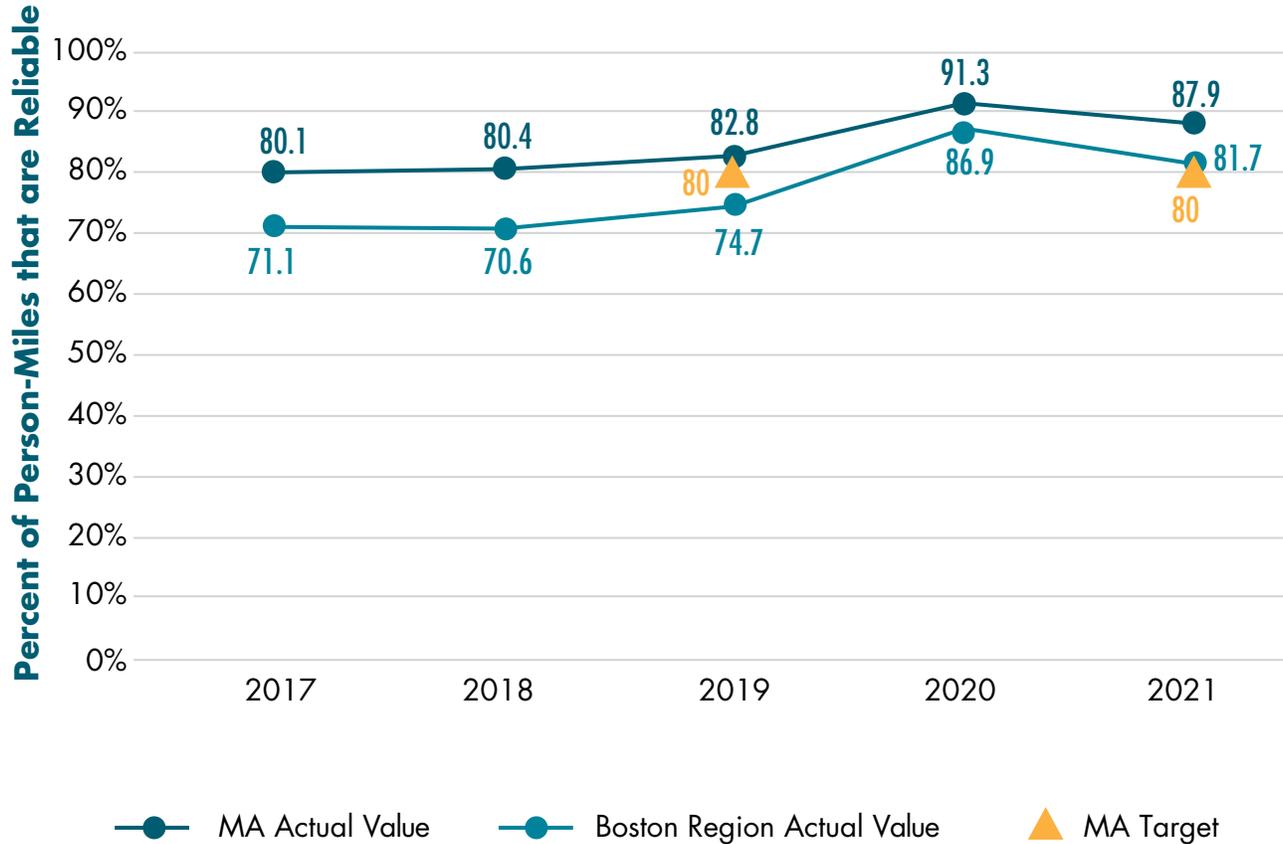
Figure 4-6
Performance Values and Targets for the Percent of Person-Miles that are Reliable on the Interstate Highway System



Note: The number of municipalities in the Boston Region MPO area decreased from 101 to 97 in 2018. This change may have affected 2017 values calculated using the RITIS platform in April 2022 as compared to baselines determined when targets were initially set in 2018.

MPO = metropolitan planning organization. RITIS = Regional Integrated Transportation Information System.
 Sources: National Performance Management Research Data Set and the Boston Region MPO staff.

Figure 4-7
Performance Values and Targets for the Percent of Person-Miles that are Reliable on the Non-Interstate NHS



Note: The number of municipalities in the Boston Region MPO area decreased from 101 to 97 in 2018. This change may have affected 2017 values calculated using the RITIS platform in April 2022 as compared to baselines determined when targets were initially set in 2018.

MPO = metropolitan planning organization. NHS = National Highway System. RITIS = Regional Integrated Transportation Information System.

Sources: National Performance Management Research Data Set, Massachusetts Department of Transportation, and the Boston Region MPO staff.

Truck Travel Time Reliability

FHWA requires states and MPOs to track truck travel time reliability on the Interstate System to better understand the performance of the nation's freight system. The applicable measure in this case is the Truck Travel Time Reliability Index (TTTR). Like the LOTTR, this measure compares longer (95th percentile) truck travel times to average (50th percentile) truck travel times. The greater the difference between these two travel times on an Interstate segment, the less reliable truck travel on that segment is considered to be. For each Interstate segment, states and MPOs calculate TTTR values for different day-and-time periods and weight the segment length by

the maximum applicable TTR value.³⁶ They then sum these weighted segment lengths for all Interstate segments and divide that total value by the length of the full Interstate network for the applicable geographic area. Like segment-specific TTR values, the greater this aggregate value is, the more unreliable the network is with respect to truck travel.

In 2018, MassDOT calculated baseline TTR Index values and established performance targets using CY 2017 truck travel-time data included in the NPMRDS. As with the all-vehicle travel time reliability targets, MassDOT set its two-year and four-year targets equal to the CY 2017 baseline. Table 4-21 displays these values. MPOs are required to set four-year targets for this measure, and the Boston Region MPO board voted to support MassDOT’s four-year TTR Index target in 2018. Table 4-21 also includes the Boston region’s CY 2017 baseline index value. As the table shows, the Boston region’s TTR baseline value is higher than the one for Massachusetts, indicating that truck travel times on the region’s Interstate highway network have been generally less reliable than on Massachusetts’s full Interstate network.

Table 4-21
Baseline Values and Targets for Truck Travel Time Reliability

Network	Measure	Cumulative Traffic Message Channel Length (Miles)	2017 Measure Value (Baseline)	Two-Year Target (CY 2019)	Four-Year Target (CY 2021)
Massachusetts— Interstate Highway System	Truck Travel Time Reliability Index	1,150	1.85	1.85	1.85
Boston Region— Interstate Highway System ¹	Truck Travel Time Reliability Index	354	2.55	N/A	N/A

Note: The two-year target reflects conditions as of the end of CY 2019, and the four-year target reflects conditions as of the end of CY 2021.

¹ The baseline values for the Boston region that are shown in this table were calculated in 2018.

CY = calendar year. MPO = metropolitan planning organization. N/A = not applicable.

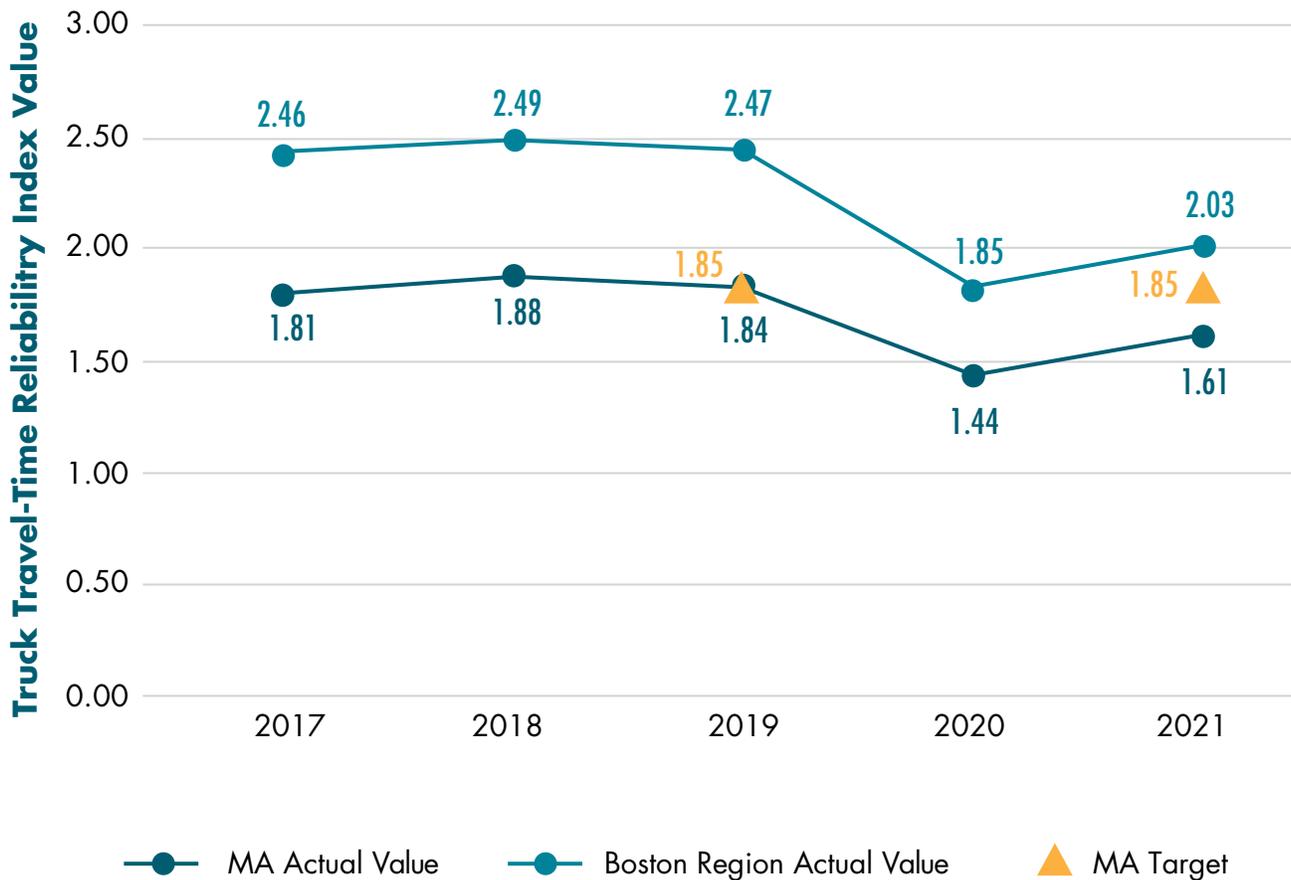
Sources: National Performance Management Research Data Set, Cambridge Systematics, the Massachusetts Department of Transportation, and the Boston Region MPO staff.

Figure 4-8 shows the change in TTR Index values for Interstate Highway System for both Massachusetts and the Boston region between 2017 and 2021. As shown in the charts the TTR values measures for the Interstate Highway System in Massachusetts were better than the Commonwealth’s two-year and four-year targets. As with the metrics capturing the share of reliable person-miles on the NHS, TTR values improved for both Massachusetts and the

³⁶ States and MPOs must calculate TTR Index Values for five time periods: weekdays from 6:00 AM to 10:00 AM, weekdays from 10:00 AM to 4:00 PM, weekdays from 4:00 PM to 8:00 PM, weekend days from 6:00 AM to 8:00 PM, and all days from 8:00 PM to 6:00 AM.

Boston region in 2020, although values increased for both geographies in 2021. Performance monitoring will enable the Commonwealth, the MPO, and other stakeholders to respond to post-pandemic changes in truck travel time reliability.

Figure 4-8
Performance Values and Targets for Truck Travel Time Reliability on the Interstate Highway System



Note: The number of municipalities in the Boston Region MPO area decreased from 101 to 97 in 2018. This change may have affected 2017 values calculated using the RITIS platform in April 2022 as compared to baselines determined when targets were initially set in 2018.

MPO = metropolitan planning organization. RITIS = Regional Integrated Transportation Information System.
 Sources: National Performance Management Research Data Set, Massachusetts Department of Transportation, and the Boston Region MPO staff.

Peak Hours of Excessive Delay Per Capita

MassDOT and the Boston Region MPO also examine mobility using measures they must monitor to meet CMAQ requirements. These measures are designed to help FHWA, states, and MPOs better understand the impacts of CMAQ investments, which are intended to contribute to air quality improvements and provide congestion relief. CMAQ performance measures related to traffic congestion apply to urbanized areas (UZAs) that contain geographic areas designated as *nonattainment areas* because they do not meet the US Environmental Protection Agency (EPA)

standards for criteria air pollutants and precursors from mobile sources.³⁷ The measures also apply to geographic areas, designated as *maintenance areas*, that have a history of being in nonattainment and are thus required to maintain air quality monitoring and standard conformity processes.

States must be involved in setting targets for CMAQ traffic performance measures if (1) they have mainline highways on the NHS that cross part of a UZA with a population of more than one million; and (2) that UZA contains part of a nonattainment or maintenance area for relevant criteria pollutants. Similarly, MPOs must participate in target setting for the traffic congestion measures if (1) the region contains mainline highways on the NHS that cross part of a UZA with a population of more than one million; and (2) the part of the MPO area that overlaps the UZA contains part of a nonattainment or maintenance area for relevant criteria pollutants. Massachusetts and the Boston Region MPO each meet these respective criteria and, therefore, must be involved in monitoring and setting targets for traffic congestion performance measures for the Boston MA-NH-RI UZA, which encompasses several MPO areas in eastern Massachusetts, New Hampshire, and Rhode Island. Agencies in each UZA that are responsible for these traffic congestion measures set two-year and four-year targets.

The first of these CMAQ traffic congestion measures is *annual hours of peak hour excessive delay (PHED) per capita*, which estimates the excessive delay experienced by a UZA's population from travel on the NHS during peak periods. States and MPOs calculate this measure using several component metrics:

- *Hours of excessive delay during peak periods.* For each NHS segment, states and MPOs determine a threshold speed and use this value and the segment length to establish an excessive delay threshold travel time (EDTTT).³⁸ They determine the amount of travel time for all vehicles that exceeded the EDTTT during weekday peak periods.³⁹ This remainder is the excessive delay for that NHS segment. Travel-time data for NHS segments must be derived by this calculation; these data are provided by the NPMRDS. This excessive delay value is calculated for peak periods for all NHS segments for a full year.
- *Number of travelers during peak periods.* To calculate this figure, states and MPOs use average annual daily traffic (AADT) estimates for NHS segments and then apply factors to adjust these estimates to reflect weekday peak hours and average vehicle occupancies.
- *UZA Population.* Population figures are provided by the US Census Bureau.

The PHED per capita measure is calculated at the Boston MA-NH-RI UZA level by multiplying the hours of excessive delay during peak periods by the number of travelers during peak periods, and then dividing that total by the UZA population.

³⁷ A precursor is a chemical compound that reacts with other chemical compounds in the presence of solar radiation to form pollutants.

³⁸ FHWA requires state DOTs and MPOs to use 60 percent of the posted speed limit for the segment or 20 miles per hour, whichever is greater, for the threshold speed.

³⁹ FHWA requires states and MPOs to use the period from 6:00 AM to 10:00 AM to represent the morning peak period, but it allows these agencies to choose either 3:00 PM to 7:00 PM or 4:00 PM to 8:00 PM to represent the evening peak period. MassDOT and NH DOT selected the period from 3:00 PM to 7:00 PM to represent the evening peak period for the Boston MA-NH-RI UZA.

To understand baseline performance and set targets for this measure, MassDOT and the New Hampshire Department of Transportation (NH DOT) worked with analysts at Cambridge Systematics and, using 2017 NPMRDS data, calculated annual hours of PHED per capita for travel on the NHS in their respective portions of the Boston MA-NH-RI UZA.⁴⁰ In 2018, the agencies in the Boston MA-NH-RI UZA that are subject to CMAQ performance monitoring requirements—MassDOT, NH DOT, the Boston Region MPO, and the Northern Middlesex Council of Governments (NMCOG)—established two-year and four-year targets that maintain this 2017 baseline value for the annual hours of PHED per capita measure, as shown in Table 4-22.

Table 4-22
Baseline Value and Targets for Annual Hours of Peak Hour Excessive Delay Per Capita in the Boston MA-NH-RI UZA

Geographic Area	Massachusetts and New Hampshire Annual PHED	Boston MA-NH-RI UZA Population (MA and NH only)¹	2017 Measure Value (Baseline)	Two-Year Target (CY 2018–19)²	Four-Year Target (CY 2020–21)²
Boston Urbanized Area	80,053,183	4,371,476	18.30	18.30	18.30

¹ Cambridge Systematics aggregated 2012–16 American Community Survey population estimates from the US Census Bureau at the block group level to estimate the population for the portion of the UZA in Massachusetts and New Hampshire, and then inflated this estimate for 2017 by applying information on expected population growth in the Boston Metropolitan Statistical Area between 2016 and 2017.

² The two-year target reflects conditions as of the end of CY 2019, and the four-year target reflects conditions as of the end of CY 2021.

CY = calendar year. FHWA = Federal Highway Administration. MA = Massachusetts. MPO = metropolitan planning organization. NH = New Hampshire. PHED = peak hours of excessive delay. RI = Rhode Island. UZA = urbanized area. Sources: National Performance Management Research Data Set, US Census Bureau, FHWA, the Massachusetts Department of Transportation, the New Hampshire Department of Transportation, Cambridge Systematics, and the Boston Region MPO staff.

MassDOT’s 2018 and 2019 estimates of PHED per capita in the Boston MA-NH-RI UZA show increases compared to the baseline value of 18.3 hours of delay per capita from 2017 (22.9 hours per person in 2018 and 25.2 in 2019). As previously mentioned, the initial value and targets for this measure were calculated with a limited amount of historic data, given differences between the NPMRDS data that were available for 2017 compared to 2016 and earlier. Also, MassDOT staff notes that several data-related factors may affect these more recent estimates. For example, the segments included on the NHS network in the NPMRDS vary from set to set, which affects the amount of excessive delay that states and MPOs can account for in their calculations.

⁴⁰ Rhode Island was not included in the calculation of this measure because it does not include any portion of the Boston MA-NH-RI UZA’s NHS network. See FHWA’s Applicability Determination: CMAQ Traffic Congestion and CMAQ On-Road Mobile Source Emissions Measures (23 CFR 490.707 and 490.807), and Change Log: Applicability Determination for CMAQ Measures,” May 22, 2018.

While congestion may have increased in the Boston MA-NH-RI UZA in 2018 and 2019, the aforementioned data issues complicate any analysis of trends. Also, the COVID-19 pandemic, along with related public and private sector responses, has impacted travel behavior on all modes in since Spring 2020. Given these circumstances and uncertainty, when revisiting targets in 2020, the agencies in the Boston MA-NH-RI UZA maintained the existing four-year performance target of 18.3 hours of PHED per capita.

Percent of Non-Single-Occupant-Vehicle Travel

States and MPOs that meet applicability criteria for CMAQ performance requirements must also monitor and set targets for the share of non-single-occupant-vehicle (non-SOV) travel. This measure is calculated at the UZA level. The percent of non-SOV travel performance measure describes the extent to which people are using alternatives to single-occupancy vehicles to travel and, thus, helping to reduce traffic congestion and air pollution from mobile sources.

Collectively, MassDOT, NH DOT, the Boston Region MPO, and NMCOG use American Community Survey (ACS) data from the US Census Bureau to estimate the percent of workers ages 16 and older who commuted to work using an option other than driving alone. These ACS five-year period estimates are rolling annual averages. When these agencies first established targets for this measure in 2018, they examined changes in the percentage of workers using non-SOV commuting options in the Boston MA-NH-RI UZA between 2012 (2008–12 ACS estimate) and 2016 (2012–16 ACS estimate). These data showed an increase in use of non-SOV commuting options over time. MassDOT calculated a linear trend line using these values for the Boston MA-NH-RI UZA and used that trend line to project expected values as of the end of CY 2019 (the expected 2015–19 ACS estimate) and CY 2021 (the expected 2017–21 ACS estimate). These initial targets are described in the MPO’s 2018 CMAQ Performance Plan.⁴¹

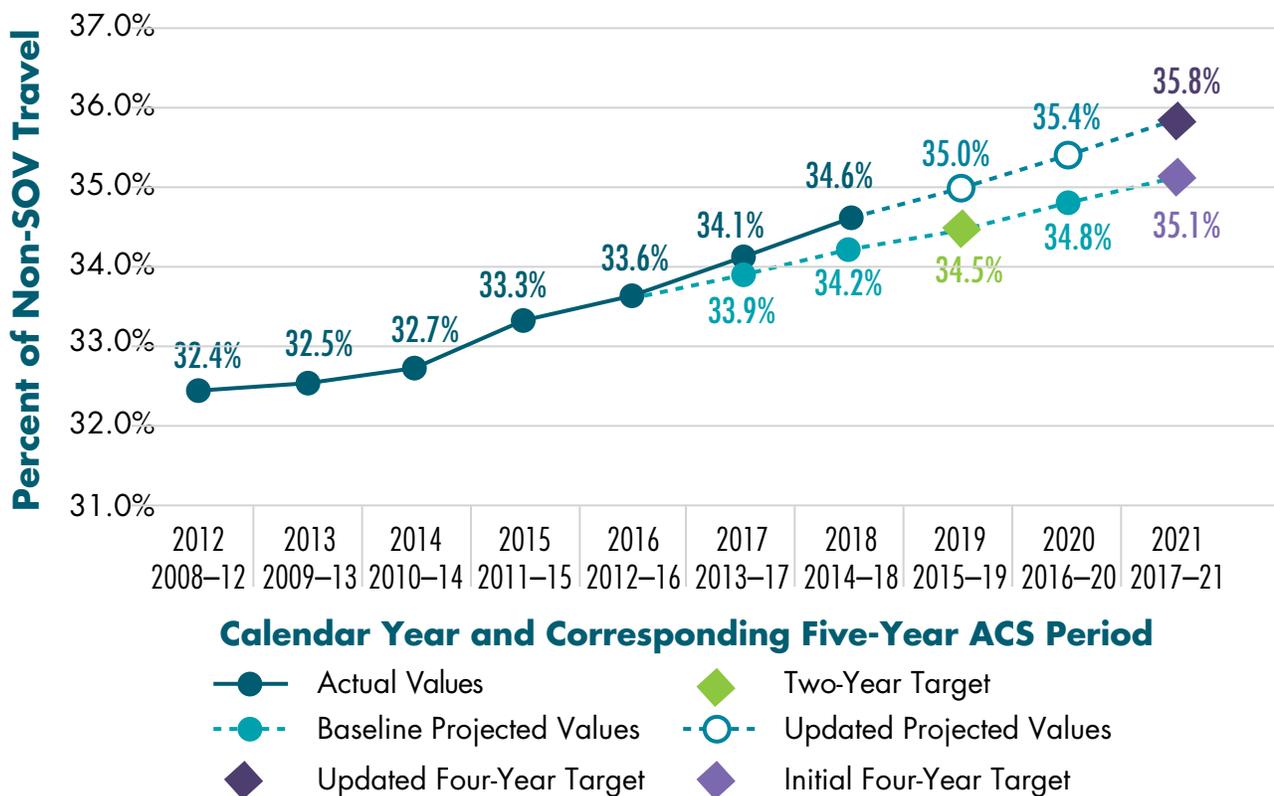
In 2020, MassDOT, NH DOT, the Boston Region MPO, and NMCOG revisited the targets for the percent of non-SOV travel measure. These agencies examined 2013–17 and 2014–18 ACS data and found that the values reported in the data for these years were higher than the projections they made when setting initial targets. Because of this, they suggested that averages for CY 2019 and CY 2021 would exceed the performance targets established in 2018.

When revisiting existing targets, these agencies considered that the COVID-19 pandemic, along with related public and private sector responses, has affected 2020 travel patterns across modes and would likely have impacts on travel in 2021 as well. Fluctuations in SOV traffic volumes, transit ridership, and carpool, taxi, and rideshare travel introduce some uncertainty. However, some changes, such as increased teleworking, may complement the ongoing investments by MassDOT, NH DOT, the Boston Region MPO, the NMCOG, and other agencies in the Boston MA-NH-RI UZA in projects that encourage travelers to use alternatives to SOVs when traveling to work and other destinations. Also, the five-year rolling average value associated with the four-year target (2017–21) will capture increases in non-SOV travel prior to 2020, even if uncertainties will affect travel choices in 2020 and 2021.

⁴¹ Boston Region MPO staff, “Boston Region MPO Baseline CMAQ Performance Plan (2018)” (October 1, 2018). www.ctps.org/data/pdf/programs/performance/2018-PBPP-Boston-MPO-CMAQ-Performance-Plan.pdf.

Given the aforementioned updated data points and assumptions, MassDOT and NH DOT—in consultation with the Boston Region MPO and NMCOG staff—updated the Boston MA-NH-RI UZA’s four-year performance target for the percent of non-SOV travel measure from 35.1 percent to 35.8 percent. The Boston Region MPO formally adopted this revised target in November 2020. Figure 4-9 shows past values and projections, updated actual values and projections, and initial and adjusted performance targets for this measure. Using 2016–20 ACS estimates related to modes used to commute to work, MPO staff estimated that the share of non-SOV travel to work in the Boston MA-NH-RI UZA is 36.9 percent, which is higher than the value that MassDOT, NH DOT, Boston Region MPO, and NMCOG staff projected for that timeframe.⁴² This increase compared to the projected value may be due in part to the increase in remote work during the COVID-19 pandemic in 2020.

Figure 4-9
Performance Values and Targets for the Percent of Non-SOV Travel in the Boston MA-NH-RI UZA



Notes: Values in this figure reflect five-year rolling averages for the percent of non-SOV travel to work for workers ages 16 and older. This chart was developed in September 2020.

ACS = American Community Survey. MA = Massachusetts. MPO = metropolitan planning organization. NH = New Hampshire. Non-SOV = non-single-occupancy vehicle. RI = Rhode Island. UZA = urbanized area.

Sources: US Census Bureau, ACS Five-Year Estimates (Table DP03, “Selected Economic Characteristics”); the Massachusetts Department of Transportation; the New Hampshire Department of Transportation; and the Boston Region MPO staff.

Table 4-23 lists the baseline and performance targets for the percent of non-SOV travel measure.

⁴² The estimated margin of error for this non-SOV travel value is +/- 0.3 percent. The Boston MA-NH-RI UZA boundaries are based on the 2010 Census designation.

Table 4-23
Performance Values and Targets for the Percent of Non-SOV Travel in the Boston MA-NH-RI UZA

Geographic Area	Baseline Value (CYs 2012–16 average)	Two-Year Target (CYs 2015–19 average)	Projected Two-Year Value (CYs 2015–19 average)	Adjusted Four-Year Target (CYs 2017–21 average)
Boston MA-NH-RI UZA	33.6%	34.5%	35.0%	35.8%

Note: Values in this table reflect five-year rolling averages for the percent of non-SOV travel to work.

ACS = American Community Survey. CY = calendar year. MA = Massachusetts. MPO = metropolitan planning organization. N/A = not applicable. NH = New Hampshire. Non-SOV = non-single-occupancy vehicle. RI = Rhode Island. UZA = urbanized area.

Sources: US Census Bureau, ACS Five-Year Estimates (Table DP03, “Selected Economic Characteristics”); the Massachusetts Department of Transportation; the New Hampshire Department of Transportation; and the Boston Region MPO staff.

TIP Projects Supporting Capacity Management and Mobility Performance

The MPO seeks to make investments that help manage capacity on the transportation network and improve mobility options for travelers in a variety of ways, including the following:

- Providing alternatives to SOV travel, such as by expanding transit service or adding new bicycle and pedestrian facilities
- Improving roadway design or adding capacity at bottleneck locations
- Implementing traffic and operational improvements along congested or unreliable corridors

When prioritizing projects for funding with Regional Target dollars, the MPO uses evaluation criteria to assess how well each project expands transportation options and mode choice and how it supports mobility. These sets of criteria have included, and continue to include, items that award points to projects that enhance bicycle and pedestrian accommodations and connections to transit, and that support truck movement. The MPO’s criteria prior to October 2020 granted points to projects that reduced vehicle congestion and delay for transit vehicles. In October 2020, the MPO adopted an updated set of project selection criteria that includes criteria tailored to each of the MPO’s investment programs;

- transitions from an emphasis on reducing vehicle congestion to supporting reliability, which is measured using travel time information available in the RITIS platform; and
- awards points for reducing transit passenger delay, as opposed to transit vehicle delay.

The MPO's Community Connections investment program, which funds first- and last-mile solutions, community transportation, and other related projects, has its own set of evaluation criteria. These criteria focus on connectivity to transit and key destinations and supporting shifts in travel to non-SOV modes.

By electing to support the Commonwealth's targets for federally required reliability measures and agreeing to the Boston MA-NH-RI UZA targets for the federally required annual hours of PHED per capita and non-SOV travel measures, the MPO agrees to plan and program projects so that they contribute to achieving those targets. It can be challenging to anticipate how transportation projects may affect these performance measures, as they track outcomes that are not only affected by transportation investments but also traveler choices and demand, among other factors. The MPO developed estimates for MPO staff-identified project-related metrics to see how its Regional Target roadway projects could improve the transportation system in ways that contribute to more reliable, less congested travel on the NHS or that encourage more non-SOV travel:

- Projects that improve roadway geometry or signalization on the NHS, particularly on segments considered to be unreliable, might improve overall travel time reliability on that system.
- Projects that reduce vehicle hours of delay, particularly on the NHS, may also reduce annual hours of PHED per capita.
- Projects that add to the region's sidewalk or bicycle and pedestrian facility networks, that support access to transit, or that provide new non-SOV options might encourage use of non-SOV modes. These projects also help to create connectivity in the bicycle and pedestrian networks identified in the Massachusetts Bicycle Transportation and Pedestrian Transportation Plans.

Table 4-24 summarizes these estimates for Regional Target corridor, intersection, bicycle and pedestrian, and Community Connections projects. MPO staff developed estimated values for these metrics using available data from functional design reports and other materials provided by project proponents; results from the MPO's TIP evaluations; 2019 NPMRDS data available in the RITIS platform; and other sources. These estimates aggregate changes in vehicle hours of delay using project-level information on vehicle volumes and changes in delay times at intersections from project improvements.

Table 4-24

Regional Target Projects: Capacity Management and Mobility Performance Metrics

Metric	Value
Projects that overlap unreliable NHS segments and that will improve roadway signalization or geometry ¹	12 projects
Projects that overlap any NHS segments and that will improve roadway signalization or geometry ^{1,2}	19 projects
Net reduction in vehicle hours of delay per day ^{2,3}	11,000 hours reduced per day
Net reduction in vehicle hours of delay per day for projects that overlap the NHS ^{2,3}	7,800 hours reduced per day
Miles of new sidewalks added	11 miles
Lane miles of new bicycle accommodations and shared-use paths	52 lane miles
Number of new transit services ⁴	4 transit services
Number of expanded transit services ⁴	4 transit services
Number of new bikeshare stations	9 stations
Projects that improve intermodal connections or access to transit	38 projects

1 The MPO staff identified reliable and unreliable segments on the NHS using the 2019 NPMRDS data in the RITIS platform and federal travel time reliability performance thresholds.

2 These metrics exclude Community Connections and Transit Modernization projects.

3 These aggregate estimates of reductions in vehicle hours of delay exclude Project 606226–Reconstruction of Rutherford Avenue in Boston, and 607981–McGrath Boulevard Construction. These two projects were included in the air quality modeling results for the Destination 2040 recommended plan. These aggregate estimates are based on projected future conditions for project locations and have been rounded to the nearest hundred.

4 Project S12694–NewMo Microtransit Service Expansion is counted separately from Project S12125–Newton Microtransit Service.

MPO = metropolitan planning organization. NHS = National Highway System. NPMRDS = National Performance Management Research Data Set. RITIS = Regional Integrated Transportation Information System.

Source: Boston Region MPO staff.

During FFYs 2023–27, the MPO will fund two projects near Interstate highways: the construction of Interstate-495/Route 1A Ramps in Wrentham and a bridge replacement on Route 30 over the Charles River in Newton and Weston (near the Interstate 90 and 95 Interchange, a bottleneck identified in MassDOT’s current Freight Plan).⁴³ These projects include signal, structure, and roadway geometry improvements that may help improve truck mobility and travel time reliability. Meanwhile, the MPO’s investment in transit state-of-good-repair improvements at Lynn Station and Forest Hills Station may make transit a more attractive travel option and encourage increases in non-SOV travel.

The FFYs 2023–27 TIP also includes funding that is not yet programmed for Community Connections projects in FFYs 2024–27 and for the Transit Modernization Program in FFYs 2025–27. Future projects in the Transit Modernization Program will help reduce emissions by encouraging non-SOV travel or by changing the amount or type of energy these assets use. Similarly, future projects in the Community Connections program will encourage non-SOV travel by addressing first- and-last-mile needs. Increases in non-SOV travel may in turn make roadways less congested and more reliable.

MassDOT, MBTA, and RTA projects, which are described in Chapter 3, also address capacity management and mobility in the Boston region and may also support improvements on federally required reliability, congestion, and non-SOV travel performance measures. In particular, MassDOT’s nine Bicycle and Pedestrian projects enhance, connect, or expand the region’s bicycle and pedestrian networks, which support non-SOV travel and the High Comfort Bike network described in the Bicycle Transportation Plan. Its eleven Safe Routes to School projects will improve bicycling and walking conditions and thereby encourage students to take non-SOV modes to get to school. MassDOT’s Intersection Improvement Program includes nine projects which may address delay and congestion. Four of its Roadway Reconstruction projects will implement improvements at freight bottlenecks identified in MassDOT’s Freight Plan, including

- the Interstate 90 and Interstate 495 interchange in Hopkinton and Westborough;
- the Interstate 95 and Route 3 interchange in Burlington;
- the Interstate 95 and Interstate 93 interchange in Reading; and
- the Interstate 290 and Interstate 495 interchange in Marlborough.

Meanwhile, MBTA and RTA investments enhance the region’s transit systems and make them attractive alternatives to SOV travel, which may in turn help reduce congestion and improve reliability. For example, the MBTA has set aside funding to support the construction of bus priority infrastructure, such as side or center-running bus lanes, transit signal priority (TSP) implementation, and bus stop upgrades. Meanwhile, both CATA and MWRTA will upgrade their fare collection technologies, and MWRTA will implement electric sign boards at high-demand locations to expand rider access to digital tools, which will improve riders’ experiences using transit.

⁴³ Massachusetts Department of Transportation. *Massachusetts Freight Plan*. April 2018. Page 2-15. Accessed April 11, 2022, at www.mass.gov/files/documents/2018/09/04/Freight%20Plan508.pdf.

Future Activities to Improve and Monitor Capacity Management and Mobility Performance

The MPO will continue to work with MassDOT, the MBTA, the region's RTAs, other transit service providers, and other stakeholders in the region to improve capacity management and mobility performance. These activities may include the following:

- Continue to implement the MPO's updated TIP project selection criteria pertaining to capacity management and mobility, and further integrate these criteria into the MPO's performance monitoring activities.
- Continue to seek out and improve data to help the MPO better analyze capacity management and mobility issues for all modes.
- Continue to refine the MPO's Community Connections and Transit Modernization programs and strengthen links between these programs and the region's performance in various capacity management and mobility areas.
- Improve methods for understanding the impacts transportation projects may have on reliability, congestion, and non-SOV travel performance measures.
- Explore ways to integrate the monitoring of federally required performance measures more fully into the MPO's CMP.
- Explore other mobility performance measures, including measures specific to destination access, travel by non-SOV modes, or freight movement.

Clean Air and Sustainable Communities Performance

Relevant Goals, Policies, and Plans

The MPO aims to support clean air and sustainable communities in the Boston region by creating an environmentally friendly transportation system. It pursues this goal by investing in projects that reduce greenhouse gases (GHGs) and other pollutants generated by the transportation sector and minimizing negative environmental impacts from the system.

The MPO recognizes that GHG emissions contribute to climate change. If climate change trends continue as projected, the conditions in the Boston region will include a rise in sea level coupled with storm-induced flooding, and warmer temperatures that would affect the region's infrastructure, economy, human health, and natural resources. The Commonwealth of Massachusetts is responding to this challenge by taking action to reduce the GHGs produced in the state, including those generated by the transportation sector. To that end, Massachusetts passed its Global Warming Solutions Act (GWSA), which requires reductions of GHGs by 2020, and further reductions by 2050, relative to 1990 baseline conditions. To meet GWSA requirements, the MPO works with MassDOT and other stakeholders to anticipate the GHG impacts of projects included in the TIP, specifically by examining additions or reductions in carbon dioxide (CO₂). More details on the MPO's GHG tracking and evaluation processes are included in Appendix B.

Transportation projects may also help reduce other air pollutants and precursors and support reductions in CO₂, volatile organic compounds (VOCs), nitrogen oxides (NO_x) and carbon monoxide (CO) by improving traffic flow and bicycle and pedestrian travel. The Boston Region MPO contains a maintenance area for CO in Waltham and also is required to track VOCs and NO_x to meet EPA requirements. (More detailed information about the MPO's air quality status and related requirements is available in Chapter 5).

The MPO tracks the air quality benefits of transportation projects to identify projects that may be eligible for CMAQ funds. It describes these CMAQ-funded projects in its CMAQ Performance plans and progress reports; these documents include performance targets for the annual PHED per capita and share of non-SOV travel measures described in the previous section, along with targets for the amount of applicable emissions the MPO expects will be reduced because of CMAQ-funded projects in air quality non-attainment or maintenance areas in the region. The MPO must note how it expects its CMAQ-funded projects to support improvements with respect to relevant performance measures, which reinforces the connection between planning, investments, and expected performance outcomes.

Emissions Reduction Performance Measure and Targets

The federally required CMAQ emissions reduction measure, identified in Table 4-3, is the total emissions reduction for applicable pollutants and precursors for CMAQ-funded projects in designated nonattainment and maintenance areas. FHWA requires states and MPOs subject to these CMAQ performance management requirements to establish a baseline for this measure by identifying emissions reductions associated with any CMAQ-funded projects programmed in air quality nonattainment or maintenance areas between FFY 2014 and FFY 2017. These states and MPOs were also required to set two-year and four-year targets for the emissions reductions expected from CMAQ-funded projects programmed in nonattainment or maintenance areas.

In the Boston Region MPO's case, this CMAQ emissions performance measure would capture the anticipated CO emissions reductions from any CMAQ-funded projects that the MPO has programmed specifically in the carbon monoxide maintenance area in Waltham.⁴⁴ Table 4-25 shows the Boston Region MPO's baseline and target values for this measure. Neither the MPO nor MassDOT programmed any CMAQ-funded projects in Waltham during FFYs 2014 to 2017. When targets were set in 2018, the MPO's TIP did not reflect any CMAQ-funded projects programmed in Waltham from FFYs 2018 to 2021. Neither the MPO nor MassDOT ultimately programmed CMAQ-funded projects in Waltham during this time period. The FFYs 2023–27 TIP will provide CMAQ funding for the NewMo Expansion project in FFYs 2023–25, and this project will enable riders to connect to destinations in Waltham. While emissions reductions from this project would not help to achieve current performance targets, they may affect future target-setting and performance monitoring activities.

⁴⁴ FHWA regularly assesses the CMAQ performance management requirements that apply to states and MPOs. FHWA conducted its most recent assessment in 2019, at which time the MPO was only subject to emissions performance management requirements for its carbon monoxide maintenance area in Waltham.

Table 4-25
Baseline Value and Targets for Emissions Reduction from CMAQ Projects in the Boston Region

Performance Measure	FFYs 2014–17 Measure Value (Baseline)	Two-Year Target (FFYs 2018–19)	Four-Year Target (FFYs 2018–21)
Daily kilograms of carbon monoxide emissions reduction from CMAQ projects in Boston region nonattainment or maintenance areas	0	0	0

CMAQ = Congestion Mitigation and Air Quality Improvement. FFY = federal fiscal year. MPO = metropolitan planning organization.

Source: Boston Region MPO staff.

TIP Projects Supporting Clean Air and Sustainable Communities Performance

The MPO uses evaluation criteria to assess the projected transportation-related emissions from each project that is a candidate for Regional Target funding, both for CO₂ and other air quality pollutants and precursors, among other environmental considerations. Transportation projects can support reductions in CO₂, VOCs, NO_x, and CO by improving traffic flow and providing alternatives to SOV travel, including bicycle, walking, and transit options.

Table 4-26 displays the CO₂ and other emissions reductions the MPO expects from projects it has programmed using its Regional Target funds. MPO staff estimates emissions for projects using MassDOT’s air quality analysis worksheets for each project type and the EPA’s Motor Vehicle Emission Simulator (MOVES) emission factors.

Table 4-26
Regional Target Projects: Clean Air and Sustainable Communities Performance Metrics

Metric	Value
Annual kilograms of CO ₂ reduced	11,062,400 kilograms
Annual kilograms of other emissions (VOCs, NO _x , and CO) reduced	23,100 kilograms

Note: These aggregate emission reduction estimates exclude Project 606226–Reconstruction of Rutherford Avenue in Boston, and 607981–McGrath Boulevard Construction. These two projects were included in the air quality modeling results for the *Destination 2040* recommended plan. These aggregate estimates are based on projected future conditions for project locations and have been rounded to the nearest hundred.

CO = carbon monoxide. CO₂ = carbon dioxide. MPO = metropolitan planning organization. NO_x = nitrogen oxide. VOC = volatile organic compounds.

Source: Boston Region MPO staff.

As previously mentioned, the FFYs 2023–27 TIP also includes funding that has not yet been programmed for Community Connections projects in FFYs 2024–27 and for the Transit Modernization Program in FFYs 2025–27. Future projects in the Transit Modernization Program will help reduce emissions by encouraging non-SOV travel or by changing the amount or type of energy these assets use. Similarly, future projects in the Community Connections program will encourage non-SOV travel and emissions reductions by addressing first- and last-mile needs.

MassDOT, MBTA, and RTA projects and programs also support improvements to air quality and the environment. For example, as described in Chapter 3, both the MBTA and MWRTA’s capital programs include investments to electrify their vehicle fleets and upgrade their facilities to meet the needs of those vehicles. Appendix B provides more detailed information and assessments of the GHG impacts of MassDOT, MBTA, CATA, and MWRTA projects and programs. MassDOT sets separate CMAQ emissions reduction performance targets and tracks the relationship between its projects and those targets.⁴⁵

Future Activities to Improve and Monitor Clean Air and Sustainable Communities Performance

The GWSA and FHWA’s CMAQ performance management requirements create frameworks that reinforce coordination between the MPO, MassDOT, and the region’s transit providers as they make investments to support clean air and sustainable communities. Future performance activities in this area may include the following:

- Improve methods for understanding how transportation projects may improve air quality and other environment-related outcomes.
- Continue to implement the MPO’s updated TIP project selection criteria pertaining to clean air and sustainable communities, and further integrate these criteria into the MPO’s performance monitoring activities.
- Explore other performance measures related to air quality and the environment.

Economic Vitality Performance

Relevant Goals, Policies, and Plans

The MPO seeks to ensure that the Boston region’s transportation network provides a strong foundation for economic vitality. Transportation investments can support economic vitality in a variety of ways, such as by supporting freight movement, improving connections to key freight and economic development sites, and supporting compact development. The MPO’s approach to addressing freight needs is guided in large part by MassDOT’s Freight Plan, which identifies key freight facilities and needs, strategies to improve freight movement, and priority projects.

⁴⁵ An On-Road Mobile Source Emissions Reductions Report for Massachusetts is available at www.fhwa.dot.gov/tpm/reporting/state/emissions.cfm?state=Massachusetts.

The Metropolitan Area Planning Council's (MAPC) regional plan also shapes the MPO's approach to pursuing economic vitality goals. The recently adopted *MetroCommon 2050* plan outlines MAPC's mobility goal for the region in 2050, which is that "Traveling around Metro Boston is safe, affordable, convenient, and enjoyable."⁴⁶ Several subgoals are relevant to economic vitality:

- The transportation system is designed and operated to ensure access to opportunity for everyone, with a particular emphasis on neighborhoods historically underserved by high-quality transit.
- State and local governments work together with businesses and property owners and advocates to create seamless travel throughout the region, including "first mile, last mile" connections.

MAPC's 2020-2025 Comprehensive Economic Development Strategy also outlines the goal that "everyone in the region is able to access jobs, goods, and services close to their homes via affordable transportation options, with shorter commutes and fewer transfers."⁴⁷

To support *Metrofuture*, the previous regional plan, MAPC worked with its state-level partners at the Executive Office of Housing and Economic Development (EOHED) and the Executive Office of Energy and Environmental Affairs (EOEEA), as well as municipalities, to identify locations throughout the region appropriate for building housing stock and siting employers. These agencies identified improvements needed to support the outcomes planned for these local, regional, and state-level priority development areas, and this work helps MAPC, the MPO, and state agencies to respond with their investments and technical assistance.

Economic Vitality Performance Measure

States and MPOs track the federally required truck travel time reliability measure for the Interstate Highway System, listed in Table 4-3, by using the Truck Travel Time Reliability Index. This measure has the most direct implications for the MPO's capacity management and mobility goal area; however, this measure is also relevant to the Boston region's economic vitality. For more details about this measure and associated targets, see the Capacity Management and Mobility Performance section of this chapter.

TIP Projects Supporting Economic Vitality

When evaluating TIP projects using its TIP criteria, the MPO assesses how well each project serves areas identified for economic development by state, regional, and local planning entities, such as priority sites designated under Massachusetts Chapter 43D, Massachusetts Opportunity Zones, and transit stations. The MPO also examines whether and how projects in its Complete Streets, Intersection Improvements, Major Infrastructure, and Transit Modernization programs serve areas with a relatively high density of existing development or that provide affordable housing. These assessments are based on MAPC-provided information on targeted development

⁴⁶ For more information about *MetroCommon 2050*, visit metrocommon.mapc.org.

⁴⁷ Metropolitan Area Planning Council, *2020-2025 Comprehensive Economic Development Strategy*, 2021, page 5. Accessed on April 9, 2022, at www.mapc.org/wp-content/uploads/2021/02/Final-CEDS-022521.pdf.

sites and project relationships to areas of concentrated development, along with Commonwealth data and project data from functional design reports and other sources. For the Community Connections program, MPO staff award some points to projects based the extent to which they connect to activity hubs and residential developments, addressing first- and last-mile needs. Table 4-27 provides some highlights of how Regional Target-funded projects in this TIP address economic vitality.

Table 4-27
Regional Target Projects: Economic Vitality Performance Metrics

Metric	Value
Projects that improve access to sites targeted for development	33 projects
Projects that serve existing employment and population centers ¹	32 projects
Community Connections projects that connect to activity hubs and residential developments	11 projects

¹ This metric excludes projects in the MPO’s Community Connections program.

MPO = metropolitan planning organization.

Source: Boston Region MPO staff.

Future Activities to Improve and Monitor Economic Vitality Performance

MAPC’s regional land use plan and economic vitality initiatives, USDOT’s freight directives, and MassDOT’s freight planning will all influence strategies that the MPO uses to monitor economic vitality performance going forward. The MPO’s ongoing freight planning work will also play an important role in this process. Future activities may include the following:

- Explore other performance measures related to freight and economic vitality.
- Improve methods for understanding how transportation projects may affect economic vitality performance.

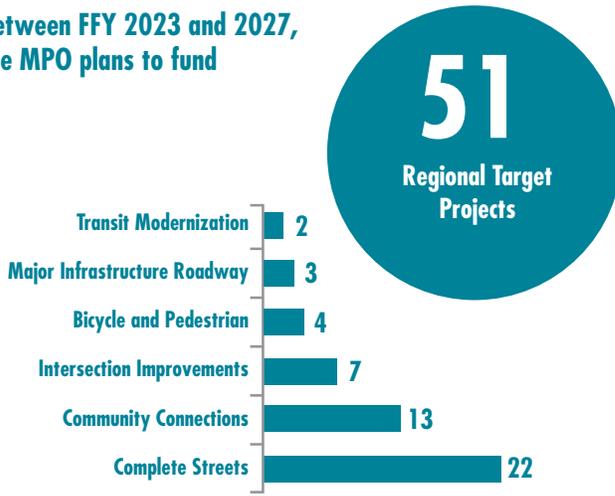
Summary: Regional Target-Funded Projects Supporting MPO Goal Areas

Figure 4-10 highlights some of the ways that the MPO’s FFYs 2023–27 Regional Target-funded projects support improved performance in the MPO’s various goal areas.

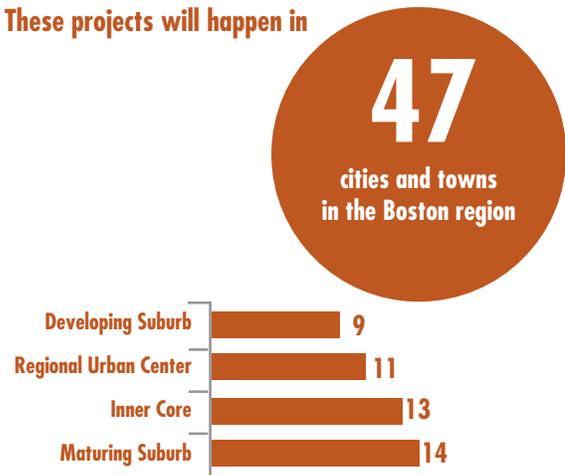
Figure 4-10
FFYs 2023–27 TIP Target Program: Projects by the Numbers

FFYS 2023–27 TIP TARGET PROGRAM: PROJECTS BY THE NUMBERS

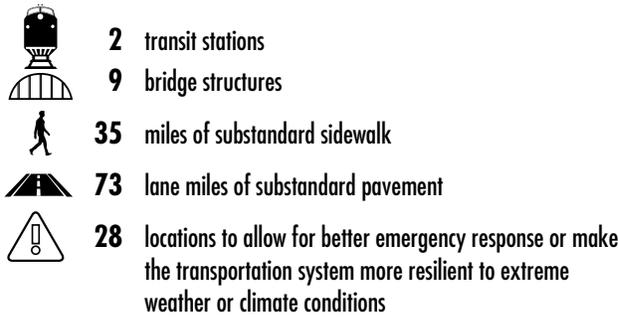
Between FFY 2023 and 2027, the MPO plans to fund



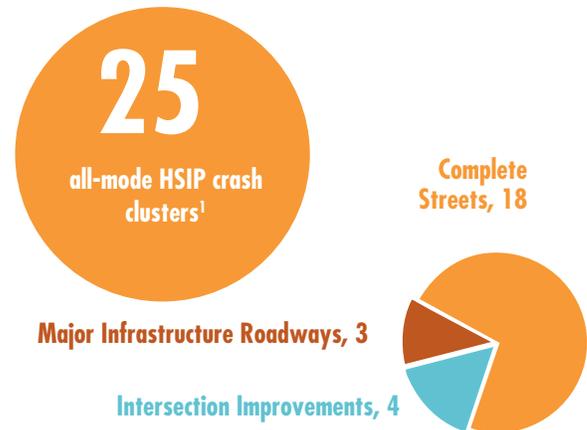
These projects will happen in



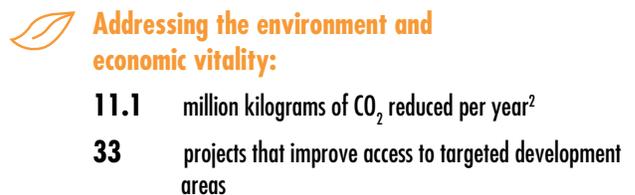
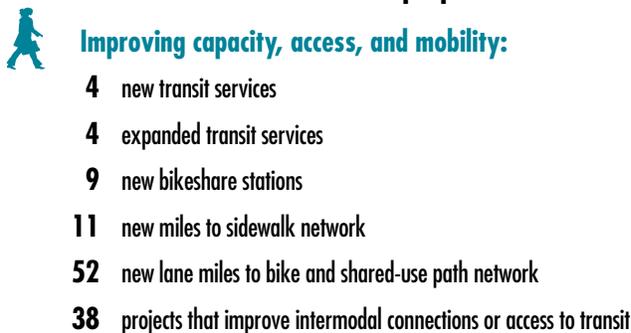
These projects will address safety and help preserve the transportation system by improving



These projects will improve safety by addressing



These projects will also enhance the system by



¹ MassDOT identified these clusters using 2017–19 crash data.

² These estimates exclude the Rutherford Avenue project in Boston, the Commonwealth Avenue (Route 30) bridge project in Newton and Weston, and the McGrath Boulevard project in Somerville.

CO₂ = carbon dioxide. HSIP = Highway Safety Improvement Program. MAPC = Metropolitan Area Planning Council. MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization.

Sources: MassDOT and the Boston Region MPO.

PERFORMANCE MONITORING, REPORTING, AND EVALUATION

The three key phases in the MPO's PBPP process—planning, investing, and monitoring and evaluating—were discussed earlier in this chapter. Within this framework, the MPO's TIP relates primarily to the first two phases, focusing on the relationship between the goals and objectives and performance requirements in the MPO's planning framework and ways the MPO will invest its capital dollars in upcoming federal fiscal years. Other MPO activities relate more directly to the monitoring and evaluation phase of PBPP:

- The MPO's current LRTP, *Destination 2040*, contains a systems performance report that describes the MPO's performance measures and targets as of August 2019. This report includes an assessment of the Boston region's current performance with respect to baseline data and, where feasible, past performance targets. When developing the performance report for *Destination 2050*, the MPO's next LRTP, the MPO will expand this report to include information about progress the MPO has made with respect to its performance measures and targets.
- The MPO will also report on its progress through federally required performance plans and reports, such as its CMAQ performance plans and progress reports.
- The MPO also describes progress on its PBPP web page (bostonmpo.org/performance). This web page provides ongoing updates about the MPO's target-setting activities for federally required performance measures, as well as a link to the MPO's Performance Dashboard, which provides visualizations of the performance of the Boston region's transportation system on a variety of transportation-related metrics.
- The MPO supplements these monitoring and reporting activities with specific evaluation studies—such as TIP Before-and-After studies—that it conducts through its Unified Planning Work Program to better understand the outcomes of MPO investments.

The Commonwealth and the region's transit agencies also have reporting and evaluation responsibilities. MassDOT and the Commonwealth's Executive Office of Public Safety and Security report roadway safety target information annually to FHWA and NHTSA. MassDOT reports other statewide performance targets and related information to FHWA on a biennial basis via FHWA's Performance Management Form. The MBTA, MWRTA, and CATA must report their asset inventory and condition data to the NTD and provide information about the progress that has been made with respect to performance measures and targets as compared to previous reports. These transit agencies also regularly report data about safety outcomes to the NTD, and their annual reviews of their PTASPs and safety targets also create opportunities for them to evaluate their performance.

Going forward, the MPO will incorporate the results of these reports and evaluations to use in its future planning and investment activities. These activities may include identifying new ways to bring information about performance into the MPO's LRTP and TIP development processes, such as by updating project selection criteria or providing information through other means. This work would help the MPO develop scenarios to explore how various transportation investments made through the LRTP could support various goals and performance areas. Over time, the MPO expects that activities like these will help ensure that the MPO's investments are helping to meet its vision and goals for the region's transportation system.



CHAPTER 5

Determination of Air Quality Conformity

BACKGROUND

This chapter documents the latest Transportation Improvement Program (TIP) air quality conformity determination for the 1997 Ozone National Ambient Air Quality Standards (NAAQS) and carbon monoxide (CO) NAAQS in the Boston Region Metropolitan Planning Organization (MPO) area. It covers the applicable conformity requirements according to the latest regulations, regional designation status, legal considerations, and federal guidance.

Introduction

The 1990 Clean Air Act Amendments (CAAA) require MPOs within nonattainment and maintenance areas to perform air quality conformity determinations prior to the approval of Long-Range Transportation Plans (LRTPs) and TIPs, and at such other times as required by regulation. CAAA Section 176(c) (Title 42, United States Code [USC], Section 7506 [c]) requires that federally funded or approved highway and transit activities are consistent with (“conform to”) the purpose of the State Implementation Plan (SIP). Conformity to the purpose of the SIP means that Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that

- will not cause or contribute to new air quality violations;
- worsen existing violations; or
- delay the timely attainment of the relevant NAAQS or any interim milestones (42 USC 7506[c][1]).

The United States Environmental Protection Agency’s (EPA) transportation conformity rules establish the criteria and procedures for determining whether metropolitan transportation plans, TIPs, and federally supported highway and transit projects conform to the SIP (Title 40, Code of Federal Regulations [CFR], Parts 51.390 and 93).

A nonattainment area is one that the EPA has designated as not meeting certain air quality standards. A maintenance area is a nonattainment area that now meets the standards and has been redesignated as maintaining the standard. A conformity determination is a demonstration that plans, programs, and projects are consistent with the SIP for attaining the air quality standards. The CAAA requirement to perform a conformity determination ensures that federal approval and funding go to transportation activities that are consistent with air quality goals.

Legislative and Regulatory Background

The Commonwealth of Massachusetts was previously classified as a nonattainment area for ozone and was divided into two nonattainment areas. The Eastern Massachusetts ozone nonattainment area included Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester counties. The Western Massachusetts ozone nonattainment area included Berkshire, Franklin, Hampden, and Hampshire counties. With these classifications, the 1990 CAAA required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), the two major precursors to ozone formation, to achieve attainment of the ozone standard.

The 1970 Clean Air Act defined a one-hour NAAQS for ground-level ozone. The 1990 CAAA further classified degrees of nonattainment of the one-hour standard based on the severity of the monitored levels of the pollutant. The Commonwealth of Massachusetts was classified as being in serious nonattainment of the one-hour ozone standard and was required to achieve attainment by 1999. The attainment date was later extended, first to 2003 and a second time to 2007.

In 1997, the EPA proposed a new eight-hour ozone standard that replaced the one-hour standard, effective June 15, 2005. Scientific research had shown that ozone could affect human health at lower levels and over longer exposure times than one hour. The new standard was challenged in court and, after a lengthy legal battle, the courts upheld it. The new standard was finalized in June 2004. The new eight-hour standard is 0.08 parts per million (ppm) averaged over eight hours, and this level is not to be exceeded more than once per year. With this new standard, nonattainment areas were again further classified based on the severity of the eight-hour values. Massachusetts was classified as being in moderate nonattainment for the eight-hour standard and again was separated into two nonattainment areas—Eastern Massachusetts and Western Massachusetts.

In March 2008, the EPA published revisions to the eight-hour ozone NAAQS, establishing a level of 0.075 ppm (Volume 73, Federal Register [FR], page 16438; March 27, 2008). In 2009, EPA announced it would reconsider this standard because it fell outside of the range recommended by the Clean Air Scientific Advisory Committee. However, EPA did not take final action on the reconsideration, keeping the standard as 0.075 ppm.

After reviewing data from Massachusetts monitoring stations, EPA sent a letter on December 16, 2011, proposing that *only* Dukes County be designated as nonattainment for the new proposed 0.075 ppm ozone standard. The Commonwealth of Massachusetts concurred with these findings.

On May 21, 2012, the final rule (77 FR 30088) was published in the Federal Register. This rule defined the 2008 NAAQS as 0.075 ppm, the standard that was promulgated in March 2008. A second rule (77 FR 30160) published on May 21, 2012, revoked the 1997 ozone NAAQS effective one year after the July 20, 2012, effective date of the 2008 NAAQS.

Also, on May 21, 2012, the Federal Register published the air quality designation areas for the 2008 NAAQS. Dukes County was the only area in Massachusetts designated as a nonattainment area. All other Massachusetts counties were designated as *attainment/unclassified* for the 2008 standard.

On March 6, 2015, EPA published the final rulemaking, “Implementation of the 2008 National Ambient Air Quality Standards (NAAQS) for Ozone: State Implementation Plan Requirements; Final Rule” (80 FR 12264), effective April 6, 2015. This rulemaking confirmed the removal of transportation conformity to the 1997 ozone NAAQS and the replacement with the 2008 ozone NAAQS, which actually set a stricter level of allowable ozone concentration than the 1997 standards and classified Massachusetts (except for Dukes County) as *attainment/unclassifiable*.

However, on February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA* (“*South Coast II*,” 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were designated either as nonattainment or maintenance areas for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked.

On November 29, 2018, EPA issued *Transportation Conformity Guidance for the South Coast II Court Decision* (EPA-420-B-18-050, November 2018), which addressed how transportation conformity determinations could be made in these areas. According to the guidance, both Eastern and Western Massachusetts, along with several other areas across the country, were defined as orphan nonattainment areas—areas that were designated as nonattainment areas for the 1997 ozone NAAQS at the time of its revocation (80 FR 12264, March 6, 2015) and as attainment areas for the 2008 ozone NAAQS in EPA’s original designation rule for this NAAQS (77 FR 30160, May 21, 2012). As of February 16, 2019, conformity determinations are required in these areas.

CONFORMITY DETERMINATION

Ozone

After February 16, 2019, as a result of the court ruling and the subsequent federal guidance, transportation conformity for the 1997 NAAQS—intended as an anti-backsliding measure—now applies to both Massachusetts orphan areas. Therefore, a conformity determination was made for the 1997 ozone NAAQS in all of the Massachusetts MPOs’ FFYs 2020–40 LRTPs. This conformity determination was finalized in July 2019, following all of the MPOs’ endorsements of their LRTPs, and approved by the Massachusetts Divisions of FHWA and FTA on October 15, 2019. This conformity determination continues to be valid for the Boston Region MPO’s FFYs 2023–27 TIP, and Massachusetts’ s 2023–27 State Transportation Improvement Program, as each is developed from the conforming 2020–40 LRTPs.

The transportation conformity regulation in 40 CFR § 93.109 sets forth the criteria and procedures for determining conformity. The conformity criteria for TIPs and LRTPs include a demonstration of fiscal constraint (§ 93.108), a basis on the latest planning assumptions (§ 93.110), use of the latest emissions model (§ 93.111), consultation (§ 93.112), provision for the timely implementation of transportation control measures (TCMs) (§ 93.113[b] and [c]), and consistency with an emissions budget and/or interim emissions tests (§ 93.118 and/or § 93.119).

For the 1997 ozone NAAQS areas, transportation conformity for TIPs and LRTPs for the 1997 ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR § 93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of EPA’s nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 ozone NAAQS revocation was effective on April 6, 2015, and the court for *South Coast II* upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, budget, or interim emissions tests.

Therefore, transportation conformity for the 1997 ozone NAAQS for the Boston Region MPO’s FFYs 2023–27 TIP can be demonstrated by showing that the remaining requirements in 40 CFR § 93.109 have been met. The following requirements regarding the use of the latest planning assumptions, consultation, timely implementation of TCMs, and fiscal constraint are defined in Section 2.4 of that guidance and are addressed in the following sections.

Latest Planning Assumptions

The requirement to use the latest planning assumptions in 40 CFR § 93.110 generally applies to regional emissions analyses. In the areas subject to the 1997 ozone NAAQS, the use of latest planning assumptions requirement applies to assumptions about TCMs in an approved SIP. (See the section titled *Timely Implementation of Transportation Control Measures* below).

Consultation

The consultation requirements in 40 CFR § 93.112 for interagency consultation and public consultation were addressed. Interagency consultation was conducted with FHWA, FTA, EPA Region 1, the Massachusetts Department of Environmental Protection (DEP), and the other Massachusetts MPOs on March 6, 2019, to discuss the latest conformity-related court rulings and resulting federal guidance. Regular and recurring interagency consultations have been held on (at least) an annual schedule, with the most recent conformity consultation held on April 27, 2022. Ongoing consultation is conducted in accordance with the following items:

- The Commonwealth of Massachusetts' Air Pollution Control Regulations 310 CMR 60.03, "Conformity to the State Implementation Plan of Transportation Plans, Programs, and Projects Developed, Funded, or Approved Under Title 23 USC or the Federal Transit Act"
- The Commonwealth of Massachusetts' Memorandum of Understanding (MOU) between DEP, the Massachusetts Department of Transportation (MassDOT), and Massachusetts MPOs, and Regional Transit Authorities, titled "The Conduct of Air Quality Planning and Coordination for Transportation Conformity" (dated September 16, 2019)

Public consultation was conducted consistent with planning rule requirements in 23 CFR § 450. Title 23 CFR § 450.324 and 310 CMR 60.03(6)(h) requires that the development of the TIP, LRTP, and related certification documents provide an adequate opportunity for public review and comment. Section 450.316(b) also establishes the outline for MPO public engagement programs. The Boston Region MPO's Public Engagement Plan was formally adopted in October 2014 and amended in October 2021 and is available at https://www.ctps.org/public_involvement. The Public Engagement Plan ensures that the public will have access to the TIP and LRTP and all supporting documentation, provides for public notification of the availability of the TIP and LRTP and the public's right to review the document and comment thereon, and provides a 21-day public review and comment period prior to the adoption of the TIP and LRTP and related certification documents.

The public comment period for this conformity determination commenced on May 2, 2022. During the 21-day public comment period, any comments received will be incorporated into this TIP. This process will allow sufficient opportunity for public comment and for the MPO board to review the draft document. The public comment period will close on May 23, 2022, and the Boston Region MPO is expected to endorse this air quality conformity determination on May 26, 2022. These procedures comply with the associated federal requirements.

Timely Implementation of Transportation Control Measures (TCMs)

TCMs were submitted to EPA as SIP revisions in 1979 and 1982, and as part of the Central Artery/Tunnel (CA/T) project. The TCMs in the 1979 and 1982 submissions were accomplished through construction of ongoing projects or implementation of ongoing programs.

The TCMs submitted as part of the mitigation for the CA/T project have been documented in the *Destination 2040* LRTP as recommended or completed projects, except for the Fairmount Line Improvement Project and the Green Line Extension.

MassDOT works with the DEP to implement TCMs documented in the SIP. The Boston Region MPO will continue to include relevant projects in the LRTP and TIP, including those projects implemented to provide equal or better emissions outcomes when the primary TCMs do not meet deadlines, until the process for completing all active TCMs has concluded. When the process has been completed, the MPO will amend the LRTP and future TIPs and their conformity determinations to document any changes (including any interim projects or programs).

A Status Report of Uncompleted SIP Projects

The status of the TCMs has been updated in the *SIP Transit Commitments Status Report*, which MassDOT submitted to DEP in August 2021. For a detailed description of the status of these projects, please visit the MassDOT website at <https://www.mass.gov/doc/state-implementation-plan-transit-commitments-2021-status-report/download>.

As part of the status report, MassDOT indicated that it is no longer reporting on the Red Line/Blue Line Connector Design, Blue Line Platform Lengthening and Station Modernization, the Greenbush Commuter Rail Restoration, the Construction of 1,000 Parking Spaces, and the Fairmount Line Improvement Project. All of those projects have been completed and MassDOT believes that the relevant commitments have been met. Therefore, information on those projects is not included in this chapter. The only project remaining is the Green Line Extension to Somerville and Medford. Information on this project is as follows:

Green Line Extension to Somerville and Medford Project—SIP Required Completion by December 2014

The Green Line Extension project is a 4.7-mile light rail line, which will extend the current Green Line service from a relocated Lechmere Station in East Cambridge to a terminus at College Avenue in Medford, with a spur to Union Square in Somerville. This project is moving forward with a cost estimate of \$2.289 billion. Funding came from a combined \$1.99 billion in federal and state funds and pledged contributions totaling approximately \$296 million from the Cities of Cambridge and Somerville (\$75 million), the Boston Region MPO (\$157.1 million), and MassDOT (\$64.3 million through Special Obligation Bonds). Since the status report was submitted, Cambridge and Somerville were refunded their full \$75 million in November 2021.

In early 2017, the MBTA initiated a procurement process for a design-build entity to design and construct the project. In November 2017, approval was received to execute a design-build

contract with Green Line Extension contractors. The notice to proceed under the contract was issued in December 2017. The FTA obligated an initial portion (\$100 million) of the Capital Investment Grant funds for the project in December 2017, under the 2015 Full Funding Grant Agreement. Additional funds have since followed. The contract with Green Line Extension contractors is in the amount of \$999.7 million.

The primary goals of the project are to improve corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, and support opportunities for sustainable development in Cambridge, Somerville, and Medford. In addition to the light rail service on two new branches extending from Lechmere Station to Union Square Station and College Avenue Station, the project includes the construction of a vehicle maintenance facility and a multiuse path.

SIP Requirement Status

By filing an Expanded Environmental Notification Form, procuring multiple design consultants, and publishing both Draft and Final Environmental Impact Reports, MassDOT met the first four interim milestones associated with the Green Line Extension project. Since those filings, MassDOT has committed substantial resources to the Green Line Extension project, a top transportation priority of the Commonwealth and the largest expansion of the MBTA rapid transit system in decades. The project then transitioned from the planning and environmental review phases to the design, engineering, and construction phases, and the tasks associated with programming federal funding began.

The timeline for overall project completion, however, has been substantially delayed. In the 2011 SIP Status Report, MassDOT reported that the Green Line Extension project would not meet the legal deadline for completion by December 31, 2014. The delay triggered the requirement to provide interim emission reduction offset projects and measures for the period of the delay (beginning January 1, 2015). Working with the Central Transportation Planning Staff, MassDOT and the MBTA calculated the value for reductions of non-methane hydrocarbons, CO, and NO_x that would be equal to or greater than the reductions projected to result from the operation of the Green Line Extension during the period of the delay, as specified in the SIP regulation.

In June 2012, MassDOT released a list of potential mitigation ideas received from the public that could be used as offset measures. In the summer and fall of 2012, MassDOT elicited public comments on these potential measures. Then the MBTA created an internal working group to determine a final portfolio of interim mitigation measures to implement by December 31, 2014, the legal deadline for the implementation of the Green Line Extension.

This work resulted in a recommendation to implement the following three interim mitigation measures, which collectively would meet the emissions reduction target for the project:

- Additional off-peak service along existing routes serving the corridor, including the Green Line, and MBTA bus Routes 80, 88, 91, 94, and 96
- Purchase of 142 new hybrid-electric vehicles for the MBTA's paratransit service, The RIDE
- Additional park and ride spaces at the Salem and Beverly intermodal facilities

The Petition to Delay was submitted to the DEP on July 22, 2014, and expanded further on the analysis and determination of the interim offset measures. In a letter dated July 16, 2015, the DEP conditionally approved MassDOT's request to delay the Green Line Extension project and the implementation of the above interim mitigation measures. Both the 2014 Petition to Delay and the July 2015 Conditional Approval are available on MassDOT's website. Interim offset measures will remain in place for as long as is necessary.

The Green Line Extension to Union Square opened for service on March 21, 2022, and the extension to Medford is scheduled to open for service in Summer 2022.

Funding Source: The Commonwealth, FTA via the Full Funding Grant Agreement, and the Boston Region MPO.

Fiscal Constraint

Transportation conformity requirements in 40 CFR § 93.108 state that TIPs and LRTPs must be fiscally constrained so as to be consistent with the United States Department of Transportation's metropolitan planning regulations (23 CFR part 450). The Boston Region MPO's FFYs 2023–27 TIP is consistent with the required fiscal constraints, as demonstrated in Chapter 3.

Carbon Monoxide

The requirement to perform a conformity determination for CO for several cities in the Boston region has expired. On April 1, 1996, the EPA classified the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville as in attainment (in compliance) for 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.

The requirement to perform a conformity determination for CO for the city of Waltham has also expired. On April 22, 2002, the EPA classified Waltham as being in attainment for CO emissions. Subsequently, an EPA-approved CO limited 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 determination against a "budget test" (using "hot spot" analyses as needed at the project level) for Waltham. As of April 22, 2022, however, the 20-year maintenance period for this CO area expired and transportation conformity is no longer required for this pollutant in this municipality. This ruling is documented in a letter from EPA dated April xx, 2022.

CONCLUSION

In summary and based on the entire process described above, the Boston Region MPO has prepared this conformity determination for the 1997 ozone NAAQS in accordance with EPA's and the Commonwealth of Massachusetts' latest conformity regulations and guidance. This conformity determination process demonstrates that the FFYs 2023–27 TIP meets the Clean Air Act and Transportation Conformity Rule requirements for the 1997 ozone NAAQS, and has been prepared following all the guidelines and requirements of these rules during this period.

Therefore, the implementation of the Boston Region MPO's FFYs 2023–27 TIP is consistent with the air quality goals of, and in conformity with, the Massachusetts SIP.



3863

TRACK 1

TRACK 2

COPLEY & WEST

GREEN LINE - COPLEY & WEST

3702

3702

If you have not validated your fare at a fare collecting machine, please tap your fare at the start of this line.



CHAPTER 6

Transportation Equity Performance

The Boston Region Metropolitan Planning Organization (MPO) monitors how the transportation projects it funds, as a group, affect the region’s most vulnerable populations and those who have been disproportionately affected by the transportation system. This monitoring helps ensure that these populations are not disproportionately burdened by or receive disproportionately fewer benefits from MPO-funded projects. This chapter provides the results of analyses conducted for monitoring projects funded with Regional Target funds, in the federal fiscal years (FFYs) 2023–27 Transportation Improvement Program (TIP).¹ It also includes an overview of the transportation equity (TE) component of the project evaluation process as it has changed in recent years.

TRANSPORTATION EQUITY POPULATIONS

In response to federal mandates, the MPO considers six demographic groups to be TE populations—populations that are covered by federal directives and that have been disproportionately underserved and burdened by the transportation system. These mandates include Title VI of the Civil Rights Act of 1964; the Americans with Disabilities Act of 1990; Executive Order 13166—*Improving Access to Services for Persons with Limited English Proficiency*; and the Age Discrimination Act of 1975. (More information on these mandates can be found in Appendix E.) TE populations include people who identify as a minority, people with low-incomes, people with limited English proficiency (LEP), older adults, young people, and people with disabilities.²

The MPO’s TE goal shapes the MPO’s approach to improving transportation outcomes for TE populations. The TE goal is to 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. The MPO’s practices to achieve this goal are shaped by the various federal nondiscrimination and environmental justice laws and regulations. In addition, the MPO strives to go beyond these federal requirements to meet the transportation needs and address disproportionately high and adverse effects of existing transportation investments experienced by TE populations in the Boston region.

1 Regional Target funds are those federal funds provided to MPOs that are programmed for projects at the discretion of each MPO. The Boston Region MPO typically receives about \$110 million each year in Regional Target funds. This amount has increased about \$130 million for the five years of the FFYs 2023–27 TIP due to an increase in federal funding.

2 TE populations are identified using Decennial Census and American Community Survey data and are defined as follows:

- People who identify as a minority include those who identify as Hispanic or Latino/a/x and/or a race other than White. Minority status is calculated for the entire population. For conciseness, people who identify as minority are referred to as the “minority population” in the remainder of this document.
- A person is considered to have a low income if their annual family income is less than or equal to 200 percent of the poverty level for their family size. Low-income status is calculated for the population for which poverty status can be determined. For conciseness, people with a low income are referred to as the “low-income population” in the remainder of this document.
- People with LEP are those who report speaking English less than “very well” on the American Community Survey. LEP status is calculated for the population ages five and older.
- Disability status is calculated for the noninstitutionalized population.
- The older adult population includes people ages 75 and older. It is calculated for the entire population.
- The youth population includes people ages 17 and younger. It is calculated for the entire population.

As part of this work, the MPO analyzes TIP projects individually upon intake prior to being selected for funding (during the project evaluation process), as well as the group of projects that are selected for Regional Target funding (by conducting equity analyses). These reviews allow the MPO to assess how the projects perform relative to the MPO's TE goal, as well as progress in improving transportation outcomes for TE populations. The remainder of this chapter describes the review processes for Regional Target-funded projects in the FFYs 2023–27 TIP.

A NOTE ON DEMOGRAPHICS

The FFYs 2023–27 TIP marks a change in terms of the demographic data that were used to evaluate projects and conduct equity analyses. For project evaluations, staff updated all demographic data with the latest demographic data available. Minority data came from the 2020 Census, while all other TE population data were from the 2015–19 American Community Survey (ACS). Age data from the 2020 Census are scheduled to be released later in 2022; therefore, ACS data were used for the youth and older adult populations. In the future these data will be updated with 2020 Census data.

In addition, project evaluations no longer rely on transportation analysis zones (TAZs) as the geographic unit of analysis; census block groups are the basis instead. Scores for projects evaluated both in the FFYs 2022–26 and FFYs 2023–27 TIP cycles will have changed, reflecting the new data. For the equity analyses described in this chapter, 2016–20 ACS data were available and used for all TE populations except the minority population, which was based on 2020 Census data.

TRANSPORTATION EQUITY PROJECT EVALUATION

In October 2020, the MPO approved a new set of project evaluation criteria for each of the six MPO goal areas, including the TE goal area (see Chapter 2). These criteria were used to evaluate projects proposed for funding in the FFYs 2022–26 and FFYs 2023–27 TIPs. This section describes the project evaluation process for transportation equity. (See Appendix A for project scores.)

The TE evaluation criteria for all investment programs other than Community Connections are integrated into the other goal areas rather than existing as a stand-alone set of criteria. (However, the TE equity component for each project score was calculated and can be found in Appendix A.) This structure allows the MPO to evaluate projects based not only on the TE populations who live near the project, but also on the expected impacts of the projects on these populations. The TE score as a percentage of a project's maximum possible score is about 20 percent. The TE evaluation is a three-step process, as described below.

Step 1: Determine the impacts of each project using the scores for selected evaluation criteria in the other goal areas.

Project impacts are identified through the evaluation criteria in the Safety, Capacity Management and Mobility, Clean Air and Sustainable Communities, and System

Preservation goal areas. A subset of these criteria was selected to be equity criteria, based on existing transportation needs identified through public engagement. These criteria are shown in Table 6-1, along with their maximum scores.

Table 6-1
Criteria Used in Transportation Equity Scoring

Investment Program	Criteria	Maximum Points (with Equity Multiplier) ¹			
		Bicycle Network and Pedestrian Connections Program	Complete Streets Program	Intersection Improvements Program	Major Infrastructure Program
Capacity Management and Mobility	Reduces transit passenger delay	N/A	4 (8)	4 (8)	4 (8)
	Invests in new transit assets	N/A	2 (4)	2 (4)	2 (4)
	Improves pedestrian network/ADA accessibility	9 (18)	4 (8)	4 (8)	4 (8)
	Improves bicycle network	9 (18)	4 (8)	4 (8)	4 (8)
Clean Air and Sustainable Communities	Reduces transportation-related emissions (CO, VOCs, and PM2.5)	6 (12)	5 (10)	5 (10)	5 (10)
Safety	Improves pedestrian safety	7 (14)	3 (6)	4 (8)	3 (6)
	Improves bicycle safety	7 (14)	3 (6)	4 (8)	3 (6)
	Project addresses severe-crash location	N/A	3 (6)	3 (6)	3 (6)
System Preservation	Incorporates resiliency elements into design	5 (10)	5 (10)	5 (10)	5 (10)
	Improves existing transit assets	N/A	2 (4)	2 (4)	2 (4)
	Improves connectivity to critical facilities	2 (4)	1 (2)	1 (2)	1 (2)
	Improves existing pedestrian facilities	5 (10)	3 (6)	3 (6)	3 (6)

¹ Points include applicable bonus points.

ADA = Americans with Disabilities Act. CO = carbon monoxide. N/A = not applicable. PM = particulate matter. VOC = volatile organic compound.

Source: Boston Region MPO.

Step 2: Calculate the project’s “equity multiplier.”

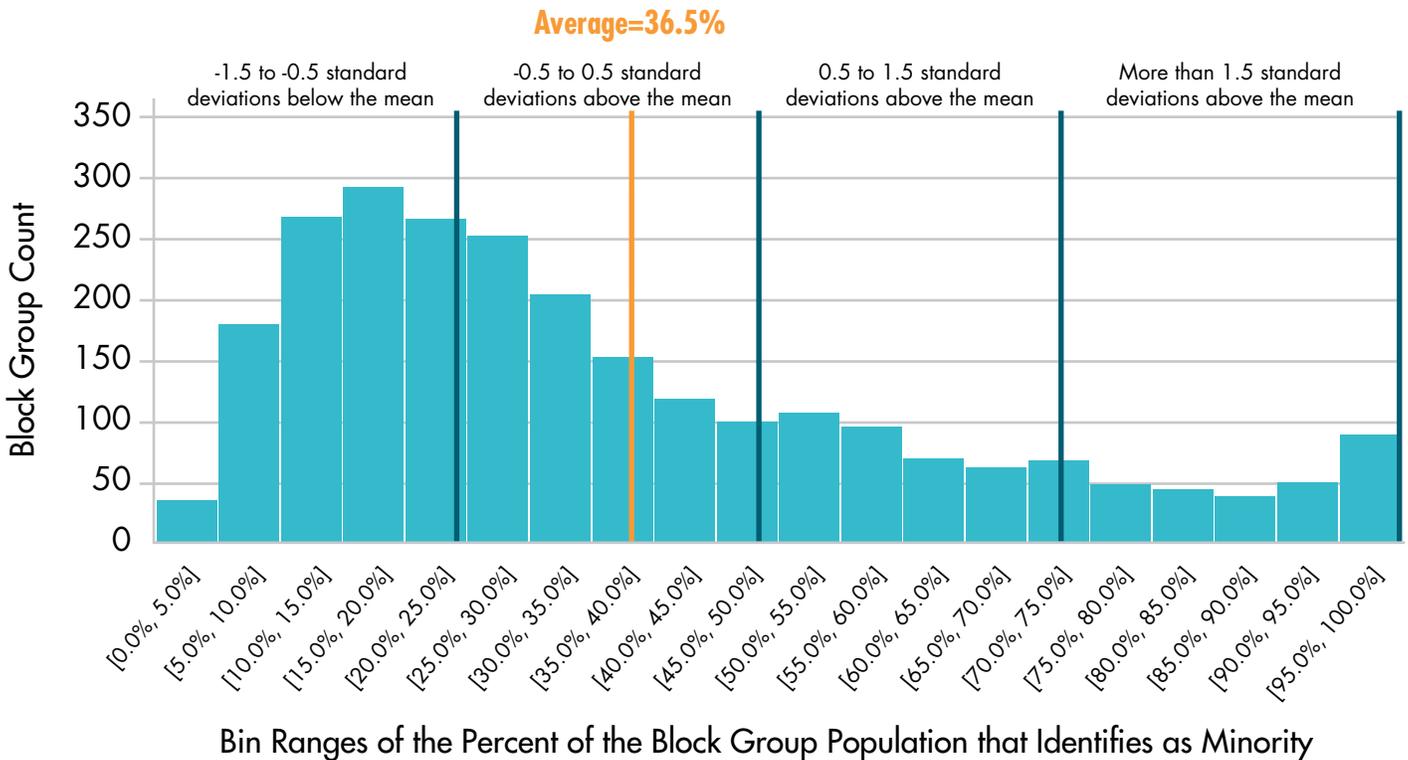
Equity multipliers are assigned to each project based on the share of each TE population in the project area (within one-half mile) relative to the regionwide average. For each project area the following steps are taken:

Step 2a: Calculate the percent of the population that belongs to each TE population within the project area.

Step 2b: Determine the equity index for each TE population. The equity index is derived from the distribution of each TE population across the Boston region. For example, Figure 6-1 below is a histogram of the distribution of the minority population across all the block groups in the Boston region. The Y-axis shows the number of block groups, and the X-axis shows the percent of the population in those block groups who identify as a minority. It also shows the regionwide average, as well as where certain standard deviations (SD) above and below the average fall.

The SD measures the variation of the population across the region. A lower SD indicates that values are clustered around the average—people with disabilities, and the youth and older adult populations share this characteristic. A higher SD indicates that values are more dispersed—the minority and low-income populations, and people with LEP share this characteristic.

Figure 6-1
Distribution of the Minority Population in the Boston Region



Source: US Census Bureau.

Step 2c: The percent of the total population that belongs to each TE population in the project area is compared to the SD categorization as shown above. For example, a project area in which ten percent of the population identifies as minority would fall between -1.5 and -0.5 SDs below the average. Each SD range has an equity index associated with it. Table 6-2 shows the indices associated with each SD range for all six TE populations.

Table 6-2
Equity Index Look-up Table: Project Investment Programs

Equity Population	Less than -1.5 SDs from the Average	-0.5 to -1.5 SDs from the Average	-0.5 to 0.5 SDs from the Average	0.5 to 1.5 SDs from the Average	Greater than 1.5 SDs from the Average
Minority population	0.0	2.0	4.0	6.0	8.0
Low-income population	0.0	2.0	4.0	6.0	8.0
People with LEP	0.0	1.0	2.0	3.0	4.0
People with disabilities	0.0	0.5	1.0	1.5	2.0
Older adult population	0.0	0.5	1.0	1.5	2.0
Youth population	0.0	0.5	1.0	1.5	2.0

LEP = limited English proficiency. SD = standard deviation.

Source: Boston Region MPO.

Step 2d: The indices for each of the TE populations are added up to obtain a final index value. The highest index a project can receive is 26 (the sum of the values in the far-right column).

Step 2e: Finally, the equity index is matched with its corresponding multiplier using the table below.

Table 6-3
Equity Multiplier Look-up Table

If Equity Index is Equal or Greater Than...	...And Less Than...	The Project's Multiplier is...
0.0	1.0	0.0
1.0	6.0	1.25
6.0	15.0	1.5
15.0	20.0	1.75
20.0	27.0	2.0

Source: Boston Region MPO.

Step 3: Calculate the final scores.

The scores calculated in Step 1 are multiplied by the project's equity multiplier to get the final score for the criteria identified in Table 6-1.

This process achieves several results:

- Assesses project impacts to TE populations, not simply the presence of these populations
- Prioritizes projects that benefit the minority population, low-income population, and people with LEP to account for systemic discrimination historically experienced by these populations
- Compares all projects against regional averages, which enables MPO staff to create one equity index that includes all TE populations and provides a standardized way to compare projects

Note that with each new census and ACS dataset that are released, SDs are recalculated.

Community Connections projects are scored in the same way as described above, except that there is no multiplier to calculate and apply to other criteria scores. Instead, an index is calculated as described in Steps 2a–2d, above. The final step is to match the index with its corresponding TE score as shown in Table 6-4.

Table 6-4
Equity Index Look-up Table: Community Connections

If Project Equity Index is Greater than...	...And Less Than...	The Project Score is...
0	1	0
1	6	3
6	11	6
11	16	9
16	21	12
21	27	18

Source: Boston Region MPO.

TRANSPORTATION EQUITY ANALYSES

As required by federal regulations, the MPO assesses the impacts of all Regional Target-funded projects, as a group, in each TIP on TE populations.³ These analyses help the MPO to better understand the extent to which investments help the MPO meet its TE goal. This information will inform future changes or updates to MPO work and decision-making. As new tools are identified and analyses are developed, they will be added to subsequent TIPs.

In the FFYs 2023–27 TIP, the MPO has left unprogrammed Regional Target funds for projects which have not yet been identified. As a standard practice, the MPO reserves funds for these programs with the expectation that they will be allocated when projects are ready to be funded. Specifically, \$6.7 million for the Community Connections and \$19.5 million for the Transit Modernization investment programs have been left unprogrammed. Except for the funding distribution analysis, the equity analyses in this chapter do not account for these funds. Additionally, the analyses in this chapter do not include roadway projects in the region that are funded by the Massachusetts Department of Transportation or public transit projects funded by regional transit authorities.

³ The following sources for the TE populations were used for the analyses in this section:

FFYs 2022–26 TIP and earlier:

- Minority population: US Census Bureau; 2010 Decennial Census Redistricting Data (P.L. 94-171), Table P2: Hispanic or Latino, and Not Hispanic or Latino by Race; generated by CTPS; using data.census.gov.
- Low-income population: US Census Bureau; 2010–14 American Community Survey, Table C17002: Ratio of Income to Poverty Level in the Past 12 Months; generated by CTPS; using data.census.gov.
- People with limited English proficiency: US Census Bureau; 2010–14 American Community Survey, Table B16004: Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Older; generated by CTPS; using data.census.gov.
- People with disabilities: US Census Bureau; 2010–14 American Community Survey, Table B18101: Sex by Age by Disability Status; generated by CTPS; using data.census.gov.
- Older adults and youth population: US Census Bureau; 2010 Census, Table P12: Sex by Age; generated by CTPS; using data.census.gov.

FFYs 2023–27 TIP:

- Minority population: US Census Bureau; 2020 Decennial Census Redistricting Data (P.L. 94-171), Table P2: Hispanic or Latino, and Not Hispanic or Latino by Race; generated by CTPS; using data.census.gov.
- Low-income population: US Census Bureau; 2016–20 American Community Survey, Table C17002: Ratio of Income to Poverty Level in the Past 12 Months; generated by CTPS; using data.census.gov.
- People with limited English proficiency: US Census Bureau; 2016–20 American Community Survey, Table B16004: Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Older; generated by CTPS; using data.census.gov.
- People with disabilities: US Census Bureau; 2016–20 American Community Survey, Table B18101: Sex by Age by Disability Status; generated by CTPS; using www.data.census.gov.
- Older adult and youth population: US Census Bureau; 2016–20 American Community Survey, Table B18101: Sex by Age; generated by CTPS; using data.census.gov.

Geographical Analyses

Transportation Equity Populations in the Boston Region

Table 6-5 shows the total number of people in the Boston region who belong to each TE population, as well as the percentage of each TE population relative to the Boston region's population. Values from the FFYs 2022–26 TIP are also shown as a comparison.

Table 6-5
Transportation Equity Populations in the Boston Region

TE Population Group	MPO Region Population		Percent of the Total Population	
	FFYs 2022–26 TIP	FFYs 2023–27 TIP	FFYs 2022–26 TIP	FFYs 2023–27 TIP
Minority population	870,459	1,223,835	28.2%	36.5%
Low-income population	683,548	674,215	23.0%	19.6%
People with LEP	308,770	375,848	10.6%	11.1%
People with disabilities	306,776	342,552	10.0%	10.2%
Older adult population	206,578	232,286	6.7%	6.8%
Youth population	636,761	634,550	20.6%	19.3%

Note: To calculate the TE population values, the population in each block group was controlled to the total 2020 census population count and then summed to get the total TE population in the Boston region.

FFY = federal fiscal year. LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Source: US Census Bureau.

Figures 6-2 to 6-7 show the percent of each TE population throughout the Boston region. In general, the minority population, people with low incomes, and people with LEP tend to live closer to or in Boston. On the other hand, people aged 75 or older, people 17 or younger, and people with disabilities are dispersed throughout the region.

Figure 6-2
Percentage of the Minority Population in the Boston Region

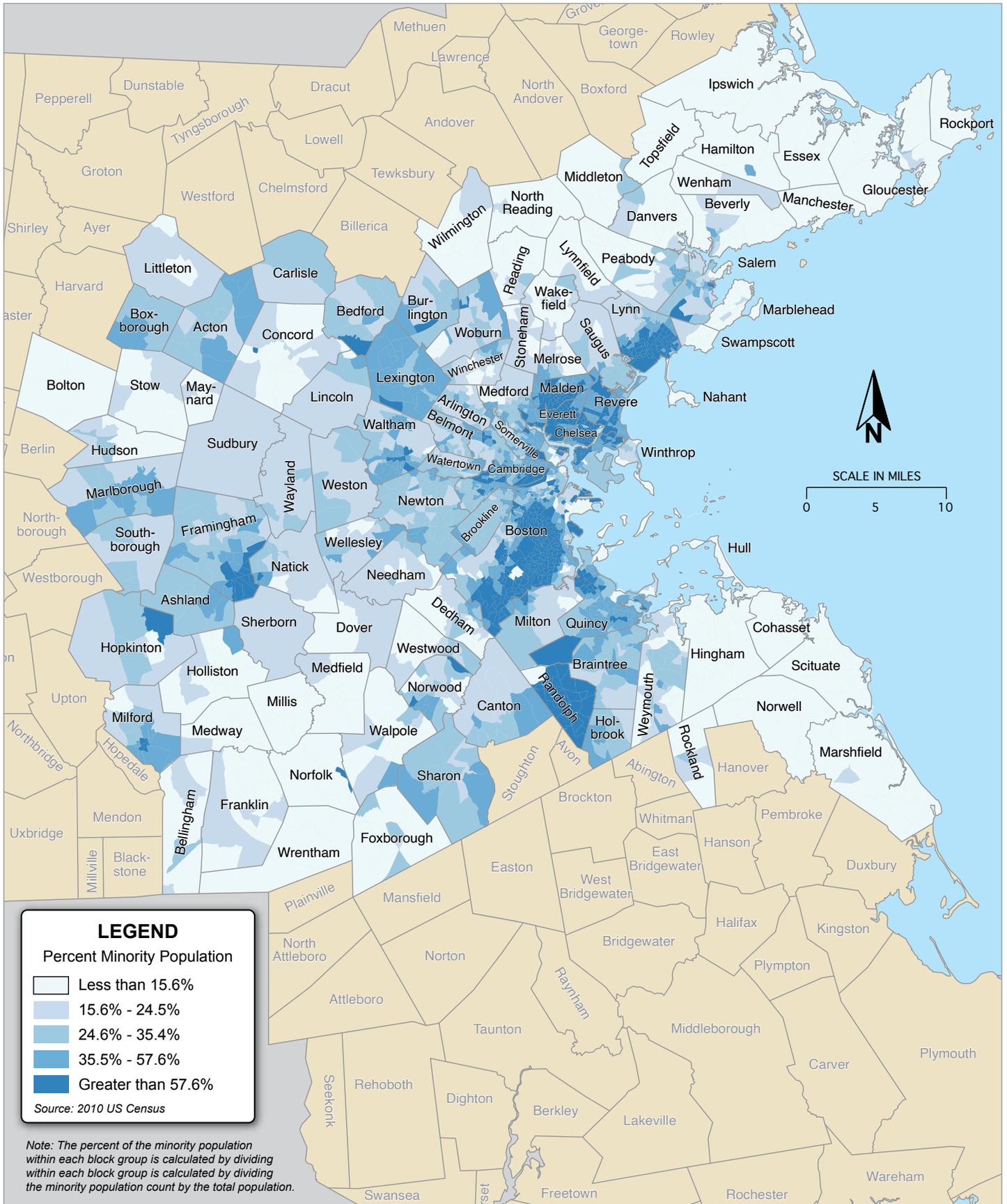


Figure 6-3
Percentage of the Low-income Population in the Boston Region

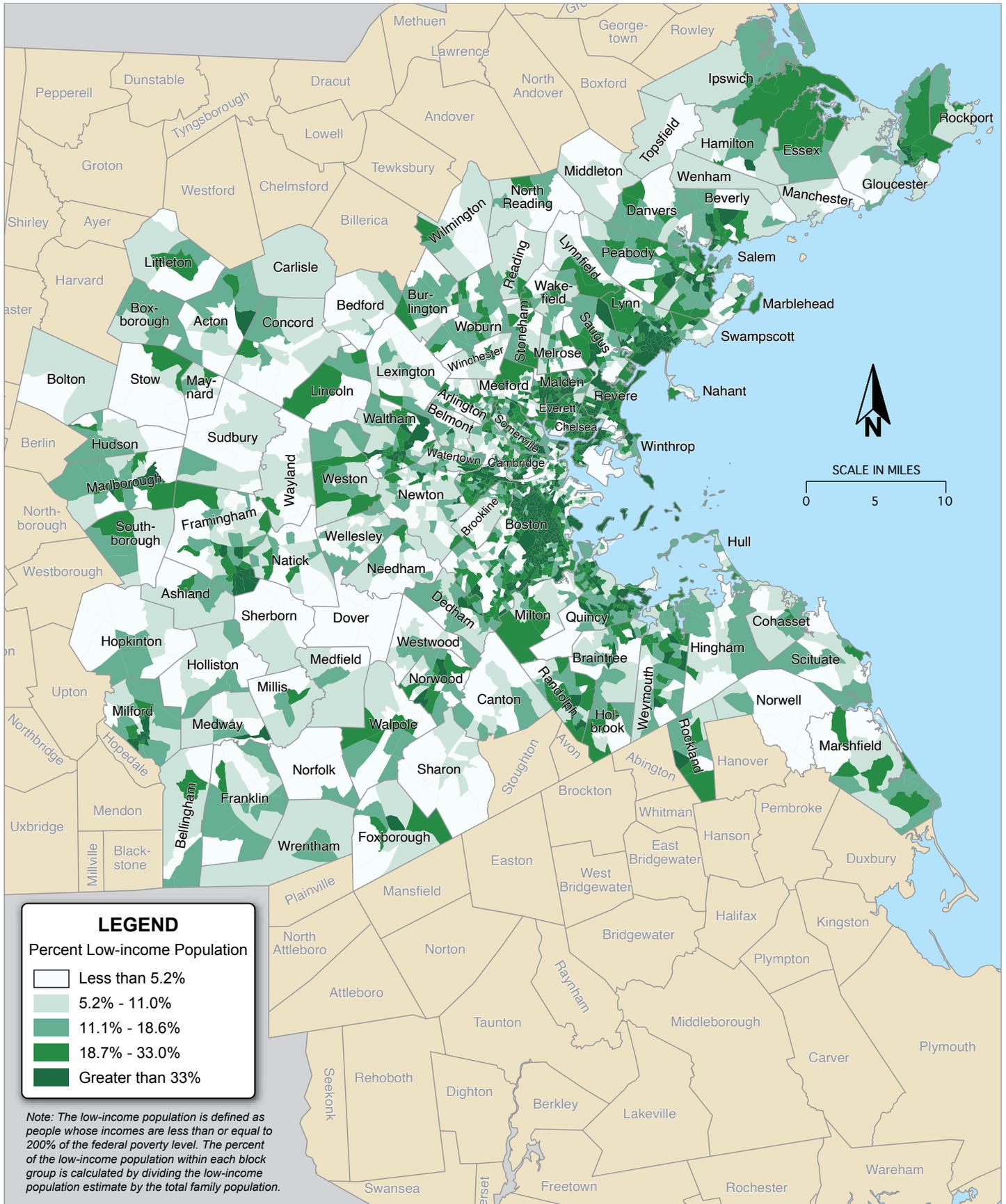


Figure 6-4
Percentage of People with Limited English Proficiency in the Boston Region

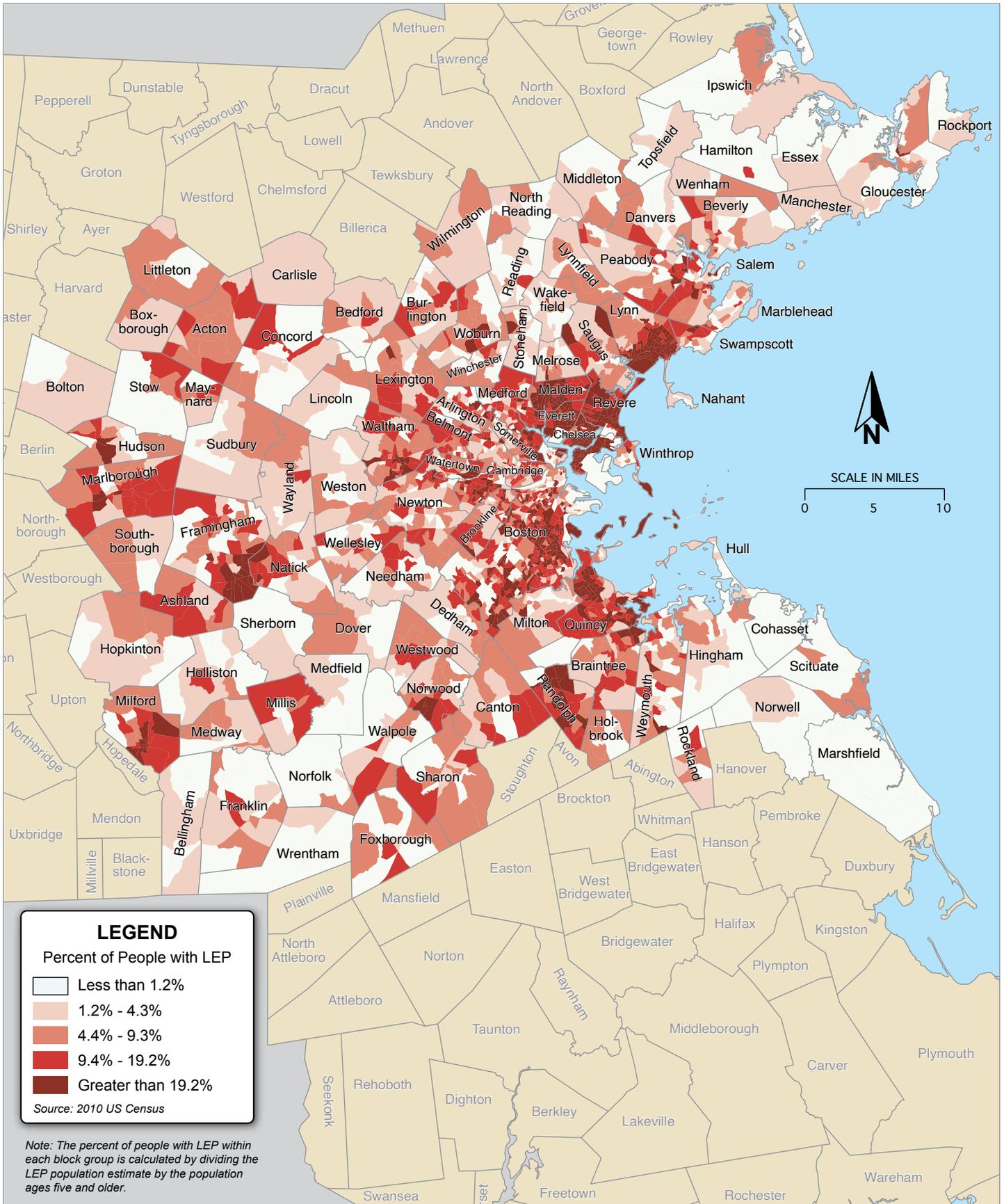


Figure 6-5
Percentage of People with Disabilities in the Boston Region

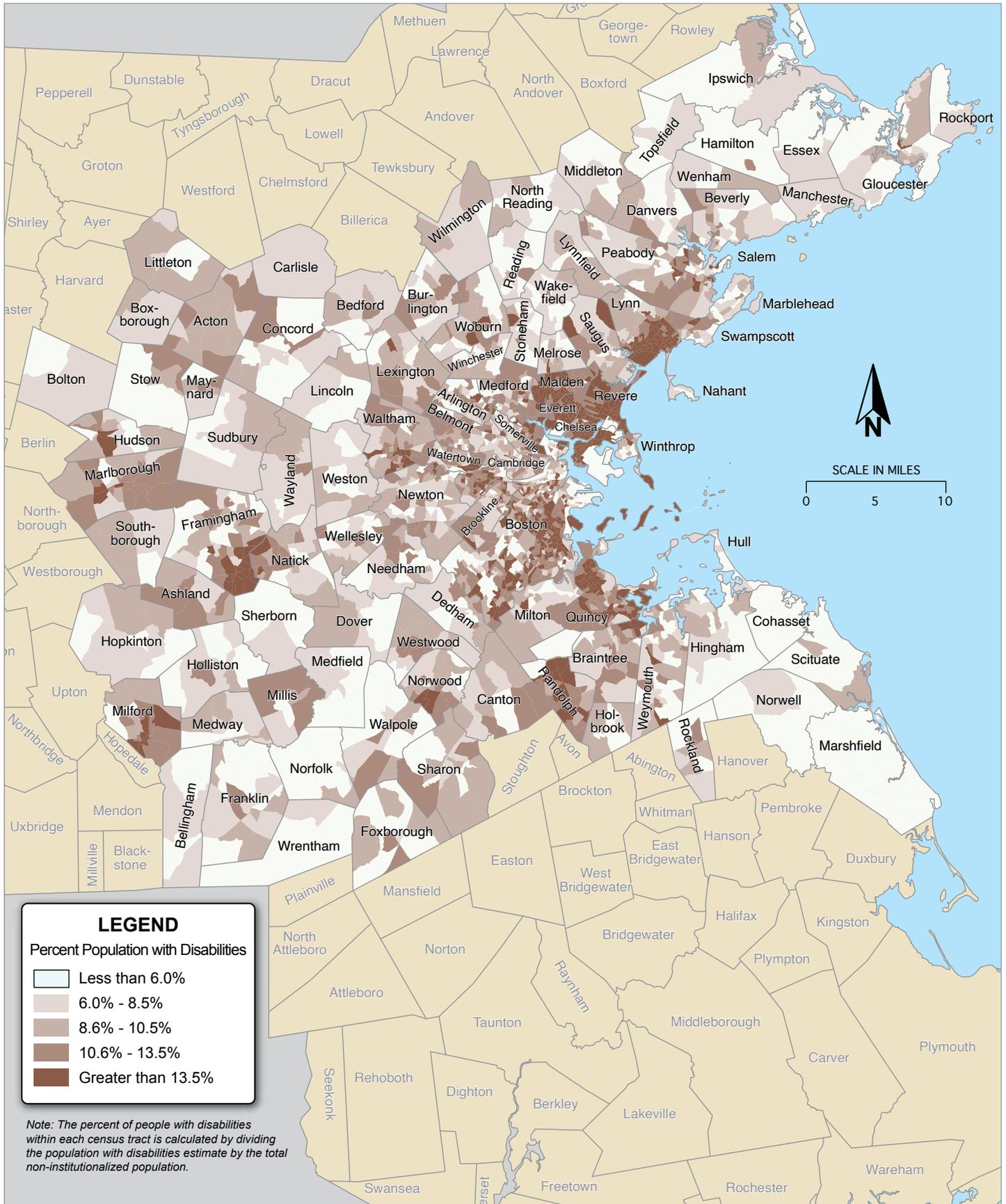


Figure 6-6
Percentage of Older Adults in the Boston Region

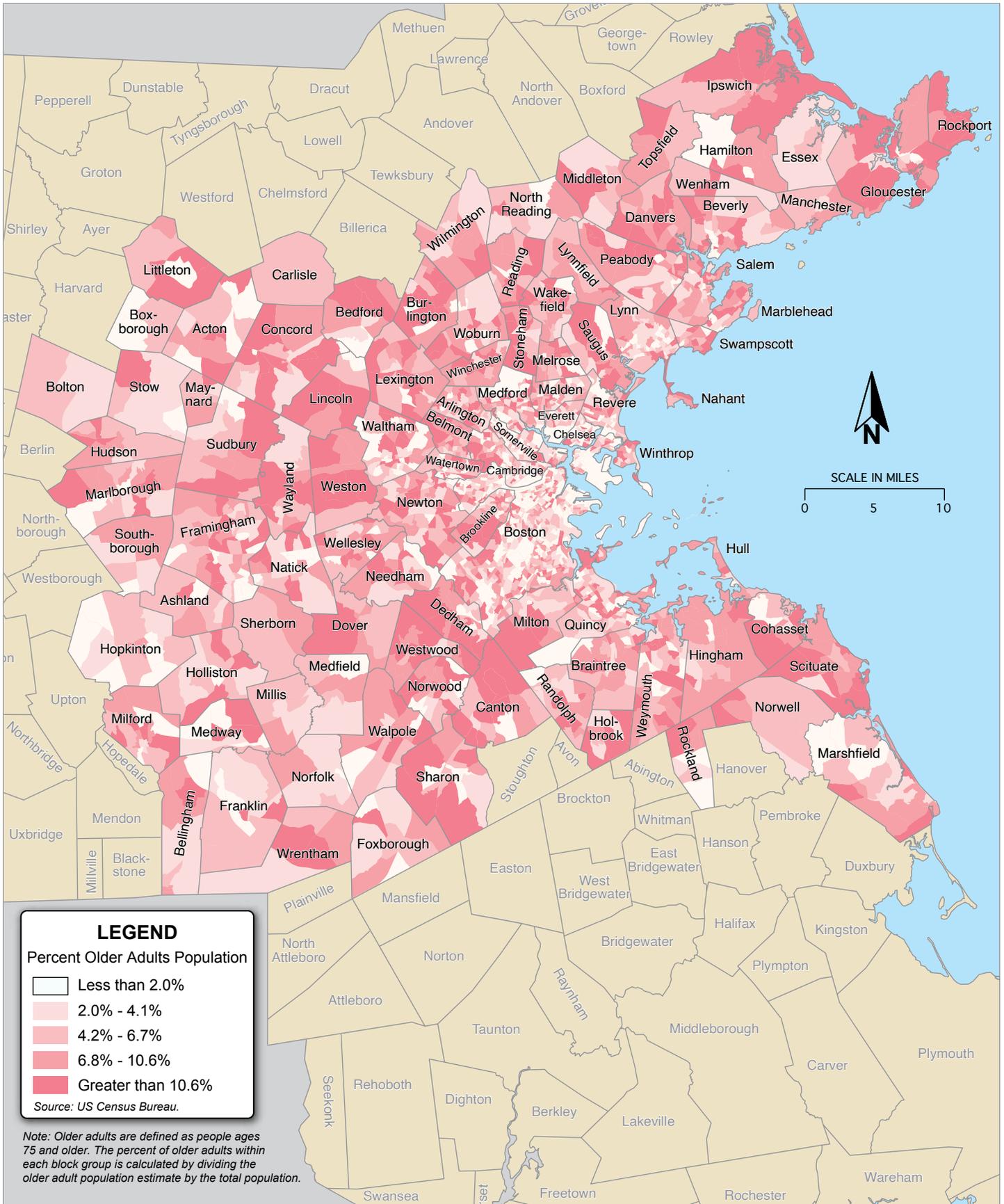
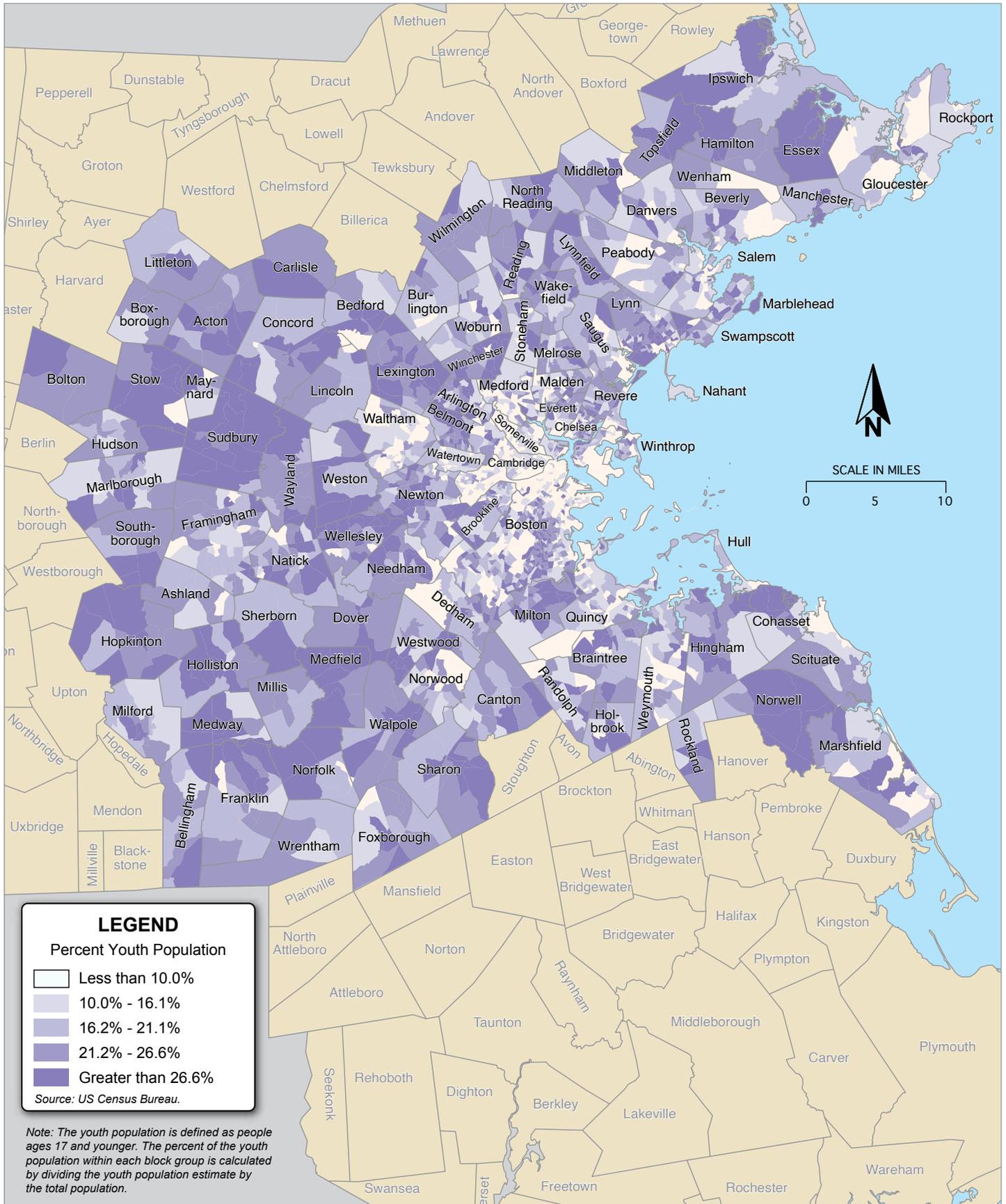


Figure 6-7
Percentage of Youth Population in the Boston Region



Transportation Equity Populations Served or Impacted by Regional Target-funded Projects

The analyses in this section assess which TE populations are likely served or impacted by Regional Target-funded projects. Affected populations are considered those who live in close proximity, defined as one-half mile, from project extents. Geographic proximity is an approximation that helps determine who is likely to use and be impacted by a project. For some projects, such as those in the Bicycle Network and Pedestrian Connections and Complete Streets Programs, this measure is a reasonable representation as these projects are often designed and located in such a way so as to serve local residents. For other projects, such as those in the Major Infrastructure Program, this may be a less accurate representation, given that many users of these types of roadways or public transit lines live outside of the half-mile boundary. Some impacts, however, are local regardless of investment program, such as pollution from carbon monoxide (CO) and other transportation-related emissions. Despite drawbacks, geographical analyses are a readily available approximation of who may be most served and affected by projects funded by the MPO.

Table 6-6
Transportation Equity Populations Served or Impacted by Regional Target Projects

TE Population Group	Regionwide Population	Population Served	Percentage of Total Population Served	Percentage of Regionwide Population
Minority population	1,223,835	278,341	39.4%	36.5%
Low-income population	674,215	147,568	21.4%	20.1%
People with LEP	375,848	79,880	11.5%	11.2%
People with disabilities	342,552	70,085	9.9%	10.2%
Older adult population	232,286	45,609	6.5%	6.9%
Youth population	634,550	132,508	18.8%	18.9%

Notes: As is its usual practice, the MPO has left some funds unallocated in the outer years of the TIP, and this analysis does not reflect those funds.

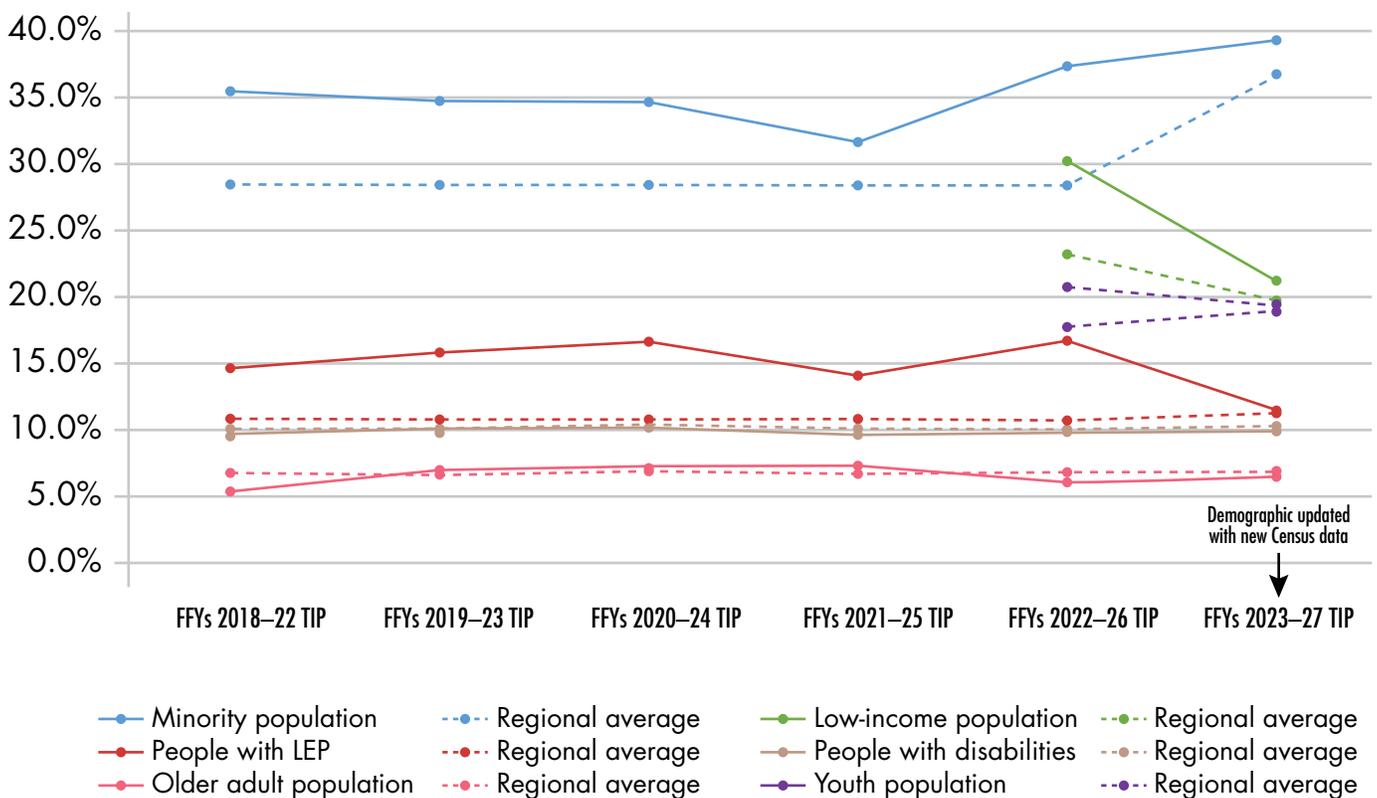
This table does not include the Bridge Rehabilitation of Commonwealth Avenue over the Charles River project as it was evaluated by MassDOT.

LEP = limited English proficiency. TE = transportation equity.

Sources: US Census Bureau, 2015–17 MBTA Systemwide Passenger Survey, and Boston Region MPO.

Figure 6-8 shows the percentage of TE populations served or impacted (out of the entire population served or impacted) by Regional Target projects in the FFYs 2018–22, 2019–23, 2020–24, 2021–25, 2022–26, and 2023–27 TIPs.⁴ (Note that the youth population was added and that the low-income definition changed to its current definition starting in the FFYs 2022–26 TIP; therefore data are shown for these populations starting with the FFYs 2022–26 TIP.) The results show that the percent of TE populations served or impacted have continued to be on par with their respective shares of the Boston region’s population. For the minority population in particular, the percentage has been several percentage points above the regionwide average in every TIP since FFYs 2018–22. For the youth population, the percentage was below its share of the region’s population in the FFYs 2022–26 TIP but is now on par in the FFYs 2023–27 TIP.

Figure 6-8
Change in the Percentage of Transportation Equity Populations Served or Impacted by Regional Target Projects



Notes: People aged 17 or younger were not considered among the TE population until the FFYs 2022–26 TIP. Additionally, starting in the FFYs 2022–26 TIP, the low-income population was defined based on poverty status. (Formerly it was based on household income; this is not shown in the figure as it cannot be compared with the current low-income definition. For information about the data for the FFYs 2018–22, 2019–23, 2020–24, and 2021–25 TIPs, [see the respective documents](#).

As is its usual practice, the MPO has left some funds unallocated in the outer years of each TIP, and this analysis does not reflect those funds. This figure also does not include the Bridge Rehabilitation of Commonwealth Avenue over the Charles River project (110980) as it was evaluated by MassDOT.

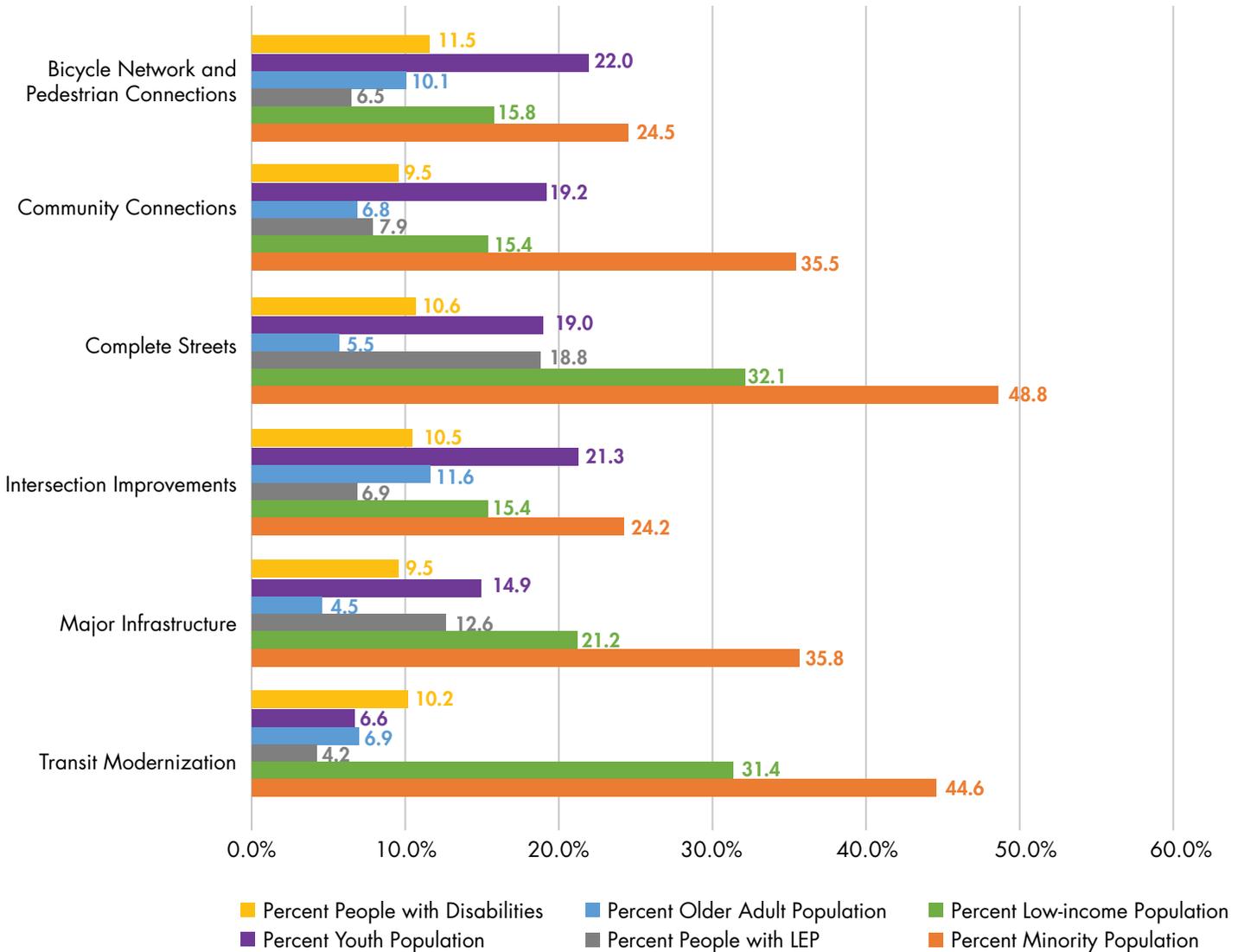
FFY = federal fiscal year. LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Sources: US Census Bureau, 2015–17 MBTA Systemwide Passenger Survey, and Boston Region MPO.

⁴ Starting in the FFYs 2022–26 TIP, the methodology for determining the population within a half-mile of projects was updated. A half mile is now measured along the roadway network (excluding limited access highways) rather than as-the-crow-flies, as was done in previous TIPs.

Figure 6-9 shows the percentage of TE populations served or impacted (out of the entire population served or impacted) for each investment program in the FFYs 2023–27 TIP. Some TE populations are likely to benefit from or be impacted by projects in certain investment programs. For example, approximately 19 percent of the population served or impacted by Complete Streets projects are expected have LEP; this percentage is significantly higher than the LEP share of the Boston region’s population, which is 11.2 percent. However, people with LEP are underserved by projects in the Bicycle and Pedestrian Network Connections investments program, with only 6.5 percent of the total population served.

Figure 6-9
Percent of Transportation Equity Populations Served or Impacted by Regional Target Projects by Investment Program



Notes: As is its usual practice, the MPO has left some funds unallocated in the outer years of the TIP, and this analysis does not reflect those funds.

This figure does not include the Bridge Rehabilitation of Commonwealth Avenue over the Charles River project as it was evaluated by MassDOT.

LEP = limited English proficiency. TIP = Transportation Improvement Program.

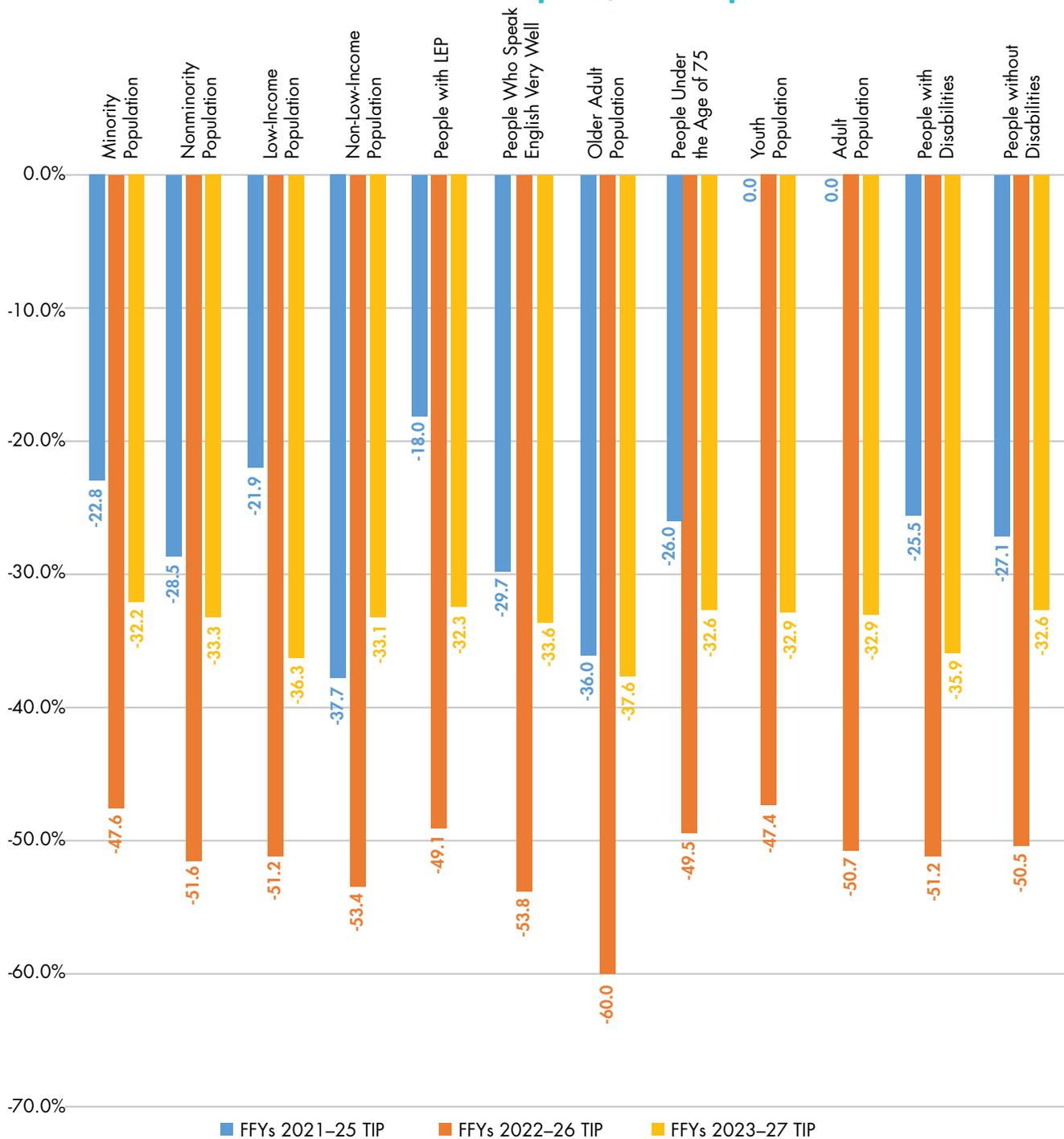
Sources: US Census Bureau, 2015–17 MBTA Systemwide Passenger Survey, and Boston Region MPO.

Transportation Emission Impacts Analysis

Figure 6-10 shows projected changes in emissions for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x) that would result from the implementation of Regional Target-funded projects and affect TE populations and their non-TE counterparts. Reductions are reported in kilograms per 1,000 people and are shown for the FFYs 2021–25, 2022–26, and 2023–27 TIPs. The changes shown are for each TIP and are not cumulative across all TIPs.

In the FFYs 2021–25 TIP, only the older adult population was likely to receive greater emission reductions than their non-TE counterpart, while in the FFYs 2022–26 TIP this was the case for only older adults and people with disabilities. However, in the FFYs 2023–27 TIP, reductions in emissions are likely to be greater for people with disabilities, the youth population, the older adult population, and the low-income population than for their non-TE counterparts. People with LEP and the minority population are likely to continue to receive less of a reduction of emissions compared their non-TE counterparts; however, that difference is likely to be less than it was in previous TIPs. These results show that the MPO is making progress toward reducing emissions disparities for some TE populations; however, future funding should ensure that the minority population and people with LEP in particular benefit at least as much or more from the emissions reductions resulting from Regional Target projects as their non-TE counterparts.

Figure 6-10
Reduction in Carbon Monoxide, Volatile Organic Compounds, and Nitrogen Oxide Emissions per 1,000 People



Notes: As is its usual practice, the MPO has left some funds unallocated in the outer years of the TIP, and this analysis does not reflect those funds. This table does not include the Bridge Rehabilitation of Commonwealth Avenue over the Charles River project as it was evaluated by MassDOT.

The youth population was not considered a TE population in the FFYs 2021-25 TIP.

CO = carbon monoxide. CMAQ = Congestion Mitigation and Air Quality. FFY = federal fiscal year. LEP = limited English proficiency. N/A = not applicable. NOx = nitrogen oxide. TIP = Transportation Improvement Program. TE = transportation equity. VOC = volatile organic compounds.

Source: US Census Bureau, 2015-17 MBTA Systemwide Passenger Survey, and Boston Region MPO's Congestion Mitigation and Air Quality analyses.

Funding Distribution Analysis

The results of the analyses reported in this section show how Regional Target funds are distributed to projects serving TE populations based on the percentage of the population served by the Regional Target-funded projects. The MPO has programmed approximately \$645 million in Regional Target funding in the FFYs 2023–27 TIP. Like the geographical analyses shown above, this funding distribution analysis assumes that funds allocated to TE populations indicate a benefit. While the MPO strives to ensure that projects selected for funding provide significant transportation improvements to and mitigate potential burdens on TE populations, the complexity of projects and their varied impacts limit the degree to which these outcomes can be ensured.

Table 6-7 shows the percent of funding allocated in the FFYs 2023–27 TIP to Regional Target projects, in the aggregate, that are expected to serve or impact TE populations compared to the share of each TE population within the Boston region. Except for the older adult population, all TE populations will receive a smaller share of funding relative to their share of the regionwide population. The share of TE populations served or impacted is on par or greater than their respective share of the Boston region population (see Table 6-6), which suggests that projects that are expected to serve or impact TE populations are generally smaller projects or projects that will receive a small amount of funding. This does not mean that projects are not providing significant benefits to TE populations, as more funding does not necessarily mean more benefits. While the MPO strives to ensure that projects selected for funding provide significant transportation improvements to and mitigate potential burdens on TE populations, the complexity of projects and their varied impacts limit the degree to which these outcomes can be ensured. More detailed analyses of specific impacts are required to better understand the benefits and burdens TE populations may experience from Regional Target projects, as well as the relationship between funding levels and project benefits.

Table 6-7
Percent of Funding Allocated to Transportation Equity Populations

TE Population	Percentage of Funding Allocated	Percentage of Regionwide Population
Minority population	30.9%	36.5%
Low-income population	18.8%	20.1%
People with LEP	10.0%	11.2%
People with disabilities	9.9%	10.2%
Older adult population	7.5%	6.9%
Youth population	18.2%	18.9%

Notes: As is its usual practice, the MPO has left some funds unallocated in the outer years of the TIP, and this analysis does not reflect those funds.

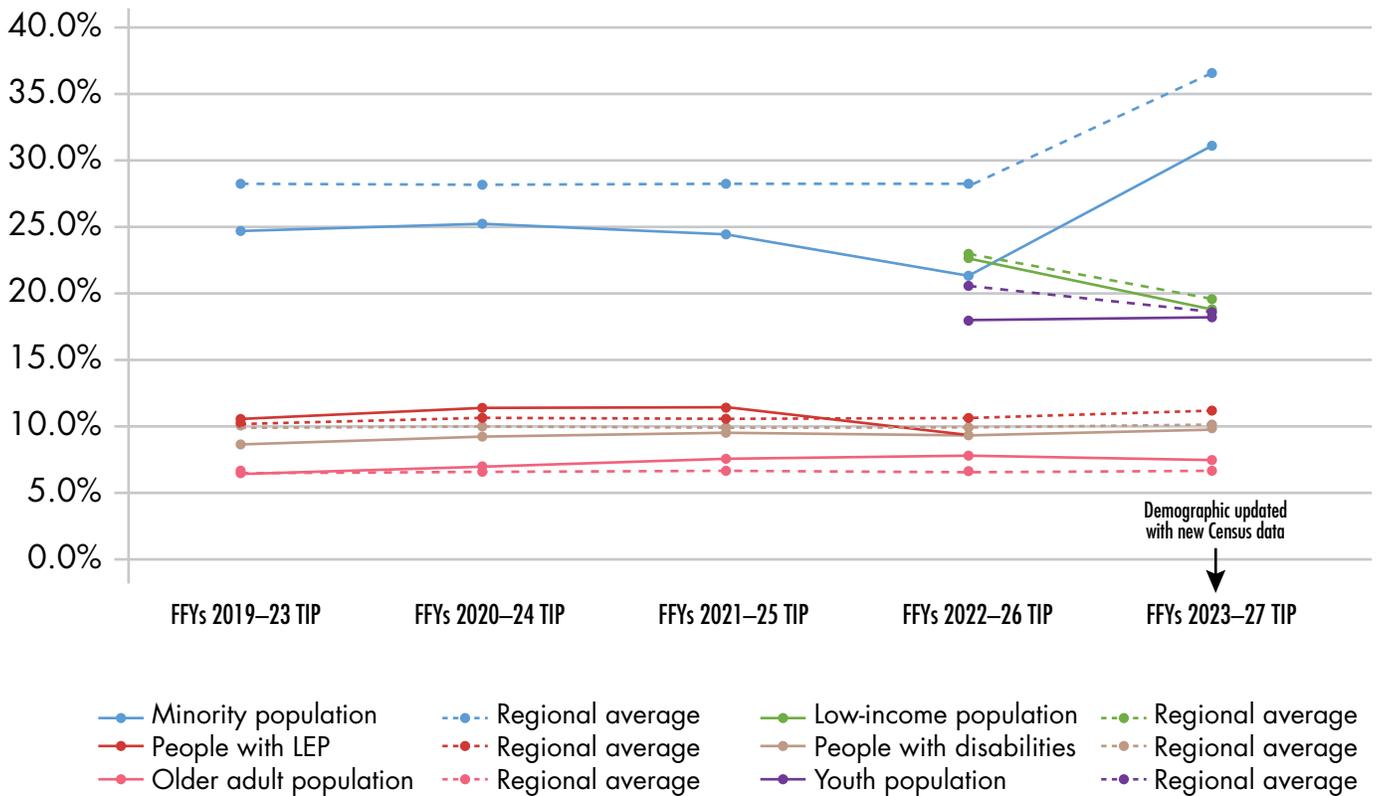
This table does not include the Bridge Rehabilitation of Commonwealth Avenue over the Charles River project as it was evaluated by MassDOT.

LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Sources: US Census Bureau, 2015–17 MBTA Systemwide Passenger Survey, and Boston Region MPO.

Figure 6-11 shows the percentage of funding allocated to Regional Target projects that are expected to serve or impact TE populations for the FFYs 2019–23, 2020–24, 2021–25, 2022–26, and 2023–27 TIPs. These data are shown relative to each TE population’s share of their population in the Boston region. Over the past five TIPs, the share of funding allocated to TE populations is approximately level to their share of the Boston region population, except for the minority population. Funding for the minority population has consistently been several percentage points below their share of the region’s population. As described above, funding is only an approximate measure of whether Regional Target projects will likely serve or benefit TE populations, though in general the MPO strives to provide equal or greater funding to TE populations.

Figure 6-11
Change in the Percentage of Funding Allocated to Transportation Equity Populations



Notes: People ages 17 or younger were not considered as a TE population until the FFYs 2022-26 TIP cycle. Additionally, starting in the FFYs 2022-26 TIP, people with low incomes were defined based on their poverty status for their family size. (Formerly, the definition was based on household income.) The decrease in percent of the low-income population served in the FFYs 2022-26 TIP is largely due to this change, as is the change in the regionwide average. For more information about the data for the FFYs 2019-23, 2020-24, and 2021-25 TIPs, [see the respective documents](#).

As is its usual practice, the MPO has left some funds unallocated in the outer years of the TIP, and this analysis does not reflect those funds.

This figure does not include the Bridge Rehabilitation of Commonwealth Avenue over the Charles River project as it was evaluated by MassDOT.

FFY = federal fiscal year. LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Sources: US Census Bureau, 2015-17 MBTA Systemwide Passenger Survey, and Boston Region MPO.

FUTURE ACTIVITIES TO IMPROVE MONITORING OF TRANSPORTATION EQUITY PERFORMANCE

The MPO will continue to explore more sophisticated methods of identifying specific impacts of projects funded with Regional Target dollars and evaluating, as a group, their benefits and burdens on TE populations. MPO staff has developed a similar analysis for the MPO's LRTP and will continue to use it to inform updates and refinements to the equity analyses in the TIP. New analyses are also being developed for the LRTP Needs Assessment, which will involve expanding accessibility analyses and analyses of health and climate impacts. In addition, staff are working on a study, Identifying Transportation Inequities in the Boston Region, which will complement the LRTP work and contribute to the further development of future TIP equity analyses.



APPENDIX A

Project Prioritization and Scoring

As described in Chapter 2, the Transportation Improvement Program (TIP) development and project prioritization and funding process consists of numerous phases and is supported by several different funding sources. This appendix includes information about transportation projects that the Boston Region Metropolitan Planning Organization (MPO) considered for funding through the Highway Discretionary (Regional Target) Program in the federal fiscal years (FFYs) 2023–27 TIP.

To be considered for funding by the MPO, a project must fulfill certain basic criteria. Projects evaluated through the MPO’s Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure investment programs must meet these criteria:

- The Massachusetts Department of Transportation’s Project Review Committee must have approved the project or must plan to review it.
- The project proponent must be a municipality or state agency.
- The project must be at the 25-percent design stage or demonstrate the level of detail of a project near this threshold (for example, through the submission of functional design reports, project locus maps and designs, operations analyses, or Highway Capacity Manual data sheets showing future build and no-build scenarios).

For projects evaluated through the MPO’s Community Connections Program, the following criteria apply:

- The project proponent must submit a complete application for funding to MPO staff, along with supporting documentation such as geographic files depicting the project area and budgeting worksheets.
- The proponent must be a municipality, transportation management association (TMA), or regional transit authority (RTA). Other entities, such as nonprofit organizations, may apply in partnership with a municipality, TMA, or RTA that has agreed to serve as a project proponent and fiscal manager.
- The proponent must demonstrate that the project will have a positive impact on air quality, as this program is funded using federal Congestion Mitigation and Air Quality funds.
- The proponent must demonstrate readiness and institutional capacity to manage the project sustainably.

If a project meets the above criteria, it is presented to the MPO board in the *Universe of Projects* (Table A-1) to be considered for funding. This project list is presented to the MPO board in November and provides a snapshot of information available on projects at that stage in the TIP development. Some projects that get evaluated for funding may not appear in the *Universe*, as more project information may become available following the compilation of the *Universe*. In addition, some projects that appear on the *Universe* list may not be evaluated in a given year

if these projects are not actively being advanced by municipal or state planners or if they are not at the minimum required level of design for evaluation. Community Connections projects are not included in the Universe because proponents of those projects apply for funding through a discrete application process, the submission deadline for which is after the presentation of the Universe to the MPO board.

Once a proponent provides sufficient design documentation for a project in the *Universe* and the municipality or state is actively prioritizing the project for funding, the project can be evaluated by MPO staff. The evaluation criteria used to score projects are based on the MPO's goals and objectives. After the projects are evaluated, the scores are shared with project proponents, posted on the MPO's website, and presented to the MPO board for review and discussion. The scores for projects evaluated during development of the FFYs 2023–27 TIP for programming in the MPO's Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure investment programs are summarized in Table A-3. Scores for projects that applied for funding through the MPO's Community Connections Program during the FFYs 2023–27 TIP cycle are summarized in Table A-4.

As has been mentioned throughout this document, the MPO board approved a suite of changes to the TIP project selection criteria in October 2020. One of the central goals was to create distinct criteria for each investment program to allow for evaluations to be conducted in ways that better reflect the nuances of different types of transportation projects. For this reason, the project selection criteria for each investment program are shown in separate tables in this appendix as follows: Bicycle Network and Pedestrian Connections (Table A-5); Community Connections (Table A-6); Complete Streets (Table A-7); Intersection Improvements (Table A-8); and Major Infrastructure (Table A-9). Archived project evaluation criteria for all investment programs, which were discontinued in October 2020 after the FFYs 2021–25 TIP cycle, are shown in Tables A-10 and A-11.

In addition to project scores, several other factors are taken into consideration by the MPO when selecting projects for funding. Table A-2 describes many of these elements, including the relationships between the MPO's FFYs 2023–27 Regional Target projects and the MPO's Long-Range Transportation Plan (LRTP), studies and technical assistance conducted by MPO staff through the Unified Planning Work Program (UPWP), the federally required performance measures discussed in Chapter 4, and Massachusetts' modal plans. These projects are listed by MPO investment program. More details about each of these projects are available in the funding tables and project descriptions included in Chapter 3. Performance-related information for the FFYs 2023–27 Regional Target projects is included in Chapter 4, and information about greenhouse gas (GHG) emissions for these projects is available in Appendix B.



**Table A-1
FFYs 2023-27 Transportation Improvement Program (TIP) Universe of Projects**

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Inner Core										
Complete Streets										
Boston	Boston	Reconstruction of Albany Street	N/A	Pre-PRC	2021	N/A	6	Pursuing 2022 PRC approval.	N/A	
Boston	MassDOT	Reconstruction on Gallivan Boulevard (Route 203), from Neponset Circle to East of Morton Street Intersection	606896	PRC approved (2012)	2018	\$11,500,000	6	Resulted from FFY 2012 Addressing Priority Corridors MPO Study	N/A	
Boston	MassDOT	Improvements on Morton Street (Route 203), from West of Gallivan Boulevard to Shea Circle	606897	PRC approved (2012)	2018	\$11,500,000	6	Resulted from FFY 2012 Addressing Priority Corridors MPO Study	N/A	
Boston	Boston	Roadway Improvements along Commonwealth Avenue (Route 30), from Alcorn Street to Warren/Kelton Streets (Phase 3 & Phase 4)	608449	25% submitted (9/28/2017)	2017 or earlier	\$31,036,006	6	Last scored for FFYs 2020-24 TIP.	56	
Boston	MassDOT	Gallivan Boulevard (Route 203) Safety Improvements, from Washington Street to Granite Avenue	610650	PRC approved (2019)	2019	\$5,750,000	6	Priority for District 6. Road safety audit being initiated.	N/A	
Brookline	Brookline	Rehabilitation of Washington Street	610932	PRC approved (2020)	2020	\$25,888,631	6		56.9	Yes
Chelsea	Chelsea	Reconstruction of Spruce Street, from Everett Avenue to Williams Street	610675	PRC approved (2019)	2019	\$5,408,475	6		N/A	
Chelsea	Chelsea	Reconstruction of Everett Avenue and 3rd Street, from Broadway to Ash Street	N/A	Pre-PRC	2020	N/A	6		N/A	
Chelsea	Chelsea	Park Street & Pearl Street Reconstruction	611983	PRC approved (2021)	2020	\$10,451,525	6		68.9	Yes
Chelsea	Chelsea	Reconstruction of Marginal Street	N/A	Pre-PRC	2019	N/A	6		N/A	

Table A-1 (continued, 2)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Lynn	Lynn	Reconstruction of Western Avenue (Route 107)	609246	PRC approved (2018)	2018	\$36,205,000	4	Project programmed in LRTP (FFYs 2025-29) but no longer considered Major Infrastructure by MPO.	71.4	Yes
Lynn, Salem	MassDOT	Reconstruction of Route 107	608927	PRC approved (2017)	2020	\$38,155,000	4		N/A	
Melrose	Melrose	Reconstruction of Lebanon Street, from Lynde Street to Malden City Line	N/A	Pre-PRC	2020	N/A	4	Project at conceptual stage.	N/A	
Newton	Newton	Reconstruction of Washington Street, from Church Street to Chestnut Street	N/A	Pre-PRC	2020	N/A	6		N/A	
Revere	Revere	Reconstruction of Ocean Ave, Revere Street, and Revere Beach Boulevard	N/A	Pre-PRC	2020	N/A	4	Project at conceptual stage.	N/A	
Winthrop	Winthrop	Reconstruction & Improvements on Route 145	609446	PRC approved (2019)	2019	\$7,565,512	6		N/A	
Intersection Improvements										
Boston, Brookline	Boston, Brookline	Mountfort St. & Commonwealth Ave. Connection	608956	PRC approved (2017)	2018	\$916,883	6		N/A	
Cambridge	DCR	Intersection Improvements at Fresh Pond Parkway/Gerry's Landing Road, from Brattle Street to Memorial Drive	609290	PRC approved (2018)	2019	\$7,000,000	6	Short-term improvements being initiated. Project may be candidate for funding in future year.	N/A	
Everett	MassDOT	Intersection Improvements on Route 16	611969	PRC approved (2021)	2021	\$15,300,000	4		N/A	
Medford	Medford	Intersection Improvements at Main Street and South Street	611974	PRC approved (2021)	2019	\$8,498,000	4	Project location studied by CTPS. Priority for municipality.	N/A	
Newton	MassDOT	Traffic Signal and Safety Improvements at Interchange 127 (Newton Corner)	609288	PRC approved (2018)	2019	\$14,000,000	6		N/A	

Table A-1 (continued, 3)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Quincy	MassDOT	Intersection Improvements at Route 3A (Southern Artery) and Broad Street	608569	PRC approved (2016)	2020	\$2,900,000	6	Priority for District 6.	N/A	
Quincy	Quincy	Intersection Improvements at Willard Street and Ricciuti Drive	610823	PRC approved (2020)	2020	\$1,544,650	6	Project at conceptual stage. 25% design advancing.	N/A	
Bicycle and Pedestrian										
Belmont	Belmont	Community Path, Belmont Component of the MCRT (Phase 1)	609204	25% submitted (11/3/2021)	2018	\$16,703,600	4		59	Yes
Boston	Boston	Fenway Multi-Use Path Phase III	N/A	Pre-PRC	2021	N/A	6	Project at conceptual stage.	N/A	
Everett, Somerville	DCR	Mystic River Bicycle and Pedestrian Crossing	612004	PRC approved (2021)	2021	\$38,218,334	4		N/A	
Lynn, Nahant	Lynn, Nahant	Northern Strand Extension	610919	DPH (11/17/2021)	2020	\$9,363,750	4		N/A	
Medford	Medford	Shared Use Path Connection at the Route 28/ Wellington Underpass	611982	PRC approved (2021)	2021	\$3,625,000	4		N/A	
Major Infrastructure										
Boston	Boston	Bridge Replacement, Meridian Street Over Chelsea Creek (Andrew P. McArdle Bridge)	N/A	Pre-PRC	2021	N/A	6	Project not programmed in LRTP (likely to meet MPO definition for Major Infrastructure based on cost)	N/A	
Revere, Malden	MassDOT	Improvements on Route 1 (NB) Add-A-Lane	610543	PRC approved (2019)	2019	\$7,210,000	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
Revere, Saugus	Revere, Saugus	Roadway Widening on Route 1 North (Phase 2)	611999	PRC approved (2021)	2021	\$2,397,600	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
Somerville	Somerville	McGrath Boulevard Project	607981	PRC approved (2014)	2017 or earlier	\$88,250,000	4	LRTP project (FFYs 2025-29)	66.2	Yes

Table A-1 (continued, 4)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Minuteman Advisory Group on Interlocal Coordination										
Complete Streets										
Lexington	Lexington	Route 4/225 (Bedford Street) and Hartwell Avenue	N/A	Pre-PRC	2019	\$30,557,000	4	Project programmed in LRTP (FFYs 2030-34) but no longer considered Major Infrastructure by MPO.	N/A	
Intersection Improvements										
Littleton	Littleton	Intersection Improvements at Route 119/ Beaver Brook Road	610702	PRC approved (2020)	2020	\$3,120,110	3	MassDOT agreed to fund design after 25% design approved.	N/A	
Bicycle and Pedestrian										
Concord	Concord	Assabet River Pedestrian Bridge	N/A	Pre-PRC	2020	\$2,000,000-\$3,600,000	4	Project at conceptual stage.	N/A	
Major Infrastructure										
Acton	MassDOT	Intersection Improvements at Route 2 and Route 27 Ramps	610553	PRC approved (2019)	2020	\$3,480,000	3	Project not programmed in LRTP (meets MPO roadway classification requirement). Priority for District 3 and Town of Acton.	N/A	
Concord	Concord	Reconstruction & Widening on Route 2, from Sandy Pond Road to Bridge over MBTA/B&M Railroad	608015	PRC approved (2014)	2019	\$8,000,000	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
MetroWest Regional Collaborative										
Complete Streets										
Weston	Weston	Reconstruction on Route 30	608954	25% submitted (10/19/2020)	2018	\$15,203,814	6	Design Public Hearing targeted for January/February 2022.	49.2	Yes

Table A-1 (continued, 5)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Holliston	Holliston	Reconstruction of Concord Street (Route 126)	N/A	Pre-PRC	2021	N/A	3	Added through subregional outreach. Project is municipal priority, as it's tied to necessary below-grade sewer work.	N/A	
Intersection Improvements										
Framingham	MassDOT	Roundabout Construction at Salem End Road, Badger Road and Gates Street	609280	PRC approved (2018)	2019	\$2,520,000	3		N/A	
Weston	Weston	Intersection Improvements - Boston Post Road (Route 20) at Wellesley Street	608940	25% resubmitted (8/20/2021)	2018	\$2,394,045	6	Design Public Hearing targeted for December 2021.	45.6	Yes
Weston	Weston	Intersection Improvements - Signalization of Route 20 at Highland Street	N/A	Pre-PRC	2021	N/A	6	Added through subregional outreach.	N/A	
Bicycle and Pedestrian										
Natick	Natick	Cochituate Rail Trail Extension, from MBTA Station to Mechanic Street	610691	PRC approved (4/30/2020)	2020	\$4,500,110	3		N/A	
Major Infrastructure										
Framingham	Framingham	Intersection Improvements at Route 126/135/MBTA and CSX Railroad	606109	PRC approved (2010)	2019	\$115,000,000	3	L RTP project (FFYs 2030-34).	N/A	
Natick	Natick	Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements	605313	25% resubmitted (2/12/2020)	2018	\$45,097,350	3	L RTP project (FFYs 2025-29). High priority for District 3. Updated 25% design anticipated February 2022.	56.4	Yes
North Suburban Planning Council										
Complete Streets										
Burlington	Burlington	Town Center Complete Streets Improvements	N/A	Pre-PRC	2021	N/A	4		N/A	

Table A-1 (continued, 6)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Burlington, Billerica	MassDOT	Resurfacing and Related Work on Route 3A	610704	25% submitted (1/12/2021)	2020	\$4,406,512	4		N/A	
Lynnfield	Lynnfield	Reconstruction of Summer Street	609381	PRC approved (2019)	2019	\$21,521,921	4		N/A	
Reading	Reading	Reading Downtown Improvement Project	N/A	Pre-PRC	2020	\$7-\$8 million	4	Project at conceptual stage.	N/A	
Stoneham	Stoneham	Reconstruction of South Main Street, from Town Center to South Street	N/A	Pre-PRC	2021	N/A	4		N/A	
Wakefield	Wakefield	Main Street Reconstruction	610545	PRC approved (2019)	2020	\$26,382,000	4		41.8	Yes
Winchester	Winchester	Town Center Complete Streets Improvements	N/A	Pre-PRC	2021	N/A	4		N/A	
Intersection Improvements										
Stoneham	Stoneham	Intersection Improvements at Main Street (Route 28), Franklin Street, and Central Street	N/A	Pre-PRC	2020	N/A	4	Project at conceptual stage.	N/A	
Bicycle and Pedestrian										
Stoneham, Wakefield	Stoneham, Wakefield	Mystic Highlands Greenway Project	N/A	Pre-PRC	2021	N/A	4		N/A	
Major Infrastructure										
Burlington	MassDOT	Improvements at I-95 (Route 128)/Route 3 Interchange	609516	PRC approved (2019)	2019	\$3,001,500	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
Reading	MassDOT	Improvements on I-95	609527	PRC approved (2019)	2019	\$14,980,000	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	

Table A-1 (continued, 7)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
North Shore Task Force										
Complete Streets										
Beverly, Manchester-by-the-Sea	MassDOT	Resurfacing and Related Work on Route 127	607707	PRC approved (2013)	2018	\$2,300,000	4		N/A	
Danvers	Danvers	Reconstruction on Collins Street, from Sylvan Street to Centre and Holten Streets	602310	75% submitted (3/5/2010)	2017 or earlier	\$5,183,121	4	Updated 75% design submission needed for project to move forward. Last scored for FFYs 2020-24 TIP.	46	
Ipswich	Ipswich	Reconstruction of County Road, from South Main Street to East Street	611975	PRC approved (2021)	2020	\$5,653,500	4		45.4	Yes
Ipswich	Ipswich	Argilla Road Adaptation Project	N/A	Pre-PRC	2021	\$4,000,000	4	Municipal priority for funding.	N/A	
Marblehead	Marblehead	Bridge Replacement, M-04-001, Village Street over Marblehead Rail Trail (Harold B. Breare Bridge)	N/A	Pre-PRC	2019	N/A	4	Project at conceptual stage.	N/A	
Manchester-by-the-Sea	Manchester-by-the-Sea	Pine Street - Central Street (Route 127) to Rockwood Heights Road	N/A	Pre-PRC; PNF submitted (12/27/16)	2017 or earlier	N/A	4		N/A	
Manchester-by-the-Sea	Manchester-by-the-Sea	Bridge Replacement, M-02-001 (8AM), Central Street (route 127) over Saw Mill Brook	610671	PRC approved (2019)	2019	\$4,350,000	4		34.8	Yes
Salem	MassDOT	Reconstruction of Bridge Street, from Flint Street to Washington Street	5399	25% submitted (8/20/2004)	2017 or earlier	\$24,810,211	4		N/A	
Salem	Salem	Boston Street Improvements	609437	25% resubmitted (10/7/2021)	2019	\$12,480,000	4		56.1	Yes
Wenham	Wenham	Safety Improvements on Route 1A	609388	25% submitted (12/21/2020)	2019	\$3,629,036	4		N/A	

Table A-1 (continued, 8)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Wenham	Wenham	Roadway Reconstruction on Larch Row and Dodges Row	N/A	Pre-PRC	2019	\$800,000	4	Project at conceptual stage.	N/A	
Intersection Improvements										
Essex	Essex	Targeted Safety Improvements on Route 133 (John Wise Avenue)	609315	PRC approved (2019)	2019	\$2,135,440	4		N/A	
Bicycle and Pedestrian										
Peabody, Salem	Peabody, Salem	Riverwalk Project	N/A	Pre-PRC	2021	N/A	4	MVP grant issued for project design.	N/A	
Swampscott	Swampscott	Rail Trail Construction	610666	25% submitted (1/27/2021)	2019	\$7,700,000	4		62.4	Yes
Major Infrastructure										
Beverly	Beverly	Route 128 and Brimbal Avenue Interchange Project (Phase II)	N/A	Pre-PRC	2021	N/A	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
South Shore Coalition										
Complete Streets										
Holbrook	Holbrook	Corridor Improvements and Related Work on South Franklin Street (Route 37) from Snell Street to King Road	608543	PRC approved (2017)	2018	\$4,000,200	5		N/A	
Rockland	Rockland	Reconstruction of VFW Drive/Weymouth Street, from Union Street to the Hingham Town Line	N/A	Pre-PRC	2021	\$12,100,000	5		N/A	
Weymouth	MassDOT	Reconstruction on Route 3A, Including Pedestrian and Traffic Signal Improvements	608231	PRC approved (2016)	2017 or earlier	\$10,780,100	6	Pre-25% package submitted in July 2021.	N/A	

Table A-1 (continued, 9)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Weymouth	MassDOT	Resurfacing and Related Work on Route 3A	608483	PRC approved (2016)	2018	\$2,400,000	6		N/A	
Intersection Improvements										
Cohasset	Cohasset	Intersection Improvements at Route 3A and King Street	N/A	Pre-PRC	2021	N/A	5	Added through subregional outreach.	N/A	
Hull	Hull	Intersection Improvements at George Washington Boulevard and Barnstable Road/ Logan Avenue	N/A	Pre-PRC	2021	N/A	5	Added through subregional outreach.	N/A	
South West Advisory Planning Committee										
Complete Streets										
Bellingham	Bellingham	South Main Street (Route 126) - Elm Street to Douglas Drive Reconstruction	N/A	Pre-PRC; PNF submitted (3/13/17)	2017 or earlier	N/A	3		N/A	
Franklin	MassDOT	Resurfacing and Intersection Improvements on Route 140, from Beaver Street to I-495 Ramps	607774	PRC approved (2014)	2018	\$4,025,000	3		N/A	
Medway	Medway	Improvements on Route 109 West of Highland Street	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Milford	MassDOT	Resurfacing and Related Work on Route 16	612091	PRC approved (2021)	2021	\$4,192,500	3		N/A	
Millis	Millis	Town Center Improvements	N/A	Pre-PRC	2020	N/A	3	Project at conceptual stage.	N/A	
Wrentham	Wrentham	Resurfacing and Related Work on Route 1	608497	PRC approved (2016)	2020	N/A	5	25% design anticipated July 2022.	N/A	

Table A-1 (continued, 10)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Intersection Improvements										
Medway	Medway	Traffic Signalization at Trotter Drive and Route 109	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Sherborn	Sherborn	Intersection Improvements at Route 16 and Maple Street	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Wrentham	Wrentham	Intersection Improvements on Route 1A at North and Winter Street	610676	25% submitted (8/13/2021)	2020	\$2,649,000	5		N/A	Yes
Wrentham	Wrentham	Intersection Improvements at Randall Road and Route 1A	N/A	Pre-PRC	2020	\$2,649,000	5	Project at conceptual stage.	N/A	
Wrentham	Wrentham	Intersection Improvements at Route 1A and Route 140	N/A	Pre-PRC	2020	N/A	5	Project at conceptual stage.	N/A	
Bicycle and Pedestrian										
Franklin	Franklin	Southern New England Trunk Trail (SNETT) Extension, from Grove Street to Franklin Town Center	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.		
Hopkinton	Hopkinton	Campus Trail Connector, Shared Use Trail Construction	611932	PRC approved (2020)	2020	\$1,750,700	3		N/A	
Norfolk, Walpole, and Wrentham	Norfolk	Metacomet Greenway	N/A	Pre-PRC	2021	N/A	5	Project at conceptual stage.	N/A	
Sherborn	Sherborn	Upper Charles River Trail Extension to Framingham City Line	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Major Infrastructure										
Bellingham	MassDOT	Ramp Construction & Relocation, I-495 at Route 126 (Hartford Avenue)	604862	PRC approved (2006)	2017 or earlier	\$13,543,400	3	High priority for District 3	N/A	

Table A-1 (continued, 11)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Wrentham	Wrentham	I-495 North Slip Ramp Improvements at Route 1A	N/A	Pre-PRC	2020	N/A	5	Project at conceptual stage.	N/A	
Three Rivers Interlocal Council										
Complete Streets										
Canton, Milton	MassDOT	Roadway Improvements on Route 138	608484	PRC approved (2016)	2020	\$18,467,500	6	Milton also in ICC subregion. Project a high priority for the TRIC subregion. District is working to refine scope.	N/A	
Medfield	Medfield	Reconstruction of Route 109	N/A	Pre-PRC	2021	N/A	3	Added through subregional outreach.	N/A	
Milton	MassDOT	Reconstruction on Granite Avenue, from Neponset River to Squantum Street	608406	25% submitted (2/10/2017)	2017 or earlier	\$3,665,146	6	Milton also in ICC subregion.	N/A	
Milton	Milton	Adams Street Improvements, from Randolph Avenue to Eliot Street	610820	PRC approved (2020)	2020	\$1,799,330	6	Milton also in ICC subregion.	N/A	
Needham	Needham	Reconstruction of Highland Avenue, from Webster Street to Great Plains Avenue	612536	PRC approved (2021)	2021	\$10,402,402	6	Needham also in ICC subregion.	N/A	
Westwood	Westwood	Reconstruction of Canton Street	608158	PRC reapproved (2021)	2017 or earlier	\$14,254,274	6	Priority for municipality.	N/A	
Intersection Improvements										
Foxborough	Foxborough	Intersection Signalization at Route 140 (Commercial Street) and Walnut Street	N/A	Pre-PRC	2021	\$5,000,000	5	Added through subregional outreach. Town has advanced design outside of TIP process. District supports project.	N/A	
Medfield	Medfield	Intersection Improvements at West Street and North Meadows Road (Route 27)	N/A	Pre-PRC	2021	N/A	3	Added through subregional outreach.	N/A	

Table A-1 (continued, 12)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Milton	Milton	Intersection Improvements - Squantum Street at Adams Street	608955	25% submitted (11/19/2020)	2018	\$2,311,203	6	Milton also in ICC subregion.	34.4	Yes
Bicycle and Pedestrian										
Canton	Canton	Warner Trail Extension, from Sharon to Blue Hills Reservation	N/A	Pre-PRC	2021	N/A	6	Added through subregional outreach. Feasibility study currently underway.	N/A	
Major Infrastructure										
Canton, Westwood	MassDOT	Interchange Improvements at I-95 / I-93 / University Avenue / I-95 Widening	87790	25% submitted (7/25/14)	2017 or earlier	\$202,205,994	6	Project not programmed in LRTP. Last scored for FFYs 2020-24 TIP.	47	

Table A-2
FFYs 2023–27 Regional Target Projects and Their Relationships to Plans and Performance Measures

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609204	Belmont–Community Path, Belmont Component of the MCRT (Phase 1)	Bicycle and Pedestrian	Connect the Fitchburg Cutoff Bike Path at Brighton Street with the Clark Street pedestrian bridge west of Belmont Center. Construct an underpass beneath the commuter rail tracks at Channing Road and Alexander Avenue.	Belmont	2026	This project will extend the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project is expected to improve safety for bicyclists and pedestrians, including by constructing an underpass to allow for safe passage beneath the commuter rail tracks. It will add more than a mile of community path and connect to the existing Fitchburg Cutoff Bike Path. By extending and improving the region’s bicycle network and improving access to local destinations, this project is expected to increase non-SOV travel. It is also expected to reduce CO ₂ and other transportation-related emissions.
609211	Peabody–Independence Greenway Extension	Bicycle and Pedestrian	Extend the Independence Greenway from the North Shore Mall to central Peabody.	Peabody	2024	This project will extend the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project is expected to improve safety for bicyclists and pedestrians. It will create more than a mile of bike trail network and bring the Independence Greenway’s total length to eight miles. By extending the region’s bicycle network, this project is expected to increase non-SOV travel. It is also expected to reduce CO ₂ and other transportation-related emissions.
610544	Peabody–Multi-Use Path Construction of Independence Greenway at Interstate 95 and Route 1	Bicycle and Pedestrian	Construct a new multi-use paved path along the abandoned railbed between two existing segments of the Independence Greenway in Peabody and create a connection to the existing Border to Boston trailhead at Lowell Street.	Peabody	2025	This project will extend the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project will create nearly two miles of multi-use trail, connect other segments of the Independence Greenway, and create a link to the Border to Boston trail. By connecting these sections of the regional bike network, this project is expected to increase non-SOV travel. Improved signalization near ramps to Route 1 may help facilitate motorized and nonmotorized traffic flow and reduce PHED on this NHS corridor. This project is also expected to improve safety for bicyclists and pedestrians and to reduce CO ₂ and other transportation-related emissions.
610666	Swampscott–Rail Trail Construction	Bicycle and Pedestrian	Create a 2.1-mile rail trail that connects to the existing Marblehead Rail Trail. Construct a pedestrian bridge at Paradise Road (Route 1A).	Swampscott	2027	This project would connect sections of the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project will create a 2.1 mile multi-use trail that connects to the existing Marblehead Rail Trail and provides an off-road trail segment for the East Coast Greenway. By connecting these sections of the regional bike network and supporting access to local destinations, this project is expected to increase non-SOV travel. This project is also expected to improve safety for bicyclists and pedestrians and to reduce CO ₂ and other transportation-related emissions.
S12702	Acton–Bicycle Parking along the Bruce Freeman Rail Trail	Community Connections	Install three bike racks at key locations along Great Road and the Bruce Freeman Rail Trail.	Acton	2023	N/A	This project may increase non-SOV travel in the region by enhancing bicycle amenities on the region’s bicycle network. This project is also expected to reduce CO ₂ and other transportation-related emissions.
S12704	Belmont–Chenery Middle School Bicycle Parking	Community Connections	Install a shelter over an existing bicycle rack at Chenery Middle School, which may serve as a proof-of-concept for future bicycle parking expansion.	Belmont	2023	N/A	This project may increase non-SOV travel in the region by enhancing bicycle amenities. It is also expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 2)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
S12695	Cambridge–Bluebikes Station Replacement and System Expansion	Community Connections	Install two new BlueBikes bikeshare stations and replace five existing stations to ensure a state-of-good-repair.	Cambridge	2023	N/A	This project may increase non-SOV travel by enhancing and expanding bicycling options in Cambridge. It is also expected to reduce CO ₂ and other transportation-related emissions.
S12114	Canton–Royall Street Shuttle	Community Connections	Establish a shuttle service connecting Canton’s Royall Street employment cluster with the MBTA Route 128 commuter rail station and Ashmont, Mattapan Trolley, and Quincy Adams rapid transit stations.	Canton	2022 (Past) 2023–24	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Canton. It is expected to reduce CO ₂ and other transportation-related emissions.
S12700	Cape Ann Transportation Authority (CATA)–CATA On Demand Microtransit Service Expansion	Community Connections	Expand existing CATA On Demand microtransit service to Rockport and to an additional neighborhood in Gloucester, and to help customers reach a wider array of essential destinations.	Gloucester, Rockport	2023–25	N/A	This project may increase non-SOV travel by expanding CATA’s microtransit service to new areas and supporting its ability to serve customers beyond those commuting to transit or specific employment centers. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Gloucester and Rockport. This project is expected to reduce CO ₂ and other transportation-related emissions.
S12696	Malden, Medford–BlueBikes System Expansion	Community Connections	Construct three new BlueBikes bikeshare stations in Medford and one in Malden.	Malden, Medford	2023	N/A	This project may increase non-SOV travel by expanding bicycling options in Medford and Malden. It is expected to reduce CO ₂ and other transportation-related emissions.
S12701	MetroWest Regional Transit Authority (MWRTA) –CatchConnect Microtransit Service Expansion	Community Connections	Expand MWRTA’s CatchConnect microtransit service to Hudson and Marlborough, which will support connections to MWRTA’s fixed-route network.	Hudson, Marlborough	2023–25	N/A	This project may increase non-SOV travel by expanding microtransit service to new areas. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Hudson and Marlborough. This project is expected to help reduce CO ₂ emissions.
S12703	Montachusett Regional Transit Authority (MART) –MART Microtransit Service	Community Connections	Establish an on-demand microtransit service that will serve Bolton, Boxborough, Littleton, and Stow.	Bolton, Boxborough, Littleton, Stow	2023–25	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Boxborough, Bolton, Littleton, and Stow. It is expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 3)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
S12125	Newton–Newton Microtransit Service	Community Connections	Implement a new dynamically routed microtransit service that will provide shared, first- and last-mile rides between three MBTA rail lines and the Wells Avenue Business District before expanding citywide.	Newton	2021–22 (past) 2023	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Newton. It is expected to reduce CO ₂ and other transportation-related emissions.
S12694	Newton–NewMo Microtransit Service Expansion	Community Connections	Expand an existing Newton-wide microtransit service (see project S12125) to include stops in six neighboring municipalities.	Newton [adding service to Boston, Needham, Waltham, Watertown, Wellesley, and Weston]	2023–25	N/A	This project may increase non-SOV travel by expanding the reach of Newton’s existing microtransit service. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in multiple MPO communities. This project is expected to reduce CO ₂ and other transportation-related emissions.
S12698	Salem–BlueBikes System Expansion	Community Connections	Construct three new BlueBikes bikeshare stations to expand the bikeshare network in Salem.	Salem	2023	N/A	This project may increase non-SOV travel by expanding bicycling options in Salem. It is expected to reduce CO ₂ and other transportation-related emissions.
S12699	Stoneham–Stoneham Shuttle Service	Community Connections	Create a shuttle service to foster east-west connections between Stoneham and neighboring communities.	Stoneham	2023–25	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes Stoneham. It is expected to help reduce CO ₂ and other transportation-related emissions.
S12697	Watertown–Pleasant Street Shuttle Service Expansion	Community Connections	Expand a recently-launched shuttle service along the Pleasant Street corridor in Watertown by reducing headways. Support the service’s transition to using electric vehicles.	Cambridge, Watertown	2023–25	N/A	This project may increase non-SOV travel by supporting more frequent service on the Pleasant Street corridor. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Cambridge and Watertown. It is expected to reduce CO ₂ and other transportation-related emissions.
608348	Beverly–Reconstruction of Bridge Street	Complete Streets	Improve the roadway cross section, pavement, signals, and bicycle and pedestrian accommodations in the project corridor.	Beverly	2023	N/A	The project area overlaps a 2017–19 HSIP all-mode crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. The project improves signal and geometry improvements that may support increased reliability and reduced PHED on nearby Route 62, which is on the NHS. It will also provide bicycle-on-shoulder lanes and improved sidewalks, which may encourage non-SOV travel. This project is also expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 4)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
606453	Boston–Improvements on Boylston Street	Complete Streets	Improve the roadway cross section, signals, and bicycle and pedestrian accommodations in the project corridor.	Boston	2024	N/A	The project area overlaps a 2017–19 HSIP all-mode crash cluster location, a 2010–19 HSIP bicycle crash cluster location, and a 2010–19 HSIP pedestrian crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than two lane miles of substandard NHS pavement, will address reliability needs on an unreliable NHS segment, and may also reduce PHED on that segment. It will improve substandard sidewalks and add bicycle lanes in the project corridor; these features are expected to increase non-SOV travel. The project is also expected to reduce CO ₂ and other transportation-related emissions.
610932	Brookline–Rehabilitation of Washington Street	Complete Streets	Replace signals, reconstruct sidewalks and pavement, and provide protected bicycle facilities and dedicated bus pull-out spaces in the Washington Street corridor between Washington Square and Brookline Village.	Brookline	2027	N/A	The project area overlaps two 2010–19 HSIP bicycle crash cluster locations and a 2010–19 HSIP pedestrian crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve substandard sidewalks, implement bicycle lanes, upgrade signals to include TSP, and add bus shelters to the corridor; these features are expected to increase non-SOV travel. The project is expected to reduce CO ₂ and other transportation-related emissions.
611983	Chelsea–Park and Pearl Street Reconstruction	Complete Streets	Improve safety and mobility on Park and Pearl Street by improving signals and roadway geometry, reconstructing sidewalks, and adding bicycle facilities.	Chelsea	2027	N/A	The project area overlaps a 2017–19 HSIP all-mode crash cluster location, a 2010–19 HSIP bicycle crash cluster location, and two 2010–19 HSIP pedestrian crash cluster locations. The project is expected to improve safety performance, including for bicyclists and pedestrians. The project will reconstruct sidewalks, improve bicycle amenities, and implement TSP; these features are expected to increase non-SOV travel. The project is expected to reduce CO ₂ and other transportation-related emissions.
608007	Cohasset, Scituate–Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A) from Beechwood Street to Henry Turner Bailey Road	Complete Streets	Improve the corridor from the Beechwood Street intersection to the Cohasset/Scituate town line. Upgrade traffic signal equipment, make geometric modifications at intersections, and provide bicycle and pedestrian accommodations.	Cohasset, Scituate	2024	This project location was studied in “Route 3A Subregional Priority Roadway Study in Cohasset and Scituate” (CTPS, 2014).	The project area overlaps a 2017–19 HSIP all-mode crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to add sidewalks and bicycle lanes in the project corridor, which may encourage non-SOV travel. The project is expected to reduce CO ₂ and other transportation-related emissions.
607899	Dedham–Pedestrian Improvements along Bussey Street	Complete Streets	Improve the corridor by reconstructing sidewalks, making minor geometric improvements at the at the intersection with Colburn Street and Clisby Avenue, and provide shared bicycle accommodations.	Dedham	2023	N/A	This project is expected to improve transportation safety, including for bicyclists and pedestrians. It will upgrade sidewalks in the project area, which may encourage non-SOV travel. It is expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 5)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609257	Everett–Rehabilitation of Beacham Street, from Route 99 to Chelsea City Line	Complete Streets	Reconstruct Beacham Street to reduce vehicular collisions and improve bicycle and pedestrian travel.	Everett	2025	N/A	This project is expected to improve transportation safety, including for bicyclists and pedestrians. It will improve substandard sidewalks and include a shared-use path—both features may encourage non-SOV travel and improve safety performance. The project is expected to reduce CO ₂ and other transportation-related emissions.
605168	Hingham–Intersection Improvements at Route 3A/Summer Street Rotary	Complete Streets	Improve multimodal access between Hingham Center, residential areas, and Hingham Harbor and make safety improvements, including by establishing a small roundabout at the intersection of Route 3A and Summer Street.	Hingham	2025	This project location was studied in “Summer Street/George Washington Boulevard Subregional Priority Roadway Study in Hingham and Hull” (CTPS, 2016).	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than a lane mile of substandard pavement on the NHS, and the geometric improvements included in the project are expected to help reduce delay and potentially PHED on the NHS. The project is expected to improve substandard sidewalks, add new sidewalks, and add bicycle accommodations, including a shared-use path. These features may support increases in non-SOV travel. The project is also expected to reduce CO ₂ and other transportation-related emissions.
605743	Ipswich–Resurfacing and Related Work on Central and South Main Streets	Complete Streets	Reconstruct the roadway between Mineral Street and Poplar Street to improve the roadway surface. Make minor geometric improvements at intersections, include pedestrian crossings, and improve sidewalks.	Ipswich	2024	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than a lane mile of substandard pavement on the NHS. It will upgrade substandard sidewalks, and it is expected to add bicycle lanes; both features may encourage non-SOV travel. The project is also expected to reduce CO ₂ and other transportation-related emissions.
609054	Littleton–Reconstruction of Foster Street	Complete Streets	Add turning lanes, consolidate curb cuts, and improve bicycle, pedestrian, and vehicular accommodations in the project corridor.	Littleton	2024	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will include a shared-use path, which is expected to increase non-SOV travel. This project is also expected to reduce CO ₂ and other transportation-related emissions.
603739	Lynn–Rehabilitation of Essex Street	Complete Streets	Make key bicycle and pedestrian safety improvements and operational improvements, such as signal upgrades, in the project corridor.	Lynn	2024	N/A	The project area overlaps five 2017–19 all-mode HSIP crash cluster locations and three 2010–19 HSIP pedestrian crash cluster locations. The project is expected to improve safety performance, including for bicyclists and pedestrians. Planned improvements to signals and roadway geometry in the corridor may help improve reliability on nearby unreliable NHS segments and may also reduce PHED on those segments. It is expected to reconstruct substandard sidewalks and add bicycle lanes; these features are expected to increase non-SOV travel. This project is also expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 6)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609246	Lynn– Reconstruction of Western Avenue	Complete Streets	Reconstruct Western Avenue between Centre Street and Eastern Avenue. Improve signal timing, intersection design, and bus stop locations. Implement bicycle and ADA-compliant pedestrian improvements.	Lynn	2027	N/A	The project area overlaps five 2017–19 all-mode HSIP crash cluster locations, two 2010–19 HSIP pedestrian crash cluster locations and one 2010–19 HSIP bicycle crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians, and it will improve nearly 4 lane miles of substandard pavement on the NHS. The signal improvements included in the project are expected reduce delay and may help reduce PHED and improve reliability on the NHS. It will reconstruct sidewalks and add bike lanes, TSP, and bus amenities; these features are expected to increase non-SOV travel. This project is also expected to reduce CO ₂ and other transportation-related emissions.
608045	Milford– Rehabilitation on Route 16, from Route 109 to Beaver Street	Complete Streets	Improve vehicular safety and traffic flow through the implementation of a road diet, additional roadway reconstruction, bicycle and pedestrian accommodations, and enhanced signalization on Route 16 (East Main Street) from Route 109 (Medway Road) to Beaver Street.	Milford	2026	N/A	The project area overlaps a 2017–19 all-mode HSIP crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. The project is also expected to upgrade substandard sidewalks, add new sidewalks, and add shared-use paths; these features are expected to increase non-SOV travel.
110980	Newton, Weston– Commonwealth Avenue (Route 30) over the Charles River	Complete Streets	Replace a deteriorated bridge over the Charles River. Reconstruct the Route 30 corridor in the vicinity of the I-95 and I-90 interchange, including several I-95 on-ramps. Improve sidewalks and pedestrian amenities, add a bike lane, and develop a segment of shared-use path along the Charles River.	Newton, Weston	2024	N/A	The project area overlaps a 2017–19 all-mode HSIP crash cluster locations and the project is expected to improve safety performance, including for bicyclists and pedestrians. It will replace a deteriorated NHS bridge structure and will improve one lane mile of substandard pavement on the NHS. Signal and geometric improvements on Route 30 and reconfiguration of the Interstate 95 ramps may improve reliability on the NHS. The shared-use path, sidewalk improvements, and bike lane included in the project are expected to increase non-SOV travel. This project is expected to reduce CO ₂ and other transportation-related emissions.
608933	Peabody– Rehabilitation of Central Street	Complete Streets	Reconstruct pavement and sidewalks, provide bicycle accommodations, upgrade signals, and improve other features within the project corridor.	Peabody	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve nearly two lane miles of pavement on the NHS. Upgrades to signals and other elements may address improve reliability on unreliable NHS segments within the project corridor and potentially reduce PHED. The project will upgrade existing sidewalks and add bike lanes; these features are expected to increase non-SOV travel. This project is expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 7)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608707	Quincy–Reconstruction of Sea Street	Complete Streets	Improve safety in the project corridor by modifying roadway geometry, upgrading signals, constructing median islands, reconstructing sidewalks, and providing bicycle.	Quincy	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve sidewalks, which may encourage non-SOV travel. This project is expected to reduce transportation-related pollutants and precursor emissions, including carbon monoxide, nitrous oxide, and volatile organic compounds.
609432	Salem–Boston Street Improvements	Complete Streets	Incorporate complete streets elements and a separated bicycle path into the corridor. Add a new signal at Boston Street and Aborn Street and upgrade existing signals at other intersections along the corridor.	Salem	2026	N/A	The project area overlaps a 2010–19 HSIP pedestrian crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve more than a lane mile of substandard NHS pavement. The project includes signal and geometry improvements and is expected to reduce delay, which may reduce PHED and improve reliability on the NHS. It will implement sidewalks on both sides of the corridor and add separated bicycle facilities; these features are expected to increase non-SOV travel. This project is expected to reduce CO ₂ and other transportation-related emissions.
607777	Watertown–Rehabilitation of Mount Auburn Street (Route 16)	Complete Streets	Reconstruct the corridor from the Cambridge city line to east of Watertown Square. Revise roadway geometry; implement a roadway diet, safety improvements, and bicycle and pedestrian accommodations; and upgrade traffic signal equipment.	Watertown	2023	This project changes network capacity and is considered regionally significant for air quality modeling.	The project area overlaps one 2010–19 HSIP pedestrian crash cluster locations and is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than six lane miles of pavement on the NHS. Signal and other improvements included in the project may improve reliability on unreliable NHS segments within the project corridor and potentially reduce PHED. The project will improve sidewalks and provide bicycle accommodations; these features are expected to increase non-SOV travel. This project is expected to reduce CO ₂ and other transportation-related emissions.
608954	Weston–Reconstruction on Route 30	Complete Streets	Reconstruct Route 30 within the Town of Weston. Implement geometric improvements and signal additions or upgrades at intersections. Construct a shared-use path the length of the project corridor.	Weston	2026	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It includes geometric and signal improvements and is expected to reduce delay, which may help reduce PHED and improve reliability on nearby NHS segments. The shared-use path and pedestrian improvements included in the project are expected to increase non-SOV travel. This project is expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 8)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608051	Wilmington (MassDOT)– Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line	Complete Streets	Add bicycle lanes, provide sidewalks, improve traffic signals, and reconstruct turn lanes within the project corridor.	Wilmington	2025	Sections of the Route 38 and 129 corridors in Wilmington are identified as priority bottlenecks in the <i>Destination 2040</i> Needs Assessment. A portion of this corridor was studied in “Safety and Operations Analysis at Selected Intersections: Main Street at Church Street and Burlington Avenue” (CTPS, 2012).	The project area overlaps a 2015–17 all-mode HSIP crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. The project will improve over four lane miles of substandard pavement on the NHS and replace a culvert on the project corridor with a bridge. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project corridor and potentially reduce PHED. The project will improve existing sidewalks, add new sidewalks, and provide bicycle accommodations—all of these features are expected to increase non-SOV travel. It is expected to reduce CO ₂ and other transportation-related emissions.
607244	Winthrop–Revere Street Roadway Improvements	Complete Streets	Reconstruct and reclaim pavement; reconstruct sidewalks; and improve intersections and bicycle and pedestrian accommodations in the project corridor.	Winthrop	2023	N/A	The project area is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than a mile of substandard sidewalks and add bicycle accommodations, which may encourage non-SOV travel. It is expected to reduce CO ₂ and other transportation-related emissions.
610662	Woburn–Roadway and Intersection Improvements at Woburn Common, Route 38 (Main Street), Winn Street, Pleasant Street, and Montvale Avenue	Complete Streets	Improve safety and congestion within the Woburn Common area by making safety and operational improvements, reconfiguring the Woburn Common rotary, and reconstructing and realigning roadways. The project will also reconstruct sidewalks, add bike lanes, and upgrade or add signals in the area.	Woburn	2025	N/A	The project area overlaps a 2017–19 all-mode HSIP crash cluster location and a 2010–19 HSIP pedestrian crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve nearly two lane miles of substandard pavement on the NHS. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will reconstruct sidewalks to support pedestrian safety and mobility. It is also expected to include bicycle accommodations and to reduce CO ₂ and other transportation-related emissions.
603739	Wrentham (MassDOT)– Construction of Interstate 495/ Route 1A Ramps	Complete Streets	Construct ramps at the interchange of Route 1A and Interstate 495 to accommodate increased traffic volumes resulting from nearby development.	Wrentham	2024	This project area was studied as part of “Route 1A Corridor Study in Wrentham” (CTPS, 2017).	The project area overlaps two 2017–19 all-mode HSIP crash cluster locations and the project is expected to improve safety performance, including for bicyclists and pedestrians. The project is expected to reduce vehicle delay and may support reductions of PHED on nearby NHS roadways. It will add sidewalks and bicycle lanes, which may support non-SOV travel. It is also expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 9)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608436	Ashland–Rehabilitation and Rail Crossing Improvements on Cherry Street	Intersection Improvements	Improve the safety features on Cherry Street and Main Street to establish a Federal Railroad Administration Quiet Zone surrounding the railroad crossings on those two roadways. Install roadway medians, enhance existing railroad crossing signals and gates, reconstruct pavement, construct sidewalks, and improve drainage in the project area.	Ashland	2024	N/A	The project is expected to improve safety performance at a railroad crossing location, including for bicyclists and pedestrians.
608067	Burlington, Woburn–Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street	Intersection Improvements	Reconstruct the intersection and all traffic signal equipment. Enhance roadway geometry to provide exclusive turn lanes for intersection approaches. Reconstruct existing sidewalks, construct new sidewalks, and add bicycle lanes and ADA-compliant bus stops, where feasible.	Burlington, Woburn	2025	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. The project is expected to improve existing sidewalks and add new sidewalks at the intersection, as well as add new bike lanes; all of these features may encourage non-SOV travel. The geometric improvements included in the project are expected to help reduce delay and potentially PHED on nearby NHS routes. The project is expected to reduce CO ₂ and other transportation-related emissions.
608889	Framingham–Traffic Signal Installation at Edgell Road and Central Street	Intersection Improvements	Install traffic signals and make geometric improvements at the intersection of Edgell Road and Central Street. Add bicycle lanes, cross walks, and ensure sidewalks are ADA/AAB-compliant.	Framingham	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It also includes improvements to bicycle and pedestrian accommodations to support non-motorized travel through the intersection, which may encourage non-SOV travel. The project is expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 10)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
605857	Norwood–Intersection Improvements at Route 1 and University Avenue/ Everett Street	Intersection Improvements	Upgrade traffic signals and make associated geometric improvements at the intersection of Route 1, University Avenue and Everett Street. Construct an additional travel lane in each direction on Route 1, lengthen left-turn lanes, upgrade pedestrian crossings and bicycle amenities, and rehabilitate sidewalks.	Norwood, Westwood	2025–26	The Route 1 corridor in Norwood is identified as a priority bottleneck in the <i>Destination 2040</i> Needs Assessment. This location was studied in “Route 1 at Everett Street and University Avenue” (CTPS, 2014).	The project area overlaps a 2017–19 all-mode HSIP crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve nearly three lane miles of pavement on the NHS. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will improve substandard sidewalks and add new sidewalks and bicycle accommodations, all of which may encourage non-SOV travel. It is expected to reduce CO ₂ and other transportation-related emissions.
606130	Norwood–Intersection Improvements at Route 1A and Upland Road/ Washington Street and Prospect Street/ Fulton Street	Intersection Improvements	Make intersection improvements at two locations on Route 1A. Install traffic and pedestrian signals and widen Washington Street and Upland Road to accommodate turn lanes. Reconstruct existing sidewalks to meet ADA/ AAB standards.	Norwood	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will upgrade existing sidewalks, and add new sidewalks and bicycle accommodations in the project area, all of which may encourage non-SOV travel. The project is expected to reduce CO ₂ and other transportation-related emissions.
608940	Weston–Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	Intersection Improvements	Address safety, congestion, and connectivity concerns at the intersection of Route 20, Boston Post Road, and Wellesley Street by installing a new signal system, implementing geometric improvements, replacing and adding sidewalks, and adding bicycle lanes.	Weston	2026	This project intersects a priority bottleneck location identified in the <i>Destination 2040</i> Needs Assessment.	The project area overlaps a 2017–19 all-mode HSIP crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will improve and add sidewalks and add bicycle lanes; these features may encourage non-SOV travel. It is expected to reduce CO ₂ and other transportation-related emissions.

Table A-2 (continued, 11)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609253	Wilmington–Intersection Improvements at Lowell Street (Route 129) and Woburn Street	Intersection Improvements	Improve traffic safety and efficiency at the intersection of Lowell Street (Route 129) and Woburn Street by making geometric modifications to the roadway, installing new pedestrian signals, adding crosswalks, and providing bicycle lanes.	Wilmington	2023	Sections of the Route 38 and 129 corridors are identified as priority bottlenecks in the <i>Destination 2040</i> Needs Assessment. A portion of this corridor was studied in “Safety and Operations Analysis at Selected Intersections: Main Street at Church Street and Burlington Avenue” (CTPS, 2012).	The project area overlaps a 2017–19 all-mode HSIP crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than half of a lane mile of pavement on the NHS. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will improve existing sidewalks, and it is expected to add new sidewalks and bicycle lanes, all of which may encourage non-SOV travel. The project is expected to reduce CO ₂ and other transportation-related emissions.
606226	Boston–Reconstruction of Rutherford Avenue	Major Infrastructure: Roadway	Reconstruct Rutherford Avenue from Sullivan Square to the North Washington Street Bridge to create a multimodal urban boulevard.	Boston	2025–27	This project is included in <i>Destination 2040</i> , the MPO’s LRTP. This project changes network capacity and is considered regionally significant for air quality modeling.	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve four NHS bridge structures and more than 7 lane miles of NHS pavement. The project area overlaps many NHS segments considered to be unreliable, and the project includes changes to roadway geometry and signals that are expected to improve reliability on the NHS and potentially reduce PHED. The project will improve existing sidewalks and is expected to add new sidewalks and a range of bicycle and pedestrian accommodations within the corridor, all of which are expected to increase non-SOV travel. It was analyzed as part of a set of recommended LRTP projects, and MPO staff estimate that this set will decrease CO ₂ emissions in the region compared to a no-build scenario.
607981	Somerville–McGrath Boulevard Reconstruction	Major Infrastructure: Roadway	Remove the existing McCarthy Viaduct and replace it with an at-grade urban boulevard. Rationalize intersections, improve signalization, and create off-street pedestrian and bicycle facilities. Improve bus operations by installing floating/in-lane bus stops, transit signal priority, and bus queue-jump lanes at key intersections.	Somerville	2027	This project is included in <i>Destination 2040</i> , the MPO’s LRTP. This project changes network capacity and is considered regionally significant for air quality modeling.	The project area overlaps a 2017–19 all-mode HSIP crash cluster location, a 2010–19 HSIP pedestrian crash cluster location, and a 2010–19 HSIP bicycle crash cluster location. It is expected to improve safety performance, including for bicyclists and pedestrians. It will improve one NHS bridge and improve more than four lane miles of substandard pavement on the NHS. The geometric and signal improvements included in the project may reduce PHED and improve reliability on this portion of the NHS network. The project will improve bus operations and amenities, reconstruct and reconfigure sidewalks, and add off-street bicycle and pedestrian facilities; these features are expected to increase non-SOV travel. It was analyzed as part of a set of recommended LRTP projects, and MPO staff estimate that this set will decrease CO ₂ emissions in the region compared to a no-build scenario.

Table A-2 (continued, 12)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
S12706	Boston–Forest Hills Improvement Project*	Transit Modernization	Make platform repairs, replace elevators and construct a new elevator/stair tower to connect the station’s upper and lower busways. Implement accessibility, wayfinding, safety, and station brightening upgrades. Improve the station roof.	Boston	2024	Forest Hills station improvements are listed the MBTA’s 2018 Transit Asset Management Plan (see Appendix F: Project-Based Listing of Investment Priorities.)	This project makes safety, state-of-good-repair, and modernization improvements to one of the MBTA’s passenger facilities. These upgrades may increase ridership by making the station more accessible to all users and easier to navigate, which may increase transit ridership and non-SOV travel.
S12705	Lynn–Lynn Station Improvements, Phase II	Transit Modernization	Reconstruct the existing rail platform. Construct two new elevators. Upgrade lighting and other amenities. Make structural repairs to the viaduct northeast of the station.	Lynn	2023	Lynn Station improvements are listed the MBTA’s 2018 Transit Asset Management Plan (see Appendix F: Project-Based Listing of Investment Priorities.)	This project makes safety, state-of-good-repair, and modernization improvements to one of the MBTA’s passenger facilities. These upgrades may increase ridership by making the station more accessible to all users and easier to navigate, which may increase transit ridership and non-SOV travel.

Notes: HSIP cluster locations are identified by MassDOT. Substandard pavement and sidewalk designations are based on data provided by MassDOT and project proponents and on MPO assessments conducted for TIP evaluations. The estimated lane miles of substandard NHS pavement improved is based on MPO staff’s assessment of pavement condition in the project area and their assessment of the portion of the project on the NHS. The IRI thresholds used to classify pavement are based on the TIP criteria the MPO adopted in 2020: less than 95 is good, 95 to 170 is fair, and greater than 170 is poor.

* The MPO is contributing funds to this project, which is generally funded by MassDOT or the MBTA.

AAB = Architectural Access Board. ADA = Americans with Disabilities Act. CO2 = carbon dioxide. CTPS = Central Transportation Planning Staff. FFY = federal fiscal year. HSIP = Highway Safety Improvement Program. IRI = International Roughness Index. MassDOT = Massachusetts Department of Transportation. MBTA = Massachusetts Bay Transportation Authority. MCRT = Mass Central Rail Trail. MPO = metropolitan planning organization. N/A = not applicable. NHS = National Highway System. PHED = peak hours of excessive delay. SOV = single-occupancy vehicle. TSP = transit signal priority.

Source: Boston Region MPO staff.

**Table A-3
FFYs 2023–27 TIP Project Evaluation Results: Multiple MPO Investment Programs**

Proponent	Project Number	Project Name	MAPC Subregion	Project Status (as of 3/17/22)	Project Cost	Cost/Lane Mile*	Total Score	Total Base Score	Total Equity Score	Safety	Safety Equity Score	System Preservation and Modernization	System Preservation Equity Score	Capacity Management and Mobility	Capacity Management Equity Score	Clean Air and Sustainable Communities	Clean Air Equity Score	Economic Vitality
Bicycle Network and Pedestrian Connections Program																		
Swampscott	610666	Rail Trail Construction	NSTF	25% Rejected 1/27/21	\$7,700,000	\$3.67 million	66.4	59	7.4	13	2	5	0.8	18	3.6	12	1	11
Belmont	609204	Community Path, Belmont Component of the MCRT (Phase 1)	ICC	25% Submitted 1/5/22	\$18,780,698	\$13.81 million	64.6	57	7.6	15	2	8	1.4	18	3.6	7	0.6	9
Possible Points							100	80	20	20	5.6	14	4.8	18	7.2	14	2.4	14
Complete Streets Program																		
Lynn	609246	Reconstruction of Western Avenue	ICC	PRC Approved 12/6/18	\$40,980,000	\$10.25 million	74.9	63	11.9	18	3.5	14	3	10	3.5	11	1.9	10
Chelsea	611983	Park and Pearl Street Reconstruction	ICC	PRC Approved 1/28/21	\$10,451,525	\$15.59 million	69.9	55	14.9	14	3.6	14	4.6	11	5.1	6	1.6	10
Salem, Peabody	609437	Boston Street Improvements	NSTF	25% Resubmitted 10/7/21	\$12,480,000	\$7.85 million	67.8	57	10.8	12	2.7	15	3.5	11	3.5	8	1.1	11
Brookline	610932	Rehabilitation of Washington Street	ICC	PRC Approved 9/24/20	\$25,888,631	\$10.79 million	62.4	55	7.4	14	2.1	13	2.1	11	2.5	7	0.7	10
Weston	608954	Reconstruction on Route 30	MWRC	25% Submitted 10/19/20	\$15,203,814	\$1.79 million	49.2	43	6.2	11	1.6	10	1.6	10	2	9	1	3
Ipswich	611975	Roadway Improvements on County Street	NSTF	PRC Approved 1/28/21	\$5,653,500	\$6.28 million	45.4	40	5.4	7	1	12	1.6	8	2	8	0.8	5
Wakefield	610545	Main Street Reconstruction	NSPC	PRC Approved 12/19/19	\$26,382,000	\$6.58 million	40.8	37	3.8	12	1.7	10	1.3	6	1.6	0	-0.8	9
Manchester-by-the-Sea	610671	Bridge Replacement, Central Street over Saw Mill Brook	NSTF	PRC Approved 12/19/19	\$4,350,000	\$36.25 million	34.8	32	2.8	7	0.8	14	1.7	2	0.3	2	0	7
Possible Points							100	80	20	18	4.6	20	5.6	18	7.2	12	2.6	12

Table A-3 (continued, 2)

Proponent	Project Number	Project Name	MAPC Subregion	Project Status (as of 3/17/22)	Project Cost	Cost/Lane Mile*	Total Score	Total Base Score	Total Equity Score	Safety	Safety Equity Score	System Preservation and Modernization	System Preservation Equity Score	Capacity Management and Mobility	Capacity Management Equity Score	Clean Air and Sustainable Communities	Clean Air Equity Score	Economic Vitality
Intersection Improvements Program																		
Weston	608940	Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	MWRC	25% Resubmitted 5/18/21	\$1,219,250	\$4.20 million	50.6	45	5.6	15	1.7	9	1.5	10	1.7	8	0.7	3
Milton	608955	Intersection Improvements, Squantum Street at Adams Street	ICC/TRIC	25% Submitted 11/29/20	\$2,311,250	\$16.51 million	34.4	30	4.4	9	1.5	8	1.2	5	1	4	0.7	4
Possible Points							100	80	20	21	5.4	17	5.4	18	6.8	12	2.4	12
Major Infrastructure Program																		
Somerville (MassDOT)	607981	McGrath Boulevard Reconstruction	ICC	PRC Approved 5/9/14	\$88,250,000	\$9.81 million	72.2	63	9.2	13	2.1	19	2.7	13	3.3	8	1.1	10
Natick (MassDOT)	605313	Bridge Replacement, Route 27 over Route 9 and Interchange Improvements	MWRC	25% Resubmitted 2/12/20	\$45,097,350	\$14.69 million	57.7	51	6.7	13	1.8	13	1.5	11	2.3	8	1.1	6
Possible Points							100	80	20	18	4.6	20	5.6	18	7.2	12	2.6	12

Table A-4
FFYs 2023–27 TIP Project Evaluation Results: Community Connections Program

Proponent	Project Name	MAPC Subregion	Project Cost	Cost/Monthly User**	Total Score	Connectivity	Coordination	Plan Implementation	Transportation Equity	Mode Shift and Demand Projection	Fiscal Sustainability
Newton	NewMo Microtransit Service Expansion	ICC	\$712,459	\$101	87	18	14	12	9	24	10
Cambridge	Bluebikes Station Replacement and System Expansion	ICC	\$349,608	\$27	78	18	4.5	12.5	9	24	10
Medford/ Malden	Bluebikes System Expansion	ICC	\$145,821	\$81	78	17	12	6	9	24	10
Watertown	Pleasant Street Shuttle Service Expansion	ICC	\$801,758	\$990	78	18	12	9	9	20	10
Salem	Bluebikes System Expansion	NSTF	\$119,629	\$399	77	13	15	6	9	24	10
Stoneham	Stoneham Shuttle Service	NSPC	\$637,453	\$247	72	15	12	12	6	17	10
CATA	CATA On Demand Microtransit Service Expansion	NSTF	\$650,633	\$434	61.75	10.75	6	9	6	20	10
MWRTA	CatchConnect Microtransit Service Expansion	MWRC	\$360,130	\$240	59	12	3	9	9	16	10
Acton	Bicycle Parking along the Bruce Freeman Rail Trail	MAGIC	\$8,017	\$7	58	6	2	9	9	22	10
MART	Montachusett RTA Microtransit Service	MAGIC	\$1,052,849	\$675	57	7	15	3	6	16	10
Belmont	Chenery Middle School Bicycle Parking	ICC	\$4,376	\$12	49.75	4.75	6	5	6	18	10
Possible Points					100	18	15	15	18	24	10

***All cost/user calculations are based on the demand estimates submitted by project proponents during the application process. For transit operating projects, cost/user is based on ridership after 6 months of service.*

Table A-5
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Bicycle Network and Pedestrian Connections Program

MPO Goal Area Safety: Transportation by all modes will be safe. (Up to 20 points)				
Criterion	Project improves bicycle safety (up to 5 points) +5 High total effectiveness of bicycle safety improvements +3 Medium total effectiveness of bicycle safety improvements +1 Low total effectiveness of bicycle safety improvements +0 Project does not implement bicycle safety improvements	Project improves pedestrian safety (up to 5 points) +5 High total effectiveness of pedestrian safety improvements +3 Medium total effectiveness of pedestrian safety improvements +1 Low total effectiveness of pedestrian safety improvements +0 Project does not implement pedestrian safety improvements	Project improves safety for all users (up to 3 points) +3 Project includes three or more eligible multimodal safety improvements +2 Project includes two eligible multimodal safety improvements +1 Project includes one eligible multimodal safety improvement +0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	Bonus (up to 2 points) +2 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 2 points) +2 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 3 points) +3 Addresses safety at multiple all-mode HSIP clusters OR a top-200 crash location +2 Addresses safety at one all-mode HSIP cluster	
Equity Multiplier?	Yes	Yes	No	

MPO Goal Area System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 14 points)				
Criterion	Project incorporates resiliency elements into its design (up to 5 points) +1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections +1 Project demonstrates regional coordination on resiliency	Project improves connectivity to critical facilities (up to 2 points) +2 Project improves access to critical facilities	Project improves existing pedestrian facilities (up to 5 points) +5 Existing pedestrian facilities are in poor condition and improvements are included in the project +3 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities	Project improves other existing assets (up to 2 points) +2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria
Bonus/Penalty (if applicable)	Penalty -1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding	N/A	N/A	N/A
Equity Multiplier?	Yes	Yes	Yes	No

Table A-5 (continued, 2)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)				
Criterion	Project improves pedestrian network and ADA accessibility (up to 5 points) +5 Project adds new shared-use path +3 Project adds new high-quality sidewalks +1 Project adds new standard sidewalks +0 Project does not improve pedestrian network	Project improves bicycle network (up to 5 points) +5 Project adds new separated bicycle facility (including shared-use paths) +3 Project adds new buffered bicycle facility +1 Project adds new standard bicycle facility +0 Project does not improve bicycle network		
Bonus/Penalty (if applicable)	Bonus (up to 4 points) +4 Project closes a gap in the pedestrian network +3 Project improves ADA accessibility beyond minimum required standards +2 Project creates or improves a pedestrian connection to transit +1 Project extends existing pedestrian network	Bonus (up to 4 points) +4 Project closes a gap in the bicycle network +2 Project creates or improves a bicycle connection to transit +2 Project extends existing bicycle network +1 Project makes accommodations for bicycle parking or a bicycle share station		
Equity Multiplier?	Yes	Yes		

MPO Goal Area Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 14 points)				
Criterion	Project reduces CO2 (up to 4 points) +4 300 or more annual tons of CO2 reduced +3 100–299 annual tons of CO2 reduced +2 50–99 annual tons of CO2 reduced +1 Less than 50 annual tons of CO2 reduced +0 No expected impact -1 Less than 50 annual tons of CO2 increased -4 50 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 4 points) +4 1,500 or more total annual kilograms of other emissions reduced +3 750–1499 total annual kilograms of other emissions reduced +2 250–749 total annual kilograms of other emissions reduced +1 Less than 250 total annual kilograms of other emissions reduced +0 No impact -1 Less than 250 total annual kilograms of other emissions increased -4 250 or more total annual kilograms of other emissions increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural asset	
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes	
Equity Multiplier?	No	Yes	No	

Table A-5 (continued, 3)

MPO Goal Area Economic Vitality: Ensure our transportation network provides a strong foundation for economic vitality. (Up to 14 points)				
Criterion	Project serves sites targeted for future development (up to 4 points)	Project serves existing employment and population centers (up to 4 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)
	+2 Project improves bicycle access to or within a site +2 Project improves pedestrian access to or within a site	+4 Project mostly serves an existing area of concentrated development +2 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project OR robust community outreach process	N/A
Equity Multiplier?	No	No	No	No
Total Base Points Possible	80			
Total Equity Points Possible	20			
Total Possible Points	100			

Table A-6
Evaluation Criteria for FFYs 2022 and 2023 Community Connections Program

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
NETWORK OR CONNECTIVITY VALUE (18 points)			
<p>The primary purpose of the Community Connections Program is to close gaps in the transportation network, especially those in the first or last mile between transit and a destination. Projects will be awarded points based on how effectively a proposed project closes different types of gaps and makes travel easier or more efficient.</p>	<p>Connection to existing activity hubs and residential developments (9/6 points)</p>	<p>Application materials, CTPS GIS layers reflecting relevant destinations and employment and population density</p>	<p><i>Projects can earn points for any combination of conditions, up to the noted overall maximum.</i></p> <p>Area projects (up to 9 points)</p> <p>0 If the project area includes* no dense employment concentrations, or dense residential concentrations, or Major Civic Destinations.</p> <p>+2 for each dense employment concentration OR dense residential concentration included in the project area, up to a maximum of 6 points</p> <p>+1 if the project targets a specific dense employment concentration, OR dense residential concentration, or Major Civic Destination</p> <p>+.25 points for each Major Civic Destination included in the project area, up to a maximum of 2 points</p> <p>Point projects (up to 6 points)</p> <p>0 points if the project has no locations/stops within** ½ mile of a dense employment concentration OR a dense residential concentration</p> <p>+1 point for each location/stop within ½ mile of a dense employment concentration OR a dense residential concentration, up to a maximum of 4 points</p> <p>+2 points for each location/stop within ¼ mile of a dense employment concentration OR a dense residential concentration, up to a maximum of 4 points</p> <p>+.25 points for each location/stop within a ½ mile of a Major Civic Destination, up to a maximum of 1 point</p> <p>+.5 points for each location/stop within a ¼ mile of a Major Civic Destination, up to a maximum of 1 point</p> <p>*A project area includes a dense employment or residential concentration if it contains more than 50% of a transportation analysis zone (TAZ) that meets employment or residential density thresholds</p> <p>**For dense employment or residential concentrations, "Within" is defined as the location being within the specified distance of the centroid of the relevant TAZs</p>

Table A-6 (continued, 2)

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
<p>The primary purpose of the Community Connections Program is to close gaps in the transportation network, especially those in the first or last mile between transit and a destination. Projects will be awarded points based on how effectively a proposed project closes different types of gaps and makes travel easier or more efficient.</p>	<p>Connection to existing transit hubs (6 points)</p>	<p>Application materials, CTPS GIS layers reflecting transit stops and routes</p>	<p><i>Projects can earn points for any combination of conditions, up to the noted overall maximum.</i></p> <p>Area Projects (up to 9 points)</p> <ul style="list-style-type: none"> 0 if the project area does not include any transit stops for any mode +1 for each bus stop with infrequent service in the project area, up to a maximum of 4 points +2 for each commuter rail station in the project area, up to a maximum of 4 points +3 for each bus stop with frequent service in the project area, up to a maximum of 6 points +4 for each rapid transit stop in the project area, up to a maximum of 8 points <p>Point Projects (up to 6 points)</p> <ul style="list-style-type: none"> 0 if none of the project locations are within 1/2 mile of any transit stations/routes +1 if there is one bus stop with infrequent service within 1/2 mile of a project location +2 if there are multiple instances of a bus stop with infrequent service within 1/2 mile of a project location +3 if there is a commuter rail station within 1/2 mile of a project location +4 if there is a bus stop with frequent service within 1/4 mile of a project location +5 if there are multiple instances of bus stops with frequent service within 1/4 mile of a project location +6 if there is at least one rapid transit stop within 1/4 mile of a project location

Table A-6 (continued, 3)

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
	Connection to other transportation infrastructure (6 points)	Application materials, CTPS GIS layers including bicycle infrastructure (derived from MAPC trailmap and other sources) and MassDOT road inventory with enhanced sidewalk data	<p>Area Projects (not eligible for points in this subcriterion) n/a</p> <p>Point Projects (up to 6 points)</p> <ul style="list-style-type: none"> 0 if none of the project locations are within 250 feet of sidewalks or protected bicycle infrastructure +1 for each project location within 250 feet of a sidewalk, up to a maximum of 2 points +1 for each project location within 250 feet of protected bicycle infrastructure, up to a maximum of 2 points +2 if any project location is within 250 feet of BOTH a sidewalk and protected bicycle infrastructure
Coordination or cooperation between multiple entities (15 points)			
The MPO prioritizes collaboration among different entities in the transportation planning process. Cooperative project planning and execution is particularly important for first-mile and last-mile connections of the type that the Community Connections Program is intended to facilitate. The cooperation can involve actors from both the public and private sectors.	Number of collaborating entities (15 points)	Application materials	<ul style="list-style-type: none"> +3 for each collaborating entity beyond the sponsor, up to a maximum of 9 points -15 for Bus Lane, TSP, or E-Link projects that do not have a letter of support from the MBTA <p>Additionally</p> <ul style="list-style-type: none"> +3 If the project consists of collaborators from multiple sectors (i.e., public and private, or public and nonprofit) +3 If each listed collaborator has provided a formal letter of support to the MPO
Inclusion in and consistency with local and regional plans (15 points)			
A comprehensive planning process is important to ensure that projects occur in an environment of collaboration and careful consideration rather than independently. This criterion proposes to award points based on the extent to which a proposed project has been included in prior plans at both the local and regional levels, and whether it meets the goals of those plans.	Inclusion in local plans (6 points)	Application materials, local plans	<p>Project is scored based on the best condition it meets.</p> <ul style="list-style-type: none"> +3 if the project supports a theme, idea, or concept in a local comprehensive plan or equivalent document. +6 If the project is specifically included as a need or priority in a local comprehensive plan or equivalent document
	Inclusion in MPO plans (6 points)	Application materials, LRTP Needs Assessment, UPWP Database, MAPC plans	<p>Project earns points for each condition met.</p> <ul style="list-style-type: none"> +3 If the project is identified as a need in a current or previous LRTP Needs Assessment or another regional plan +3 if the project or a large element thereof is recommended in MPO/MAPC technical studies
	Inclusion in statewide plans (3 point)	Application materials, LRTP Needs Assessment	<ul style="list-style-type: none"> +3 If the project is included as a need or priority in MassDOT or other statewide planning studies

Table A-6 (continued, 4)

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
TRANSPORTATION EQUITY (18 points)			
The MPO seeks to prioritize investments that benefit equity populations, while minimizing any burdens associated with MPO-funded projects for these populations.	Serves one or more transportation equity demographics, as identified by the MPO (18 points)	Application materials, CTPS GIS layers	See detailed scoring criteria handout: https://docs.google.com/document/d/1YXBvJoj2FM2UJp0qd88Ew_nKR5OscyS/
GENERATION OF MODE SHIFT (12 points)			
Another primary purpose of the Community Connection Program is to enable modal shift from SOV to transit or other modes. This criterion awards points based on the project's effectiveness at creating mode shift and/or enabling trips that were previously impossible by non-SOV modes.	Allow new trips that would not be otherwise possible without a car (12 points)	Application materials	<p>This criterion will be scored by MPO staff based on materials and narrative provided in the project application, considering factors such as:</p> <ul style="list-style-type: none"> • Whether the project competes with or complements existing transit service • If the project brings non-SOV transportation options to an area that previously had few or none • Whether the project provides complementary connections to existing non-SOV transportation services and infrastructure • Whether the project serves a particular, identified transportation purpose that includes or facilitates mode shift • If relevant, whether the project shows it has a viable path to fiscal independence at the end of the MPO grant period • Reliability of projected local or other non-MPO financial contributions • If the project serves a population that travels through the project area but does not live adjacent to or within it • The quality and innovation of the project's marketing plan, when relevant

Table A-6 (continued, 5)

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
DEMAND PROJECTION (12 points)			
Gaining an understanding of how many transportation network users a project will reach is crucial for understanding its cost-effectiveness.	Overall demand estimate (6 points)	Application materials	0 If the application contains no estimates of demand or usage +3 If the application contains estimates of demand or usage, but no documentation of methods used to create them or background information +6 If the application contains estimates of demand or usage that are backed by extensive documentation of methods used to create the estimates and/or other relevant background information
	Staff evaluation of demand estimate (6 points)	Application materials	0 If staff judge that demand/usage projections are unrealistic or not present +3 if staff judge that demand/usage projections are somewhat realistic +6 If staff judge that demand/usage projections are realistic
BUDGET SHEET (10 points)			
	Quality of information provided (10 points)	Application materials	0 if there is no budget sheet present or the budget sheet does not contain useful information +5 if the budget sheet is incomplete or inaccurate, but usable with work +10 if the budget sheet is completed with all necessary information

Definitions

Area projects: Those that are geographically defined as a polygon, rather than delivered at a particular point or points. Examples: microtransit covering an entire town, or an education project for a neighborhood.

Point projects: Those that are delivered at a particular point or points and can be geographically defined as such. Examples: bike racks, fixed-route transit (the stops are the points)

Population density concentration: any TAZ with more than 4,000 people per square mile.

Employment density concentration: any TAZ with more than 4,000 jobs per square mile

Frequent service: Follows the MBTA Service Delivery Policy. Stops with frequent service defined are defined in a CTPS layer used in pilot round CC scoring and for the Destination 2040 Needs Assessment. This layer measures frequency at the stop level rather than the route level; that is, a stop with four buses per hour, from two different routes, is considered a frequent stop.

Table A-7
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Complete Streets Program

MPO Goal Area	Safety: Transportation by all modes will be safe. (Up to 18 points)							
Criterion	Project addresses severe-crash location (up to 3 points)	Project addresses high-crash location (up to 3 points)	Project addresses truck-related safety issue (up to 2 points)	Project improves bicycle safety (up to 2 points)	Project improves pedestrian safety (up to 2 points)	Project improves safety for all users (up to 2 points)		
	+3 EPDO value of 1000 or more +2 EPDO value of 250 to 999 +1 EPDO value of less than 250 +0 No EPDO value	+3 Crash rate of 6.45 or greater +2 Crash rate between 4.25 and 6.45 +1 Crash rate between 2.05 and 4.25 +0 Crash rate below 2.05	+2 High total effectiveness of truck safety improvements +1 Medium total effectiveness of truck safety improvements +0 Low total effectiveness or no implementation of truck safety improvements	+2 High total effectiveness of bicycle safety improvements +1 Medium total effectiveness of bicycle safety improvements +0 Low total effectiveness or no inclusion of bicycle safety improvements	+2 High total effectiveness of pedestrian safety improvements +1 Medium total effectiveness of pedestrian safety improvements +0 Low total effectiveness or no inclusion of pedestrian safety improvements	+2 Project includes three or more eligible multimodal safety improvements +1 Project includes one or two eligible multimodal safety improvements +0 Project does not include any eligible multimodal safety improvements		
Bonus/Penalty (if applicable)	N/A	N/A	N/A	Bonus (up to 1 point) +1 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 1 point) +1 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 2 points) +2 Addresses safety at multiple all-mode HSIP clusters OR a top-200 crash location +1 Addresses safety at one all-mode HSIP cluster		
Equity Multiplier?	Yes	No	No	Yes	Yes	No		

Table A-7 (continued, 2)

MPO Goal Area		System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 20 points)							
Criterion	Project incorporates resiliency elements into its design (up to 5 points)	Improves evacuation route (up to 1 point)	Improves connectivity to critical facilities (up to 1 point)	Project improves existing transit assets (up to 2 points)	Project improves existing pedestrian facilities (up to 3 points)	Project improves existing bridges (up to 2 points)	Project improves existing avement condition (up to 2 points)	Project improves other existing assets (up to 2 points)	
	<ul style="list-style-type: none"> +1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections + Project demonstrates regional coordination on resiliency 	<ul style="list-style-type: none"> +1 Project improves an evacuation route, diversion route, or alternate diversion route 	<ul style="list-style-type: none"> +1 Project improves access to critical facilities 	<ul style="list-style-type: none"> +2 Project makes significant improvements to existing transit assets +1 Project makes moderate improvements to existing transit assets +0 Project does not modernize or improve the condition of existing transit assets 	<ul style="list-style-type: none"> +3 Existing pedestrian facilities are in poor condition and improvements are included in the project +2 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities 	<ul style="list-style-type: none"> +2 Project improves existing bridge(s) from poor to good condition through rehabilitation or replacement +1 Project improves existing bridge(s) from fair to good condition through rehabilitation or replacement 0 Project does not include bridge improvements 	<ul style="list-style-type: none"> +2 Current roadway condition is poor and pavement improvements are included in the project +1 Current roadway condition is fair and pavement improvements are included in the project +0 Current roadway condition is good 	<ul style="list-style-type: none"> +2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria 	
Bonus/Penalty (if applicable)	Penalty	N/A	N/A	N/A		Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	<ul style="list-style-type: none"> -1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding 					<ul style="list-style-type: none"> +1 Project reduces or removes vehicle weight/height restrictions or improves bridge on a key roadway 	<ul style="list-style-type: none"> +1 Project improves pavement on a key corridor or improves roadway substructure 		
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	No	

Table A-7 (continued, 3)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	Project reduces transit passenger delay (up to 3 points)	Project invests in New Transit Assets (up to 2 points)	Project improves pedestrian network and ADA accessibility (up to 3 points)	Project improves bicycle network (up to 3 points)	Project improves truck movement (up to 2 points)	Project addresses unreliable corridor (up to 1 point)	
	+3 Project results in significant passenger delay reductions +2 Project results in moderate passenger delay reductions +1 Project results in limited passenger delay reductions +0 Project does not make meaningful reductions in passenger delay	+2 Project makes significant investments in new transit assets +1 Project makes moderate investments in new transit assets +0 Project does not invest in nw transit assets	+3 Project adds new sidewalks on high-utility link +2 Project adds new sidewalks on medium-utility link +1 Project adds new sidewalks on low-utility link +0 Project does not improve pedestrian network	+3 Project adds new separated bicycle facility (including shared-use paths) +2 Project adds new buffered bicycle facility +1 Project adds newstandard bicycle facility +0 Project does not improve bicycle network	+2 Project significantly improves truck movement +1 Project somewhat improves truck movement +0 Project makes minimal improvements to truck movement or does not address criteria	+1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point)	N/A	Bonus (up to 1 point)	Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement		+1 Project closes a gap in the pedestrian network +1 Project enhances ADA accessibility beyond minimum required standards +1 Project creates or improves pedestrian connection to transit	+1 Project closes a gap in the bicycle network +1 Project creates or improves a bicycle connection to transit +1 Project makes accommodations for bicycle parking or bicycle share station +1 Project is on a high-utility link	+1 Project addresses key freight corridor or makes accommodations for freight deliveries		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

Table A-7 (continued, 4)

MPO Goal Area								
Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 12 points)								
Criterion	Project reduces CO2 (up to 3 points) +3 750 or more annual tons of CO2 reduced +2 250-749 annual tons of CO2 reduced +1 al tons of CO2 reduced 0 No impact -1 Less than 250 annual tons of CO2 increased -3 250 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 3 points) +3 1,000 or more total kilograms of VOC, NOx, CO reduced +2 250-999 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -3 250 or more total kilograms of VOC, NOx, CO increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural assets					
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes					
Equity Multiplier?	No	Yes	No					

Table A-7 (continued, 5)

MPO Goal Area		Economic Vitality: Ensure our transportation network provides a strong foundation for economic vitality. (Up to 12 points)						
Criterion	Project serves sites targeted for future development (up to 3 points)	Project serves existing employment and population centers (up to 3 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)				
	+1 Project improves bicycle access to or within a site +1 Project improves pedestrian access to or within a site +1 Project improves transit access to or within a site	+3 Project mostly serves an existing area of concentrated development +1 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area				
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project or robust community outreach process	N/A				
Equity Multiplier?	No	No	No	No				

Total Base Points Possible	80
Total Equity Points Possible	20
Total Possible Points	100

**Table A-8:
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Intersection Improvements Program**

MPO Goal Area							
Safety: Transportation by all modes will be safe. (Up to 21 points)							
Criterion	Project addresses severe-crash location (up to 3 points)	Project addresses high-crash location (up to 3 points)	Project addresses truck-related safety issue (up to 2 points)	Project improves bicycle safety (up to 3 points)	Project improves pedestrian safety (up to 3 points)	Project improves safety for all users (up to 3 points)	
	+3 EPDO value of 300 or more +2 EPDO value of 100 to 299 +1 EPDO value of less than 100 +0 No EPDO value	Signalized Intersection: +3 Crash rate of 1.69 or greater +2 Crash rate between 1.02 and 1.69 +1 Crash rate between 0.35 and 1.02 +0 Crash rate below 0.35 Unsignalized Intersection: +3 Crash rate of 1.36 or greater +2 Crash rate between 0.78 and 1.36 +1 Crash rate between 0.20 and 0.78 +0 Crash rate below 0.20	+2 High total effectiveness of truck safety improvements +1 Medium total effectiveness of truck safety improvements +0 Low total effectiveness or no implementation of truck safety improvements	+3 High total effectiveness of bicycle safety improvements +2 Medium total effectiveness of bicycle safety improvements +1 Low total effectiveness of bicycle safety improvements +0 Project does not include bicycle safety improvements	+3 High total effectiveness of pedestrian safety improvements +2 Medium total effectiveness of pedestrian safety improvements +1 Low total effectiveness of pedestrian safety improvements +0 Project does not include pedestrian safety improvements	+3 Project includes three or more eligible multimodal safety improvements +2 Project includes two eligible multimodal safety improvements +1 Project includes one eligible multimodal safety improvement +0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	N/A	N/A	N/A	Bonus (up to 1 point) +1 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 1 point) +1 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 2 points) +2 Addresses safety at multiple all-mode HSIP clusters or a top-200 crash location +1 Addresses safety at one all-mode HSIP cluster	
Equity Multiplier?	Yes	No	No	Yes	Yes	No	

Table A-8 (continued, 2)

MPO Goal Area		System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 17 points)						
Criterion	Project incorporates resiliency elements into its design (up to 5 points)	Improves evacuation route (up to 1 point)	Improves connectivity to critical facilities (up to 1 point)	Project improves existing transit assets (up to 2 points)	Project improves existing pedestrian facilities (up to 3 points)	Project improves existing pavement condition (up to 2 points)	Project improves other existing assets (up to 2 points)	
	+1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections +1 Project demonstrates regional coordination on resiliency	+1 Project improves an evacuation route, diversion route, or alternate diversion route	+1 Project improves access to critical facilities	+2 Project makes significant improvements to existing transit assets +1 Project makes moderate improvements to existing transit assets +0 Project does not modernize or improve the condition of existing transit assets	+3 Existing pedestrian facilities are in poor condition and improvements are included in the project +2 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities	+2 Current roadway condition is poor and pavement improvements are included in the project +1 Current roadway condition is fair and pavement improvements are included in the project +0 Current roadway condition is good	+2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Penalty	N/A	N/A	N/A		Bonus (up to 1 point)	N/A	
	-1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding					+1 Project improves pavement on a key corridor or improves roadway substructure		
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	

Table A-8 (continued, 3)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	Project reduces transit passenger delay (up to 3 points)	Project invests in New Transit Assets (up to 2 points)	Project improves pedestrian network and ADA accessibility (up to 3 points)	Project improves bicycle network (up to 3 points)	Project improves truck movement (up to 2 points)	Project addresses unreliable corridor (up to 1 point)	
	+3 Project results in significant passenger delay reductions +2 Project results in moderate passenger delay reductions +1 Project results in limited passenger delay reductions +0 Project does not make meaningful reductions in passenger delay	+2 Project makes significant investments in new transit assets +1 Project makes moderate investments in new transit assets +0 Project does not invest in new transit assets	+3 Project adds new sidewalks on high-utility link +2 Project adds new sidewalks on medium-utility link +1 Project adds new sidewalks on low-utility link +0 Project does not improve pedestrian network	+3 Project adds new separated bicycle facility (including shared-use paths) +2 Project adds new buffered bicycle facility +1 Project adds new standard bicycle facility +0 Project does not improve bicycle network	+2 Project significantly improves truck movement +1 Project somewhat improves truck movement +0 Project makes minimal improvements to truck movement or does not address criteria	+1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point)	N/A	Bonus (up to 1 point)	Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement		+1 Project closes a gap in the pedestrian network +1 Project enhances ADA accessibility beyond minimum required standards +1 Project creates or improves pedestrian connection to transit	+1 Project closes a gap in the bicycle network +1 Project creates or improves a bicycle connection to transit +1 Project makes accommodations for bicycle parking or bicycle share station +1 Project is on a high-utility link	+1 Project addresses key freight corridor or makes accommodations for freight deliveries		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

Table A-8 (continued, 4)

MPO Goal Area Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 12 points)							
Criterion	Project reduces CO2 (up to 3 points) +3 750 or more annual tons of CO2 reduced +2 250-749 annual tons of CO2 reduced +1 Less than 250 annual tons of CO2 reduced 0 No impact -1 Less than 250 annual tons of CO2 increased -3 250 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 3 points) +3 1,000 or more total kilograms of VOC, NOx, CO reduced +2 250-999 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -3 250 or more total kilograms of VOC, NOx, CO increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural assets				
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes				
Equity Multiplier?	No	Yes	No				

Table A-8 (continued, 5)

MPO Goal Area Economic Vitality: Ensure our transportation network provides a strong foundation for economic vitality. (Up to 12 points)							
Criterion	Project serves sites targeted for future development (up to 3 points)	Project serves existing employment and population centers (up to 3 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)			
	+1 Project improves bicycle access to or within a site +1 Project improves pedestrian access to or within a site +1 Project improves transit access to or within a site	+3 Project mostly serves an existing area of concentrated development +1 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area			
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project or robust community outreach process	N/A			
Equity Multiplier?	No	No	No	No			
Total Base Points Possible	80						
Total Equity Points Possible	20						
Total Possible Points	100						

Table A-9
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Major Infrastructure Program

MPO Goal Area Safety: Transportation by all modes will be safe. (Up to 18 points)							
Criterion	Project addresses severe-crash location (up to 3 points)	Project addresses high-crash location (up to 3 points)	Project addresses truck-related safety issue (up to 2 points)	Project improves bicycle safety (up to 2 points)	Project improves pedestrian safety (up to 2 points)	Project improves safety for all users (up to 2 points)	
	+3 EPDO value of 1000 or more +2 EPDO value of 250 to 999 +1 EPDO value of less than 250 +0 No EPDO value	For corridor projects: +3 Crash rate of 6.45 or greater +2 Crash rate between 4.25 and 6.45 +1 Crash rate between 2.05 and 4.25 +0 Crash rate below 2.05 For intersection and interchange projects: Signalized Intersection: +3 Crash rate of 1.69 or greater +2 Crash rate between 1.02 and 1.69 +1 Crash rate between 0.35 and 1.02 +0 Crash rate below 0.35 Unsignalized Intersection: +3 Crash rate of 1.36 or greater +2 Crash rate between 0.78 and 1.36 +1 Crash rate between 0.20 and 0.78 +0 Crash rate below 0.20	+2 High total effectiveness of truck safety improvements +1 Medium total effectiveness of truck safety improvements +0 Low total effectiveness or no implementation of truck safety improvements	+2 High total effectiveness of bicycle safety improvements +1 Medium total effectiveness of bicycle safety improvements +0 Low total effectiveness or no inclusion of bicycle safety improvements	+2 High total effectiveness of pedestrian safety improvements +1 Medium total effectiveness of pedestrian safety improvements +0 Low total effectiveness or no inclusion of pedestrian safety improvements	+2 Project includes three or more eligible multimodal safety improvements +1 Project includes one or two eligible multimodal safety improvements +0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	N/A	N/A	N/A	Bonus (up to 1 point) +1 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 1 point) +1 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 2 points) +2 Addresses safety at multiple all-mode HSIP clusters OR a top-200 crash location +1 Addresses safety at one all-mode HSIP cluster	
Equity Multiplier?	Yes	No	No	Yes	Yes	No	

Table A-9 (continued, 2)

MPO Goal Area System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 20 points)								
Criterion	Project incorporates resiliency elements into its design (up to 5 points)	Improves evacuation route (up to 1 point)	Improves connectivity to critical facilities (up to 1 point)	Project improves existing transit assets (up to 2 points)	Project improves existing pedestrian facilities (up to 3 points)	Project improves existing bridges (up to 2 points)	Project improves existing pavement condition (up to 2 points)	Project improves other existing assets (up to 2 points)
	<ul style="list-style-type: none"> +1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections +1 Project demonstrates regional coordination on resiliency 	<ul style="list-style-type: none"> +1 Project improves an evacuation route, diversion route, or alternate diversion route 	<ul style="list-style-type: none"> +1 Project improves access to critical facilities 	<ul style="list-style-type: none"> +2 Project makes significant improvements to existing transit assets +1 Project makes moderate improvements to existing transit assets +0 Project does not modernize or improve the condition of existing transit assets 	<ul style="list-style-type: none"> +3 Existing pedestrian facilities are in poor condition and improvements are included in the project +2 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities 	<ul style="list-style-type: none"> +2 Project improves existing bridge(s) from poor to good condition through rehabilitation or replacement +1 Project improves existing bridge(s) from fair to good condition through rehabilitation or replacement 0 Project does not include bridge improvements 	<ul style="list-style-type: none"> +2 Current roadway condition is poor and pavement improvements are included in the project +1 Current roadway condition is fair and pavement improvements are included in the project +0 Current roadway condition is good 	<ul style="list-style-type: none"> +2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria
Bonus/Penalty (if applicable)	<p>Penalty</p> <ul style="list-style-type: none"> -1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding 	N/A	N/A	N/A		<p>Bonus (up to 1 point)</p> <ul style="list-style-type: none"> +1 Project reduces or removes vehicle weight/height restrictions or improves bridge on a key roadway 	<p>Bonus (up to 1 point)</p> <ul style="list-style-type: none"> +1 Project improves pavement on a key corridor or improves roadway substructure 	N/A
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	No

Table A-9 (continued, 3)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	Project reduces transit passenger delay (up to 3 points)	Project invests in New Transit Assets (up to 2 points)	Project improves pedestrian network and ADA accessibility (up to 3 points)	Project improves bicycle network (up to 3 points)	Project improves truck movement (up to 2 points)	Project addresses unreliable corridor (up to 1 point)	
	+3 Project results in significant passenger delay reductions +2 Project results in moderate passenger delay reductions +1 Project results in limited passenger delay reductions +0 Project does not make meaningful reductions in passenger delay	+2 Project makes significant investments in new transit assets +1 Project makes moderate investments in new transit assets +0 Project does not invest in new transit assets	+3 Project adds new sidewalks on high-utility link +2 Project adds new sidewalks on medium-utility link +1 Project adds new sidewalks on low-utility link +0 Project does not improve pedestrian network	+3 Project adds new separated bicycle facility (including shared-use paths) +2 Project adds new buffered bicycle facility +1 Project adds new standard bicycle facility +0 Project does not improve bicycle network	+2 Project significantly improves truck movement +1 Project somewhat improves truck movement +0 Project makes minimal improvements to truck movement or does not address criteria	+1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point)	N/A	Bonus (up to 1 point)	Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement		+1 Project closes a gap in the pedestrian network +1 Project enhances ADA accessibility beyond minimum required standards +1 Project creates or improves pedestrian connection to transit	+1 Project closes a gap in the bicycle network +1 Project creates or improves a bicycle connection to transit +1 Project makes accommodations for bicycle parking or bicycle share station +1 Project is on a high-utility link	+1 Project addresses key freight corridor or makes accommodations for freight deliveries		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

Table A-9 (continued, 4)

MPO Goal Area Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 12 points)							
Criterion	Project reduces CO2 (up to 3 points) +3 750 or more annual tons of CO2 reduced +2 250-749 annual tons of CO2 reduced +1 Less than 250 annual tons of CO2 reduced 0 No impact -1 Less than 250 annual tons of CO2 increased -3 250 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 3 points) +3 1,000 or more total kilograms of VOC, NOx, CO reduced +2 250-999 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -3 250 or more total kilograms of VOC, NOx, CO increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural assets				
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes				
Equity Multiplier?	No	Yes	No				

Table A-9 (continued, 5)

MPO Goal Area Economic Vitality: Ensure our transportation network provides a strong foundation for economic vitality. (Up to 12 points)								
Criterion	Project serves sites targeted for future development (up to 3 points)	Project serves existing employment and population centers (up to 3 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)				
	+1 Project improves bicycle access to or within a site	+3 Project mostly serves an existing area of concentrated development	+2 20 percent or more of the project cost is provided	+3 10.4% or more of housing units are affordable in project area				
	+1 Project improves pedestrian access to or within a site	+1 Project partly serves an existing area of concentrated development	+1 Less than 20 percent of the project cost is provided	+2 6.6-10.3% of housing units are affordable in project area				
	+1 Project improves transit access to or within a site	+0 Project does not serve an existing area of concentrated development	+0 No non-TIP funding is provided by the project proponent	+1 1-6.5% of housing units are affordable in project area				
				+0 Less than 1% of housing units are affordable in project area				
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point)	N/A				
			+1 Project proponent supports design process through pilot project or robust community outreach process					
Equity Multiplier?	No	No	No	No				
Total Base Points Possible	80							
Total Equity Points Possible	20							
Total Possible Points	100							

Table A-10
Evaluation Criteria for FFYs 2021-25 TIP Development

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING																																										
SAFETY: Transportation by all modes will be safe.																																												
<p>Reduce the number and severity of crashes and safety incidents for all modes</p> <p>Reduce serious injuries and fatalities from transportation</p> <p>Make investments and support initiatives that help protect transportation customers, employees, and the public from safety and security threats</p>	<p>Crash severity value: EPDO index (0–5 points)</p>	<p>+5 EPDO value of 300 or more +4 EPDO value between 200 and 299 +3 EPDO value between 100 and 199 +2 EPDO value between 50 and 99 +1 EPDO value less than 50 +0 No EPDO value</p>																																										
	<p>Crash rate (intersections and corridors) (0–5 points)</p>	<table border="1"> <thead> <tr> <th>Intersection Evaluation Score</th> <th>Signalized</th> <th>Unsignalized</th> </tr> </thead> <tbody> <tr> <td>+5</td> <td>≥ 1.69</td> <td>≥ 1.36</td> </tr> <tr> <td>+4</td> <td>1.31–1.69</td> <td>1.03–1.36</td> </tr> <tr> <td>+3</td> <td>0.93–1.31</td> <td>0.70–1.03</td> </tr> <tr> <td>+2</td> <td>0.55–0.93</td> <td>0.37–0.70</td> </tr> <tr> <td>+1</td> <td>0.36–0.55</td> <td>0.21–0.37</td> </tr> <tr> <td>+0</td> <td>< 0.36v</td> <td>< 0.21</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Corridor Evaluation Score</th> <th>Interstate Other Freeways Expressways</th> <th>Principal Arterials or Other Minor Arterials Major–Minor Collectors</th> </tr> </thead> <tbody> <tr> <td>+5</td> <td>≥ 1.81</td> <td>≥ 6.45</td> </tr> <tr> <td>+4</td> <td>1.40–1.81</td> <td>5.35–6.45</td> </tr> <tr> <td>+3</td> <td>1.00–1.40</td> <td>4.25–5.35</td> </tr> <tr> <td>+2</td> <td>0.59–1.00</td> <td>3.15–4.25</td> </tr> <tr> <td>+1</td> <td>0.40–0.59</td> <td>2.05–3.15</td> </tr> <tr> <td>+0</td> <td>< 0.40</td> <td>< 2.05</td> </tr> </tbody> </table>	Intersection Evaluation Score	Signalized	Unsignalized	+5	≥ 1.69	≥ 1.36	+4	1.31–1.69	1.03–1.36	+3	0.93–1.31	0.70–1.03	+2	0.55–0.93	0.37–0.70	+1	0.36–0.55	0.21–0.37	+0	< 0.36v	< 0.21	Corridor Evaluation Score	Interstate Other Freeways Expressways	Principal Arterials or Other Minor Arterials Major–Minor Collectors	+5	≥ 1.81	≥ 6.45	+4	1.40–1.81	5.35–6.45	+3	1.00–1.40	4.25–5.35	+2	0.59–1.00	3.15–4.25	+1	0.40–0.59	2.05–3.15	+0	< 0.40	< 2.05
	Intersection Evaluation Score	Signalized	Unsignalized																																									
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<p>Improves truck-related safety issue (0–5 points)</p>	<p>+3 High total effectiveness of truck safety countermeasures +2 Medium total effectiveness of truck safety countermeasures +1 Low total effectiveness of truck safety countermeasures +0 Does not implement truck safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below: +2 Improves truck safety at HSIP Cluster</p>																																											
<p>Improves bicycle safety (0–5 points)</p>	<p>+3 High total effectiveness of bicycle safety countermeasures +2 Medium total effectiveness of bicycle safety countermeasures +1 Low total effectiveness of bicycle safety countermeasures +0 Does not implement bicycle safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below: +2 Improves bicycle safety at HSIP Bicycle Cluster +1 Improves bicycle safety at HSIP Cluster</p>																																											
<p>Improves pedestrian safety (0–5 points)</p>	<p>+3 High total effectiveness of pedestrian safety countermeasures +2 Medium total effectiveness of pedestrian safety countermeasures +1 Low total effectiveness of pedestrian safety countermeasures +0 Does not implement pedestrian safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below: +2 Improves pedestrian safety at HSIP Pedestrian Cluster +1 Improves pedestrian safety at HSIP Cluster</p>																																											
<p>Improves safety or removes an at-grade railroad crossing (0–5 points)</p>	<p>+5 Removes an at-grade railroad crossing +3 Significantly improves safety at an at-grade railroad crossing +1 Improves safety at an at-grade railroad crossing +0 Does not include a railroad crossing</p>																																											
SAFETY (30 possible points)																																												

Table A-10 (continued, 2)

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
SYSTEM PRESERVATION AND MODERNIZATION: Maintain and modernize the transportation system and plan for its resiliency.		
<p>Maintain the transportation system, including roadway, transit, and active transportation infrastructure, in a state of good repair</p> <p>Modernize transportation infrastructure across all modes</p> <p>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)</p>	<p>Improves substandard roadway bridge(s) (0–3 points)</p>	<p>+3 Condition is structurally deficient and improvements are included in the project</p> <p>+1 Condition is functionally obsolete and improvements are included in the project</p> <p>+0 Does not improve substandard bridge or does not include a bridge</p>
	<p>Improves substandard pavement (0–6 points)</p>	<p>+6 IRI rating greater than 320: Poor condition and pavement improvements are included in the project</p> <p>+4 IRI rating between 320 and 191: Fair condition and pavement improvements are included in the project</p> <p>+0 IRI rating less than 190: Good or better condition</p>
	<p>Improves substandard traffic signal equipment (0–6 points)</p>	<p>+6 Poor condition and improvements are included in the project</p> <p>+4 Fair condition and improvements are included in the project</p> <p>+0 Does not meet or address criteria</p>
	<p>Improves transit asset(s) (0–3 points)</p>	<p>+2 Brings transit asset into state of good repair</p> <p>+1 Meets an identified-need in an asset management plan</p> <p>+0 Does not meet or address criteria</p>
	<p>Improves substandard sidewalk(s) (0–3 points)</p>	<p>+3 Poor condition and sidewalk improvements are included in the project</p> <p>+2 Fair condition and sidewalk improvements are included in the project</p> <p>+0 Sidewalk condition is good or better</p>
	<p>Improves emergency response (0–2 points)</p>	<p>+1 Project improves an evacuation route, diversion route, or alternate diversion route</p> <p>+1 Project improves an access route to or in proximity to an emergency support location</p>
	<p>Improves ability to respond to extreme conditions (0–6 points)</p>	<p>+2 Addresses flooding problem and/or sea level rise and enables facility to function in such a condition</p> <p>+1 Brings facility up to current seismic design standards</p> <p>+1 Addresses critical transportation infrastructure</p> <p>+1 Protects freight network elements</p> <p>+1 Implements hazard mitigation or climate adaptation plans</p>
	SYSTEM PRESERVATION AND MODERNIZATION (29 possible points)	

Table A-10 (continued, 3)

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
CAPACITY MANAGEMENT AND MOBILITY: Use existing facility capacity more efficiently and increase transportation options.		
<p>Improve access to and accessibility of all modes, especially transit and active transportation</p> <p>Support roadway management and operations strategies to improve travel reliability, mitigate congestion, and support non-single-occupant-vehicle travel</p> <p>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</p> <p>Improve reliability of transit</p> <p>Increase percentage of population and employment within one-quarter mile of transit stations and stops</p> <p>Support community-based and private-initiative services to meet first- and last-mile, reverse commute, and other non-traditional transportation needs, including those of people 75 years old or older and people with disabilities</p> <p>Support strategies to better manage automobile and bicycle parking capacity and usage at transit stations</p> <p>Fund improvements to bicycle and pedestrian networks aimed at creating a connected network of bicycle and accessible sidewalk facilities by expanding existing facilities and closing gaps</p> <p>Increase percentage of population and places of employment with access to facilities on the bicycle network</p> <p>Eliminate bottlenecks on the freight network, improve freight reliability, and enhance freight intermodal connections</p>	<p>Reduces transit vehicle delay (0–4 points)</p>	<p>+3 5 hours or more of daily transit vehicle delay reduced</p> <p>+2 1–5 hours of daily transit vehicle delay reduced</p> <p>+1 Less than one hour of daily transit vehicle delay reduced</p> <p>+0 Does not reduce transit delay</p> <p>If project scores points above, then it is eligible for additional points below:</p> <p>+1 Improves one or more key bus route(s)</p>
	<p>Improves pedestrian network and ADA accessibility (0–5 points)</p>	<p>+2 Adds new sidewalk(s) (including shared-use paths)</p> <p>+2 Improves ADA accessibility</p> <p>+1 Closes a gap in the pedestrian network</p> <p>+0 Does not improve pedestrian network</p>
	<p>Improves bicycle network (0–4 points)</p>	<p>+3 Adds new physically separated bicycle facility (including shared-use paths)</p> <p>+2 Adds new buffered bicycle facility</p> <p>+1 Adds new standard bicycle facility</p> <p>+1 Closes a gap in the bicycle network</p> <p>+0 Does not improve bicycle network</p>
	<p>Improves intermodal accommodations/ connections to transit (0–6 points)</p>	<p>+6 Meets or addresses criteria to a high degree</p> <p>+4 Meets or addresses criteria to a medium degree</p> <p>+2 Meets or addresses criteria to a low degree</p> <p>+0 Does not meet or address criteria</p>

Table A-10 (continued, 4)

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
	Improves truck movement (0–4 points)	+3 Meets or addresses criteria to a high degree +2 Meets or addresses criteria to a medium degree +1 Meets or addresses criteria to a low degree +0 Does not meet or address criteria If project scores points above, then it is eligible for additional points below: +1 Addresses MPO-identified bottleneck location
	Reduces vehicle congestion (0–6 points)	+6 400 hours or more of daily vehicle delay reduced +4 100–400 hours of daily vehicle delay reduced +2 Less than 100 hours of daily vehicle delay reduced +0 Does not meet or address criteria
CAPACITY MANAGEMENT AND MOBILITY (29 possible points)		
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.		
Reduce greenhouse gases generated in the 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	Reduces CO2 (-5–5 points)	+5 1,000 or more annual tons of CO2 reduced +4 500–999 annual tons of CO2 reduced +3 250–499 annual tons of CO2 reduced +2 100–249 annual tons of CO2 reduced +1 Less than 100 annual tons of CO2 reduced 0 No impact -1 Less than 100 annual tons of CO2 increased -2 100–249 annual tons of CO2 increased -3 250–499 annual tons of CO2 increased -4 500–999 annual tons of CO2 increased -5 1,000 or more annual tons of CO2 increased
	Reduces other transportation-related emissions (VOC, NOx, CO) (-5–5 points)	+5 2,000 or more total kilograms of VOC, NOx, CO reduced +4 1,000–1999 total kilograms of VOC, NOx, CO reduced +3 500–999 total kilograms of VOC, NOx, CO reduced +2 250–499 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -2 250–499 total kilograms of VOC, NOx, CO increased -3 500–999 total kilograms of VOC, NOx, CO increased -4 1,000–1999 total kilograms of VOC, NOx, CO increased -5 2,000 or more total kilograms of VOC, NOx, CO increased
	Addresses environmental impacts (0–4 points)	+1 Addresses water quality +1 Addresses cultural resources/open space +1 Addresses wetlands/resource areas +1 Addresses wildlife preservation/protected habitats +0 Does not meet or address criteria
	Is in an EOEEA-certified "Green Community" (0–2 points)	+2 Project is located in a "Green Community" +0 Project is not located in a "Green Community"
CLEAN AIR/SUSTAINABLE COMMUNITIES (16 possible points)		

Table A-10 (continued, 5)

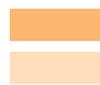
OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
TRANSPORTATION EQUITY: Ensure that all people receive comparable benefits from, and are not disproportionately burdened by, MPO investments, regardless of race, color, national origin, age, income, ability, or sex.		
<p>Prioritize MPO investments that benefit equity populations</p> <p>Minimize potential harmful environmental, health, and safety effects of MPO funded projects for all equity populations</p> <p>Promote investments that support transportation for all ages (age-friendly communities)</p> <p>Promote investments that are accessible to all people regardless of ability</p>	<p>Serves Title VI/non-discrimination populations (-10-12 points)</p>	<p>+2 Serves minority (high concentration) population (>2,000 people)</p> <p>+1 Serves minority (low concentration) population (≤ 2,000 people)</p> <hr/> <p>+2 Serves low-income (high concentration) population (>2,000 people)</p> <p>+1 Serves low-income (low concentration) population (≤ 2,000 people)</p> <hr/> <p>+2 Serves limited-English proficiency (high concentration) population (>1,000 people)</p> <p>+1 Serves limited-English proficiency (low concentration) population (≤ 1,000 people)</p> <hr/> <p>+2 Serves elderly (high concentration) population (>2,000 people)</p> <p>+1 Serves elderly (low concentration) population (≤ 2,000 people)</p> <hr/> <p>+2 Serves zero vehicle households (high concentration) population (>1,000 people)</p> <p>+1 Serves zero vehicle households (low concentration) population (≤ 1,000 people)</p> <hr/> <p>+2 Serves persons with disabilities (high concentration) population (>1,000 people)</p> <p>+1 Serves persons with disabilities (low concentration) population (≤ 1,000 people)</p> <hr/> <p>+0 Does not serve Title VI or non-discrimination populations</p> <p>-10 Creates a burden for Title VI/non -discrimination populations</p>
TRANSPORTATION EQUITY (12 possible points)		
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.		

Table A-10 (continued, 6)

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
<p>Respond to mobility needs of the workforce population</p> <p>Minimize the burden of housing and transportation costs for residents in the region</p> <p>Prioritize transportation investments that serve residential, commercial, and logistics targeted development sites and "Priority Places" identified in the MBTA's Focus 40 plan</p> <p>Prioritize transportation investments consistent with compact-growth strategies of the regional transportation plan</p>	<p>Serves targeted development site (0–6 points)</p>	<p>+2 Provides new transit access to or within site</p> <p>+1 Improves transit access to or within site</p> <p>+1 Provides for bicycle access to or within site</p> <p>+1 Provides for pedestrian access to or within site</p> <p>+1 Provides for improved road access to or within site</p> <p>+0 Does not provide any of the above measures</p>
	<p>Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)</p>	<p>+2 Mostly serves an existing area of concentrated development</p> <p>+1 Partly serves an existing area of concentrated development</p> <p>+1 Supports local zoning or other regulations that are supportive of smart growth development</p> <p>+2 Complements other local financial or regulatory support that fosters economic revitalization in a manner consistent with smart growth development principles</p> <p>+0 Does not provide any of the above measures</p>
	<p>Provides multimodal access to an activity center (0–4 points)</p>	<p>+1 Provides transit access (within a quarter mile) to an activity center</p> <p>+1 Provides truck access to an activity center</p> <p>+1 Provides bicycle access to an activity center</p> <p>+1 Provides pedestrian access to an activity center</p> <p>+0 Does not provide multimodal access</p>
	<p>Leverages other investments (non-TIP funding) (0–3 points)</p>	<p>+3 Meets or addresses criteria to a high degree (>30 percent of the project cost)</p> <p>+2 Meets or addresses criteria to a medium degree (10–30 percent of the project cost)</p> <p>+1 Meets or addresses criteria to a low degree (< 10 percent of the project cost)</p> <p>+0 Does not meet or address criteria</p>
	<p>ECONOMIC VITALITY (18 possible points)</p>	
<p>TOTAL SCORE (134 possible points)</p>		

Table A-11
Evaluation Criteria for FFY 2021 Community Connections Program

 Blues = Criteria that apply to all projects

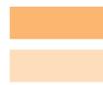
 Oranges = Criteria for capital projects

 Greens = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
PROJECT ELIGIBILITY VERIFICATION		
<p>Each project funded through this program must show an air quality benefit when analyzed through the MPO's air quality analysis process.</p> <p>Projects must be ready to begin construction or operation by October 2020. Project sponsors or proponents must demonstrate that they have gained support from stakeholders and have the institutional capacity to carry out the project within the MPO timeframe.</p>	<p>Air Quality Analysis</p>	<p>Projects must pass a spreadsheet-based air quality benefit test based on a variety of data inputs customized to the type of project.</p>
	<p>Proponent's Project Management Capacity</p>	<p>Names, experience, and time commitment of project management staff, as provided by the proponent.</p>
GENERAL SCORING CRITERIA (30 possible points)		
Network or connectivity value (6 points)		
<p>The primary purpose of the Community Connections Program is to close gaps in the transportation network, especially those in the first or last mile between transit and a destination. Projects will be awarded points based on how effectively a proposed project closes different types of gaps and makes travel easier or more efficient.</p>	<p>Connection to existing activity hubs and residential developments (2 points)</p>	<p>Proximity of the project or service to employment, residential, and civic activity hubs, such as dense areas of employment or housing.</p>
	<p>Connection to existing transit hubs (2 points)</p>	<p>Proximity of the project to transit service, with added incentive for connecting to frequent or high-quality service.</p>
	<p>Connection to other transportation infrastructure (2 points)</p>	<p>Proximity of the project to sidewalk or protected or off-road bicycle infrastructure.</p>
Coordination or cooperation between multiple entities (5 points)		
<p>The MPO prioritizes collaboration among different entities in the transportation planning process. Cooperative project planning and execution is particularly important for first-mile and last-mile connections of the type that the Community Connections Program is intended to facilitate. The cooperation can involve actors from both the public and private sectors.</p>	<p>Number of collaborating entities (5 points)</p>	<p>Number and variety (judged by sector of origin) of entities collaborating to support the project.</p>
Inclusion in and consistency with local and regional plans (5 points)		
<p>A comprehensive planning process is important to ensure that projects occur in an environment of collaboration and careful consideration rather than independently. This criterion proposes to award points based on the extent to which a proposed project has been included in prior plans at both the local and regional levels, and whether it meets the goals of those plans.</p>	<p>Inclusion in local plans (2 points)</p>	<p>Whether the project is included as a need or priority in a local comprehensive plan.</p>
	<p>Inclusion in MPO plans (2 points)</p>	<p>Whether the project is identified as a need in the LRTP Needs Assessment or recommended in an MPO or MAPC study.</p>

Table A-11 (continued, 2)

 Blues = Criteria that apply to all projects

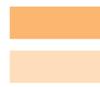
 Oranges = Criteria for capital projects

 Greens = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
	Inclusion in statewide plans (1 point)	Whether the project is included as a need or priority in a MassDOT or other statewide study.
Transportation equity (5 points)		
The MPO seeks to target investments to areas that benefit a high percentage of low-income and minority populations; minimize any burdens associated with MPO-funded projects in low-income and minority areas; and break down barriers to participation in MPO-decision making.	Serves a demographic of transportation equity concern, as identified by the MPO (5 points)	The extent to which the project serves equity populations.
Generation of mode shift (4 points)		
Another primary purpose of the Community Connection Program is to enable modal shift from SOV to transit or other modes. This criterion would award points based on the project's effectiveness at creating mode shift and/or enabling trips that were previously impossible by non-SOV modes.	Allow new trips that would not be otherwise possible without a car (4 points)	Whether the project adds to overall non-automotive mobility by creating new connections or making trips possible that were not previously, without detracting from or competing with existing transit options.
Demand projection (4 points)		
Gaining an understanding of how many transportation network users a project will reach is crucial for understanding its cost-effectiveness.	Overall demand estimate (2 points)	Presence of demand/usage estimates and quality of analysis used to support them in the application materials.
	Staff evaluation of demand estimate (2 points)	Whether staff judge the demand/usage projections realistic.
TYPE-SPECIFIC EVALUATION CRITERIA: CAPITAL PROJECTS (30 points)		
SAFETY BENEFITS (12 points)		
Bicycle safety (6 points)		
Improving safety on the regional transportation network is one of the MPO's key goals. This criterion would award points to projects that improve safety for the most vulnerable users of the network – people walking and people riding bicycles. An overall score of the effectiveness of bicycle safety countermeasures will be made through professional judgement comparing existing facilities, safety issues, use, and desired/anticipated use to the proposed bicycle safety countermeasures planned to be implemented as part of the project.	Total effectiveness of bicycle safety countermeasures (6 points)	Existing and potential bicyclist usage of the infrastructure and effectiveness of the expected safety improvements.
Pedestrian safety (6 points)		
An overall score of the effectiveness of pedestrian safety countermeasures will be made through professional judgement comparing existing facilities, safety issues, use, and desired/anticipated use to the proposed pedestrian safety countermeasures planned to be implemented as part of the project.	Total effectiveness of pedestrian safety countermeasures (6 points)	Existing and potential pedestrian usage of the infrastructure and effectiveness of the expected safety improvements.

Table A-11 (continued, 3)

 Blues = Criteria that apply to all projects

 Oranges = Criteria for capital projects

 Greens = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
Lifecycle cost-effectiveness (10 points)		
In addition to the initial construction costs, the MPO is concerned that projects funded through the Community Connection Program remain fiscally sustainable after MPO-awarded funding runs out. Projects proposed to the program should be cost-effective compared to potential alternatives, and proponents should demonstrate that local maintenance budgets will be able to accommodate the increased costs of maintaining the project.	Lifecycle Alternatives Analysis (5 Points)	Presence of a cost-effectiveness analysis in the application and whether the analysis is qualitative or quantitative.
	Maintenance budget and plan (5 Points)	Identification of a maintenance plan for the project, including the entity responsible for it and a source of funds.
Resilience to weather and environmental hazards (8 points)		
Resilience in the face of increasingly destructive storms and weather hazards is a growing concern in the Boston region, and is codified in the MPO's System Preservation goal. Project proponents should demonstrate that their project will not cause damage to a sensitive ecosystem and that it will be able to resist damage from extreme weather events.	Impact on areas of environmental concern (6 points)	Magnitude of the project's environmental impact, positive or negative.
	Relationship to resilience plans (2 points)	Whether the project is included in local resilience plans.
TYPE-SPECIFIC CRITERIA: OPERATIONAL PROJECTS		
Long-Term Financial Plan (12 points)		
	Annual operating costs (2 points)	Whether the estimate of operating costs is present and realistic.
	Annual maintenance costs (1 point)	Whether the estimate of maintenance costs is present and realistic.
	All other costs (1 point)	Whether the estimate of other costs is present and realistic.
	Fare structure (2 points)	Presence of a detailed description of the proposed fare structure and explanation thereof.
	Plan for fiscal sustainability (6 points)	Whether the application identifies full funding for the project (reflecting a local match to MPO funds) for 0, 1, 2, 3 or more years.
Service Plan (10 points)		
	Service Plan (4 points)	Presence of details on: <ul style="list-style-type: none"> • Plans for ADA compliance • Frequency and routing of service • How the service plans meet the need of projected riders
	Operational/contracting plan (4 points)	Presence of details on administrative and/or contracting plans and the background of the operator.
	Marketing plan (2 points)	Presence of a detailed description of a marketing plan.

Table A-11 (continued, 4)

 Blues = Criteria that apply to all projects


 Oranges = Criteria for capital projects


 Greens = Criteria for operating projects


OBJECTIVE	CRITERIA	FACTORS
Performance Monitoring Plan (8 points)		
	Data management plan (3 points)	Inclusion of plans for data collection, analysis for monitoring service, and sharing the data with the MPO.
	Passenger survey (2 points)	Whether the application describes plans for a ridership survey and the frequency with which it will be administered.
	Trip-level boarding counts (1 point)	Presence of plans for trip-level data collection.
	Stop-level data collection (1 point)	Presence of plans for stop-level data collection.
	Marketing evaluation (1 point)	Presence of plans for an evaluation of the marketing effort.

APPENDIX B

Greenhouse Gas Monitoring and Evaluation

BACKGROUND

The Global Warming Solutions Act of 2008 (GWSA) required statewide reductions in greenhouse gas (GHG) emissions of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. As part of the GWSA, the Executive Office of Energy and Environmental Affairs developed the Massachusetts Clean Energy and Climate Plan (CECP), which outlined programs to attain the 25 percent reduction by 2020—including a 7.6 percent reduction attributed to the transportation sector.

The Commonwealth's 13 metropolitan planning organizations (MPOs) are integrally involved in helping to achieve GHG emissions reductions mandated under the GWSA. The MPOs work closely with the Massachusetts Department of Transportation (MassDOT) and other involved agencies to develop common transportation goals, policies, and projects that will help to reduce GHG emissions levels statewide, and meet the specific requirements of the GWSA regulation, *Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation (310 CMR 60.05)*. The purpose of this regulation is to assist the Commonwealth in achieving its adopted GHG emissions reduction goals by requiring the following:

- MassDOT must demonstrate that its GHG emissions reduction commitments and targets are being achieved.
- Each MPO must evaluate and track the GHG emissions and impacts of both its Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP).
- Each MPO, in consultation with MassDOT, must develop and use procedures to prioritize and select projects for its LRTP and TIP based on factors that include GHG emissions and impacts.

The Commonwealth's MPOs are meeting the requirements of this regulation through the transportation goals and policies contained in their LRTPs, the major projects planned in their LRTPs, and the mix of new transportation projects that are programmed and implemented through their TIPs.

The GHG tracking and evaluation processes enable the MPOs and MassDOT to identify the anticipated GHG impacts of the planned and programmed projects, and to use GHG impacts as criteria to prioritize transportation projects. This approach is consistent with the GHG emissions reduction policies that promote healthy transportation modes through prioritizing and programming an appropriate balance of roadway, transit, bicycle, and pedestrian investments, as well as policies that support smart growth development patterns by creating a balanced multimodal transportation system.

REGIONAL TRACKING AND EVALUATING LONG-RANGE TRANSPORTATION PLANS

MassDOT coordinated with MPOs and regional planning agencies to implement GHG tracking and to evaluate projects during the development of the LRTPs that were adopted in September

2011. This collaboration continued during the development of the LRTPs and amendments adopted in 2016, and for the TIPs produced for federal fiscal years (FFYs) 2016–19, 2017–21, 2018–22, 2019–23, 2020–24, 2021–25, and 2022–26. Working together, MassDOT and the MPOs have attained the following milestones:

- As a supplement to the 2016 LRTPs and Amendment One to the Boston Region MPO’s LRTP, *Charting Progress to 2040*, the MPOs have completed modeling and developed long-range statewide projections for GHG emissions produced by the transportation sector. The Boston Region MPO’s travel demand model and the statewide travel demand model were used to project GHG emissions levels for 2018, 2019, and 2020 No-Build (base conditions). These projections were developed as part of amendments to 310 CMR 60.05 (adopted in August 2017 by the Massachusetts Department of Environmental Protection) to demonstrate that aggregate transportation GHG emissions reported by MassDOT will meet established annual GHG emissions targets.
- All of the MPOs have discussed climate change, addressed GHG emissions reduction projections in their LRTPs, and prepared statements affirming their support for reducing GHG emissions as a regional goal.

TRACKING AND EVALUATING THE TRANSPORTATION IMPROVEMENT PROGRAM

In addition to monitoring the GHG impacts of projects in the LRTP that will add capacity to the transportation system, it also is important to monitor and evaluate the GHG impacts of all transportation projects that are programmed in the TIP. The TIP includes both the larger, capacity-adding projects from the LRTP and smaller projects, which are not included in the LRTP but that may affect GHG emissions. The principal objective of this tracking is to enable the MPOs to evaluate the expected GHG impacts of different projects and to use this information as criteria to prioritize and program projects in future TIPs.

In order to monitor and evaluate the GHG impacts of TIP projects, MassDOT and the MPOs have developed approaches for identifying anticipated GHG emissions impacts of different types of projects. Since carbon dioxide (CO₂) is the largest component of GHG emissions overall and is the focus of regulation 310 CMR 60.05, CO₂ has been used to measure the GHG emissions impacts of transportation projects in the TIP and LRTP.

All TIP projects have been sorted into two categories for analysis: 1) projects with quantified CO₂ impacts, and 2) projects with assumed CO₂ impacts. Projects with quantified impacts consist of capacity-adding projects from the LRTP and projects from the TIP that underwent a Congestion Mitigation and Air Quality Improvement (CMAQ) program spreadsheet analysis. Projects with assumed impacts are those that would be expected to produce a minor decrease or increase in emissions, and those that would be assumed to have no CO₂ impact.

TRACKING AND EVALUATING THE TRANSPORTATION IMPROVEMENT PROGRAM

Travel Demand Model

Projects with quantified impacts include capacity-adding projects in the LRTP that were analyzed using the Boston Region MPO's travel demand model set. No independent calculations were done for these projects during the development of the TIP.

Off-Model Methods

MassDOT's Office of Transportation Planning provided spreadsheets that are used to determine projects' eligibility for funding through the CMAQ program. Typically, MPO staff uses data from projects' functional design reports, which are prepared at the 25-percent design phase, to conduct these calculations. Staff used these spreadsheets to calculate estimated projections of CO₂ for each project, in compliance with GWSA regulations. These estimates are shown in Tables B-1 and B-2. A note of "to be determined" is shown for those projects for which a functional design report was not yet available.

As part of the development of the FFYs 2023–27 TIP, analyses were done for the types of projects described below. A summary of steps performed in the analyses is provided.

Traffic Operational Improvement

For an intersection reconstruction or signalization project that typically reduces delay and, therefore, idling, the following steps are taken:

- Step 1: Calculate the AM peak hour total intersection delay (seconds)
- Step 2: Calculate the PM peak hour total intersection delay (seconds)
- Step 3: Select the peak hour with the longer intersection delay
- Step 4: Calculate the selected peak hour total intersection delay with improvements
- Step 5: Calculate the vehicle delay in hours per day (assumes peak hour delay is 10 percent of daily delay)
- Step 6: Input the emissions factors for arterial idling speed from the US Environmental Protection Agency's Motor Vehicle Emission Simulator (MOVES)
- Step 7: Calculate the net emissions change in kilograms per day
- Step 8: Calculate the net emissions change in kilograms per year (seasonally adjusted)
- Step 9: Calculate the cost effectiveness (first year cost per kilogram of emissions reduced)

Pedestrian and Bicycle Infrastructure

For a shared-use path that would enable more walking and biking trips and reduce automobile trips, the following steps are taken:

- Step 1: Calculate the estimated number of one-way trips based on the percentage of workers residing in the communities served by the facility and the communities' bicycle and pedestrian commuter mode share
- Step 2: Calculate the reduction in vehicle-miles traveled per day and per year (assumes each trip is the length of the facility and that the facility operates 200 days per year)
- Step 3: Input the MOVES emissions factors for the average commuter travel speed (assumes 35 miles per hour)
- Step 4: Calculate the net emissions change in kilograms per year (seasonally adjusted)
- Step 5: Calculate the cost effectiveness (first year cost per kilogram of emissions reduced)

Bus Replacement

For a program that replaces old buses with new buses that reduce emissions or run on cleaner fuel, the following steps are taken:

- Step 1: Input the MOVES emissions factors for the average bus travel speed (assumes 18 miles per hour) for both the old model year bus and the new model year bus
- Step 2: Calculate the fleet vehicle-miles per day based on the vehicle revenue-miles and operating days per year
- Step 3: Calculate the net emissions change in kilograms per year (seasonally adjusted)
- Step 4: Calculate the cost effectiveness (first-year cost per kilogram of emissions reduced)

Other Types of Projects

Calculations may be performed on the project types listed below; however, there are no projects of these types in this TIP:

- New and Additional Transit Service: A new bus or shuttle service that reduces automobile trips
- Park-and-Ride Lot: A facility that reduces automobile trips by encouraging high-occupancy vehicle (HOV) travel via carpooling or transit
- Alternative Fuel Vehicles: New vehicle purchases that replace traditional gas or diesel vehicles with alternative fuel or advanced technology vehicles
- Anti-Idling Strategies: Strategies that include incorporating anti-idling technology into fleets and using light-emitting diode (LED) lights on trucks for the purpose of illuminating worksites

- **Bike-share Projects:** Programs in which bicycles are made available for shared use to individuals on a short-term basis, allowing each bicycle to serve several users per day
- **Induced Travel:** Projects associated with a roadway capacity change that gives rise to new automobile trips
- **Speed Reduction Projects:** Projects that result in slower vehicle travel speeds and, therefore, reduced emissions
- **Transit Signal Priority Projects:** Technology at signalized intersections or along corridors that affect bus travel times
- **Truck Stop Electrification:** Provides truck drivers with necessary services, such as heating, air conditioning, or appliances, without requiring them to idle their engines

ANALYZING PROJECTS WITH ASSUMED IMPACTS

Qualitative Decrease or Increase in Carbon Dioxide Emissions

Projects with assumed CO₂ impacts are those that could produce a minor decrease or increase in emissions, but the change in emissions cannot be calculated with any precision. Examples include a bicycle rack installation, Safe Routes to School project, or transit marketing or customer service improvement. These projects are categorized as producing an assumed nominal increase or decrease in emissions.

No Carbon Dioxide Impact

Projects that do not change the capacity or use of a facility—for example, a resurfacing project that restores a roadway to its previous condition, or a bridge rehabilitation or replacement that restores the bridge to its previous condition—are assumed to have no CO₂ impact.

More details about these projects are discussed in Chapter 3. The following tables display the GHG impact analyses of projects funded in the FFYs 2023–27 Highway Program (Table B-1) and Transit Program (Table B-2). Table B-3 summarizes the GHG impact analyses of highway projects completed before FFY 2023. Table B-4 summarizes the GHG impact analyses of transit projects completed before FFY 2023. A project is considered completed when the construction contract has been awarded or the transit vehicles have been purchased.

**Table B-1
Greenhouse Gas Regional Highway Project Tracking: FFYs 2023–27 Programmed Projects**

Project ID Number	Project Name	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description
S12702	Acton - Bicycle Parking along the Bruce Freeman Rail Trail	Quantified	1,024	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607748	Acton - Intersection and Signal Improvements on Route 2 and Route 111 (Massachusetts Ave) at Piper Rd and Taylor Rd	Qualitative		Qualitative decrease in emissions
610722	Acton, Boxborough, Littleton - Pavement Preservation Route 2	Qualitative		No assumed impact/negligible impact on emissions
609531	Arlington - Stratton School Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
612099	Ashland - Bridge Replacement, A-14-006, Cordaville Road over Sudbury River	Qualitative		No assumed impact/negligible impact on emissions
608436	Ashland - Rehabilitation and Rail Crossing Improvements on Cherry Street	Qualitative		No assumed impact/negligible impact on emissions
612173	Bellingham - Bridge Replacement, B-06-022, Maple Street over Interstate 495	Qualitative		No assumed impact/negligible impact on emissions
S12704	Belmont - Chenery Middle School Bicycle Parking	Quantified	771	Quantified decrease in emissions from bicycle and pedestrian infrastructure
609204	Belmont - Community Path, Belmont Component of the MCRT (Phase 1)	Quantified	26,347	Quantified decrease in emissions from bicycle and pedestrian infrastructure
608514	Beverly - Bridge Replacement, B-11-001, Bridge Street over Bass River (Hall-Whitaker Drawbridge)	Qualitative		No assumed impact/negligible impact on emissions
608348	Beverly - Reconstruction of Bridge St	Quantified	387,153	Quantified decrease in emissions from Complete Streets project
605276	Beverly, Salem - Drawbridge Replacement/Rehabilitation of B-11-005=S-01-013, Kernwood Avenue over Danvers River	Qualitative		No assumed impact/negligible impact on emissions
S12703	Bolton, Boxborough, Littleton, Stow - Montachusett RTA Microtransit Service	Quantified	24,602	Quantified decrease in emissions from new/additional transit service
612663	Boston - Bridge Preservation, B-16-053 (4T3), Brookline Avenue over Interstate 90 and Railroad	Qualitative		No assumed impact/negligible impact on emissions
612664	Boston - Bridge Preservation, B-16-179, Austin Street over Interstate 93, and B-16-281, Interstate 93 Upper and Lower Deck	Qualitative		No assumed impact/negligible impact on emissions
612662	Boston - Bridge Preservation, B-16-235 (39T and 3A0), Route 1A over Chelsea Street/ Bremen Street and Railroad	Qualitative		No assumed impact/negligible impact on emissions
606902	Boston - Bridge Reconstruction/Rehab, B-16-181, West Roxbury Parkway over MBTA	Qualitative		No assumed impact/negligible impact on emissions
606496	Boston - Bridge Rehabilitation, B-16-052, Bowker Overpass over Mass. Pike, MBTA/CSX, and Ipswich Street and Ramps	Qualitative		No assumed impact/negligible impact on emissions

Table B-1 (continued, 2)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
608197	Boston - Bridge Rehabilitation, B-16-107, Canterbury St over Amtrak Railroad	Qualitative		No assumed impact/negligible impact on emissions
606901	Boston - Bridge Replacement, B-16-109, River Street Bridge over MBTA/AMTRAK	Qualitative		No assumed impact/negligible impact on emissions
612519	Boston - Bridge Replacement, B-16-165, Blue Hill Avenue over Railroad	Qualitative		No assumed impact/negligible impact on emissions
606728	Boston - Bridge Replacement, B-16-365, Storrow Drive over Bowker Ramps	Qualitative		No assumed impact/negligible impact on emissions
612624	Boston - Deck Replacement, B-16-056, Cambridge Street Over Interstate 90, Includes Preservation of B-16-057, Lincoln Street Pedestrian Overpass over Interstate 90	Qualitative		No assumed impact/negligible impact on emissions
610537	Boston - Ellis Elementary Traffic Calming (SRTS)	Qualitative		Qualitative decrease in emissions
S12706	Boston - Forest Hills Improvement Project	Qualitative		Qualitative decrease in emissions
611954	Boston - Guide and Traffic Sign Replacement on I-90/I-93 within Central Artery/Tunnel System	Qualitative		No assumed impact/negligible impact on emissions
606453	Boston - Improvements on Boylston St, from Intersection of Brookline Ave and Park Dr to Ipswich St	Quantified	1,920,790	Quantified decrease in emissions from Complete Streets project
606226	Boston - Reconstruction of Rutherford Ave, from City Square to Sullivan Square	Quantified		L RTP project included in the statewide model
606476	Boston - Roadway, Ceiling, Arch & Wall Reconstruction and Other Control Systems in Sumner Tunnel	Qualitative		No assumed impact/negligible impact on emissions
608208	Boston, Milton, Quincy - Interstate Maintenance and Related Work on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
608009	Boxborough - Bridge Replacement, B-18-002, Route 111 over Interstate 495	Qualitative		No assumed impact/negligible impact on emissions
607684	Braintree - Bridge Replacement, B-21-017, Washington Street (ST 37) over MBTA/CSX Railroad	Qualitative		No assumed impact/negligible impact on emissions
612196	Braintree - Bridge Replacement, B-21-067, JW Maher Highway over Monaquot River	Qualitative		No assumed impact/negligible impact on emissions
608498	Braintree, Quincy, Weymouth - Resurfacing and Related Work on Route 53	Qualitative		No assumed impact/negligible impact on emissions
612050	Braintree, Weymouth - Resurfacing and Related Work on Route 3	Qualitative		No assumed impact/negligible impact on emissions
S12210	Brookline - Improvements at William H. Lincoln School (SRTS)	Qualitative		Qualitative decrease in emissions

Table B-1 (continued, 3)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
610932	Brookline - Rehabilitation of Washington Street	Quantified	36,431	Quantified decrease in emissions from Complete Streets project
609516	Burlington - Improvements at Interstate 95 (Route 128)/Route 3 Interchange	Qualitative		No assumed impact/negligible impact on emissions
612034	Burlington, Woburn - Interstate Maintenance and Related Work on Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
S12695	Cambridge - Bluebikes Station Replacement and System Expansion	Quantified	20,484	Quantified decrease in emissions from bicycle and pedestrian infrastructure
606449	Cambridge - Bridge Replacement, C-01-008, First Street Bridge and C-01-040, Land Boulevard Bridge/Broad Canal Bridge	Qualitative		No assumed impact/negligible impact on emissions
611987	Cambridge - Bridge Replacement, C-01-026, Memorial Drive over Brookline Street	Qualitative		No assumed impact/negligible impact on emissions
610776	Cambridge - Superstructure Replacement, C-01-031, US Route 3/Route 16/Route 2 over MBTA Red Line	Qualitative		No assumed impact/negligible impact on emissions
609438	Canton - Bridge Replacement, C-02-042, Revere Court over West Branch of the Neponset River	Qualitative		No assumed impact/negligible impact on emissions
610541	Canton - Interim Interchange Improvements at Interstate 95/Route 128/Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
S12114	Canton - Royall Street Shuttle	Quantified	702,115	Quantified decrease in emissions from new/additional transit service
609053	Canton, Dedham, Norwood - Highway Lighting Improvements at Interstate 93 and Interstate 95/Route 128	Qualitative		No assumed impact/negligible impact on emissions
612615	Canton, Milton - Roadway Reconstruction on Route 138, From Royall Street to Dollar Lane	Qualitative		Qualitative decrease in emissions
612051	Canton, Milton, Randolph - Interstate Maintenance and Related Work on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
608952	Chelsea - Bridge Superstructure Replacement, C-09-013, Washington Avenue, Carter Street, and County Road/Route 1	Qualitative		No assumed impact/negligible impact on emissions
S12211	Chelsea - Improvements at Mary C. Burke Elementary (SRTS)	Qualitative		Qualitative decrease in emissions
611983	Chelsea - Park and Pearl Street Reconstruction	Quantified	10,214	Quantified decrease in emissions from Complete Streets project
609532	Chelsea - Targeted Safety Improvements and Related Work on Broadway, from Williams Street to City Hall Avenue	Quantified	-25,503	Quantified increase in emissions
608007	Cohasset, Scituate - Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A) from Beechwood Street to Henry Turner Bailey Road	Quantified	5,849	Quantified decrease in emissions from Complete Streets project

Table B-1 (continued, 4)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
612607	Danvers - Rail Trail West Extension (Phase 3)	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610782	Danvers, Middleton - Bridge Replacement, D-03-009=M-20-005, Andover Street (SR 114) over Ipswich River	Qualitative		No assumed impact/negligible impact on emissions
608818	Danvers, Middleton - Resurfacing and Related Work on Route 114	Qualitative		No assumed impact/negligible impact on emissions
S12212	Dedham - Improvements at Avery Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
607899	Dedham - Pedestrian Improvements Along Bussey St, Including Superstructure Replacement, D-05-010, Bussey Street over Mother Brook	Quantified	3,331	Quantified decrease in emissions from bicycle and pedestrian infrastructure
611969	Everett - Intersection Improvements on Route 16	Qualitative		Qualitative decrease in emissions
609257	Everett - Reconstruction of Beacham Street	Quantified	4,038	Quantified decrease in emissions from Complete Streets project
608480	Foxborough - Resurfacing and Related Work on Route 1	Qualitative		No assumed impact/negligible impact on emissions
S12640	Framingham - High-Risk At-Grade Railroad Crossing Countermeasures on Route 126	Qualitative		No assumed impact/negligible impact on emissions
S12205	Framingham - Improvements at Harmony Grove Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
608889	Framingham - Traffic Signal Installation at Edgell Road and Central Street	Quantified	233,257	Quantified decrease in emissions from traffic operational improvement
609402	Framingham, Natick - Resurfacing and Related Work on Route 9	Qualitative		No assumed impact/negligible impact on emissions
S12700	Gloucester, Rockport - CATA On Demand Microtransit Service Expansion	Quantified	33,400	Quantified decrease in emissions from new/additional transit service
609467	Hamilton - Bridge Replacement, H-03-002, Winthrop Street over Ipswich River	Qualitative		No assumed impact/negligible impact on emissions
605168	Hingham - Improvements on Route 3A from Otis Street/Cole Road, Including Summer Street and Rotary; Rockland Street to George Washington Boulevard	Quantified	284,736	Quantified decrease in emissions from Complete Streets project
607977	Hopkinton, Westborough - Reconstruction of Interstate 90/Interstate 495 Interchange	Quantified		LRTP project included in the statewide model
S12701	Hudson, Marlborough - MWRTA CatchConnect Microtransit Service Expansion	Quantified	11,936	Quantified decrease in emissions from new/additional transit service
605743	Ipswich - Resurfacing and Related Work on Central and South Main Streets	Quantified	4,356	Quantified decrease in emissions from Complete Streets project
603722	Lexington - Bridge Replacement, L-10-010, Route 2A (Marrett Road) over Interstate 95/Route 128	Qualitative		No assumed impact/negligible impact on emissions

Table B-1 (continued, 5)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
609054	Littleton - Reconstruction of Foster Street	Quantified	1,140	Quantified decrease in emissions from Complete Streets project
609254	Lynn - Intersection Improvements at Two Intersections on Broadway	Quantified	73,291	Quantified decrease in emissions from traffic operational improvement
S12705	Lynn - Lynn Station Improvements Phase II	Qualitative		Qualitative decrease in emissions
609246	Lynn - Reconstruction of Western Avenue	Quantified	902,708	Quantified decrease in emissions from Complete Streets project
609252	Lynn - Rehabilitation of Essex Street	Quantified	411,394	Quantified decrease in emissions from Complete Streets project
612599	Lynn - Targeted Safety and Multimodal Improvements (Playbook Priority Corridors)	Qualitative		Qualitative decrease in emissions
610919	Lynn, Nahant - Northern Strand Extension	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607329	Lynnfield, Wakefield - Rail Trail Extension, from the Galvin Middle School to Lynnfield/Peabody Town Line	Quantified	158,032	Quantified decrease in emissions from bicycle and pedestrian infrastructure
S12696	Malden, Medford - Bluebikes System Expansion	Quantified	2,637	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610543	Malden, Revere - Improvements at Route 1 (Northbound)	Qualitative		No assumed impact/negligible impact on emissions
604564	Maynard - Bridge Replacement, M-10-004, Route 62 (Main Street) over the Assabet River	Qualitative		No assumed impact/negligible impact on emissions
611974	Medford - Intersection Improvements at Main Street and South Street	Qualitative		Qualitative decrease in emissions
612001	Medford - Milton Fuller Roberts Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
611982	Medford - Shared-Use Path Connection at the Route 28/Wellington Underpass	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
612499	Medford - South Medford Connector Bike Path	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610726	Medford, Winchester, Stoneham - Interstate Pavement Preservation on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
609530	Medway - Holliston Street and Cassidy Lane Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
608522	Middleton - Bridge Replacement, M-20-003, Route 62 (Maple Street) over Ipswich River	Qualitative		No assumed impact/negligible impact on emissions
608045	Milford - Rehabilitation on Route 16, from Route 109 to Beaver Street	Quantified	-16,555	Quantified increase in emissions

Table B-1 (continued, 6)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
607342	Milton - Intersection and Signal Improvements at Route 28 (Randolph Ave) and Chickatawbut Road	Qualitative		Qualitative decrease in emissions
608955	Milton - Intersection Improvements, Squantum Street at Adams Street	Quantified	104,106	Quantified decrease in emissions from traffic operational improvement
612178	Natick - Bridge Replacement, N-03-010, Speen Street over Railroad MBTA/CSX	Qualitative		No assumed impact/negligible impact on emissions
605313	Natick - Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements	Quantified	539,400	Quantified decrease in emissions from traffic operational improvement
610680	Natick - Lake Cochituate Path	Quantified	1,749	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607420	Natick - Superstructure Replacement, N-03-012, Boden Lane over CSX/MBTA	Qualitative		No assumed impact/negligible impact on emissions
612182	Newton - Bridge Replacement, N-12-040, Boylston Street Over Green Line D Branch	Qualitative		No assumed impact/negligible impact on emissions
611997	Newton - Horace Mann Elementary School Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
S12694	Newton - NewMo Microtransit Service Expansion	Quantified	TBD	Quantified decrease in emissions from new/additional transit service
S12125	Newton - Newton Microtransit Service	Quantified	24,809	Quantified decrease in emissions from new/additional transit service
610674	Newton - Reconstruction of Commonwealth Avenue (Route 30), from East of Auburn Street to Ash Street	Quantified	16,846	Quantified decrease in emissions from Complete Streets project
110980	Newton, Weston - Bridge Rehabilitation, N-12-010=W-29-005, Commonwealth Avenue (Route 30) over the Charles River	Quantified	TBD	Quantified decrease in emissions from Complete Streets project
608609	Newton, Westwood - Steel Superstructure Cleaning (Full Removal) and Painting of Two Bridges: N-12-056 and W-31-006	Qualitative		No assumed impact/negligible impact on emissions
605321	Norwood - Bridge Preservation, N-25-026, Providence Highway (State Route 1) over the Neponset River	Qualitative		No assumed impact/negligible impact on emissions
605857	Norwood - Intersection Improvements at Route 1 and University Avenue/Everett Street	Quantified	1,092,131	Quantified decrease in emissions from traffic operational improvement
606130	Norwood - Intersection Improvements at Route 1A and Upland Road/Washington Street and Prospect Street/Fulton Street	Quantified	131,840	Quantified decrease in emissions from traffic operational improvement
609211	Peabody - Independence Greenway Extension	Quantified	36,651	Quantified decrease in emissions from bicycle and pedestrian infrastructure

Table B-1 (continued, 7)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
610544	Peabody - Multi-Use Path Construction of Independence Greenway at Interstate 95 and Route 1	Quantified	24,423	Quantified decrease in emissions from bicycle and pedestrian infrastructure
608933	Peabody - Rehabilitation of Central Street	Quantified	150,913	Quantified decrease in emissions from Complete Streets project
608707	Quincy - Reconstruction of Sea Street	Quantified	-30,437	Quantified increase in emissions
612049	Randolph - Resurfacing and Related Work on Route 24	Qualitative		No assumed impact/negligible impact on emissions
609399	Randolph - Resurfacing and Related Work on Route 28	Qualitative		No assumed impact/negligible impact on emissions
609527	Reading - Improvements on Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
S12124	Regionwide - Community Connections Program	Qualitative		Impact on emissions will be calculated when specific projects are chosen for funding through this program
S12113	Regionwide - Transit Modernization Program	Qualitative		Impact on emissions will be calculated when specific projects are chosen for funding through this program
612184	Revere - Bridge Replacement, R-05-015, Revere Beach Parkway over Broadway	Qualitative		No assumed impact/negligible impact on emissions
612100	Revere - Improvements at Beachmont Veterans Elementary (SRTS)	Qualitative		Qualitative decrease in emissions
612523	Revere - State Road Beachmont Connector	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
S12698	Salem - Bluebikes System Expansion	Quantified	460	Quantified decrease in emissions from bicycle and pedestrian infrastructure
609437	Salem - Boston Street Improvements	Quantified	58,786	Quantified decrease in emissions from Complete Streets project
612075	Salem - Bridge Replacement, S-01-024, Jefferson Avenue over Parallel Street	Qualitative		No assumed impact/negligible impact on emissions
S12209	Sharon - Improvements at Cottage Street Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
612496	Somerville - Bridge Preservation, S-17-031, Interstate 93 (Northbound and Southbound) from Route 28 to Temple Street (Phase 2)	Qualitative		No assumed impact/negligible impact on emissions
607981	Somerville - McGrath Boulevard Construction	Quantified	136,345	Quantified decrease in emissions from Complete Streets project
608562	Somerville - Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway (Top 200 Crash Location)	Qualitative		Qualitative decrease in emissions

Table B-1 (continued, 8)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
612028	Stoneham - Deck Replacement and Superstructure Repairs, S-27-006 (2I2), (ST 28) Fellsway West over Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
610665	Stoneham - Intersection Improvements at Route 28 (Main Street), North Border Road and South Street	Qualitative		Qualitative decrease in emissions
S12699	Stoneham - Stoneham Shuttle Service	Quantified	41,707	Quantified decrease in emissions from new/additional transit service
608255	Stow - Bridge Replacement, S-29-011, Box Mill Road over Elizabeth Brook	Qualitative		No assumed impact/negligible impact on emissions
610660	Sudbury, Wayland - Mass Central Rail Trail (MCRT)	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610666	Swampscott - Rail Trail Construction	Quantified	138,430	Quantified decrease in emissions from bicycle and pedestrian infrastructure
612076	Topsfield - Bridge Replacement, T-06-013, Perkins Row over Mile Brook	Qualitative		No assumed impact/negligible impact on emissions
612048	Waltham - Interstate Maintenance and Related Work in Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
608564	Watertown - Intersection Improvements at Route 16 and Galen Street	Qualitative		Qualitative decrease in emissions
S12697	Watertown - Pleasant Street Shuttle Service Expansion	Quantified	183,575	Quantified decrease in emissions from new/additional transit service
607777	Watertown - Rehabilitation of Mount Auburn St (Route 16)	Quantified	634,598	Quantified decrease in emissions from Complete Streets project
608940	Weston - Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	Quantified	102,453	Quantified decrease in emissions from traffic operational improvement
608954	Weston - Reconstruction on Route 30	Quantified	357,681	Quantified decrease in emissions from Complete Streets project
607327	Wilmington - Bridge Replacement, W-38-002, Route 38 (Main Street) over the B&M Railroad	Qualitative		No assumed impact/negligible impact on emissions
608929	Wilmington - Bridge Replacement, W-38-003, Butters Row over MBTA	Qualitative		No assumed impact/negligible impact on emissions
608703	Wilmington - Bridge Replacement, W-38-029 (2KV), ST 129 Lowell Street over Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
609253	Wilmington - Intersection Improvements at Lowell Street (Route 129) and Woburn Street	Quantified	494,211	Quantified decrease in emissions from traffic operational improvement
608051	Wilmington - Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line	Quantified	492,160	Quantified decrease in emissions from Complete Streets project

Table B-1 (continued, 9)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
607244	Winthrop - Reconstruction and Related Work Along Winthrop Street and Revere Street Corridor	Quantified	252,816	Quantified decrease in emissions from Complete Streets project
610662	Woburn - Roadway and Intersection Improvements at Woburn Common, Route 38 (Main Street), Winn Street, Pleasant Street, and Montvale Avenue	Quantified	736,275	Quantified decrease in emissions from traffic operational improvement
608067	Woburn, Burlington - Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street	Quantified	168,263	Quantified decrease in emissions from traffic operational improvement
603739	Wrentham - Construction of Interstate 495/Route 1A Ramps	Quantified	1,233,486	Quantified decrease in emissions from traffic operational improvement

**Table B-2
Greenhouse Gas Regional Transit Project Tracking: FFYs 2023–27 Programmed Projects**

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
CATA	Acquire - Shop Equipment / Computers / Software	Qualitative		No assumed impact/negligible impact on emissions
CATA	Replace 30' Buses/Trolleys (2)	Quantified	530	Quantified decrease in emissions from bus replacement
CATA	Buy Assoc. Capital Maintenance Items	Qualitative		No assumed impact/negligible impact on emissions
CATA	Preventive Maintenance	Qualitative		No assumed impact/negligible impact on emissions
CATA	Repave Parking Lot	Qualitative		No assumed impact/negligible impact on emissions
CATA	Repave Parking Lot	Qualitative		No assumed impact/negligible impact on emissions
CATA	Replace 30-foot Buses (3)	Quantified	1,278	Quantified decrease in emissions from bus replacement
MBTA	Elevator Program	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bus Overhaul Program (156 Hybrid, 175 CNG, 44 60ft Hybrid)	Quantified	TBD	To be determined
MBTA	Procurement of 40 ft Enhanced Electric Hybrid Buses - FFY 2023 to FFY 2027	Quantified	TBD	To be determined
MBTA	DMA Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Midlife Overhaul of 25 New Flyer Allison Hybrid 60ft Articulated Buses	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Overhaul of 155 Option New Flyer Buses	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Procurement of Bi-Level Commuter Rail Coaches	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Mattapan HSL Transformation	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Signal Program - Red/Orange Line	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Charlestown Bus - Seawall Rehab	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Harvard Square Busway Repairs	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Harvard/Central Elevator	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Hingham Ferry Dock Modification	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bridges - Design	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (continued, 2)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MBTA	East Cottage Street Bridge	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Emergency Bridge Design / Inspection & Rating	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Norfolk Avenue Bridge	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Structural Repairs Systemwide	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Tunnel Inspection Systemwide	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Train Protection	Qualitative		No assumed impact/negligible impact on emissions
MBTA	45 High Street - Data Center Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Alewife Crossing Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Worcester Line Track and Station Accessibility Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Central Tunnel Track and Signal Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Systemwide Asset Management Program Phase 4	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Power Systems Resiliency Program	Qualitative		No assumed impact/negligible impact on emissions
MBTA	MCRS2 v17 and Business Process Update	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Red Line Interlock Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Codman Yard Expansion and Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Downtown Crossing Vertical Transportation Improvements Phase 2	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Elevator Program Multiple Location Design	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Lynn Station & Parking Garage Improvements Phase II	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Newton Commuter Rail Stations	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Newton Highlands Green Line Station Accessibility Project	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Ruggles Station Improvements Phase 2	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (continued, 3)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MBTA	South Attleboro Station Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	MBTA Catamaran Overhauls	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Mattapan Trolley Select System Upgrade	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Blue Line Vehicle Mid-Life Overhaul	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Blue Line Infrastructure Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Quincy Bus Facility Modernization	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Arborway Bus Facility - Design Funding	Qualitative		No assumed impact/negligible impact on emissions
MBTA	North Cambridge Bus Facility Modernization	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bus Priority Project Construction	Quantified	TBD	Emissions reduction will be analyzed when bus priority locations have been determined
MBTA	North Station Draw 1 Bridge Replacement	Quantified	TBD	Elements of the project, including construction of a pedestrian bridge, will be analyzed when project design advances
MBTA	Longfellow Approach	Qualitative		No assumed impact/negligible impact on emissions
MBTA	East Street Bridge Replacement (Dedham)	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bridge Program Pipeline - Rehabilitation, Repair and Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Systemwide Culvert Inspection and Load Rating	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Future Rolling Stock Fleet (25 Commuter Rail)	Quantified	TBD	Emissions reduction will be analyzed based on the type of Commuter Rail cars (electrified or multi-mode)
MBTA	Rolling Stock - Locomotive and Coach State of Good Repair and Resiliency	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Central Tunnel Signal - 25 Cycle	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Traction Power Substation Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	South Boston to Forest Hills Duct Bank Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Ashmont Branch Track Replacement	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (continued, 4)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MBTA	Braintree Line Track Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Unit Substation Replacement Project	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Oak Grove Station Vertical Transportation Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Forest Hills Improvement Project	Qualitative		No assumed impact/negligible impact on emissions
MBTA	E Branch Accessibility & Capacity Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	B Branch Accessibility & Capacity Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Riverside Vehicle Maintenance Facility Modifications & Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Extension Vehicle Maintenance Facility Modifications & Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Lake Street Complex Demolition and Reconfiguration	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Reservoir Yard and Non-Revenue Track Optimization and Reconfiguration	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Commuter Rail Facilities State of Good Repair	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Procurement of 40ft Battery Electric Buses and Related Infrastructure	Quantified	TBD	To be determined
MBTA	Systemwide Tunnel Flood Mitigation Program	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Option Order Procurement of 194 New Flyer Hybrid 40ft Buses	Quantified	TBD	To be determined
MBTA	Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881)	Quantified	TBD	To be determined
MBTA	Green Line Type 10 Light Rail Fleet Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Reliability Centered Maintenance Blue, Orange and Red Line	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Terminal, Intermodal (Transit) - Blandin	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Technology Support/Capital Outreach	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Non-Fixed Route ADA Paratransit Service	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (continued, 5)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MWRTA	Front Entrance Blandin (FEB) Project	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Buy Replacement Van (16)	Quantified	TBD	To be determined
MWRTA	AFC Transition	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Buy Replacement Van (10)	Quantified	TBD	To be determined
MWRTA	Buy Replacement Van (14)	Quantified	TBD	To be determined
MWRTA	MWRTA Modernization - Fleet Electrification	Qualitative		Qualitative decrease in emissions

**Table B-3
Greenhouse Gas Regional Highway Project Tracking: Completed Projects**

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
606134	Boston- Traffic Signal Improvements on Blue Hill Ave and Warren St	Qualitative		Qualitative decrease in emissions	2019
608651	Braintree- Adaptive Signal Controls on Route 37 (Granite Street)	Qualitative		Qualitative decrease in emissions	2019
605110	Brookline- Intersection and Signal Improvements at Route 9 and Village Square (Gateway East)	Quantified	67,056	Quantified decrease in emissions from Complete Streets project	2019
605287	Chelsea - Route 1 Viaduct Rehabilitation (Southbound/Northbound) on C-09-007 and C-09-011	Qualitative		No assumed impact/negligible impact on emissions	2019
600518	Hingham - Intersection Improvements at Derby St, Whiting St, and Gardner St	Quantified	-145,683	Quantified increase in emissions	2019
604952	Lynn-Saugus - Bridge replacement, L-18-016=S-05-008, Route 107 over the Saugus River (AKA – Belden G. Bly Bridge)	Qualitative		No assumed impact/negligible impact on emissions	2019
607133	Quincy - Superstructure Replacement, Q-01-039, Robertson Street over I-93/US 1/SR 3	Qualitative		No assumed impact/negligible impact on emissions	2019
604989	Southborough - Reconstruction of Main St (Route 30), from Sears Rd to Park St	Quantified	231,813	Quantified decrease in emissions from Complete Streets project	2019
608823	Wellesley- Newton- Weston - Pavement Resurfacing and Related Work on I-95	Qualitative		No assumed impact/negligible impact on emissions	2019
609222	Arlington – Spy Pond Sediment Removal	Qualitative		No assumed impact/negligible impact on emissions	2020
604123	Ashland - Reconstruction on Route 126 (Pond St) from Framingham Town Line to Holliston Town Line	Quantified	148,097	Quantified decrease in emissions from Complete Streets project	2020
608347	Beverly - Intersection improvements at 3 locations: Cabot St (Route 1A/97) at Dodge St (Route 1A), County Way, Longmeadow Rd and Scott St, McKay St at Balch St and Veterans Memorial Bridge (Route 1A) at Rantoul, Cabot, Water, and Front Sts	Quantified	582,422	Quantified decrease in emissions from traffic operational improvement	2020
604173	Boston - Bridge Replacement, B-16-016, North Washington Street over the Boston Inner Harbor	Qualitative		No assumed impact/negligible impact on emissions	2020
608608	Braintree - Highway Lighting Improvements at I-93/Route 3 Interchange	Qualitative		No assumed impact/negligible impact on emissions	2020
607954	Danvers - Bridge Replacement, D-03-018, ST 128 over Waters River	Qualitative		No assumed impact/negligible impact on emissions	2020
608378	Danvers, Topsfield, Boxford, Rowley - Interstate Maintenance and Related Work on Interstate 95	Qualitative		No assumed impact/negligible impact on emissions	2020

Table B-3 (continued, 2)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
607428	Hopedale, Milford - Resurfacing and Intersection Improvements on Route 16 (Main St), from Water St West to Approximately 120 Feet West of the Milford/Hopedale Town Line and the Intersection of Route 140	Quantified	201,148	Quantified decrease in emissions from Complete Streets project	2020
606043	Hopkinton - Signal and Intersection Improvements on Route 135	Quantified	1,298,625	Quantified decrease in emissions from Complete Streets project	2020
608275	Malden - Exchange St Downtown Improvement Project	Quantified	13,519	Quantified decrease in emissions from Complete Streets project	2020
608835	Medford - Improvements at Brook Elementary School	Qualitative		Qualitative decrease in emissions	2020
606635	Needham, Newton - Reconstruction of Highland Ave, Needham St and Charles River Bridge, N-04-002, from Webster St (Needham) to Route 9 (Newton)	Quantified	1,186,210	Quantified decrease in emissions from Complete Streets project	2020
609101	Peabody - Pavement Preservation and Related Work on Route 128	Qualitative		No assumed impact/negligible impact on emissions	2020
608205	Reading to Lynnfield - Guide and Traffic Sign Replacement on a Section of I-95 (SR 128)	Qualitative		No assumed impact/negligible impact on emissions	2020
608743	Salem - Improvements at Bates Elementary School	Qualitative		Qualitative decrease in emissions	2020
605342	Stow - Bridge Replacement, Route 62 (Gleasondale Rd) over the Assabet River	Qualitative		No assumed impact/negligible impact on emissions	2020
602261	Walpole - Reconstruction on Route 1A (Main Street), from the Norwood Town Line to Route 27, Includes W-03-024 over the Neponset River	Quantified	230,473	Quantified decrease in emissions from Complete Streets project	2020
608791	Winchester - Improvements at Vinson-Owen Elementary School	Qualitative		Qualitative decrease in emissions	2020
MBTA	Boston - Columbus Avenue Bus Lane Construction	Quantified	98,855	Quantified decrease in emissions from transit priority project	2021
607888	Boston - Multi-use Path Construction on New Fenway	Quantified	54,724	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2021
610724	Chelmsford, Medford, Somerville, Stoneham - Interstate Pavement Preservation on Interstate 93 and Interstate 495	Qualitative		No assumed impact/negligible impact on emissions	2021
S10788	Concord - Bruce Freeman Rail Trail Bike Shelters	Quantified	2,707	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2021
S10786	Cambridge - Concord Avenue Transit Signal Priority	Quantified	645,520	Quantified decrease in emissions from traffic operational improvement	2021

Table B-3 (continued, 3)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
607652	Everett - Reconstruction of Ferry St, South Ferry St and a Portion of Elm St	Quantified	435,976	Quantified decrease in emissions from Complete Streets project	2021
608210	Foxborough, Plainville, Wrentham, Franklin – Interstate Maintenance Resurfacing Work on Interstate 495	Qualitative		No assumed impact/negligible impact on emissions	2021
608228	Framingham - Reconstruction of Union Ave, from Proctor St to Main St	Quantified	-217,978	Quantified increase in emissions	2021
606501	Holbrook - Reconstruction of Union St (Route 139), from Linfield St to Centre St and Water St	Quantified	4,097	Quantified decrease in emissions from Complete Streets project	2021
601607	Hull - Reconstruction of Atlantic Ave and Related Work	Quantified	6,586	Quantified decrease in emissions from Complete Streets project	2021
608146	Marblehead - Intersection Improvements at Pleasant St and Village, Vine, and Cross Streets	Quantified	531	Quantified decrease in emissions from traffic operational improvement	2021
607305	Reading - Intersection Signalization at Route 28 and Hopkins St	Quantified	7,088	Quantified decrease in emissions from traffic operational improvement	2021
S10787	Sharon - Carpool Marketing	Qualitative		Qualitative reduction in emissions	2021
S10785	Somerville - Davis Square Signal Improvements	Quantified	4,214	Quantified decrease in emissions from Complete Streets project	2021
607761	Swampscott - Intersection and Signal Improvements at Route 1A (Paradise Rd) at Swampscott Mall	Qualitative		Qualitative decrease in emissions	2021
604996	Woburn - Bridge Replacement, W-43-017, New Boston Street over MBTA	Quantified		L RTP project included in the statewide model	2021
S12122	Acton - Acton Parking Management System	Qualitative		Qualitative decrease in emissions	2022
608229	Acton - Intersection and Signal Improvements at Kelley's Corner	Quantified	111,958	Quantified decrease in emissions from Complete Streets project	2022*
S12115	Arlington, Newton, Watertown - BlueBikes Expansion	Quantified	6,570	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022
608443	Ayer, Littleton - Intersection Improvements on Route 2A at Willow Rd and Bruce St	Quantified	52,101	Quantified decrease in emissions from traffic operational improvement	2022*
607738	Bedford - Minuteman Bikeway Extension from Loomis St to the Concord Town Line	Quantified	21,098	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*

Table B-3 (continued, 4)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
608887	Bellingham - South Main St (Route 126) - Douglas Dr to Mechanic St reconstruction (Route 140)	Quantified	24,363	Quantified decrease in emissions from Complete Streets project	2022
604173	Boston - Bridge Replacement, B-16-016, North Washington Street over the Boston Inner Harbor	Qualitative		No assumed impact/negligible impact on emissions	2022
608943	Boston - Neponset River Greenway Construction, Including New Bridge B-16-309 (C6Y) over Dorchester Bay	Quantified	239,055	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*
607670	Boston - Superstructure Replacement, B-16-067 (3GV), Maffa Way and B-16-068=S-17-027 (3GW), Mystic Avenue over Orange and MBTA/BMRR	Qualitative		No assumed impact/negligible impact on emissions	2022*
609090	Boston, Milton, Quincy - Highway Lighting System Replacement on Interstate 93, from Neponset Avenue to the Braintree Split	Qualitative		No assumed impact/negligible impact on emissions	2022*
S12121	Brookline - Transit App Education Program	Qualitative		No assumed impact/negligible impact on emissions	2022
S12116	Cambridge - Alewife Wayfinding Improvements	Qualitative		No assumed impact/negligible impact on emissions	2022
S10780	Cambridge, Somerville - Green Line Extension Project - Extension to College Ave with the Union Square Spur	Quantified		L RTP project included in the statewide model	2022
608599	Canton, Norwood - Stormwater Improvements along Route 1 and Interstate 95	Qualitative		No assumed impact/negligible impact on emissions	2022
608078	Chelsea - Reconstruction on Broadway (Route 107) from City Hall to Revere city line	Quantified	93,278	Quantified decrease in emissions from Complete Streets project	2022
608495	Concord, Lexington, Lincoln - Resurfacing and Related Work on Route 2A	Qualitative		No assumed impact/negligible impact on emissions	2022*
609060	Danvers, Lynnfield, Peabody - Guide and Traffic Sign Replacement on Interstate 95/Route 128 (Task 'A' Interchange)	Qualitative		No assumed impact/negligible impact on emissions	2022
S12119	Everett, Malden - Main Street Transit Signal Priority	Quantified	715,743	Quantified decrease in emissions from transit signal priority project	2022
602077	Lynn - Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square	Quantified	12,761	Quantified decrease in emissions from Complete Streets project	2022*
604952	Lynn, Saugus - Bridge Replacement, L-18-016=S-05-008, Route 107 over the Saugus River (AKA - Belden G. Bly Bridge)	Qualitative		No assumed impact/negligible impact on emissions	2022

Table B-3 (continued, 5)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
S12118	Malden, Medford - BlueBikes Expansion	Quantified	2,028	Quantified decrease in emissions from bike share project	2022
609066	Newton, Weston - Multi-Use Trail Connection, from Recreation Road to Upper Charles River Greenway Including Reconstruction of Pedestrian Bridge N-12-078=W-29-062	Quantified	378	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*
608866	Newton, Weston - Steel Superstructure Cleaning (Full Removal) and Painting of Three bridges: N-12-051, W-29-011, and W-29-028	Qualitative		No assumed impact/negligible impact on emissions	2022
S12117	Regionwide - MBTA Systemwide Bike Racks	Quantified	42,656	Quantified decrease in emissions from bicycle infrastructure	2022
608164	Sudbury, Concord - Bike Path Construction (Bruce Freeman Rail Trail)	Quantified	49,903	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*
S12120	Wellesley - Bicycle Infrastructure	Quantified	2,069	Quantified decrease in emissions from bicycle infrastructure	2022

*Project is anticipated to be advertised for construction bids in FFY 2022.

**Table B-4
Greenhouse Gas Regional Transit Project Tracking: Completed Projects**

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
CATA	Buy replacement 30-foot buses (3)	Quantified	60,730	Quantified decrease in emissions from bus replacement	2018
MWRTA	Buy replacement -less than 30-foot CNG buses (6)	Quantified	125,266	Quantified decrease in emissions from bus replacement	2018
MWRTA	Buy replacement paratransit vehicles (9)	Quantified	23,069	Quantified decrease in emissions from bus replacement	2018
CATA	Buy Replacement 35-foot Bus (2)	Quantified	40,487	Quantified decrease in emissions from bus replacement	2019
MWRTA	Buy Replacement Capitol Bus	Quantified	1,894	Quantified decrease in emissions from bus replacement	2019
CATA	Buy Replacement Van (2)	Quantified	724	Quantified decrease in emissions from bus replacement	2020
MBTA	Option Order Procurement of 194 New Flyer Hybrid 40 ft Buses	Quantified	TBD	To be determined	2020
MBTA	Procurement of Battery Electric 40ft Buses and Related infrastructure	Quantified	TBD	To be determined	2020
MBTA	Green Line Type 10 Light Rail Fleet Replacement	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Robert Street Bridge	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	GL B-Branch Infrastructure Improve	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	GL C-Branch Surface Improve	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	GL E-Branch Surface Improve	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Green Line (Non-GLX) Grade Crossings	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Green Line D Branch Track and Signal Replacement	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Forest Hills Improvement Project	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Green Line B-Branch Consolidation	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Natick Center Station Accessibility Project	Qualitative		No assumed impact/negligible impact on emissions	2020

Table B-4 (continued, 2)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
MBTA	Oak Grove Station Vertical Transportation Improvements	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Somerville-Medford - Green Line Extension Project - Extension to College Ave with the Union Square Spur	Quantified		L RTP project included in the statewide model	2022
MBTA	Bridge Bundling Contract	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Emergency Bridge Repair	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Gloucester Drawbridge Replacement	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Tunnel Rehabilitation	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	F40 Commuter Rail Locomotive Overhaul	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Systemwide Asset Management Program Phase 3	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	North Station Terminal Signal	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Systemwide Radio	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Silver Line Gateway - Phase 2	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Symphony Station Improvements	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Worcester Union Station Accessibility and Infrastructure Improvements	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Bridge Bundling Contract	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Dorchester Avenue Bridge	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Saugus Drawbridge Replacement	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Systemwide Bridge Inspection and Rating	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	South Elm Street Bridge Replacement	Qualitative		No assumed impact/negligible impact on emissions	2022

Table B-4 (continued, 3)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
MBTA	SCADA Upgrades	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Braintree and Quincy Adams Garage Rehabilitation	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Wollaston Station / Quincy Center Garage Demolition	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Winchester Center Station	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Overhaul of 33 Kawasaki 900 Series Bi-Level Coaches	Qualitative		No assumed impact/negligible impact on emissions	2022

APPENDIX C

Public Engagement and Comments

OVERVIEW

In the course of developing the Transportation Improvement Program (TIP), the staff of the Boston Region Metropolitan Planning Organization (MPO) regularly engages with municipalities and the general public to provide information about the milestones, deadlines, and key decision points in the development process. Staff publicly shares materials and information used by the MPO board for decision-making via the TIP development web page: www.bostonmpo.org/tip-dev. This process affords the public ongoing opportunities to provide input to the MPO board during the development of the TIP and prior to the release of the draft TIP for the official public review period. This appendix documents the input received during the development of the FFYs 2023–27 TIP and comments received during the public review period.

In light of the changing conditions for public engagement due to the COVID-19 pandemic, MPO staff greatly increased the use of virtual public involvement (VPI) tactics such as online workshops and virtual information sessions. All Boston Region MPO meetings throughout the FFYs 2023–27 TIP development cycle were hosted remotely, allowing project proponents and members of the public to participate via internet or telephone and provide comments without the need to travel to attend a meeting in person. MPO staff have received significant feedback from many stakeholders in support of the continued provision of virtual engagement options going forward.

When in-person MPO meetings resume, staff intend to facilitate a hybrid meeting setup to allow for both in-person and online participation by project proponents and the public. Whenever possible, staff also plan on transitioning public engagement events, such as workshops, focus groups, information sessions, and presentations, to a hybrid model. These efforts should continue to provide a greater level of accessibility and transparency to the TIP process than is achievable through in-person meetings alone.

SUMMARY OF COMMENTS RECEIVED DURING TIP DEVELOPMENT

MPO staff-initiated engagement activities for the FFYs 2023–27 TIP in September 2021 and maintained communication with municipal, state agency, and public stakeholders throughout the TIP development process. The primary direct-engagement events at which staff received input were the virtual subregional committee meetings held by the Metropolitan Area Planning Council (MAPC) and the TIP How-To virtual information sessions with municipal TIP contacts and Massachusetts Department of Transportation (MassDOT) district project engineers. These events offered individuals the opportunity to directly engage with staff to ask questions, voice concerns, provide suggestions, and propose new projects for funding.

The MPO board held a series of discussions at its regular meetings as the TIP was developed in stages that focused on project solicitation, project evaluation, and programming of funds. Staff informed the public at each stage via its standard communication channels (email, Twitter, Instagram, and the MPO website). As a result, the MPO received a number of oral and written comments while developing the draft TIP. The comments directed to the MPO board are summarized below in Table C-1.

In addition to the MPO's standard public engagement efforts conducted annually as a part of the development of the new TIP, the MPO provided a new avenue for engagement in the months

leading up to the FFYs 2023–27 TIP cycle through the creation of the TIP Project Cost Ad Hoc Committee. (See Chapter 2 for more information on this committee’s work.) This committee began hosting public meetings in June 2021, immediately following the endorsement of the FFYs 2022–26 TIP. These meetings offered all stakeholders, including the public, a chance to engage the committee in its policymaking efforts, bringing an even greater level of public participation to the MPO’s TIP process. The committee’s final policy proposals were released for a 21-day public comment period in September 2021. Comments received on those proposals are included in Table C-1 below.

Table C-1
Public Comments Received during Development of the FFYs 2023–27 TIP

Project	Name	Support Oppose Request Concern	Comment
Projects under consideration for TIP funding (FFYs 2023–27)			
Bicycle Parking along the Bruce Freeman Rail Trail (Acton) (#S12702)	Municipal: Franny Osman, Acton Transportation Advisory Committee; Mary Smith, Acton Green Advisory Board	Support	Supports inclusion of Acton’s bicycle parking project in the FFYs 2023–27 TIP. Notes that this project will help Acton work towards several town-wide goals, including reduced greenhouse gas emissions, improved bicycle access, and greater connectivity to local recreation, businesses, and transit services.
Chenery Middle School Bicycle Parking (Belmont) (#S12704)	Municipal: Catherine Bowen, Belmont School Committee; David Coleman, Belmont Transportation Advisory Committee; Ben Ligon, Chenery Middle School Teacher Organizations: Belmont High School Climate Action Club; Chenery Middle School PTO; Dean Hickman, Chair, Sustainable Belmont Belmont resident: Jeff Roth	Support	Supports inclusion of Chenery Middle School’s bicycle parking project in the FFYs 2023–27 TIP. Highlights the benefits of the project, including supporting increased bicycling to school, reduced auto traffic near the school, improved safety, and a reduction in emissions.

Table C-1, (continued, 2)

Project	Name	Support Oppose Request Concern	Comment
<p>Community Path, Belmont Component of the MCRT (Phase 1) (Belmont) (#609204)</p>	<p>Legislative: Sen. Will Brownsberger; Rep. Dave Rogers</p> <p>Municipal: Marty Bitner, Belmont Energy Committee; Catherine Bowen, Belmont School Committee; Amy Checkoway, Belmont School Committee Chair; Wesley Chin, Belmont Department of Public Health; Glenn Clancy, Belmont Director of Community Development; David Coleman, Belmont Transportation Advisory Committee; Bonnie Friedman, Belmont Community Path Project Committee; Patrice Garvin, Belmont Town Administrator; Russ Leino, Belmont Community Path Project Committee; Gloria Leipzig, Chair, Belmont Housing Authority; Bill Lovallo, Belmont High School Building Committee; Mark Paolillo, Belmont Select Board; Vincent Stanton, Belmont Community Path Project Committee</p> <p>Organizations: Belmont High School Climate Action Club, Friends of the Belmont Community Path</p> <p>Belmont residents: Edin Insanic, Jeff Roth</p>	<p>Support</p>	<p>Supports inclusion of the Belmont Community Path in the FFYs 2023–27 TIP. Benefits of the project include increased connectivity to transit, educational facilities, and local businesses; expansion of the regional bicycle network and the filling in of a missing gap of the MCRT between Cambridge and Waltham; safety improvements for bicyclists and pedestrians; increased mode shift opportunities; increased recreational opportunities; improved health of Path users; and the creation of new public space in Belmont Center. The project will improve safe travel for Belmont students and allow mainly off-road travel into downtown Boston. Cites the robust public process that has been undertaken by the Town in support of the project.</p>

Table C-1, (continued, 3)

Project	Name	Support Oppose Request Concern	Comment
<p>Community Path, Belmont Component of the MCRT (Phase 1) (Belmont) (#609204)</p>	<p>Belmont residents: Paul Cobuzzi, Eunice Flanders, Allison Lenk, Aleida Leza, Naomi Okugawa, Darin Takemoto, Margaret Merrie Waters, Wayne Wild, Xiaoyun Xie</p>	<p>Oppose</p>	<p>Opposes the design of the Belmont Community Path and the project’s potential inclusion in the FFYs 2023–27 TIP. States the Town of Belmont and the Community Path Project Committee (CPPC) have not conducted adequate outreach to project abutters, that abutters are not represented at the CPPC, and that the project’s design process has not been fully responsive to abutters’ concerns. The proposed design, in which the Community Path runs along the north side of the commuter rail tracks, will adversely affect project abutters; the project would about Belmont High School if moved to the south side of the tracks. Adverse impacts to abutters include noise and light pollution, decreased property values, increased litter, drainage problems, damage to private property including mature trees, and increased crime. Additional concerns include safety issues due to the proximity of the Path to the commuter rail tracks and the project cost. Concerns also exist about the necessary right of way for the project and the extent to which there will be impacts on abutters’ properties.</p>
<p>Rehabilitation of Washington Street (Brookline) (#610932)</p>	<p>Legislative: Rep. Tommy Vitolo</p> <p>Municipal: Rich Benevento, WorldTech Engineering, on behalf of the Town of Brookline; Erin Gallentine, Brookline Commissioner of Public Works; Robert King, Brookline Director of Engineering and Transportation; James Lee, Brookline Commission on Disability; David Trevvett, Brookline Pedestrian Advisory Committee</p> <p>Brookline residents: Shonali Guadino, Jeff Wachter</p>	<p>Support</p>	<p>Supports inclusion of the Rehabilitation of Washington Street in the FFYs 2023–27 TIP. Cites the importance of Washington Street as a key commercial corridor in Brookline and the importance of the project in enhancing safety, mobility, resiliency, and accessibility for all. Highlights the improvements this project will make for people walking, bicycling, and taking transit and the robust support for the project locally.</p>

Table C-1, (continued, 3)

Project	Name	Support Oppose Request Concern	Comment
Bluebikes Station Replacement and System Expansion (Cambridge) (#S12695)	Organizations: Alewife Transportation Management Association, Harvard Square Business Association	Support	Supports inclusion of Cambridge’s Bluebikes project in the FFYs 2023–27 TIP. Notes the importance of the Bluebikes system for promoting sustainable multimodal access to key destinations throughout Cambridge and across the region, including both Alewife and Harvard Square. Highlight that this project will continue to expand the system to provide Bluebikes access to more people while also ensuring the existing system continues to meet users’ needs by maintaining a state of good repair for highly used stations and docks.
Reconstruction of Western Avenue (Lynn) (#609246)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the City of Lynn; Aaron Clausen, City of Lynn	Support	Supports inclusion of the Reconstruction of Western Avenue in the FFYs 2022-26 TIP. Notes that Western Avenue is an important multimodal connector throughout the North Shore. Highlights the extent to which the project will advance equity, sustainability, safety, and economic vitality in Lynn by adding new or improved accommodations for people walking, bicycling and taking transit. Cites the broad support for the project locally.
BlueBikes System Expansion (Malden and Medford) (#S12696)	Municipal: Mayor Breanna Lungo-Koehn, City of Medford; Medford Bicycle Advisory Commission; Tim McGivern, Chair, Medford Complete Streets Committee; Stephen Winslow, Malden City Councillor Organization: Bike to the Sea, Lyft	Support	Supports inclusion of Medford and Malden’s BlueBikes expansion project in the FFYs 2023–27 TIP. Highlights the importance of this project in enhancing access to the Northern Strand Trail, creating new alternative transportation options, and fostering greater connectivity between Medford and Malden and the surrounding Bluebikes communities, including so residents can access critical services, employment opportunities, and local businesses.
Montachusett RTA Microtransit Service (MART) (#S12703)	Organization: Bruno Fisher, Deputy Administrator, Montachusett RTA	Support	Supports inclusion of MART’s microtransit project in the FFYs 2023–27 TIP. Notes that this project will complement MART’s existing fixed-route service in the region while supporting better access to critical services and employment opportunities for local residents.

Table C-1, (continued, 4)

Project	Name	Support Oppose Request Concern	Comment
<p>CatchConnect Microtransit Service Expansion (MWRTA) (#S12701)</p>	<p>Legislative: Sen. Karen Spilka, Rep. Carmine Gentile</p> <p>Municipal: Kristina Johnson, Director of Planning and Community Development, Town of Hudson; Meghan Jop, Executive Director of General Government Services, Town of Wellesley; Thatcher Kezer III, Chief Operating Officer, City of Framingham</p> <p>Organization: MetroWest Center for Independent Living; Joseph Nolan, Chair, MWRTA Advisory Board</p>	<p>Support</p>	<p>Supports inclusion of MWRTA’s microtransit expansion project in the FFYs 2023–27 TIP. Highlights the importance of this project for expanding non-single-occupancy vehicle options, creating better connectivity across the MetroWest region, and improving access to jobs and services. The project will allow the existing service to expand to new communities while improving last-mile connections to other existing fixed-route MWRTA service in the region.</p>
<p>Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements (Natick) (#605313)</p>	<p>Municipal: Natick Select Board Chair Karen Adelman-Foster; Jeremy Marsette, Natick Director of Public Works; Josh Ostroff, Natick Transportation Advisory Committee; Eric Sofen, Natick Trails Committee</p>	<p>Support</p>	<p>Supports inclusion of the reconstruction of the Route 9 and Route 27 interchange in Natick in the FFYs 2023–27 TIP. Cites the deteriorating condition of the Route 27 bridge today and the existing safety and accessibility issues plaguing the interchange. Highlights the importance of the project for improving connectivity and safety for people walking and bicycling and the critical nature of this project not just for Natick, but as a key connection in the region.</p>
<p>Newmo Microtransit Service Expansion (Newton) (#S12694)</p>	<p>Municipal: Mayor Ruthanne Fuller, City of Newton; Steve Magoon, Acting City Manager, City of Watertown</p> <p>Organizations: Charles River Regional Chamber; University of Massachusetts Amherst - Mount Ida Campus; Friends of Leo J. Martin Skiing</p>	<p>Support</p>	<p>Supports inclusion of Newton’s microtransit expansion project in the FFYs 2023–27 TIP. Notes that this project will support the expansion of existing NewMo service to neighboring communities and key regional destinations while increasing the ability of the service to fill first- and last-mile gaps in the transportation network. Highlights the importance of the service for those who cannot drive, including seniors, low-income residents, youth, and people with disabilities. Cites the success of the existing service as a reason to further invest in this model.</p>

Table C-1, (continued, 5)

Project	Name	Support Oppose Request Concern	Comment
Bluebikes System Expansion (Salem) (#S12698)	<p>Municipal: City of Salem Bicycling Advisory Committee</p> <p>Organizations: BlueCross BlueShield of Massachusetts, Destination Salem, Salem State University</p>	Support	Supports inclusion of Salem’s Bluebikes system expansion project in the FFYs 2023–27 TIP. Notes the importance of this project for promoting healthy, sustainable transportation options in Salem, as it would help to create a critical mass of Bluebikes stations locally for the network to be successful. Highlights that this project will help advance key local planning goals while providing an additional mobility option for visitors to Salem.
McGrath Boulevard Construction (Somerville) (#607981)	Municipal: Mayor Katjana Ballantyne, City of Somerville	Support	Supports inclusion of the McGrath Boulevard project in the FFYs 2023–27 TIP. Highlighted the difficulty and safety concerns of crossing McGrath without a car and as a route to school, and challenges for pedestrians and cyclists. Stated that the project is a regional project with regionwide benefits, and has seen strong support from the MPO board and community in past years.
Stoneham Shuttle Service (Stoneham) (#S12699)	<p>Legislative: Rep. Michael Day, Sen. Jason Lewis</p> <p>Municipal: Stoneham Select Board; Erin Wortman, Stoneham Director of Planning and Community Development,</p> <p>Organizations: Greater Boston Stage Company, Middlesex Investment Partners, Nobility Hill Tavern, Stoneham Chamber of Commerce, Stoneham Community Development Corporation, Zoo New England</p>	Support	Supports inclusion of Stoneham’s shuttle service project in the FFYs 2023–27 TIP. Notes that Stoneham seeks to address first- and last-mile connections for residents and businesses, build east-west capacity into existing MBTA service in Stoneham to increase local mobility, and enhance transportation equity throughout the area. Cites the broad public support for this project, as evidenced by the multi-stakeholder project application.

Table C-1, (continued, 6)

Project	Name	Support Oppose Request Concern	Comment
<p>Swampscott Rail Trail (Swampscott) (#610666)</p>	<p>Legislative: Sen. Brendan Crighton</p> <p>Municipal: Sean Fitzgerald, Town Administrator; Marzie Galazka, Director, Swampscott Community and Economic Development; Tania Lillak, Chair, Swampscott Open Space and Recreation Plan Committee; Suzanne Wright, Swampscott School Committee</p> <p>Organizations: East Coast Greenway Alliance, Friends of the Swampscott Rail Trail, Solomon Foundation, Swampscott Conservanc"</p>	<p>Support</p>	<p>Supports inclusion of the Swampscott Rail Trail in the FFYs 2023–27 TIP. The project will connect to the Northern Strand Community Trail and the Marblehead Rail Trail, and increase connectivity within Swampscott by providing safe connections to local businesses, transit, and recreational and educational facilities. In addition, the trail will provide open space in a densely populated community and provide opportunities for recreational and healthy activity. The project includes environmental-friendly aspects, including an edible walking forest and pollinator garden. The project is largely supported by community; the Town Meeting approved the project by a vote of 210 to 56.</p>
<p>Pleasant Street Shuttle Service Expansion (Watertown) (#S12697)</p>	<p>Municipal: Mark Sideris, Watertown City Council President</p> <p>Organizations: Amstel Heritage Watertown; Sophia Gallimore, Watertown TMA; Lincoln Property Company; Paradigm Properties; Watertown Mews; WeDriveU</p>	<p>Support</p>	<p>Supports inclusion of Watertown’s shuttle service project in the FFYs 2023–27 TIP. Cites the importance of this project in shortening headways and increasing ridership by adding a second vehicle to the route. Highlights that the electrification of the service supported by this project is in alignment with the town’s comprehensive plan and climate change mitigation efforts. Cites that the project provides critical connectivity between transit hubs on a fast-growing corridor in Watertown.</p>

Table C-1, (continued, 7)

Project	Name	Support Oppose Request Concern	Comment
Intersection Improvements Boston Post Road (Route 20) at Wellesley Street (Weston) (#608940)	Municipal: Meghan Jop, Executive Director of General Government Services, Town of Wellesley	Support	Supports inclusion of Weston’s intersection improvement project at Route 20 and Wellesley Street in the FFYs 2023–27 TIP. Highlights the importance of this project not just for Weston, but for the whole region, as this intersection is a key connection point between several municipalities. Notes the improvements the project will make to safety and traffic congestion in the area.
Currently programmed projects (FFYs 2022–26)			
Rehabilitation of Bridge Street (Beverly) (#608348)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the City of Beverly	Support	Supports continued inclusion of the Rehabilitation of Bridge Street in the FFYs FFYs 2023–27 TIP. Highlights that the project is on track for advertisement in FFY 2023. States that the cost increase seen during the FFYs 2023–27 TIP cycle for this project is not due to a change in project scope, but rather due to increasing material costs.
Reconstruction of Rutherford Avenue (Boston) (#606226)	Boston resident: Dan Jaffe	Concern	Expresses concern that the proposed delay of the Reconstruction of Rutherford Avenue in Boston from FFY 2023 to FFY 2025 will negatively impact the Charlestown neighborhood, including by perpetuating conditions that are currently unsafe and that are not meeting the needs of local residents. States that the currently proposed design for this project is in line with the neighborhood’s goals and is the result of abundant feedback from local residents over many years. Requests that the project not be delayed any longer and that the City of Boston move forward with existing designs.
Rehabilitation of Central Street (Peabody) (#608933)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the City of Peabody	Support	Supports continued inclusion of the Rehabilitation of Central Street in the FFYs 2023–27 TIP. Highlights that the project is on track for advertisement in FFY 2023, with 75 percent design plans anticipated to be submitted by May 2022.

Table C-1, (continued, 8)

Project	Name	Support Oppose Request Concern	Comment
Rehabilitation of Mount Auburn Street (Watertown) (#607777)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the Town of Watertown	Support	Supports continued inclusion of the Rehabilitation of Mount Auburn Street in the FFYs 2023–27 TIP. Highlights that coordination with all stakeholders, including the MBTA, remains ongoing and that the project is on track for advertisement in FFY 2023, with 75 percent design plans anticipated to be submitted in May or June 2022.
Intersection Improvements at Lowell Street (Route 129) and Woburn Street (Wilmington) (#609253)	Municipal: Valerie Gingrich, Director of Planning and Conservation, Town of Wilmington	Support	Supports the continued inclusion of the intersection improvement project at Lowell Street and Woburn Street in the FFYs 2023–27 TIP. Acknowledges the cost increase for the project during the FFYs 2023–27 TIP cycle and requests that the MPO continue to support the project at the higher cost. Notes that the cost increase is due to several factors, including adjustments to the project’s proposed drainage system, increasing unit costs, and increasing costs to relocate utilities. Notes that the project remains critical for enhancing safety at this key intersection.
Other Comments			
Support for Projects in Natick	Municipal: Natick Select Board Chair Karen Adelman-Foster	Support	Expresses support for several projects in Natick, including the Natick Center Cochituate Rail Trail connection (#610691), Lake Cochituate Path (#610680), Boden Lane Bridge (#607420), Spring Street Bridge (#610869), and Speen Street Bridge (#612178). Cites the importance of each of these projects in promoting safe, efficient mobility in Natick.

Table C-1, (continued, 9)

Project	Name	Support Oppose Request Concern	Comment
TIP Project Cost Ad Hoc Committee	Belmont residents: Cosmo Caterino, Aleida Leza	Support	Expresses support for the MPO’s proposed cost-change policies, citing the desire to see these policies support a greater degree of MPO oversight over project costs and project development processes. States that increased MPO scrutiny over project costs should support projects that are more fiscally responsible.
TIP Project Cost Ad Hoc Committee	Municipal: Catherine Bowen, Belmont School Committee Member	Concern	Expresses broad support for the MPO’s proposed cost-change policies, but cites concerns that the MPO’s requirement that projects submit 25 percent design plans prior to being funded may have a chilling effect on the overall number of municipalities pursuing funding through the TIP process.

SUMMARY OF COMMENTS RECEIVED DURING TIP PUBLIC REVIEW PERIOD

The MPO board voted to release a draft FFYs 2023–27 TIP document for public review at its April 28, 2022, meeting. This vote initiated an official 21-day public review period, which began on May 2, 2022, and will close on May 23, 2022. The comments received during this public review period will be summarized in Table C-2. Draft responses from the MPO to the commenters will be presented at the May 26, 2022, MPO meeting and will be included in this section when the final version of the document is posted to the MPO’s website following a vote for endorsement.

Table C-2
Public Comments Received during the Public Review Period for the
Draft FFYs 2023–27 TIP

Table C-2 will summarize the comments received by the MPO from the public during the TIP public review period. This table will be included in the final FFYs 2023–27 TIP, which will be endorsed by the MPO after the conclusion of the public review period.

APPENDIX D

Geographic Distribution of TIP Funding

OVERVIEW OF CONTENTS

Appendix D provides information about the geographic distribution of federal highway funding in the Boston region between federal fiscal years (FFYs) 2023 and 2027, including the distribution of the Boston Region MPO's Regional Target Program funding (the MPO's discretionary funding) and funding for projects and programs prioritized by the Massachusetts Department of Transportation. Funding amounts shown include the state's matching funds that leverage the available federal funds.

Figures D-1 through D-4 summarize the distribution of the MPO's Regional Target Program funding and all federal highway funding by subregion. Funding is shown for the time period covered by this TIP (FFYs 2023–27) and over a longer time horizon (FFYs 2011–27). Table D-1 shows the breakdown of this data for each municipality in the Boston region for FFYs 2023–27.

PURPOSE

The analysis presented here provides details about how the MPO has allocated its federal transportation highway dollars across its geographic region by showing which municipalities and areas of the Boston region have received highway funding for the construction of transportation projects. This data was first compiled for FFYs 2008-13 in response to the Boston Region MPO's 2014 Certification Review by the Federal Highway Administration and Federal Transit Administration.

Figure D-1
Distribution of Regional Target Funding by Subregion (FFYs 2023–27)

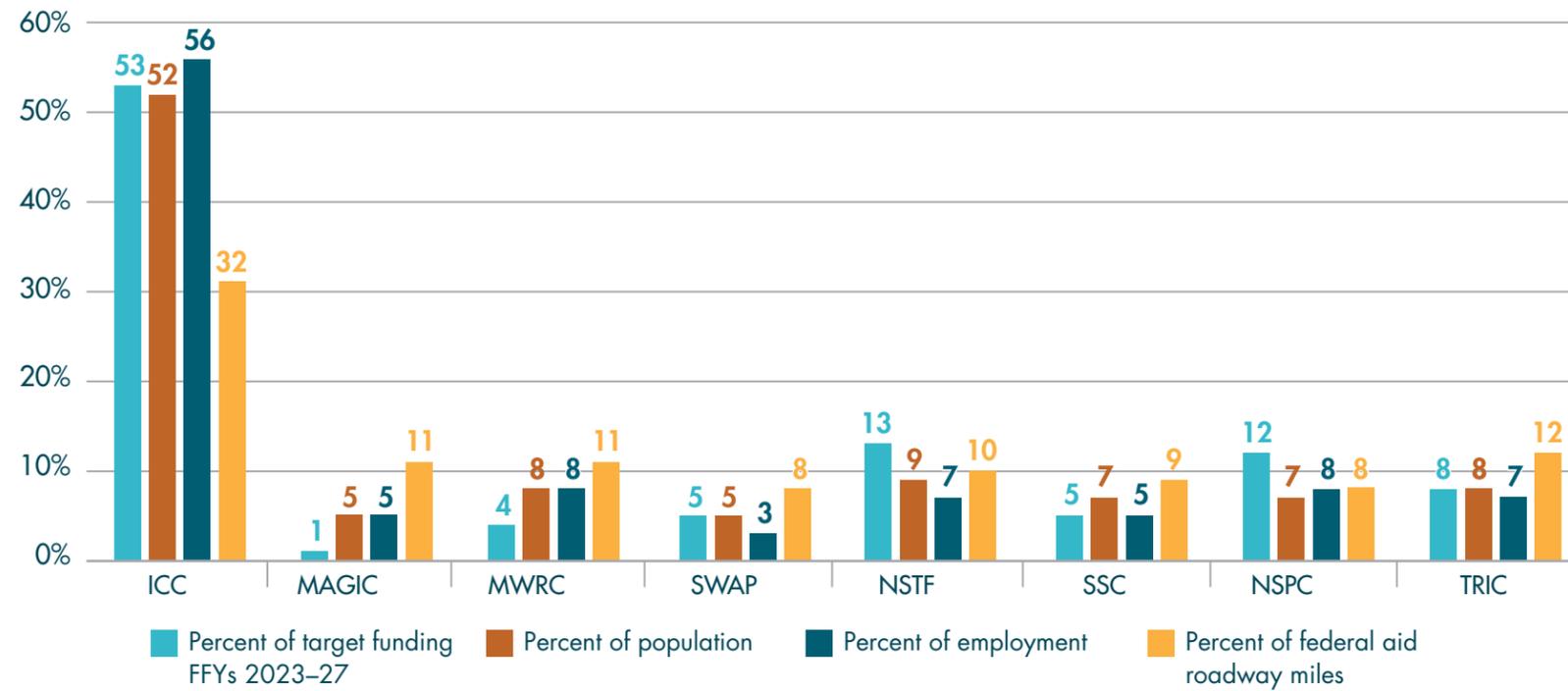


Figure D-2
Distribution of All Federal Highway Funding in the Boston Region by Subregion (FFYs 2023–27)

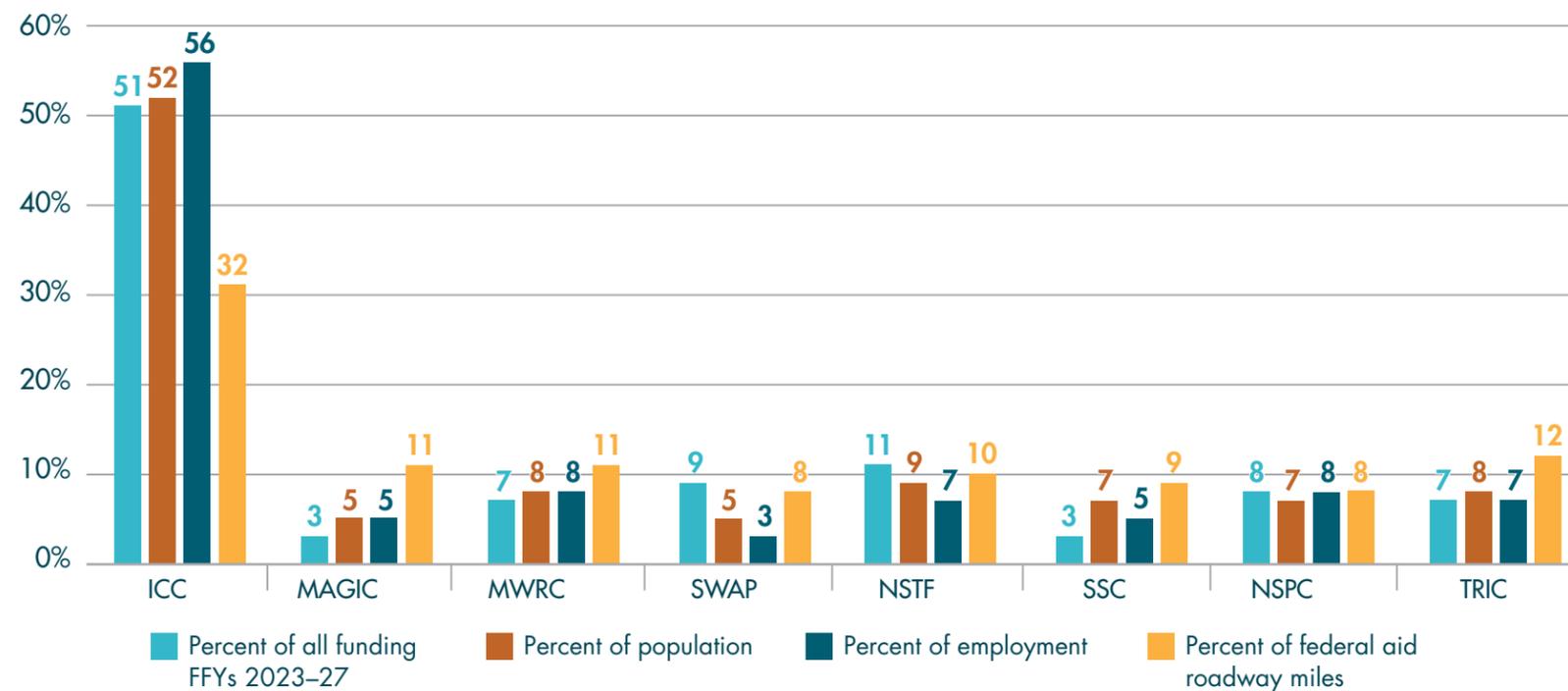


Figure D-3
Distribution of Regional Target Funding by Subregion (FFYs 2011-27)

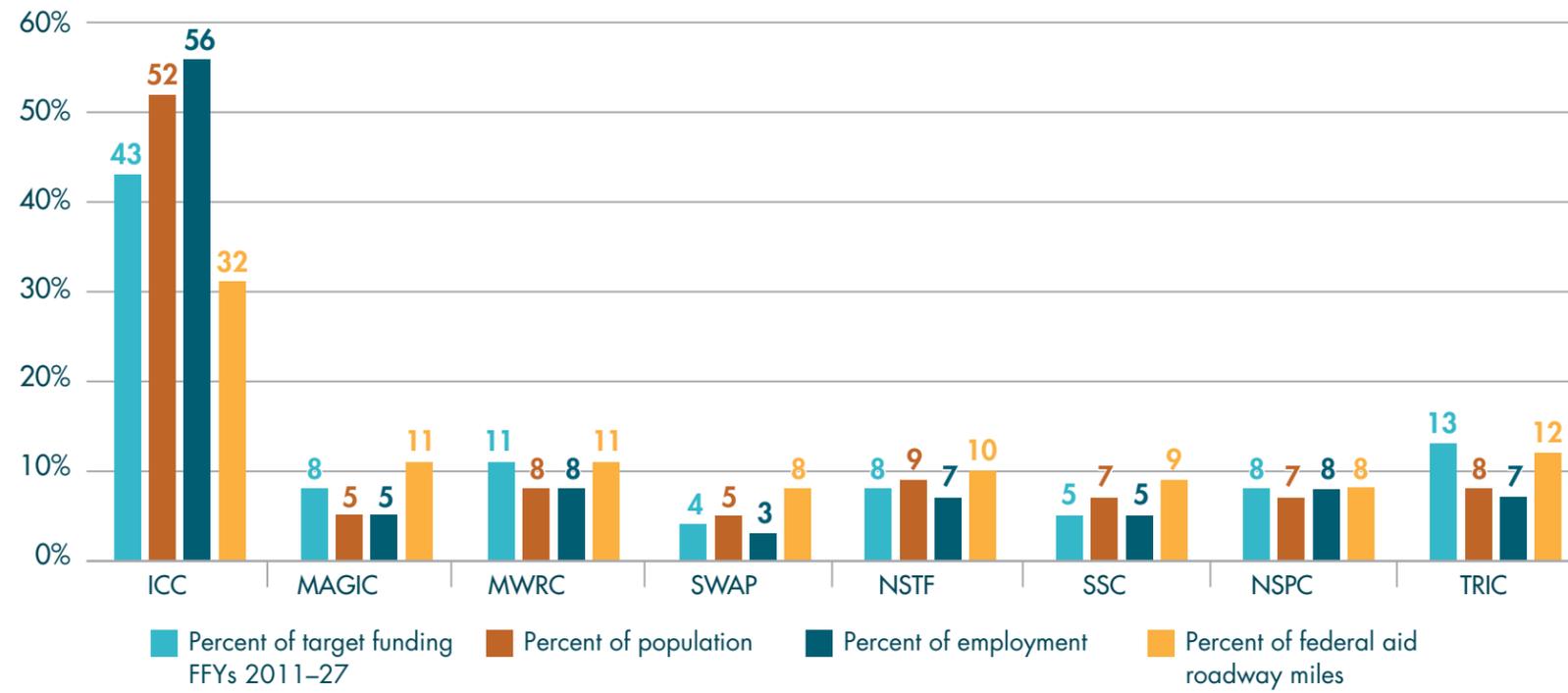
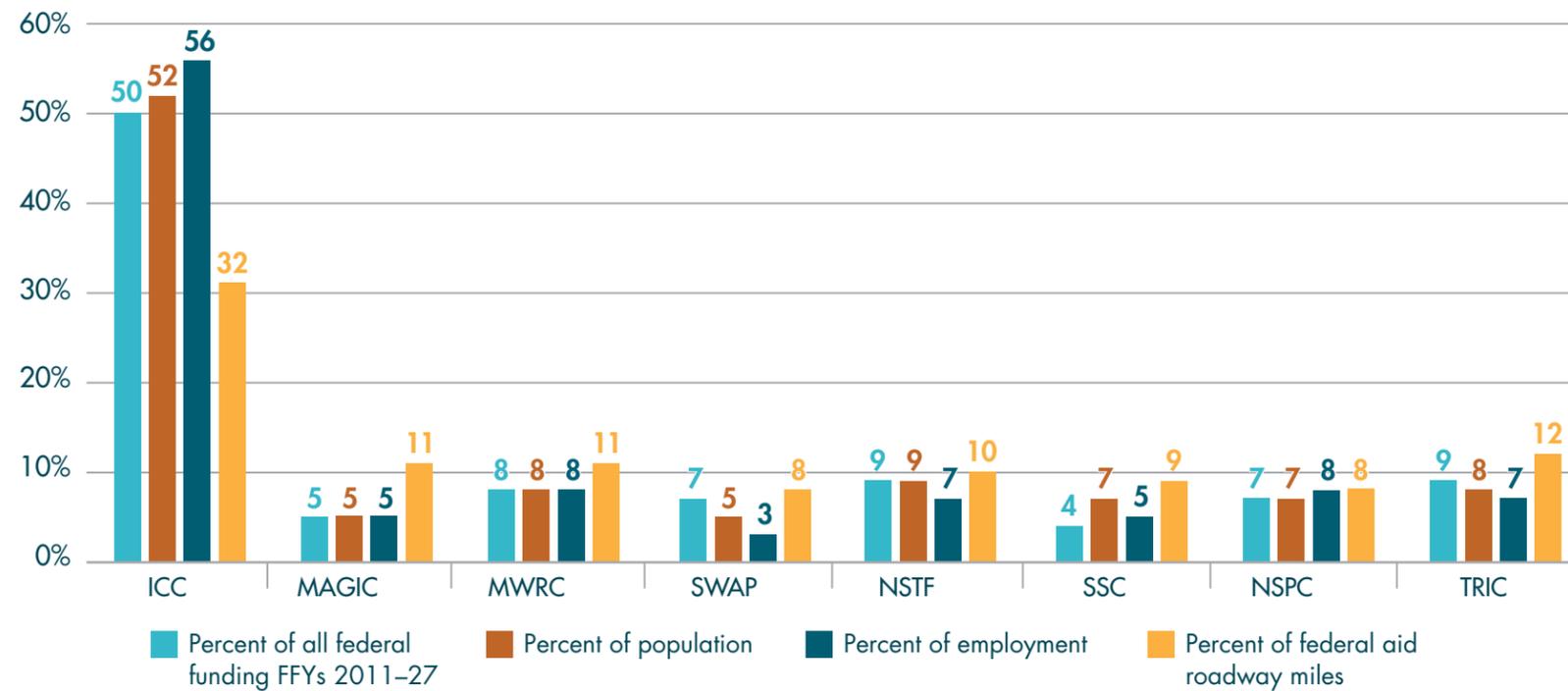


Figure D-4
Distribution of All Federal Highway Funding in the Boston Region by Subregion (FFYs 2011-27)



**Table D-1
Federal Highway Programming for Municipalities in the Boston Region (FFYs 2023–27)**

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Boston	Inner Core	Inner Core	20.0%	31.2%	11.1%	\$108,449,011	20.7%	\$291,622,743	19.1%	\$400,071,754	19.5%
Somerville	Inner Core	Inner Core	2.5%	1.2%	1.2%	\$20,000,000	3.8%	\$209,381,819	13.7%	\$229,381,819	11.2%
Hopkinton	SWAP	Developing Suburb	0.5%	0.5%	1.0%	\$0	0.0%	\$147,018,157	9.6%	\$147,018,157	7.2%
Beverly	NSTF	Regional Urban Center	1.3%	1.2%	1.2%	\$12,594,932	2.4%	\$87,711,718	5.8%	\$100,306,650	4.9%
Natick	MetroWest	Maturing Suburb	1.1%	1.3%	1.2%	\$0	0.0%	\$89,799,350	5.9%	\$89,799,350	4.4%
Cambridge	Inner Core	Inner Core	3.4%	6.0%	1.8%	\$349,608	0.1%	\$81,254,354	5.3%	\$81,603,962	4.0%
Wilmington	NSPC	Maturing Suburb	0.7%	1.0%	1.3%	\$31,085,535	5.9%	\$38,799,452	2.5%	\$69,884,987	3.4%
Salem	NSTF	Regional Urban Center	1.3%	1.1%	0.7%	\$7,108,429	1.4%	\$50,930,758	3.3%	\$58,039,187	2.8%
Lynn	Inner Core	Regional Urban Center	2.9%	1.3%	1.3%	\$32,602,000	6.2%	\$19,033,076	1.2%	\$51,635,076	2.5%
Norwood	TRIC	Regional Urban Center	0.9%	1.3%	1.0%	\$32,790,150	6.3%	\$4,855,382	0.3%	\$37,645,532	1.8%
Milton	TRIC	Maturing Suburb	0.9%	0.3%	1.3%	\$0	0.0%	\$36,673,224	2.4%	\$36,673,224	1.8%
Peabody	NSTF	Regional Urban Center	1.7%	1.3%	1.4%	\$32,464,982	6.2%	\$0	0.0%	\$32,464,982	1.6%
Chelsea	Inner Core	Inner Core	1.1%	0.8%	0.6%	\$12,123,769	2.3%	\$20,045,148	1.3%	\$32,168,917	1.6%
Framingham	MetroWest	Regional Urban Center	2.2%	2.5%	2.5%	\$2,484,704	0.5%	\$29,476,827	1.9%	\$31,961,531	1.6%
Brookline	Inner Core	Inner Core	1.9%	0.9%	1.3%	\$30,030,812	5.7%	\$1,305,823	0.1%	\$31,336,635	1.5%
Watertown	Inner Core	Inner Core	1.0%	1.1%	0.6%	\$28,252,285	5.4%	\$3,080,230	0.2%	\$31,332,515	1.5%

Table D-1 (continued, 2)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Medford	Inner Core	Inner Core	1.8%	1.0%	1.5%	\$72,911	0.0%	\$30,420,970	2.0%	\$30,493,880	1.5%
Revere	Inner Core	Inner Core	1.7%	0.5%	1.3%	\$0	0.0%	\$29,858,991	2.0%	\$29,858,991	1.5%
Woburn	NSPC	Regional Urban Center	1.2%	2.2%	1.5%	\$22,326,115	4.3%	\$6,474,344	0.4%	\$28,800,459	1.4%
Everett	Inner Core	Inner Core	1.3%	0.7%	0.6%	\$10,168,416	1.9%	\$17,748,000	1.2%	\$27,916,416	1.4%
Braintree	SSC	Maturing Suburb	1.2%	1.5%	1.4%	\$0	0.0%	\$25,850,441	1.7%	\$25,850,441	1.3%
Randolph	TRIC	Maturing Suburb	1.0%	0.5%	1.0%	\$0	0.0%	\$24,908,198	1.6%	\$24,908,198	1.2%
Quincy	Inner Core	Regional Urban Center	3.0%	2.6%	2.1%	\$6,052,562	1.2%	\$18,265,308	1.2%	\$24,317,870	1.2%
Canton	TRIC	Maturing Suburb	0.7%	1.2%	1.1%	\$325,719	0.1%	\$23,937,776	1.6%	\$24,263,495	1.2%
Newton	Inner Core	Inner Core	2.8%	3.0%	2.6%	\$1,042,574	0.2%	\$22,595,183	1.5%	\$23,637,757	1.2%
Belmont	Inner Core	Inner Core	0.8%	0.4%	0.6%	\$21,038,758	4.0%	\$0	0.0%	\$21,038,758	1.0%
Lexington	MAGIC	Maturing Suburb	1.0%	1.1%	1.9%	\$0	0.0%	\$20,456,262	1.3%	\$20,456,262	1.0%
Weston	MetroWest	Maturing Suburb	0.4%	0.2%	1.3%	\$18,393,832	3.5%	\$0	0.0%	\$18,393,832	0.9%
Reading	NSPC	Maturing Suburb	0.8%	0.4%	0.8%	\$0	0.0%	\$17,376,800	1.1%	\$17,376,800	0.8%
Stoneham	NSPC	Maturing Suburb	0.7%	0.4%	0.8%	\$796,817	0.2%	\$15,414,505	1.0%	\$16,211,322	0.8%
Waltham	Inner Core	Inner Core	2.0%	3.0%	1.6%	\$0	0.0%	\$16,082,742	1.1%	\$16,082,742	0.8%
Burlington	NSPC	Maturing Suburb	0.8%	2.2%	1.3%	\$6,046,915	1.2%	\$9,595,904	0.6%	\$15,642,819	0.8%

Table D-1 (continued, 3)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Hingham	SSC	Maturing Suburb	0.7%	0.7%	1.3%	\$15,596,549	3.0%	\$0	0.0%	\$15,596,549	0.8%
Wrentham	SWAP	Developing Suburb	0.4%	0.3%	1.0%	\$15,587,884	3.0%	\$0	0.0%	\$15,587,884	0.8%
Boxborough	MAGIC	Developing Suburb	0.2%	0.2%	0.4%	\$0	0.0%	\$15,284,656	1.0%	\$15,284,656	0.7%
Bellingham	SWAP	Developing Suburb	0.5%	0.3%	0.9%	\$0	0.0%	\$14,249,535	0.9%	\$14,249,535	0.7%
Cohasset	SSC	Developing Suburb	0.2%	0.1%	0.5%	\$11,258,807	2.2%	\$0	0.0%	\$11,258,807	0.5%
Milford	SWAP	Regional Urban Center	0.9%	0.8%	1.2%	\$10,119,616	1.9%	\$0	0.0%	\$10,119,616	0.5%
Dedham	TRIC	Maturing Suburb	0.8%	0.9%	1.1%	\$6,314,855	1.2%	\$3,143,758	0.2%	\$9,458,613	0.5%
Weymouth	SSC	Maturing Suburb	1.7%	1.0%	1.5%	\$0	0.0%	\$9,018,690	0.6%	\$9,018,690	0.4%
Swampscott	NSTF	Maturing Suburb	0.4%	0.2%	0.3%	\$8,932,000	1.7%	\$0	0.0%	\$8,932,000	0.4%
Middleton	NSTF	Developing Suburb	0.3%	0.3%	0.5%	\$0	0.0%	\$8,508,556	0.6%	\$8,508,556	0.4%
Danvers	NSTF	Maturing Suburb	0.9%	1.4%	1.5%	\$0	0.0%	\$8,015,758	0.5%	\$8,015,758	0.4%
Winchester	NSPC	Maturing Suburb	0.7%	0.5%	0.6%	\$0	0.0%	\$7,302,504	0.5%	\$7,302,504	0.4%
Ipswich	NSTF	Developing Suburb	0.4%	0.3%	0.7%	\$5,490,888	1.0%	\$1,567,895	0.1%	\$7,058,783	0.3%
Foxborough	TRIC	Developing Suburb	0.5%	0.7%	1.3%	\$0	0.0%	\$6,894,080	0.5%	\$6,894,080	0.3%

Table D-1 (continued, 3)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Acton	MAGIC	Maturing Suburb	0.7%	0.5%	1.1%	\$8,017	0.0%	\$6,752,478	0.4%	\$6,760,495	0.3%
Winthrop	Inner Core	Inner Core	0.6%	0.1%	0.3%	\$6,617,959	1.3%	\$0	0.0%	\$6,617,959	0.3%
Littleton	MAGIC	Developing Suburb	0.3%	0.3%	1.0%	\$3,992,645	0.8%	\$2,521,264	0.2%	\$6,513,909	0.3%
Lynnfield	NSPC	Maturing Suburb	0.4%	0.3%	0.6%	\$0	0.0%	\$6,180,338	0.4%	\$6,180,338	0.3%
Wakefield	NSPC	Maturing Suburb	0.8%	0.8%	0.9%	\$0	0.0%	\$6,180,338	0.4%	\$6,180,338	0.3%
Ashland	MetroWest	Maturing Suburb	0.5%	0.3%	0.5%	\$1,222,315	0.2%	\$3,965,472	0.3%	\$5,187,787	0.3%
Nahant	Inner Core	Maturing Suburb	0.1%	0.0%	0.2%	\$0	0.0%	\$4,681,875	0.3%	\$4,681,875	0.2%
Malden	Inner Core	Inner Core	1.9%	0.8%	1.0%	\$72,911	0.0%	\$4,181,800	0.3%	\$4,254,711	0.2%
Stow	MAGIC	Developing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$3,454,408	0.2%	\$3,454,408	0.2%
Topsfield	NSTF	Developing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$3,258,119	0.2%	\$3,258,119	0.2%
Hudson	MAGIC	Developing Suburb	0.6%	0.5%	0.7%	\$0	0.0%	\$2,970,998	0.2%	\$2,970,998	0.1%
Marlborough	MetroWest	Regional Urban Center	1.2%	1.6%	2.0%	\$0	0.0%	\$2,970,998	0.2%	\$2,970,998	0.1%
Medway	SWAP	Developing Suburb	0.4%	0.2%	0.6%	\$0	0.0%	\$2,807,468	0.2%	\$2,807,468	0.1%
Sudbury	MAGIC	Maturing Suburb	0.6%	0.5%	1.0%	\$0	0.0%	\$2,262,001	0.1%	\$2,262,001	0.1%
Wayland	MetroWest	Maturing Suburb	0.4%	0.2%	0.7%	\$0	0.0%	\$2,262,001	0.1%	\$2,262,001	0.1%

Table D-1 (continued, 4)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Hamilton	NSTF	Developing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$1,567,895	0.1%	\$1,567,895	0.1%
Maynard	MAGIC	Maturing Suburb	0.3%	0.2%	0.3%	\$0	0.0%	\$1,520,953	0.1%	\$1,520,953	0.1%
Sharon	TRIC	Maturing Suburb	0.6%	0.2%	1.1%	\$0	0.0%	\$1,436,915	0.1%	\$1,436,915	0.1%
Arlington	Inner Core	Inner Core	1.4%	0.5%	0.8%	\$0	0.0%	\$1,302,209	0.1%	\$1,302,209	0.1%
Scituate	SSC	Maturing Suburb	0.6%	0.2%	1.0%	\$1,250,979	0.2%	\$0	0.0%	\$1,250,979	0.1%
Westwood	TRIC	Maturing Suburb	0.5%	0.5%	0.7%	\$0	0.0%	\$1,071,429	0.1%	\$1,071,429	0.1%
Bedford	MAGIC	Maturing Suburb	0.4%	1.1%	0.8%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Bolton	MAGIC	Developing Suburb	0.2%	0.1%	0.7%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Carlisle	MAGIC	Developing Suburb	0.2%	0.0%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Concord	MAGIC	Maturing Suburb	0.6%	0.7%	1.1%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Dover	SWAP	Developing Suburb	0.2%	0.0%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Essex	NSTF	Developing Suburb	0.1%	0.1%	0.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Franklin	SWAP	Developing Suburb	1.0%	0.8%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Gloucester	NSTF	Regional Urban Center	0.9%	0.6%	1.0%	\$0	0.0%	\$0	0.0%	\$0	0.0%

Table D-1 (continued, 5)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Holbrook	SSC	Maturing Suburb	0.3%	0.1%	0.3%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Holliston	MetroWest	Developing Suburb	0.4%	0.3%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Hull	SSC	Maturing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Lincoln	MAGIC	Maturing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Manchester	NSTF	Developing Suburb	0.2%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Marblehead	NSTF	Maturing Suburb	0.6%	0.3%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Marshfield	SSC	Maturing Suburb	0.8%	0.3%	1.0%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Medfield	TRIC	Maturing Suburb	0.4%	0.2%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Melrose	Inner Core	Inner Core	0.9%	0.3%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Millis	SWAP	Developing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Needham	TRIC	Maturing Suburb	0.9%	1.0%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Norfolk	SWAP	Developing Suburb	0.4%	0.2%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
North Reading	NSPC	Maturing Suburb	0.5%	0.4%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Norwell	SSC	Developing Suburb	0.3%	0.5%	0.8%	\$0	0.0%	\$0	0.0%	\$0	0.0%

Table D-1 (continued, 6)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Rockland	SSC	Developing Suburb	0.6%	0.4%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Rockport	NSTF	Developing Suburb	0.2%	0.1%	0.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Saugus	Inner Core	Maturing Suburb	0.9%	0.6%	0.8%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Sherborn	SWAP	Developing Suburb	0.1%	0.0%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Southborough	MetroWest	Maturing Suburb	0.3%	0.4%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Walpole	TRIC	Developing Suburb	0.8%	0.6%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Wellesley	MetroWest	Maturing Suburb	0.9%	0.9%	0.9%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Wenham	NSTF	Developing Suburb	0.2%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%



EXIT

3853

TRACK 1

TRACK 2

EY & WEST

GREEN LINE - COPLEY & WEST

3702

3702

If you have not established your fare on a fare collecting machine, please tap your fare on the board at the start of the trip.

APPENDIX E

Regulatory and Policy Framework

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

REGULATORY FRAMEWORK

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

Federal Regulations and Guidance

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

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

1. **Safety:** Achieve significant reduction in traffic fatalities and serious injuries on all public roads
2. **Infrastructure condition:** Maintain the highway infrastructure asset system in a state of good repair
3. **Congestion reduction:** Achieve significant reduction in congestion on the National Highway System
4. **System reliability:** Improve efficiency of the surface transportation system
5. **Freight movement and economic vitality:** Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
6. **Environmental sustainability:** Enhance performance of the transportation system while protecting and enhancing the natural environment
7. **Reduced project delivery delays:** Reduce project costs, promote jobs and the economy, and expedite movement of people and goods by accelerating project completion by eliminating delays in the project development and delivery process, including by reducing regulatory burdens and improving agencies' work practices

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

FAST Act: Planning Factors

The MPO gives specific consideration to the federal planning factors, described in Title 23, section 134, of the US Code (23 USC § 134), when developing all documents that program federal transportation funds. In accordance with the legislation, studies and strategies undertaken by the MPO shall

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

The Boston Region MPO has also incorporated these federal planning factors into its vision, goals, and objectives.

FAST Act: Performance-Based Planning and Programming

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

Bipartisan Infrastructure Law (BIL): Planning Emphasis Areas

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

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

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

1990 Clean Air Act Amendments

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

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

Air quality conformity determinations must be performed for capital improvement projects that receive federal funding and for those that are considered regionally significant, regardless of the funding source. These determinations must show that projects in the MPO's Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) will not cause or contribute to any new air quality violations; will not increase the frequency or severity of any existing air quality violations in any area; and will not delay the timely attainment of air quality standards in any area. The policy, criteria, and procedures for demonstrating air quality conformity in the Boston region were established in Title 40, parts 51 and 53, of the Code of Federal Regulations.

On April 1, 1996, the EPA classified the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville as in attainment for carbon monoxide (CO) emissions. Subsequently, a CO maintenance plan was set up through the Massachusetts SIP to ensure that emission levels did not increase. While the maintenance plan was in effect, past TIPs and LRTPs included an air quality conformity analysis for these communities. As of April 1, 2016, however, the 20-year maintenance period for this CO maintenance area expired and transportation conformity is no longer required for this pollutant in these communities. This ruling is documented in a letter from the EPA dated May 12, 2016.

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

On February 16, 2018, the US Court of Appeals for the DC Circuit issued a decision in *South Coast Air Quality Management District v. EPA*, which struck down portions of the 2008 Ozone National Ambient Air Quality Standards (NAAQS) SIP Requirements Rule concerning the ozone NAAQS. Those portions of the SIP Requirements Rule included transportation conformity

requirements associated with the EPA's revocation of the 1997 ozone NAAQS. Massachusetts was designated as an attainment area in accord with the 2008 ozone NAAQS but as a nonattainment or maintenance area as relates to the 1997 ozone NAAQS. As a result of this court ruling, MPOs in Massachusetts must once again demonstrate conformity for ozone when developing LRTPs and TIPs.

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

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

Nondiscrimination Mandates

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

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

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 requires that no person be excluded from participation in, be denied the benefits of, or be subjected to discrimination on the basis of race, color, or national origin, under any program or activity provided by an agency receiving federal financial assistance. Executive Order 13166—*Improving Access to Services for Persons with Limited English Proficiency*, dated August 11, 2000, extends Title VI protections to people who, as a result of their nationality, have limited English proficiency. Specifically, it calls for improved access to federally assisted programs and activities, and it requires MPOs to develop and implement a system through which people with limited English proficiency can meaningfully participate in the transportation planning process. This requirement includes the development of a Language Assistance Plan that documents the organization’s process for providing meaningful language access to people with limited English proficiency who access their services and programs.

Environmental Justice Executive Order

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

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

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

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

Americans with Disabilities Act

Title III of the ADA “prohibits states, MPOs, and other public entities from discriminating on the basis of disability in the entities’ services, programs, or activities,” and requires all transportation projects, plans, and programs to be accessible to people with disabilities. Therefore, MPOs must consider the mobility needs of people with disabilities when programming federal funding for

studies and capital projects. MPO-sponsored meetings must also be held in accessible venues and be conducted in a manner that provides for accessibility. Also, MPO materials must be made available in accessible formats.

Other Nondiscrimination Mandates

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

State Guidance and Priorities

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

Choices for Stewardship: Recommendations to Meet the Transportation Future

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

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

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

Massachusetts Strategic Highway Safety Plan

The *Massachusetts 2018 Strategic Highway Safety Plan* (SHSP) identifies the state's key safety needs and guides investment decisions to achieve significant reductions in highway fatalities and serious injuries on all public roads. The SHSP establishes statewide safety goals and objectives

and key safety emphasis areas, and it draws on the strengths of all highway safety partners in the Commonwealth to align and leverage resources to address the state's safety challenges collectively. The Boston Region MPO considers SHSP goals, emphasis areas, and strategies when developing its plans, programs, and activities.

MassDOT Modal Plans

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

Global Warming Solutions Act

The GWSA makes Massachusetts a leader in setting aggressive and enforceable GHG reduction targets and implementing policies and initiatives to achieve these targets. In keeping with this law, the Massachusetts Executive Office of Energy and Environmental Affairs (EEA), in consultation with other state agencies and the public, developed the *Massachusetts Clean Energy and Climate Plan for 2020*. This implementation plan, released on December 29, 2010 (and updated in 2015), establishes the following targets for overall statewide GHG emission reductions:

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

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

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

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

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

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

Healthy Transportation Policy Initiatives

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

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

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

Congestion in the Commonwealth 2019

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

Regional Guidance and Priorities

Focus40, The MBTA's Program for Mass Transportation

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

MetroCommon 2050

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

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

The Boston Region MPO's Congestion Management Process

The purpose of the Congestion Management Process (CMP) is to monitor and analyze performance of facilities and services, develop strategies for managing congestion based on the results of traffic monitoring, and move those strategies into the implementation stage by

providing decision-makers in the region with information and recommendations for improving the transportation system's performance. The CMP monitors roadways and park-and-ride facilities in the Boston region for safety, congestion, and mobility, and identifies problem locations. The CMP is described in more detail in the Unified Planning Work Program (UPWP). Studies undertaken through the CMP are often the inspiration for discrete studies funded through the UPWP. Needs identified through the MPO's CMP can also be addressed by projects funded in the TIP.

Coordinated Public Transit-Human Services Transportation Plan

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

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

State and Regional COVID-19 Adaptations

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

APPENDIX F

Boston Region Metropolitan Planning Organization Membership

VOTING MEMBERS

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

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

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

The **MBTA**, created in 1964, is a body politic and corporate, and a political subdivision of the Commonwealth. Under the provisions of Chapter 161A of the Massachusetts General Laws, it has the statutory responsibility within its district of operating the public transportation system, preparing the engineering and architectural designs for transit development projects, and constructing and operating transit development projects. The MBTA district comprises 175 communities, including all of the 97 cities and towns of the Boston Region MPO area.

In April 2015, as a result of a plan of action to improve the MBTA, a five-member Fiscal and Management Control Board (FMCB) was created. The FMCB was created to oversee and improve the finances, management, and operations of the MBTA. The FMCB's authorizing statute called for an initial three-year term, with the option for the board to request that the governor approve a single two-year extension. In 2017, the FMCB's initial mandate, which would have expired in June 2018, was extended for two years, through June 30, 2020. In 2020, the FMCB's mandate was extended a second time for an additional period of one year, through June 30, 2021.

Following the expiration of the FMCB's extended mandate, the MBTA Board of Directors was formed as a permanent replacement to provide oversight for the agency. By statute, the board consists of seven members, including the Secretary of Transportation as an ex-officio member. The MBTA Advisory Board appoints one member who has municipal government experience in

the MBTA's service area and experience in transportation operations, transportation planning, housing policy, urban planning, or public or private finance. The governor appoints the remaining five board members, which include an MBTA rider and member of an environmental justice population, and a person recommended by the President of the American Federation of Labor and Congress of Industrial Organizations.

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

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

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

The **City of Boston**, six elected cities (currently **Beverly, Everett, Framingham, Newton, Somerville, and Burlington**), and six elected towns (currently **Acton, Arlington, Brookline, Medway, Norwood, and Rockland**) represent the 97 municipalities in the Boston Region MPO area. The City of Boston is a permanent MPO member and has two seats. There is one elected municipal seat for each of the eight MAPC subregions and four seats for at-large elected municipalities (two cities and two towns). The elected at-large municipalities serve staggered three-year terms, as do the eight municipalities representing the MAPC subregions.

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

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

APPENDIX G

Operations and Maintenance Summary

OVERVIEW

In addition to the capital programs detailed throughout this document, highway and transit agencies in the Boston region are required to submit operations and maintenance (O&M) information for FFYs 2021–26 to the Boston Region Metropolitan Planning Organization (MPO) to satisfy federal requirements for the certification of the Transportation Improvement Program (TIP). These O&M tables outline the operating revenues for each agency, including farebox collections; federal, state, and local operating funds; interest income; and other auxiliary revenues from activities such as advertising and leasing. These tables also include a summary of the operating expenses for each agency with both revenues and expenses detailed for each fiscal year. This appendix documents the FFYs 2023–27 TIP O&M information for the Massachusetts Department of Transportation (MassDOT), Massachusetts Bay Transportation Authority (MBTA), MetroWest Regional Transit Authority (MWRTA), and Cape Ann Transportation Authority (CATA).

Table G-1
FFYs 2023–27 TIP Operations and Maintenance Summary: MassDOT

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 1: Non-Federal Aid					
Section I - Non Federal Aid Maintenance Projects - State Bondfunds					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$78,719	\$114,000	\$52,000	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$47,360,434	\$22,008,112	\$7,019,328	\$345,318	\$-
Bridge Maintenance - Deck Repairs	\$13,072,586	\$8,334,358	\$5,311,045	\$443,585	\$-
Bridge Maintenance - Joints	\$3,793,035	\$2,804,206	\$1,208,481	\$68,432	\$-
Bridge Preservation	\$2,882,033	\$11,816,698	\$4,974,667	\$317,981	\$-
Drawbridge Maintenance	\$5,575,223	\$2,560,174	\$-	\$-	\$-
Painting - Structural	\$6,162,363	\$1,605,861	\$-	\$-	\$-
Structures Maintenance	\$284,948	\$142,680	\$-	\$-	\$-
04 - Capacity					
Highway Relocation	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Major Widening	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$6,669,216	\$5,718,204	\$1,651,487	\$114,754	\$-
07 - Intersection Improvements					
Traffic Signals	\$3,488,759	\$2,224,126	\$1,914,764	\$94,957	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 2)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$625,000	\$695,000	\$65,316	\$-	\$-
Resurfacing	\$6,415,673	\$4,437,466	\$3,658,730	\$956,730	\$-
Resurfacing DOT Owned Non-Interstate	\$5,222,136	\$3,704,756	\$1,345,715	\$178,272	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$1,966,347	\$1,455,089	\$310,866	\$-	\$-
Contract Highway Maintenance	\$3,190,450	\$3,000,531	\$1,668,618	\$100,901	\$-
Crack Sealing	\$1,672,864	\$1,194,760	\$706,377	\$109,600	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$7,341,532	\$6,292,153	\$1,154,896	\$103,925	\$-
Dredging	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$3,429,456	\$4,146,615	\$1,845,428	\$278,197	\$-
Highway Sweeping	\$963,234	\$1,007,278	\$141,245	\$-	\$-
Landscaping	\$233,427	\$600,000	\$244,014	\$-	\$-
Mowing and Spraying	\$2,002,002	\$1,038,229	\$357,576	\$29,565	\$-
Sewer and Water	\$3,904	\$20,843	\$10,580	\$-	\$-
Tree Trimming	\$3,939,855	\$2,625,059	\$722,777	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - No Added Capacity	\$6,001	\$-	\$-	\$-	\$-
Hwy Reconstr - Restr and Rehab	\$646,014	\$109,047	\$265,670	\$177,113	\$-
Roadway - Reconstr - Sidewalks and Curbing	\$1,879,857	\$748,676	\$-	\$-	\$-

Table G-1 (continued, 3)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
13 - Safety Improvements					
Electrical	\$398,549	\$-	\$-	\$-	\$-
Impact Attenuators	\$1,068,681	\$911,141	\$346,248	\$129,196	\$-
Lighting	\$3,735,830	\$2,267,423	\$1,281,166	\$116,870	\$-
Pavement Marking	\$3,332,465	\$3,166,821	\$1,623,975	\$343,891	\$-
Safety Improvements	\$227,620	\$33,595	\$-	\$-	\$-
Sign Installation/Upgrading	\$545,832	\$833,711	\$827,507	\$65,739	\$-
Structural Signing	\$359,312	\$129,607	\$-	\$-	\$-
Section I Total:	\$138,573,354	\$95,746,219	\$38,708,474	\$3,975,025	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$83,800,000	\$95,000,000	\$95,000,000	\$95,000,000	\$95,000,000
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$34,400,000	\$35,440,000	\$36,510,000	\$37,610,000	\$38,740,000
Section II Total:	\$118,200,000	\$130,440,000	\$131,510,000	\$132,610,000	\$133,740,000
Grand Total NFA:	\$256,773,354	\$226,186,219	\$170,218,474	\$136,585,025	\$133,740,000

Table G-1, (continued, 4)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 2: Federal Aid					
Section I - Federal Aid Maintenance Projects					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$3,805,564	\$502,504	\$2,357,142	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$1,038,762	\$952,198	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$-	\$-	\$-	\$-	\$-
Bridge Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$3,401,816	\$378,207	\$-	\$-	\$-
Structures Maintenance	\$238,348	\$2,860,181	\$1,430,090	\$-	\$-
04 - Capacity					
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$-	\$-	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-

Table G-1 (continued, 5)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Culvert Replacement	\$-	\$-	\$-	\$-	\$-
Drainage	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$-	\$-	\$-	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-
Lighting	\$5,557,056	\$9,931	\$978,483	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-
Safety Improvements	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 6)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$583,693	\$99,450	\$-	\$-	\$-
Section I Total:	\$13,586,477	\$3,850,272	\$5,804,478	\$952,198	\$-
Grand Total Federal Aid:	\$13,586,477	\$3,850,272	\$5,804,478	\$952,198	\$-

Table G-1, (continued, 6)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 1: Non-Federal Aid					
Section I - Non Federal Aid Maintenance Projects - State Bondfunds					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$78,719	\$114,000	\$52,000	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$36,405,775	\$18,815,892	\$6,183,863	\$345,318	\$-
Bridge Maintenance - Deck Repairs	\$13,072,586	\$8,334,358	\$5,311,045	\$443,585	\$-
Bridge Maintenance - Joints	\$3,793,035	\$2,804,206	\$1,208,481	\$68,432	\$-
Bridge Preservation	\$722,817	\$1,510,000	\$635,000	\$-	\$-
Drawbridge Maintenance	\$5,575,223	\$2,560,174	\$-	\$-	\$-
Painting - Structural	\$4,516,054	\$1,605,861	\$-	\$-	\$-
Structures Maintenance	\$284,948	\$142,680	\$-	\$-	\$-
04 - Capacity					
Highway Relocation	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Major Widening	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$4,429,468	\$2,368,944	\$929,429	\$114,754	\$-
07 - Intersection Improvements					
Traffic Signals	\$3,488,759	\$2,224,126	\$1,914,764	\$94,957	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 7)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$625,000	\$695,000	\$65,316	\$-	\$-
Resurfacing	\$6,415,673	\$4,437,466	\$3,658,730	\$956,730	\$-
Resurfacing DOT Owned Non-Interstate	\$5,203,927	\$3,704,756	\$1,345,715	\$178,272	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$1,966,347	\$1,455,089	\$310,866	\$-	\$-
Contract Highway Maintenance	\$3,055,450	\$2,387,018	\$1,154,312	\$72,342	\$-
Crack Sealing	\$1,672,864	\$1,194,760	\$706,377	\$109,600	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$6,789,520	\$5,478,547	\$1,040,684	\$103,925	\$-
Dredging	\$-	\$-	\$-	\$-	\$-
Drilling & Boring	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$3,429,456	\$4,146,615	\$1,845,428	\$278,197	\$-
Highway Sweeping	\$963,234	\$1,007,278	\$141,245	\$-	\$-
Landscaping	\$233,427	\$600,000	\$244,014	\$-	\$-
Mowing and Spraying	\$1,984,043	\$822,728	\$177,992	\$29,565	\$-
Sewer and Water	\$3,904	\$20,843	\$10,580	\$-	\$-
Tree Trimming	\$3,939,855	\$2,625,059	\$722,777	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - No Added Capacity	\$6,001	\$-	\$-	\$-	\$-
Hwy Reconstr - Restr and Rehab	\$646,014	\$109,047	\$265,670	\$177,113	\$-
Roadway - Reconstr - Sidewalks and Curbing	\$1,879,857	\$748,676	\$-	\$-	\$-

Table G-1, (continued, 8)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
13 - Safety Improvements					
Electrical	\$398,549	\$-	\$-	\$-	\$-
Impact Attenuators	\$1,068,681	\$842,686	\$181,956	\$47,050	\$-
Lighting	\$3,735,830	\$2,267,423	\$1,281,166	\$116,870	\$-
Pavement Marking	\$3,332,465	\$3,166,821	\$1,623,975	\$343,891	\$-
Safety Improvements	\$227,620	\$33,595	\$-	\$-	\$-
Sign Installation/Upgrading	\$467,832	\$573,711	\$646,592	\$65,739	\$-
Structural Signing	\$359,312	\$129,607	\$-	\$-	\$-
Section I Total:	\$120,772,243	\$76,926,966	\$31,657,976	\$3,546,339	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$83,800,000	\$95,000,000	\$95,000,000	\$95,000,000	\$95,000,000
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$34,400,000	\$35,440,000	\$36,510,000	\$37,610,000	\$38,740,000
Section II Total:	\$118,200,000	\$130,440,000	\$131,510,000	\$132,610,000	\$133,740,000
Grand Total NFA:	\$238,972,243	\$207,366,966	\$163,167,976	\$136,156,339	\$133,740,000

Table G-1, (continued, 9)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 2: Federal Aid					
Section I - Federal Aid Maintenance Projects					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$2,557,469	\$502,504	\$-	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$-	\$-	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$-	\$-	\$-	\$-	\$-
Bridge Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$3,401,816	\$378,207	\$-	\$-	\$-
Structures Maintenance	\$-	\$-	\$-	\$-	\$-
04 - Capacity					
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$-	\$-	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 10)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Crack Sealing	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$-	\$-	\$-	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-
Lighting	\$-	\$-	\$-	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 11)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Safety Improvements	\$-	\$-	\$-	\$-	\$-
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$583,693	\$99,450	\$-	\$-	\$-
Section I Total:	\$6,542,978	\$980,161	\$-	\$-	\$-
Grand Total Federal Aid:	\$6,542,978	\$980,161	\$-	\$-	\$-

Table G-1, (continued, 12)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 1: Non-Federal Aid					
Section I - Non Federal Aid Maintenance Projects - State Bondfunds					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$232,327	\$610,000	\$396,913	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$-	\$-	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$1,169,837	\$3,118,136	\$2,431,780	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$-	\$-	\$-	\$-	\$-
Structures Maintenance	\$-	\$-	\$-	\$-	\$-
04 - Capacity					
Highway Relocation	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Major Widening	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$3,249,260	\$722,058	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 13)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Crack Sealing	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$552,012	\$813,606	\$114,211	\$-	\$-
Dredging	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$17,958	\$215,500	\$179,584	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - No Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
Roadway - Reconstr - Sidewalks and Curbing	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 14)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-
Lighting	\$-	\$-	\$-	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-
Safety Improvements	\$-	\$-	\$-	\$-	\$-
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$-	\$-	\$-	\$-	\$-
Section I Total:	\$1,972,134	\$8,006,503	\$3,844,546	\$-	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$-	\$-	\$-	\$-	\$-
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$-	\$-	\$-	\$-	\$-
Section II Total:	\$-	\$-	\$-	\$-	\$-
Grand Total NFA:	\$1,972,134	\$8,006,503	\$3,844,546	\$-	\$-

(able G-1, (continued, 15)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 2: Federal Aid					
Section I - Federal Aid Maintenance Projects					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$1,248,095	\$-	\$2,357,142	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$-	\$-	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$-	\$-	\$-	\$-	\$-
Bridge Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$-	\$-	\$-	\$-	\$-
Structures Maintenance	\$-	\$-	\$-	\$-	\$-
04 - Capacity					
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$-	\$-	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 16)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Crack Sealing	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$-	\$-	\$-	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-

Table G-1, (continued, 17)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Lighting	\$5,557,056	\$9,931	\$978,483	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-
Safety Improvements	\$-	\$-	\$-	\$-	\$-
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$-	\$-	\$-	\$-	\$-
Section I Total:	\$6,805,151	\$9,931	\$3,335,626	\$-	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$-	\$-	\$-	\$-	\$-
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$-	\$-	\$-	\$-	\$-
Section II Total:	\$-	\$-	\$-	\$-	\$-
Grand Total NFA:	\$6,805,151	\$9,931	\$3,335,626	\$-	\$-

Table G-2
FFYs 2023–27 TIP Operations and Maintenance Summary: MBTA

Category	FY23-FY27	FY23	FY24	FY25	FY26	FY27
Operations and Maintenance Revenues (\$M)						
Fare Revenue	2,589	472	504	518	533	561
Non-Fare Revenue	521	98	103	105	107	109
Sales Tax and Local Assessments	7,754	1,459	1,504	1,549	1,596	1,645
Additional State Assistance	635	127	127	127	127	127
Federal Relief & One-Time Revenue	437	316	121			
Total Revenue	11,936	2,473	2,359	2,300	2,363	2,442
Operations and Maintenance Costs (\$M)						
Wages, Materials, and Services and Contracts	10,611	1,939	2,035	2,134	2,218	2,286
Debt Service	2,904	533	560	571	613	627
Total Costs	13,515	2,472	2,595	2,705	2,831	2,913
Difference Between Revenues and Costs	(1,579)	0	(236)	(406)	(467)	(471)

1. FY 2023–FY27 spending and revenue estimates are based on Scenario 2 ridership projections as of the December Annual Pro Forma presentation to the MBTA Board of Directors on December 15, 2021.
2. Additional state assistance is displayed as part of total revenue.
3. Federal Relief & One-Time Revenue includes Coronavirus Aid, Relief, and Economic Security (CARES) Act funds, Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (CRRSAA) funds, and American Rescue Plan Act (ARPA) funds, along with a planned transfer of Operating Deficiency Reserve funds and Federal Emergency Management Agency (FEMA) reimbursement revenues for COVID-19 expenses.
4. Federal Relief & One-Time Revenue: The MBTA has an estimated allocation of one-time federal COVID-19 relief funding totaling \$1,988 million with \$827 million from the CARES Act from March 27, 2020, \$301 million from the CRRSAA from December 27, 2020, and a projected \$860 million from ARPA from March 11, 2021.
5. Sales Tax: The dedicated revenues from the state sales tax are equal to whichever is greater, the amount of actual sales tax receipts generated from the statewide sales tax dedicated to the MBTA or a base revenue amount. The annual amount of dedicated sales tax revenues that the MBTA receives is subject to annual upward adjustment to a maximum three percent increase based on a comparison of the percentage increase of inflation to the increase in actual sales tax receipts. Legislation enacted in 2014 increased the base revenue amount in SFY 2015 to \$970.6 million and increased the dedicated sales tax revenue amount for the MBTA by an additional \$160 million annually.

Table G-3
FFYs 2023–27 TIP Operations and Maintenance Summary: MWRTA

Operating Revenue	Actual	Actual	Actual	Per Approved Budget	Projected	Projected	Projected	Projected	Projected
	FY19	FY20	FY21	FY 22	FY 23	FY24	FY25	FY26	FY27
Farebox	\$607,985	\$479,129	\$20,701	\$442,513	\$455,989	\$467,389	\$479,074	\$491,051	\$503,327
Section 5339									
Section 5307	\$1,534,066	\$922,968					\$2,514,930	\$2,395,392	\$2,395,392
Section 5311									
CMAQ/TDM									
Cares /Crrsaa/American Rescue Plan		\$825,000	\$2,550,000	\$2,453,706	\$4,277,394	\$3,021,989			
Advertising	\$87,950	\$80,250	\$78,425	\$83,794	\$96,425	\$98,836	\$101,307	\$103,839	\$106,435
Interest Income	\$7,168	\$5,307	\$882	\$875	\$1,321	\$1,354			
Rental Income	\$123,844	\$108,364	\$84,257	\$108,000	\$84,419	\$86,530	\$118,000	\$118,000	\$118,000
Parking Revenue	\$274,999	\$206,328	\$200,075	\$252,270	\$195,873	\$200,770	\$205,789	\$210,934	\$216,208
State Operating Assistance	\$3,542,451	\$3,474,631	\$3,514,840	\$3,939,264	\$3,192,206	\$3,672,011	\$3,763,811	\$3,857,907	\$3,954,354
Local Assessment	\$4,078,598	\$3,876,600	\$3,036,067	\$4,072,853	\$3,599,300	\$3,689,283	\$3,781,515	\$3,876,053	\$3,972,954
Other: (Define)	\$688,727	\$534,505	\$391,202	\$421,987	\$232,805	\$238,625	\$244,591	\$250,705	\$256,973
TOTAL	\$10,945,787	\$10,513,083	\$9,876,449	\$11,775,262	\$12,135,734	\$11,476,787	\$11,209,017	\$11,303,881	\$11,523,643
Other - Operating (examples)									
Ins. Recoveries, misc.	\$25,904	\$10,624	\$3,391	\$3,400	\$2,258	\$2,314	\$2,372	\$2,431	\$2,492
Gain on Sale of Fixed Assets									
ID Income									
Miscellaneous	\$13,142	\$4,283							
Vending	\$5,254	\$4,687	\$3,333	\$5,254	\$2,078	\$2,130	\$2,183	\$2,237	\$2,293
Fuel Tax Rebate	\$53,733	\$31,334	\$19,937	\$20,000	\$18,848	\$19,319	\$19,802	\$20,297	\$20,805
Vehicle Repair Reimbursement	\$68,892	\$74,162	\$49,501	\$68,892	\$48,943	\$50,166	\$51,420	\$52,706	\$54,023
MAPC Reimbursement	\$-								
HST Revenue	\$1,251								

Table G-3, (continued, 2)

Operating Revenue	Actual	Actual	Actual	Per Approved Budget	Projected	Projected	Projected	Projected	Projected
	FY19	FY20	FY21	FY 22	FY 23	FY24	FY25	FY26	FY27
CDL Workforce Development	\$17,500								
Hudson Shuttle	\$-								
Mass Bay Community College Shuttle	\$212,789	\$176,674		\$212,789		\$-	\$-	\$-	\$-
Travel Training Initiative	\$84,262	\$76,048	\$78,594	\$48,867	\$100,000	\$102,500	\$105,063	\$107,689	\$110,381
5310 ADA Above and Beyond	\$172,038								
Solar Renew Energy Credit Rev	\$260	\$52,770	\$50,762	\$52,284	\$49,361	\$50,595	\$51,860	\$53,156	\$54,485
First Mile Last Mile Operating Grant	\$11,653								
Rte 20 Operating Grant	\$3,603								
Mass Dot Shuttle Reimbursement	\$6,200	\$66,375							
COA Training Revenue	\$7,377	\$11,548	\$8,843	\$10,500	\$11,318	\$11,601	\$11,891	\$12,188	\$12,493
Rebate Income	\$4,869								
MW Health Foundation Training Grant		\$26,000							
MAPC Grant Revenue			\$176,842						
Other Operating Revenue	\$688,727	\$534,505	\$391,202	\$421,987	\$232,805	\$238,625	\$244,591	\$250,705	\$256,973
Operating Expenses	\$10,945,787	\$10,513,083	\$9,876,449	\$11,818,383	\$12,135,734	\$11,476,787	\$11,209,017	\$11,303,881	\$11,523,643

Table G-4
FFYs 2023–27 TIP Operations and Maintenance Summary: CATA

	Previous (Actual)	Current (Budgeted)	Year Two (Projected)	Year Three (Projected)	Year Four (Projected)	Year Five (Projected)
	2021	2022	2023	2024	2025	2026
Farebox	\$66,825	\$120,000	\$190,000	\$190,000	\$190,000	\$190,000
Section 5307	\$144,821	\$250,992	\$501,984	\$514,534	\$527,397	\$540,582
Section 5311	\$-	\$-	\$-	\$-	\$-	\$-
CMAQ/TDM	\$-	\$-	\$-	\$-	\$-	\$-
Fully Funded	\$-	\$-	\$-	\$-	\$-	\$-
MassDOT Discretionary Grant	\$-	\$96,680	\$-	\$-	\$-	\$-
Community Transit Grant	\$46,874	\$97,024	\$50,000	\$50,000	\$50,000	\$50,000
Auxiliary Revenues *	\$2,822,586	\$762,156	\$500,000	\$500,000	\$500,000	\$500,000
Interest Income	\$10,641	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
State Contract Assistance **	\$1,465,569	\$1,506,637	\$1,544,303	\$1,582,910	\$1,622,483	\$1,663,045
Local Assessment	\$775,531	\$795,480	\$815,367	\$835,751	\$856,645	\$878,061
Total	\$5,332,847	\$3,630,969	\$3,603,654	\$3,675,195	\$3,748,525	\$3,823,688
Operating Expenses ***	Previous	Current	Year Two	Year Three	Year Four	Year Five
	2021	2022	2023	2024	2025	2026
	\$5,332,847	\$3,630,969	\$3,603,654	\$3,675,195	\$3,748,525	\$3,823,688

* Auxiliary Revenues include contract transportation (HST, Beverly Shuttle, adult day care, etc), rental income, advertising

** Operating Assistance provided by the state

*** Description of Operating Expenses: Salaries and wages; fringe benefit; legal, accounting, and professional services; promotional/marketing; insurance; equipment; non-capitalized maintenance/repair; fuel costs; tire costs; office supplies and equipment; interest expense; management fees; travel and training; and other miscellaneous expense items