



Transportation
Improvement
Program
FFYs 2022–26

DRAFT



Transportation Improvement Program and Air Quality Conformity Determination

Federal Fiscal Years 2022–26

Boston Region Metropolitan Planning Organization

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

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which is composed of the

Massachusetts Department of Transportation
Metropolitan Area Planning Council
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MBTA Advisory Board
Massachusetts Port Authority
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City of Boston
City of Everett, At-Large City
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Title VI Specialist

Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116

civilrights@ctps.org

By 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

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visit <https://www.mass.gov/massrelay>

CONTACT MPO STAFF

By mail:

Boston Region MPO
Certification Activities Group, Central Transportation Planning Staff
10 Park Plaza, Suite 2150
Boston, MA 02116

By 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

For more information, including numbers for Spanish speakers, visit <https://www.mass.gov/massrelay>

By fax:

617.570.9192

By email:

mgenova@ctps.org

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ABBREVIATIONS

Abbreviation	Term
3C	continuous, comprehensive, cooperative [metropolitan transportation planning process]
A&F	Administration and Finance Committee
AAB	Architectural Access Board
AA DT	average annual daily traffic
AC	advance construction
ACS	American Community Survey [US Census Bureau data]
ADA	Americans with Disabilities Act of 1990
AFC	automated fare collection
ALI	activity line item
BRT	bus rapid transit
BTD	Boston Transportation Department
CA/T	Central Artery/Tunnel [project also known as “the Big Dig”]
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
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
CMP	Congestion Management Process
CNG	compressed natural gas
CO	carbon monoxide
CO ₂	carbon dioxide
CTPS	Central Transportation Planning Staff
CY	calendar year
DCR	Department of Conservation and Recreation
DEIR	draft environmental impact report
DEP	Department of Environmental Protection [Massachusetts]
DOT	department of transportation
EDTTT	excessive delay threshold travel time
EJ	environmental justice
ENF	environmental notification form
EO	executive order
EOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
EOHED	Massachusetts Executive Office of Housing and Economic Development
EPA	Environmental Protection Agency [federal]
EPDO	equivalent property damage only [a traffic-related index]

Abbreviation	Term
FARS	Fatality Analysis and Reporting System [FHWA]
FAST Act	Fixing America's Surface Transportation Act
FDR	functional design report
FEIR	final environmental impact report
FFGA	full funding grant agreement
FFY	federal fiscal year
FHWA	Federal Highway Administration
FMCB	MBTA Fiscal and Management Control Board
FR	Federal Register
FTA	Federal Transit Administration
GANS	grant anticipation notes [municipal bond financing]
GHG	greenhouse gas
GLX	Green Line Extension
GWSA	Global Warming Solutions Act of 2008 [Massachusetts]
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
MARPA	Massachusetts Association of Regional Planning Agencies
MassDOT	Massachusetts Department of Transportation
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MCCA	Massachusetts Convention Center Authority
MEPA	Massachusetts Environmental Policy Act
MGL	Massachusetts General Laws
MOVES	Motor Vehicle Emissions Simulator [EPA air quality model]
MPO	metropolitan planning organization [Boston Region MPO]
MOU	memorandum of understanding
MWRC	MetroWest Regional Collaborative [MAPC municipal subregion]
MWR TA	MetroWest Regional Transit Authority
NAAQS	National Ambient Air Quality Standards
NFA	non-federal aid
NFP	National Freight Program

Abbreviation	Term
NH DOT	New Hampshire Department of Transportation
NHFP	National Highway Freight Program
NHPP	National Highway Performance Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NMCOG	Northern Middlesex Council of Governments
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
OTP	MassDOT Office of Transportation Planning
PBPP	performance-based planning and programming
PHED	peak hours of excessive delay
PfP	Planning for Performance
PL	metropolitan planning funds [FHWA] or public law funds
PMT	Program for Mass Transportation [MBTA]
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
RMV	Registry of Motor Vehicles [MassDOT division]
RSA	road safety audit
RTA	regional transit authority
RTAC	Regional Transportation Advisory Council [of the Boston Region MPO]
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SEIR	Single Environmental Impact Report [MEPA]
SFY	state fiscal year
SHSP	Strategic Highway Safety Plan
SIP	State Implementation Plan
SOV	single-occupant vehicle
SPR	Statewide Planning and Research
SRTS	Safe Routes to School [federal program]
SSC	South Shore Coalition [MAPC municipal subregion]
STBGP	Surface Transportation Block Grant Program [federal funding program; replaced STP]
STIP	State Transportation Improvement Program
STP	Surface Transportation Program [federal funding program; replaced by STBGP]
SWAP	South West Advisory Planning Committee [MAPC municipal subregion]

Abbreviation	Term
TAM	Transit Asset Management Plan
TAMP	Transportation Asset Management Plan
TAP	Transportation Alternatives Program [federal funding program]
TCM	transportation control measure
TE	transportation equity
TERM	Transit Economic Requirements Model [FTA]
TFPC	total federal participating cost
TIP	Transportation Improvement Program [MPO certification document]
TRIC	Three Rivers Interlocal Council [MAPC municipal subregion]
TTI	travel time index
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 [oversees FHWA and FTA]
UZA	urbanized area
VMT	vehicle-miles traveled
VOCs	volatile organic compounds [pollutants]
VRM	vehicle revenue-miles

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
INTRODUCTION	ES-1
FFYS 2022–26 TIP INVESTMENTS	ES-2
Highway Program	ES-2
Transit Program	ES-2
REGIONAL TARGET PROGRAM DETAILS	ES-3
FINANCING THE FFYS 2022–26 TIP	ES-8
Highway Program	ES-8
Transit Program	ES-9
THE TIP DEVELOPMENT PROCESS	ES-10
Overview	ES-10
Outreach and Data Collection	ES-11
Project Evaluation	ES-12
TIP Readiness Day	ES-12
Staff Recommendation and Draft TIP	ES-12
APPROVING THE TIP	ES-13
UPDATES TO THE TIP	ES-13
STAY INVOLVED WITH THE TIP	ES-14
CHAPTER 1: 3C TRANSPORTATION PLANNING AND THE BOSTON REGION METROPOLITAN PLANNING ORGANIZATION	1-1
THE TRANSPORTATION PLANNING PROCESS	1-2
3C Transportation Planning	1-2
THE BOSTON REGION MPO	1-3
MPO Central Vision Statement	1-7
Certification Documents	1-7
CHAPTER 2: THE TIP PROCESS	2-1
INTRODUCTION TO THE TIP PROCESS	2-1
FUNDING THE TIP	2-2
Federal Funding Framework	2-2
Federal Highway Program	2-2

Federal Transit Program	2-4
INVESTMENT FRAMEWORKS	2-5
MPO Investment Framework	2-5
MassDOT and Transit Agency Investment Frameworks	2-11
DEVELOPING THE TIP	2-12
Project Selection Process.	2-12
Selection Process for Projects Prioritized by the State and Transit Agencies	2-19
APPROVING THE TIP.	2-20
Approval of the Draft TIP for Public Review	2-20
Approval of the Draft TIP.	2-20
UPDATING THE TIP	2-20
Public Notice.	2-21
CHAPTER 3: SUMMARY OF HIGHWAY AND TRANSIT PROGRAMMING	3-1
INVESTMENT SUMMARY	3-4
DETAILED PROJECT DESCRIPTIONS	3-41
Field Definitions.	3-41
Acton: Intersection Improvements at Massachusetts Avenue (Route 111) and Main Street (Route 27) (Kelley’s Corner).	3-43
Acton: Intersection and Signal Improvements on Routes 2 and 111 (Massachusetts Avenue) at Piper Road and Taylor Road	3-44
Acton: Parking Management System	3-45
Acton, Boxborough, and Littleton: Pavement Preservation on Route 2	3-46
Arlington: Stratton School Improvements (SRTS)	3-47
Arlington, Newton, and Watertown: BlueBikes Expansion.	3-48
Ashland: Bridge Replacement, A-14-006, Cordaville Road over Sudbury River	3-49
Ashland: Rehabilitation and Rail Crossing Improvements on Cherry Street	3-50
Ayer and Littleton: Intersection Improvements on Route 2A at Willow Road and Bruce Street.	3-51
Bedford: Minuteman Bikeway Extension, from Loomis Street to the Concord Town Line	3-52
Bellingham: South Main Street (Route 126), from Mechanic Street (Route 140) to Douglas Drive	3-53
Beverly: Rehabilitation of Bridge Street.	3-54

Boston: Bridge Reconstruction/Rehabilitation, B-16-181, West Roxbury Parkway over MBTA	3-55
Boston: Bridge Rehabilitation, B-16-107, Canterbury Street Over Amtrak Railroad	53-6
Boston: Bridge Replacement, North Washington Street over the Boston Inner Harbor	3-57
Boston: Ellis Elementary Traffic Calming (SRTS)	3-58
Boston: Guide and Traffic Sign Replacement on Interstate 90/93 within Central Artery/Tunnel System	3-59
Boston: Improvements on Boylston Street, from Intersection of Brookline Avenue and Park Drive to Ipswich Street	3-60
Boston: Intersection and Signal Improvements at the VFW Parkway and Spring Street	3-61
Boston: Neponset River Greenway (Phase 3)	3-62
Boston: Reconstruction of Rutherford Avenue, from Sullivan Square to North Washington Street Bridge	3-63
Boston: Roadway, Ceiling, Arch, and Wall Reconstruction and other Control Systems in Sumner Tunnel	3-64
Boston, Milton, and Quincy: Interstate Maintenance and Related Work on Interstate 93	3-65
Boston, Milton and Quincy: Highway Lighting System Replacement on Interstate 93, from Neponset Avenue to the Braintree Split	3-66
Braintree, Quincy, and Weymouth: Resurfacing and Related Work on Route 53	3-67
Braintree and Weymouth: Resurfacing and Related Work on Route 3	3-68
Brookline: Transit App Education Program	3-69
Burlington and Woburn: Interstate Maintenance and Related Work on Interstate 95	3-70
Cambridge: Alewife Wayfinding Improvements	3-71
Cambridge: Superstructure Replacement, C-01-031, US Route 3/Route 16/Route 2 over MBTA Red Line	3-72
Cambridge and Somerville: Green Line Extension Project Extension to College Avenue with the Union Square Spur	3-73
Canton: Bridge Replacement, C-02-042 (33V) Revere Court over East Branch of the Neponset River	3-74
Canton: Royall Street Shuttle	3-75
Canton, Dedham, Norwood, Sharon, and Westwood: Highway Lighting Improvements at Interstate 93 and Interstate 95/Route 128	3-76
Canton, Foxborough, Norwood, Sharon, and Walpole: Stormwater Improvements along Route 1 and Interstate 95	3-77
Chelsea: Reconstruction of Broadway, from City Hall Avenue to the Revere City Line	3-78

Chelsea: Targeted Safety Improvements and Related Work on Broadway, from Williams Street to City Hall Avenue	3-79
Cohasset and Scituate: Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A), from Beechwood Street to the Scituate Town Line	3-80
Concord, Lexington, and Lincoln: Resurfacing and Related Work on Route 2A	3-81
Danvers: Resurfacing and Related Work on Route 114.	3-82
Danvers, Lynnfield, and Peabody: Guide and Traffic Sign Replacement on Interstate 95/Route 128 (Task 'A' Interchange)	3-83
Danvers and Middleton: Bridge Maintenance, Andover Street (D-03-009) over Ipswich River	3-84
Dedham: Pedestrian Improvements along Bussey Street	3-85
Everett: Rehabilitation of Beacham Street, from Route 99 to Chelsea City Line	3-86
Everett and Malden: Main Street Transit Signal Priority	3-87
Foxborough,: Resurfacing and Related Work on Route 1	3-88
Framingham: Traffic Signal Installation at Edgell Road at Central Street	3-89
Framingham and Natick: Resurfacing and Related Work on Route 9	3-90
Hamilton: Bridge Replacement, Winthrop Street over Ipswich River, H-03-002 (2R5).	3-91
Hingham: Intersection Improvements at Route 3A/Summer Street Rotary.	3-92
Hopkinton and Westborough: Reconstruction of Interstate 90/ Interstate 495 Interchange	3-93
Ipswich: Resurfacing and Related Work on Central and South Main Streets	3-94
Littleton: Reconstruction of Foster Street.	3-95
Lynn: Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square.	3-96
Lynn: Rehabilitation of Essex Street.	3-97
Lynn: Traffic and Safety Improvements at Two Locations on Broadway	3-98
Lynn and Saugus: Bridge Replacement, Route 107 over the Saugus River (aka Belden G. Bly Bridge)	3-99
Lynnfield and Wakefield: Rail Trail Extension, from the Galvin Middle School to Lynnfield/Peabody Town Line	3-100
Malden and Medford: BlueBikes Expansion	3-101
Medford: Milton Fuller Roberts Elementary School (SRTS)	3-102
Medford, Stoneham, and Winchester: Interstate Pavement Preservation on Interstate-93 . . .	3-103

Medway: Holliston Street and Cassidy Lane Improvements (SRTS)	3-104
Middleton: Bridge Replacement, M-20-003, Route 62 (Maple Street) over Ipswich River. . .	3-105
Milford: Rehabilitation on Route 16, from Route 109 to Beaver Street.	3-106
Milton: Intersection and Signal Improvements at Route 28 (Randolph Avenue) and Chickatawbut Road	3-107
Natick: Lake Cochituate Path.	3-108
Newton: Horace Mann Elementary School Improvements (SRTS)	3-109
Newton: Newton MicroTransit Service	110
Newton: Reconstruction of Commonwealth Avenue (Route 30), from East of Auburn Street to Ash Street	3-111
Newton and Westwood: Steel Superstructure Cleaning (Full Removal) and Painting of Two Bridges: N-12-056 and W-31-006	3-112
Newton and Weston: Steel Superstructure Cleaning (Full Removal) and Painting of Three Bridges: N-12-051, W-29-011, and W-29-028	3-113
Norwood: Intersection Improvements at Route 1 and University Avenue/Everett Street	3-114
Norwood: Intersection Improvements at Route 1A and Upland Road/Washington Street and Prospect Street/Fulton Street	3-115
Peabody: Central Street Corridor and Intersection Improvements	3-116
Peabody: Independence Greenway Extension	3-117
Peabody: Multi-Use Path Construction of Independence Greenway at Interstate 95 and Route 1	3-118
Quincy: Reconstruction of Sea Street	3-119
Randolph: Resurfacing and Related Work on Route 28.	3-120
Regional: Community Connections Program	3-121
Regional: Transit Modernization Program	3-122
Regionwide: MBTA Systemwide Bike Racks.	3-123
Revere: Improvements at Beachmont Veterans Elementary (SRTS)	3-124
Salem: Bridge Replacement, S-01-024, Jefferson Avenue over Parallel Street	3-125
Somerville: Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway (Top 200 Crash Location)	3-126
Stoneham: Deck Replacement and Superstructure Repairs, S-27-006 (2L2), (ST 28) Fellsway West over Interstate 93	3-127
Stoneham: Intersection Improvements at Route 28 (Main Street), North Border Road, and Pond Street.	3-128

Stow: Bridge Replacement, S-29-11, Box Mill Road Over Elizabeth Brook	3-129
Sudbury and Concord: Bruce Freeman Rail Trail, Phase 2D	3-130
Topsfield: Bridge Replacement, T-06-013, Perkins Row over Mile Brook	3-131
Watertown: Rehabilitation of Mount Auburn Street (Route 16)	13-32
Wellesley: Bicycle Infrastructure	133
Weston and Newton: Multi-Use Trail Connection, from Recreation Road to Upper Charles River Greenway including Reconstruction of Pedestrian Bridge N-12-078=W-29-062	3-134
Wilmington: Bridge Replacement, W-38-029 (2KV), Route 129 (Lowell Street) over Interstate 93	3-135
Wilmington: Bridge Replacement, W-38-003, Butters Row over MBTA	3-136
Wilmington: Intersection Improvements at Lowell Street (Route 129) and Woburn Street . . .	3-137
Wilmington: Reconstruction on Route 38 (Main Street), from Route 62 to the Woburn City Line	3-138
Winthrop: Reconstruction and Related Work along Winthrop Street and Revere Street Corridor	3-139
Woburn: Roadway and Intersection Improvements at Woburn Common, Route 38 (Main Street), Winn Street, Pleasant Street, and Montvale Avenue	3-140
Woburn and Burlington: Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street	3-141
Wrentham: Construction of Interstate 495/Route 1A Ramps	3-142
CHAPTER 4: PERFORMANCE ANALYSIS	4-1
OVERVIEW	4-1
Federal Performance Management Requirements	4-2
Other Performance-Based Planning and Programming Activities	4-5
PERFORMANCE-BASED PLANNING AND PROGRAMMING PHASES	4-5
Planning Phase	4-5
Investing Phase	4-6
Monitoring and Evaluating Phase	4-7
Coordination	4-8
FFYS 2022–26 PERFORMANCE ANALYSIS	4-8
Safety Performance	4-9
System Preservation and Modernization Performance	4-28
Capacity Management and Mobility Performance	45

Clean Air and Sustainable Communities Performance	4-58
Economic Vitality Performance.	4-62
Summary: Regional Target-Funded Projects Supporting MPO Goal Areas	4-63
PERFORMANCE MONITORING, REPORTING, AND EVALUATION	4-65
CHAPTER 5: DETERMINATION OF AIR QUALITY CONFORMITY	5-1
INTRODUCTION	5-2
Legislative and Regulatory Background.	5-2
CONFORMITY DETERMINATION	5-4
Ozone	5-4
Carbon Monoxide	5-9
CONCLUSION.	5-10
CHAPTER 6: TRANSPORTATION EQUITY PERFORMANCE REPORT	6-1
FEDERAL REQUIREMENTS	6-2
INTEGRATING EQUITY INTO THE TIP	6-2
Transportation Equity Project Evaluation	6-3
Transportation Equity Analyses	6-5
GEOGRAPHICAL ANALYSES	6-6
TRANSPORTATION EMISSION IMPACTS ANALYSIS	6-17
FUNDING DISTRIBUTION ANALYSES	6-19
FUTURE ACTIVITIES TO IMPROVE MONITORING OF TRANSPORTATION EQUITY PERFORMANCE	6-22

APPENDICES

APPENDIX A: PROJECT PRIORITIZATION AND SCORING
APPENDIX B: GREENHOUSE GAS MONITORING AND EVALUATION
APPENDIX C: PUBLIC OUTREACH AND COMMENTS
APPENDIX D: GEOGRAPHIC DISTRIBUTION OF TIP FUNDING
APPENDIX E: REGULATORY AND POLICY FRAMEWORK
APPENDIX F: BOSTON REGION METROPOLITAN PLANNING ORGANIZATION MEMBERSHIP
APPENDIX G: OPERATIONS AND MAINTENANCE SUMMARY

LIST OF TABLES AND FIGURES

TABLES

ES-1	New Regional Target Projects Funded in the FFYs 2022–26 TIP	ES-3
ES-2	FFYs 2022–26 Boston Region MPO Regional Target Investment Summary	ES-6
2-1	Federal Highway Administration Programs Applicable to the FFYs 2022–26 Transportation Improvement Program	2-4
2-2	Federal Transit Administration Programs Applicable to the FFYs 2022–26 Transportation Improvement Program	2-5
3-1	Boston Region MPO Regional Target Program Funding Summary.	3-2
3-2	New Regional Target Projects Funded in the FFYs 2022–26 TIP.	3-3
3-3	FFYs 2022–26 Boston Region MPO Regional Target Investment Summary	3-4
3-4	MassDOT Highway Program Investment Summary	3-5
3-5	MBTA Transit Program Investment Summary	3-6
3-6	CATA and MWRTA Transit Program Investment Summary	3-7
3-7	Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table	3-9
3-8	Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program)	3-27
3-9	Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program - Project List and Descriptions [80% Federal Share])	3-28
3-10	Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA)	3-32
3-11	Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (CATA)	3-38
4-1	National and Boston Region MPO Goal Areas	4-2
4-2	Federally Required Transit Performance Measures	4-3
4-3	Federally Required Roadway Performance Measures	4-4
4-4	Massachusetts CY 2021 Safety Performance Targets	4-11
4-5	Regional Target Projects: Roadway Safety Performance Metrics	4-19
4-6	Past Safety Performance Data for MBTA Transit Services (CYs 2017–19 Averages)	4-21
4-7	MBTA CY 2021 Safety Performance Targets	4-22
4-8	Past Safety Performance Data for CATA Transit Services	4-23
4-9	CATA SFY 2021 Safety Performance Targets	4-24
4-10	MWRTA Past Safety Performance Data (SFYs 2019–20).	4-24

4-12	MWRTA SFY 2021 Safety Performance Targets	4-26
4-13	NHS Bridge Condition Baselines for Massachusetts and the Boston Region.	4-30
4-14	Massachusetts NHS Bridge Condition Targets	4-31
4-15	Massachusetts NHS Pavement Condition Targets	4-33
4-16	Regional Target Projects: Roadway System Preservation and Modernization Performance Metrics	4-35
4-17	TAM Performance Values and SFY 2021 Targets for Transit Rolling Stock	4-38
4-18	TAM Performance Values and SFY 2021 Targets for Transit Equipment	4-39
4-19	TAM Performance Values and SFY 2021 Targets for Facilities	4-40
4-20	TAM Performance Values and SFY 2021 Targets for Infrastructure (Fixed Guideway), MBTA	4-41
4-21	Targets for Travel Time Reliability	4-48
4-22	Targets for Truck Travel Time Reliability	4-49
4-23	Targets for Annual Hours of Peak Hour Excessive Delay Per Capita in the Boston Urbanized Area	4-52
4-24	Boston MA-NH-RI UZA Percent of Non-SOV Travel Measure Values and Targets	4-55
4-25	Regional Target Projects: Roadway Capacity Management and Mobility Performance Metrics	4-57
4-26	Targets for Emissions Reduction from CMAQ Projects in the Boston Region	4-60
4-27	Regional Target Projects: Clean Air and Sustainable Communities Performance Metrics . .	4-61
4-28	Regional Target Projects: Economic Vitality Performance Metrics	4-63
6-1	Criteria Used in Transportation Equity Scoring.	6-4
6-2	Transportation Equity Populations in the Boston Region.	6-6
6-3	Transportation Equity Populations Served or Impacted by Regional Target-funded Projects	6-13
6-4	Percentage of Transportation Equity Populations Served or Impacted by Regional Target Projects, by Investment Program	6-17
6-5	Reduction in Carbon Monoxide, Volatile Organic Compounds, and Nitrogen Oxide Emissions per 1,000 People	6-18
6-6	Percent of Funding Allocated to Transportation Equity Populations	6-19

FIGURES

ES-1	FFYs 2022–26 TIP Regional Target Funding by MPO Investment Program	ES-5
ES-2	FFYs 2022–26 TIP: Regional Target Funding Levels Relative to L RTP Investment Program Goals	ES-7
ES-3	FFYs 2022-26 TIP: Regional Target Funding Levels Relative to Key Indicators.	ES-8
1-1	Municipalities in the Boston Region	1-3
1-2	Boston Region MPO Organizational Chart	1-5
1-3	L RTP Goals and Objectives	1-8
1-4	Relationship between the L RTP, TIP, UPWP, and Performance-Based Planning Process	1-10
2-1	<i>Destination 2040</i> Investment Programs	2-7
2-2	<i>Destination 2040</i> Funding Goals by MPO Investment Program	2-11
2-3	TIP Project Evaluation Criteria: Point Distribution for Community Connections Projects.	2-16
2-4	TIP Project Evaluation Criteria: Point Distributions by Project Type (All Other Investment Programs).	2-17
4-1	Fatalities from Motor Vehicle Crashes	4-13
4-2	Fatality Rate per 100 Million VMT	4-13
4-3	Number of Serious Injuries	4-14
4-4	Serious Injury Rate per 100 Million VMT	4-15
4-5	Number of Nonmotorized Fatalities and Serious Injuries.	4-17
4-6	Performance Values and Targets for the Percent of Non-SOV Travel in the Boston MA-NH-RI UZA	4-54
4-7	FFYs 2022–26 TIP Target Program: Projects by the Numbers.	4-64
6-1	Percentage of the Minority Population in the Boston Region	6-7
6-2	Percentage of People with Low Incomes in the Boston Region	6-8
6-3	Percentage of People with LEP in the Boston Region	6-9
6-4	Percentage of People Age 75 or Older in the Boston Region.	6-10
6-5	Percentage of People Age 17 Or Younger in the Boston Region	6-10
6-6	Percentage of People with Disabilities in the Boston Region.	6-12
6-7	Change in the Percentage of Transportation Equity Populations Served or Impacted by Regional Target Projects	6-15
6-8	Change in the Percentage of Funding Allocated to Transportation Equity Populations	6-21



Executive Summary

INTRODUCTION

The Boston Region Metropolitan Planning Organization's (MPO) five-year capital investment plan, the Federal Fiscal Years (FFYs) 2022–26 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 2022–26 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 2022–26 TIP, roadway, bridge, and bicycle and pedestrian programs account for more than \$1.2 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 2022–26 TIP includes nearly \$3.6 billion in transit investments by the transit authorities that will support state of good repair, modernize transit systems, and increase access to transit. The Green Line Extension project is a major project programmed in this TIP that will expand transit service. 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.

REGIONAL TARGET PROGRAM DETAILS

During FFYs 2022–26, the Boston Region MPO plans to fund 45 projects with its Regional Target funding. In total, nine new projects were added to the MPO’s Regional Target program during this TIP cycle, all of which were funded through the MPO’s Community Connections Program. Two additional fiscal years of funding were also added for one project already programmed by the MPO, the Newton Microtransit Service project. Details on these projects are available in table ES-1.

Table ES-1: New Regional Target Projects Funded in the FFYs 2022–26 TIP

Project Name	Municipality (Proponent)	FFYs of Funding	Regional Target Dollars Programmed
Royall Street Shuttle	Canton	2022-24	\$534,820
Newton Microtransit Service	Newton	2023-24*	\$427,000
BlueBikes Expansion	Arlington, Newton, and Watertown	2022	\$340,000
Alewife Wayfinding Improvements	Cambridge (128 Business Council)	2022	\$292,280
Systemwide Bike Racks	MBTA	2022	\$275,740
BlueBikes Expansion	Malden and Medford	2022	\$236,830
Main Street Transit Signal Priority	Everett and Malden (MBTA)	2022	\$225,000
Bicycle Infrastructure	Wellesley	2022	\$85,054
Transit App Education Program	Brookline	2022	\$43,620
Acton Parking Management System	Acton	2022	\$20,000
Total	N/A	N/A	\$2,480,344

Note: All projects in this table are funded through the MPO’s Community Connections Program.

*The first FFY of funding for the Newton Microtransit Service project is in FFY 2021, in which \$300,000 was allocated to the project.

Source: Boston Region MPO.

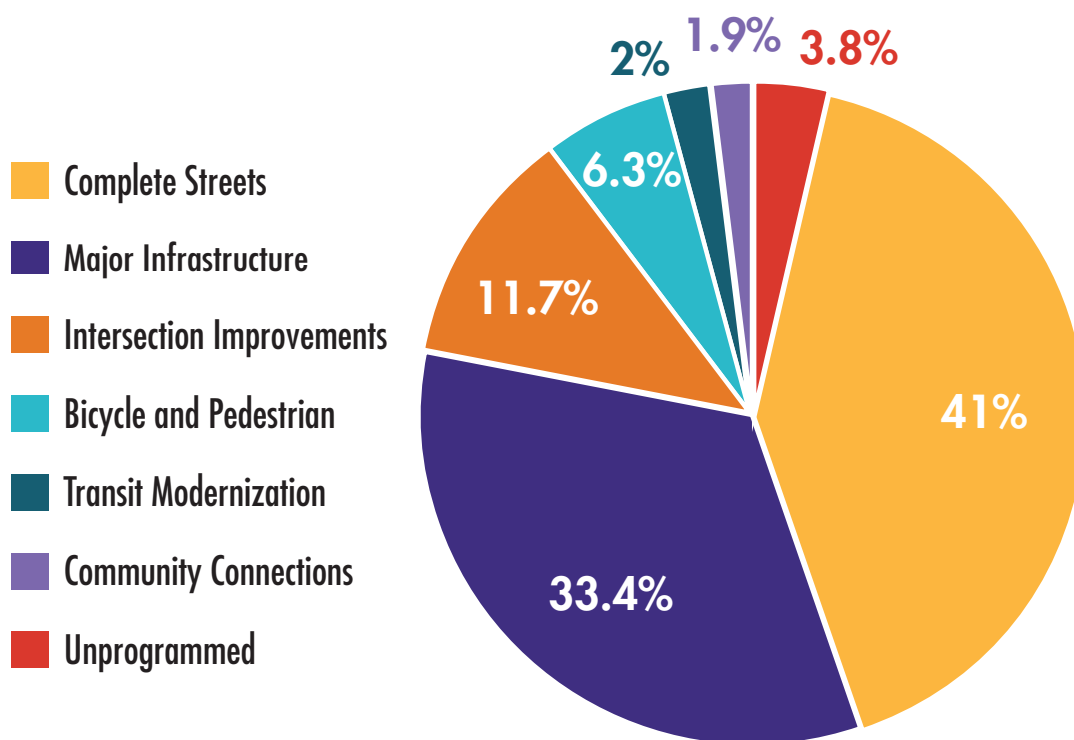
Other investment decisions made this year include the allocation of more than \$10 million in new funding in FFY 2026 to the Reconstruction of Rutherford Avenue in Boston. FFY 2026 is the fourth year of a five-year funding commitment made by the MPO to this project, which is expected to be completed in FFY 2027. The MPO also set aside continued funding for its Community Connections Program (in FFYs 2023–27) and allocated a second year of funding to its Transit Modernization Program in FFY 2026 (in addition to the funds already reserved in FFY 2025). The funding set aside through both of these programs will be allocated to specific projects during future TIP programming cycles.

During the development of the FFYs 2022–26 TIP, the MPO was very limited in its financial capacity to fund new projects. In addition to the inherently constrained nature of transportation infrastructure funding, the need for which greatly exceeds available resources in any given year, significant cost increases for many projects already programmed in FFYs 2021–25 consumed funding for prospective new projects in FFY 2026. Though this challenge inevitably arises to some extent during every TIP cycle, both this year and last year’s FFYs 2021–25 TIP cycle saw especially severe levels of cost increases. This dynamic drove decision making during this fiscal year and led to no new projects being selected for programming in the FFYs 2022–26 TIP except the \$2.5 million in Community Connections projects listed above in Table ES-1.

The MPO’s long-time practice has been to fully fund cost increases for projects already programmed in the TIP. This practice provides certainty for project proponents that the investments they make in project design and permitting will lead to capital funding to support the completion of their project. Given the severity of project cost increases in sequential TIP cycles, however, the MPO has formed a subcommittee of board members to examine the issue further and assess whether changes to this policy—or any of the MPO’s other programming policies outlined in this TIP—are warranted. This subcommittee intends to conduct this work during the summer of 2021, with the intent of providing policy change recommendations to the MPO board for adoption prior to the beginning of the FFYs 2023–27 TIP cycle in the fall of 2021.

Figure ES-1 shows how the Regional Target funding for FFYs 2022–26 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 expansion of transit infrastructure through investments in Major Infrastructure projects. The MPO also elected to leave approximately \$20.5 million unprogrammed, preferring that the use of these funds be determined after the conclusion of the policy dialogue discussed above.

Figure ES-1: FFYs 2022–26 TIP Regional Target Funding by MPO Investment Program



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 2022–26 TIP. As noted in Figure ES-1, the MPO has programmed more than 96 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 2022–26 Boston Region MPO Regional Target Investment Summary

MPO Investment Program	Number of Projects	Regional Target Dollars Programmed
Bicycle Network and Pedestrian Connections	4	\$33,704,014
Community Connections (allocated to projects)	10	\$2,480,344
Community Connections (not yet allocated to projects)	N/A	\$7,522,281
Complete Streets	19	\$220,955,609
Intersection Improvements	8	\$62,805,302
Major Infrastructure—Flex to Transit ¹	1	\$27,116,883
Major Infrastructure—Roadway ²	3	\$152,977,631
Transit Modernization (not yet allocated to projects)	N/A	\$11,000,000
Unprogrammed	N/A	\$20,496,035
Total	45	\$539,058,099

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

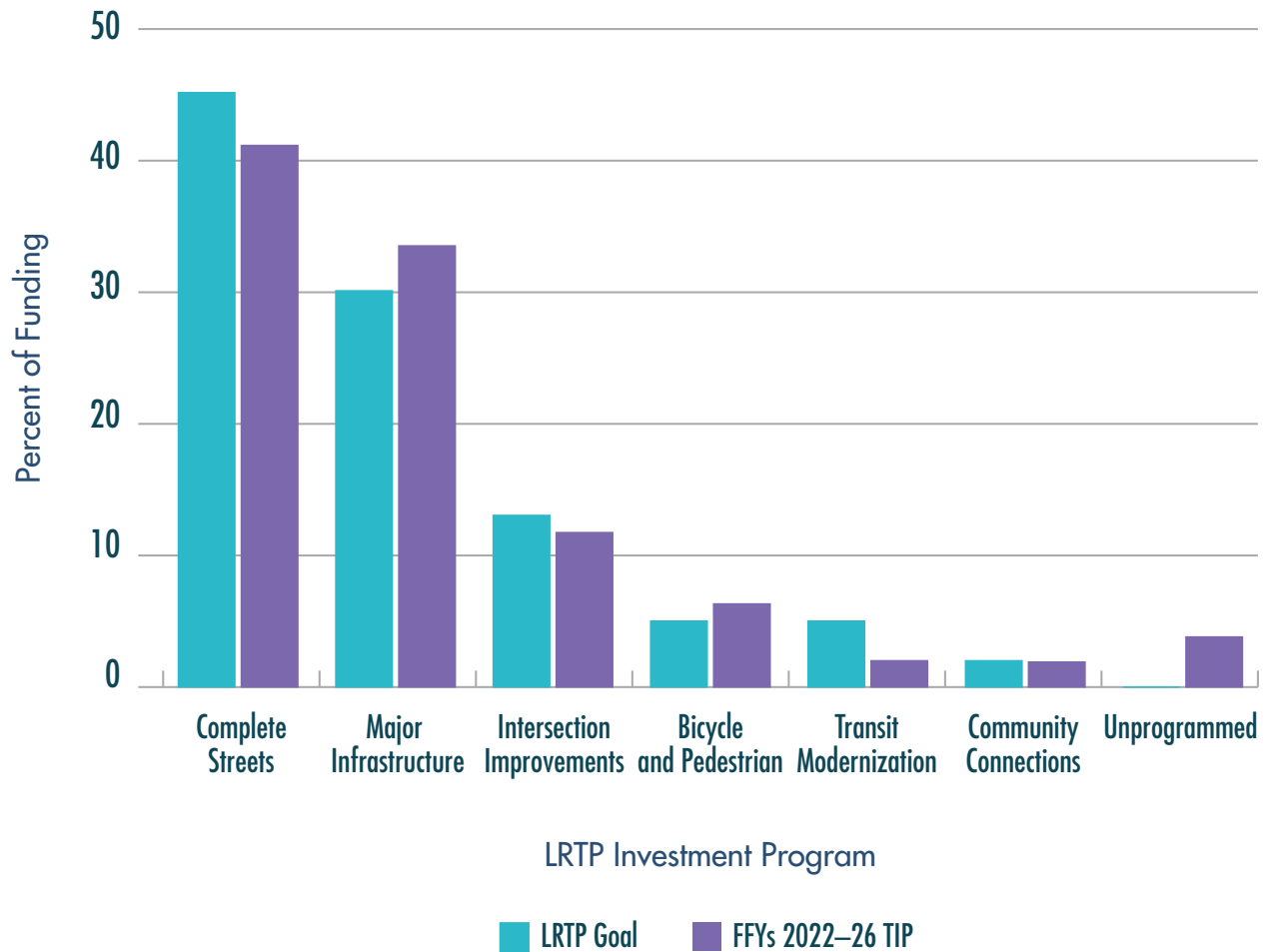
1 The MPO will flex federal highway improvement dollars to support the Green Line Extension.

2 In FFY 2022, the MPO will contribute \$11,046,213 to Project 606476—Summer Tunnel Improvements—and MassDOT will contribute other funds. This project is included in the total number of projects in this category.

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 2022–26 TIP is shown in Figure ES-2.

Figure ES-2: FFYs 2022–26 TIP: Regional Target Funding Levels Relative to L RTP Investment Program Goals

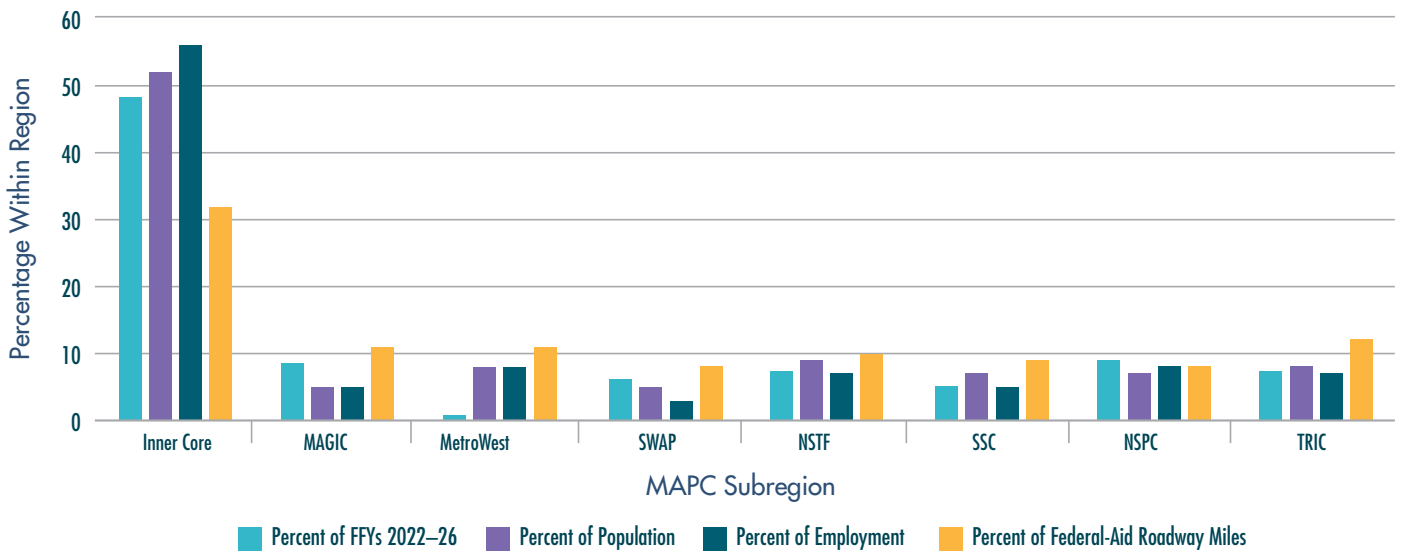


L RTP = Long-Range Transportation Plan. TIP = Transportation Improvement Program.

Source: Boston Region MPO.

The investments made in the FFYs 2022–26 TIP will be implemented in 37 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 2022-26 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. Funds allocated to the MBTA's Systemwide Bicycle Rack project (\$275,740 in FFY 2022) are also not included, as these funds will be distributed regionwide.

Source: Boston Region MPO.

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

FINANCING THE FFYS 2022-26 TIP

Highway Program

The TIP Highway Program was developed with the assumption that federal funding for the state would range between \$668 million and \$721 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 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 \$86 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 this planning cycle, \$726 million to \$750 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.

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 \$105 million and \$110 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.

Under the federal transportation legislation, Fixing America's Surface Transportation (FAST) Act, funding is allocated by the following categories:

- 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 Universe include 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.

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.

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 \$539 million of Regional Target funding available to the Boston Region MPO for FFYs 2022–26. 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 April 2021.

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 input 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



Chapter 1

3C Transportation Planning and the Boston Region Metropolitan Planning Organization

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

THE TRANSPORTATION PLANNING PROCESS

The federal government regulates the funding, planning, and operation of the surface transportation system through the federal transportation program, which was enacted into law through Titles 23 and 49 of the United States Code. Section 134 of Title 23 of the Federal Aid Highway Act, 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 surface transportation law is the Fixing America's Surface Transportation (FAST) Act. The FAST Act sets policies related to metropolitan transportation planning. The law requires that all MPOs carry out a continuing, comprehensive, and cooperative (3C) transportation planning process.

3C Transportation Planning

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

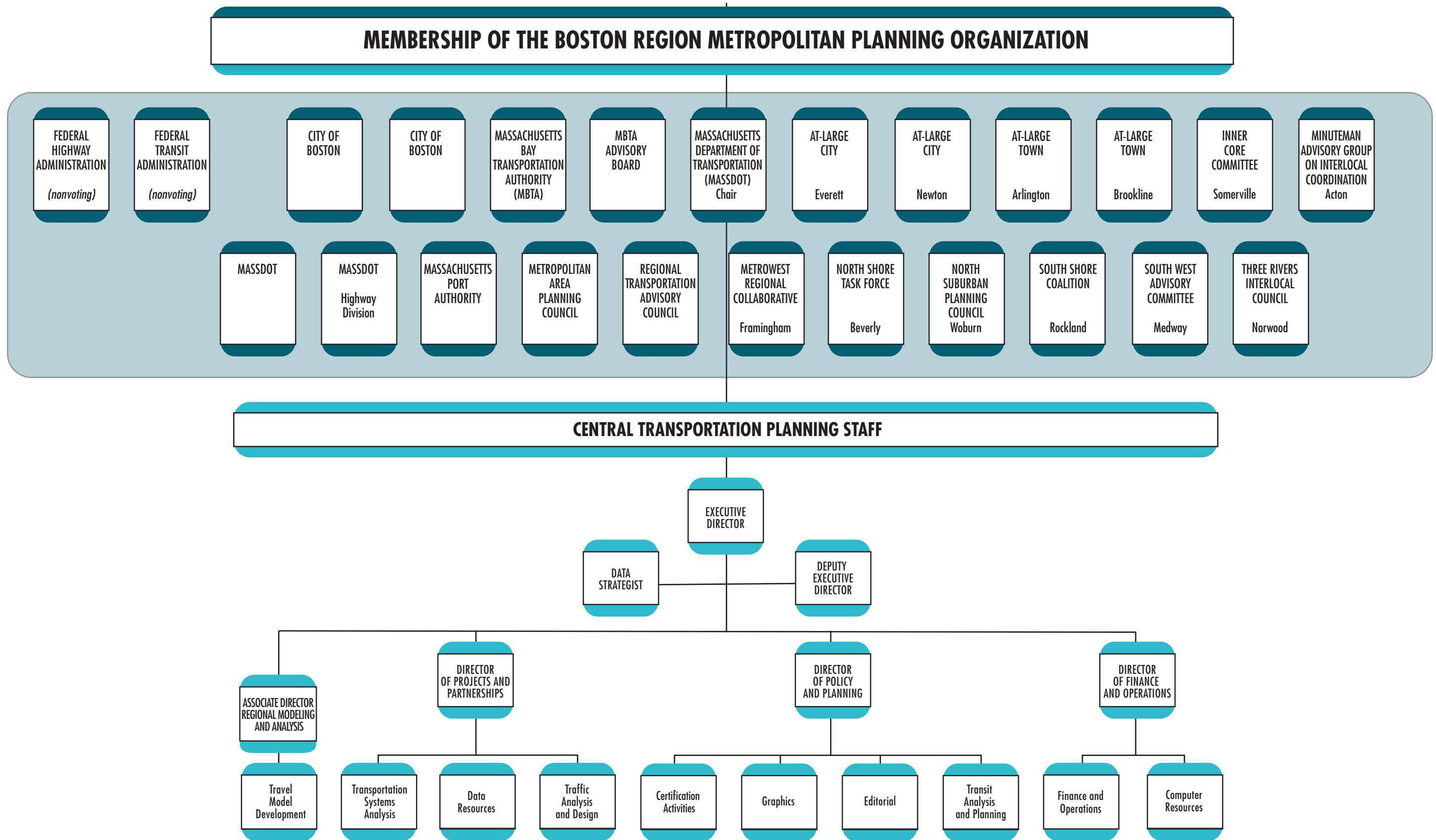
- Identify transportation problems and develop possible solutions
- Ensure that decision-making balances short- and long-range considerations and adequately reflects the range of possible future scenarios, options, and consequences
- Represent both regional and local considerations, and both transportation 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 FAST Act, the Americans with Disabilities Act of 1990, the Clean Air Act, the Civil Rights Act of 1964, Executive Order 12898 (regarding environmental justice), Executive Order 13166 (regarding outreach to populations with limited English-language proficiency), and Executive Order 13330 (regarding the coordination of human-services transportation)

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

The 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





SHARE THE ROAD

2 PARKING

BIKE WALK

New So...

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

Figure 1-3: LRTP Goals and Objectives

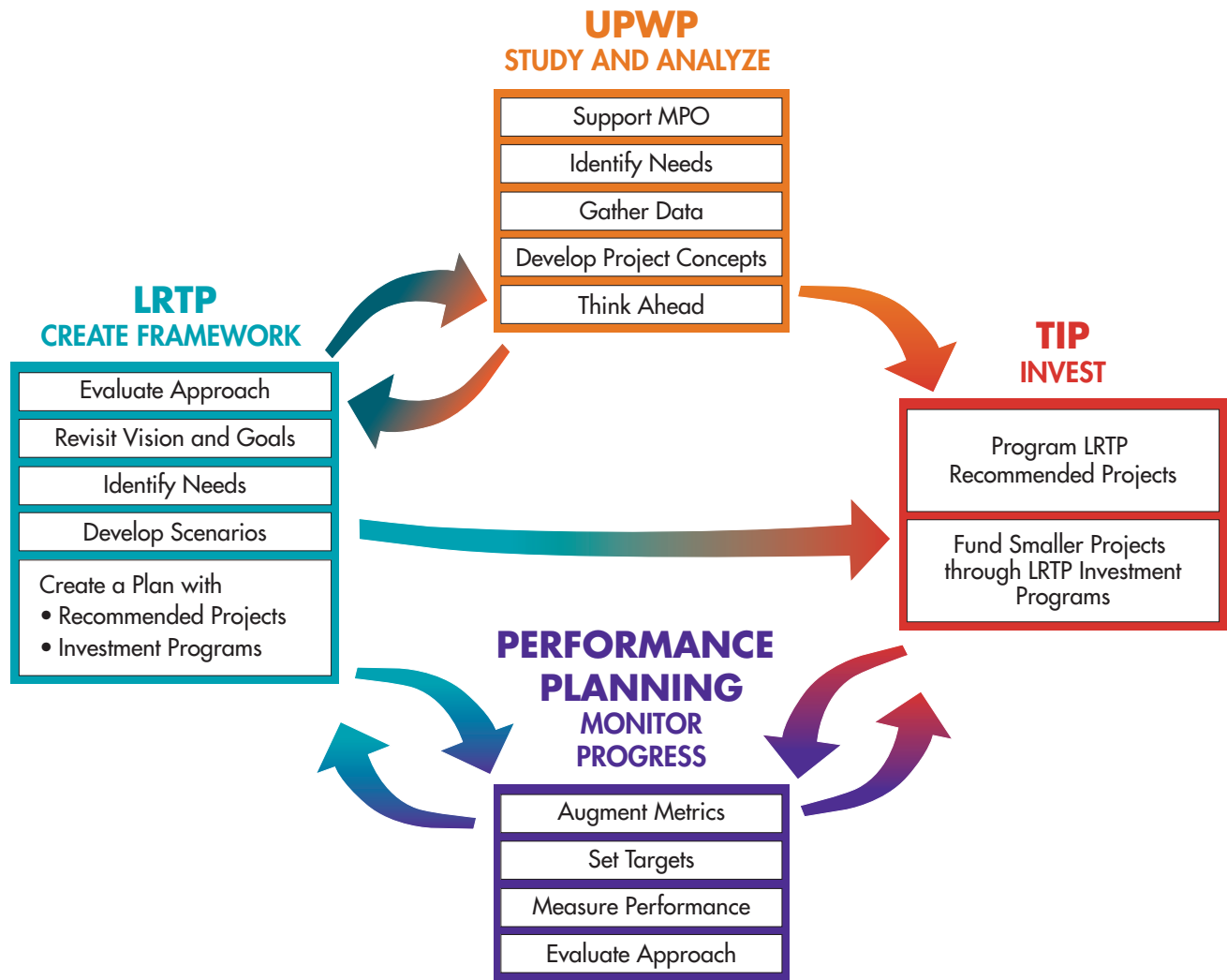
CENTRAL VISION STATEMENT	
<p>The Boston Region Metropolitan Planning Organization envisions a modern, well-maintained transportation system that supports a sustainable, healthy, livable, and economically vibrant region. To achieve this vision, the transportation system must be safe and resilient; incorporate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

(Fig 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 and 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





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).¹ The establishment of this level of funding is referred to as an *authorization*.

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 2022–26 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 \$668 million and \$721 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 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 \$86 million and \$134 million annually over the five years of this TIP.

¹ The most recent authorization act, Fixing America’s Surface Transportation (FAST) Act, was signed into law on December 4, 2015. A one-year extension of the FAST Act was signed into law on October 1, 2020.

The remaining Federal-Aid Highway Program funds are budgeted to support state and regional (i.e., MPO) priorities. In the FFYs 2022–26 TIP, there is a total of approximately \$726 million to \$750 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 2022–26 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 \$539 million, an average of \$107.8 million per year. 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 Fixing America's Surface Transportation (FAST) Act and fund projects in the FFYs 2022–26 TIP.

Table 2-1: Federal Highway Administration Programs Applicable to the FFYs 2022–26 Transportation Improvement Program

FAST Act Program	Eligible Uses
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
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) [formerly the Surface Transportation Program (STP)]	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)
Metropolitan Planning	Facilities that contribute to an intermodal transportation system, including intercity bus, pedestrian, and bicycle facilities
National Highway Freight Program (NHFP)	Projects that improve the efficient movement of freight on the National Highway Freight Network

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 FAST Act and support transit investments in the FFYs 2022–26 TIP.

Table 2-2: Federal Transit Administration Programs Applicable to the FFYs 2022–26 Transportation Improvement Program

FAST Act 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

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 2022–26 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

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

KEY: MPO GOALS



Safety



System Preservation and Modernization



Capacity Management and Mobility



Clean Air/Sustainable Communities



Transportation Equity



Economic Vitality

Figure 2-1: Destination 2040 Investment Programs (cont., 2)

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 services, including shuttle operations, partnerships with transportation network companies, or transit enhancements
- Coordinating transit service or small capital improvements with existing or future fixed-route service
- Adopting innovative parking management strategies or constructing additional parking for automobiles or bicycles
- Making minor bicycle and pedestrian infrastructure improvements near transit stations
- Promoting education and wayfinding, including travel instruction, training on new technologies, signage, and pilot or demonstration projects

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 \$20 million and/or add capacity to the transportation system. 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.²

While the MPO did not fund any specific Transit Modernization projects in this TIP cycle, funding was reserved in FFYs 2025 and 2026 for future allocation. In the meantime, 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 2022–26 TIP, the MPO built on the success of last year's pilot round of the Community Connections Program, funding nine additional projects on top of the five projects funded in the previous TIP cycle. Funding continues to be reserved in FFYs 2023–26 for allocation in future TIP cycles. 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-management 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.

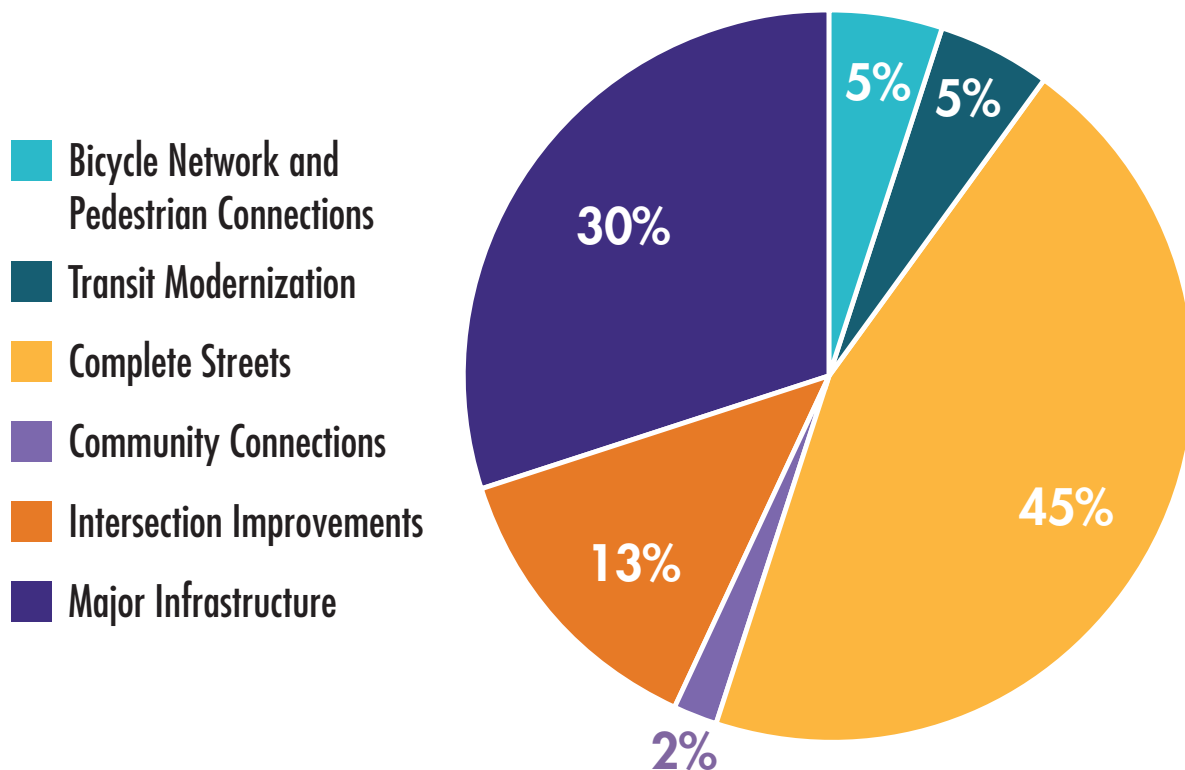
² The Community Connections Program was formerly referred to as the Community Transportation/Parking/Clean Air and Mobility Program when it was originally created in the MPO's 2015 LRTP, *Charting Progress to 2040*.

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. 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.

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



MassDOT and Transit Agency Investment Frameworks

MassDOT, in coordination with the MBTA, updates its rolling five-year Capital Investment Plan (CIP) on an annual basis. This planning document identifies priority roadway, transit, bridge, and statewide infrastructure projects for the five MassDOT divisions and the MBTA. The CIP process uses a framework that prioritizes funding according to MassDOT’s strategic goals. Reliability is the top priority for MassDOT, followed by modernization and then expansion. MassDOT and the MBTA have created investment programs for the CIP 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 TIP. 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. 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 2022–26 TIP cycle to take place virtually. During the fall of 2020, 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 more than two dozen office hour sessions booked for this purpose during the early stages of developing the FFYs 2022–26 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 was noted earlier in Chapter 2, 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 by MPO investment program and LRTP goal area are also available in Figure 2-4.

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.

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

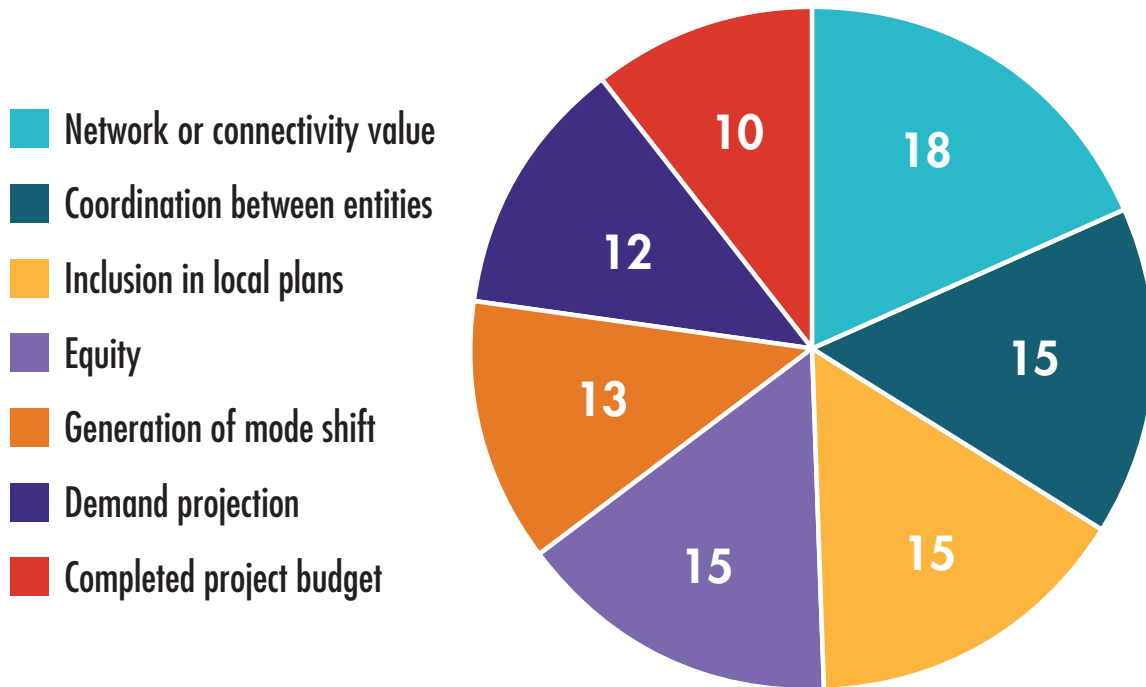
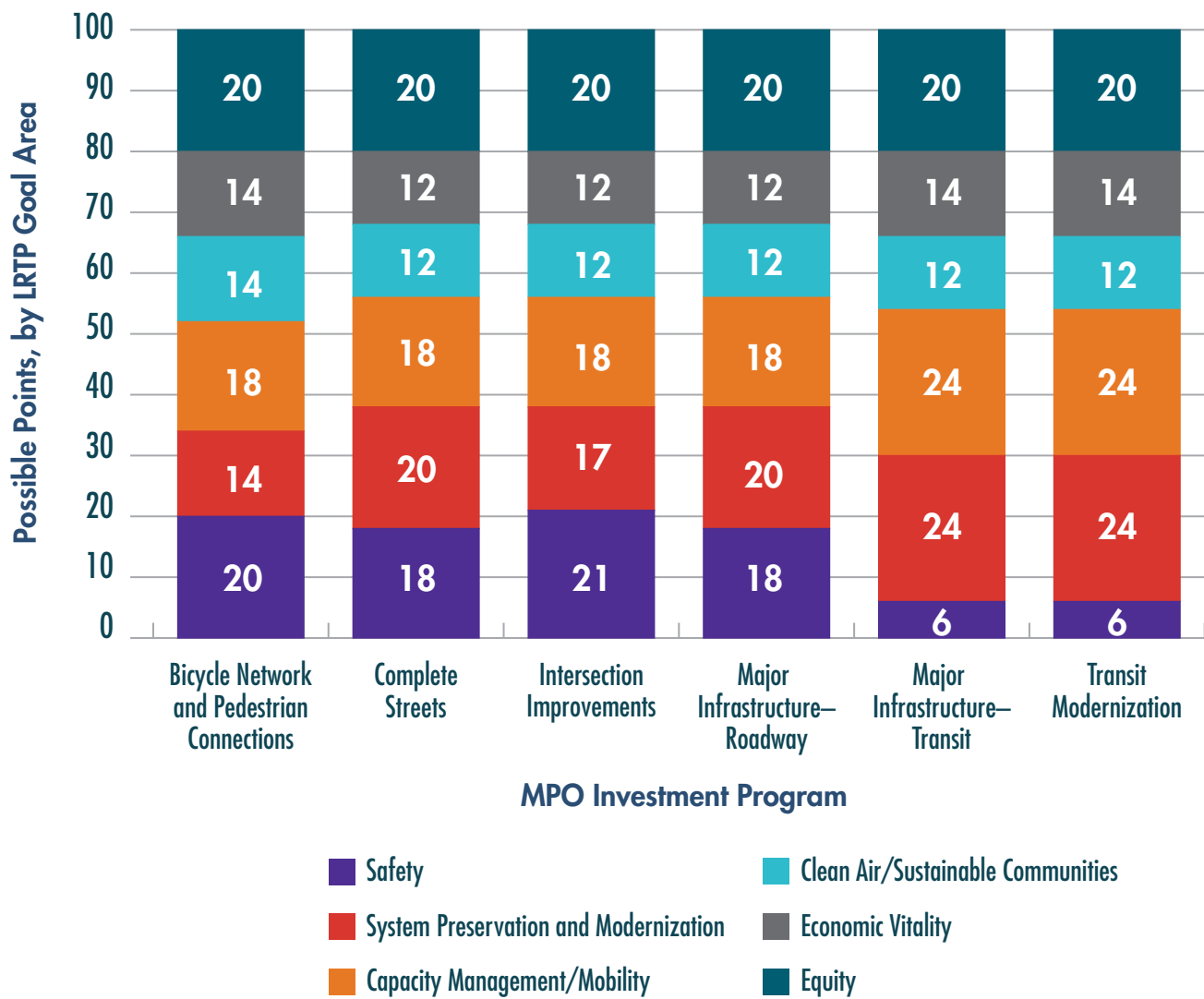


Figure 2-4: TIP Project Evaluation Criteria: Point Distributions by Project Type (All Other Investment Programs)



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 subcommittee to further explore the causes of project cost increases and devise MPO policy changes to support more reliable project delivery by all parties. The MPO expects this subcommittee to conclude its work in advance of the project selection process for the FFYs 2023–27 TIP. More information on this subject is available in Chapter 3.

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 project cost escalation issues outlined above, the MPO elected not to fund any new projects in the FFYs 2022–26 TIP except for those funded with approximately \$2.5 million of Community Connections Program funds that had been previously reserved for such projects.

This decision resulted in approximately \$20.5 million remaining unprogrammed, allowing the MPO to reassess the use of these funds after any policy changes are made by the board prior to the FFYs 2023–27 TIP cycle. More information on the projects funded in the FFYs 2022–26 TIP, including the Community Connections projects funded with Regional Target funds, 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 MassDOT’s CIP. MassDOT and the MBTA 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.
- **Mobility:** Projects should provide efficient and effective modal options.
- **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 and Fairness:** Projects should equitably distribute both the benefits and the burdens of investments among all communities.
- **Environment and Health Impacts:** Projects should maximize the potential positive health and environmental aspects of the transportation system.
- **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 MassDOT’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, these agencies submit their lists of bridge projects, 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.

Though amendments to the TIP happen every year, anomalous events occur during certain TIP cycles that require action by the MPO board. During the development of the FFYs 2022–26 TIP, the reduction in ridership across the MBTA system caused by the COVID-19 pandemic—and the resulting decrease in farebox revenue—required an amendment to the FFYs 2021–25 TIP to reallocate a significant amount of MBTA capital funds to cover operating expenses. This decision delayed several federally funded capital projects, but allowed the MBTA the financial flexibility to fund preventative maintenance activities in support of the transit system's continued operation during the crisis. Such an event reinforces the notion that the TIP is a living capital plan that is regularly amended in response to the changing needs of the region.

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 Participation 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.



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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) 2022–26. 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 2022–26 TIP Regional Target Program complies with financial constraint requirements.

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

	FFY 2022	FFY 2023	FFY 2024	FFY 2025	FFY 2026	Total
Regional Target Obligation Authority	\$106,681,829	\$109,011,849	\$110,440,638	\$107,862,383	\$105,061,400	\$539,058,099
Regional Target Funds Programmed	\$106,638,666	\$108,908,330	\$110,440,638	\$106,862,383	\$84,712,047	\$518,562,064
Regional Target Funds Unprogrammed	\$43,163	\$103,519	\$0	\$0	\$20,349,353	\$20,496,035

Source: Boston Region MPO.

In the FFYs 2022–26 TIP, the MPO elected to leave approximately \$20.5 million in Regional Target funds unallocated to specific projects. This is uncharacteristic, as the MPO typically strives to fully allocate all of its funds in every fiscal year to the extent possible. In drafting this TIP, a significant number of projects that were selected for funding by the MPO in prior TIP cycles saw sizeable cost increases. The MPO’s historic policy has been—and continues to be—to use any available new funding to cover such cost increases before considering new projects for funding.

To provide certainty for project proponents, the MPO elected to maintain this policy during this TIP cycle, resulting in no allocation of funding for new projects in FFYs 2022–26 other than the 10 projects funded through the MPO’s Community Connections Program, which are listed in Table 3-2 below. The funding of these 10 projects—nine of which are new, and one of which is receiving a second and third year of funding—represents a successful second round of this new funding program for first- and last-mile projects, supporting the MPO’s ability to work towards its goals for the region even in years with limited available funding for new projects. (More information on these projects is available on the following pages of this chapter.) To support the MPO’s ability to fund more projects in future years, the MPO has formed a subcommittee of board members to examine the issue of project cost increases further. This subcommittee intends to conduct this work during the summer of 2021, with the intent of providing policy change recommendations to the MPO for adoption prior to the beginning of the FFYs 2023–27 TIP cycle in the fall of 2021.

Table 3-2: New Regional Target Projects Funded in the FFYs 2022–26 TIP

Project Name	Municipality (Proponent)	FFYs of Funding	Regional Target Dollars Programmed
Royall Street Shuttle	Canton	2022-24	\$534,820
Newton Microtransit Service	Newton	2023-24*	\$427,000
BlueBikes Expansion	Arlington, Newton, and Watertown	2022	\$340,000
Alewife Wayfinding Improvements	Cambridge (128 Business Council)	2022	\$292,280
Systemwide Bike Racks	MBTA	2022	\$275,740
BlueBikes Expansion	Malden and Medford	2022	\$236,830
Main Street Transit Signal Priority	Everett and Malden (MBTA)	2022	\$225,000
Bicycle Infrastructure	Wellesley	2022	\$85,054
Transit App Education Program	Brookline	2022	\$43,620
Acton Parking Management System	Acton	2022	\$20,000
Total	N/A	N/A	\$2,480,344

Note: All projects in this table are funded through the MPO’s Community Connections Program.

*The first FFY of funding for the Newton Microtransit Service project is in FFY 2021, in which \$300,000 was allocated to the project.

Source: Boston Region MPO.

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, and 2C) 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 the 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 2022–26 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.

Table 3-3: FFYs 2022–26 Boston Region MPO Regional Target Investment Summary

MPO Investment Program	Number of Projects	Regional Target Dollars Programmed
Bicycle Network and Pedestrian Connections	4	\$33,704,014
Community Connections (allocated to projects)	10	\$2,480,344
Community Connections (not yet allocated to projects)	N/A	\$7,522,281
Complete Streets	19	\$220,955,609
Intersection Improvements	8	\$62,805,302
Major Infrastructure—Flex to Transit*	1	\$27,116,883
Major Infrastructure—Roadway†	3	\$152,977,631
Transit Modernization (not yet allocated to projects)	N/A	\$11,000,000
Unprogrammed	N/A	\$20,496,035
Total	45	\$539,058,099

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

* The MPO will flex federal highway improvement dollars to support the Green Line Extension.

† In FFY 2022, the MPO will contribute \$11,046,213 to Project 606476—Summer Tunnel Improvements—and MassDOT will contribute other funds. This project is included in the total number of projects in this category.

Source: Boston Region MPO.

Table 3-4 shows MassDOT’s FFYs 2022–26 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.

Table 3-4: MassDOT Highway Program Investment Summary

MassDOT Program	Number of Projects	MassDOT Dollars Programmed
Bicycles and Pedestrians	5	\$34,054,640
Bridge Program	19	\$146,335,182
Earmarks or Discretionary Grants* †	2	\$146,559,638
Intersection Improvements ‡	5	\$21,394,315
Interstate Pavement	3	\$59,772,691
Non-Interstate Pavement	8	\$57,479,177
Roadway Improvements	1	\$411,782
Roadway Reconstruction	8	\$171,183,263
Safety Improvements	7	\$37,638,458
Total	55	\$674,829,146

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

* Funding has been earmarked for two projects, both of which are also receiving funding through MassDOT’s Roadway Reconstruction Program (606476—Summer Tunnel Improvements, and 607977—Interstates 90/495 Interchange Reconstruction). Each project is counted in the tally for the Earmark Projects and Roadway Reconstruction categories, but is only counted once in the total number of projects funded.

† Project 606476—Sumner Tunnel Improvements—is also funded with \$22,115,687 in Regional Target funds, which are not shown in this table.

‡ One project is funded through this program while also receiving funding through MassDOT’s Safety Improvements Program (608562—Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway in Somerville). This project is counted the tally for the Intersection Improvements and Safety Improvements categories, but is 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 TIP funding amounts, with additional details on the MBTA’s programs and projects in Tables 3-8 and 3-9 on the following pages. 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, as is currently demonstrated by the ongoing funding provided in support of the Green Line Extension project. Further information on how the MBTA’s investments support system safety and condition is available in Chapter 4.

Table 3-5: MBTA Transit Program Investment Summary

Federal Transit Administration Program	MBTA Program	MBTA Dollars Programmed
Section 5307: Urbanized Area Formula Grants	Revenue Vehicle Program	\$735,977,381
Section 5307: Urbanized Area Formula Grants	Signals/Systems Upgrade Program	\$0
Section 5307: Urbanized Area Formula Grants	Stations and Facilities Program	\$233,100,526
Section 5337: Fixed Guideway/Bus Funds	Bridge and Tunnel Program	\$295,197,136
Section 5337: Fixed Guideway/Bus Funds	Revenue Vehicle Program	\$75,824,136
Section 5337: Fixed Guideway/Bus Funds	Signals/Systems Upgrade Program	\$427,731,765
Section 5337: Fixed Guideway/Bus Funds	Stations and Facilities Program	\$178,373,206
Section 5339: Bus and Bus Facilities Funds	Bus Program	\$40,149,866
Section 5309: Fixed Guideway Capital Investment Grants	Green Line Extension—New Starts (Full Funding Grant Agreement)	\$92,242,000
Other Federal Funds	Positive Train Control*	\$745,369,284
Other Federal Funds	RRIF/TIFIA Financing Program†	\$715,000,000
Total	N/A	\$3,538,965,301

Note: FTA formula funds (Sections 5307, 5337 and 5339) are based on estimated apportionments. TIP programs and projects are based on a preliminary draft Capital Investment Plan (CIP) as of April 22, 2021. 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 Railroad Rehabilitation and Improvement Financing (RRIF) funds.

† RRIF/Transportation Infrastructure Finance and Innovation Act (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.

Sources: MBTA and the Boston Region MPO.

Table 3-6 summarizes CATA and MWRTA investments included in the FFYs 2022-26 TIP, with further information 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 2022-26 TIP include the electrification of the agency’s paratransit fleet and investments in technology to support travel training and customer service efforts.

Table 3-6: CATA and MWRTA Transit Program Investment Summary

Regional Transit Authority	Federal Transit Administration Program	RTA Dollars Programmed
CATA	Section 5307: Urbanized Area Formula Funding	\$3,105,000
CATA	State Transportation Bond Capital Assistance	\$2,145,000
CATA	Municipal and Local Assessments	\$356,250
MWRTA	Section 5307: Urbanized Area Formula Funding	\$16,905,684
MWRTA	Section 5339: Bus and Bus Facilities	\$250,000
MWRTA	State Transportation Bond Capital Assistance	\$1,489,000
MWRTA	Other Federal	\$27,450,990
MWRTA	Other Non-Federal	\$721,100
Total	N/A	\$52,423,024

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

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.

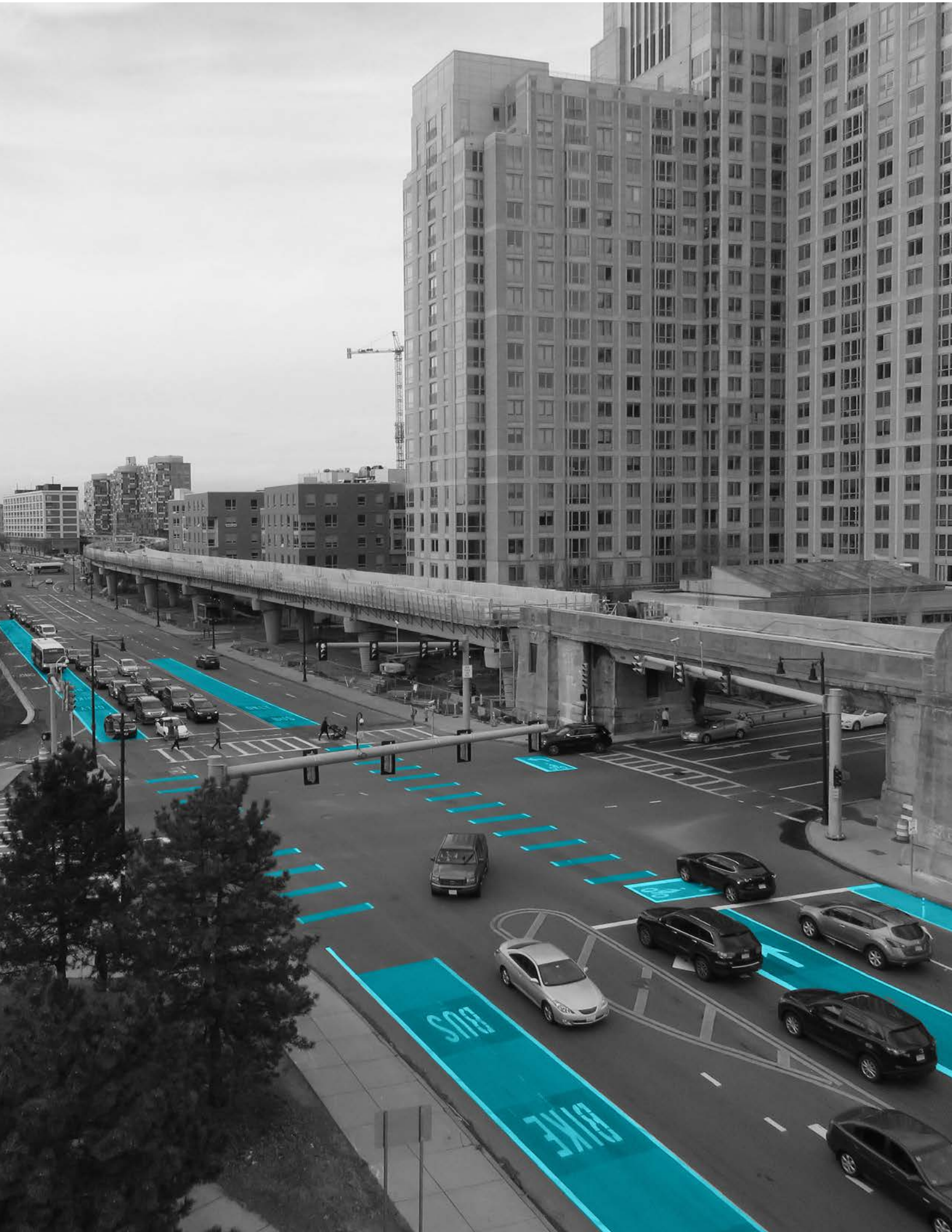


Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table

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 2022								\$299,464,327	\$243,340,692	\$56,123,635	
Section 1A / Regionally Prioritized Projects								\$132,888,666	\$106,410,933	\$26,477,733	
Roadway Reconstruction								\$35,094,904	\$28,075,923	\$7,018,981	
2022	602077	Boston Region	Lynn	LYNN- RECONSTRUCTION ON ROUTE 129 (LYNNFIELD STREET), FROM GREAT WOODS ROAD TO WYOMA SQUARE	4	CMAQ	\$6,643,384	\$1,000,000	\$800,000	\$200,000	Construction; CMAQ+STBG Total Cost = \$6,349,357; MPO Evaluation Score = 38
2022	602077	Boston Region	Lynn	LYNN- RECONSTRUCTION ON ROUTE 129 (LYNNFIELD STREET), FROM GREAT WOODS ROAD TO WYOMA SQUARE	4	STBG	\$6,643,384	\$5,349,357	\$4,279,486	\$1,069,871	Construction; CMAQ+STBG Total Cost = \$6,349,357; MPO Evaluation Score = 38
2022	606476	Boston Region	Boston	BOSTON- ROADWAY, CEILING, ARCH & WALL RECONSTRUCTION AND OTHER CONTROL SYSTEMS IN SUMNER TUNNEL	6	STBG	\$136,722,750	\$11,046,213	\$8,836,970	\$2,209,243	Construction; NHPP+HSIP+Other Federal Aid Total Cost = \$126,544,931; Total MPO Contribution = \$22,115,687; AC schedule over 3 years (2021-2023). MPO funding has 2-year AC schedule (2021-22).
2022	608078	Boston Region	Chelsea	CHELSEA- RECONSTRUCTION ON BROADWAY (ROUTE 107), FROM CITY HALL AVENUE TO THE REVERE C.L.	6	CMAQ	\$11,301,176	\$1,000,000	\$800,000	\$200,000	Construction; CMAQ+STBG Total Cost = \$11,301,176; MPO Evaluation Score = 61
2022	608078	Boston Region	Chelsea	CHELSEA- RECONSTRUCTION ON BROADWAY (ROUTE 107), FROM CITY HALL AVENUE TO THE REVERE C.L.	6	STBG	\$11,301,176	\$10,301,176	\$8,240,941	\$2,060,235	Construction; CMAQ+STBG Total Cost = \$11,301,176; MPO Evaluation Score = 61
2022	608887	Boston Region	Bellingham	BELLINGHAM- REHABILITATION AND RELATED WORK ON ROUTE 126, FROM DOUGLAS DRIVE TO ROUTE 140	3	CMAQ	\$6,398,158	\$2,000,000	\$1,600,000	\$400,000	Construction; CMAQ+STBG+TAP Total Cost = \$6,398,158; MPO Evaluation Score = 45; TAP Proponent = Bellingham
2022	608887	Boston Region	Bellingham	BELLINGHAM- REHABILITATION AND RELATED WORK ON ROUTE 126, FROM DOUGLAS DRIVE TO ROUTE 140	3	STBG	\$6,398,158	\$3,517,330	\$2,813,864	\$703,466	Construction; CMAQ+STBG+TAP Total Cost = \$6,398,158; MPO Evaluation Score = 45; TAP Proponent = Bellingham
2022	608887	Boston Region	Bellingham	BELLINGHAM- REHABILITATION AND RELATED WORK ON ROUTE 126, FROM DOUGLAS DRIVE TO ROUTE 140	3	TAP	\$6,398,158	\$880,828	\$704,662	\$176,166	Construction; CMAQ+STBG+TAP Total Cost = \$6,398,158; MPO Evaluation Score = 45; TAP Proponent = Bellingham
Bicycle and Pedestrian								\$23,886,844	\$19,109,475	\$4,777,369	
2022	607738	Boston Region	Bedford	BEDFORD- MINUTEMAN BIKEWAY EXTENSION, FROM LOOMIS STREET TO THE CONCORD T.L.	4	CMAQ	\$11,000,168	\$9,500,168	\$7,600,134	\$1,900,034	Construction; CMAQ+TAP Total Cost = \$11,000,168; MPO Evaluation Score = 47; TAP Proponent = Bedford
2022	607738	Boston Region	Bedford	BEDFORD- MINUTEMAN BIKEWAY EXTENSION, FROM LOOMIS STREET TO THE CONCORD T.L.	4	TAP	\$11,000,168	\$1,500,000	\$1,200,000	\$300,000	Construction; CMAQ+TAP Total Cost = \$11,000,168; MPO Evaluation Score = 47; TAP Proponent = Bedford
2022	608164	Boston Region	Multiple	SUDBURY- CONCORD- BIKE PATH CONSTRUCTION (BRUCE FREEMAN RAIL TRAIL)	3	CMAQ	\$12,886,676	\$8,834,137	\$7,067,310	\$1,766,827	Construction; CMAQ+TAP Total Cost = \$12,886,676; MPO Evaluation Score = 40; TAP Proponent = Sudbury
2022	608164	Boston Region	Multiple	SUDBURY- CONCORD- BIKE PATH CONSTRUCTION (BRUCE FREEMAN RAIL TRAIL)	3	STBG	\$12,886,676	\$3,552,539	\$2,842,031	\$710,508	Construction; CMAQ+TAP Total Cost = \$12,886,676; MPO Evaluation Score = 40; TAP Proponent = Sudbury

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2022	608164	Boston Region	Multiple	SUDBURY- CONCORD- BIKE PATH CONSTRUCTION (BRUCE FREEMAN RAIL TRAIL)	3	TAP	\$12,886,676	\$500,000	\$400,000	\$100,000	Construction; CMAQ+TAP Total Cost = \$12,886,676; MPO Evaluation Score = 40; TAP Proponent = Sudbury
Earmark Discretionary								\$26,250,000	\$21,000,000	\$5,250,000	
2022	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	Other FA	\$285,366,126	\$26,250,000	\$21,000,000	\$5,250,000	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
Intersection Improvements								\$18,537,410	\$14,929,928	\$3,607,482	
2022	608229	Boston Region	Acton	ACTON- INTERSECTION & SIGNAL IMPROVEMENTS AT KELLEY'S CORNER, ROUTE 111 (MASSACHUSETTS AVENUE) AND ROUTE 27 (MAIN STREET)	3	CMAQ	\$15,311,125	\$3,000,000	\$2,400,000	\$600,000	Construction; CMAQ+TAP+STBG Total Cost = \$15,311,125; MPO Evaluation Score = 45; TAP Proponent = Acton
2022	608229	Boston Region	Acton	ACTON- INTERSECTION & SIGNAL IMPROVEMENTS AT KELLEY'S CORNER, ROUTE 111 (MASSACHUSETTS AVENUE) AND ROUTE 27 (MAIN STREET)	3	STBG	\$15,311,125	\$12,111,125	\$9,688,900	\$2,422,225	Construction; CMAQ+TAP+STBG Total Cost = \$15,311,125; MPO Evaluation Score = 45; TAP Proponent = Acton
2022	608229	Boston Region	Acton	ACTON- INTERSECTION & SIGNAL IMPROVEMENTS AT KELLEY'S CORNER, ROUTE 111 (MASSACHUSETTS AVENUE) AND ROUTE 27 (MAIN STREET)	3	TAP	\$15,311,125	\$200,000	\$160,000	\$40,000	Construction; CMAQ+TAP+STBG Total Cost = \$15,311,125; MPO Evaluation Score = 45; TAP Proponent = Acton
2022	608443	Boston Region	Multiple	LITTLETON- AYER- INTERSECTION IMPROVEMENTS ON ROUTE 2A AT WILLOW ROAD AND BRUCE STREET	3	HSIP	\$3,226,285	\$1,000,000	\$900,000	\$100,000	Construction; HSIP+STBG Total Cost = \$3,226,285; MPO Evaluation Score = 36
2022	608443	Boston Region	Multiple	LITTLETON- AYER- INTERSECTION IMPROVEMENTS ON ROUTE 2A AT WILLOW ROAD AND BRUCE STREET	3	STBG	\$3,226,285	\$2,226,285	\$1,781,028	\$445,257	Construction; HSIP+STBG Total Cost = \$3,226,285; MPO Evaluation Score = 36
Flex to FTA								\$27,909,903	\$22,327,922	\$5,581,981	
2022	S10780	Boston Region	Medford, Somerville	GREEN LINE EXTENSION PROJECT- EXTENSION TO COLLEGE AVENUE WITH THE UNION SQUARE SPUR	4	CMAQ	\$27,096,238	\$27,116,883	\$21,693,506	\$5,423,377	Construction; STBG+CMAQ+Section 5309 (Transit) Total MPO Contribution = \$190,079,465; Total funding in this TIP = \$27,116,883; AC Yr 6 of 6; Funding flexed to FTA; Match provided by local contributions
2022	S12116	Boston Region	Cambridge	ALEWIFE WAYFINDING IMPROVEMENTS	6	CMAQ	\$292,280	\$292,280	\$233,824	\$58,456	Construction; CMAQ Total Cost = \$292,280; MPO Evaluation Score = 24; Project funded through MPO's Community Connections Program.
2022	S12117	Boston Region	Multiple	MBTA SYSTEMWIDE BIKE RACKS	Regionwide	CMAQ	\$275,740	\$275,740	\$220,592	\$55,148	Construction; CMAQ Total Cost = \$275,740; MPO Evaluation Score = 64; Project funded through MPO's Community Connections Program.

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2022	S12119	Boston Region	Everett, Malden	MAIN STREET TRANSIT SIGNAL PRIORITY	4	CMAQ	\$225,000	\$225,000	\$180,000	\$45,000	Construction; CMAQ Total Cost = \$225,000; MPO Evaluation Score = 72; Project funded through MPO's Community Connections Program.
Transit Grant Program								\$1,209,605	\$967,684	\$241,921	
2022	S12114	Boston Region	Canton	ROYALL STREET SHUTTLE	6	CMAQ	\$534,820	\$209,101	\$167,281	\$41,820	Operations; CMAQ Total Cost = \$534,820; MPO Evaluation Score = 51; Project funded through MPO's Community Connections Program.
2022	S12115	Boston Region	Multiple	BLUEBIKES EXPANSION IN ARLINGTON, NEWTON, AND WATERTOWN	4, 6	CMAQ	\$340,000	\$340,000	\$272,000	\$68,000	Construction; CMAQ Total Cost = \$340,000; MPO Evaluation Score = 52; Project funded through MPO's Community Connections Program.
2022	S12118	Boston Region	Multiple	BLUEBIKES EXPANSION IN MALDEN AND MEDFORD	4	CMAQ	\$236,830	\$236,830	\$189,464	\$47,366	Construction; CMAQ Total Cost = \$236,830; MPO Evaluation Score = 73; Project funded through MPO's Community Connections Program.
2022	S12120	Boston Region	Wellesley	WELLESLEY BICYCLE INFRASTRUCTURE	6	CMAQ	\$85,054	\$85,054	\$68,043	\$17,011	Construction; CMAQ Total Cost = \$85,054; MPO Evaluation Score = 42.75; Project funded through MPO's Community Connections Program.
2022	S12121	Boston Region	Brookline	TRANSIT APP EDUCATION PROGRAM	6	CMAQ	\$43,620	\$43,620	\$34,896	\$8,724	Operations; CMAQ Total Cost = \$43,620; MPO Evaluation Score = 49; Project funded through MPO's Community Connections Program.
2022	S12122	Boston Region	Acton	PARKING MANAGEMENT SYSTEM	3	CMAQ	\$20,000	\$20,000	\$16,000	\$4,000	Construction; CMAQ Total Cost = \$20,000; MPO Evaluation Score = 29; Project funded through MPO's Community Connections Program.
2022	S12125	Boston Region	Newton	NEWTON MICROTRANSIT SERVICE	6	CMAQ	\$427,000	\$275,000	\$220,000	\$55,000	Operations; CMAQ Total Cost = \$727,000; MPO Evaluation Score = 53; Project funded over three fiscal years (2021-2023) through MPO's Community Connections Program.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$42,784,269	\$34,227,415	\$8,556,854	
Earmark Discretionary								\$42,784,269	\$34,227,415	\$8,556,854	
2022	606476	Boston Region	Boston	BOSTON- ROADWAY, CEILING, ARCH & WALL RECONSTRUCTION AND OTHER CONTROL SYSTEMS IN SUMNER TUNNEL	6	NHPP-E	\$136,722,750	\$30,823,424	\$24,658,739	\$6,164,685	Construction; NHPP+HSIP+Other Federal Aid Total Cost = \$126,544,931; Total MPO Contribution = \$22,115,687; AC schedule over 3 years (2021-2023). MPO funding has 2-year AC schedule (2021-22).
2022	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	HIP	\$285,366,126	\$11,960,845	\$9,568,676	\$2,392,169	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: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
Section 2A / State Prioritized Reliability Projects								\$71,549,639	\$57,283,481	\$14,266,158	
Bridge On-system NHS								\$49,443,262	\$39,554,610	\$9,888,652	
2022	604173	Boston Region	Boston	BOSTON- BRIDGE REPLACEMENT, B-16-016, NORTH WASHINGTON STREET OVER THE BOSTON INNER HARBOR	6	NHPP	\$176,318,433	\$28,825,727	\$23,060,582	\$5,765,145	Project ACd over 2017-2022.
2022	604952	Boston Region	Multiple	LYNN- SAUGUS- BRIDGE REPLACEMENT, L-18-016=S-05-008, ROUTE 107 OVER THE SAUGUS RIVER (AKA - BELDEN G. BLY BRIDGE)	4	NHPP	\$98,962,749	\$20,617,535	\$16,494,028	\$4,123,507	Project ACd over 2019-2022.
Non-Interstate Pavement								\$3,248,450	\$2,598,760	\$649,690	
2022	608495	Boston Region	Multiple	CONCORD- LEXINGTON- LINCOLN- RESURFACING AND RELATED WORK ON ROUTE 2A	4	NHPP	\$3,248,450	\$3,248,450	\$2,598,760	\$649,690	
Roadway Improvements								\$411,782	\$329,426	\$82,356	
2022	608599	Boston Region	Multiple	CANTON- NORWOOD- STORMWATER IMPROVEMENTS ALONG ROUTE 1 & I-95	5	STBG	\$411,782	\$411,782	\$329,426	\$82,356	
Bridge Systematic Maintenance								\$5,349,900	\$4,279,920	\$1,069,980	
2022	608866	Boston Region	Multiple	NEWTON- WESTON- STEEL SUPERSTRUCTURE CLEANING (FULL REMOVAL) AND PAINTING OF 3 BRIDGES: N-12-051, W-29-011 & W-29-028	6	NHPP	\$2,349,900	\$2,349,900	\$1,879,920	\$469,980	
2022	612028	Boston Region	Stoneham	STONEHAM- DECK REPLACEMENT & SUPERSTRUCTURE REPAIRS, S-27-006 (2L2), (ST 28) FELLSWAY WEST OVER I-93	4	NHPP	\$3,000,000	\$3,000,000	\$2,400,000	\$600,000	
Safety Improvements								\$13,096,245	\$10,520,766	\$2,575,479	
2022	609060	Boston Region	Multiple	LYNNFIELD- PEABODY- DANVERS- GUIDE AND TRAFFIC SIGN REPLACEMENT ON I-95/128 (TASK 'A' INTERCHANGE)	4	HSIP	\$437,700	\$437,700	\$393,930	\$43,770	
2022	609090	Boston Region	Multiple	BOSTON- MILTON- QUINCY- HIGHWAY LIGHTING SYSTEM REPLACEMENT ON I-93, FROM NEPONSET AVENUE TO THE BRAINTREE SPLIT	6	NHPP	\$12,658,545	\$12,658,545	\$10,126,836	\$2,531,709	
Section 2B / State Prioritized Modernization Projects								\$40,254,605	\$35,829,145	\$4,425,461	
Roadway Reconstruction								\$40,254,605	\$35,829,145	\$4,425,461	
2022	606476	Boston Region	Boston	BOSTON- ROADWAY, CEILING, ARCH & WALL RECONSTRUCTION AND OTHER CONTROL SYSTEMS IN SUMNER TUNNEL	6	NHPP	\$136,722,750	\$4,000,000	\$3,200,000	\$800,000	Construction; NHPP+HSIP+Other Federal Aid Total Cost = \$126,544,931; Total MPO Contribution = \$22,115,687; AC schedule over 3 years (2021-2023). MPO funding has 2-year AC schedule (2021-22).

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 5)

Year	MassDOT Project ID	MPO	Municipality	MassDOT Project Description	District	Funding Source	Adjusted TFC	Total Programmed Funds	Federal Funds	Non-Federal Funds	Other Information
2022	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NHPP-I	\$285,366,126	\$12,233,939	\$11,010,545	\$1,223,394	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
2022	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$285,366,126	\$24,020,666	\$21,618,599	\$2,402,067	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 2C / State Prioritized Expansion Projects								\$11,987,148	\$9,589,718	\$2,397,430	
Bicycle and Pedestrian								\$11,987,148	\$9,589,718	\$2,397,430	
2022	608943	Boston Region	Boston	BOSTON- NEPONSET RIVER GREENWAY CONSTRUCTION, INCLUDING NEW BRIDGE B-16-309 (C6Y) OVER DORCHESTER BAY	6	CMAQ	\$8,809,272	\$8,809,272	\$7,047,418	\$1,761,854	
2022	609066	Boston Region	Multiple	NEWTON- WESTON- MULTI-USE TRAIL CONNECTION, FROM RECREATION ROAD TO UPPER CHARLES RIVER GREENWAY INCLUDING RECONSTRUCTION OF PED BRIDGE N-12-078=W-29-062	6	CMAQ	\$3,177,876	\$3,177,876	\$2,542,301	\$635,575	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
Federal Fiscal Year 2023								\$275,789,516	\$226,115,864	\$49,673,653	
Section 1A / Regionally Prioritized Projects								\$108,908,329	\$87,606,835	\$21,301,494	
Intersection Improvements								\$15,627,974	\$12,632,551	\$2,995,423	
2023	606130	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1A & UPLAND ROAD/WASHINGTON STREET & PROSPECT STREET/FULTON STREET	5	CMAQ	\$8,270,371	\$1,000,000	\$800,000	\$200,000	Construction; CMAQ+STBG Total Cost = \$8,270,371; MPO Evaluation Score = 53
2023	606130	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1A & UPLAND ROAD/WASHINGTON STREET & PROSPECT STREET/FULTON STREET	5	STBG	\$8,270,371	\$7,270,371	\$5,816,297	\$1,454,074	Construction; CMAQ+STBG Total Cost = \$8,270,371; MPO Evaluation Score = 53
2023	608889	Boston Region	Framingham	FRAMINGHAM- TRAFFIC SIGNAL INSTALLATION AT EDGELL ROAD AT CENTRAL STREET	3	CMAQ	\$2,655,882	\$1,680,000	\$1,344,000	\$336,000	Construction; CMAQ+STBG Total Cost = \$2,655,882; MPO Evaluation Score = 41
2023	608889	Boston Region	Framingham	FRAMINGHAM- TRAFFIC SIGNAL INSTALLATION AT EDGELL ROAD AT CENTRAL STREET	3	STBG	\$2,655,882	\$975,882	\$780,706	\$195,176	Construction; CMAQ+STBG Total Cost = \$2,655,882; MPO Evaluation Score = 41
2023	609253	Boston Region	Wilmington	WILMINGTON- INTERSECTION IMPROVEMENTS AT LOWELL STREET (ROUTE 129) AND WOBURN STREET	4	CMAQ	\$4,701,721	\$3,400,000	\$2,720,000	\$680,000	Construction; CMAQ+HSIP Total Cost = \$4,701,721; MPO Evaluation Score = 53
2023	609253	Boston Region	Wilmington	WILMINGTON- INTERSECTION IMPROVEMENTS AT LOWELL STREET (ROUTE 129) AND WOBURN STREET	4	HSIP	\$4,701,721	\$1,301,721	\$1,171,549	\$130,172	Construction; CMAQ+HSIP Total Cost = \$4,701,721; MPO Evaluation Score = 53
Roadway Reconstruction								\$91,280,355	\$73,374,284	\$17,906,071	
2023	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	NHPP	\$183,633,774	\$13,000,000	\$10,400,000	\$2,600,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston
2023	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	STBG	\$183,633,774	\$15,741,203	\$12,592,962	\$3,148,241	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston
2023	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	TAP	\$183,633,774	\$1,000,000	\$800,000	\$200,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2023	606453	Boston Region	Boston	BOSTON- IMPROVEMENTS ON BOYLSTON STREET, FROM INTERSECTION OF BROOKLINE AVENUE & PARK DRIVE TO IPSWICH STREET	6	CMAQ	\$8,665,052	\$1,000,000	\$800,000	\$200,000	Construction; CMAQ+TAP+STBG Total Cost = \$8,665,052; MPO Evaluation Score = 58; TAP Proponent = Boston
2023	606453	Boston Region	Boston	BOSTON- IMPROVEMENTS ON BOYLSTON STREET, FROM INTERSECTION OF BROOKLINE AVENUE & PARK DRIVE TO IPSWICH STREET	6	STBG	\$8,665,052	\$6,852,620	\$5,482,096	\$1,370,524	Construction; CMAQ+TAP+STBG Total Cost = \$8,665,052; MPO Evaluation Score = 58; TAP Proponent = Boston
2023	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
2023	607244	Boston Region	Winthrop	WINTHROP- RECONSTRUCTION & RELATED WORK ALONG WINTHROP STREET & REVERE STREET CORRIDOR	6	CMAQ	\$5,931,953	\$2,000,000	\$1,600,000	\$400,000	Construction; CMAQ+STBG+TAP Total Cost = \$5,931,953; MPO Evaluation Score = 54; TAP Proponent = Winthrop
2023	607244	Boston Region	Winthrop	WINTHROP- RECONSTRUCTION & RELATED WORK ALONG WINTHROP STREET & REVERE STREET CORRIDOR	6	STBG	\$5,931,953	\$3,371,953	\$2,697,562	\$674,391	Construction; CMAQ+STBG+TAP Total Cost = \$5,931,953; MPO Evaluation Score = 54; TAP Proponent = Winthrop
2023	607244	Boston Region	Winthrop	WINTHROP- RECONSTRUCTION & RELATED WORK ALONG WINTHROP STREET & REVERE STREET CORRIDOR	6	TAP	\$5,931,953	\$560,000	\$448,000	\$112,000	Construction; CMAQ+STBG+TAP Total Cost = \$5,931,953; MPO Evaluation Score = 54; TAP Proponent = Winthrop
2023	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	CMAQ	\$28,340,090	\$1,000,000	\$800,000	\$200,000	Construction; HSIP+CMAQ+STBG Total Cost = \$28,340,090; 2-year AC schedule (2023-2024); MPO Evaluation Score = 75
2023	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	HSIP	\$28,340,090	\$2,000,000	\$1,800,000	\$200,000	Construction; HSIP+CMAQ+STBG Total Cost = \$28,340,090; 2-year AC schedule (2023-2024); MPO Evaluation Score = 75
2023	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	STBG	\$28,340,090	\$9,169,621	\$7,335,697	\$1,833,924	Construction; HSIP+CMAQ+STBG Total Cost = \$28,340,090; 2-year AC schedule (2023-2024); 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	\$5,157,564	\$4,630,368	\$3,704,294	\$926,074	Construction; STBG+TAP Total Cost = \$5,157,564; MPO Evaluation Score = 35; TAP Proponent = Dedham
2023	607899	Boston Region	Dedham	DEDHAM- PEDESTRIAN IMPROVEMENTS ALONG BUSSEY STREET, INCLUDING SUPERSTRUCTURE REPLACEMENT, D-05-010, BUSSEY STREET OVER MOTHER BROOK	6	TAP	\$5,157,564	\$527,196	\$421,757	\$105,439	Construction; STBG+TAP Total Cost = \$5,157,564; MPO Evaluation Score = 35; TAP Proponent = Dedham
2023	608348	Boston Region	Beverly	BEVERLY- RECONSTRUCTION OF BRIDGE STREET	4	CMAQ	\$7,942,866	\$3,000,000	\$2,400,000	\$600,000	Construction; CMAQ+STBG Total Cost = \$7,942,866; MPO Evaluation Score = 66
2023	608348	Boston Region	Beverly	BEVERLY- RECONSTRUCTION OF BRIDGE STREET	4	STBG	\$7,942,866	\$4,942,866	\$3,954,293	\$988,573	Construction; CMAQ+STBG Total Cost = \$7,942,866; MPO Evaluation Score = 66

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 8)

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	608707	Boston Region	Quincy	QUINCY- RECONSTRUCTION OF SEA STREET	6	STBG	\$5,843,442	\$5,617,188	\$4,493,750	\$1,123,438	Construction; STBG+TAP Total Cost = \$5,843,442; MPO Evaluation Score = 40; TAP Project Proponent = Quincy
2023	608707	Boston Region	Quincy	QUINCY- RECONSTRUCTION OF SEA STREET	6	TAP	\$5,843,442	\$226,254	\$181,003	\$45,251	Construction; STBG+TAP Total Cost = \$5,843,442; MPO Evaluation Score = 40; TAP Project Proponent = Quincy
2023	608933	Boston Region	Peabody	PEABODY- REHABILITATION OF CENTRAL STREET	4	CMAQ	\$15,828,654	\$3,000,000	\$2,400,000	\$600,000	Construction; CMAQ+HSIP+STBG Total Cost = \$15,828,654; MPO Evaluation Score = 61
2023	608933	Boston Region	Peabody	PEABODY- REHABILITATION OF CENTRAL STREET	4	HSIP	\$15,828,654	\$1,500,000	\$1,350,000	\$150,000	Construction; CMAQ+HSIP+STBG Total Cost = \$15,828,654; MPO Evaluation Score = 61
2023	608933	Boston Region	Peabody	PEABODY- REHABILITATION OF CENTRAL STREET	4	STBG	\$15,828,654	\$11,328,654	\$9,062,923	\$2,265,731	Construction; CMAQ+HSIP+STBG Total Cost = \$15,828,654; MPO Evaluation Score = 61
Transit Grant Program								\$2,000,000	\$1,600,000	\$400,000	
2023	S12114	Boston Region	Canton	ROYALL STREET SHUTTLE	6	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	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM	Regionwide	CMAQ	\$7,522,281	\$1,670,823	\$1,336,658	\$334,165	Planning, Design, or Construction; Set Aside for LRTP 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.
Section 1B / Earmark or Discretionary Grant Funded Projects								\$51,607,808	\$41,286,246	\$10,321,562	
Earmark Discretionary								\$51,607,808	\$41,286,246	\$10,321,562	
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 = \$126,544,931; 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	HIP-BR	\$285,366,126	\$40,000,000	\$32,000,000	\$8,000,000	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								\$82,297,337	\$68,887,030	\$13,410,307	
Bridge On-system NHS								\$19,277,046	\$15,421,637	\$3,855,409	
2023	606902	Boston Region	Boston	BOSTON- BRIDGE RECONSTRUCTION/ REHAB, B-16-181, WEST ROXBURY PARKWAY OVER MBTA	6	NHPP	\$6,644,290	\$6,644,290	\$5,315,432	\$1,328,858	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2023	607327	Boston Region	Wilmington	WILMINGTON- BRIDGE REPLACEMENT, W-38-002, ROUTE 38 (MAIN STREET) OVER THE B&M RAILROAD	4	NHPP	\$13,127,334	\$12,632,756	\$10,106,205	\$2,526,551	
Interstate Pavement								\$24,419,044	\$21,977,140	\$2,441,904	
2023	608208	Boston Region	Multiple	QUINCY- MILTON- BOSTON- INTERSTATE MAINTENANCE & RELATED WORK ON I-93	6	NHPP-I	\$24,419,044	\$24,419,044	\$21,977,140	\$2,441,904	
Bridge Off-system								\$3,592,584	\$2,874,067	\$718,517	
2023	608255	Boston Region	Stow	STOW- BRIDGE REPLACEMENT, S-29-011, BOX MILL ROAD OVER ELIZABETH BROOK	3	STBG-BR-Off	\$3,592,584	\$3,592,584	\$2,874,067	\$718,517	
Non-Interstate Pavement								\$16,481,993	\$13,185,594	\$3,296,399	
2023	608480	Boston Region	Foxborough	FOXBOROUGH- RESURFACING AND RELATED WORK ON ROUTE 1	5	NHPP	\$7,169,843	\$7,169,843	\$5,735,874	\$1,433,969	
2023	608498	Boston Region	Multiple	QUINCY- WEYMOUTH- BRAINTREE- RESURFACING AND RELATED WORK ON ROUTE 53	6	NHPP	\$8,178,768	\$8,178,768	\$6,543,014	\$1,635,754	
2023	608818	Boston Region	Danvers	DANVERS- RESURFACING AND RELATED WORK ON ROUTE 114	4	NHPP	\$1,133,382	\$1,133,382	\$906,706	\$226,676	
Safety Improvements								\$11,116,611	\$9,500,545	\$1,616,066	
2023	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	\$6,072,559	\$5,465,303	\$607,256	
2023	609053	Boston Region	Multiple	CANTON- DEDHAM- NORWOOD- HIGHWAY LIGHTING IMPROVEMENTS AT I-93 & I-95/128	6	NHPP	\$5,044,052	\$5,044,052	\$4,035,242	\$1,008,810	
Bridge Systematic Maintenance								\$2,228,571	\$1,782,857	\$445,714	
2023	608609	Boston Region	Multiple	NEWTON- WESTWOOD- STEEL SUPERSTRUCTURE CLEANING (FULL REMOVAL) AND PAINTING OF 2 BRIDGES: N-12-056 & W-31-006	6	NHPP	\$2,228,571	\$2,228,571	\$1,782,857	\$445,714	
Bridge On-system Non-NHS								\$5,181,488	\$4,145,190	\$1,036,298	
2023	608929	Boston Region	Wilmington	WILMINGTON- BRIDGE REPLACEMENT, W-38-003, BUTTERS ROW OVER MBTA	4	STBG	\$5,181,488	\$5,181,488	\$4,145,190	\$1,036,298	
Section 2B / State Prioritized Modernization Projects								\$26,298,184	\$22,993,466	\$3,304,719	
Roadway Reconstruction								\$19,181,213	\$16,588,192	\$2,593,021	
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 = \$126,544,931; Total MPO Contribution = \$22,115,687; AC schedule over 3 years (2021-2023). MPO funding has 2-year AC schedule (2021-22).

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2023	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$285,366,126	\$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
2023	609530	Boston Region	Medway	MEDWAY- HOLLISTON STREET AND CASSIDY LANE IMPROVEMENTS (SRTS)	3	TAP	\$1,487,008	\$1,487,008	\$1,189,606	\$297,402	
Intersection Improvements								\$7,116,971	\$6,405,274	\$711,697	
2023	607342	Boston Region	Milton	MILTON- INTERSECTION & SIGNAL IMPROVEMENTS AT ROUTE 28 (RANDOLPH AVENUE) & CHICKATAWBUT ROAD	6	HSIP	\$7,066,971	\$7,066,971	\$6,360,274	\$706,697	
2023	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	\$50,000	\$45,000	\$5,000	
Section 2C / State Prioritized Expansion Projects								\$6,677,858	\$5,342,286	\$1,335,572	
Bicycle and Pedestrian								\$6,677,858	\$5,342,286	\$1,335,572	
2023	610674	Boston Region	Newton	NEWTON- RECONSTRUCTION OF COMMONWEALTH AVENUE (ROUTE 30), FROM EAST OF AUBURN STREET TO ASH STREET	6	CMAQ	\$6,677,858	\$6,677,858	\$5,342,286	\$1,335,572	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
Federal Fiscal Year 2024								\$216,037,614	\$178,696,769	\$37,340,845	
Section 1A / Regionally Prioritized Projects								\$110,440,638	\$89,152,510	\$21,288,128	
Intersection Improvements								\$17,456,745	\$14,215,396	\$3,241,349	
2024	603739	Boston Region	Wrentham	WRENTHAM- CONSTRUCTION OF ROUTE I-495/ROUTE 1A RAMPS	5	HSIP	\$16,187,418	\$2,500,000	\$2,250,000	\$250,000	Construction; HSIP+STBG+TAP Total Cost = \$16,187,418; MPO Evaluation Score = 55; TAP Proponent = MassDOT
2024	603739	Boston Region	Wrentham	WRENTHAM- CONSTRUCTION OF ROUTE I-495/ROUTE 1A RAMPS	5	STBG	\$16,187,418	\$13,187,418	\$10,549,934	\$2,637,484	Construction; HSIP+STBG+TAP Total Cost = \$16,187,418; MPO Evaluation Score = 55; TAP Proponent = MassDOT
2024	603739	Boston Region	Wrentham	WRENTHAM- CONSTRUCTION OF ROUTE I-495/ROUTE 1A RAMPS	5	TAP	\$16,187,418	\$500,000	\$400,000	\$100,000	Construction; HSIP+STBG+TAP Total Cost = \$16,187,418; MPO Evaluation Score = 55; TAP Proponent = MassDOT
2024	608436	Boston Region		ASHLAND- REHABILITATION AND RAIL CROSSING IMPROVEMENTS ON CHERRY STREET	3	STBG	\$1,269,327	\$1,269,327	\$1,015,462	\$253,865	Construction; STBG Total Cost = \$1,269,327; MPO Evaluation Score = 38
Roadway Reconstruction								\$87,735,523	\$70,738,418	\$16,997,105	
2024	605743	Boston Region	Ipswich	IPSWICH- RESURFACING & RELATED WORK ON CENTRAL & SOUTH MAIN STREETS	4	STBG	\$5,702,076	\$5,182,526	\$4,146,021	\$1,036,505	Construction; STBG+TAP Total Cost = \$5,702,076; MPO Evaluation Score = 47; TAP Proponent = Ipswich
2024	605743	Boston Region	Ipswich	IPSWICH- RESURFACING & RELATED WORK ON CENTRAL & SOUTH MAIN STREETS	4	TAP	\$5,702,076	\$519,550	\$415,640	\$103,910	Construction; STBG+TAP Total Cost = \$5,702,076; MPO Evaluation Score = 47; TAP Proponent = Ipswich
2024	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	NHPP	\$183,633,774	\$8,500,000	\$6,800,000	\$1,700,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston
2024	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	STBG	\$183,633,774	\$20,946,838	\$16,757,470	\$4,189,368	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston
2024	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	TAP	\$183,633,774	\$1,000,000	\$800,000	\$200,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$25,000,000 in anticipated funding provided by City of Boston; MPO Evaluation Score = 59; TAP Proponent = Boston
2024	607777	Boston Region	Watertown	WATERTOWN- REHABILITATION OF MOUNT AUBURN STREET (ROUTE 16)	6	STBG	\$28,340,090	\$16,170,469	\$12,936,375	\$3,234,094	Construction; HSIP+CMAQ+STBG Total Cost = \$28,340,090; 2-year AC schedule (2023-2024); MPO Evaluation Score = 75

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 12)

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	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	\$12,990,931	\$1,500,000	\$1,350,000	\$150,000	Construction; HSIP+STBG+TAP Total Cost = \$12,990,391; 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	STBG	\$12,990,931	\$11,350,699	\$9,080,559	\$2,270,140	Construction; HSIP+STBG+TAP Total Cost = \$12,990,391; 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	\$12,990,931	\$140,232	\$112,186	\$28,046	Construction; HSIP+STBG+TAP Total Cost = \$12,990,391; MPO Evaluation Score = 37; TAP Proponent = MassDOT
2024	609054	Boston Region	Littleton	LITTLETON- RECONSTRUCTION OF FOSTER STREET	3	CMAQ	\$4,146,209	\$1,000,000	\$800,000	\$200,000	Construction; CMAQ+TAP+STBG Total Cost = \$4,146,209; MPO Evaluation Score = 38; TAP Proponent = Littleton
2024	609054	Boston Region	Littleton	LITTLETON- RECONSTRUCTION OF FOSTER STREET	3	STBG	\$4,146,209	\$2,646,209	\$2,116,967	\$529,242	Construction; CMAQ+TAP+STBG Total Cost = \$4,146,209; MPO Evaluation Score = 38; TAP Proponent = Littleton
2024	609054	Boston Region	Littleton	LITTLETON- RECONSTRUCTION OF FOSTER STREET	3	TAP	\$4,146,209	\$500,000	\$400,000	\$100,000	Construction; CMAQ+TAP+STBG Total Cost = \$4,146,209; MPO Evaluation Score = 38; TAP Proponent = Littleton
2024	609252	Boston Region	Lynn	LYNN- REHABILITATION OF ESSEX STREET	4	CMAQ	\$18,279,000	\$6,000,000	\$4,800,000	\$1,200,000	Construction; CMAQ+HSIP+STBG Total Cost = \$18,279,000; MPO Evaluation Score = 66
2024	609252	Boston Region	Lynn	LYNN- REHABILITATION OF ESSEX STREET	4	HSIP	\$18,279,000	\$4,000,000	\$3,600,000	\$400,000	Construction; CMAQ+HSIP+STBG Total Cost = \$18,279,000; MPO Evaluation Score = 66
2024	609252	Boston Region	Lynn	LYNN- REHABILITATION OF ESSEX STREET	4	STBG	\$18,279,000	\$8,279,000	\$6,623,200	\$1,655,800	Construction; CMAQ+HSIP+STBG Total Cost = \$18,279,000; MPO Evaluation Score = 66
Bicycle and Pedestrian								\$3,248,370	\$2,598,696	\$649,674	
2024	609211	Boston Region	Peabody	PEABODY- INDEPENDENCE GREENWAY EXTENSION	4	CMAQ	\$3,248,370	\$1,972,500	\$1,578,000	\$394,500	Construction; CMAQ+TAP Total Cost = \$3,248,370; MPO Evaluation Score = 34; TAP Proponent = Peabody
2024	609211	Boston Region	Peabody	PEABODY- INDEPENDENCE GREENWAY EXTENSION	4	TAP	\$3,248,370	\$1,275,870	\$1,020,696	\$255,174	Construction; CMAQ+TAP Total Cost = \$3,248,370; MPO Evaluation Score = 34; TAP Proponent = Peabody
Transit Grant Program								\$2,000,000	\$1,600,000	\$400,000	
2024	S12114	Boston Region	Canton	ROYALL STREET SHUTTLE	6	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	Regionwide	CMAQ	\$7,522,281	\$1,851,458	\$1,481,166	\$370,292	Planning, Design, or Construction; Set Aside for LRTP Community Connections Program

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
Section 1B / Earmark or Discretionary Grant Funded Projects								\$25,917,561	\$20,734,049	\$5,183,512	
Earmark Discretionary								\$25,917,561	\$20,734,049	\$5,183,512	
2024	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	HIP-BR	\$285,366,126	\$25,917,561	\$20,734,049	\$5,183,512	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								\$38,102,340	\$31,602,880	\$6,499,461	
Bridge On-system Non-NHS								\$8,605,030	\$6,884,024	\$1,721,006	
2024	608197	Boston Region	Boston	BOSTON- BRIDGE REHABILITATION, B-16-107, CANTERBURY STREET OVER AMTRAK RAILROAD	6	STBG	\$4,678,193	\$4,678,193	\$3,742,554	\$935,639	
2024	608522	Boston Region	Middleton	MIDDLETON- BRIDGE REPLACEMENT, M-20-003, ROUTE 62 (MAPLE STREET) OVER IPSWICH RIVER	4	STBG	\$3,926,837	\$3,926,837	\$3,141,470	\$785,367	
Non-Interstate Pavement								\$6,930,814	\$5,544,651	\$1,386,163	
2024	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	
Bridge Off-system								\$5,874,329	\$4,699,463	\$1,174,866	
2024	609438	Boston Region	Canton	CANTON- BRIDGE REPLACEMENT, C-02-042, REVERE COURT OVER WEST BRANCH OF THE NEPONSET RIVER	6	STBG-BR-Off	\$2,617,932	\$2,617,932	\$2,094,346	\$523,586	
2024	609467	Boston Region	Multiple	HAMILTON- BRIDGE REPLACEMENT, H-03-002, WINTHROP STREET OVER IPSWICH RIVER	4	STBG-BR-Off	\$3,256,397	\$3,256,397	\$2,605,118	\$651,279	
Bridge On-system NHS								\$5,482,092	\$4,385,674	\$1,096,418	
2024	610782	Boston Region	Multiple	DANVERS-MIDDLETON - BRIDGE REPLACEMENT, D-03-009=M-20-005, ANDOVER STREET (SR 114) OVER IPSWICH RIVER	4	NHPP	\$5,482,092	\$5,482,092	\$4,385,674	\$1,096,418	
Interstate Pavement								\$11,210,075	\$10,089,068	\$1,121,008	
2024	612034	Boston Region	Multiple	BURLINGTON- WOBURN- INTERSTATE MAINTENANCE AND RELATED WORK ON I-95	4	NHPP-I	\$11,210,075	\$11,210,075	\$10,089,068	\$1,121,008	
Section 2B / State Prioritized Modernization Projects								\$41,577,075	\$37,207,330	\$4,369,745	
Roadway Reconstruction								\$35,730,602	\$31,945,505	\$3,785,097	
2024	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$285,366,126	\$33,610,230	\$30,249,207	\$3,361,023	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	609531	Boston Region	Arlington	ARLINGTON- STRATTON SCHOOL IMPROVEMENTS (SRTS)	4	TAP	\$1,072,752	\$1,072,752	\$858,202	\$214,550	
2024	610537	Boston Region	Boston	BOSTON- ELLIS ELEMENTARY TRAFFIC CALMING (SRTS)	6	TAP	\$1,047,621	\$1,047,620	\$838,096	\$209,524	
Intersection Improvements								\$5,846,473	\$5,261,826	\$584,647	
2024	609254	Boston Region	Lynn	LYNN- INTERSECTION IMPROVEMENTS AT TWO INTERSECTIONS ON BROADWAY	4	HSIP	\$5,846,473	\$5,846,473	\$5,261,826	\$584,647	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
Federal Fiscal Year 2025								\$221,194,797	\$184,419,520	\$36,775,277	
Section 1A / Regionally Prioritized Projects								\$107,862,383	\$86,853,079	\$21,009,304	
Roadway Reconstruction								\$83,180,783	\$67,044,626	\$16,136,157	
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	\$15,474,200	\$13,974,200	\$11,179,360	\$2,794,840	Construction; TAP+STBG Total Cost = \$15,474,200; 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	\$15,474,200	\$1,500,000	\$1,200,000	\$300,000	Construction; TAP+STBG Total Cost = \$15,474,200; 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	\$183,633,774	\$12,000,000	\$9,600,000	\$2,400,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$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	\$183,633,774	\$18,055,959	\$14,444,767	\$3,611,192	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$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	\$183,633,774	\$2,000,000	\$1,600,000	\$400,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$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	\$25,473,225	\$6,000,000	\$4,800,000	\$1,200,000	Construction; CMAQ+HSIP+STBG Total Cost = \$25,473,225; Project has 2-year AC schedule (2025-26); 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	\$25,473,225	\$1,000,000	\$900,000	\$100,000	Construction; CMAQ+HSIP+STBG Total Cost = \$25,473,225; Project has 2-year AC schedule (2025-26); 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	\$25,473,225	\$2,000,000	\$1,600,000	\$400,000	Construction; CMAQ+HSIP+STBG Total Cost = \$25,473,225; Project has 2-year AC schedule (2025-26); MPO Evaluation Score = 59
2025	609257	Boston Region	Everett	EVERETT- RECONSTRUCTION OF BEACHAM STREET	4	HSIP	\$10,545,024	\$1,000,000	\$900,000	\$100,000	Construction; HSIP+TAP+STBG Total Cost = \$10,545,024; MPO Evaluation Score = 54; TAP Proponent = Everett
2025	609257	Boston Region	Everett	EVERETT- RECONSTRUCTION OF BEACHAM STREET	4	STBG	\$10,545,024	\$8,045,024	\$6,436,019	\$1,609,005	Construction; HSIP+TAP+STBG Total Cost = \$10,545,024; MPO Evaluation Score = 54; TAP Proponent = Everett

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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	609257	Boston Region	Everett	EVERETT- RECONSTRUCTION OF BEACHAM STREET	4	TAP	\$10,545,024	\$1,500,000	\$1,200,000	\$300,000	Construction; HSIP+TAP+STBG Total Cost = \$10,545,024; 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	\$16,105,600	\$3,000,000	\$2,700,000	\$300,000	Construction; HSIP+STBG Total Cost = \$16,105,600; 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	\$16,105,600	\$13,105,600	\$10,484,480	\$2,621,120	Construction; HSIP+STBG Total Cost = \$16,105,600; MPO Evaluation Score = 75
Intersection Improvements								\$10,612,800	\$8,553,412	\$2,059,388	
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	CMAQ	\$25,757,791	\$3,000,000	\$2,400,000	\$600,000	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$25,757,791; 2-year AC schedule (2025-26); MPO Evaluation Score = 55
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	HSIP	\$25,757,791	\$631,724	\$568,552	\$63,172	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$25,757,791; 2-year AC schedule (2025-26); MPO Evaluation Score = 55
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	NHPP	\$25,757,791	\$2,873,029	\$2,298,423	\$574,606	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$25,757,791; 2-year AC schedule (2025-26); MPO Evaluation Score = 55
2025	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	STBG	\$25,757,791	\$2,495,247	\$1,996,198	\$499,049	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$25,757,791; 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	\$1,612,800	\$1,612,800	\$1,290,240	\$322,560	Construction; CMAQ Total Cost = \$1,612,800; MPO Evaluation Score = 52
Bicycle and Pedestrian								\$6,568,800	\$5,255,040	\$1,313,760	
2025	610544	Boston Region	Peabody	PEABODY- MULTI-USE PATH CONSTRUCTION OF INDEPENDENCE GREENWAY AT I-95 AND ROUTE 1	4	CMAQ	\$6,568,800	\$4,000,000	\$3,200,000	\$800,000	Construction; CMAQ+TAP Total Cost = \$6,568,800; 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	\$6,568,800	\$2,568,800	\$2,055,040	\$513,760	Construction; CMAQ+TAP Total Cost = \$6,568,800; MPO Evaluation Score = 53; TAP Proponent = Peabody
Flex to FTA								\$5,500,000	\$4,400,000	\$1,100,000	
2025	S12113	Boston Region		TRANSIT MODERNIZATION PROGRAM	Regionwide	CMAQ	\$11,000,000	\$5,500,000	\$4,400,000	\$1,100,000	Construction; Flex to FTA; Set aside for LRTP Transit Modernization Program
Transit Grant Program								\$2,000,000	\$1,600,000	\$400,000	
2025	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM	Regionwide	CMAQ	\$7,522,281	\$2,000,000	\$1,600,000	\$400,000	Planning, Design, or Construction; Set Aside for LRTP Community Connections Program
Section 2A / State Prioritized Reliability Projects								\$68,891,728	\$58,171,740	\$10,719,988	
Bridge On-system NHS								\$30,464,223	\$24,371,378	\$6,092,845	
2025	608703	Boston Region	Wilmington	WILMINGTON- BRIDGE REPLACEMENT, W-38-029 (2KV), ST 129 LOWELL STREET OVER I 93	4	NHPP	\$16,542,624	\$16,542,624	\$13,234,099	\$3,308,525	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2025	610776	Boston Region	Cambridge	CAMBRIDGE- SUPERSTRUCTURE REPLACEMENT, C-01-031, US ROUTE 3/ROUTE 16/ROUTE 2 OVER MBTA REDLINE	6	NHPP	\$13,921,599	\$13,921,599	\$11,137,279	\$2,784,320	
Safety Improvements								\$6,440,001	\$5,796,001	\$644,000	
2025	609532	Boston Region	Chelsea	CHELSEA- TARGETED SAFETY IMPROVEMENTS AND RELATED WORK ON BROADWAY, FROM WILLIAMS STREET TO CITY HALL AVENUE	6	HSIP	\$6,440,001	\$6,440,001	\$5,796,001	\$644,000	
Non-Interstate Pavement								\$7,843,932	\$6,275,146	\$1,568,786	
2025	610722	Boston Region	Multiple	ACTON- BOXBOROUGH- LITTLETON- PAVEMENT PRESERVATION ROUTE 2	3	NHPP	\$7,843,932	\$7,843,932	\$6,275,146	\$1,568,786	
Interstate Pavement								\$24,143,572	\$21,729,215	\$2,414,357	
2025	610726	Boston Region	Multiple	MEDFORD- WINCHESTER- STONEHAM- INTERSTATE PAVEMENT PRESERVATION ON I-93	4	NHPP-I	\$24,143,572	\$24,143,572	\$21,729,215	\$2,414,357	
Section 2B / State Prioritized Modernization Projects								\$40,724,988	\$36,422,143	\$4,302,845	
Roadway Reconstruction								\$40,724,988	\$36,422,143	\$4,302,845	
2025	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NHPP-I	\$285,366,126	\$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	\$285,366,126	\$23,421,524	\$21,079,372	\$2,342,152	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	\$893,887	\$893,887	\$715,110	\$178,777	
2025	612001	Boston Region	Medford	MEDFORD- MILTON FULLER ROBERTS ELEMENTARY SCHOOL (SRTS)	4	TAP	\$1,058,663	\$1,058,663	\$846,930	\$211,733	
2025	612100	Boston Region	Revere	REVERE- IMPROVEMENTS AT BEACHMONT VETERANS ELEMENTARY (SRTS)	4	TAP	\$350,914	\$350,914	\$280,731	\$70,183	
Section 2C / State Prioritized Expansion Projects								\$3,715,698	\$2,972,558	\$743,140	
Bicycle and Pedestrian								\$3,715,698	\$2,972,558	\$743,140	
2025	610680	Boston Region	Natick	NATICK- LAKE COCHITUATE PATH	3	CMAQ	\$3,715,699	\$3,715,698	\$2,972,558	\$743,140	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
Federal Fiscal Year 2026								\$180,904,954	\$149,472,209	\$31,432,745	
Section 1A / Regionally Prioritized Projects								\$84,712,046	\$67,869,637	\$16,842,409	
Intersection Improvements								\$16,757,791	\$13,406,233	\$3,351,558	
2026	605857	Boston Region	Norwood	NORWOOD- INTERSECTION IMPROVEMENTS AT ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET	5	STBG	\$25,757,791	\$16,757,791	\$13,406,233	\$3,351,558	Construction; HSIP+CMAQ+STBG+NHPP Total Cost = \$25,757,791; 2-year AC schedule (2025-26); MPO Evaluation Score = 55
Roadway Reconstruction								\$60,454,255	\$48,463,404	\$11,990,851	
2026	606226	Boston Region	Boston	BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE	6	NHPP	\$183,633,774	\$12,000,000	\$9,600,000	\$2,400,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$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	\$183,633,774	\$19,500,000	\$15,600,000	\$3,900,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$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	\$183,633,774	\$2,000,000	\$1,600,000	\$400,000	Construction; NHPP+STBG+TAP Total Cost = \$183,633,774; AC schedule over 5 years (2023-2027); Total funding in this TIP = \$125,744,000; \$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	\$10,481,030	\$1,000,000	\$900,000	\$100,000	Construction; HSIP+STBG Total Cost = \$10,481,030; MPO Evaluation Score = 43
2026	608045	Boston Region	Milford	MILFORD- REHABILITATION ON ROUTE 16, FROM ROUTE 109 TO BEAVER STREET	3	STBG	\$10,481,030	\$9,481,030	\$7,584,824	\$1,896,206	Construction; HSIP+STBG Total Cost = \$10,481,030; MPO Evaluation Score = 43
2026	608051	Boston Region	Wilmington	WILMINGTON- RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.	4	STBG	\$25,473,225	\$16,473,225	\$13,178,580	\$3,294,645	Construction; CMAQ+HSIP+STBG Total Cost = \$25,473,225; Project has 2-year AC schedule (2025-26); MPO Evaluation Score = 59
Flex to FTA								\$5,500,000	\$4,400,000	\$1,100,000	
2026	S12113	Boston Region		TRANSIT MODERNIZATION PROGRAM	Regionwide	CMAQ	\$11,000,000	\$5,500,000	\$4,400,000	\$1,100,000	Construction; Flex to FTA; Set aside for LRTP Transit Modernization Program
Transit Grant Program								\$2,000,000	\$1,600,000	\$400,000	
2026	S12124	Boston Region	Multiple	COMMUNITY CONNECTIONS PROGRAM	Regionwide	CMAQ	\$7,522,281	\$2,000,000	\$1,600,000	\$400,000	Planning, Design, or Construction; Set Aside for LRTP Community Connections Program
Section 2A / State Prioritized Reliability Projects								\$40,796,246	\$33,335,557	\$7,460,689	
Safety Improvements								\$6,985,601	\$6,287,041	\$698,560	
2026	607748	Boston Region	Acton	ACTON- INTERSECTION & SIGNAL IMPROVEMENTS ON SR 2 & SR 111 (MASSACHUSETTS AVENUE) AT PIPER ROAD & TAYLOR ROAD	3	HSIP	\$4,382,329	\$4,382,329	\$3,944,096	\$438,233	

Table 3-7: Federal Fiscal Years 2022–26 Transportation Improvement Program Highway Table (cont., 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
2026	611954	Boston Region	Boston	BOSTON- GUIDE AND TRAFFIC SIGN REPLACEMENT ON I-90/I-93 WITHIN CENTRAL ARTERY/TUNNEL SYSTEM	6	HSIP	\$2,603,272	\$2,603,272	\$2,342,945	\$260,327	
Non-Interstate Pavement								\$22,973,988	\$18,379,190	\$4,594,798	
2026	609402	Boston Region	Multiple	FRAMINGHAM- NATICK- RESURFACING AND RELATED WORK ON ROUTE 9	3	NHPP	\$14,082,878	\$14,082,878	\$11,266,302	\$2,816,576	
2026	612050	Boston Region	Multiple	BRAINTREE- WEYMOUTH- RESURFACING AND RELATED WORK ON ROUTE 3	6	NHPP	\$8,891,110	\$8,891,110	\$7,112,888	\$1,778,222	
Bridge On-system Non-NHS								\$7,461,816	\$5,969,453	\$1,492,363	
2026	612075	Boston Region	Salem	SALEM- BRIDGE REPLACEMENT, S-01-024, JEFFERSON AVENUE OVER PARALLEL STREET	4	STBG	\$3,354,720	\$3,354,720	\$2,683,776	\$670,944	
2026	612099	Boston Region		ASHLAND- BRIDGE REPLACEMENT, A-14-006, CORDAVILLE ROAD OVER SUDBURY RIVER	3	STBG	\$4,107,096	\$4,107,096	\$3,285,677	\$821,419	
Bridge Off-system								\$3,374,841	\$2,699,873	\$674,968	
2026	612076	Boston Region	Topsfield	TOPSFIELD- BRIDGE REPLACEMENT, T-06-013, PERKINS ROW OVER MILE BROOK	4	STBG-BR-Off	\$3,374,481	\$3,374,841	\$2,699,873	\$674,968	
Section 2B / State Prioritized Modernization Projects								\$43,722,726	\$38,927,866	\$4,794,860	
Intersection Improvements								\$8,430,871	\$7,165,197	\$1,265,674	
2026	607759	Boston Region	Boston	BOSTON- INTERSECTION & SIGNAL IMPROVEMENTS AT THE VFW PARKWAY & SPRING STREET	6	STBG	\$4,225,870	\$4,225,870	\$3,380,696	\$845,174	
2026	610665	Boston Region	Stoneham	STONEHAM- INTERSECTION IMPROVEMENTS AT ROUTE 28 (MAIN STREET), NORTH BORDER ROAD AND SOUTH STREET	4	HSIP	\$4,205,001	\$4,205,001	\$3,784,501	\$420,500	
Roadway Reconstruction								\$35,291,855	\$31,762,670	\$3,529,186	
2026	607977	Boston Region	Multiple	HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE	3	NFP-I	\$285,366,126	\$35,291,855	\$31,762,670	\$3,529,186	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 2C / State Prioritized Expansion Projects								\$11,673,936	\$9,339,149	\$2,334,787	
Bicycle and Pedestrian								\$11,673,936	\$9,339,149	\$2,334,787	
2026	607329	Boston Region	Multiple	WAKEFIELD- LYNNFIELD- RAIL TRAIL EXTENSION, FROM THE GALVIN MIDDLE SCHOOL TO LYNNFIELD/ PEABODY T.I.	4	CMAQ	\$11,673,936	\$11,673,936	\$9,339,149	\$2,334,787	

Table 3-8: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program)

Federal Funding Program	ALI	2022	2023	2024	2025	2026	FFY22-26 Total (Federal)	FFY22-26 Total (Incl. Match)
5307		\$149,839,571	\$152,401,827	\$155,007,899	\$157,658,534	\$160,354,495	\$775,262,326	\$969,077,908
Revenue Vehicle Program	12.12.00	\$117,756,381	\$117,756,381	\$117,756,381	\$117,756,381	\$117,756,381	\$588,781,905	\$735,977,381
Signals/Systems Upgrade Program	12.63.01	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stations and Facilities Program	12.34.00	\$32,083,190	\$34,645,446	\$37,251,518	\$39,902,153	\$42,598,114	\$186,480,421	\$233,100,526
5337		\$151,084,011	\$153,667,547	\$156,295,263	\$158,967,911	\$161,686,263	\$781,700,995	\$977,126,244
Bridge & Tunnel Program	12.24.05	\$47,231,542	\$47,231,542	\$47,231,542	\$47,231,542	\$47,231,542	\$236,157,709	\$295,197,136
Revenue Vehicle Program	12.12.00	\$12,131,862	\$12,131,862	\$12,131,862	\$12,131,862	\$12,131,862	\$60,659,309	\$75,824,136
Signals/Systems Upgrade Program	12.63.01	\$68,437,082	\$68,437,082	\$68,437,082	\$68,437,082	\$68,437,082	\$342,185,412	\$427,731,765
Stations and Facilities Program	12.34.00	\$23,283,525	\$25,867,061	\$28,494,777	\$31,167,425	\$33,885,777	\$142,698,565	\$178,373,206
5339		\$6,208,003	\$6,314,160	\$6,422,132	\$6,531,951	\$6,643,647	\$32,119,893	\$40,149,866
Bus Program	11.14.00	\$6,208,003	\$6,314,160	\$6,422,132	\$6,531,951	\$6,643,647	\$32,119,893	\$40,149,866
FFY22-26 FTA Formula Funding		\$307,131,585	\$312,383,534	\$317,725,294	\$323,158,396	\$328,684,405	\$1,589,083,214	\$1,986,354,017
5309 - GLX		\$46,121,000	\$0	\$0	\$0	\$0	\$46,121,000	\$92,242,000
Green Line Extension	13.23.03	\$46,121,000	\$0	\$0	\$0	\$0	\$46,121,000	\$92,242,000
Other Federal		\$586,594,981	\$316,691,912	\$284,582,391	\$147,500,000	\$125,000,000	\$1,460,369,284	\$1,460,369,284
RRIF Financing - PTC/ATC/Fiber	12.63.01	\$439,094,981	\$169,191,912	\$137,082,391	\$0	\$0	\$745,369,284	\$745,369,284
RRIF/TIFIA Financing Program	12.24.05	\$147,500,000	\$147,500,000	\$147,500,000	\$147,500,000	\$125,000,000	\$715,000,000	\$715,000,000
FFY22-26 Total Federal Funding		\$939,847,566	\$629,075,446	\$602,307,685	\$470,658,396	\$453,684,405	\$3,095,573,498	\$3,538,965,301

Note: FTA formula funds (5307, 5337 and 5339) are based on estimated apportionments for FFY22-26.

TIP programs and projects are based on the preliminary FY22-26 CIP and planned federal obligations as of Apr-21. Adjustments will be made to federal projects and budgets as the FY22-26 CIP process 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.

Green Line Extension funding is based on the FFGA. \$850.0M obligated to date and another \$100.0M is expected to be obligated in FFY21, leaving a \$46.1M balance.

RRIF loan funding for the PTC/ATC/Fiber Resiliency project is based on the 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: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program - Project List and Descriptions [80% Federal Share])

Funds	TIP Program	CIP ID#	Project Name	FFY 2021	FFY 2022-2026	Total (Federal)	Project Description
FTA Formula Funds (5307, 5337, 5339)							
5307 - Revenue Vehicles							
5307	Revenue Vehicles	P0369	Green Line Type 10 Light Rail Fleet Replacement	\$37,801,325	\$321,808,529	\$359,609,854	Replacement of Light Rail Vehicles to replace the existing Green Line Type 7 and 8 Fleets.
5307	Revenue Vehicles	P0653	Procurement of Battery Electric 40ft Buses and Related infrastructure	\$0	\$41,437,713	\$41,437,713	Procurement of Battery Electric 40ft Buses and Related infrastructure
5307	Revenue Vehicles	P0618	Delivery of 40 ft Buses - FY 2021 to FY 2025	\$0	\$133,254,827	\$133,254,827	Procurement of 40-foot electric and hybrid buses for replacement of diesel bus fleet.
5307	Revenue Vehicles	P0619	Dual Mode Articulated (DMA) Bus Replacement	\$71,356,024	\$0	\$71,356,024	Procurement of 60-foot DMA buses to replace the existing fleet of 32 Silver Line BRT buses and to provide for ridership expansion projected as a result of Silver Line service extension to Chelsea.
5307	Revenue Vehicles	P0649	Option Order Procurement of 194 New Flyer Hybrid 40 ft Buses	\$0	\$5,844,571	\$5,844,571	Procurement of 40-foot buses with hybrid propulsion to replace Emission Controlled Diesel (ECD) buses that have reached the end of their service life.
5307	Revenue Vehicles	P0650	Overhaul of 33 Kawasaki 900 Series Bi-Level Coaches	\$4,800,000	\$30,560,000	\$35,360,000	Overhaul and upgrade of existing systems on commuter rail coaches that were brought into service in 2005 to enable optimal reliability through the end of their service life.
5307	Revenue Vehicles	P0652	Procurement of Bi-Level Commuter Rail Coaches	\$0	\$35,076,265	\$35,076,265	Procurement of bi-level commuter rail coaches to replace existing cars that have exceeded their service life.
5307	Revenue Vehicles	P0911	156 Hybrid, 175 CNG, 45 60ft Hybrid Bus Overhaul Program	\$0	\$20,800,000	\$20,800,000	Overhaul of MBTA bus fleet (hybrid and CNG)
				\$113,957,349	\$588,781,905	\$702,739,254	
5307 - Stations and Facilities							
5307	Stations and Facilities	P0066e	Harvard/Central Elevator	\$5,347,007	\$0	\$5,347,007	Elevator Improvements at Harvard/Central to address station accessibility needs.
5307	Stations and Facilities	P0104	Charlestown Bus - Seawall Rehab	\$930,609	\$0	\$930,609	Rehabilitation of existing seawall to protect bus maintenance facility from future storm and flooding events.
5307	Stations and Facilities	P0165	Harvard Square Busway Repairs	\$1,600,000	\$0	\$1,600,000	Rehabilitation of roadway, drainage and catenary infrastructure at the Harvard Square Busway.
5307	Stations and Facilities	P0671a	Bus Facility Modernization Program - Quincy Bus Facility	\$111,020,540	\$186,480,420	\$297,500,960	Replace the existing Quincy bus facility to provide additional capacity to support future service growth and a transition to battery electric buses.
				\$118,898,155	\$186,480,420	\$305,378,575	
5337 - Bridge and Tunnel							
5337	Bridge and Tunnel	P0006	Gloucester Drawbridge Replacement	\$4,246,758	\$8,156,224	\$12,402,982	Replacement of Gloucester Drawbridge with two new independent/operational and functioning movable bascule bridges.
5337	Bridge and Tunnel	P0008	Emergency Bridge Design / Inspection & Rating	\$0	\$2,379,908	\$2,379,908	Inspection of bridge assets system wide for determination of asset condition ratings and subsequent prioritization and scoping for repairs to select bridges.
5337	Bridge and Tunnel	P0009	Bridges - Design	\$0	\$10,480,489	\$10,480,489	Design for high priority bridge repairs system wide.
5337	Bridge and Tunnel	P0037	Emergency Bridge Repair	\$0	\$2,369,753	\$2,369,753	Repairs to bridges system wide, based on asset condition as determined by system wide inspections.

Table 3-9: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program - Project List and Descriptions [80% Federal Share])(cont., 2)

Funds	TIP Program	CIP ID#	Project Name	FFY 2021	FFY 2022-2026	Total (Federal)	Project Description
5337	Bridge and Tunnel	P0182	Tunnel Rehab	\$0	\$705,198	\$705,198	Repair and rehabilitation of transit tunnels system wide.
5337	Bridge and Tunnel	P0495	Bridge Bundling Contract	\$0	\$47,357,564	\$47,357,564	Replacement of 6 commuter rail bridges: Lynn Fells Parkway in Melrose (Haverhill Line); Parker Street in Lawrence (Haverhill Line); Commercial Street in Lynn (Newburyport/Rockport Line); Bacon Street in Wellesley (Worcester Line); Intervale Road in Weston (Worcester Line); and High Line Bridge in Somerville (Lowell Line).
5337	Bridge and Tunnel	P0551	Longfellow Approach	\$0	\$91,088,476	\$91,088,476	Rehabilitation of the Longfellow Approach Viaduct, Charles/MGH Station platforms, and Span 1 of the Longfellow Bridge.
5337	Bridge and Tunnel	P0627	Inspection and Rating of MBTA Systemwide Bridges	\$0	\$43,432,800	\$43,432,800	Inspection of bridge assets system wide for determination of asset condition ratings.
5337	Bridge and Tunnel	P0851	Norfolk Ave & East Cottage Street Bridges	\$22,173,611	\$0	\$22,173,611	Replacement of East Cottage Street bridge with a new superstructure and substructure to meet design code/standards, as well as MBTA and FTA State of Good Repair requirements.
5337	Bridge and Tunnel	P0853	Robert Street Bridge	\$3,389,786	\$0	\$3,389,786	Replacement of bridge carrying the Needham Line Commuter Rail service over Robert Street in Roslindale.
5337	Bridge and Tunnel	P0907	East Street Bridge Replacement (Dedham)	\$0	\$14,400,000	\$14,400,000	Replacement of bridge carrying the Franklin Line commuter rail service and CSX freight service over East Street in Dedham.
5337	Bridge and Tunnel	R0074	Tunnel Inspection Systemwide	\$5,280,000	\$15,787,297	\$21,067,297	Inspection to assess condition of transit tunnels systemwide.
				\$35,090,154	\$236,157,709	\$271,247,864	
5337 - Revenue Vehicles							
5337	Revenue Vehicles	P0239	Locomotive Overhaul	\$10,000,000	\$11,906,527	\$21,906,527	Overhaul of commuter rail locomotives to improve fleet availability and service reliability systemwide.
5337	Revenue Vehicles	P0370	Green Line Train Protection	\$10,280,463	\$48,752,782	\$59,033,245	Installation of on-board and wayside equipment for a train monitoring system to determine allowable train separation, based on speed and location, and to prevent vehicles from passing a red signal.
				\$20,280,463	\$60,659,309	\$80,939,772	
5337 - Signals and Systems							
5337	Signals and Systems	P0097	45 High Street - Data Center Upgrades	\$1,200,000	\$0	\$1,200,000	Includes new fire suppression/alarm system as well as power, fiber, HVAC and other data center improvements at the MBTA operations center at 45 High Street, Boston.
5337	Signals and Systems	P0212	North Station Terminal Signal	\$0	\$4,000,000	\$4,000,000	Upgrades to the commuter rail signal/communication system in the North Station area required for more efficient phasing of future track alignments, including support for the future Draw1 Bridge Replacement Project.
5337	Signals and Systems	P0261	Worcester Line Track Improvements Incl. 3rd Track Feasibility Study	\$0	\$25,885,742	\$25,885,742	Construction of a new three-track section on the Framingham/Worcester Commuter Rail line to improve capacity, efficiency of operations and to bring 4 stations into full ADA compliance.
5337	Signals and Systems	P0283	Green Line Central Tunnel Signal - 25 Cycle	\$0	\$4,000,000	\$4,000,000	Replace 25Hz track circuits and related equipment within the Green Line central tunnel system.
5337	Signals and Systems	P0285	Signal Program - Red/Orange Line	\$37,768,206	\$72,194,222	\$109,962,427	Various signal upgrades and improvements along both the Red and Orange Lines.

Table 3-9: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program - Project List and Descriptions [80% Federal Share])(cont., 3)

Funds	TIP Program	CIP ID#	Project Name	FFY 2021	FFY 2022-2026	Total (Federal)	Project Description
5337	Signals and Systems	P0301	System-Wide Radio	\$30,039,735	\$21,030,405	\$51,070,140	Replacement of existing radio system for MBTA Police to support critical two-way communication for MBTA Transit Police and to support a secure and Interoperable Radio System.
5337	Signals and Systems	P0591	Green Line Central Tunnel Track and Signal Replacement	\$0	\$96,000,000	\$96,000,000	Replacement of the existing 25 cycle signal system and associated wayside equipment at Government Center, Copley and Park Street Interlockings, and related track work.
5337	Signals and Systems	P0654	Red Line Interlock Upgrades	\$9,600,000	\$0	\$9,600,000	Replacement of existing interlocking signal components on the Red Line to bring the assets to a state of good repair.
5337	Signals and Systems	P0705	Power Systems Resiliency Program	\$0	\$11,416,644	\$11,416,644	Installation of new duct bank systems to replace damaged power infrastructure, including at West Fourth Street, Dudley Square, Arlington Street, Causeway Street, two locations on Commonwealth Ave and three locations on Beacon Street.
5337	Signals and Systems	P0857	Mattapan HSL Transformation	\$0	\$94,400,000	\$94,400,000	State of good repair and accessibility improvements to all stations, improvements to the power infrastructure, strengthening of corridor bridges, improvements to corridor drainage, and other infrastructure improvements.
5337	Signals and Systems	P0904	Systemwide Asset Management Program Phase 3	\$2,800,000	\$6,000,000	\$8,800,000	Support the MBTA's asset management program in order to meet legislative requirements; including updates to the asset inventory for Transit Asset Management Plan (TAMP) and National Transit Database (NTD) reporting.
5337	Signals and Systems	R0117	Alewife Crossing Improvements	\$0	\$7,258,400	\$7,258,400	As part of the Red/Orange Line Infrastructure Improvement Program, this project will upgrade of track switches at Alewife Station and associated retrofits to accomodate these new components.
				\$81,407,941	\$342,185,412	\$423,593,353	
5337 - Stations and Facilities							
5337	Stations and Facilities	P0003	Green Line B-Branch Consolidation	\$23,422,633	\$0	\$23,422,633	Addressing accessibility issues along the B branch of the Green Line along Commonwealth Avenue.
5337	Stations and Facilities	P0066	Elevator Program	\$0	\$12,405,121	\$12,405,121	Installation of new redundant elevators and the replacement of existing elevators at various stations, in order to mitigate degradation of station elevators and to maintain station accessibility during elevator maintenance.
5337	Stations and Facilities	P0074	Downtown Crossing Vertical Transportation Improvements Phase 2	\$0	\$5,926,390	\$5,926,390	Construction of two new redundant elevators, in order to improve accessibility and to provide for future elevator maintenance without rendering the station temporarily inaccessible.
5337	Stations and Facilities	P0075	Elevator Program Multiple Location Design	\$9,499,338	\$27,035,682	\$36,535,020	Design for the installation of new redundant elevators and the replacement of existing elevators system wide.
5337	Stations and Facilities	P0078	Hingham Ferry Dock Modification	\$400,000	\$0	\$400,000	Capital improvements and modifications to the existing ferry dock in Hingham.
5337	Stations and Facilities	P0087	Braintree and Quincy Adams Garage Rehab	\$9,295,936	\$0	\$9,295,936	The full repair and rehabilitation of the Red Line's Quincy Adams Station and Braintree Station parking garages.
5337	Stations and Facilities	P0129	Newton Highlands Green Line Station Accessibility Project	\$0	\$25,642,761	\$25,642,761	Improvements at Newton Highlands station on the D branch of the Green Line to comply with ADA accessibility standards.
5337	Stations and Facilities	P0163	Forest Hills Improvement Project	\$0	\$26,089,763	\$26,089,763	Improvements at Forest Hills Station on the Orange Line and Needham Commuter Rail Line to comply with ADA accessibility standards. Work will also include infrastructure and other improvements.

Table 3-9: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MBTA Federal Capital Program - Project List and Descriptions [80% Federal Share])(cont., 4)

Funds	TIP Program	CIP ID#	Project Name	FFY 2021	FFY 2022-2026	Total (Federal)	Project Description
5337	Stations and Facilities	P0168	Symphony Station Improvements	\$37,436,159	\$0	\$37,436,159	Upgrades to the existing Symphony Station on the Green Line in order to provide a modern, accessible, code-compliant facility.
5337	Stations and Facilities	P0496	Silver Line Gateway - Phase 2	\$0	\$4,654,574	\$4,654,574	Includes the building of a new commuter rail station adjacent to the new Chelsea Bus Rapid Transit (BRT) Station located at the Mystic Mall, as well as decommissioning of the existing Chelsea Commuter Rail Station and signal prioritization.
5337	Stations and Facilities	P0679	Codman Yard Expansion and Improvements	\$43,822,058	\$12,088,880	\$55,910,938	Infrastructure improvements to Codman Yard, an additional Red Line storage facility, to accommodate the new vehicle fleet.
5337	Stations and Facilities	P0856	Ruggles Station Improvements Phase 2	\$2,599,003	\$0	\$2,599,003	Design for state of good repair improvements to Ruggles Station on the Orange Line.
5337	Stations and Facilities	P0890	Green Line Surface Station Accessibility I	\$0	\$15,624,828	\$15,624,828	Reconstruction of Green Line surface stations and related infrastructure to support compliance with ADA regulations and alignment with corridor capacity needs.
5337	Stations and Facilities	P0970	Attleboro Station Improvements	\$1,371,330	\$0	\$1,371,330	State of good repair and accessibility improvements to the Attleboro commuter rail station, in coordination with GATRA for project funding and scope development.
5337	Stations and Facilities	R0071	Lynn Station & Parking Garage Improvements Phase II	\$0	\$13,230,567	\$13,230,567	Extensive rehabilitation efforts include reconstruction of the existing commuter rail platform, upgrade of mechanical and electrical systems at the station, and structural repairs and code compliance retrofits to the garage.
				\$127,846,458	\$142,698,565	\$270,545,023	
5339 - Bus and Bus Facility							
5339	Bus and Bus Facilities	P0653	Procurement of Battery Electric 40ft Buses and Related infrastructure	\$6,106,394	\$32,119,893	\$38,226,287	Procurement of Battery Electric 40ft Buses and Related infrastructure
				\$6,106,394	\$32,119,893	\$38,226,287	

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.

Funds	CIP ID#	Project Name
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	P0551	Longfellow Approach
RRIF/TIFIA Financing	P0552	Dorchester Avenue Bridge
RRIF/TIFIA Financing	P0952	Widett Layover Facility - Real Estate and Design
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: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	State Funds	Federal FTA Section 5307	Federal FTA Section 5339	Federal FHWA Transportation Development Credits	Other Federal	Other Non-Federal
FFY 2022												
RTD0009269	MWRTA	Transit RTA vehicle replacement	METROWEST RTA/REVENUE VEHICLE REPLACEMENT	MWRTA BUY REPLACEMENT VEHICLES; 7 D(b) - CNGs	2022	\$75,000	\$15,000	\$60,000	\$0	\$0	\$0	\$0
RTD0010209	MWRTA	Transit RTA facility and system modernization	METROWEST RTA/ ACQUISITION OF BUS SUPPORT EQUIP/FACILITIES	METROWEST RTA/ACQUIRE AFTER MARKET VEHICLE ACCESSORIES (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2022	\$103,750	\$20,750	\$83,000	\$0	\$0	\$0	\$0
RTD0009271	MWRTA	Transit RTA replacement facilities	METROWEST RTA/FEB - Front Entrance Blandin - Project	Front Entrance Blandin (FEB) Project- This project is in support of the State of Good Repair for Blandin Ave Facility and accomplishes a number of the recommendations as laid out in the 5 year Comprehensive Regional Transit Plan (CRTP). Year 2 of funding allows MWRTA to complete the project, which began with FY2020 100% RTA Cap funds, allowing us to fully leverage the current investment by MassDOT.	2022	\$721,100	\$0	\$0	\$0	\$0	\$0	\$721,100
RTD0010002	MWRTA		METROWEST RTA/ OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	METROWEST RTA/OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	2022	\$2,000,000	\$400,000	\$1,600,000	\$0	\$0	\$0	\$0
RTD0010003	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/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	2022	\$612,934	\$122,587	\$490,347	\$0	\$0	\$0	\$0
RTD0010015	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/TERMINAL, INTERMODAL (TRANSIT) - Framingham Commuter Rail Station (FCRS)	Framingham Intermodal Enhancements/ Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional funds; \$100,000 Pearl Street Garage Feasibility Study; \$50,000 Chrish Walsh Rail Trail Signal Crossing to bring Rail Trail into MWRTA Lot (MWRTA Crossing on the Y).	2022	\$5,000	\$1,000	\$4,000	\$0	\$0	\$0	\$0
RTD0010004	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ TECHNOLOGY SUPPORT/ CAPITAL OUTREACH	Mobility Management; IT; Call Center; Travel Training Enhancements/Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2022	\$75,000	\$15,000	\$60,000	\$0	\$0	\$0	\$0
RTD0010336	MWRTA		MWRTA - Vehicle replacement - Cutaways (11)	Vehicle replacement - Cutaways (11)	2022	\$1,043,992	\$0	\$0	\$0	\$260,998	\$1,043,992	\$0

Table 3-10: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA) (cont., 2)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	State Funds	Federal FTA Section 5307	Federal FTA Section 5339	Federal FHWA Transportation Development Credits	Other Federal	Other Non-Federal
RTD0010155	MWRTA	Transit RTA facility and system modernization	METROWEST RTA/2022 AFC TRANSITION - ACQUIRE - MOBILE FARE COLL EQUIP	Strategy: MWRTA will be working with our technology consultant to implement account based on board fare collection option for customers. This system will allow customers to board the vehicle using a MWRTA issued smart card or MWRTA branded application via QR code which will be linked to a back-end account for the customer. The system will utilize off the shelf components, such as tablets and HID Standard readers, and will integrate into MWRTA's existing cashless fare system being used for paratransit. This account-based system will be an additional option to customers on top of the current S&B options available (cash or Charlie card) and will allow for MWRTA to issue more flexible fare products to customer, along with integrating demand response fare collection with Fixed Route, allowing for seamless transfers across these different modes. This system will be developed to be flexible to work with AFC 2.0 initiatives of the CharlieCard when APIs are published and available for use by RTAs. The RTA Cap request is for the associated hardware to support this initiative.	2022	\$150,000	\$75,000	\$75,000	\$0	\$0	\$0	\$0
FFY 2023												
RTD0010005	MWRTA		METROWEST RTA/ OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	METROWEST RTA/OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	2023	\$2,000,000	\$400,000	\$1,600,000	\$0	\$0	\$0	\$0
RTD0010006	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ ACQUISITION OF BUS SUPPORT EQUIP/FACILITIES	METROWEST RTA/ACQUIRE AFTER MARKET VEHICLE ACCESSORIES (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2023	\$99,750	\$19,950	\$79,800	\$0	\$0	\$0	\$0
RTD0010007	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ TECHNOLOGY SUPPORT/ CAPITAL OUTREACH	Mobility Management; IT; Call Center; Travel Training Enhancements/Improvements; Fare Collection Transition;MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2023	\$100,000	\$20,000	\$80,000	\$0	\$0	\$0	\$0
RTD0010014	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/TERMINAL, INTERMODAL (TRANSIT) - Framingham Commuter Rail Station (FCRS)	Framingham Intermodal Enhancements/ Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2023	\$5,000	\$1,000	\$4,000	\$0	\$0	\$0	\$0

Table 3-10: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA) (cont., 3)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	State Funds	Federal FTA Section 5307	Federal FTA Section 5339	Federal FHWA Transportation Development Credits	Other Federal	Other Non-Federal
RTD0010008	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/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	\$312,500	\$62,500	\$250,000	\$0	\$0	\$0	\$0
RTD0010020	MWRTA	Transit RTA vehicle replacement	METROWEST RTA/REVENUE VEHICLE REPLACEMENT	MWRTA BUY REPLACEMENT VEHICLES; 6 D(b) CNGs + 6 E2s Gas	2023	\$495,000	\$165,000	\$0	\$0	\$0	\$330,000	\$0
RTD0010334	MWRTA		MWRTA - Electronic Sign Board	MWRTA - Electronic Sign Board	2023	\$200,000	\$40,000	\$160,000	\$0	\$0	\$0	\$0
RTD0010330	MWRTA		MWRTA - BEB - Back Entrance Blandin Project	MWRTA - BEB - Back Entrance Blandin Project	2023	\$2,000,000	\$400,000	\$0	\$0	\$0	\$1,600,000	\$0
RTD0010333	MWRTA		MWRTA - CRT North Framingham Bike/Pedestrian Connectivity - Cochituate Rail Trail North Framingham Feasibility Study	MWRTA - CRT North Framingham Bike/Pedestrian Connectivity - Cochituate Rail Trail North Framingham Feasibility Study	2023	\$95,000	\$19,000	\$0	\$0	\$0	\$76,000	\$0
RTD0010338	MWRTA		MWRTA - Vehicle Replacement - Cutaways (12) #2 of 2	MWRTA - Vehicle Replacement - Cutaways (12) #2 of 2	2023	\$495,000	\$165,000	\$0	\$0	\$0	\$330,000	\$0
RTD0010169	MWRTA	Transit RTA facility and system modernization	METROWEST RTA/2023 ELECTRIC VEHICLE MIGRATION	Modernization Fleet Electrification - Vehicle Migration - Purchase of 5 Paratransit (Type A) Electric Vehicles. MWRTA is seeking a 8 year migration to fully electric vehicles. This request is supported in our TAM to maintain useful life benchmarks of our paratransit fleet and is in support of Gov. Baker's 2020 Transportation Climate Initiative (TCI).	2023	\$300,000	\$150,000	\$150,000	\$0	\$0	\$0	\$0
FFY 2024												
RTD0010009	MWRTA		METROWEST RTA/ OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	METROWEST RTA/OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	2024	\$2,000,000	\$400,000	\$1,600,000	\$0	\$0	\$0	\$0
RTD0010010	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ ACQUISITION OF BUS SUPPORT EQUIP/FACILITIES	METROWEST RTA/ACQUIRE AFTER MARKET VEHICLE ACCESSORIES (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2024	\$111,750	\$22,350	\$89,400	\$0	\$0	\$0	\$0
RTD0010011	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ TECHNOLOGY SUPPORT/ CAPITAL OUTREACH	Mobility Management; IT; Call Center; Travel Training Enhancements/Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2024	\$200,000	\$40,000	\$160,000	\$0	\$0	\$0	\$0

Table 3-10: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA) (cont., 4)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	State Funds	Federal FTA Section 5307	Federal FTA Section 5339	Federal FHWA Transportation Development Credits	Other Federal	Other Non-Federal
RTD0010012	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/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	\$312,500	\$62,500	\$250,000	\$0	\$0	\$0	\$0
RTD0010013	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/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 as well and will reduce the RTACAP request upon award of additional federal funds.	2024	\$5,000	\$1,000	\$4,000	\$0	\$0	\$0	\$0
RTD0010022	MWRTA	Transit RTA vehicle replacement	METROWEST RTA/REVENUE VEHICLE REPLACEMENT	MWRTA BUY REPLACEMENT VEHICLES; 11 D(b) - CNGs + 4 E2s - Gas	2024	\$675,000	\$225,000	\$0	\$0	\$0	\$450,000	\$0
RTD0010329	MWRTA		MWRTA - FCRS Intermodal Hub	MWRTA - FCRS Intermodal Hub	2024	\$8,000,000	\$0	\$0	\$0	\$2,000,000	\$8,000,000	\$0
RTD0010331	MWRTA		MWRTA - ESG - East Street Garage Project	MWRTA - ESG - East Street Garage Project	2024	\$7,000,000	\$0	\$0	\$0	\$1,750,000	\$7,000,000	\$0
RTD0010328	MWRTA		MWRTA - Body Shop	MWRTA - Body Shop	2024	\$3,000,000	\$0	\$0	\$0	\$750,000	\$3,000,000	\$0
RTD0010340	MWRTA		MWRTA - Vehicle Replacement - Cutaways (15) #2 of 2	MWRTA - Vehicle Replacement - Cutaways (15) #2 of 2	2024	\$675,000	\$225,000	\$0	\$0	\$0	\$450,000	\$0
RTD0010170	MWRTA	Transit RTA facility and system modernization	METROWEST RTA/2024 ELECTRIC VEHICLE MIGRATION	Modernization Fleet Electrification - Vehicle Migration - Purchase of 5 Electric Vehicles	2024	\$600,000	\$300,000	\$300,000	\$0	\$0	\$0	\$0
FFY 2025												
RTD0010016	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ ACQUISITION OF BUS SUPPORT EQUIP/FACILITIES	METROWEST RTA/ACQUIRE AFTER MARKET VEHICLE ACCESSORIES (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2025	\$113,750	\$22,750	\$91,000	\$0	\$0	\$0	\$0
RTD0010017	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ TECHNOLOGY SUPPORT/ CAPITAL OUTREACH	Mobility Management; IT; Call Center; Travel Training Enhancements/Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2025	\$200,000	\$40,000	\$160,000	\$0	\$0	\$0	\$0
RTD0010018	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/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	\$450,000	\$0	\$0	\$0	\$0
RTD0010019	MWRTA		METROWEST RTA/ OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	METROWEST RTA/OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	2025	\$2,000,000	\$400,000	\$1,600,000	\$0	\$0	\$0	\$0

Table 3-10: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA) (cont., 5)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	State Funds	Federal FTA Section 5307	Federal FTA Section 5339	Federal FHWA Transportation Development Credits	Other Federal	Other Non-Federal
RTD0010023	MWRTA	Transit RTA vehicle replacement	METROWEST RTA/REVENUE VEHICLE REPLACEMENT	MWRTA BUY REPLACEMENT VEHICLES; 3 D(b) - CNGs + 5 E2s - Gas	2025	\$375,000	\$125,000	\$250,000	\$0	\$0	\$0	\$0
RTD0008997	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/TERMINAL, INTERMODAL (TRANSIT) - Framingham Commuter Rail Station (FCRS)	Framingham Intermodal Enhancements/ Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2025	\$5,000	\$1,000	\$4,000	\$0	\$0	\$0	\$0
RTD0010335	MWRTA		MWRTA - AFC TRANSITION - MOBILE FARE COLL EQUIP	MWRTA - AFC TRANSITION - MOBILE FARE COLL EQUIP	2025	\$100,000	\$50,000	\$50,000	\$0	\$0	\$0	\$0
RTD0010342	MWRTA		MWRTA - Vehicle Replacement - Cutaways (8) #2 of 2	MWRTA - Vehicle Replacement - Cutaways (8) #2 of 2	2025	\$375,000	\$125,000	\$0	\$250,000	\$0	\$0	\$0
RTD0010332	MWRTA		MWRTA - Public Restrooms at Blandin and FCRS Hubs	MWRTA - Public Restrooms at Blandin and FCRS Hubs	2025	\$200,000	\$40,000	\$0	\$0	\$0	\$160,000	\$0
RTD0010171	MWRTA	Transit RTA facility and system modernization	METROWEST RTA/2025 ELECTRIC VEHICLE MIGRATION	Modernization Fleet Electrification - Vehicle Migration - Purchase of 5 Paratransit (Type A) Electric Vehicles. MWRTA is seeking a 8 year migration to fully electric vehicles. This request is supported in our TAM to maintain useful life benchmarks of our paratransit fleet and is in support of Gov. Baker's 2020 Transportation Climate Initiative (TCI).	2025	\$600,000	\$300,000	\$300,000	\$0	\$0	\$0	\$0
FFY 2026												
RTD0010161	MWRTA		METROWEST RTA/ OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	METROWEST RTA/OPERATING ASSISTANCE NON FIXED ROUTE ADA PARA SERV	2026	\$2,000,000	\$400,000	\$1,600,000	\$0	\$0	\$0	\$0
RTD0010163	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/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	\$550,000	\$0	\$0	\$0	\$0
RTD0010165	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ TECHNOLOGY SUPPORT/ CAPITAL OUTREACH	Mobility Management; IT; Call Center; Travel Training Enhancements/Improvements; MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2026	\$200,000	\$40,000	\$160,000	\$0	\$0	\$0	\$0
RTD0010166	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/ ACQUISITION OF BUS SUPPORT EQUIP/FACILITIES	METROWEST RTA/ACQUIRE AFTER MARKET VEHICLE ACCESSORIES (i.e., passenger counters, DVR - vehicle recorders, annunciators)	2026	\$113,750	\$22,750	\$91,000	\$0	\$0	\$0	\$0

Table 3-10: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (MWRTA) (cont., 6)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	State Funds	Federal FTA Section 5307	Federal FTA Section 5339	Federal FHWA Transportation Development Credits	Other Federal	Other Non-Federal
RTD0010167	MWRTA	Transit RTA facility and vehicle maintenance	METROWEST RTA/TERMINAL, INTERMODAL (TRANSIT) - Framingham Commuter Rail Station	Intermodal at the Framingham Commuter Rail Station (FCRS) Enhancements/Improvements;MWRTA applies for competitive funding for this line item as well and will reduce the RTACAP request upon award of additional federal funds.	2026	\$5,000	\$1,000	\$4,000	\$0	\$0	\$0	\$0
RTD0010172	MWRTA	Transit RTA facility and system modernization	METROWEST RTA/2026 ELECTRIC VEHICLE MIGRATION	Modernization Fleet Electrification - Vehicle Migration - Purchase of 5 Paratransit (Type A) Electric Vehicles. MWRTA is seeking a 8 year migration to fully electric vehicles. This request is supported in our TAM to maintain useful life benchmarks of our paratransit fleet and is in support of Gov. Baker's 2020 Transportation Climate Initiative (TCI).	2026	\$300,000	\$150,000	\$150,000	\$0	\$0	\$0	\$0
RTD0010344	MWRTA		MWRTA - Vehicle Replacement - Cutaways (8) #2 of 2	MWRTA - Vehicle Replacement - Cutaways (8) #2 of 2	2026	\$375,000	\$125,000	\$0	\$0	\$0	\$250,000	\$0
RTD0010196	MWRTA	Transit RTA vehicle replacement	METROWEST RTA/REVENUE VEHICLE REPLACEMENT	MWRTA BUY REPLACEMENT VEHICLES; 6 D(b) - CNGs + 2 E2s - Gas	2026	\$375,000	\$125,000	\$250,000	\$0	\$0	\$0	\$0

Table 3-11: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (CATA)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	Bond Cap State 100% State	Federal FTA Section 5307	Other Municipal and Local Transit
FFY 2022									
RTD0009507	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-buy misc small capital	Miscellaneous small capital items	2022	\$15,000	\$15,000	\$0	\$0
RTD0009501	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-Preventive Maintenance	Preventive maintenance	2022	\$356,250	\$0	\$285,000	\$71,250
RTD0009502	Cape Ann	Transit RTA facility and system modernization	Cape Ann TA-acquire shop equip/small capital	Shop equipment, computers, software	2022	\$37,500	\$7,500	\$30,000	\$0
FFY 2023									
RTD0009503	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-Preventive Maintenance	Preventive maintenance	2023	\$356,250	\$0	\$285,000	\$71,250
RTD0007185	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-acquire shop equip/small capital	IT equipment, shop equipment, etc.	2023	\$37,500	\$7,500	\$30,000	\$0
RTD0009504	Cape Ann	Transit RTA vehicle replacement	Cape Ann TA-Revenue Vehicle Replacement - 2	<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 ULB). 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 ~\$500k in 5307 funds each year and \$285k is programmed for PM, leaving a balance of \$215K for all other capital projects.</p>	2023	\$900,000	\$450,000	\$450,000	\$0
RTD0009508	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-buy misc small capital	Miscellaneous small capital items	2023	\$15,000	\$15,000	\$0	\$0
FFY 2024									
RTD0009505	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-Preventive Maintenance	Preventive maintenance	2024	\$356,250	\$0	\$285,000	\$71,250
RTD0009506	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-repave admin/ops facility parking lot	Repave parking lot at administration and operations facility. Lot was last paved in the early 2000s during building rehabilitation	2024	\$180,000	\$36,000	\$144,000	\$0

Table 3-11: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (CATA) (cont., 2)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	Bond Cap State 100% State	Federal FTA Section 5307	Other Municipal and Local Transit
RTD0009509	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-buy misc small capital	Miscellaneous small capital items	2024	\$15,000	\$15,000	\$0	\$0
RTD0009512	Cape Ann	Transit RTA facility and system modernization	Cape Ann TA - AFC 2.0	AFC 2.0 for RTAs	2024	\$300,000	\$300,000	\$0	\$0
RTD0010077	Cape Ann	Transit RTA facility and system modernization	Cape Ann TA-acquire shop equip/small capital	IT equipment, shop equipment, etc.	2024	\$37,500	\$7,500	\$30,000	\$0
FFY 2025									
RTD0009510	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-Preventive Maintenance	PM activities	2025	\$356,250	\$0	\$285,000	\$71,250
RTD0009511	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-acquire shop equip/small capital	IT equipment, shop equipment, etc.	2025	\$37,500	\$7,500	\$30,000	\$0
RTD0009482	Cape Ann	Transit RTA vehicle replacement	Cape Ann TA-Revenue Vehicle Replacement - 2	<p>Replacement of 2015 International body-on-chassis vehicles.</p> <p>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).</p> <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 ~\$500k in 5307 funds each year and \$285k is programmed for PM, leaving a balance of \$215K for all other capital projects.</p>	2025	\$600,000	\$600,000	\$0	\$0
RTD0009513	Cape Ann	Transit RTA vehicle replacement	Cape Ann TA-Revenue Vehicle Replacement - 1	<p>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 ULB). The vehicle purchased with these funds will be off the 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 ~\$500k in 5307 funds each year and \$285k are programmed for PM, leaving a balance of \$215K for all other capital projects.</p>	2025	\$450,000	\$225,000	\$225,000	\$0

Table 3-11: Federal Fiscal Years 2022-26 Transportation Improvement Program Transit Table (CATA) (cont., 3)

Project Number	RTA	Program	Project Title	Notes	Fiscal Year	Total	Bond Cap State 100% State	Federal FTA Section 5307	Other Municipal and Local Transit
FFY 2026									
RTD0009480	Cape Ann	Transit RTA facility and vehicle maintenance	Cape Ann TA-Preventive Maintenance	PM activities	2026	\$356,250	\$0	\$285,000	\$71,250
RTD0009481	Cape Ann	Transit RTA vehicle replacement	Cape Ann TA-Revenue Vehicle Replacement - 4	<p>Replacement of 2016 International body-on-chassis vehicles.</p> <p>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).</p> <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 ~\$500k in 5307 funds each year and \$285k is programmed for PM, leaving a balance of \$215K for all other capital projects.</p>	2026	\$1,200,000	\$1,200,000	\$0	\$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 categories (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, and 2C), MassDOT's STIP Program categories are applied.

Cost: This is the total project cost as programmed in the TIP across all fiscal years, including years outside of FFYs 2022–26.

Funding Source: This identifies 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:

- **Safety:** Safety (30 possible points)
- **Sys Pres:** System Preservation and Modernization (29 possible points)
- **CM/M:** Capacity Management and Mobility (29 possible points)
- **CA/SC:** Clean Air/Sustainable Communities (16 possible points)
- **TE:** Transportation Equity (12 possible points)
- **EV:** Economic Vitality (18 possible points)
- **Total:** This is the summation of the project's scores across the above six categories (134 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 this year. The point allocations detailed

above are those that were in effect under the prior scoring system, as no new projects were selected for funding in the FFYs 2022–26 TIP through the MPO’s Bicycle and Pedestrian, Complete Streets, Intersection Improvements, and Major Infrastructure investment programs. Updates were made to the criteria for the MPO’s Community Connections Program; the scoring summary field denotes whether each of these projects was scored under the original or revised criteria. 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.

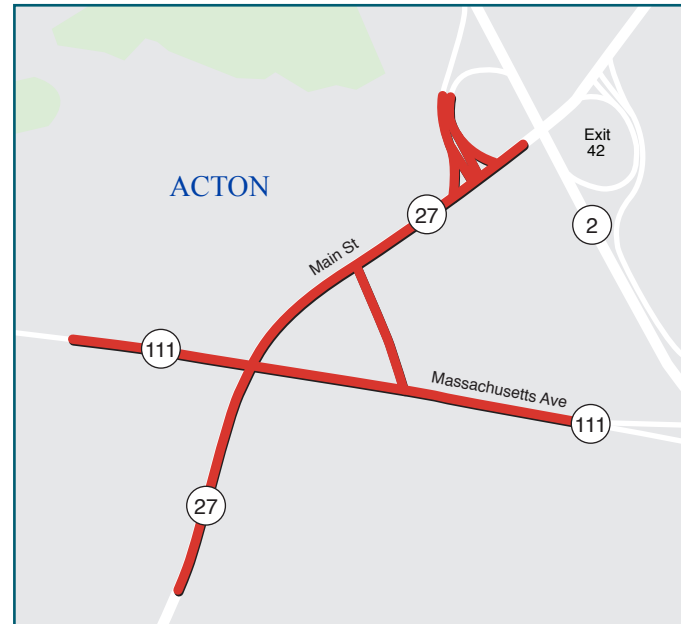
Funding Summary: Funding tables are included for each project and show the following information:

- **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 2022–26 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: Intersection Improvements at Massachusetts Avenue (Route 111) and Main Street (Route 27) (Kelley's Corner)

Proponent: Acton
ID Number: 608229
Project Type: Intersection Improvements
Cost: \$15,311,125
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	15 out of 30	8 out of 29	10 out of 29	8 out of 16	0 out of 12	4 out of 18	45 out of 134

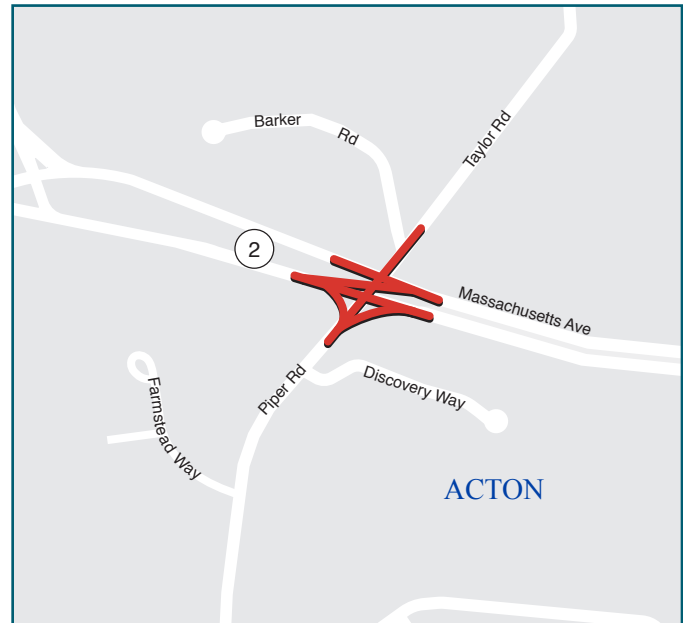
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	\$12,248,900	—	—	—	—	\$12,248,900
Non-Federal Funds	\$3,062,225	—	—	—	—	\$3,062,225
Total Funds	\$15,311,125	---	---	---	---	\$15,311,125

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: \$4,382,329
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.

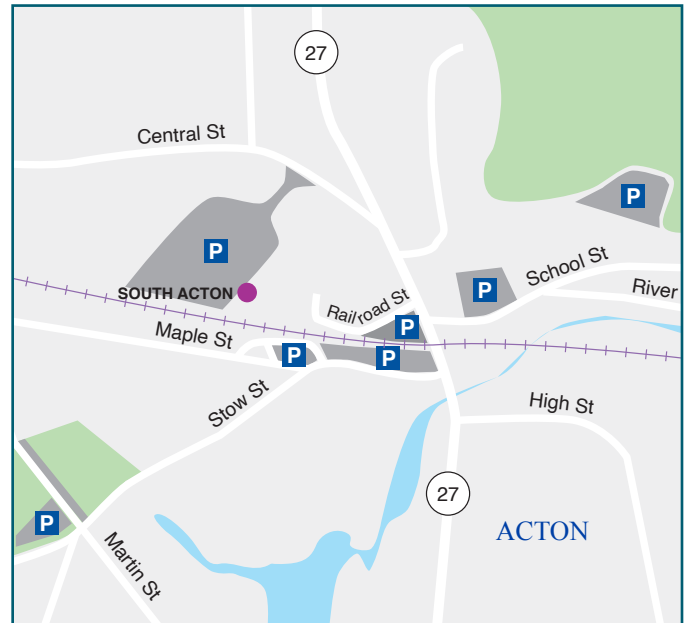
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	—	\$3,944,096	\$3,944,096
Non-Federal Funds	—	—	—	—	\$438,233	\$438,233
Total Funds	---	---	---	---	\$4,382,329	\$4,382,329

Acton: Parking Management System

Proponent: Acton
ID Number: S12122
Project Type: Community Connections
Cost: \$20,000
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 29 points when evaluated using the criteria for the second round of the MPO’s Community Connections Program. These criteria differ from those used during the pilot round of this program in FFY 2021, as updates were made to the criteria based on the results of that pilot. These criteria are listed in Table A-5.

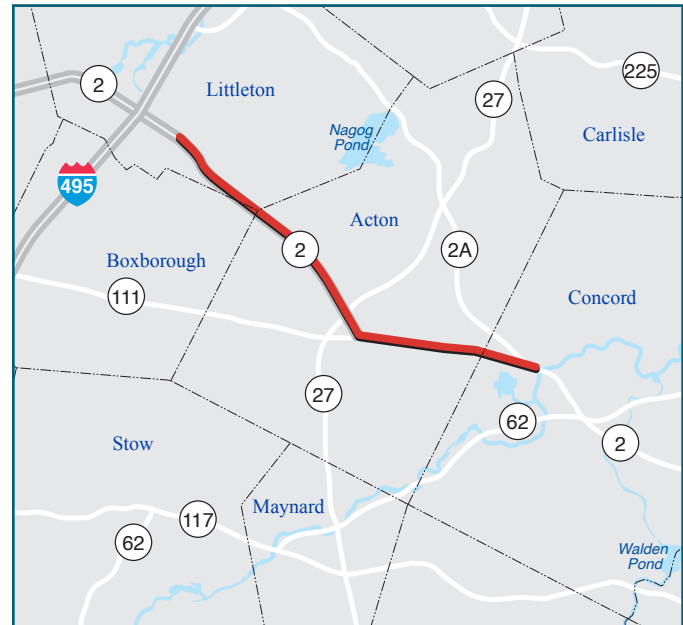
Project Description

This project will implement digital parking management products to improve the efficiency of permitting and enforcement processes at five commuter parking lots surrounding the MBTA South Acton commuter rail station. These highly utilized lots provide nearly 500 parking spaces. The project will support the transition from a paper-based parking management system to a cloud-based one that will be more convenient for commuters and Acton’s parking management team.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$16,000	—	—	—	—	\$16,000
Non-Federal Funds	\$4,000	—	—	—	—	\$4,000
Total Funds	\$20,000	---	---	---	---	\$20,000

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

Proponent: MassDOT
ID Number: 610722
Project Type: Non-Interstate Pavement
Cost: \$7,843,932
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$6,275,146	—	\$6,275,146
Non-Federal Funds	—	—	—	\$1,568,786	—	\$1,568,786
Total Funds	---	---	---	\$7,843,932	---	\$7,843,932

Arlington: Stratton School Improvements (SRTS)

Proponent: Arlington
ID Number: 609531
Project Type: Roadway Reconstruction
Cost: \$1,072,752
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.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$858,202	—	—	\$858,202
Non-Federal Funds	—	—	\$214,550	—	—	\$214,550
Total Funds	---	---	\$1,072,752	---	---	\$1,072,752

Arlington, Newton, and Watertown: BlueBikes Expansion

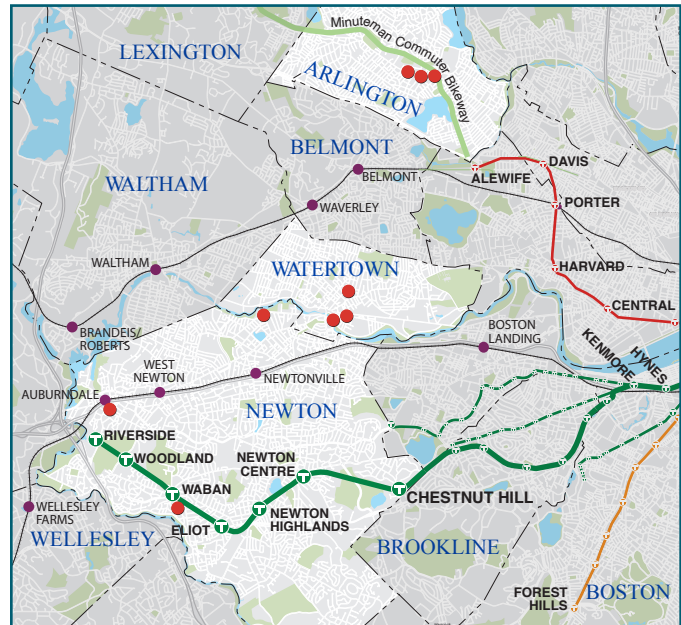
Proponent: Arlington, Newton, and Watertown

ID Number: S12115

Project Type: Community Connections

Cost: \$340,000

Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 52 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.

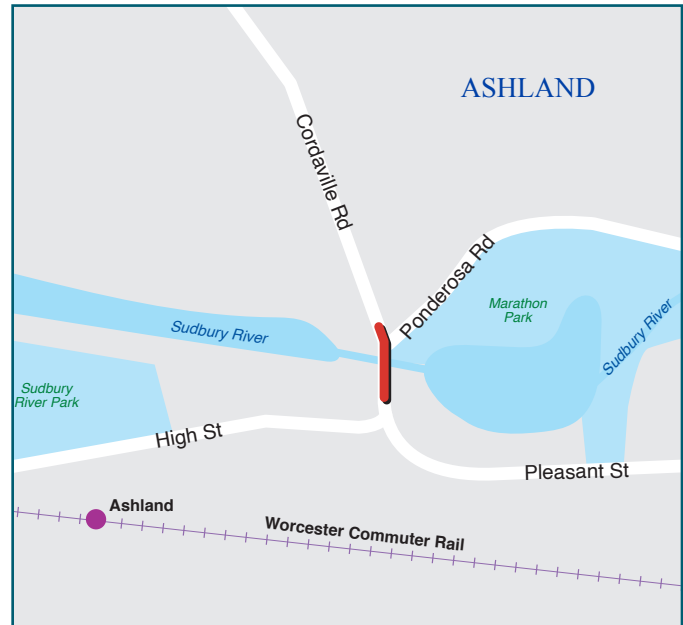
Project Description

This project will expand the regional BlueBikes bike share system in Arlington, Newton, and Watertown, adding nine new docking stations. This project is being coordinated in partnership with the Metropolitan Area Planning Council and Lyft. The principal goals of the project are to provide an alternative travel mode to promote a shift away from single-occupancy vehicles and to increase access to transit hubs, business districts, and academic institutions throughout these communities and the region.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$272,000	—	—	—	—	\$272,000
Non-Federal Funds	\$68,000	—	—	—	—	\$68,000
Total Funds	\$340,000	---	---	---	---	\$340,000

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

Proponent: MassDOT
ID Number: 612099
Project Type: Bridge
Cost: \$4,107,096
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.

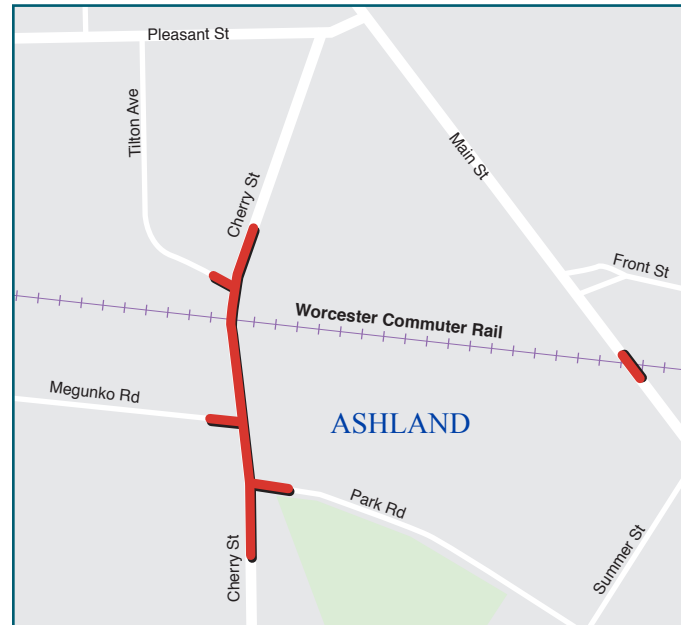
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	--	\$3,285,677	\$3,285,677
Non-Federal Funds	--	--	--	--	\$821,419	\$821,419
Total Funds	---	---	---	---	\$4,107,096	\$4,107,096

Ashland: Rehabilitation and Rail Crossing Improvements on Cherry Street

Proponent: Ashland
ID Number: 608436
Project Type: Intersection Improvements
Cost: \$1,269,327
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$1,015,462	—	—	\$1,015,462
Non-Federal Funds	—	—	\$253,865	—	—	\$253,865
Total Funds	---	---	\$1,269,327	---	---	\$1,269,327

Ayer and Littleton: Intersection Improvements on Route 2A at Willow Road and Bruce Street

Proponent: MassDOT
ID Number: 608443
Project Type: Intersection Improvements
Cost: \$3,226,285
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	17 out of 30	4 out of 29	9 out of 29	4 out of 16	1 out of 12	1 out of 18	36 out of 134

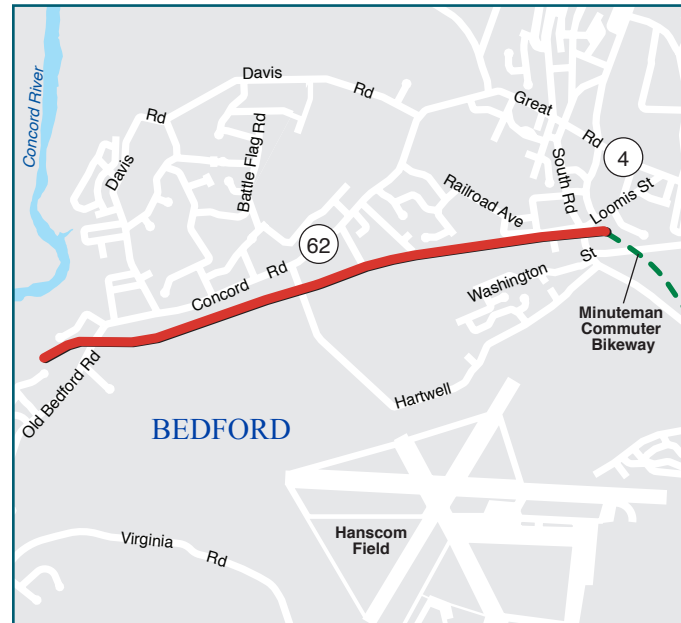
Project Description

The primary purpose of this project is to reduce angled collisions and improve the pavement condition of the intersection on Route 2A at Willow Road and Bruce Street. This goal will primarily be accomplished by reconstructing the skewed intersection and adding a new signal system. In addition, the project will also address safety for pedestrians and bicyclists through the provision of five-foot wide shoulders and the addition of crosswalks.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$2,581,028	—	—	—	—	\$2,581,028
Non-Federal Funds	\$645,257	—	—	—	—	\$645,257
Total Funds	\$3,226,285	---	---	---	---	\$3,226,285

Bedford: Minuteman Bikeway Extension, from Loomis Street to the Concord Town Line

Proponent: Bedford
ID Number: 607738
Project Type: Bicycle and Pedestrian
Cost: \$11,000,168
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	7 out of 30	13 out of 29	15 out of 29	7 out of 16	1 out of 12	4 out of 18	47 out of 134

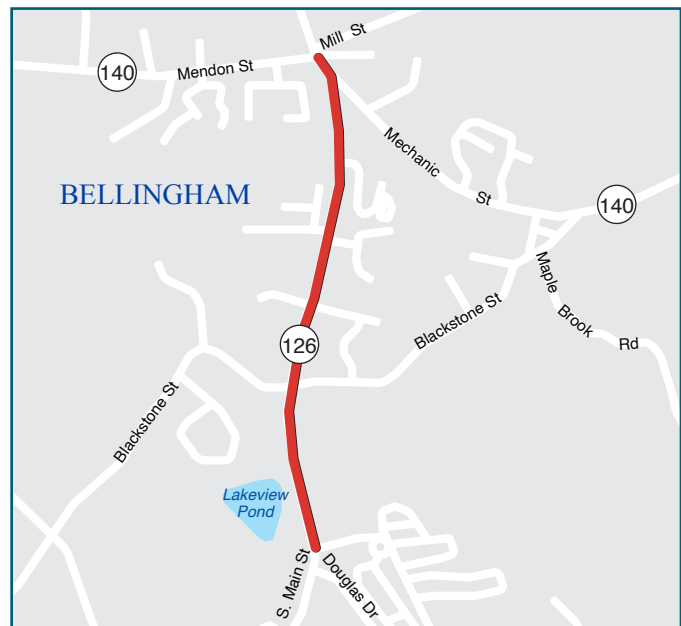
Project Description

The Minuteman Bikeway currently ends at Depot Park, in Bedford, near the intersection of South Road and Loomis Street. This project would extend the bikeway by making a 1,665 foot portion of Railroad Avenue accessible to bikes and by constructing 8,800 feet of bikeway on the Reformatory Branch Trail, from Railroad Avenue past Concord Road to Wheeler Drive, near the Bedford/Concord town line. The Railroad Avenue reconstruction will include new sidewalks, bicycle accommodations, drainage, pavement markings, signs, and defined curb cuts.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$8,800,134	--	--	--	--	\$8,800,134
Non-Federal Funds	\$2,200,034	--	--	--	--	\$2,200,034
Total Funds	\$11,000,168	---	---	---	---	\$11,000,168

Bellingham: South Main Street (Route 126), from Mechanic Street (Route 140) to Douglas Drive

Proponent: Bellingham
ID Number: 608887
Project Type: Complete Streets
Cost: \$6,398,158
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	12 out of 30	12 out of 29	12 out of 29	5 out of 16	0 out of 12	4 out of 18	45 out of 134

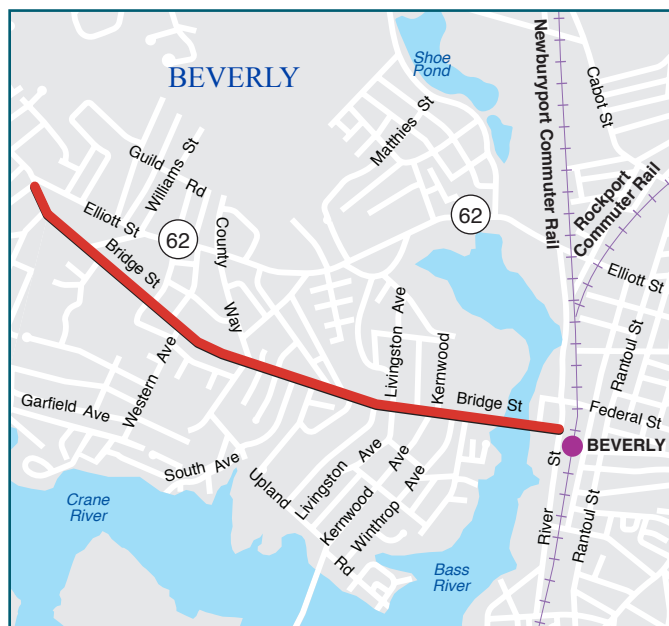
Project Description

The primary purpose of this project is to improve the poor curb reveal, pavement condition and the lack of facilities for pedestrians and bicyclists. The project will include full-depth pavement reclamation and the reconstruction of existing sidewalks with five-foot shoulders to accommodate bicycle travel. In addition, pedestrian signal poles and intersection warning signage will be added to improve pedestrian safety and reduce rear-end collisions on Easy Street.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$5,118,526	—	—	—	—	\$5,118,526
Non-Federal Funds	\$1,279,632	—	—	—	—	\$1,279,632
Total Funds	\$6,398,158	---	---	---	---	\$6,398,158

Beverly: Rehabilitation of Bridge Street

Proponent: Beverly
ID Number: 608348
Project Type: Complete Streets
Cost: \$7,942,866
Funding Source: Regional Target 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

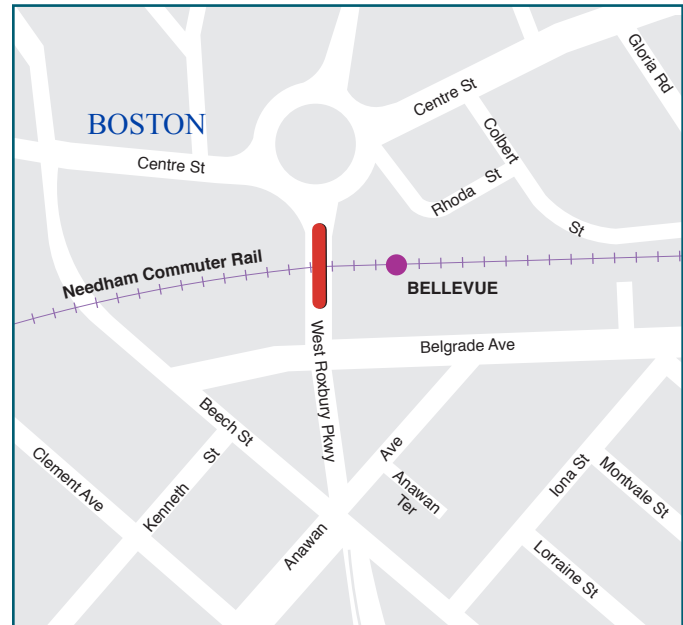
Project Description

The project involves rehabilitation 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. Under the proposed project, continuous cement concrete sidewalks with vertical granite curb will be provided along both sides of the roadway for the full length of the project. As part of the proposed 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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$6,354,293	—	—	—	\$6,354,293
Non-Federal Funds	—	\$1,588,573	—	—	—	\$1,588,573
Total Funds	---	\$7,942,866	---	---	---	\$7,942,866

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

Proponent: MassDOT
ID Number: 606902
Project Type: Bridge
Cost: \$6,644,290
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.

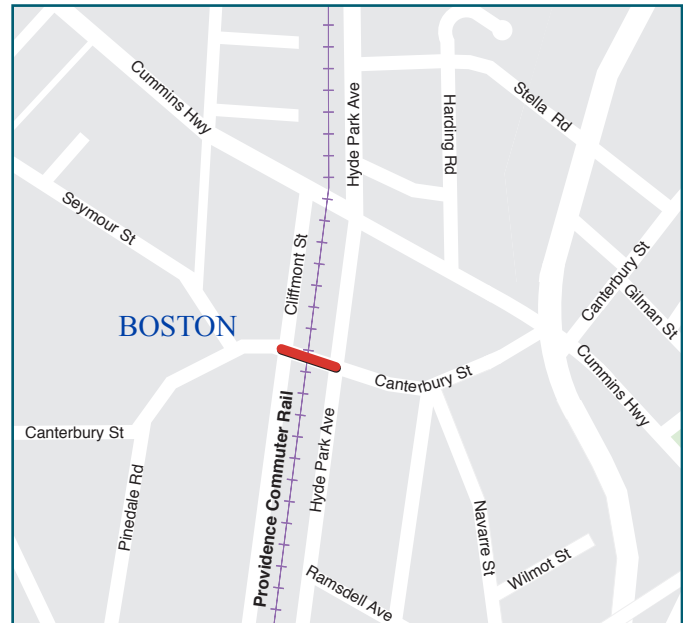
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$5,315,432	—	—	—	\$5,315,432
Non-Federal Funds	—	\$1,328,858	—	—	—	\$1,328,858
Total Funds	---	\$6,644,290	---	---	---	\$6,644,290

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

Proponent: MassDOT
ID Number: 608197
Project Type: Bridge
Cost: \$4,678,193
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.

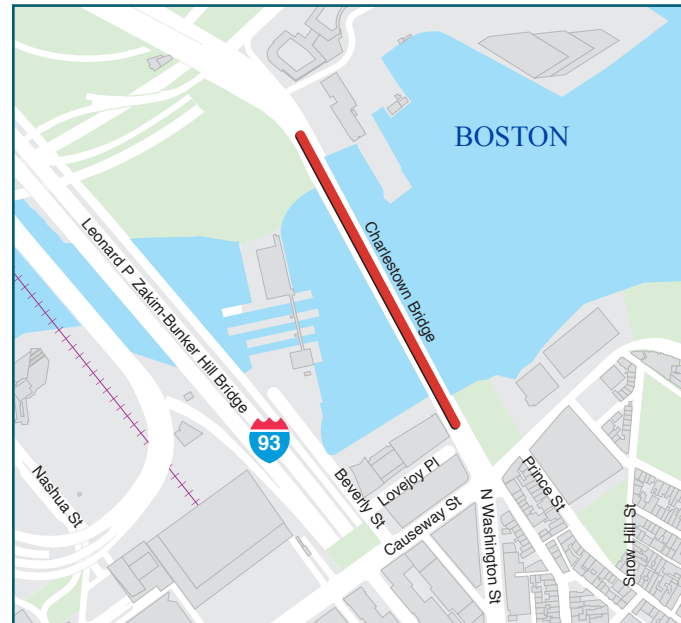
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$3,742,554	—	—	\$3,742,554
Non-Federal Funds	—	—	\$935,639	—	—	\$935,639
Total Funds	---	---	\$4,678,193	---	---	\$4,678,193

Boston: Bridge Replacement, North Washington Street over the Boston Inner Harbor

Proponent: MassDOT
ID Number: 604173
Project Type: Bridge
Cost: \$176,318,433
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 North Washington Street Bridge is a historic structure constructed in 1898. The bridge consists of 10 approach spans and a swing span, which is not operational. The bridge is structurally deficient and is posted as weight restricted. There have been extensive emergency repairs done to the bridge in the past few years. Currently the two center lanes on the swing span are closed due to steel deterioration. The City of Boston proposes to replace the bridge. The existing granite/concrete bridge piers on the approach spans will be replaced with reinforced concrete V piers and continuous trapezoidal steel box girders. The proposed deck will provide for increased bicycle and pedestrian accommodations between Kearney Square and Rutherford Avenue. This project is funded over six fiscal years (FFYs 2017-22). The total cost of the project is \$176,318,433, with \$28,825,727 funded in this TIP and the remainder funded in prior fiscal years.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$23,060,582	--	--	--	--	\$23,060,582
Non-Federal Funds	\$5,765,145	--	--	--	--	\$5,765,145
Total Funds	\$28,825,727	---	---	---	---	\$28,825,727

Boston: Ellis Elementary Traffic Calming (SRTS)

Proponent: Boston
ID Number: 610537
Project Type: Roadway Reconstruction
Cost: \$1,047,620
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.

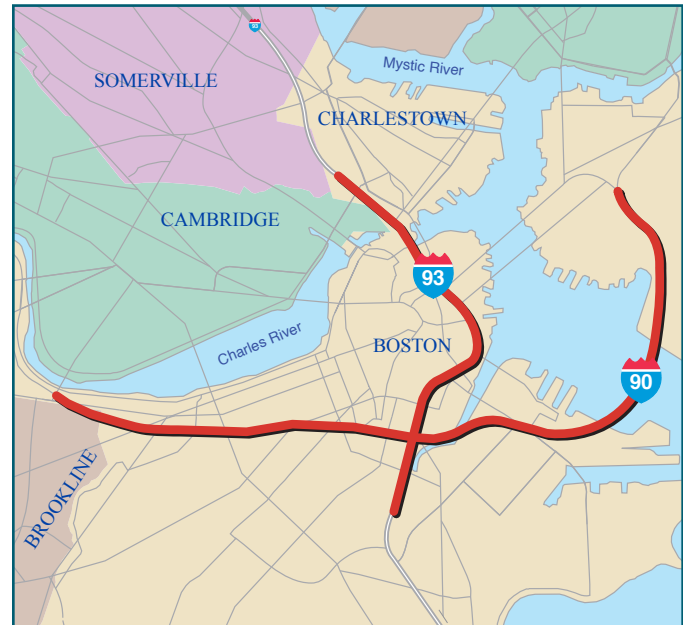
Project Description

This project will make upgrades to promote safety along the roadways surrounding Ellis Elementary School in Boston through the Safe Routes to School program.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$838,096	—	—	\$838,096
Non-Federal Funds	—	—	\$209,524	—	—	\$209,524
Total Funds	---	---	\$1,047,620	---	---	\$1,047,620

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

Proponent: MassDOT
ID Number: 611954
Project Type: Safety Improvements
Cost: \$2,603,272
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.

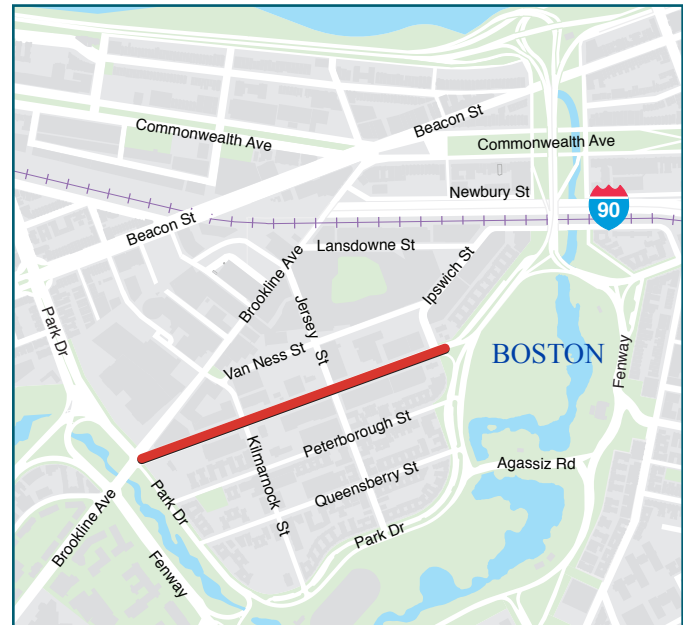
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	—	\$2,342,945	\$2,342,945
Non-Federal Funds	—	—	—	—	\$260,327	\$260,327
Total Funds	---	---	---	---	\$2,603,272	\$2,603,272

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

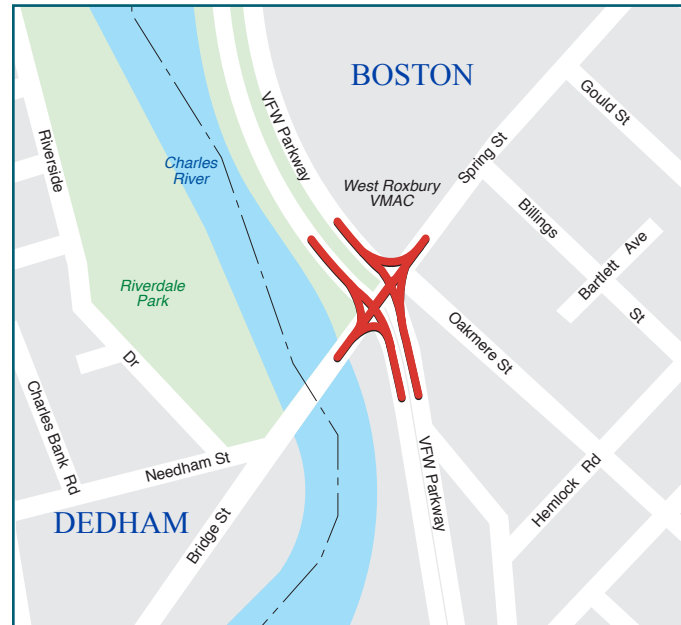
Project Description

This roadway improvement project will enhance pedestrian mobility and safety by providing neck downs at intersections. In addition, exclusive bike lanes in both directions will be established along Boylston Street to encourage local and regional bicycle travel. The project also involves an upgrade of the existing geometric layout and old signal equipment to reduce vehicular congestion and increase overall safety.

Source	(FFY) 2022	2023	2024	2025	2026	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: Intersection and Signal Improvements at the VFW Parkway and Spring Street

Proponent: MassDOT
ID Number: 607759
Project Type: Intersection Improvements
Cost: \$4,225,870
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.

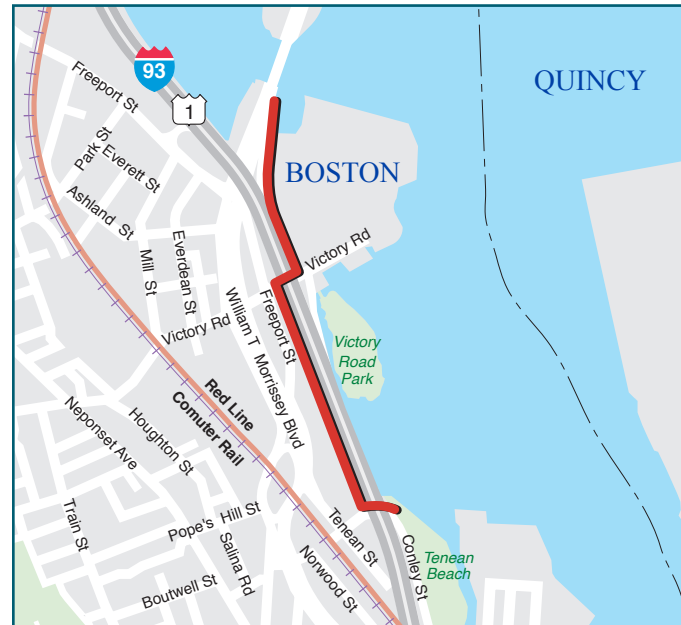
Project Description

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.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	—	\$3,380,696	\$3,180,602
Non-Federal Funds	—	—	—	—	\$845,174	\$845,174
Total Funds	---	---	---	---	\$4,225,870	\$4,225,870

Boston: Neponset River Greenway (Phase 3)

Proponent: Boston
ID Number: 608943
Project Type: Bicycle and Pedestrian
Cost: \$8,809,272
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	11 out of 30	4 out of 29	9 out of 29	10 out of 16	7 out of 12	1 out of 18	42 out of 134

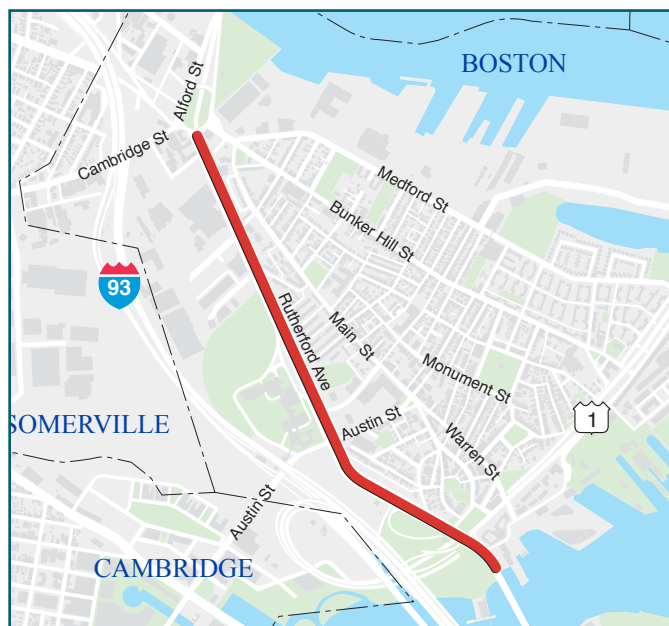
Project Description

This project will provide the final northern link of the Neponset River Greenway with the addition of approximately 0.77 miles of 10-foot paved, shared-use path between Tenean Beach and Morrissey Boulevard. The extension of the greenway will improve accessibility for pedestrian and bicycle transportation to Boston from Readville, Hyde Park, Milton, Mattapan, and Dorchester and will provide ADA-accessible connections to MBTA bus Routes 201 and 202 and the Savin Hill and Fields Corner MBTA stations. 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) 2022	2023	2024	2025	2026	Total
Federal Funds	\$7,047,418	---	---	---	---	\$7,047,418
Non-Federal Funds	\$1,761,854	---	---	---	---	\$1,761,854
Total Funds	\$8,809,272	---	---	---	---	\$8,809,272

Boston: Reconstruction of Rutherford Avenue, from Sullivan Square to North Washington Street Bridge

Proponent: Boston
ID Number: 606226
Project Type: Major Infrastructure
Cost: \$181,647,358
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.

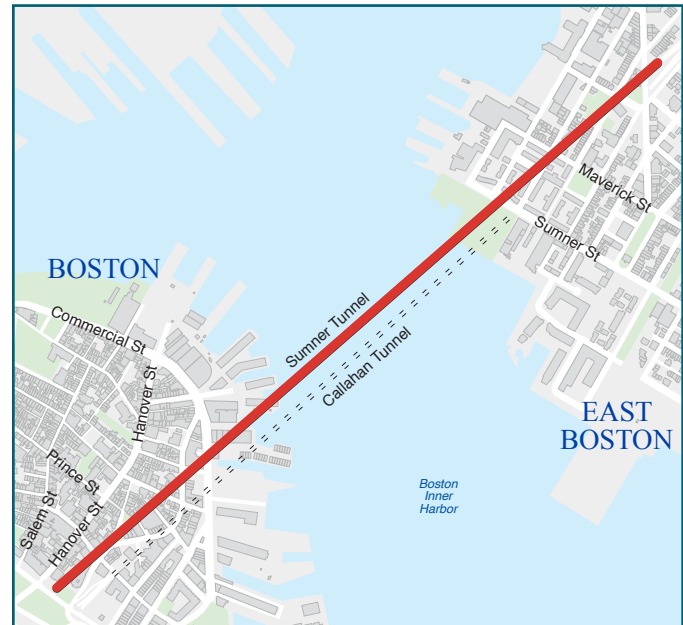
Project Description

The reconstruction of Rutherford Avenue from Sullivan Square to the North Washington Street Bridge will make the road a multimodal urban boulevard corridor. This project will be funded over five years, starting in FFY 2023. The total project cost is estimated to be \$181,647,358, and the total funding in the FFYs 2022-26 TIP is \$125,744,000. The City of Boston will contribute \$25,000,000 in local funding towards the project, leaving the MPO with a balance of \$30,903,358 to be funded in FFY 2027.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$23,792,962	\$24,357,470	\$25,644,767	\$26,800,000	\$100,595,199
Non-Federal Funds	—	\$5,948,241	\$6,089,368	\$6,411,192	\$6,700,000	\$25,148,801
Total Funds	---	\$29,741,203	\$30,446,838	\$32,055,959	\$33,500,000	\$125,744,000

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

Proponent: MassDOT
ID Number: 606476
Project Type: Major Infrastructure
Cost: \$133,272,750
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.

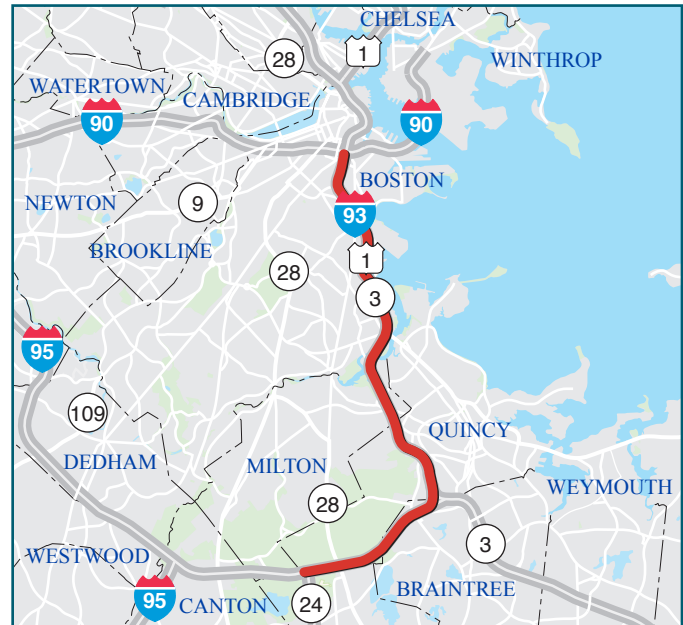
Project Description

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 \$133,272,750, 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 \$70,533,312 in funding allocated in FFY 2021. The remainder of the project’s funding is included in this TIP as shown below.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$36,695,710	\$13,495,841	—	—	—	\$50,191,551
Non-Federal Funds	\$9,173,927	\$3,373,960	—	—	—	\$12,547,887
Total Funds	\$45,869,637	\$16,869,801	---	---	---	\$62,739,438

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

Proponent: MassDOT
ID Number: 608208
Project Type: Interstate Pavement
Cost: \$24,419,044
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.

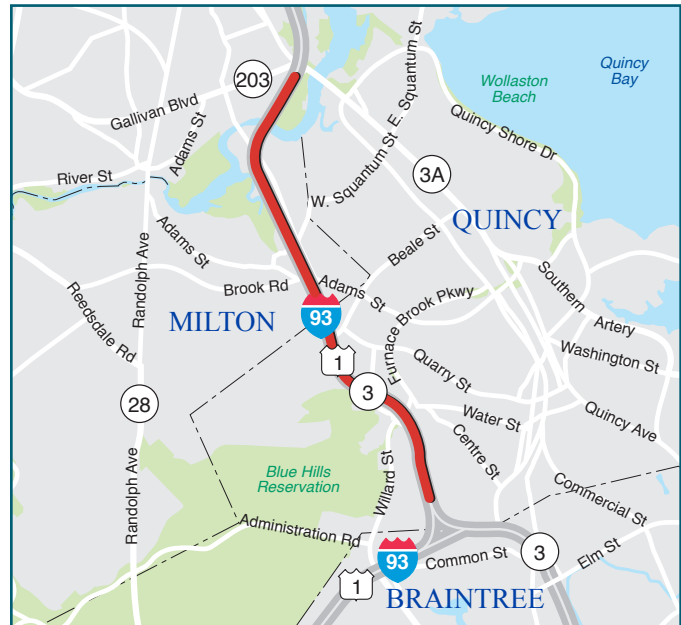
Project Description

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	--	\$21,977,140	--	--	--	\$21,977,140
Non-Federal Funds	--	\$2,441,904	--	--	--	\$2,441,904
Total Funds	---	\$24,419,044	---	---	---	\$24,419,044

Boston, Milton and Quincy: Highway Lighting System Replacement on Interstate 93, from Neponset Avenue to the Braintree Split

Proponent: MassDOT
ID Number: 609090
Project Type: Safety Improvements
Cost: \$12,658,545
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.

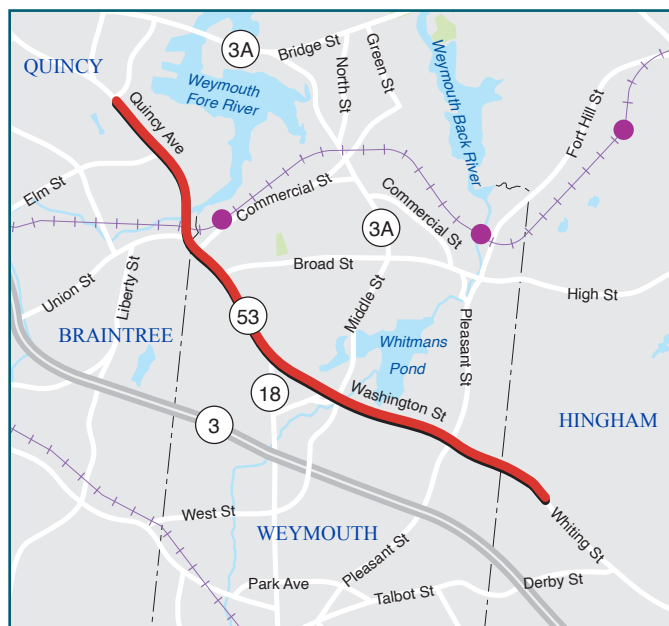
Project Description

This project will replace the highway lighting system on Interstate 93, from Neponset Avenue to the Braintree Split.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$10,126,836	—	—	—	—	\$10,126,836
Non-Federal Funds	\$2,531,709	—	—	—	—	\$2,531,709
Total Funds	\$12,658,545	---	---	---	---	\$12,658,545

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

Proponent: MassDOT
ID Number: 608498
Project Type: Non-Interstate Pavement
Cost: \$8,178,768
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.

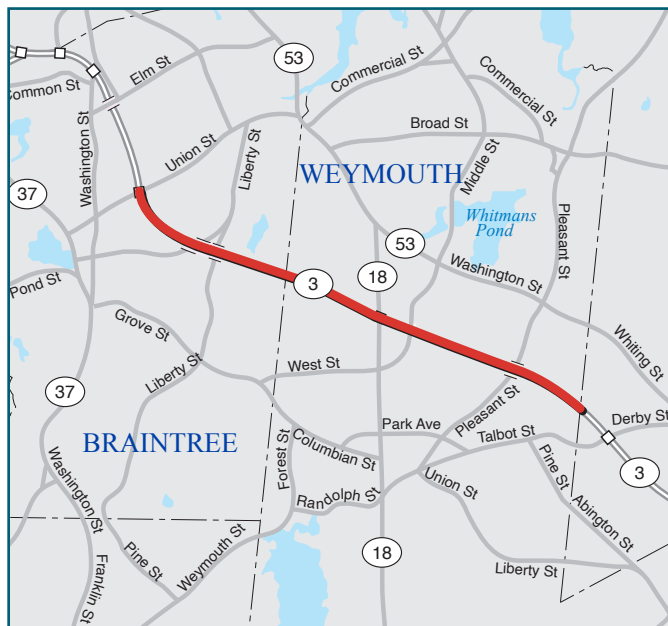
Project Description

This project involves resurfacing and related work on Route 53.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	–	\$6,543,014	–	–	–	\$6,543,014
Non-Federal Funds	–	\$1,635,754	–	–	–	\$1,635,754
Total Funds	---	\$8,178,768	---	---	---	\$8,178,768

Braintree and Weymouth: Resurfacing and Related Work on Route 3

Proponent: MassDOT
ID Number: 612050
Project Type: Non-Interstate Pavement
Cost: \$8,891,110
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.

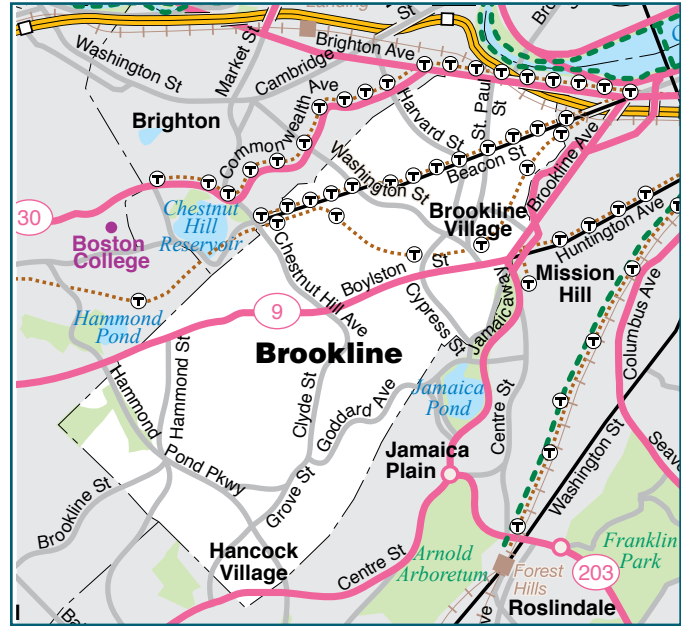
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	—	\$7,112,888	\$7,112,888
Non-Federal Funds	—	—	—	—	\$1,778,222	\$1,778,222
Total Funds	---	---	---	---	\$8,891,110	\$8,891,110

Brookline: Transit App Education Program

Proponent: Brookline
ID Number: S12121
Project Type: Community Connections
Cost: \$43,620
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 49 points when evaluated using the criteria for the second round of the MPO’s Community Connections Program. These criteria differ from those used during the pilot round of this program in FFY 2021, as updates were made to the criteria based on the results of that pilot. These criteria are listed in Table A-5.

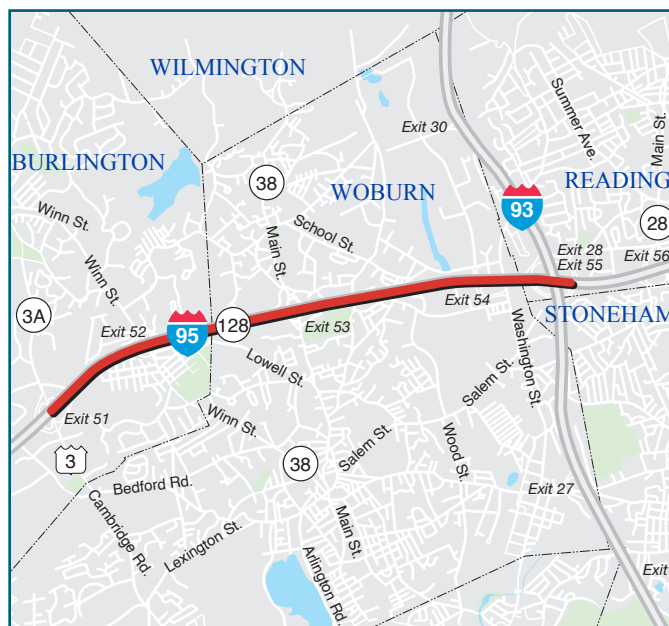
Project Description

This project will expand the TRIPPS Program (Transportation, Resources, Information, Planning and Partnership for Seniors) with the development of online training modules and other educational materials. Proposed materials include a video, a PowerPoint presentation and written training documents. Materials will focus on transportation-related smartphone applications such as Google Maps, Transit, and Routematch (targeted to customers of the MBTA’s The RIDE). The primary goal of this project is to enable older adults to travel more confidently and easily on public and private transportation modes.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$34,896	—	—	—	—	\$34,896
Non-Federal Funds	\$8,724	—	—	—	—	\$8,724
Total Funds	\$43,620	---	---	---	---	\$43,620

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

Proponent: MassDOT
ID Number: 612034
Project Type: Interstate Pavement
Cost: \$11,210,075
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.

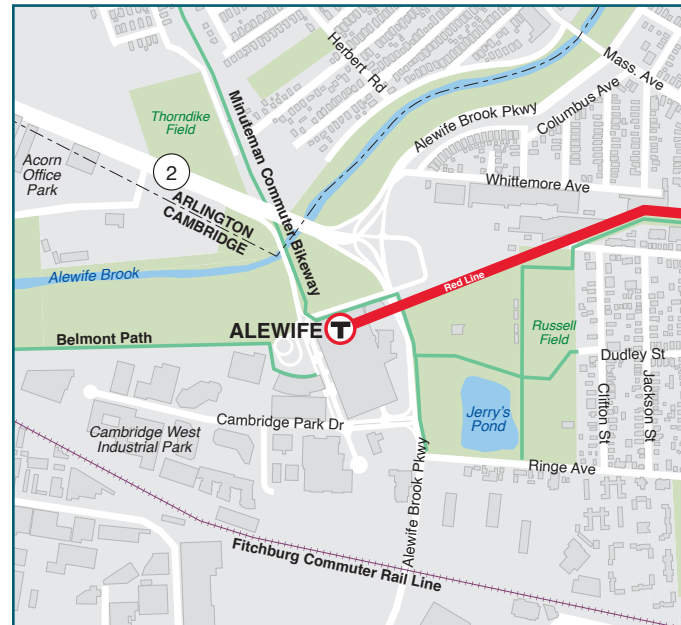
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$10,089,068	—	—	\$10,089,068
Non-Federal Funds	—	—	\$1,121,008	—	—	\$1,121,008
Total Funds	---	---	\$11,210,075	---	---	\$11,210,075

Cambridge: Alewife Wayfinding Improvements

Proponent: 128 Business Council
ID Number: S12116
Project Type: Community Connections
Cost: \$292,280
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 24 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 provide wayfinding measures at the MBTA's Alewife Station that include directional information and real-time shuttle information for 128 Business Council shuttles, alerting passengers of upcoming arrivals and departures. These improvements will help riders find, track, and plan trips on the 128 Business Council's shuttle buses and facilitate better connections to suburban areas using alternative transportation options.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$233,824	—	—	—	—	\$233,824
Non-Federal Funds	\$58,456	—	—	—	—	\$58,456
Total Funds	\$292,280	---	---	---	---	\$292,280

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: \$13,921,599
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.

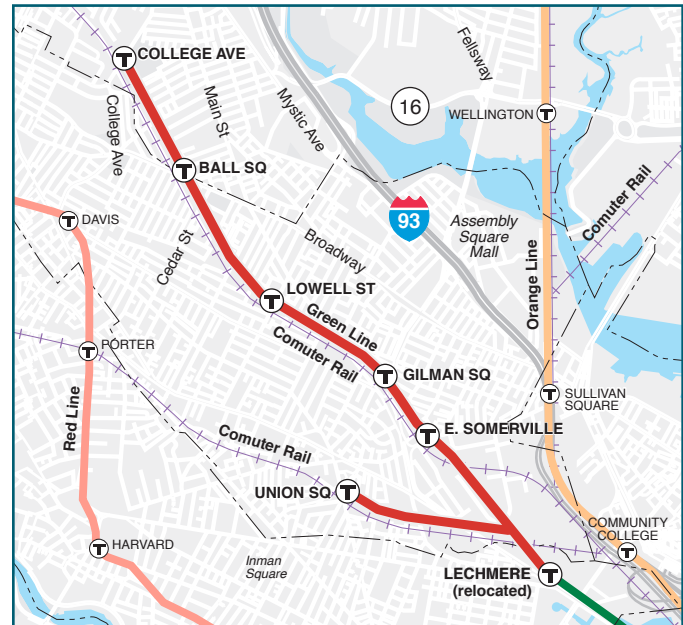
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	–	–	–	\$11,137,279	–	\$11,137,279
Non-Federal Funds	–	–	–	\$2,784,320	–	\$2,784,320
Total Funds	---	---	---	\$13,921,599	---	\$13,921,599

Cambridge and Somerville: Green Line Extension Project Extension to College Avenue with the Union Square Spur

Proponent: MBTA
ID Number: 1570
Project Type: Major Infrastructure
Cost: \$190,079,465
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.

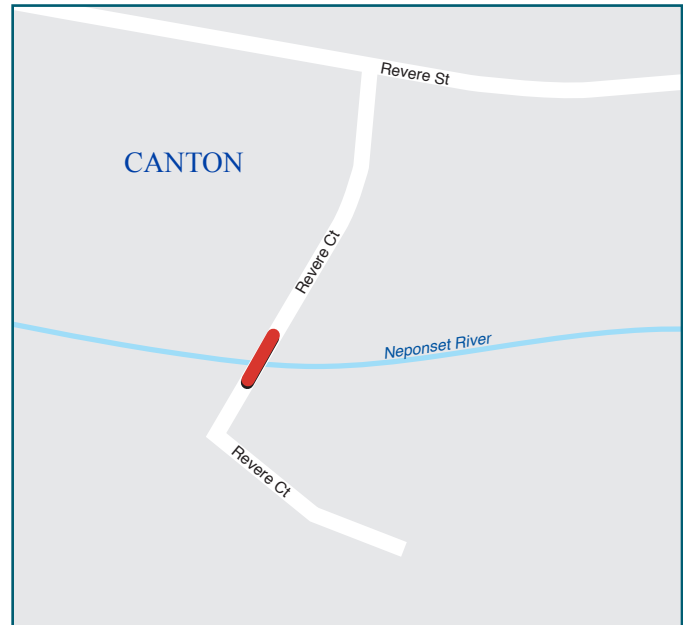
Project Description

The purpose of this project is to improve corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, and support opportunities for sustainable development. The project will extend the MBTA Green Line from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville. FFY 2022 is the sixth and final year of the Boston Region MPO’s funding obligation to the Green Line Extension. The project is expected to be complete by late 2021.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$21,693,506	—	—	—	—	\$21,693,506
Non-Federal Funds	\$5,423,377	—	—	—	—	\$5,423,377
Total Funds	\$27,116,883	---	---	---	---	\$27,116,883

Canton: Bridge Replacement, C-02-042 (33V) Revere Court over East Branch of the Neponset River

Proponent: MassDOT
ID Number: 609438
Project Type: Bridge
Cost: \$2,617,932
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.

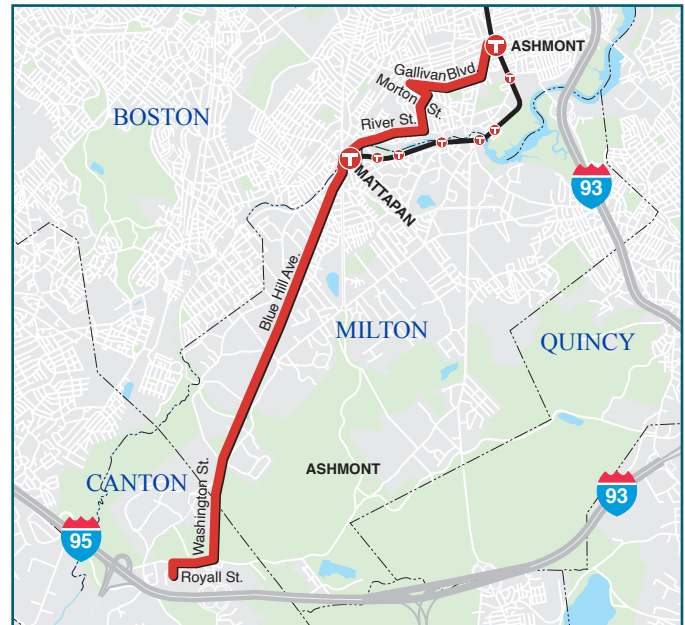
Project Description

This project will replace bridge C-02-042 (33V), which carries Revere Court over the east branch of the Neponset River.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$2,094,346	—	—	\$2,094,346
Non-Federal Funds	—	—	\$523,586	—	—	\$523,586
Total Funds	---	---	\$2,617,932	---	---	\$2,617,932

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.

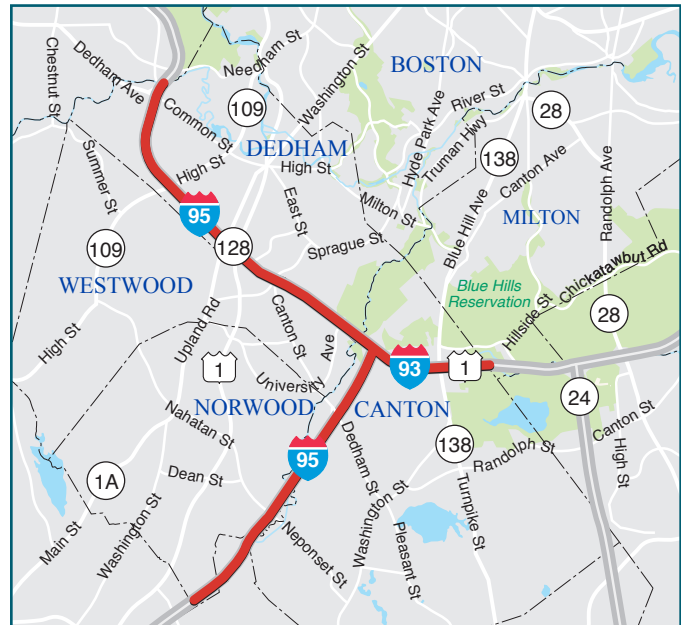
Project Description

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.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$167,281	\$141,742	\$118,834	—	—	\$427,857
Non-Federal Funds	\$41,820	\$35,435	\$29,780	—	—	\$106,963
Total Funds	\$209,101	\$177,177	\$148,542	---	---	\$534,820

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: \$5,044,052
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.

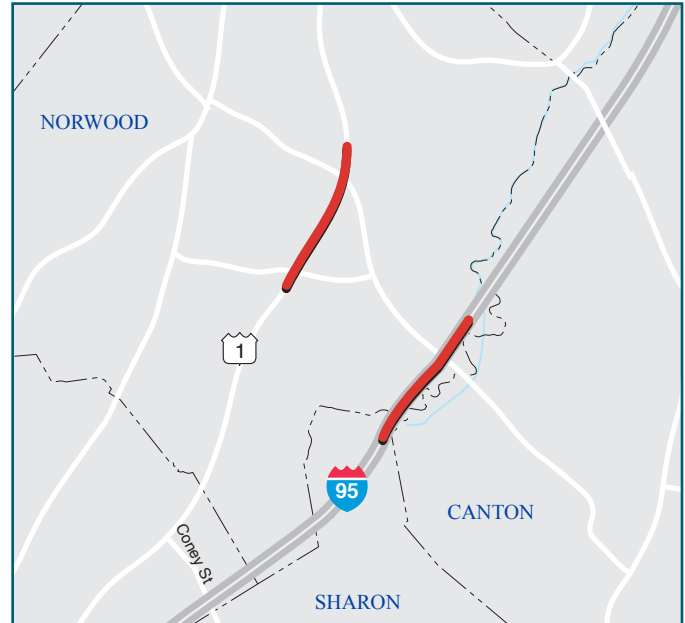
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$4,035,242	—	—	—	\$4,035,242
Non-Federal Funds	—	\$1,008,810	—	—	—	\$1,008,810
Total Funds	---	\$5,044,052	---	---	---	\$5,044,052

Canton, Foxborough, Norwood, Sharon, and Walpole: Stormwater Improvements along Route 1 and Interstate 95

Proponent: MassDOT
ID Number: 608599
Project Type: Roadway Improvements
Cost: \$411,782
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.

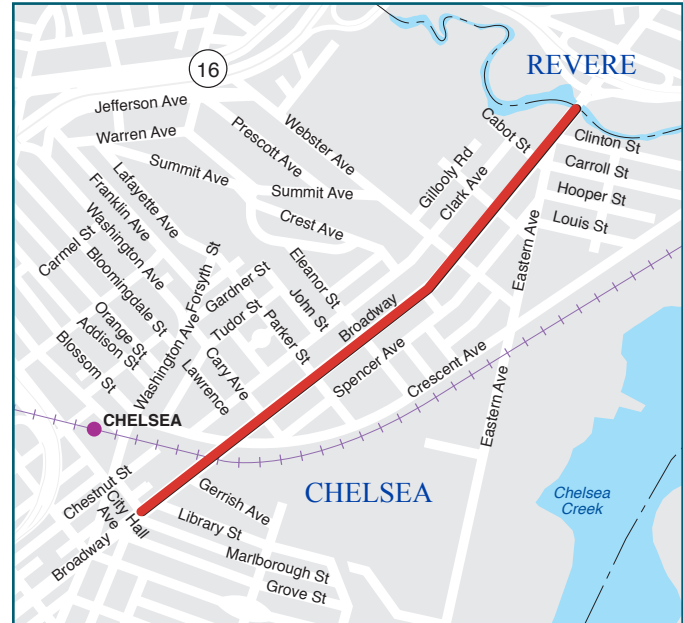
Project Description

The project consists of stormwater drainage improvements along Route 1 and Interstate 95.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$329,426	--	--	--	--	\$329,426
Non-Federal Funds	\$82,356	--	--	--	--	\$82,356
Total Funds	\$411,782	---	---	---	---	\$411,782

Chelsea: Reconstruction of Broadway, from City Hall Avenue to the Revere City Line

Proponent: Chelsea
ID Number: 608078
Project Type: Complete Streets
Cost: \$11,301,176
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	17 out of 30	10 out of 29	5 out of 29	8 out of 16	12 out of 12	9 out of 18	61 out of 134

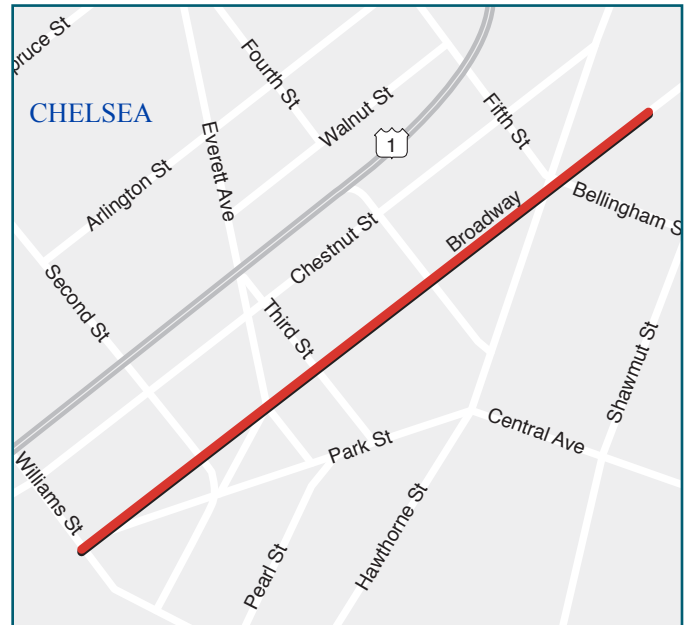
Project Description

This project will reconstruct one mile of Broadway. Improvements to the roadway will include surface and subsurface work, including replacement of utilities; construction of a dedicated bike lane along Broadway; and upgrades to the existing sidewalk network, including the installation of ADA-compliant ramps at all intersections.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$9,040,941	—	—	—	—	\$9,040,941
Non-Federal Funds	\$2,260,235	—	—	—	—	\$2,260,235
Total Funds	\$11,301,176	---	---	---	---	\$11,301,176

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: \$6,440,001
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

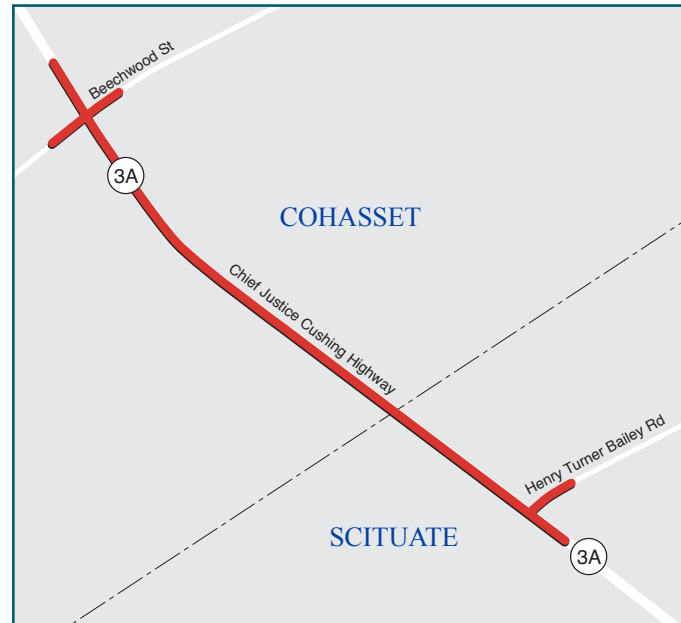
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$5,796,001	—	\$5,796,001
Non-Federal Funds	—	—	—	\$644,000	—	\$644,000
Total Funds	---	---	---	\$6,440,001	---	\$6,440,001

Cohasset and Scituate: Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A), from Beechwood Street to the Scituate Town Line

Proponent: Cohasset
ID Number: 608007
Project Type: Complete Streets
Cost: \$12,990,931
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

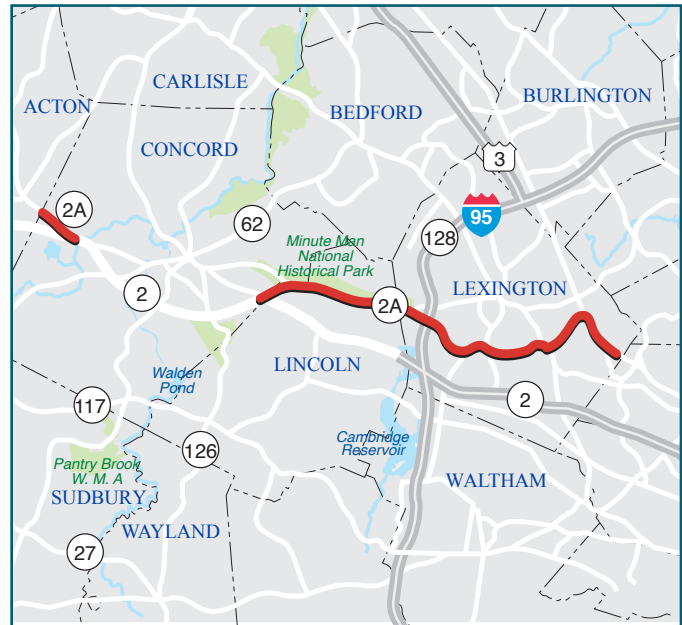
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$10,392,745	—	—	\$10,392,745
Non-Federal Funds	—	—	\$2,598,186	—	—	\$2,598,186
Total Funds	---	---	\$12,990,931	---	---	\$12,990,931

Concord, Lexington, and Lincoln: Resurfacing and Related Work on Route 2A

Proponent: MassDOT
ID Number: 608495
Project Type: Non-Interstate Pavement
Cost: \$3,248,450
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.

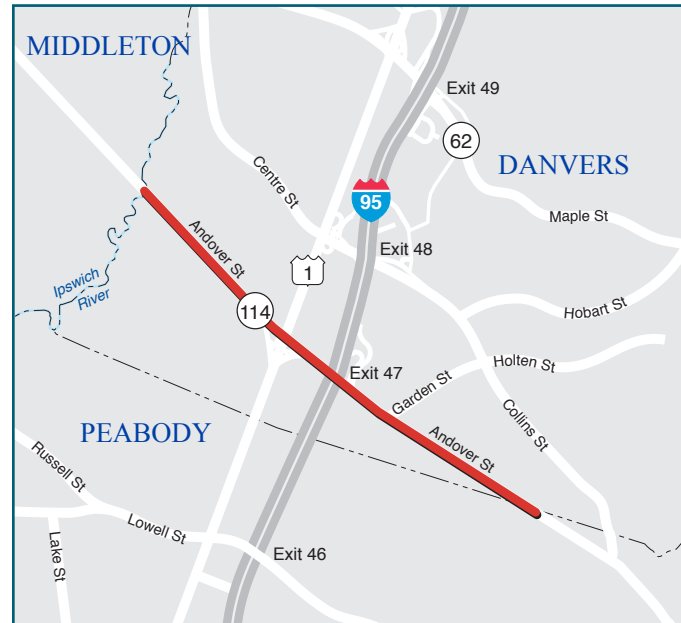
Project Description

The project consists of resurfacing and related work on Route 2A.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$2,598,760	—	—	—	—	\$2,598,760
Non-Federal Funds	\$649,690	—	—	—	—	\$649,690
Total Funds	\$3,248,450	---	---	---	---	\$3,248,450

Danvers: Resurfacing and Related Work on Route 114

Proponent: MassDOT
ID Number: 608818
Project Type: Non-Interstate Pavement
Cost: \$1,133,382
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.

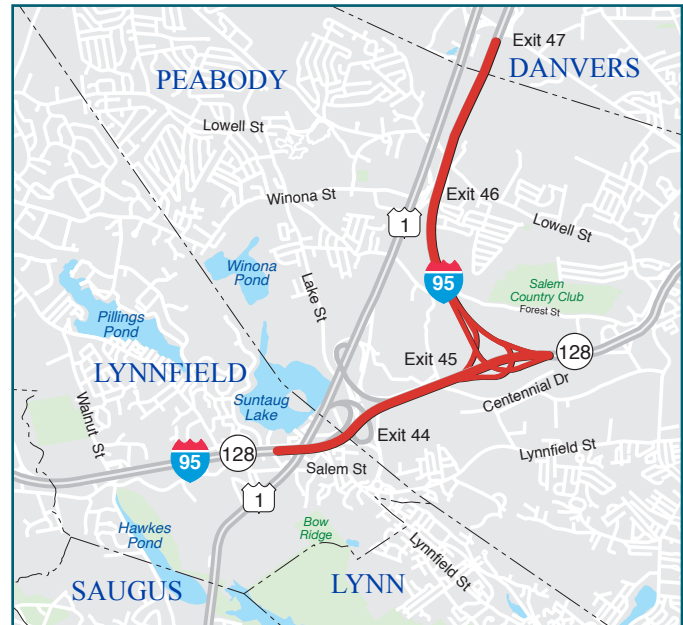
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$906,706	—	—	—	\$906,706
Non-Federal Funds	—	\$226,676	—	—	—	\$226,676
Total Funds	---	\$1,133,382	---	---	---	\$1,133,382

Danvers, Lynnfield, and Peabody: Guide and Traffic Sign Replacement on Interstate 95/Route 128 (Task 'A' Interchange)

Proponent: MassDOT
ID Number: 609060
Project Type: Intersection Improvements
Cost: \$437,700
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.

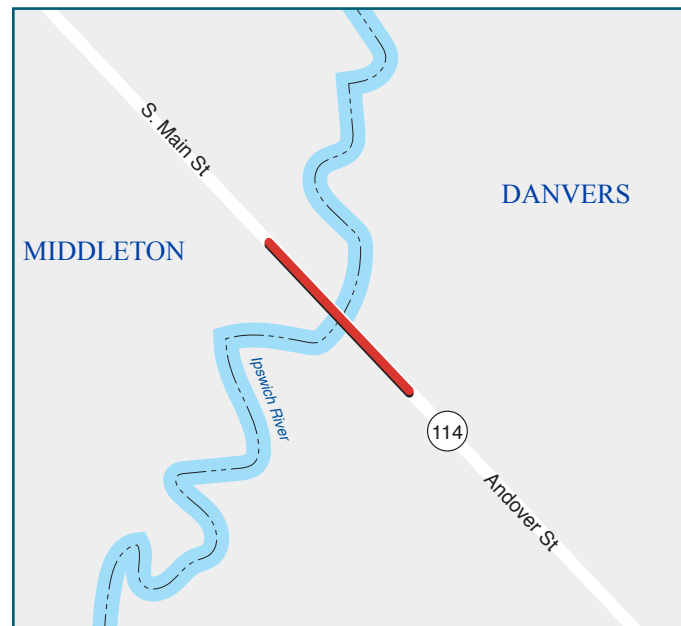
Project Description

This project will replace guide and traffic signs on Interstate 95/Route 128 (Task 'A' Interchange.)

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$393,930	--	--	--	--	\$393,930
Non-Federal Funds	\$43,770	--	--	--	--	\$43,770
Total Funds	\$437,700	---	---	---	---	\$437,700

Danvers and Middleton: Bridge Maintenance, Andover Street (D-03-009) over Ipswich River

Proponent: MassDOT
ID Number: 610782
Project Type: Bridge
Cost: \$5,482,092
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.

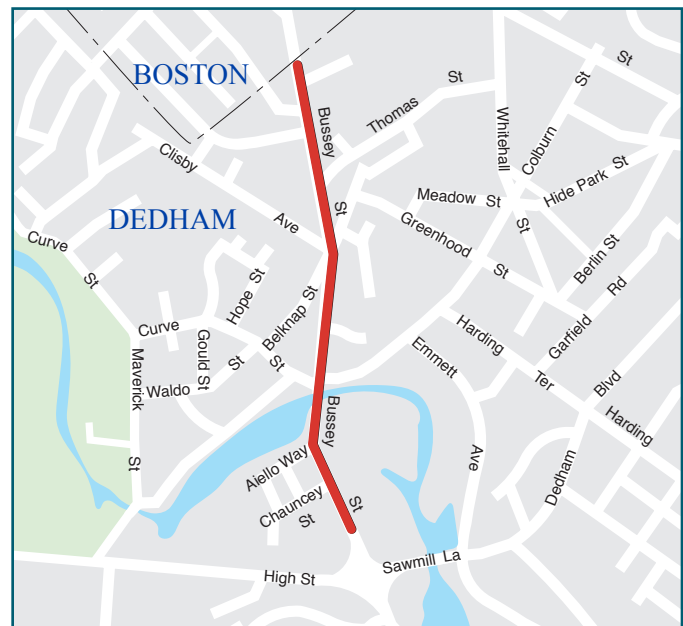
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$4,385,674	—	—	\$4,385,674
Non-Federal Funds	—	—	\$1,096,418	—	—	\$1,096,418
Total Funds	---	---	\$5,482,092	---	---	\$5,482,092

Dedham: Pedestrian Improvements along Bussey Street

Proponent: Dedham
ID Number: 607899
Project Type: Complete Streets
Cost: \$5,157,564
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

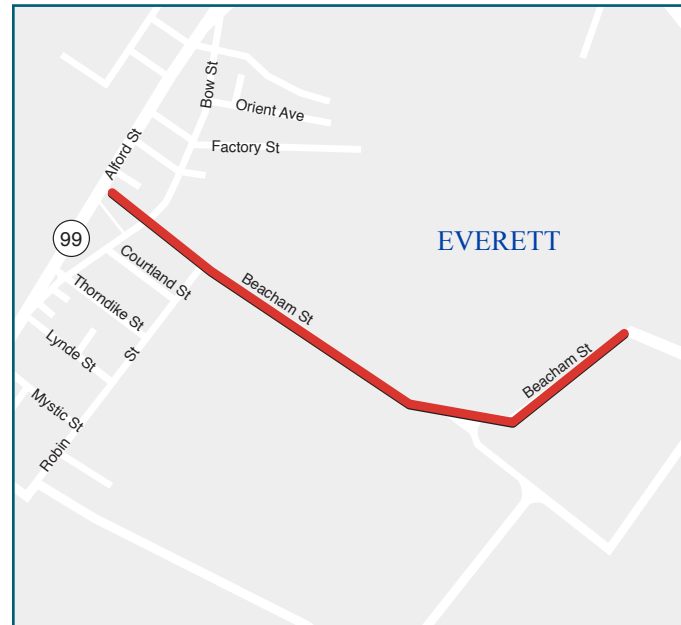
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	\$4,126,051	--	--	--	\$4,126,051
Non-Federal Funds	--	\$1,031,513	--	--	--	\$1,031,513
Total Funds	---	\$5,157,564	---	---	---	\$5,157,564

Everett: Rehabilitation of Beacham Street, from Route 99 to Chelsea City Line

Proponent: Everett
ID Number: 609257
Project Type: Complete Streets
Cost: \$10,545,024
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

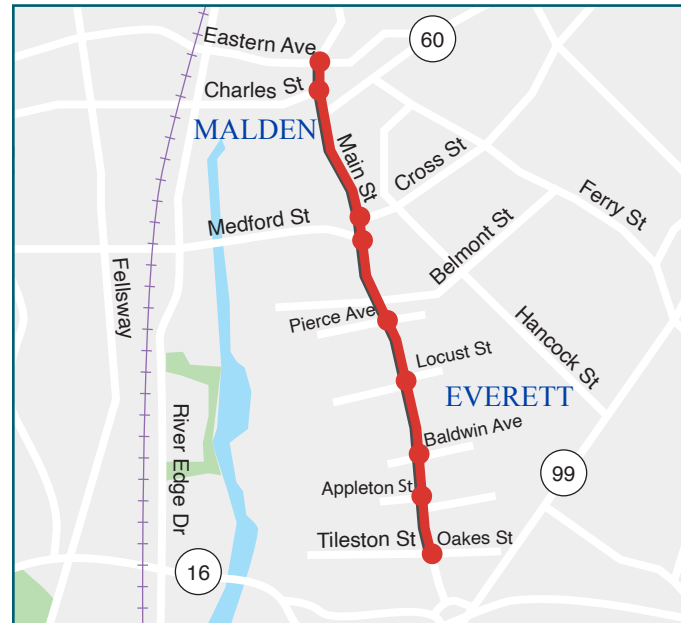
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$8,436,019	—	\$8,436,019
Non-Federal Funds	—	—	—	\$2,109,005	—	\$2,109,005
Total Funds	---	---	---	\$10,545,024	---	\$10,545,024

Everett and Malden: Main Street Transit Signal Priority

Proponent: MBTA
ID Number: S12119
Project Type: Community Connections
Cost: \$225,000
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 72 points when evaluated using the criteria for the second round of the MPO’s Community Connections Program. These criteria differ from those used during the pilot round of this program in FFY 2021, as updates were made to the criteria based on the results of that pilot. These criteria are listed in Table A-5.

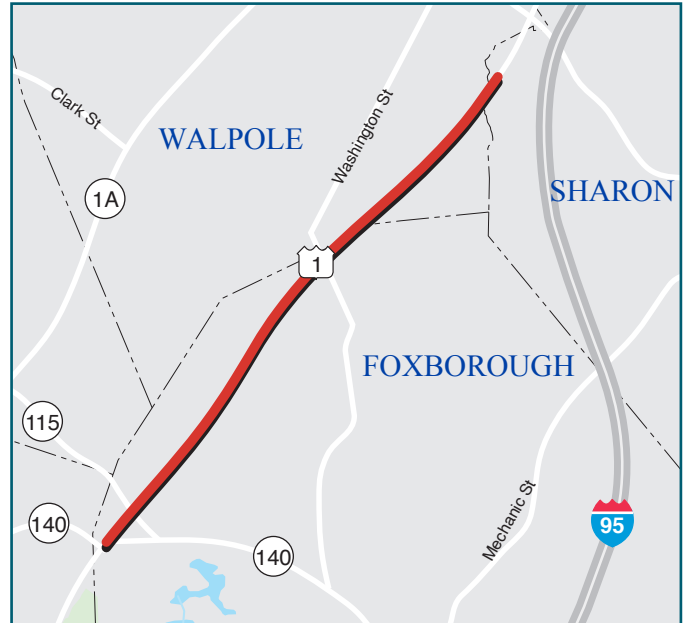
Project Description

This project will update signal equipment to enable Transit Signal Priority (TSP) on up to nine signals along Main Street in Malden and Everett. This project will improve bus travel time and reliability to points of interest including the MBTA Orange Line (Malden Center, Wellington, and Sullivan Square Stations), bus stops, and the commuter rail station at Malden Center. The corridor serves several high ridership MBTA bus routes (97, 99, 104, 105, and 106). The project will improve commutes for approximately 1,800 weekday riders traveling on this corridor.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$180,000	—	—	—	—	\$180,000
Non-Federal Funds	\$45,000	—	—	—	—	\$45,000
Total Funds	\$225,000	---	---	---	---	\$225,000

Foxborough,,: Resurfacing and Related Work on Route 1

Proponent: MassDOT
ID Number: 608480
Project Type: Non-Interstate Pavement
Cost: \$7,169,843
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$5,735,874	—	—	—	\$5,735,874
Non-Federal Funds	—	\$1,433,969	—	—	—	\$1,433,969
Total Funds	---	\$7,169,843	---	---	---	\$7,169,843

Framingham: Traffic Signal Installation at Edgell Road at Central Street

Proponent: Framingham
ID Number: 608889
Project Type: Intersection Improvements
Cost: \$2,665,882
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

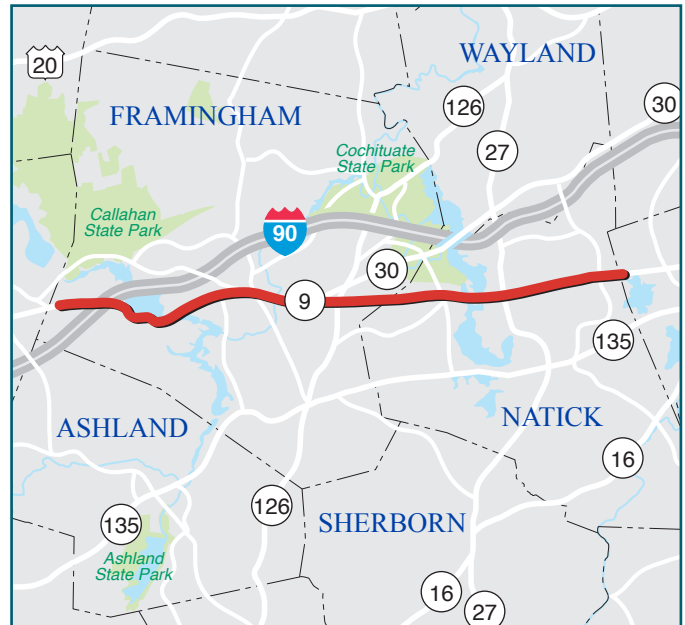
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$2,132,706	—	—	—	\$2,132,706
Non-Federal Funds	—	\$533,176	—	—	—	\$533,176
Total Funds	---	\$2,665,882	---	---	---	\$2,665,882

Framingham and Natick: Resurfacing and Related Work on Route 9

Proponent: MassDOT
ID Number: 609402
Project Type: Non-Interstate Pavement
Cost: \$14,082,878
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	—	\$11,266,302	\$11,266,302
Non-Federal Funds	—	—	—	—	\$2,816,576	\$2,816,576
Total Funds	---	---	---	---	\$14,082,878	\$14,082,878

Hamilton: Bridge Replacement, Winthrop Street over Ipswich River, H-03-002 (2R5)

Proponent: MassDOT
ID Number: 609467
Project Type: Bridge
Cost: \$3,256,397
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 (2R5), which carries Winthrop Street over the Ipswich River.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	–	–	\$2,605,118	–	–	\$2,605,118
Non-Federal Funds	–	–	\$651,279	–	–	\$651,279
Total Funds	---	---	\$3,256,397	---	---	\$3,256,397

Hingham: Intersection Improvements at Route 3A/Summer Street Rotary

Proponent: Hingham
ID Number: 605168
Project Type: Complete Streets
Cost: \$15,474,200
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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	\$12,379,360	--	\$12,379,360
Non-Federal Funds	--	--	--	\$3,094,840	--	\$3,094,840
Total Funds	---	---	---	\$15,474,200	---	\$15,474,200

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

Proponent: MassDOT
ID Number: 607977
Project Type: Roadway Reconstruction
Cost: \$285,366,126
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.

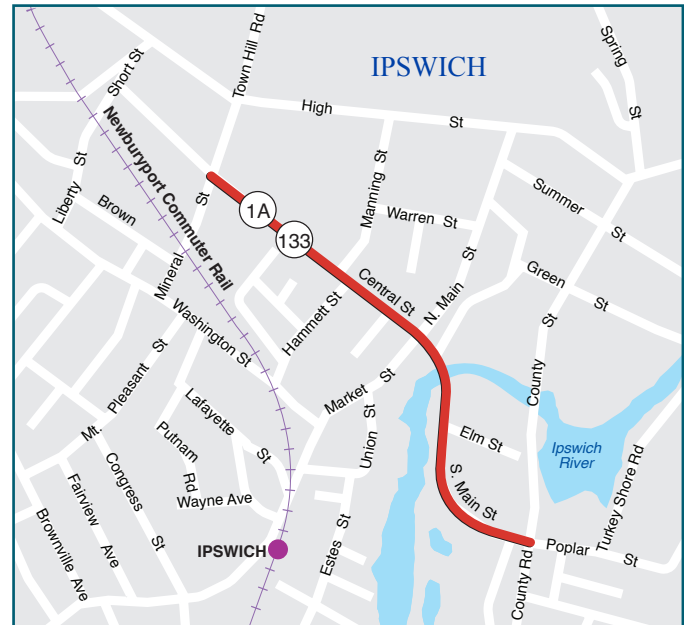
Project Description

The project would 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 \$285,366,126.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$63,197,821	\$43,188,991	\$50,983,256	\$33,079,372	\$31,762,670	\$222,212,110
Non-Federal Funds	\$11,267,630	\$9,243,221	\$8,544,535	\$5,342,152	\$3,529,186	\$37,926,724
Total Funds	\$74,465,450	\$52,432,212	\$59,527,791	\$38,421,524	\$35,291,855	\$260,138,834

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

Proponent: Ipswich
ID Number: 605743
Project Type: Complete Streets
Cost: \$5,702,076
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$4,561,661	—	—	\$4,561,661
Non-Federal Funds	—	—	\$1,140,415	—	—	\$1,140,415
Total Funds	---	---	\$5,702,076	---	---	\$5,702,076

Littleton: Reconstruction of Foster Street

Proponent: Littleton
ID Number: 609054
Project Type: Complete Streets
Cost: \$4,146,209
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

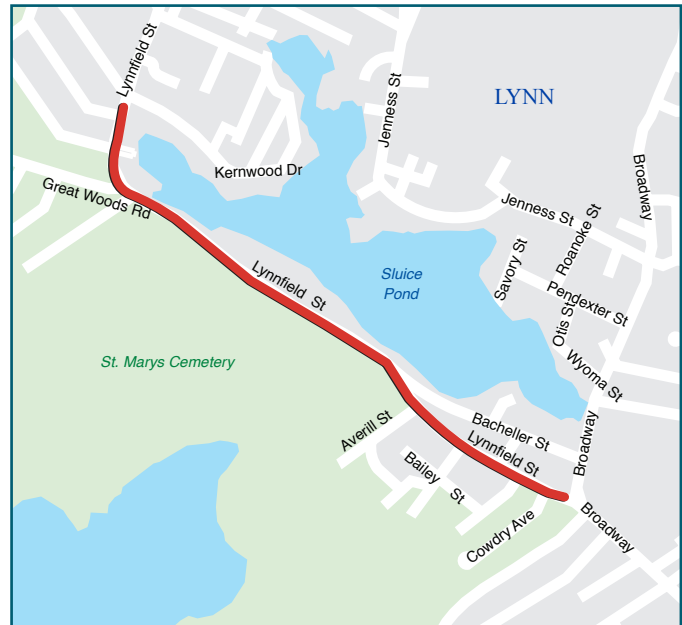
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$3,316,967	—	—	\$3,316,967
Non-Federal Funds	—	—	\$829,242	—	—	\$829,242
Total Funds	---	---	\$4,146,209	---	---	\$4,146,209

Lynn: Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square

Proponent: Lynn
ID Number: 602077
Project Type: Complete Streets
Cost: \$6,349,537
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	12 out of 30	9 out of 29	8 out of 29	4 out of 16	4 out of 12	4 out of 18	41 out of 134

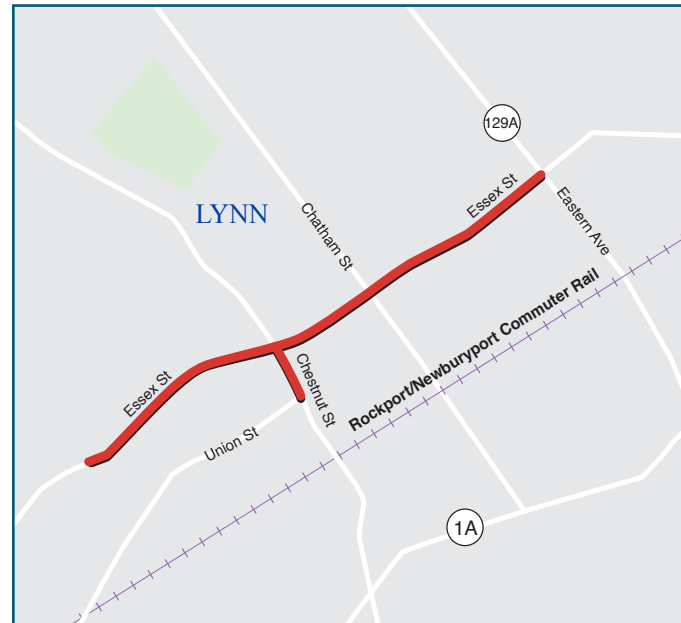
Project Description

This roadway and safety improvement project on Route 129 in Lynn includes drainage improvements, curbing, new sidewalks, wheelchair ramps, intersection improvements, pavement markings, signing, landscaping, and other incidental work. The project limits are from Colonial Avenue to about 150 feet south of Floyd Avenue (between Floyd and Cowdrey Road) for a total of 0.72 miles.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$5,079,630	—	—	—	—	\$5,079,630
Non-Federal Funds	\$1,269,907	—	—	—	—	\$1,269,907
Total Funds	\$6,349,537	---	---	---	---	\$6,349,537

Lynn: Rehabilitation of Essex Street

Proponent: Lynn
ID Number: 609252
Project Type: Complete Streets
Cost: \$18,279,000
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

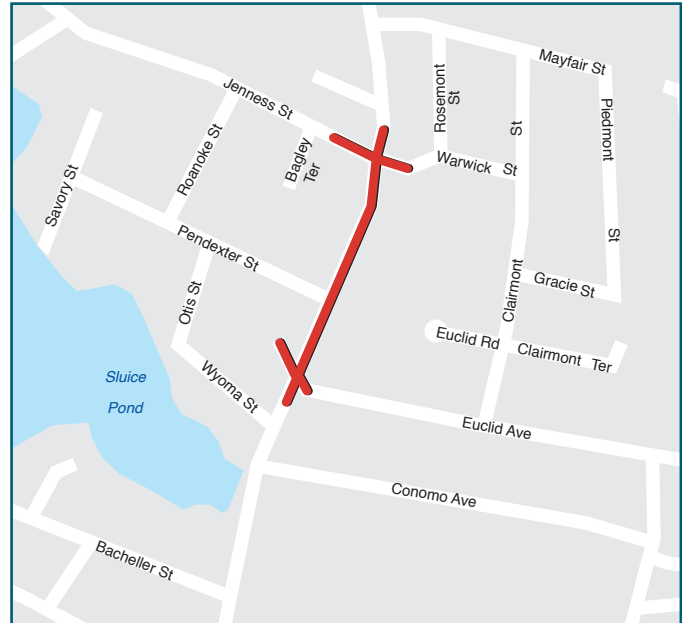
Project Description

This project is focused on making key safety improvements for pedestrian 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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$14,623,200	—	—	\$14,623,200
Non-Federal Funds	—	—	\$3,655,800	—	—	\$3,655,800
Total Funds	---	---	\$18,279,000	---	---	\$18,279,000

Lynn: Traffic and Safety Improvements at Two Locations on Broadway

Proponent: Lynn
ID Number: 609254
Project Type: Intersection Improvements
Cost: \$5,846,473
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$5,261,826	—	—	\$5,261,826
Non-Federal Funds	—	—	\$584,647	—	—	\$584,647
Total Funds	---	---	\$5,846,473	---	---	\$5,846,473

Lynn and Saugus: Bridge Replacement, Route 107 over the Saugus River (aka Belden G. Bly Bridge)

Proponent: MassDOT
ID Number: 604952
Project Type: Bridge
Cost: \$98,962,749
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.

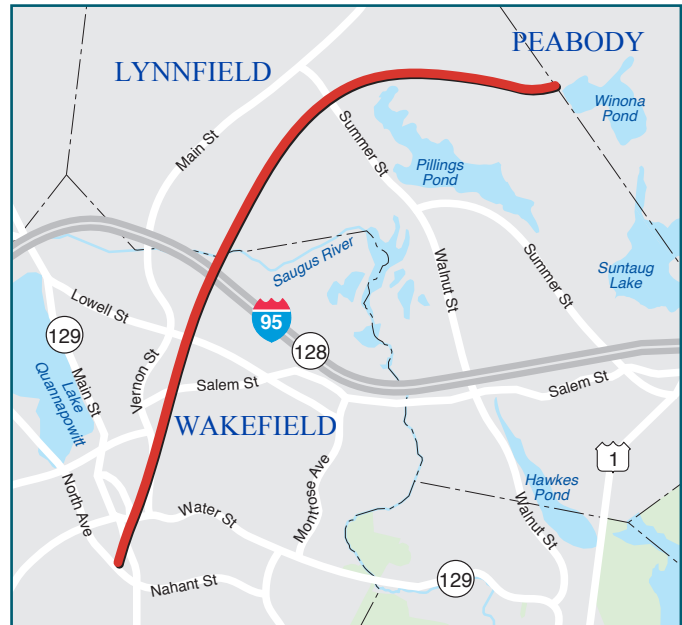
Project Description

This project consists of the construction of the Route 107 (Fox Hill) bridge, which spans the Saugus River. The new bridge will serve as the permanent replacement for the proposed temporary drawbridge. The new bridge (aka Belden G. Bly Bridge) will be a single leaf bascule drawbridge. This project is funded over four years (FFYs 2019–22) for a total cost of \$98,962,749.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$16,494,028	--	--	--	--	\$16,494,028
Non-Federal Funds	\$4,123,507	--	--	--	--	\$4,123,507
Total Funds	\$20,617,535	---	---	---	---	\$20,617,535

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: \$11,673,936
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.

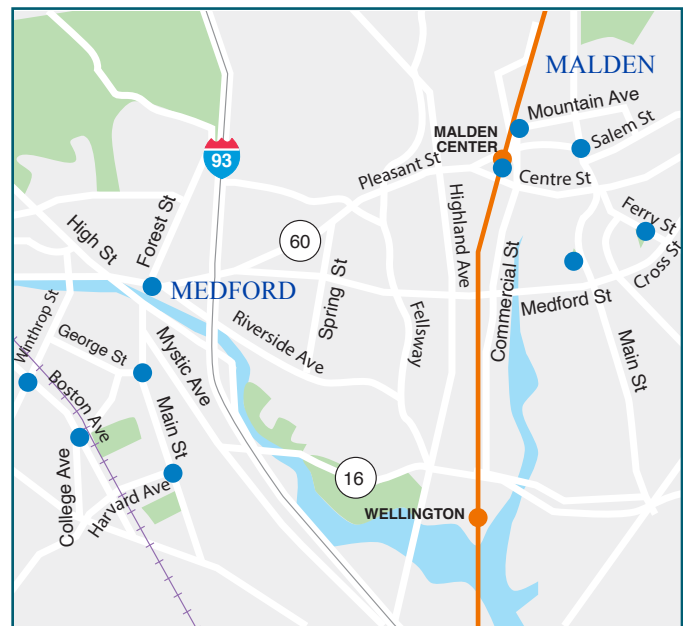
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	—	\$9,339,149	\$9,339,149
Non-Federal Funds	—	—	—	—	\$2,334,787	\$2,334,787
Total Funds	---	---	---	---	\$11,673,936	\$11,673,936

Malden and Medford: BlueBikes Expansion

Proponent: Malden and Medford
ID Number: S12118
Project Type: Community Connections
Cost: \$236,830
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 73 points when evaluated using the criteria for the second round of the MPO’s Community Connections Program. These criteria differ from those used during the pilot round of this program in FFY 2021, as updates were made to the criteria based on the results of that pilot. These criteria are listed in Table A-5.

Project Description

This project will create six new BlueBikes stations: three in Medford and three in Malden. Two stations are planned in Medford Square and Malden Center, with the other four locations determined by community engagement from the options shown on the map above. Each station will have 11 docks for its BlueBikes bicycles. The primary goals of this project are to provide a means to connect to neighboring communities and public transportation and to encourage modal shift from personal vehicles to active transportation.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$189,464	—	—	—	—	\$189,464
Non-Federal Funds	\$47,366	—	—	—	—	\$47,366
Total Funds	\$236,830	---	---	---	---	\$236,830

Medford: Milton Fuller Roberts Elementary School (SRTS)

Proponent: Medford
ID Number: 612001
Project Type: Roadway Reconstruction
Cost: \$1,058,663
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.

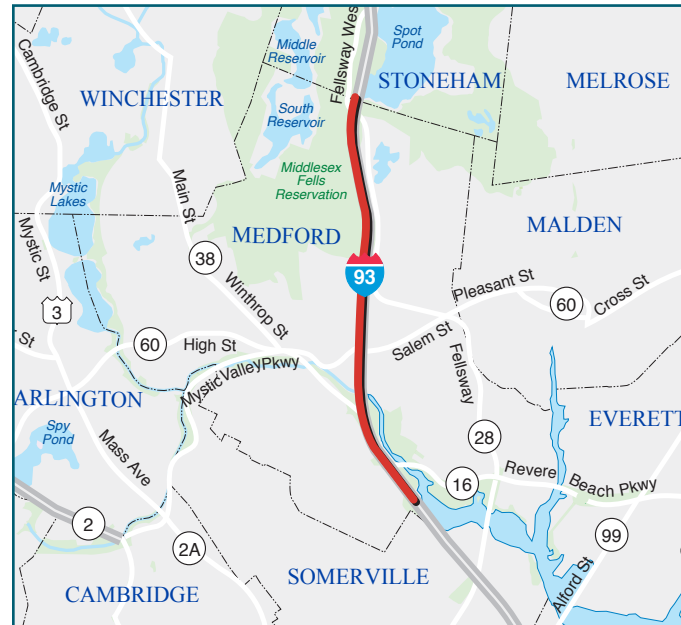
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$846,930	—	\$846,930
Non-Federal Funds	—	—	—	\$211,733	—	\$211,733
Total Funds	---	---	---	\$1,058,663	---	\$1,058,663

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

Proponent: MassDOT
ID Number: 610726
Project Type: Interstate Pavement
Cost: \$24,143,572
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.

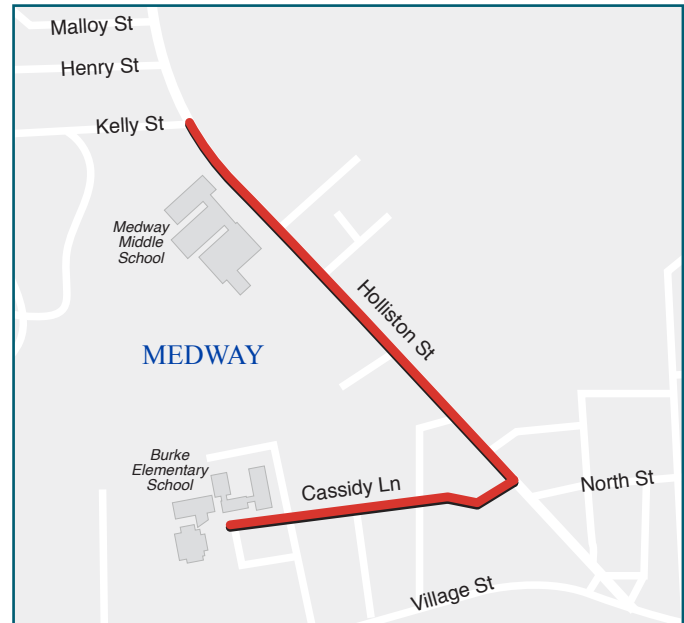
Project Description

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

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	\$21,729,215	--	\$21,729,215
Non-Federal Funds	--	--	--	\$2,414,357	--	\$2,414,357
Total Funds	---	---	---	\$24,143,572	---	\$24,143,572

Medway: Holliston Street and Cassidy Lane Improvements (SRTS)

Proponent: Medway
ID Number: 609530
Project Type: Roadway Reconstruction
Cost: \$1,487,008
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$1,189,606	—	—	—	\$1,189,606
Non-Federal Funds	—	\$297,402	—	—	—	\$297,402
Total Funds	---	\$1,487,008	---	---	---	\$1,487,008

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

Proponent: MassDOT
ID Number: 608522
Project Type: Bridge
Cost: \$3,926,837
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 replace the bridge that carries Route 62 (Maple Street) over the Ipswich River in Middleton.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	\$3,141,470	--	--	\$3,141,470
Non-Federal Funds	--	--	\$785,367	--	--	\$785,367
Total Funds	---	---	\$3,926,837	---	---	\$3,926,837

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

Proponent: Milford
ID Number: 608045
Project Type: Complete Streets
Cost: \$10,481,030
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

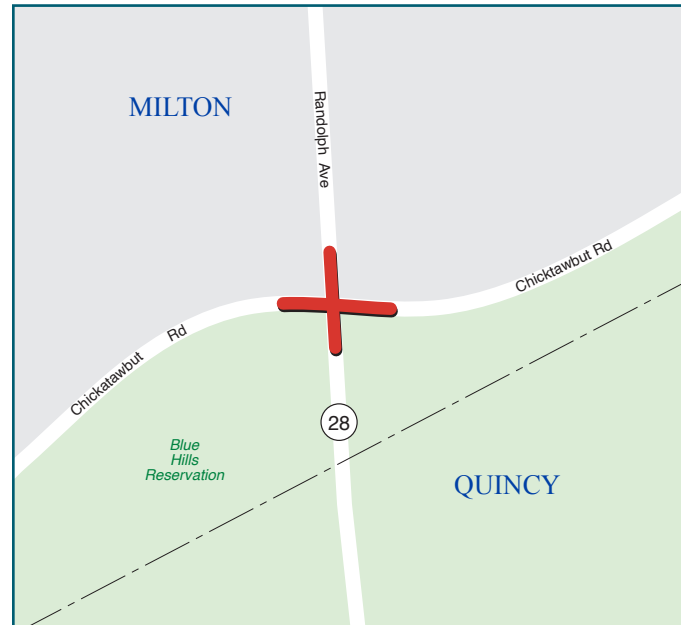
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	--	\$8,384,824	\$8,384,824
Non-Federal Funds	--	--	--	--	\$2,096,206	\$2,096,206
Total Funds	---	---	---	---	\$10,481,030	\$10,481,030

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

Proponent: MassDOT
ID Number: 607342
Project Type: Intersection Improvements
Cost: \$7,066,971
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.

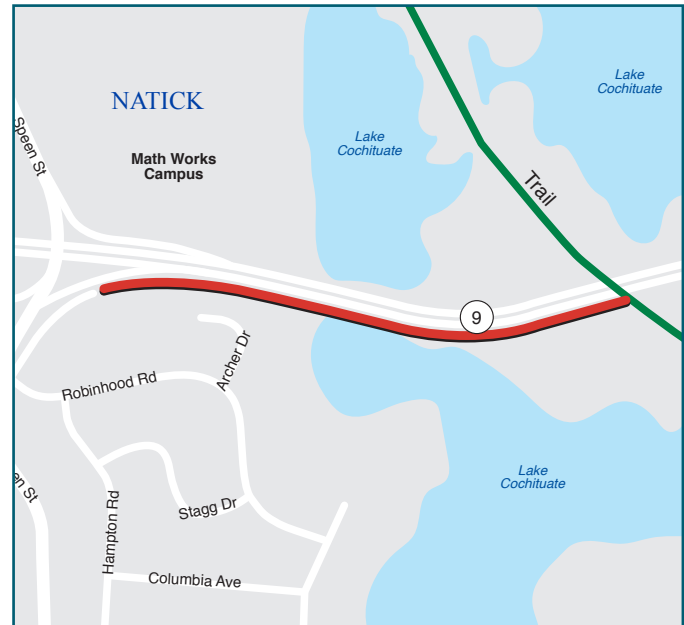
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$6,360,274	—	—	—	\$6,360,274
Non-Federal Funds	—	\$706,697	—	—	—	\$706,697
Total Funds	---	\$7,066,971	---	---	---	\$7,066,971

Natick: Lake Cochituate Path

Proponent: MassDOT
ID Number: 610680
Project Type: Bicycle and Pedestrian
Cost: \$3,715,698
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.

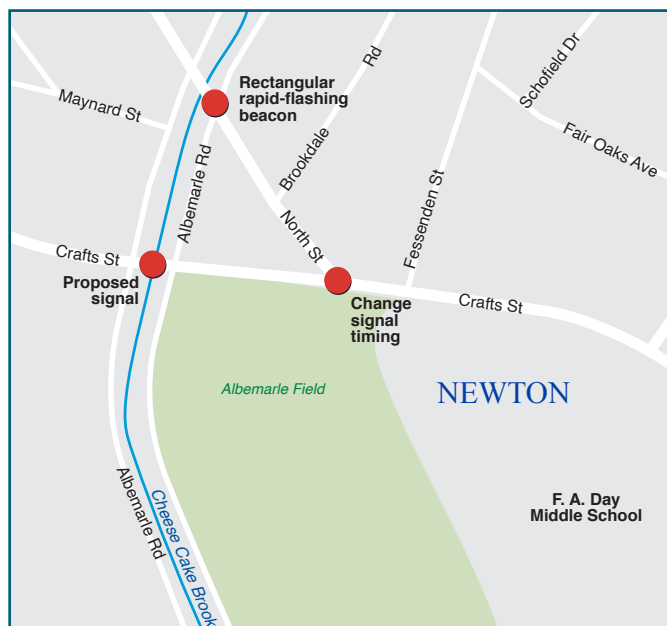
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$2,972,558	—	\$2,972,558
Non-Federal Funds	—	—	—	\$743,140	—	\$743,140
Total Funds	---	---	---	\$3,715,698	---	\$3,715,698

Newton: Horace Mann Elementary School Improvements (SRTS)

Proponent: Newton
ID Number: 611997
Project Type: Roadway Reconstruction
Cost: \$893,887
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$715,110	—	\$715,110
Non-Federal Funds	—	—	—	\$178,777	—	\$178,777
Total Funds	---	---	---	\$893,887	---	\$893,887

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 MPO’s Community Connections Program criteria. These criteria are listed in table A-14.

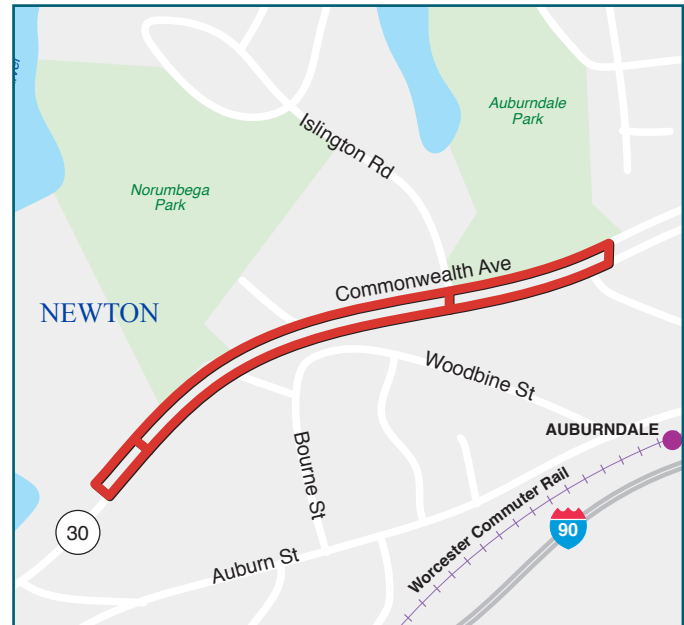
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	\$220,000	\$121,600	—	—	—	\$341,600
Non-Federal Funds	\$55,000	\$30,400	—	—	—	\$85,400
Total Funds	\$275,000	\$152,000	---	---	---	\$427,000

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: \$6,677,858
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

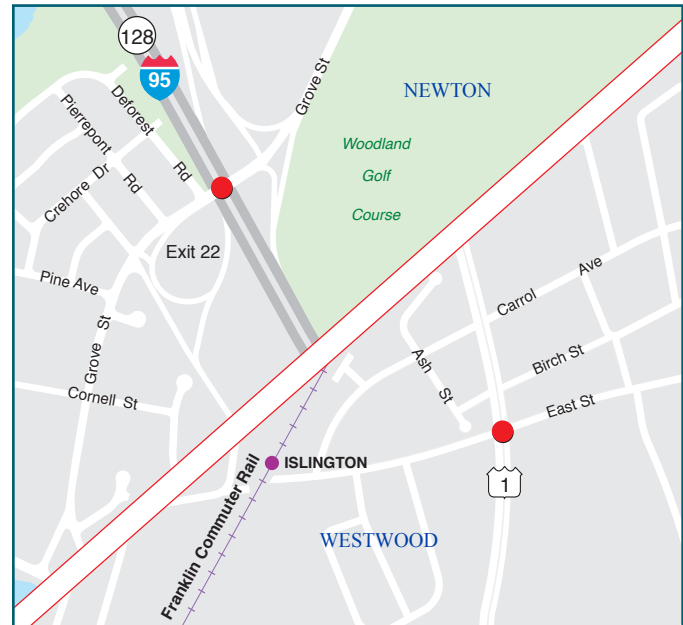
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$5,342,286	—	—	—	\$5,342,286
Non-Federal Funds	—	\$1,335,572	—	—	—	\$1,335,572
Total Funds	---	\$6,677,858	---	---	---	\$6,677,858

Newton and Westwood: Steel Superstructure Cleaning (Full Removal) and Painting of Two Bridges: N-12-056 and W-31-006

Proponent: MassDOT
ID Number: 608609
Project Type: Bridge
Cost: \$2,228,571
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 N-12-0056 and W-31-006 in Newton and Westwood.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$1,782,857	—	—	—	\$1,782,857
Non-Federal Funds	—	\$445,714	—	—	—	\$445,714
Total Funds	---	\$2,228,571	---	---	---	\$2,228,571

Newton and Weston: Steel Superstructure Cleaning (Full Removal) and Painting of Three Bridges: N-12-051, W-29-011, and W-29-028

Proponent: MassDOT
ID Number: 608866
Project Type: Bridge
Cost: \$2,349,900
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.

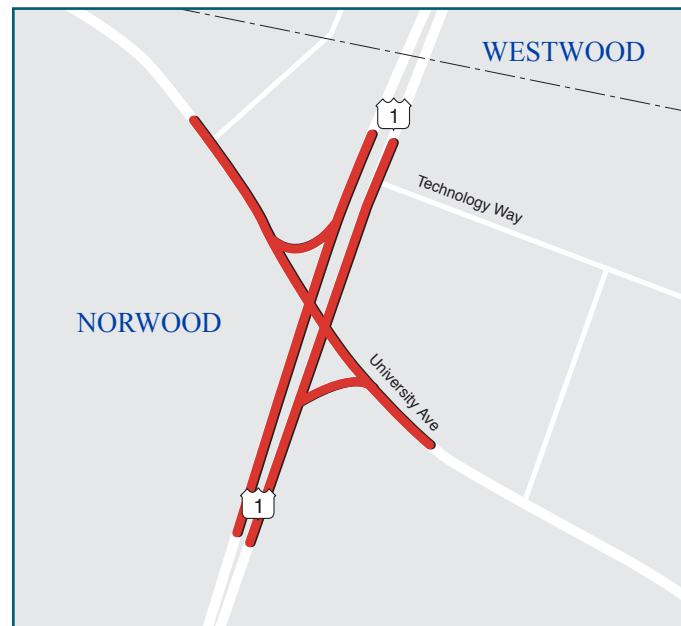
Project Description

The work consists of cleaning (full removal) of the steel superstructure and painting of bridges N-12-056 and W-31-006.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$1,879,920	—	—	—	—	\$1,879,920
Non-Federal Funds	\$469,980	—	—	—	—	\$469,980
Total Funds	\$2,349,900	---	---	---	---	\$2,349,900

Norwood: Intersection Improvements at Route 1 and University Avenue/ Everett Street

Proponent: Norwood
ID Number: 605857
Project Type: Intersection Improvements
Cost: \$25,757,971
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

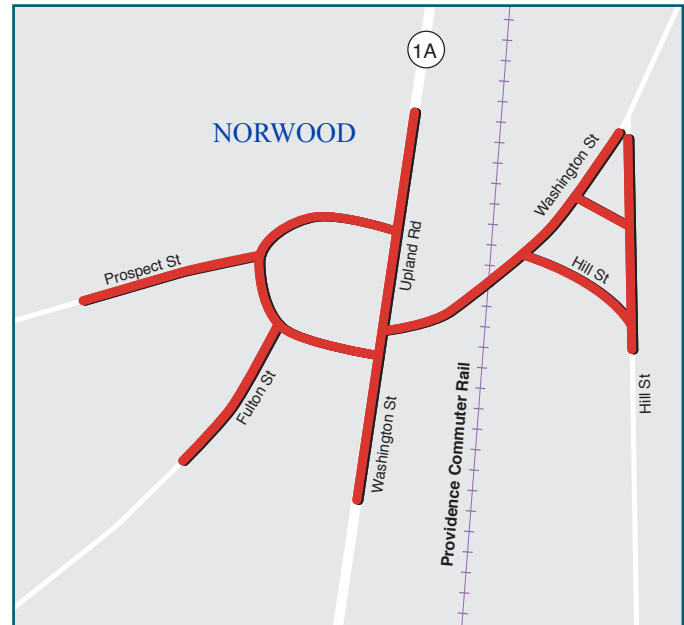
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$7,200,000	\$13,406,377	\$20,606,377
Non-Federal Funds	—	—	—	\$1,800,000	\$3,351,594	\$5,151,594
Total Funds	---	---	---	\$9,000,000	\$16,757,971	\$25,757,971

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: \$8,270,371
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

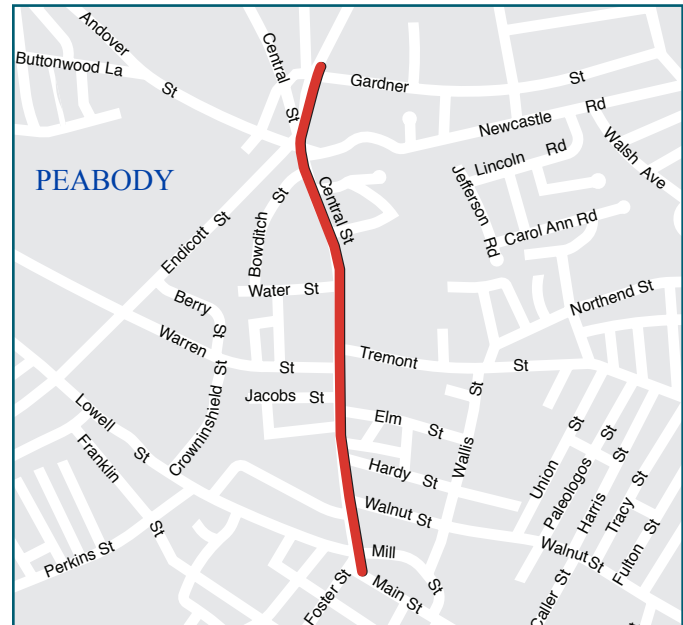
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	\$6,616,297	--	--	--	\$6,616,297
Non-Federal Funds	--	\$1,654,074	--	--	--	\$1,654,074
Total Funds	---	\$8,270,371	---	---	---	\$8,270,371

Peabody: Central Street Corridor and Intersection Improvements

Proponent: Peabody
ID Number: 608933
Project Type: Complete Streets
Cost: \$15,828,654
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

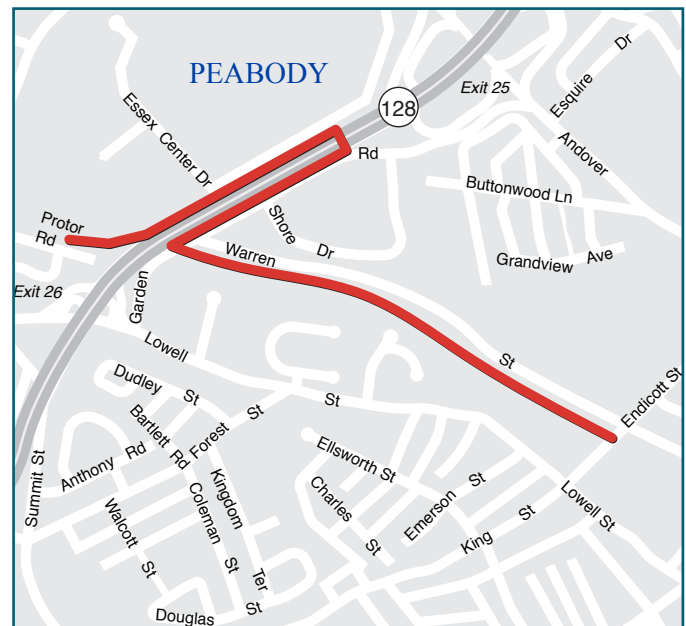
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	\$12,662,923	--	--	--	\$12,662,923
Non-Federal Funds	--	\$3,165,731	--	--	--	\$3,165,731
Total Funds	---	\$15,828,654	---	---	---	\$15,828,654

Peabody: Independence Greenway Extension

Proponent: Peabody
ID Number: 609211
Project Type: Bicycle and Pedestrian
Cost: \$3,248,370
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

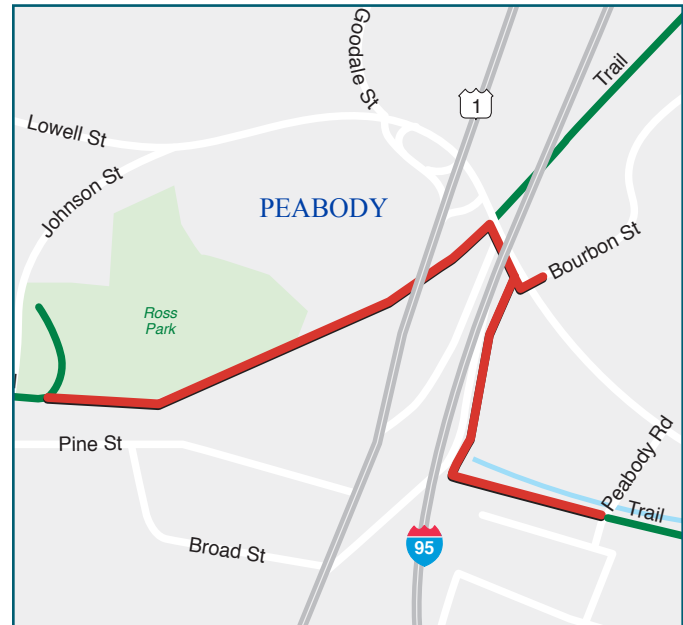
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	\$2,598,696	—	—	\$2,598,696
Non-Federal Funds	—	—	\$649,674	—	—	\$649,674
Total Funds	---	---	\$3,248,370	---	---	\$3,248,370

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: \$6,568,800
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

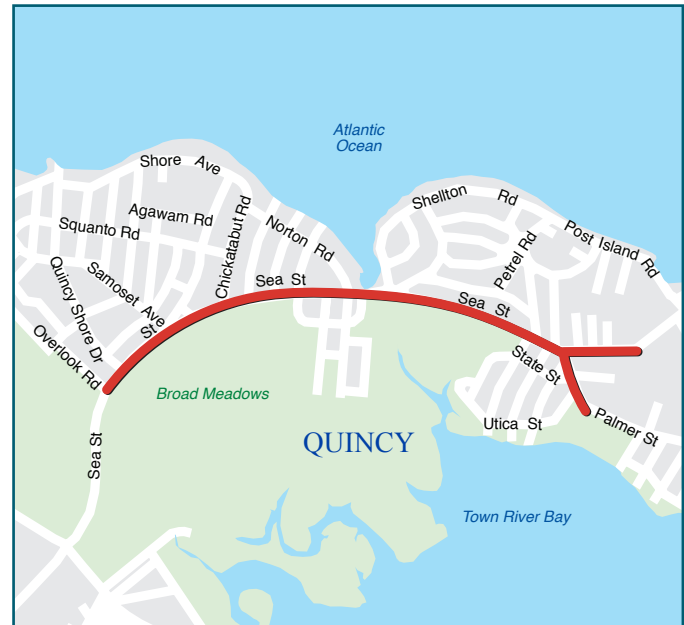
Project Description

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 those that, 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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$5,255,040	—	\$5,255,040
Non-Federal Funds	—	—	—	\$1,313,760	—	\$1,313,760
Total Funds	---	---	---	\$6,568,800	---	\$6,568,800

Quincy: Reconstruction of Sea Street

Proponent: Quincy
ID Number: 608707
Project Type: Complete Streets
Cost: \$5,843,442
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

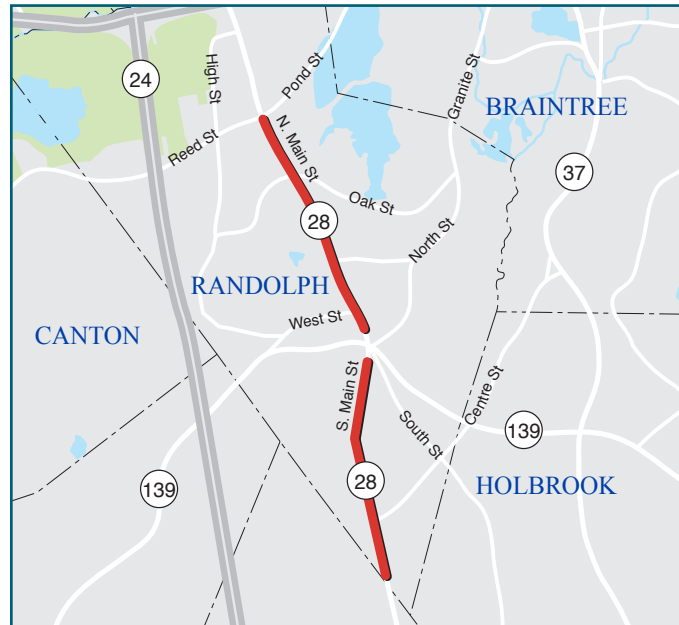
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$4,674,754	—	—	—	\$4,674,754
Non-Federal Funds	—	\$1,168,688	—	—	—	\$1,168,688
Total Funds	---	\$5,843,442	---	---	---	\$5,843,442

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.

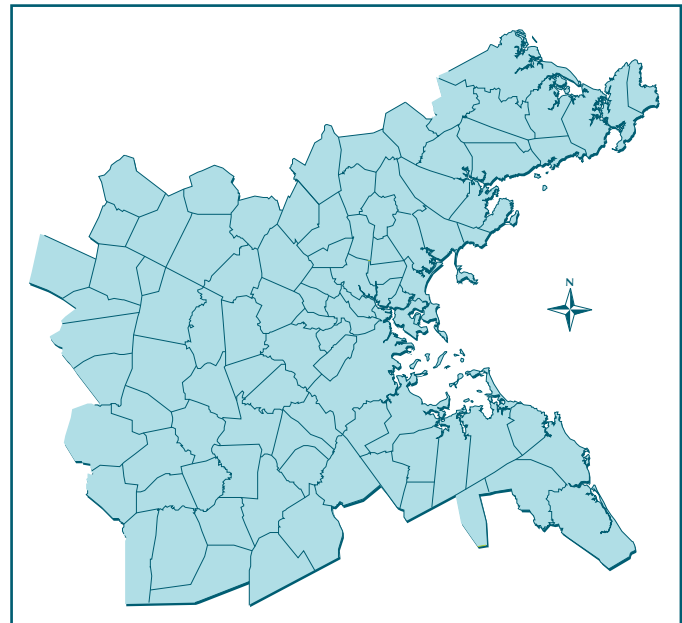
Project Description

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) 2022	2023	2024	2025	2026	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

Regional: Community Connections Program

Proponent: Regional
ID Number: S12124
Project Type: Community Connections
Cost: \$7,522,281
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 2022-26 TIP through this program are available on those projects' pages within this chapter.

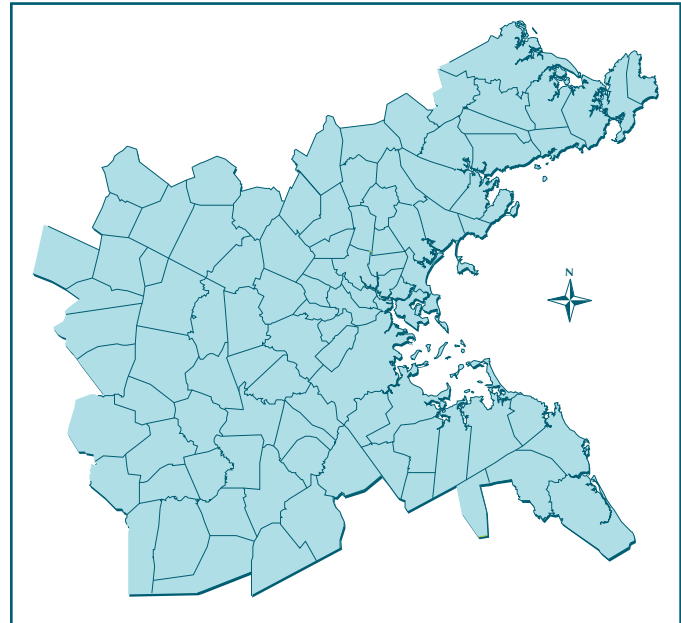
Project Description

The Community Connections (CC) 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 improving bicycle and pedestrian facilities. The CC program is one of the investment programs included in the MPO's current Long-Range Transportation Plan, *Destination 2040*, and is funded at a level of \$2 million per year in Regional Target funds beginning in FFY 2021. Ten projects are funded in the FFYs 2022-26 TIP through this program, the details of which are available in this chapter. Remaining funding in FFYs 2023 through 2026 will be allocated during future TIP cycles.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$1,336,658	\$1,481,166	\$1,600,000	\$1,600,000	\$6,017,825
Non-Federal Funds	—	\$334,165	\$370,292	\$400,000	\$400,000	\$1,504,456
Total Funds	---	\$1,670,823	\$1,851,458	\$2,000,000	\$2,000,000	\$7,522,281

Regional: Transit Modernization Program

Proponent: Regional
ID Number: S12113
Project Type: Transit Modernization
Cost: \$11,000,000
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. Scoring criteria are being developed for this program during FFY 2020 and specific projects will be funded through this program during a future TIP cycle. The MPO anticipates allocating five percent of its funding, or approximately \$5,500,000 annually, to this program beginning in FFY 2025.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	\$4,400,000	\$4,400,000	\$8,800,000
Non-Federal Funds	--	--	--	\$1,100,000	\$1,100,000	\$2,200,000
Total Funds	---	---	---	\$5,500,000	\$5,500,000	\$11,000,000

Regionwide: MBTA Systemwide Bike Racks

Proponent: MBTA
ID Number: S12117
Project Type: Community Connections
Cost: \$275,740
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 64 points when evaluated using the criteria for the second round of the MPO's Community Connections Program. These criteria differ from those used during the pilot round of this program in FFY 2021, as updates were made to the criteria based on the results of that pilot. These criteria are listed in Table A-5.

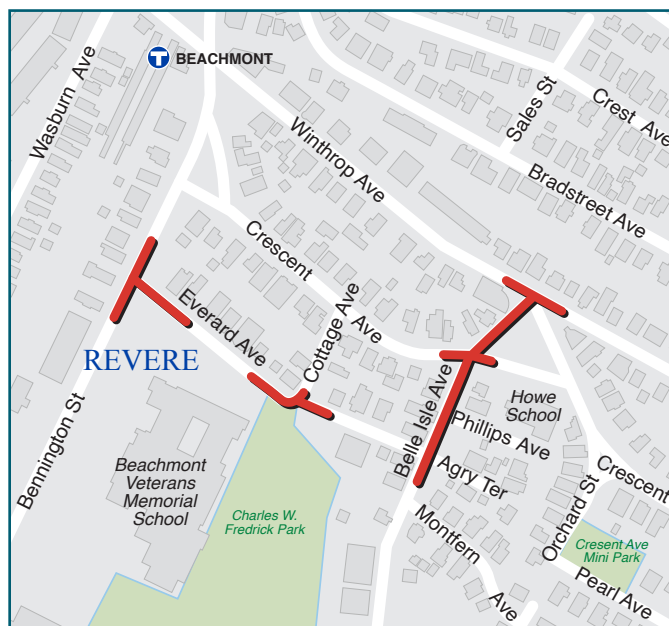
Project Description

This project will create 750 new bicycle parking spaces and 2,400 bicycle parking spots in cages. The new bicycle facilities will be more secure and accessible for riders. These infrastructure upgrades and modernization work will be conducted at up to 40 MBTA rapid transit and commuter rail stations and their adjoining parking lots. Sixteen stations have high utilization rates of their bicycle racks that often exceed capacity during the warmer months, and the remaining 24 stations have underdeveloped bicycle parking in areas that would highly benefit from increased capacity.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$220,592	—	—	—	—	\$220,592
Non-Federal Funds	\$55,148	—	—	—	—	\$55,148
Total Funds	\$275,740	---	---	---	---	\$275,740

Revere: Improvements at Beachmont Veterans Elementary (SRTS)

Proponent: Revere
ID Number: 612100
Project Type: Roadway Reconstruction
Cost: \$350,914
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.

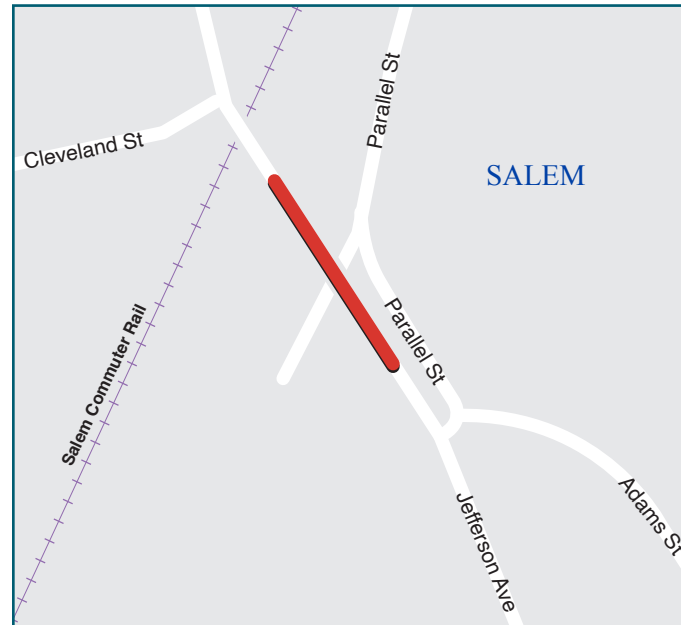
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	\$280,731	--	\$280,731
Non-Federal Funds	--	--	--	\$70,183	--	\$70,183
Total Funds	---	---	---	\$350,914	---	\$350,914

Salem: Bridge Replacement, S-01-024, Jefferson Avenue over Parallel Street

Proponent: MassDOT
ID Number: 612075
Project Type: Bridge
Cost: \$3,354,720
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.

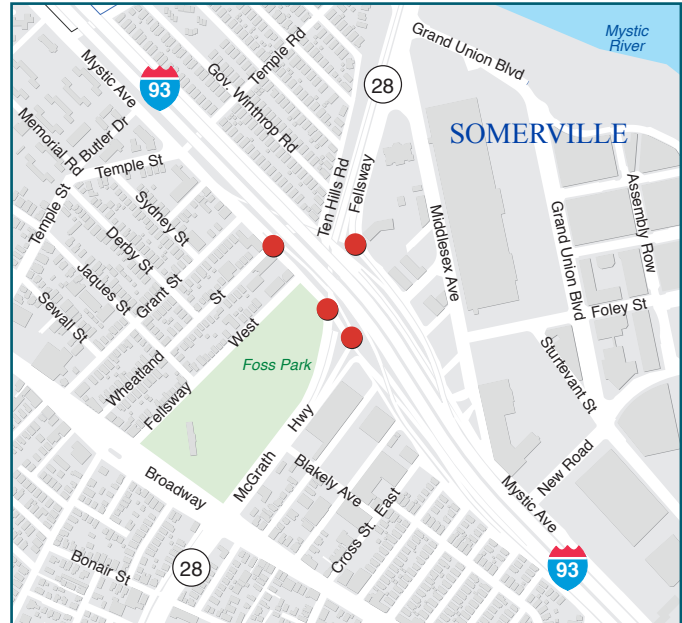
Project Description

This project will replace bridge S-01-024, which carries Jefferson Avenue over Parallel Street in Salem.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	--	\$2,683,776	\$2,683,776
Non-Federal Funds	--	--	--	--	\$670,944	\$670,944
Total Funds	---	---	---	---	\$3,354,720	\$3,354,720

Somerville: Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway (Top 200 Crash Location)

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$5,510,303	—	—	—	\$5,510,303
Non-Federal Funds	—	\$612,256	—	—	—	\$612,256
Total Funds	---	\$6,122,559	---	---	---	\$6,122,559

Stoneham: Deck Replacement and Superstructure Repairs, S-27-006 (2L2), (ST 28) Fellsway West over Interstate 93

Proponent: MassDOT
ID Number: 612028
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.

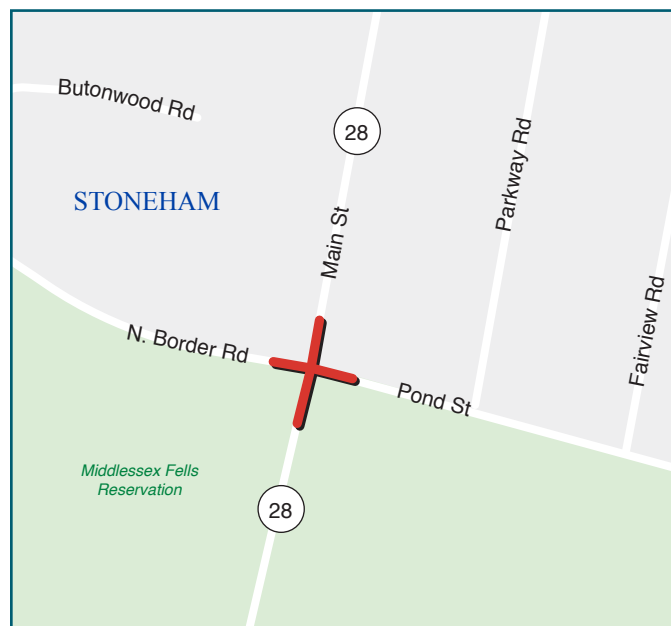
Project Description

This project will replace the bridge deck and repair the superstructure on bridge S-27-006 (2L2), carrying Fellsway West over Interstate 93 in Stoneham.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$2,400,000	--	--	--	--	\$2,400,000
Non-Federal Funds	\$600,000	--	--	--	--	\$600,000
Total Funds	\$3,000,000	---	---	---	---	\$3,000,000

Stoneham: Intersection Improvements at Route 28 (Main Street), North Border Road, and Pond Street

Proponent: MassDOT
ID Number: 610665
Project Type: Intersection Improvements
Cost: \$4,205,001
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.

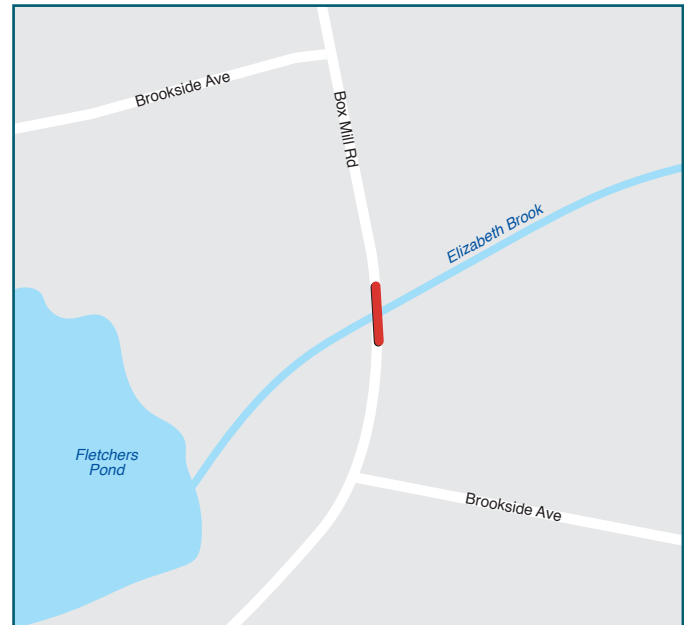
Project Description

This project will make intersection improvements at Route 28 (Main Street), North Border Road, and Pond Street in Stoneham.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	--	\$3,784,501	\$3,784,501
Non-Federal Funds	--	--	--	--	\$420,500	\$420,500
Total Funds	---	---	---	---	\$4,205,001	\$4,205,001

Stow: Bridge Replacement, S-29-11, Box Mill Road Over Elizabeth Brook

Proponent: MassDOT
ID Number: 608255
Project Type: Bridge
Cost: \$3,592,584
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.

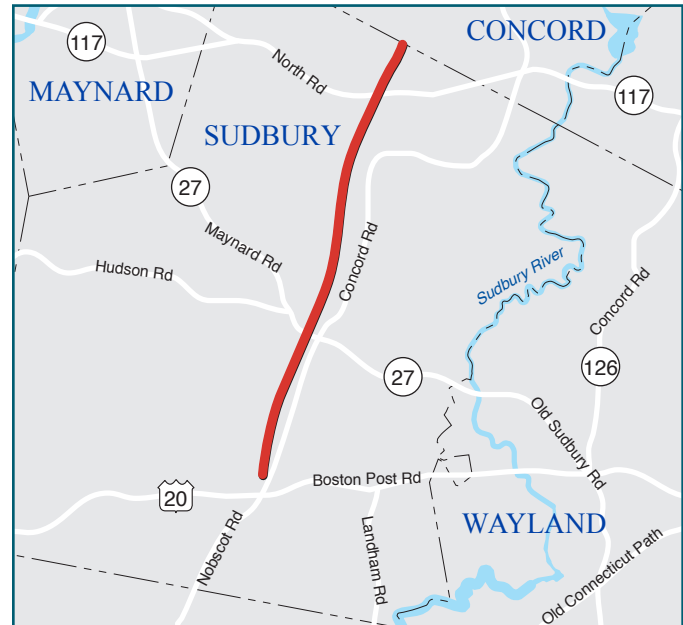
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$2,874,067	—	—	—	\$2,874,067
Non-Federal Funds	—	\$718,517	—	—	—	\$718,517
Total Funds	---	\$3,592,584	---	---	---	\$3,592,584

Sudbury and Concord: Bruce Freeman Rail Trail, Phase 2D

Proponent: Sudbury
ID Number: 608164
Project Type: Bicycle and Pedestrian
Cost: \$12,886,676
Funding Source: Regional Target Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	7 out of 30	3 out of 29	16 out of 29	9 out of 16	1 out of 12	4 out of 18	40 out of 134

Project Description

The proposed project involves construction of a 4.6 mile trail in Sudbury, from the Concord town line to Station Road. The proposed work includes improvements to two structures and upgrades to several at-grade crossings, including Route 117 (North Road), Pantry Road, and Route 27 (Hudson Road). Related work includes pavement markings, installation of guardrails, and landscaping. Construction of this phase will accompany the completion of Phase 2C of the trail, closing the gap between Powder Mill Road in Concord and the Sudbury town line to create one contiguous path.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$10,309,341	—	—	—	—	\$10,309,341
Non-Federal Funds	\$2,577,335	—	—	—	—	\$2,577,335
Total Funds	\$12,886,676	---	---	---	---	\$12,886,676

Topsfield: Bridge Replacement, T-06-013, Perkins Row over Mile Brook

Proponent: MassDOT
ID Number: 612076
Project Type: Bridge
Cost: \$3,374,841
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.

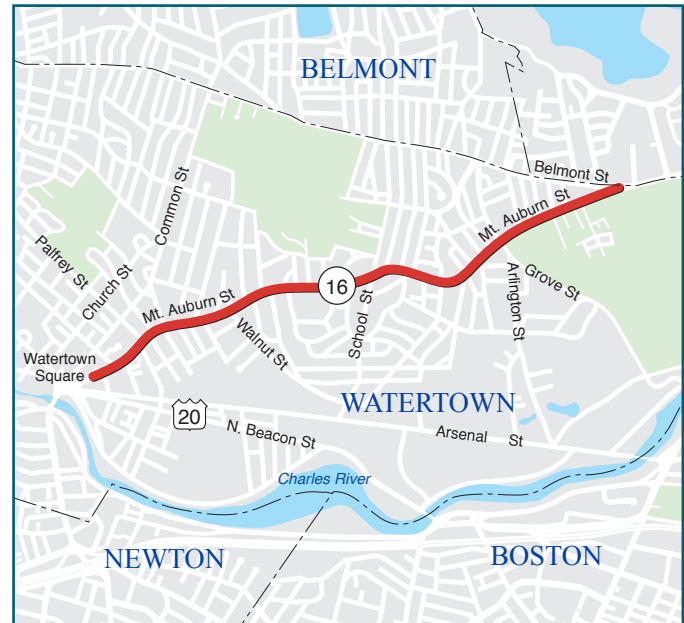
Project Description

This project will replace T-06-013, which carries Perkins Row over Mile Brook in Topsfield.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	--	\$2,699,873	\$2,699,873
Non-Federal Funds	--	--	--	--	\$674,968	\$674,968
Total Funds	---	---	---	---	\$3,374,841	\$3,374,841

Watertown: Rehabilitation of Mount Auburn Street (Route 16)

Proponent: Watertown
ID Number: 607777
Project Type: Complete Streets
Cost: \$28,340,090
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

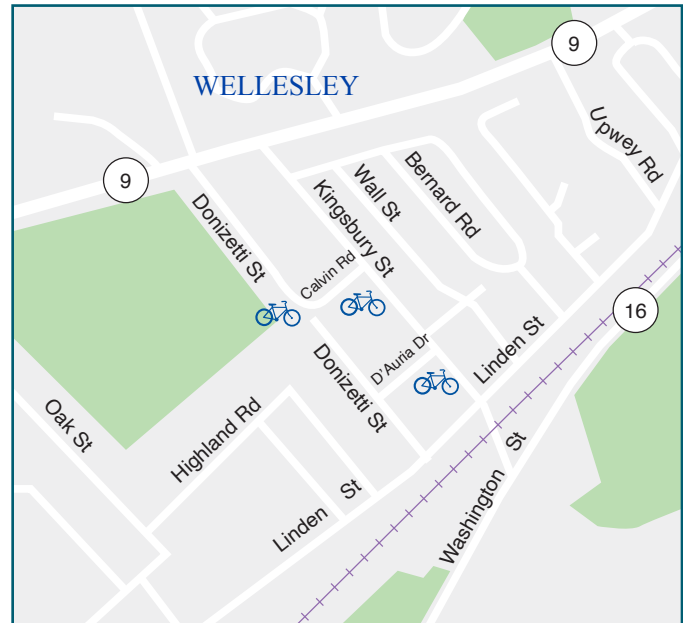
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$9,735,697	\$12,936,375	—	—	\$22,936,072
Non-Federal Funds	—	\$2,433,924	\$3,243,094	—	—	\$5,468,018
Total Funds	---	\$12,169,621	\$16,170,469	---	---	\$28,340,090

Wellesley: Bicycle Infrastructure

Proponent: Wellesley
ID Number: S12120
Project Type: Community Connections
Cost: \$85,054
Funding Source: Regional Target Funds



Scoring Summary

This project received a total score of 42.75 points when evaluated using the criteria for the second round of the MPO's Community Connections Program. These criteria differ from those used during the pilot round of this program in FFY 2021, as updates were made to the criteria based on the results of that pilot. These criteria are listed in Table A-5.

Project Description

This project will improve bicycle facilities at Wellesley Middle School by installing four covered bicycle racks. These facilities will be available to over 1,200 middle school students plus teachers and administrators at Wellesley Middle School. The primary goal of the project is to encourage bicycling to/from school and to nearby activities, facilitating mode shift in the transportation system from single-occupancy vehicles to active transportation.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	\$68,043	—	—	—	—	\$68,043
Non-Federal Funds	\$17,011	—	—	—	—	\$17,011
Total Funds	\$85,054	---	---	---	---	\$85,054

Weston and Newton: Multi-Use Trail Connection, from Recreation Road to Upper Charles River Greenway including Reconstruction of Pedestrian Bridge N-12-078=W-29-062

Proponent: MassDOT
ID Number: 609066
Project Type: Bicycle and Pedestrian
Cost: \$3,177,876
Funding Source: Statewide Highway Funds



Scoring Summary

Category	Safety	Sys Pres	CM/M	CA/SC	TE	EV	Total
Score	6 out of 30	3 out of 29	9 out of 29	4 out of 16	2 out of 12	0 out of 18	24 out of 134

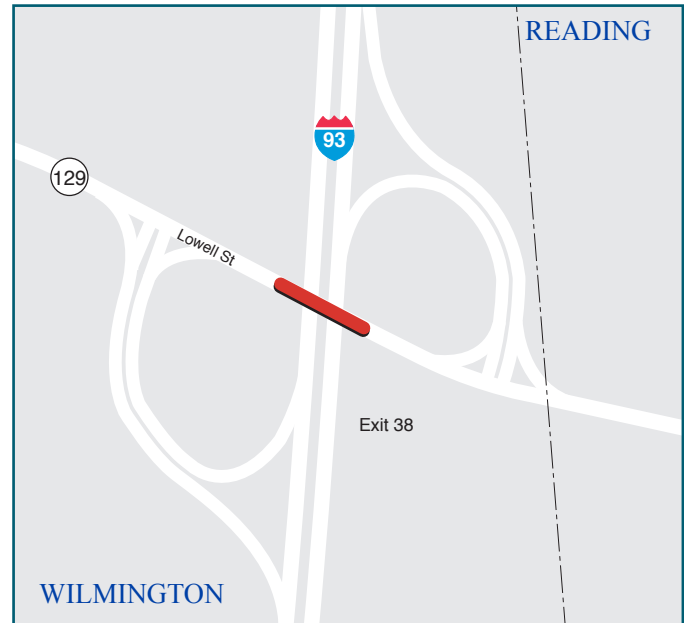
Project Description

This project would create a multi-use trail connection, from Recreation Road to Upper Charles River Greenway including reconstruction of pedestrian bridge N-12-078=W-29-062. 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) 2022	2023	2024	2025	2026	Total
Federal Funds	\$2,542,301	—	—	—	—	\$2,542,301
Non-Federal Funds	\$635,575	—	—	—	—	\$635,575
Total Funds	\$3,177,876	---	---	---	---	\$3,177,876

Wilmington: Bridge Replacement, W-38-029 (2KV), Route 129 (Lowell Street) over Interstate 93

Proponent: MassDOT
ID Number: 608703
Project Type: Bridge
Cost: \$16,542,624
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.

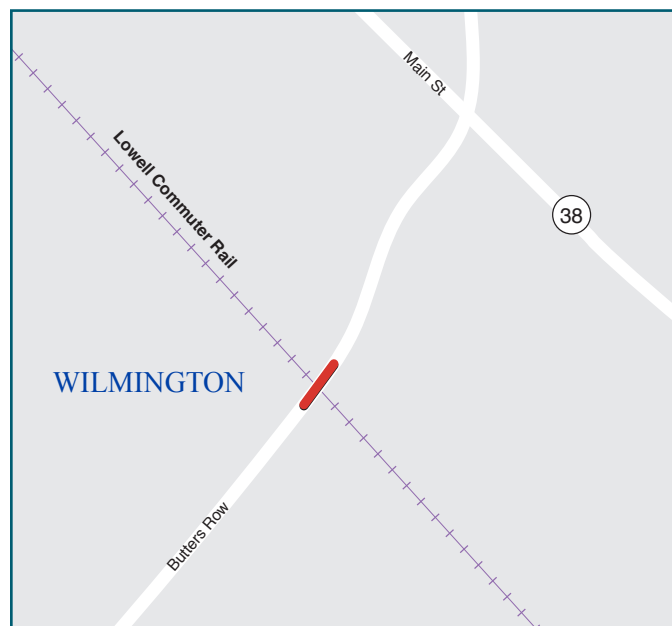
Project Description

This project will replace bridge W-38-029 (2KV), which carries Route 129 (Lowell Street) over Interstate 93.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	\$13,234,099	--	\$13,234,099
Non-Federal Funds	--	--	--	\$3,308,525	--	\$3,308,525
Total Funds	---	---	---	\$16,542,624	---	\$16,542,624

Wilmington: Bridge Replacement, W-38-003, Butters Row over MBTA

Proponent: MassDOT
ID Number: 608929
Project Type: Bridge
Cost: \$5,181,488
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.

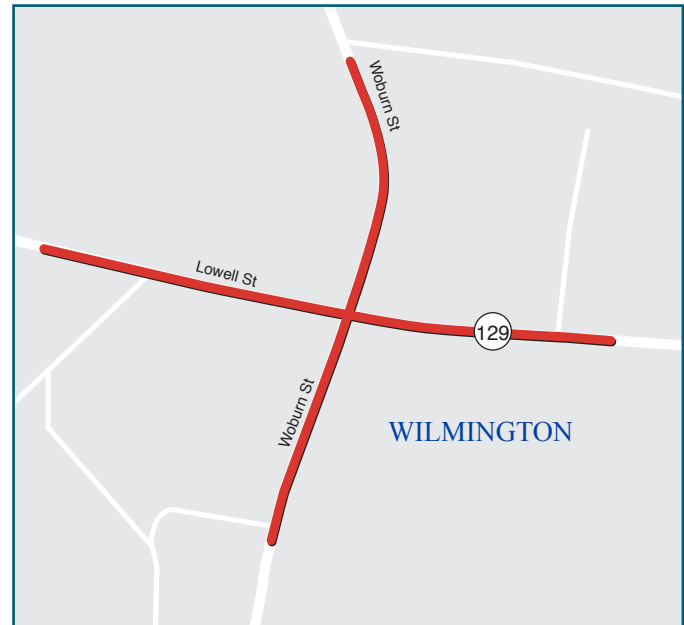
Project Description

This project will replace bridge W-38-003, which carries Butters Row over the MBTA commuter rail tracks.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$4,145,190	—	—	—	\$4,145,190
Non-Federal Funds	—	\$1,036,298	—	—	—	\$1,036,298
Total Funds	---	\$5,181,488	---	---	---	\$5,181,488

Wilmington: Intersection Improvements at Lowell Street (Route 129) and Woburn Street

Proponent: Wilmington
ID Number: 609253
Project Type: Intersection Improvements
Cost: \$4,701,721
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

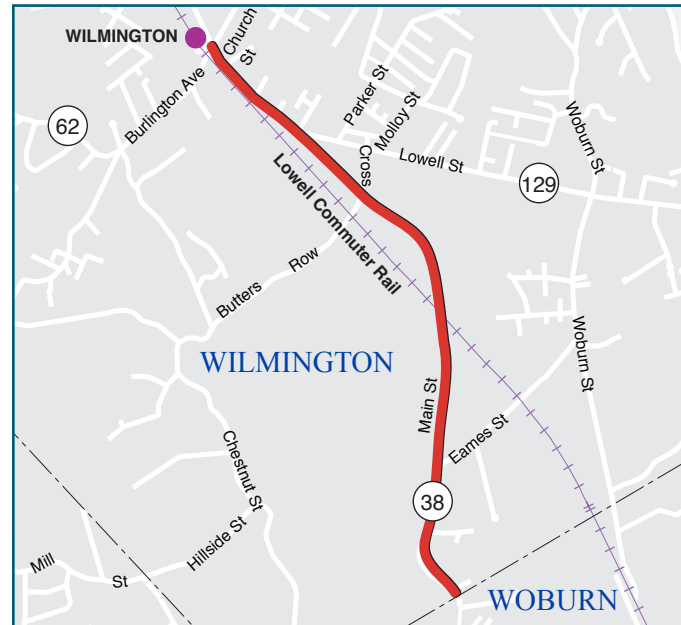
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$3,761,377	—	—	—	\$3,761,377
Non-Federal Funds	—	\$940,344	—	—	—	\$940,344
Total Funds	---	\$4,701,721	---	---	---	\$4,701,721

Wilmington: Reconstruction on Route 38 (Main Street), from Route 62 to the Woburn City Line

Proponent: Wilmington
ID Number: 608051
Project Type: Complete Streets
Cost: \$25,473,225
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

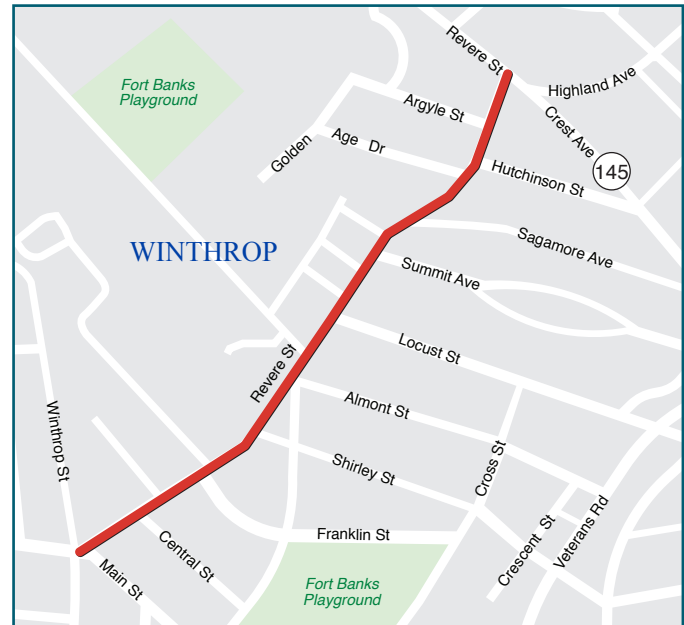
Project Description

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.

Source	(FFY) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	--	\$7,200,000	\$13,178,580	\$20,378,580
Non-Federal Funds	--	--	--	\$1,800,000	\$3,294,645	\$5,094,645
Total Funds	---	---	---	\$9,000,000	\$16,473,225	\$25,473,225

Winthrop: Reconstruction and Related Work along Winthrop Street and Revere Street Corridor

Proponent: Winthrop
ID Number: 607244
Project Type: Complete Streets
Cost: \$5,931,953
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

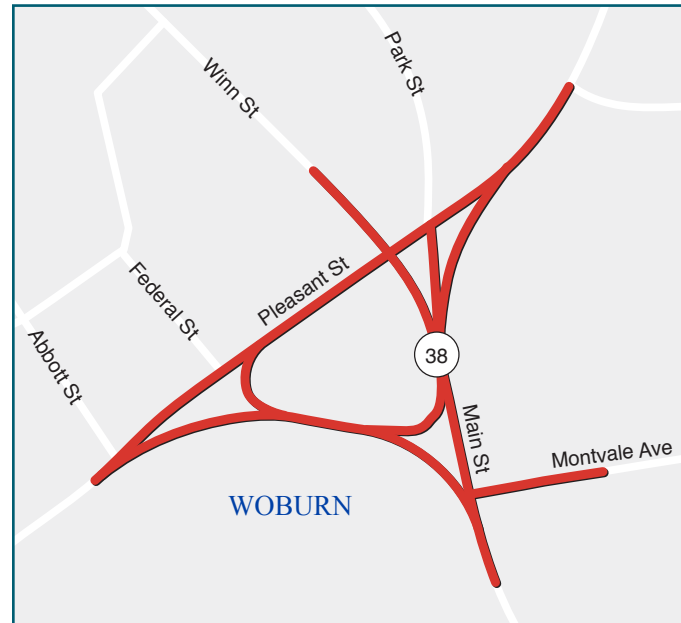
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	\$4,745,562	—	—	—	\$4,745,562
Non-Federal Funds	—	\$1,186,391	—	—	—	\$1,186,391
Total Funds	---	\$5,931,953	---	---	---	\$5,931,953

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: \$16,105,600
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

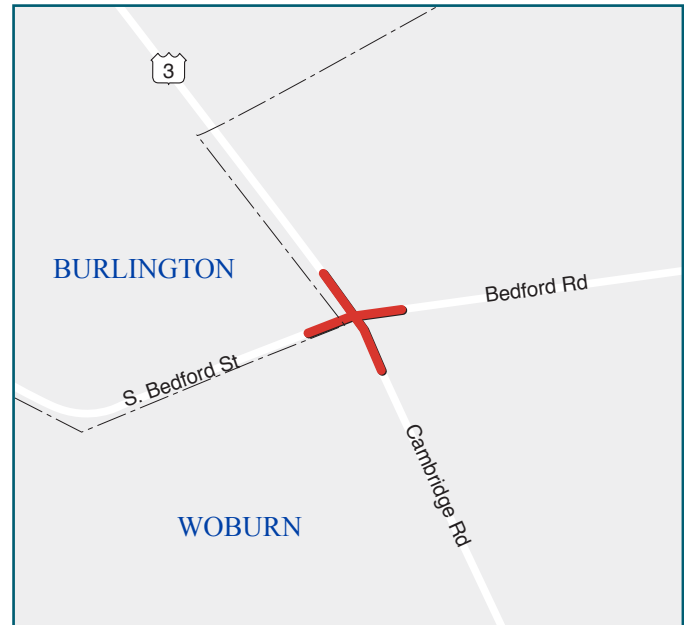
Project Description

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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$12,884,480	—	\$12,884,480
Non-Federal Funds	—	—	—	\$3,221,120	—	\$3,221,120
Total Funds	---	---	---	\$16,105,600	---	\$16,105,600

Woburn and Burlington: Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street

Proponent: Woburn
ID Number: 608067
Project Type: Intersection Improvements
Cost: \$1,612,800
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) 2022	2023	2024	2025	2026	Total
Federal Funds	—	—	—	\$1,290,240	—	\$1,290,240
Non-Federal Funds	—	—	—	\$322,560	—	\$322,560
Total Funds	---	---	---	\$1,612,800	---	\$1,612,800

Wrentham: Construction of Interstate 495/Route 1A Ramps

Proponent: MassDOT
ID Number: 603739
Project Type: Major Infrastructure
Cost: \$16,187,418
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) 2022	2023	2024	2025	2026	Total
Federal Funds	--	--	\$12,949,934	--	--	\$12,949,934
Non-Federal Funds	--	--	\$3,237,484	--	--	\$3,237,484
Total Funds	---	---	\$16,187,418	---	---	\$16,187,418



Chapter 4

Performance Analysis

OVERVIEW

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. PBPP principles are credited with improving project and program delivery and providing greater transparency and accountability to the public, among other benefits.

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; describes the MPO’s current set of performance measures and targets; and explains how the MPO anticipates the projects included in this Transportation Improvement Program (TIP) will help 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 Fixing America’s Surface Transportation (FAST) Act. 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 Area(s)
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 MPO.

MAP-21 and the FAST Act's federal PBPP mandate 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 highway 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	Total number of reportable fatalities	Safety
		Fatality rate per total VRM by mode	
Safety	Injuries	Total number of reportable injuries	Safety
		Injury rate per total VRM by mode	
Safety	Safety Events	Total number of reportable safety events	Safety
		Safety event rate per total VRM by mode	
Safety	System Reliability	Mean distance between major mechanical failures by mode	Safety
Infrastructure Condition	Equipment	Percent of vehicles that have met or exceeded their ULB	System Preservation and Modernization
Infrastructure Condition	Rolling Stock	Percent of revenue vehicles within a particular asset class that have met or exceeded their ULB	System Preservation and Modernization
Infrastructure Condition	Infrastructure	Percent of track segments with performance restrictions	System Preservation and Modernization
Infrastructure Condition	Facilities	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

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 Code of Federal Regulations [CFR] Part 673), and the Transit Asset Management Rule (49 CFR Part 625).

Table 4-3: Federally Required Roadway Performance Measures

National Goal Area	Highway 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 (CMAQ)	<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

* As of the Federal Highway Administration's 2019 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 comply with this performance measure requirement. 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 and the FAST Act, 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, MAP-21 and the FAST Act 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 FFYs 2022–26 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 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.

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 establish 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 Section 4.3 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 performance 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 Section 4.3. 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 identified in the MPO's LRTP Needs Assessment. When developing the FFYs 2022-26 TIP, the MPO considered a series of illustrative scenarios that described how various combinations of projects might affect transportation equity, safety, and greenhouse-gas-related performance measures. In future years, the MPO may make reviews of scenarios like these a more formal part of its project selection process. This type of scenario exercise helps to strengthen the links between the MPO's performance targets and the potential outcomes of the MPOs investment decisions.

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 they include 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 the actual outcomes of TIP projects. These evaluation methods allow the MPO to make necessary trade-offs or adjustments in the future.

In addition to reporting measures, targets, and performance progress in its LRTP, the Boston Region MPO describes performance on 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 were outlined in the 2019 Performance-Based Planning and Programming Agreement between MassDOT, Massachusetts MPOs, 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 Urbanized Area level, coordination responsibilities are documented in the 2018 Boston Urbanized Area Memorandum of Understanding.¹

FFYS 2022–26 PERFORMANCE ANALYSIS

This section discusses investments in the federal fiscal years (FFYs) 2022–26 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.

¹ Urbanized Areas (UZAs) are defined by the US Census Bureau to represent the urban cores of metropolitan areas. The Boston Urbanized Area includes the 97 municipalities in the Boston Region MPO and includes portions of neighboring MPOs in eastern Massachusetts, New Hampshire, and Rhode Island.

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 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 includes 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.

2 Massachusetts Department of Transportation, *Massachusetts Strategic Highway Safety Plan (2018)*, pg. 1. https://www.mass.gov/files/documents/2019/01/18/dot_SHSP_2018.pdf

3 The Commonwealth of Massachusetts' 2019 *Bicycle Transportation Plan* is available at mass.gov/service-details/bicycle-plan, and its 2019 *Pedestrian Transportation Plan* is available at mass.gov/service-details/pedestrian-plan.

4 MBTA, CATA, and MWRTA PTASPs are available on the April 8, 2021, page of the MPO meeting calendar. See bostonmpo.org/calendar/day/2021-04-08.

5 MBTA, *MBTA Transit Safety Plan (June 15, 2020)*, pg. 14

Roadway Safety Performance Measures and Targets

The Commonwealth of Massachusetts and the Boston Region MPO track traffic incidents, 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.

The Commonwealth set its most current set of roadway safety performance targets to reflect a CY 2017–21 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 CY 2018 and 2019 values for these measures and their component metrics
- Changes in travel behavior and traffic volumes in response to the COVID-19 pandemic, which were considered in VMT projections for CYs 2020 and 2021
- 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 manner⁶
- A more comprehensive accounting of nonmotorized fatalities and serious injuries, which now includes fatalities and serious injuries affecting people who skate, use wheelchairs and other mobility devices, bicycle, and walk
- Continued implementation of education and enforcement programs and transportation construction projects designed to improve safety

⁶ As of April 15, 2019, states are required to define serious injuries using the definition of "Suspected Serious Injury (A)," as detailed in the Model Minimum Uniform Crash Criteria 4th Edition. The Massachusetts Department of Transportation implemented this change in its statewide crash data system as of January 1, 2019.

- Current or proposed policies and legislation included in the Commonwealth’s 2018 SHSP, such as a primary seat belt law and a law requiring hands-free only use of electronic devices while driving
- Planned implementation of safety improvement strategies, including those pertaining to engineering, enforcement, education, awareness, data collection, and emergency response

Table 4-4 shows the Commonwealth’s CY 2021 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 CY 2021 Safety Performance Targets

Performance Measure	CY 2021 Target (2017–21 Average)*	MA Long-Term Target
Number of Fatalities	339.00	0.00
Fatality Rate (per 100M VMT)	0.55	0.00
Number of Serious Injuries	2,580.00	0.00
Serious Injury Rate (per 100M VMT)	4.23	0.00
Number of Nonmotorized Fatalities and Serious Injuries	506.00	0.00

* This target value is expressed as a five-year rolling annual average.

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 2021 targets for Massachusetts for each of the roadway safety performance measures. These figures show information that was available in spring and summer 2020, when the Commonwealth was setting CY 2021 targets. In February 2021, the Boston Region MPO reviewed and voted to support the Commonwealth’s CY 2021 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, driver behavior laws, and other factors, 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.

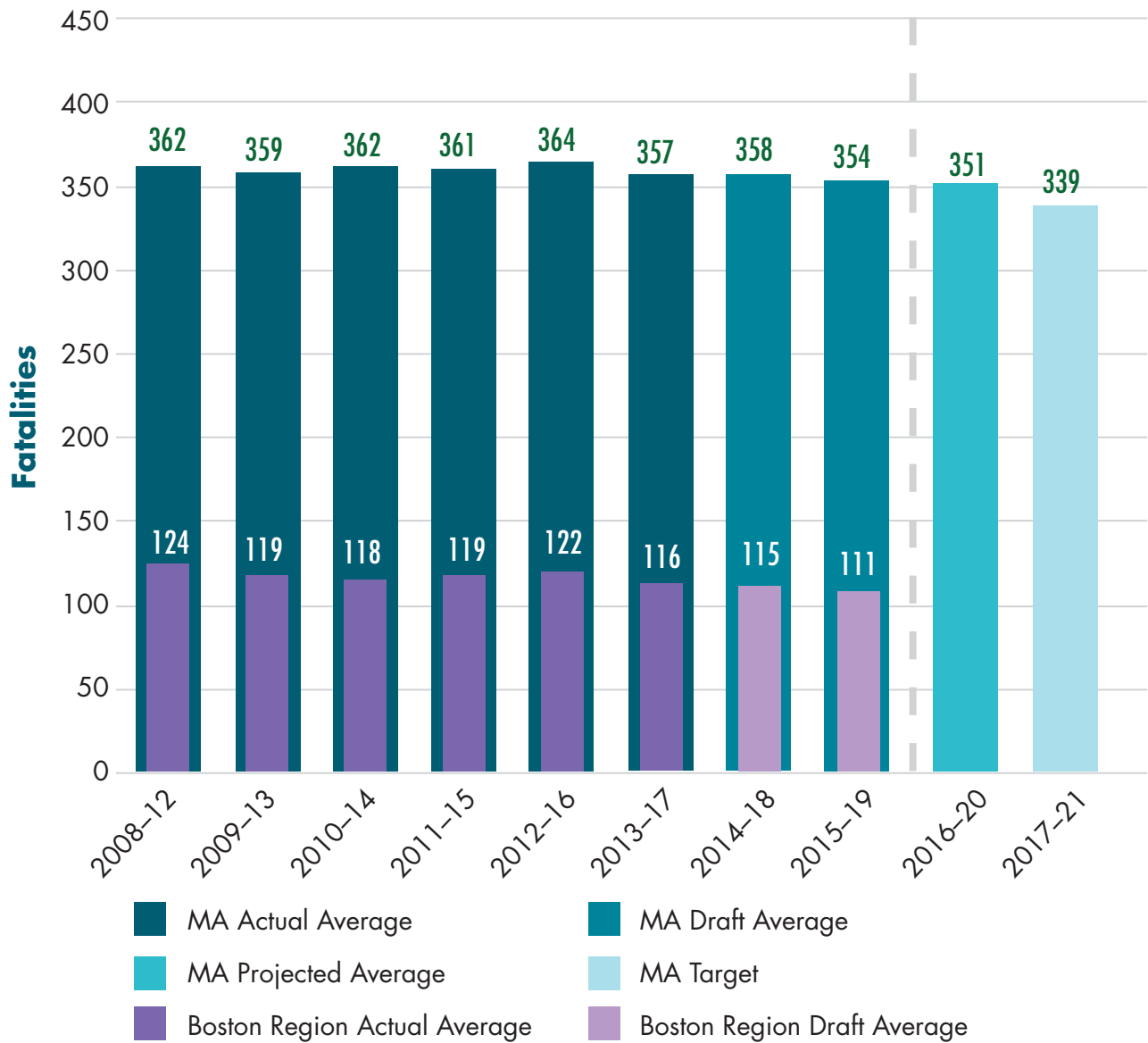
Figure 4-1 shows data, projections, and the CY 2021 target for the number of fatalities, while Figure 4-2 shows data and targets pertaining to the fatality rate per 100 million

VMT. As shown in the table, five-year rolling averages for the fatality-oriented measures have gradually decreased over time at both the Massachusetts level and the Boston region level. The Commonwealth sought to (1) create targets for the number of fatalities and the fatality rate that were lower than those set in CY 2020, and (2) account for the changes in VMT prompted by the COVID-19 pandemic. Massachusetts' VMT decreased in CY 2020 compared to prior years and is likely to remain lower than pre-pandemic levels in

CY 2021. For more details about the Commonwealth's target-setting approach, see the MPO's February 4, 2021, memo titled "Federally Required Calendar Year 2021 Safety Targets."⁷

⁷ Boston Region MPO staff, "Federally Required Calendar Year 2021 Safety Targets" (February 4, 2021). <https://www.ctps.org/data/pdf/programs/performance/CY2021-Federally-Required-Highway-Safety-Targets.pdf>.

Figure 4-1: Fatalities from Motor Vehicle Crashes

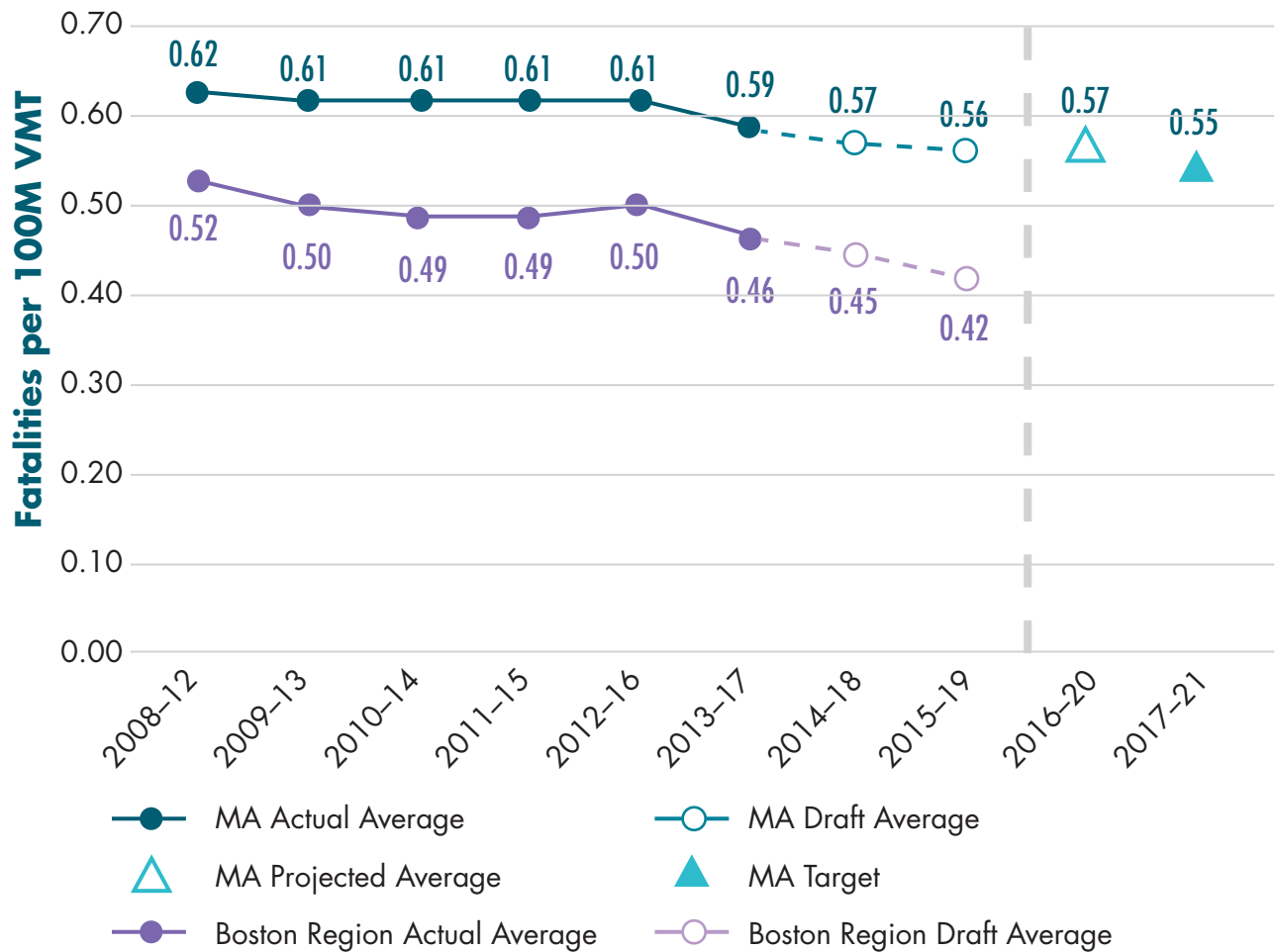


Notes: Values reflect five-year rolling annual averages and have been rounded to the nearest integer. Draft 2018 and 2019 data in these averages are from July 2020.

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.

Figure 4-2: Fatality Rate per 100 Million VMT



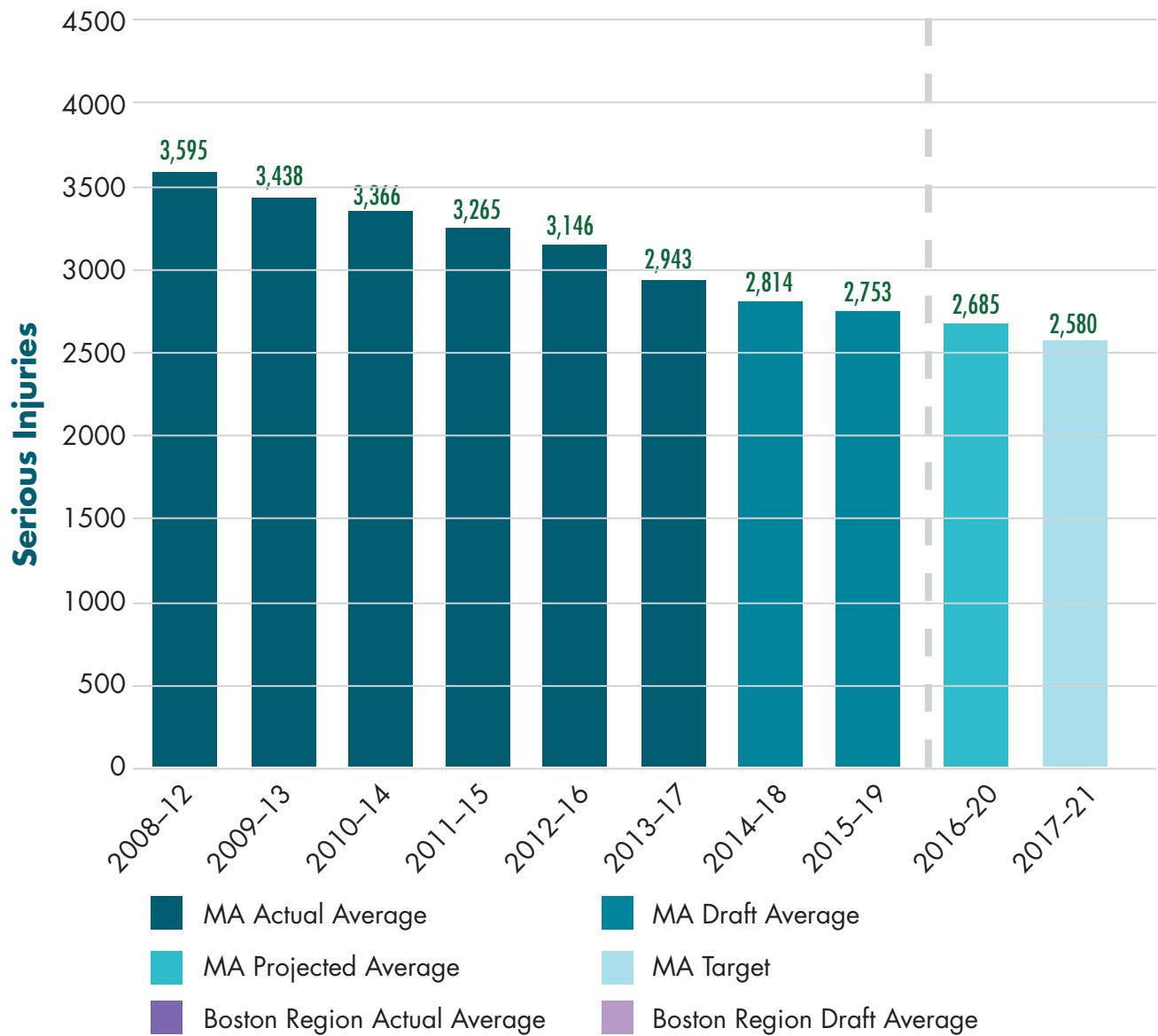
Notes: Values reflect five-year rolling annual averages and have been rounded to the hundredths decimal place. Draft 2018 and 2019 data in these averages are from July 2020. MassDOT plans to revisit 2018 VMT data for future target setting activities.

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.

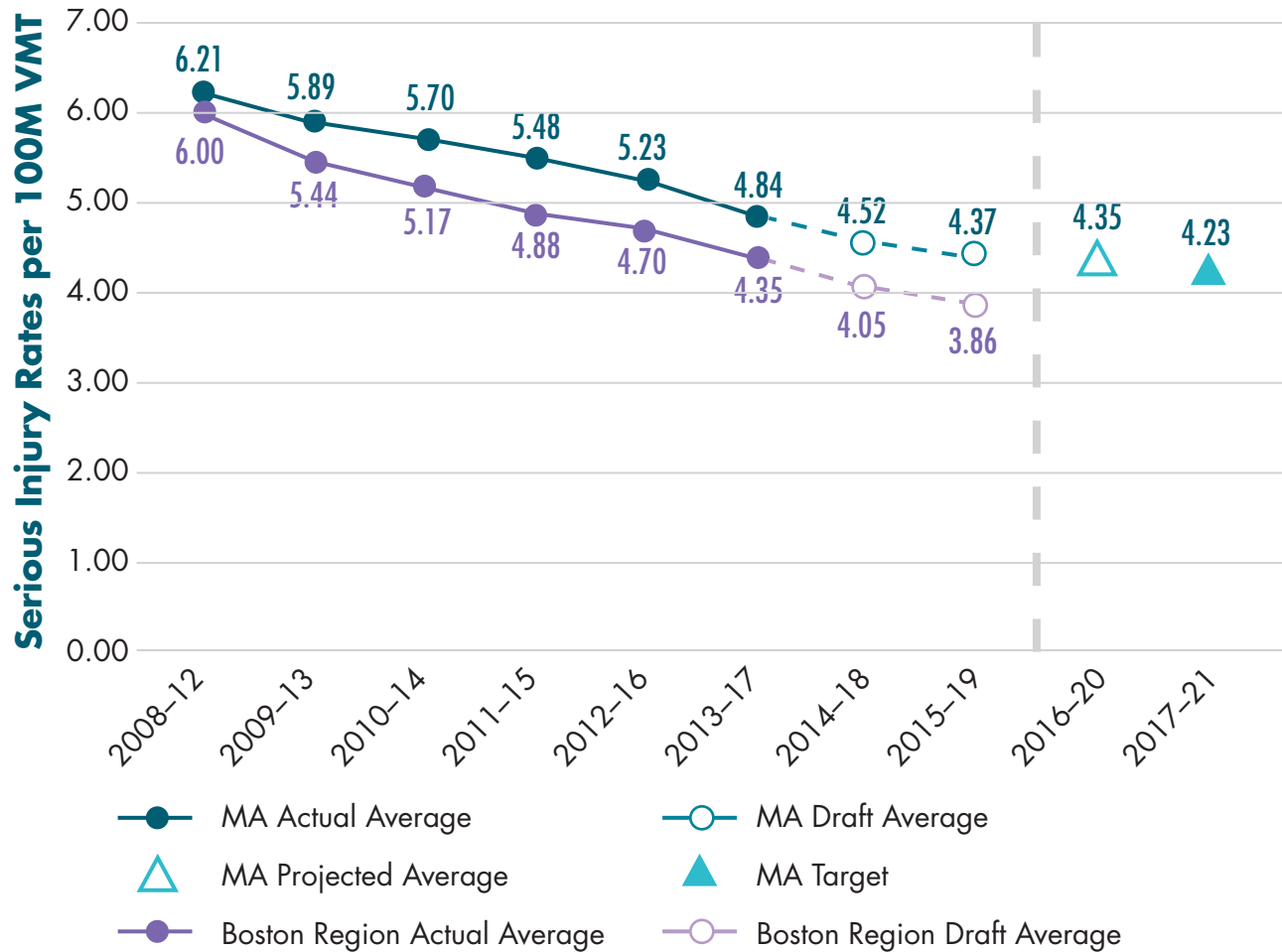
Figure 4-3 shows data, projections, and the CY 2021 target for the number of serious injuries, while Figure 4-4 shows data and targets pertaining to the serious injury rate per 100 million VMT. For Massachusetts as a whole and the Boston region in particular, the average number of serious injuries and the average serious injury rate has decreased over time. The Commonwealth followed a process like the one used to set targets for the number of fatalities and the fatality rate per 100 million VMT, which involved setting lower targets compared to prior years while accounting for travel behavior changes in response to the COVID-19 pandemic.

Figure 4-3: Number of Serious Injuries



Notes: Values reflect five-year rolling annual averages and have been rounded to the nearest integer. Draft 2018 and 2019 data in these averages are from July 2020.
 MA = Massachusetts. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.
 Sources: Massachusetts Department of Transportation and Boston Region MPO staff.

Figure 4-4: Serious Injury Rate per 100 Million VMT



Note: Values reflect five-year rolling annual averages and have been rounded to the hundredths decimal place. Draft 2018 and 2019 data in these averages are from July 2020. MassDOT plans to revisit 2018 VMT data for future target-setting activities.

MA = Massachusetts. MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization. VMT = vehicle-miles traveled.

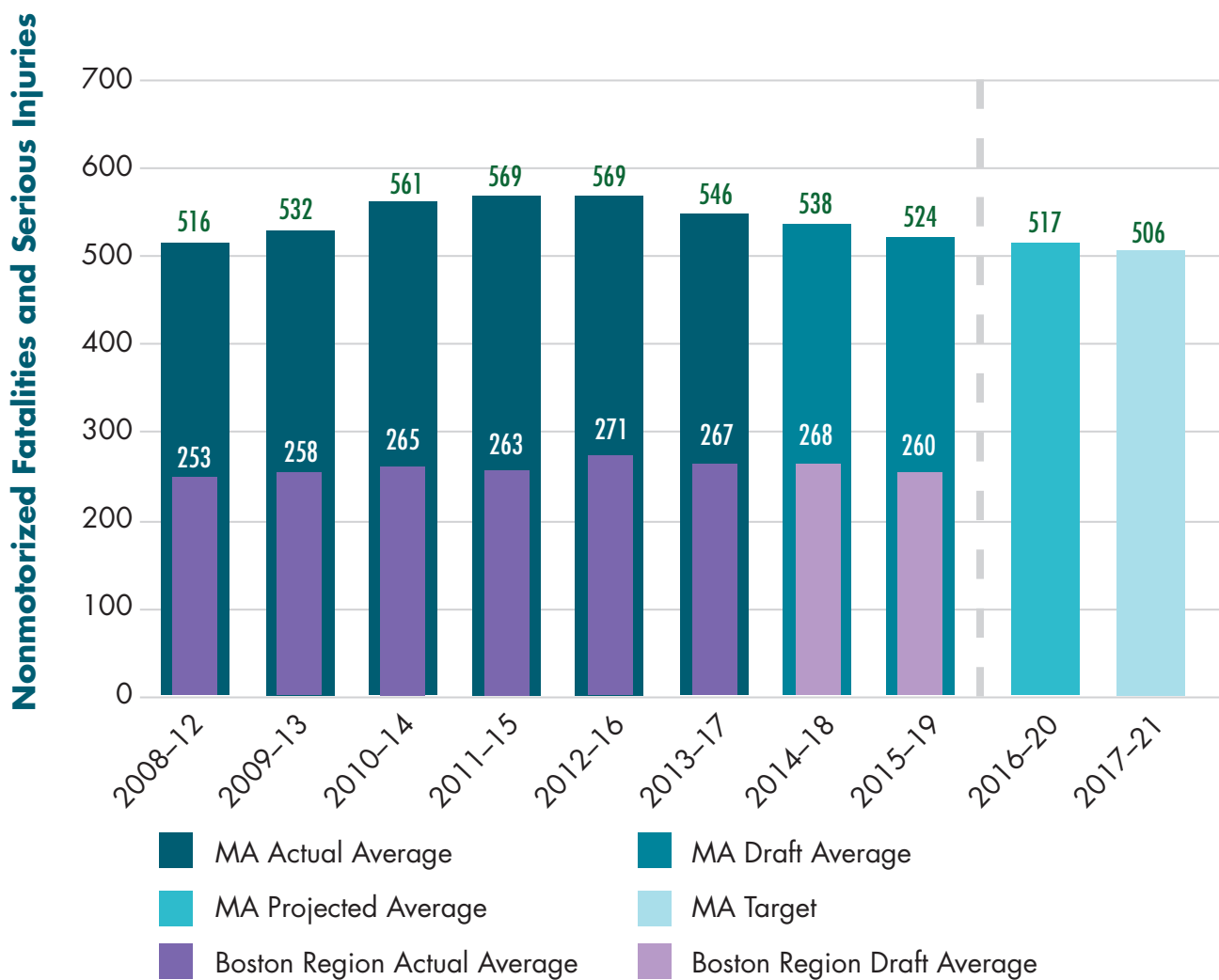
Sources: Massachusetts Department of Transportation and Boston Region MPO staff.

Figure 4-5 shows data, projections, and the CY 2021 target for the number of nonmotorized fatalities and serious injuries. As shown in the figure, the average number of nonmotorized fatalities and serious injuries in the Commonwealth had increased in the years leading up to 2016 and has since declined. For CY 2021, the Commonwealth established a target by assuming modest decreases in nonmotorized fatalities and serious injuries from CY 2019 to 2021. While the resulting target value for CY 2021 (the 2017–21 rolling annual average) is not lower than the Commonwealth’s CY 2020 target for this measure (505.4), it is lower than the draft 2015–19 average and the projected 2016–20 average. As previously mentioned, counts of nonmotorized fatalities and serious injuries now reflect more comprehensive information related to people who skate, use wheelchairs and other mobility devices, bike, or walk, which has affected data used to calculate targets.

Figure 4-5 also 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’s proportion of Massachusetts’ nonmotorized fatalities and serious injuries is larger than the region’s proportion of Massachusetts’ total fatalities or total serious injuries. This safety performance area in particular should be addressed through coordinated planning, investment, and strategy implementation between the 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. Draft 2018 and 2019 data in these averages are from July 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.

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.⁸

All of 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 Highway Safety Improvement Program (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.⁹ 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.

⁸ Commonwealth of Massachusetts, “Highway Safety Improvement Program,” accessed April 16, 2021. <https://www.mass.gov/service-details/highway-safety-improvement-program>.

⁹ For more information, see MassDOT’s 2017 Top Crash Location Report (September 2020). <https://www.mass.gov/doc/2017-top-crash-locations-report/download>.

Table 4-5 shows values for MPO staff-identified metrics that relate to how FFYs 2022–26 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. Table 4-5 shows that many of these projects are located in areas that overlap with HSIP clusters. 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	12 projects
All-mode HSIP cluster locations addressed by Regional Target projects ¹	18 locations
Regional Target projects that address HSIP Pedestrian clusters ²	5 projects
HSIP pedestrian cluster locations addressed by Regional Target projects ²	9 locations
Regional Target projects that address HSIP bicycle clusters ²	2 projects
HSIP bicycle cluster locations addressed by Regional Target projects ²	2 locations
Project areas where fatal crashes have occurred ³	4 areas
Project areas where injury crashes have occurred ³	32 areas
Project areas where crashes involving pedestrians have occurred ³	18 areas
Project areas where crashes involving bicyclists have occurred ³	12 areas

Note: The group of projects reflected in this table does not include the Green Line Extension, Community Connections investments, or Transit Modernization investments.

1 All-mode HSIP clusters are based on crash data from 2015 to 2017.

2 HSIP bicycle clusters and HSIP pedestrian clusters are based on data from 2008 to 2017.

3 Analyses of crashes in locations with projects funded by Regional Targets are based on crash data from 2015 to 2017.

Sources: Massachusetts Crash Data System, Massachusetts Department of Transportation, and the Boston Region MPO.

The projects in the FFYs 2022–26 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 are geared toward maintaining and upgrading infrastructure, which will help make travel safer on the region’s roadways. MassDOT’s Intersection Improvements, Roadway Improvements, Roadway Reconstruction, and Safety Improvements programs most directly

address safety considerations, although its Bridge and Pavement Improvement programs may also support 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 4-2, include the following¹⁰:

- 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 that transit agencies use for the rate measures, and (3) the methodologies for picking a target value. 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 adopted its initial set of transit safety performance targets on April 8, 2021. This set includes the MBTA's, MWRTA's, and CATA's safety targets and presents each agency's targets separately, as they reflect each agency's understanding of the factors that will affect safety outcomes in their service areas. These factors include the characteristics of their local operating environments and contexts and their planned investment, policies, and safety-management activities. This first set of targets will provide a baseline for future coordination on improving transit safety outcomes in the region.

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). https://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 2017–19 averages, the MBTA runs approximately 23,391,000 VRM of service on its heavy rail system; 5,817,000 VRM on its light rail system; 23,692,000 VRM on its bus network; and 16,379,000 VRM for The RIDE. Its 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 2017 to 2019.

Table 4-6: Past Safety Performance Data for MBTA Transit Services (CYs 2017–19 Averages)

MBTA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability Value
Heavy Rail	0.33	0.01	232.67	9.95	24.67	1.06	49,732.00
Light Rail	0.33	0.06	105.67	18.16	35.67	6.13	7,660.00
Bus	1.00	0.04	386.33	16.31	149.33	6.32	19,451.00
The RIDE	0.33	0.02	40.00	2.43	38.67	2.34	66,134.00

Notes: Fatality, injury, and safety event rates are expressed per one million VRM. Values have been rounded to the nearest hundredth. The system reliability measure is expressed as mean VRM traveled per major mechanical failure. This table reflects data available at the time the MBTA developed its targets.

CY = calendar year. MBTA = Massachusetts Bay Transportation Authority. VRM = vehicle-revenue miles.

Source: MBTA and the Boston Region MPO staff.

The MBTA established its initial set of performance targets for CY 2020 and chose to maintain these targets for CY 2021. These targets are shown in Table 4-7. The MBTA targets for rate measures are expressed per one million VRM. 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.¹¹ 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.¹²

¹¹ MBTA Transit Safety Plan, pg. 34.

¹² MBTA Transit Safety Plan, pg. 34.

- **Injuries and Injury Rates:** The MBTA developed its targets for these two injury measures by assuming a five-percent decrease in the injury rate from the CYs 2017–19 average for each mode.
- **Safety Events and Safety Event Rates:** The MBTA established targets for these two measures by assuming a five-percent decrease in the safety event rate from the CYs 2017–19 average. The MBTA uses both proactive and reactive safety risk management strategies to reduce the rate of safety events on its system.¹³
- **System Reliability:** As previously mentioned, transit system reliability is measured by the mean number of VRM traveled between major mechanical failures. For system reliability for heavy rail, light rail, and The RIDE, the MBTA aimed to improve upon 2019 performance for each mode and reach values closer to the CYs 2017–19 averages. For system reliability for the bus mode, the MBTA set a target value that the agency felt would be attainable based on expected changes to the fleet and resulting changes to established maintenance practices. Overall, the MBTA plans to introduce new vehicles into its fleets on multiple modes over the next few years. As these new vehicles are brought into revenue service (once initial safety conditions are met), the MBTA will continue to monitor them. 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 2021.¹⁴

Table 4-7: MBTA CY 2021 Safety Performance Targets

MBTA Mode	Fatalities Target	Fatality Rate Target	Injuries Target	Injury Rate Target	Safety Events Target	Safety Event Rate Target	System Reliability Target
Heavy Rail	0.00	0.00	221.00	9.45	24.00	1.00	47,000.00
Light Rail	0.00	0.00	100.00	17.25	34.00	5.83	7,000.00
Bus	0.00	0.00	367.00	15.50	142.00	6.00	18,000.00
The RIDE	0.00	0.00	36.00	2.30	37.00	2.22	66,000.00

Note: Fatality, injury, and safety event rates are expressed per one million VRM. Values have been rounded to the nearest hundredth. The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

CY = calendar year. MBTA = Massachusetts Bay Transportation Authority. VRM = vehicle-revenue miles.

Source: MBTA and the Boston Region MPO staff.

¹³ MBTA Transit Safety Plan, pg. 36.

¹⁴ MBTA Transit Safety Plan, pg. 36.

CATA Safety Targets

CATA monitors performance and sets federally required targets for its fixed-route bus service and its demand-response service. According to averages calculated using CYs 2016-19 data, CATA's demand-response system runs about 127,000 VRM annually, and its fixed-route bus system runs about 212,000 VRM annually. CATA has established targets for state fiscal year (SFY) 2021 (July 2020 to June 2021), and it expresses its rate targets per one million vehicle miles traveled.

Table 4-8 shows past averages for the federally required transit safety measures for CATA's fixed-route and demand-response services. While this historic data is shown in calendar years, as opposed to state fiscal years, this table does provide details about expected fatalities, injuries, safety events and expected system reliability within a 12-month period. The table provides CYs 2016–19 averages for the fatality, injury, and safety event measures, and CYs 2016–18 averages for the system reliability measure.

Table 4-8: Past Safety Performance Data for CATA Transit Services

CATA Mode	2016–19 Average Fatalities	2016–19 Average Fatality Rate	2016–19 Average Injuries	2016–19 Average Injury Rate	2016–19 Average Safety Events	2016–19 Average Safety Event Rate	2016–19 Average System Reliability Value*
Fixed-Route Bus	0.00	0.0	1.00	4.72	0.75	3.54	57,865.39
Demand Response	0.00	0.0	0.25	1.98	0.25	1.98	126,913.25

Notes: Fatality, injury, and safety event rates are expressed per one million VRM. Values have been rounded to the nearest hundredth. The system reliability measure is expressed as mean VRM traveled per major mechanical failure. These values reflect data that have been updated since the development of CATA's ASP and targets. For previous values, see CATA's ASP.

* CATA used 2016–18 averages a basis for its system reliability targets, as 2019 data on major mechanical failures was not available at the time the draft ASP and targets were developed. The 2016–18 average is 68,068.00 for fixed-route bus and 125,340.00 for demand-response service.

ASP = agency safety plan. CATA = Cape Ann Transportation Authority. CY = calendar year VRM = vehicle-revenue miles.

Sources: CATA, Cambridge Systematics, and the Boston Region MPO staff.

In general, CATA used past data and averages as the basis for determining its transit safety performance targets. When CATA set targets, it reviewed data for years when injuries or safety events did take place and reflected those values when setting injury and safety event rate targets for SFY 2021. Table 4-9 provides a summary of CATA's SFY 2021 performance targets.

Table 4-9: CATA SFY 2021 Safety Performance Targets

CATA Mode	Fatalities Target	Fatality Rate Target	Injuries Target	Injury Rate Target	Safety Events Target	Safety Event Rate Target	System Reliability Target
Fixed-Route Bus	0.0	0.0	1.0	4.8	1.0	4.8	70,000.0
Demand Response	0.0	0.0	1.0	8.2	1.0	8.2	125,000.0

Note: Fatality, injury, and safety event rates are expressed per one million VRM. Values have been rounded to the nearest tenth. The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

CATA = Cape Ann Transportation Authority. SFY = state fiscal year. 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, and the agency has set targets for SFY 2021. However, MWRTA expresses its fatality, injury, and safety event rates per 100,000 vehicle-revenue miles to align with data that it reports to MassDOT. MWRTA runs, on average, approximately 1,201,000 VRM of fixed-route service per calendar year and approximately 1,058,000 VRM of demand-response service per calendar year, based on NTD safety data for CYs 2018–19.

Table 4-10 shows agency data for SFYs 2019 and 2020 that MWRTA considered when developing its SFY 2021 performance targets. In addition to information about fatalities and injuries, Table 4-10 provides information about preventable accidents, which MWRTA and other RTAs report annually to MassDOT. Preventable accidents are defined as “those accidents in which the transit driver is typically deemed responsible or partly responsible for the occurrence of the accident.”¹⁵

Table 4-10: MWRTA Past Safety Performance Data (SFYs 2019–20)

MWRTA Mode	SFY 2019 Fatalities	SFY 2019 Injuries	SFY 2019 Preventable Accidents	SFY 2020 Fatalities	SFY 2020 Injuries	SFY 2020 Preventable Accidents
Fixed-Route Bus	0	2	16	0	0	10
Demand Response	0	0	18	0	0	10

MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year.

Source: MWRTA and Boston Region MPO staff.

¹⁵ Massachusetts Department of Transportation, *Tracker 2020*, accessed March 29, 2021. <https://www.massdottracker.com/wp/?p=4488>.

Table 4-11 shows past averages for the federally required transit safety measures for MWRTA’s fixed-route and demand-response services in calendar year format, which is similar to the data presented for the MBTA and CATA. MPO staff collected this information from the NTD’s Safety and Security Time Series data files and the NTD Annual Vehicle Database files for CYs 2018 and 2019, which overlap the period covered by the data in Table 4-10.¹⁶ As with the data shown for CATA, this NTD data is shown in calendar years, as opposed to state fiscal years, but it does provide details about expected fatalities, injuries, safety events and expected system reliability within a 12-month period. As previously mentioned, MWRTA’s rate values are expressed in 100,000 VRM.

Table 4-11: MWRTA Past Safety Performance Data for Transit Services (CYs 2018–19 Averages)

MWRTA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability Value*
Fixed-Route Bus	0.00	0.00	0.50	0.04	1.50	0.12	65,050.15
Demand Response	0.00	0.00	3.00	0.28	3.50	0.34	82,148.70

Notes: Fatality, injury, and safety event rates are expressed per 100,000 VRM. Values have been rounded to the nearest hundredth. The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

CY = calendar year. MWRTA = MetroWest Regional Transit Authority. NTD = National Transit Database. VRM = vehicle-revenue miles.

Source: NTD Safety and Security Time Series Data files (as of November 2020, published March 4, 2021), NTD 2018 and 2019 Annual Vehicle Database Files, and the Boston Region MPO staff.

Table 4-12 provides a summary of MWRTA’s SFY 2021 performance targets. MWRTA sought to set attainable values for these federally required performance measures. These target values maintain zero fatalities on MWRTA’s fixed-route bus and demand-response systems and are somewhat higher than recent actual values for other performance measures.

¹⁶ The NTD Safety and Security Time series data shown in these tables is current as of November 2020 and were published on March 4, 2021. For more information, see NTD, “Safety and Security Time Series Data” at [transit.dot.gov/ntd/data-product/safety-security-time-series-data](https://www.transit.dot.gov/ntd/data-product/safety-security-time-series-data) and NTD, “Safety and Security Major-Only Time Series Data” at [transit.dot.gov/ntd/data-product/safety-security-major-only-time-series-data](https://www.transit.dot.gov/ntd/data-product/safety-security-major-only-time-series-data). For the 2018 and 2019 Annual Vehicle Maintenance files, see <https://www.transit.dot.gov/ntd/data-product/2018-annual-database-vehicle-maintenance> and <https://www.transit.dot.gov/ntd/data-product/2019-annual-database-vehicle-maintenance>.

Table 4-12: MWRTA SFY 2021 Safety Performance Targets

MWRTA Mode	Fatalities Target	Fatality Rate Target	Injuries Target	Injury Rate Target	Safety Events Target	Safety Event Rate Target	System Reliability Target
Fixed- Route Bus	0.00	0.00	12.00	1.00	24.00	2.00	75,000.00
Demand Response	0.00	0.00	8.00	1.00	16.00	2.00	75,000.00

Note: Fatality, injury, and safety event rates are expressed per 100,000 VRM. Values have been rounded to the nearest tenth. The system reliability measure is expressed as mean VRM traveled per major mechanical failure.

MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year. VRM = vehicle-revenue miles.

Source: MWRTA and the Boston Region MPO staff.

Near-Term Investments Supporting Transit Safety Performance

During FFY 2021, 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 improve a number of its facilities to support safety performance, including Ruggles Station, the parking garages at Braintree and Quincy Adams Stations, Attleboro Station (in coordination with the Greater Attleboro Taunton Regional Transit Authority), the MBTA operations center on High Street in Boston, and the Charlestown bus facility (by rehabilitating the sea wall). It also plans to improve 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 MBTA investments include those in its Bridge and Tunnel Program, such as replacement of several bridges, including the Gloucester Drawbridge, and inspection and rehabilitation of MBTA tunnels.

Meanwhile, CATA will use its federal and state dollars to fund preventative maintenance activities and to purchase a new van and capital maintenance items. Similarly, 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 supports 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.¹⁷

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 in that category using 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 projects may address documented existing or potential safety hazards, safety regulatory mandates, or corrective actions.

The FFYs 2022–26 TIP includes the MBTA’s, MWRTA’s, and CATA’s planned infrastructure 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 measures; however, they are expected to help improve performance on these measures over time. The MBTA plans to improve a number of its facilities to support safety performance, including Forest Hills Station, the Lynn commuter rail station and parking garage, and a number of Green line surface stations. 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 will support projects such as the replacement of the Gloucester Drawbridge; and the replacement of several bridges that carry MBTA commuter rail lines. This program also supports inspection and rehabilitation of tunnels systemwide.

CATA and MWRTA also plan to make investments that will support safety. CATA will use its federal and state dollars to fund preventative maintenance activities and purchase new revenue vehicles to replace those that have reached the end of their useful life. Similarly, MWRTA will purchase replacement vehicles and invest in improvements to its Blandin terminal facility and the operations center at the commuter rail station in Framingham. Transit agency investments are also discussed in the section of this chapter, titled “System Preservation and Modernization Performance,” and additional details about these investments are available in Chapter 3.

The Boston Region MPO’s FFYs 2022–26 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 in funding for its Transit Modernization investment program starting in FFY 2025. While the MPO continues to

¹⁷ Federal Transit Administration, “Nexus of Transit Asset Management and Safety Management Systems,” accessed on April 16, 2021. <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>.

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.

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;
- continue to coordinate with transit agencies to develop targets for federally required transit safety performance measures;
- 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; and
- identify other safety performance measures, which are not federally required, for the MPO to track.

System Preservation and Modernization Performance

Relevant Goals, Policies, and Plans

One 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.¹⁸ The TAMP is a federally required risk-based asset

¹⁸ See MassDOT's *Transportation Asset Management Plan* (September 2019). <https://www.mass.gov/doc/2019-transportation-asset-management-plan/download>.

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.¹⁹

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. The Massachusetts TAMP reports that as of 2019, Massachusetts had 2,263 bridges on the NHS, which have a combined deck area of approximately 29,660,000 square feet.²⁰ The Commonwealth reports 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 of the bridge area is located on the NHS."²¹ The overwhelming majority of these NHS bridges, by count, are 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).

Based on 2020 data from the MassDOT Highway Division Bridge Inspection Management System, MPO staff estimate that there are 862 NHS bridges in the Boston region. Most of these bridges are owned by MassDOT (96 percent), and four percent are owned by municipalities, while less than one percent are owned by other entities. The MassDOT or municipally-owned NHS bridges in the Boston region have a combined deck area of approximately 14,123,000 square feet, which accounts for 48 percent of NHS bridge deck area in Massachusetts.

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

¹⁹ The MBTA's, CATA's, and MWRTA's 2018 TAM Plans are available on the March 21, 2019, page of the MPO meeting calendar (<https://www.ctps.org/calendar/day/2019-03-21>).

²⁰ 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.

²¹ Massachusetts Department of Transportation, *Transportation Asset Management Plan* (2019), pg. 8, accessed April 17, 2021. <https://www.mass.gov/doc/2019-transportation-asset-management-plan/download>.

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.²² The lowest rating of the three components determines the overall bridge condition.²³ 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).

Table 4-13 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. As of 2017, Massachusetts had 2,246 NHS bridges, which MassDOT analyzed 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. According to these baseline values, the Boston region has 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 4-13: 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.

MPO = metropolitan planning organization. NHS = National Highway System.

Sources: Massachusetts Department of Transportation and the Boston Region MPO staff.

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 is in poor condition, MassDOT programs this minimum amount.

²² National Bridge Inventory data is used to rate these components on a scale of zero (worst) to nine (best). The FHWA has classified these bridge ratings into good (seven, eight, or nine on the scale), fair (five or six), or poor (four or less).

²³ Culverts are assigned an overall condition rating.

States must set performance targets for these NHS bridge and pavement condition measures at two-year and four-year intervals. Table 4-14 shows the baseline value discussed in Table 4-13, along with an updated value calculated in July 2019, which is included in MassDOT’s 2019 TAMP. The table also shows

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 MassDOT’s anticipated NHS bridge condition based on historic trends, as well as planned bridge investments. As shown in the table, MassDOT expects there will be a small increase in the share of NHS bridge deck area in good condition by the end of CY 2021, while it expects that the share of NHS bridge deck area in poor condition in CY 2021 will be slightly lower than the baseline. Finally, the table shows MassDOT’s long-term targets for NHS bridge condition, which can be viewed as state-of-good-repair targets.²⁴

Table 4-14: 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: Massachusetts Department of Transportation and the Boston Region MPO staff.

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.

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.

²⁴ Massachusetts Department of Transportation, *Transportation Asset Management Plan* (2019), pg. 18, accessed April 17, 2021. <https://www.mass.gov/doc/2019-transportation-asset-management-plan/download>.

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 2018 Massachusetts' Road Inventory Year End Report, 10,492 lane miles (about 15 percent of statewide lane mileage) are part of the NHS.²⁵ This includes 2,253 lane miles on the Interstate System and 7,567 lane miles of non-Interstate NHS roadways. All Interstate roadways in Massachusetts are owned by MassDOT, which also owns 4,756 lane miles (63 percent) of non-Interstate NHS roadways. Of the 2,808 accepted lane miles remaining, 2,572 lane miles (92 percent) are owned by municipalities, while another 236 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, 3,701 lane miles (16 percent all of roadway lane miles) are part of the NHS. Of these, 1,138 lane miles (31 percent) are on the Interstate system, which is owned by MassDOT. Of accepted non-Interstate NHS roadway miles, 1,231 lane miles (48 percent) are owned by MassDOT, 1,103 lane miles (43 percent) are owned by municipalities, and 228 lane miles (nine 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

The Interstate performance measures classify Interstate pavements as in good or poor condition based on the pavements' International Roughness Index (IRI) value and one or more pavement distress metrics (cracking and/or rutting and faulting) depending on the pavement type (asphalt, jointed concrete, or continuous concrete). FHWA sets thresholds for each metric that determine whether the metric value is good, fair, or poor, along with thresholds that determine whether the pavement segment as a whole is considered to be in good or poor condition. Non-Interstate NHS pavements are subject to the same thresholds for IRI values. As of 2020, states are required to collect both IRI data and values for complementary distress metrics for non-Interstate NHS pavements, which will be incorporated into future performance monitoring.

MassDOT tracks the condition of roadways in Massachusetts, including NHS network, through its Pavement Management Program.

²⁵ Massachusetts Department of Transportation, *2018 Massachusetts Roadway Inventory Year End Report* (January 2019), pg. 55-70, accessed April 17, 2021. www.mass.gov/doc/2018-road-inventory-year-end-report/download.

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 not previously been required as part of pavement-monitoring programs.²⁶ 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 4-15 shows MassDOTs performance targets for these measures along with baseline data as of 2017 and updated data as of early 2019.

Table 4-15 : Massachusetts NHS Pavement Condition Targets

Federally Required Pavement Condition Performance Measure	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 has only required states to report four-year targets for pavement condition on the Interstate Highway System. MassDOT has developed both two-year and four-year targets for internal consistency.

² The 2019 values for bridge condition are as of January 1, 2019. These values are published in the 2019 MassDOT Transportation Asset Management Plan.

³ These values reflect the International Roughness Index only. Other distress metrics will be incorporated into monitoring as of 2020, per federal regulations.

MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization. NHS = National Highway System.

Sources: Massachusetts Department of Transportation and the Boston Region MPO staff.

²⁶ 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.

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 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 set of criteria has included, and continues to include, items that 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.²⁷ 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. Information about the MPO's previous criteria, which was used in the evaluations of the Regional Target-funded corridor, intersection, and bicycle and pedestrian projects included in the FFYs 2022–26 TIP, is described in the FFYs 2021–25 TIP document, which is available at bostonmpo.org/tip.

²⁷ 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; protected a facility from sea level rise; strengthened infrastructure against seismic activity; addressed critical transportation infrastructure; protected freight network elements; or implemented 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.

Table 4-16 displays metrics that describe how the MPO’s FFYs 2022–26 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.²⁸ The MPO expects that these FFYs 2022–26 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.

Table 4-16: Regional Target Projects: Roadway System Preservation and Modernization Performance Metrics

Metric	Value
Bridge structures improved	7 structures
NHS bridge structures improved	4 structures
New bridge structures to be constructed	5 structures
Lane miles of substandard pavement improved ^{1,2}	62 lane miles
Lane miles of substandard NHS pavement improved ^{1,2}	42 lane miles
Miles of substandard sidewalk improved	31 miles
Projects that improve emergency response	20 projects
Projects that improve the ability to respond to extreme conditions ²	7 projects

Note: The group of projects reflected in this table does not include the Green Line Extension or Transit Modernization investments. Community Connections projects do not include system preservation and modernization elements.

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 FFYs 2021–25 TIP criteria: 190 or less (good), 191 to 320 (fair or substandard), greater than 320 (poor or substandard).

2 MPO staff estimated values for this metric using the TIP criteria in effect when the FFYs 2021–25 TIP was developed (before October 2020).

MassDOT = Massachusetts Department of Transportation. MPO = metropolitan planning organization. NHS = National Highway System.

Source: Massachusetts Department of Transportation and the Boston Region MPO staff.

²⁸

Unless otherwise specified, performance metrics estimated for these projects are based on the criteria used in development of the FFYs 2021–25 TIP. More information about these criteria is included in Appendix A of the FFYs 2021–25 TIP document, which is available at bostonmpo.org/tip.

Many of MassDOT's FFYs 2022–26 TIP investments address bridge and pavement condition. MassDOT's Bridge programs include 18 projects that will improve or replace 25 bridge structures, 16 of which are NHS bridge structures. MassDOT's Interstate Pavement program will improve pavement on Interstate 93 in Boston, Milton, Quincy, Medford, Winchester, and Stoneham and on Interstate 95 in Burlington and Woburn. Meanwhile, its non-Interstate pavement program includes eight projects that will improve pavements on MassDOT-owned NHS roadways in 16 Boston region municipalities. These projects are expected to help MassDOT make progress toward its NHS bridge and pavement performance targets by addressing condition gaps identified in its TAMP, as well as generally improve the bridge condition in the Boston region. Chapter 3 describes the funding that MassDOT will commit to the Boston-region projects included in these programs. 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 January 2021) 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 2021 TAM performance targets (for July 2020 through June 2021). MPO staff has aggregated some information for asset subgroups.

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.”²⁹ For example, FTA’s default ULB value for a bus is 14 years.³⁰ For its SFY 2021 targets, the MBTA has used FTA default ULBs for all vehicle types except for paratransit autos, minivans and vans, which are measured using MBTA-defined ULBs. The MWRTA uses FTA default ULBs for vans and equipment vehicles (excluding automobiles), and it uses ULBs from MassDOT’s Fully Accessible Vehicle Guide for its cutaway vehicles and revenue and nonrevenue automobiles.³¹ CATA uses useful life criteria as defined in FTA Circular 5010.1E (Award Management Requirements) for ULB values for its vehicles.³²

Table 4-17 describes SFY 2020 baselines and the MPO’s SFY 2021 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.

29 Federal Transit Administration, “Performance Management” (January 8, 2020). www.transit.dot.gov/PerformanceManagement.

30 Federal Transit Administration, “Default Useful Life Benchmark Cheat Sheet” (October 26, 2016). www.transit.dot.gov/TAM/ULBcheatsheet.

31 Massachusetts Department of Transportation, *MassDOT Fully Accessible Vehicle Guide: An Overview of Accessible Vehicle Specifications* (May 2020), accessed January 9, 2021. <https://www.mass.gov/doc/massdot-fully-accessible-vehicle-guide/download>.

32 Federal Transit Administration, FTA C 5010.E “Award Management Requirements” (July 16, 2018), accessed January 9, 2021. <https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/awardmanagement-requirements-circular-50101e>.

Table 4-17: TAM Performance Values and SFY 2021 Targets for Transit Rolling Stock

Agency	Asset Type	SFY 2020 Performance (as of June 30, 2020)			SFY 2021 Targets (as of June 30, 2021)		
		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	1,138	339	30%	1,154	263	23% ¹
MBTA	Light Rail Vehicles	213	86	40%	221	86	39% ¹
MBTA	Vintage Trolleys ²	10	10	100%	10	10	100%
MBTA	Heavy Rail Vehicles	436	240	55%	462	240	52% ¹
MBTA	Commuter Rail Locomotives	88	21	24%	88	21	24%
MBTA	Commuter Rail Coaches	420	55	13%	420	55	13%
MBTA	Ferry Boats ³	3	0	0%	3	0	0%
MBTA	Paratransit Vehicles ⁴	556	288	52%	779	231	30% ¹
CATA	Buses	8	0	0%	8	2	25%
CATA	Cutaway Vehicles ⁵	21	3	14%	23	3	13% ¹
CATA	Trolleys (simulated) ⁶	2	2	100%	2	2	100%
MWRTA	Automobiles ⁷	8	8	100%	8	8	100%
MWRTA	Vans ⁸	3	0	0%	4	0	0%
MWRTA	Cutaway vehicles ^{5,7}	102	18	18%	104	26	25%

1 The SFY 2021 target anticipates improved performance compared to SFY 2020 performance.

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 2022.

4 The MBTA The RIDE paratransit vehicle data and targets reflect automobiles, vans, and minivans.

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, and uses automobiles to provide demand-response service.

8 MWRTA's vans are used to provide demand-response service.

CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority.

MWRTA = MetroWest Regional Transit Authority. NTD = National Transit Database. = SFY = State Fiscal Year. TAM = Transit Asset Management. ULB = useful life benchmark.

Source: CATA, MBTA, MWRTA, and the Boston Region MPO staff.

The MBTA's planned SFY 2021 investments in revenue vehicles include ongoing replacements for the bus fleet and The RIDE paratransit fleet, the continuation of its ferryboat overhaul program, continued procurement of Red and Orange Line (heavy rail) vehicles, and the procurement of Type 9 Green Line cars to support the Green Line Extension. During FFY 2021, MWRTA will receive federal funds to replace revenue vehicles, and during that same time frame, CATA will receive state funds to replace one of its vans.

Table 4-18 shows SFY 2020 baselines and the MPO's SFY 2021 targets for transit-equipment vehicles. MPO staff has aggregated targets for nonrevenue vehicle subtypes for each of the three transit agencies, although MBTA commuter rail and transit system vehicle fleets are listed separately. 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 if they are well beyond their ULBs. Also, the MBTA's non-revenue 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 4-18: TAM Performance Values and SFY 2021 Targets for Transit Equipment

Agency	Asset Type	SFY 2020 Performance (as of June 30, 2020)			SFY 2021 Targets (as of June 30, 2021)		
		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	Transit Equipment	797	157	20%	798	225	28%
MBTA	Commuter Rail Equipment ¹	631	150	24%	631	197	31%
CATA	All Equipment	3	1	33%	3	3	100%
MWRTA	All Equipment ²	11	6	55%	11	6	55%

1 MBTA commuter rail equipment only includes assets owned by the MBTA.

2 MWRTA equipment vehicles include both trucks and automobiles.

CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority. MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year revenue year. TAM = transit asset management. ULB = useful life benchmark.

Source: CATA, MBTA, MWRTA, and the Boston Region MPO staff.

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 4-19 shows SFY 2020 measures and the MPO's SFY 2021 targets for MBTA, CATA, and MWRTA facilities.

Table 4-19: TAM Performance Values and SFY 2021 Targets for Facilities

Agency	Asset Type	SFY 2020 Performance (as of June 30, 2020)			SFY 2021 Targets (as of June 30, 2021)		
		Number of Facilities	Number of Facilities in Marginal or Poor Condition ²	Percent of Facilities in Marginal or Poor Condition	Expected Number of Facilities	Expected Number of Facilities in Marginal or Poor Condition	Target Percent of Facilities in Marginal or Poor Condition
MBTA	Transit: Passenger/ Parking Facilities	162	22	14%	162	19	12% ¹
MBTA	Transit: Administrative/ Maintenance Facilities ³	166	113	68%	166	113	68%
MBTA	Commuter Rail: Passenger/ Parking Facilities	224	8	4%	224	7	3% ¹
MBTA	Commuter Rail: Administrative/ Maintenance Facilities ⁴	166	37	22%	166	37	22%
CATA	Administrative/ Maintenance Facilities	1	0	0%	1	0	0%
MWRTA	Administrative/ Maintenance Facilities	1	0	0%	1	0	0%

¹ The SFY 2021 target anticipates improved performance compared to SFY 2020 performance.

² Facilities that have a score of three or less on the FTA TERM scale are considered to be in marginal or poor condition.

³ The number of facilities in this category includes 31 facilities that will undergo an initial condition assessment in SFY 2021.

⁴ The number of facilities in this category includes one facility that will undergo an initial condition assessment in SFY 2021.

CATA = Cape Ann Transportation Authority. FTA = Federal Transit Administration. MBTA = Massachusetts Bay Transportation Authority. MWRTA = MetroWest Regional Transit Authority. SFY = state fiscal year. TAM = transit asset management. TERM = Transit Economic Requirements Model.

Source: CATA, MBTA, MWRTA, and the Boston Region MPO staff.

The MBTA's activities in SFY 2021 to improve facilities include equipment and safety upgrades at the Lynn and Quincy bus garages; accelerated work to improve parking facilities at Braintree, Quincy Adams, Wellington, West Natick, and Route 128 Stations, and improvements at the Iron Horse Operations Control Center. 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 4-20 describes SFY 2020 baselines and SFY 2021 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 share of track 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 4-20: TAM Performance Values and SFY 2021 Targets for Infrastructure (Fixed Guideway), MBTA

	SFY 2020 Performance (as of June 30, 2020)			SFY 2021 Targets (as of June 30, 2021)		
	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	130.23	6.18	5%	130.23	4.60	4% ²
MBTA Commuter Rail Fixed Guideway	663.84	7.54	1%	663.84	5.55	1%

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.

1 The MBTA's Transit Fixed Guideway information reflects light rail and heavy rail fixed guideway networks.

2 The SFY 2021 target anticipates improved performance compared to SFY 2020 performance.

MBTA = Massachusetts Bay Transportation Authority. SFY = state fiscal year. TAM = transit asset management.

Source: CATA, MBTA, MWRTA, and the Boston Region MPO staff.

The MBTA's SFY 2021 fixed-guideway infrastructure investments include improvements to the Blue Line Harbor Tunnel, Red and Orange Line track modernization work, Green Line D Branch track improvements and tree removal, and ongoing investment on the Franklin, Framingham/Worcester, and Haverhill commuter rail lines.

TIP Investments Supporting Transit System Asset Condition

Many types of transit investments may affect the TAM vehicle, facility, or 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 2022–26 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 2021) TAM performance targets; however, they are expected to help improve performance on the TAM measures over time.

Vehicles

During FFYs 2022 to 2026, the MBTA will be investing in vehicles to replace or expand its fleets through its Revenue Vehicles and Bus Programs. Procurements will 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

The MBTA will also overhaul hybrid and compressed-natural-gas (CNG) buses, commuter rail locomotives, and part of its bi-level commuter rail coach fleet to ensure these vehicles remain reliable through the end of their service life. In addition, the Green Line Extension project, which the MPO is helping to support with its Regional Target funds, includes investments in vehicles to support the new service.

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 vans to replace vehicles that have reached the end of their useful life. This includes expected purchases of CNG-powered vehicles and electric vehicles for MWRTA's paratransit system. 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 2022 to 2026, the MBTA will invest in several of its transit stations and parking facilities through its stations and facilities program. These investments 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 and other needs. This set of investments includes the construction of a new commuter rail station in Chelsea (and the decommissioning of the existing station); improvements to Forest Hills Station, Newton Highlands Station, Lynn Station and its parking garage, and stations along the Mattapan High Speed Line; and reconstruction of Green Line surface stations. The MBTA will also be funding the design and installation of new redundant elevators and replacing existing elevators at various stations.

In addition, the Green Line Extension project includes investment in new stations as part of the expansion of service.

The MBTA will also fund improvements for its administration and maintenance facilities. This includes continued investment to modernize the Quincy bus facility, which will support the MBTA's transition to battery-electric buses and provide additional capacity to support future service growth. The MBTA will also make infrastructure improvements at the MBTA's Codman Yard facility, in part to accommodate new Red Line vehicles.

While MWRTA and CATA's facilities are currently in a state of good repair, these agencies will continue to maintain and upgrade them during FFYs 2022 to 2026. CATA plans to repave the parking lot of its maintenance and operations facility. MWRTA plans to improve its Blandin Hub facility—including its amenities, front entrance, and support equipment—and enhance the facility's ability to maintain and manage vehicles. MWRTA will also fund improvements and enhancements for the operations center at the commuter rail station in Framingham.

Fixed-Guideway Infrastructure

The MBTA's investments in track signals and systems through its Signals and System Upgrade Program during FFYs 2022 to 2026 will, over time, help reduce the need for performance restrictions on fixed guideways. Projects that address this area include the following:

- Signal and communication system upgrades at North Station
- Framingham/Worcester Commuter Rail Line track improvements
- Green Line Central Tunnel signal system replacements
- Red and Orange Line signal Improvements
- Installation of new duct-bank systems as part of the Power Systems Resiliency Program
- Mattapan High Speed Line transformation, including power infrastructure improvements
- Upgrades to track switches and related infrastructure at Alewife station

The installation of new track and systems as part of the Green Line Extension project will also affect fixed-guideway infrastructure performance measures in the future.

Other Assets

Other planned MBTA investments during FFYs 2022 to 2026 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 Longfellow Bridge components. Inspection and rating work completed through this program supports MBTA prioritization of future investments. In addition, the MBTA will also be replacing its radio system to support MBTA police communication.

Meanwhile, CATA will invest in shop equipment, software, and other capital maintenance items. While MWRTA will invest in bus support equipment, capital maintenance items, renovations of its back entrance/dispatch area, and information technology infrastructure. 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 2021. 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.

Support for Future Regional Target Investments

As mentioned previously, the MPO has set aside \$5.5 million in funding for 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 to maintain 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 Program and to identify links between this program and the region's transit asset management performance.
- 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.³³ 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

³³ The MPO's CMAQ Performance Plans and progress reports are available at bostonmpo.org/performance.

and accompanying studies, and its MassDOT Performance Management Tracker tool.³⁴ Meanwhile, the MBTA tracks and analyzes mobility metrics and uses these to support planning processes, such as Focus40, its current long-term investment plan.³⁵ The exchange and integration of these plans help agencies in the Boston region coordinate to improve mobility across modes.

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 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.³⁶
- *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.

³⁴ The 2017 Massachusetts Freight Plan is available at www.mass.gov/doc/2017-massachusetts-freight-plan/download. MassDOT's 2019 *Congestion in the Commonwealth* report and accompanying studies are available at www.mass.gov/service-details/congestion-in-the-commonwealth.

³⁵ The MBTA's *Focus40* plan is available at <https://www.mbtafocus40.com/>.

³⁶ 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.

States or 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 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. Because historic data were limited, 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.³⁷

Table 4-21 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 4-21 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 is lower than those values for Massachusetts as a whole.

³⁷ FHWA, "Frequently Asked Questions: Target Setting," accessed April 26, 2021. <https://www.fhwa.dot.gov/tpm/faq.cfm#targ>.

Table 4-21: 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	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	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.

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.

The 2019 NPRMDS data available in the RITIS platform shows that the travel time reliability measures for the NHS in Massachusetts' were close to or better than the Commonwealth's two-year targets: 69.1 percent of person miles on the Interstate System and 82.8 percent on the non-Interstate NHS were considered reliable. In the Boston region, 2019 values were slightly better than baselines: 47.7 percent of person miles on the Interstate System and 74.7 percent on the non-Interstate NHS were considered reliable.

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. Massachusetts' share of reliable person miles rose to 94.4 percent for the Interstate network, and 91.3 percent for the non-Interstate NHS. In the Boston region, the share of reliable person miles rose to 89.3 percent for the Interstate network, and 86.9 percent for the non-Interstate NHS. 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.

Truck Travel Time Reliability

FHWA requires states and MPOs to track truck travel 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 TTTR value.³⁸ 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 TTTR values, the greater this aggregate value is, the more unreliable the network is with respect to truck travel.

In 2018, MassDOT calculated baseline TTTR 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 4-22 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 TTTR Index target in 2018. Table 4-22 also includes the Boston region’s CY 2017 baseline index value. As the table shows, the Boston region’s TTTR baseline value is higher than the one for Massachusetts, indicating that truck travel on the region’s interstate network is generally less reliable than on Massachusetts’s interstates as a whole.

Table 4-22: 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	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.

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.

³⁸ States and MPOs must calculate TTTR 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.

The 2019 NPRMDS data shows that truck travel time reliability on interstates in Massachusetts (TTTR value of 1.84) was slightly better than the two-year target value (1.85). Similarly, the 2019 truck travel time reliability value for interstates in the Boston region (2.47) was better than the 2017 baseline value (2.55).

As with the all-vehicle travel time reliability measures, TTTR values dropped for both the Boston region (1.85) and Massachusetts as a whole (1.44) in 2020. Performance monitoring will enable the Commonwealth and other stakeholders to respond to post-pandemic changes in truck travel time reliability.

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.³⁹ 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:

³⁹ A precursor is a chemical compound that reacts with other chemical compounds in the presence of solar radiation to form pollutants.

- *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)*.⁴⁰ They determine the amount of travel time for all vehicles that exceeded the EDTTT during weekday peak periods.⁴¹ 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*.

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.⁴² 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 4-23.

40 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.

41 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.

42 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.

Table 4-23: Targets for Annual Hours of Peak Hour Excessive Delay Per Capita in the Boston Urbanized Area

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.

Sources: National Performance Management Research Data Set, US Census Bureau, FHWA, the Massachusetts Department of Transportation, the New Hampshire Department of Transportation, and Cambridge Systematics, and the Boston Region MPO staff.

The 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.

While congestion may have increased in the Boston MA-NH-RI UZA over the past several years, these issues complicate any analysis of trends. Also, the COVID-19 pandemic, along with related public and private sector responses, impacted travel behavior on all modes in 2020 and 2021 to date. 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.⁴³

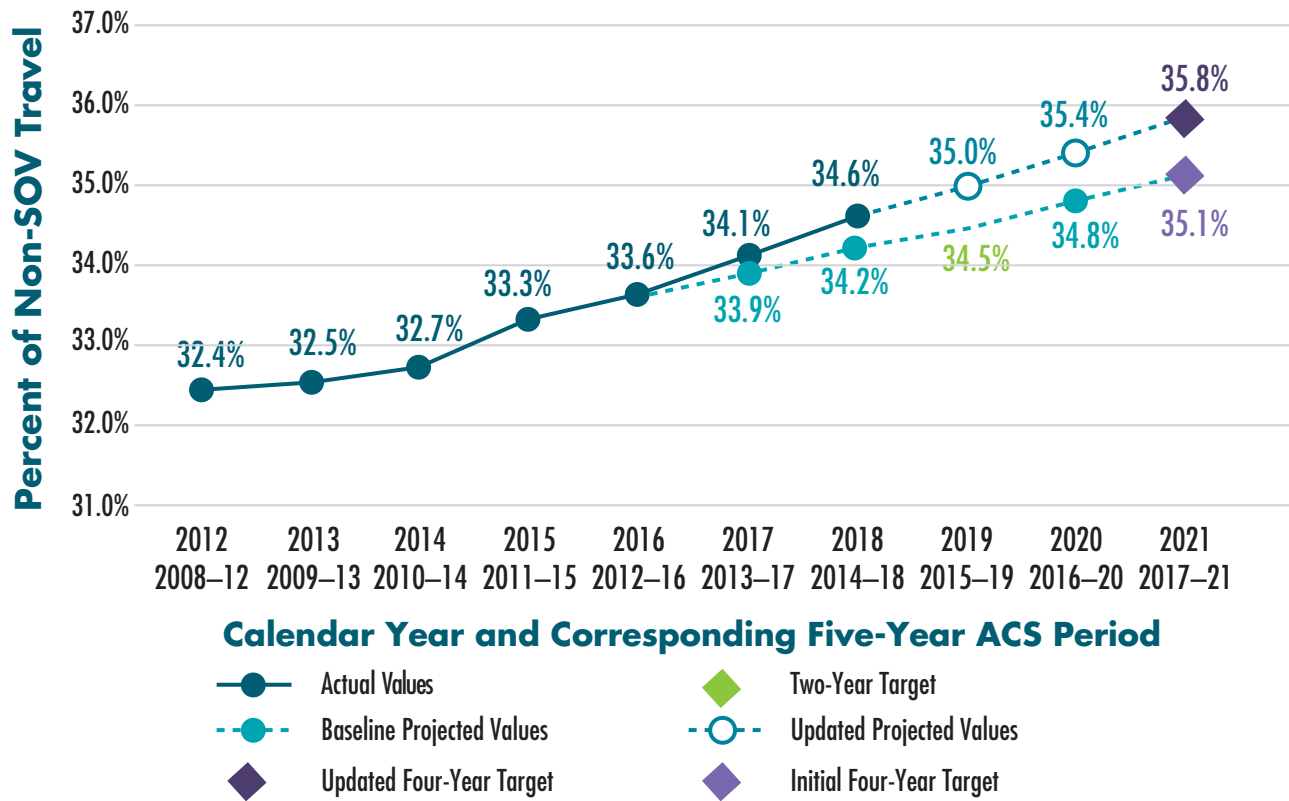
In 2020, MassDOT, NH DOT, the Boston Region MPO, and NMCOG revisited its targets for the percent of non-SOV travel measure. These agencies examined 2013–17 and 2014–18 ACS data and found that the values reported in the data for these years were higher than the projections they made when setting their 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 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.

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 4-6 shows past values and projections, updated actual values and projections, and initial and adjusted performance targets for this measure.

⁴³ Boston Region MPO staff, “Boston Region MPO Baseline CMAQ Performance Plan (2018)” (October 1, 2018). <https://www.ctps.org/data/pdf/programs/performance/2018-PBPP-Boston-MPO-CMAQ-Performance-Plan.pdf>.

Figure 4-6: 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. 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 4-24 lists the baseline and performance targets for this measure.

Table 4-24: Boston MA-NH-RI UZA Percent of Non-SOV Travel Measure Values and Targets

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 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. 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, which was used for the evaluations of in the Regional Target-funded corridor, intersection, and bicycle and pedestrian projects in the FFYs 2021–25 TIP, 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. Details about the MPO's current TIP criteria, including Community Connections Program criteria, are available in Appendix A, while information about the MPO's previous criteria is available in the FFYs 2021–25 TIP document.

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 4-25 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 4-25: Regional Target Projects: Roadway Capacity Management and Mobility Performance Metrics

Metric	Value
Projects that overlap unreliable NHS segments and that will improve roadway signalization or geometry ¹	13 projects
Projects that overlap any NHS segments and that will improve roadway signalization or geometry ¹	16 projects
Net reduction in vehicle hours of delay per day ²	9,700 hours reduced per day
Net reduction in vehicle hours of delay per day for projects that overlap the NHS ²	7,700 hours reduced per day
Miles of new sidewalks added	16 miles
Lane miles of new bicycle accommodations and shared-use paths	52 lane miles
Number of new shuttle services	2 shuttle services
Number of new bikeshare stations	15 stations
Projects that improve intermodal connections or access to transit	31 projects

Note: The group of projects reflected in this table does not include the Green Line Extension. No projects have been selected for the MPO’s Transit Modernization Program.

1 The MPO staff identified reliable and unreliable segments on the NHS using the 2019 NPMRDS data in the RITIS platform federal travel time reliability performance thresholds.

2 This aggregate estimate for reduced hours of vehicle delay per day also excludes Project 606226–Reconstruction of Rutherford Avenue in Boston, which was included in the air quality modeling results in Destination 2040. This aggregate estimate is based on projected future conditions for project locations and has been rounded to the nearest hundred.

MPO = metropolitan planning organization. NHS = National Highway System. NPMRDS = National Performance Management Research Data Set.

Source: The Boston Region MPO staff.

Other Regional Target investments not reflected in the measures shown in Table 4-25 will also support the availability of non-SOV options. By contributing to the Green Line Extension project, the MPO supports the expansion of light-rail service to more areas within the Boston region. Funding is also available for the MPO’s new Transit Modernization Program beginning in FFY 2025. These projects have not yet been selected but could enhance transit service and encourage people to take transit instead of traveling alone in their cars, which 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 Bicycle and Pedestrian projects expand the region's bicycle and pedestrian networks, which support non-SOV travel and support the High Comfort Bike network described in the Bicycle Transportation Plan. MassDOT's Intersection Improvement Program includes four intersection and signal projects, which may address delay and congestion. One of its Roadway Reconstruction projects addresses a freight bottleneck identified in the MassDOT's Freight Plan, the Interstate 90/Interstate 495 interchange in Hopkinton and Westborough, which will likely improve truck travel time reliability. Meanwhile, MBTA and RTA investments enhance the region's transit systems and make them attractive alternative to SOV travel, which may in turn help reduce congestion and improve reliability.

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, and 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 or travel by non-SOV modes.

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 the region. The MPO must note how it expects its CMAQ-funded projects to support improvements in these 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 4-26 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, and at the time of target setting the MPO’s TIP did not reflect any CMAQ-funded projects programmed in Waltham from FFY 2018 to 2021. The FFYs 2022–26 TIP does not include any CMAQ-funded projects in Waltham.

Table 4-26: 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 of 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 4-27 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.

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 4-27: Regional Target Projects: Clean Air and Sustainable Communities Performance Metrics

Metric	Value
Annual kilograms of CO ₂ reduced	9,380,000 kilograms
Annual kilograms of other emissions (VOCs, NO _x , and CO) reduced	19,600 kilograms

Note: The group of projects reflected in this table does not include the Green Line Extension. No projects have been selected for the MPO’s Transit Modernization Program. This aggregate estimate of emissions reduction also excludes Project 606226—Reconstruction of Rutherford Avenue in Boston, which was included in the air quality modeling results in Destination 2040. 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.

While not reflected in Table 4-27, the Green Line Extension will provide a non-SOV travel alternative, which can help reduce CO₂ and other transportation related emissions. This TIP also includes funding for the MPO’s Transit Modernization Program beginning in FFY 2025. While projects have not been selected for this program yet, in general, modern transit assets may help reduce emissions by encouraging non-SOV travel or by changing the amount or type of energy these assets use.

MassDOT, MBTA, and RTA projects and programs also support improvements to air quality and the environment. 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.

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.
- Identify an effective approach for tracking GHG impacts from MPO investments over time.
- 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.

The Metropolitan Area Planning Council's (MAPC) regional land use plan also identifies economic vitality goals and strategies that influence MPO investments. For example, a strategy in MAPC's current regional land use plan, *MetroFuture*, is to coordinate transportation investments to guide economic growth in the region.⁴⁵ 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 the infrastructure improvements required 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. The MPO has not yet established other performance measures specific to freight or economic vitality, such as measures that could be used to track the coordination of land use development and transportation investments.

TIP Projects Supporting Economic Vitality

When evaluating TIP projects using its TIP criteria, the MPO assesses how well each project may advance *MetroFuture*'s land use planning objectives. This evaluation accounts for how a project serves areas identified for economic development by state, regional, and local planning as well as areas with a relatively high density of existing development. These assessments are based on MAPC-provided information on targeted development sites and project relationships to areas of concentrated development, along with project data from functional design reports and other sources.

⁴⁵ For more information about *MetroFuture*, visit www.mapc.org/get-involved/metrofuture-our-regional-plan/. MAPC is currently working on an update to this plan, *MetroCommon 2050*.

Table 4-28 provides some highlights of how Regional Target-funded projects in this TIP address economic vitality.

Table 4-28: Regional Target Projects: Economic Vitality Performance Metrics

Metric	Value
Projects that improve access to targeted development sites	22 projects
Projects that provide multimodal access to an activity center	32 projects

Note: The group of projects reflected in this table does not include the Green Line Extension or Project 606476–Sumner Tunnel Improvements in Boston. No projects have been selected for the MPO’s Transit Modernization 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:

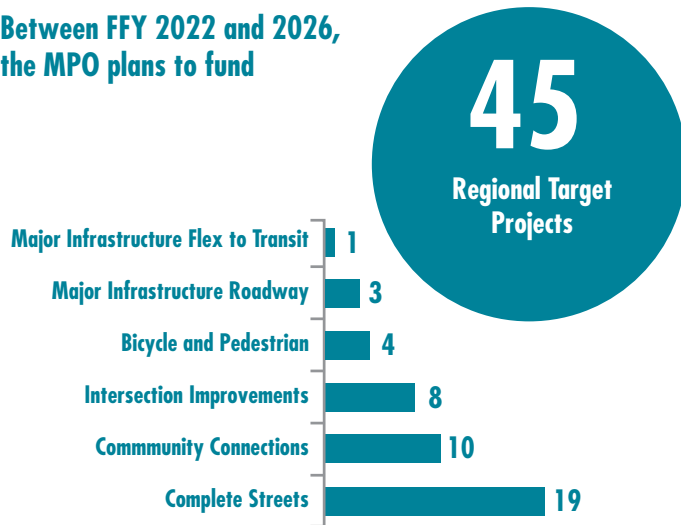
- Explore other performance measures related to freight and economic vitality.
- Improve methods for understanding how transportation projects may affect economic vitality performance.

Summary: Regional Target-Funded Projects Supporting MPO Goal Areas

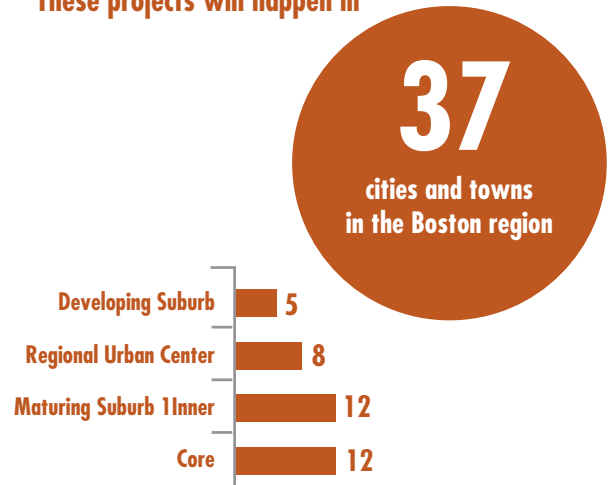
Figure 4-7 highlights some of the ways that the MPO’s FFYs 2022–26 Regional Target-funded projects support improved performance in the MPO’s various goal areas.

Figure 4-7 : FFYs 2022–26 TIP Target Program: Projects by the Numbers

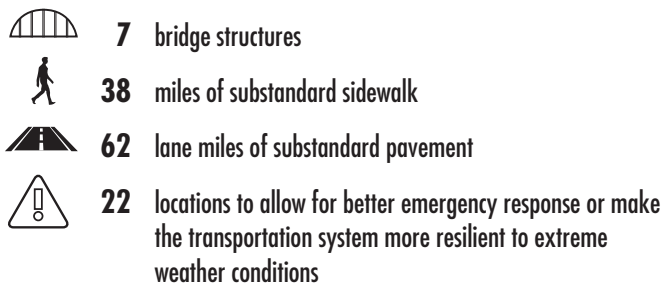
Between FFY 2022 and 2026, the MPO plans to fund



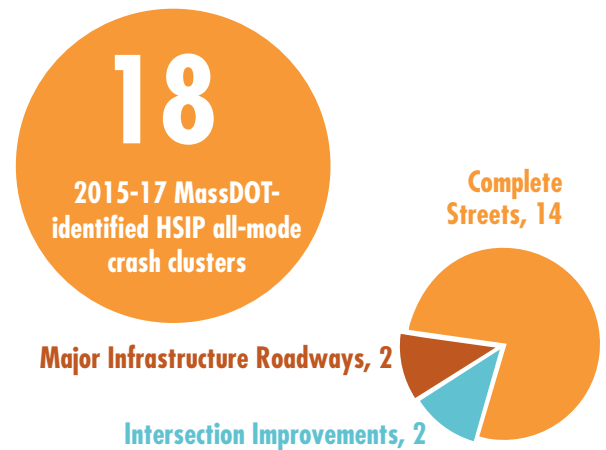
These projects will happen in



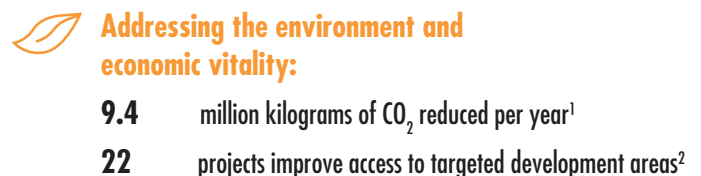
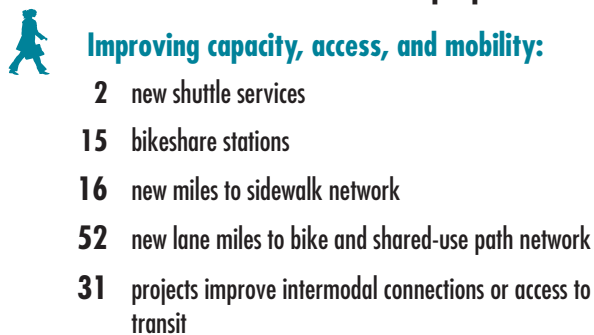
These projects will address safety and help preserve the transportation system by improving



These projects will improve safety by addressing



These projects will also enhance the system by



Sources: MassDOT and the Boston Region MPO

CO₂: carbon dioxide. HSIP: Highway Safety Improvement Program. MAPC: Metropolitan Area Planning Council

¹ These estimates exclude the Green Line Extension project in Cambridge, Somerville and Medford, and the Rutherford Avenue project in Boston.

² These estimates exclude the Green Line Extension project in Cambridge, Somerville and Medford, and the Sumner Tunnel project in Boston.

Note: Projects have not yet been programmed in the MPOs Transit Modernization Program.

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 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 or, if feasible, past performance targets. Over time, the MPO will expand this report in its LRTPs 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 activities, 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 reports 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 put 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 would support various goals and performance areas. Over time, the MPO expects that these actions will help ensure that the MPO's investments are helping to meet its vision and goals for the region's transportation system.



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Chapter 5

Determination of Air Quality Conformity

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 2022–26 TIP, and Massachusetts’ FFYs 2022–26 State Transportation Improvement Program, as each is developed from the conforming 2020–40 Long Range Transportation Plans.

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 2022–26 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 January 21, 2021. 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 participation programs. The Boston Region MPO's Public Participation Plan was formally

adopted in October 2014 and amended in April 2019 and is available at https://www.ctps.org/public_involvement. The Public Participation 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 _____, 2021. 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 _____, 2021, and the Boston Region MPO is expected to endorse this air quality conformity determination on _____, 2021. 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 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 June 2020. Highlights from the report are presented below. 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-2020-status-report/download>.

Fairmount Line Improvement Project—SIP Required Completion by December 2011

The Four Corners and Newmarket Stations on the Fairmount commuter rail line opened for service on July 1, 2013. All change orders have been paid and the project is officially closed out. The Talbot Avenue Station opened in November 2012.

The Blue Hill Avenue Station was redesigned and the 100 percent design plans were submitted to MassDOT in March 2016. The MBTA advertised the project in December 2016 and the Notice to Proceed was issued in February 2017. Construction was completed and the station opened for service in February 2019.

Given the delays in final completion of the project, MassDOT and the Massachusetts Bay Transportation Authority (MBTA) prepared a Petition to Delay and an Interim Emission Offset Plan to be implemented for the duration of the delay of the Fairmount Line Improvement Project. Both the petition and the offset plan were submitted to DEP in July 2011. MassDOT estimated the amount of emission reduction that would be expected from the implementation of the new Fairmount Line stations. With input from Fairmount Line stakeholders, MassDOT proposed offset measures that would meet emission reduction targets while the project remained under construction. The measures include providing shuttle bus service in Boston connecting Andrew Square to Boston Medical Center and increasing weekday service on MBTA bus Route 31, which serves the Boston neighborhoods of Dorchester and Mattapan. These measures were implemented on January 2, 2012. The offset measures have been removed now that the project is complete and regular service has resumed.

Funding Source: The Commonwealth

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 new cost estimate of \$2.289 billion. Funding is in place, including 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).

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.

Funding Source: The Commonwealth, FTA via the Full Funding Grant Agreement, the Boston Region MPO, the City of Cambridge, and the City of Somerville

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 2022–26 TIP is consistent with the required fiscal constraints, as demonstrated in Chapter 3.

Carbon Monoxide

In addition to ozone, 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.

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 budget test (as budgets are not treated as being constraining in these areas for the length of the initial maintenance period). Any requirements for future project-level conformity determinations for projects located within this community will continue to use a hot-spot analysis to ensure that any new transportation projects in this area do not cause or contribute to violations of the NAAQS for CO.

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 2022–26 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 2022–26 TIP is consistent with the air quality goals of, and in conformity with, the Massachusetts SIP.





Chapter 6

Transportation Equity Performance Report

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-selected projects. This chapter provides the results of analyses conducted for monitoring projects funded with Regional Target funds, in the federal fiscal years (FFYs) 2022–26 Transportation Improvement Program (TIP).¹

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.

FEDERAL REQUIREMENTS

The Boston Region MPO's transportation equity (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 various federal nondiscrimination and environmental justice laws and regulations, including 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.)

In response to these regulations, the MPO considers six population groups to be TE populations—populations that are covered by the above federal directives and that have been disproportionately underserved and burdened by the transportation system:²

- People who identify as minority³
- People with low income⁴
- People with limited English proficiency (LEP)
- People with disabilities
- People age 75 and older
- People age 17 and younger

INTEGRATING EQUITY INTO THE TIP

The MPO systematically integrates the transportation needs and interests of TE populations into its planning processes and strives to improve their transportation outcomes. With regards to the TIP, this is done through the evaluation and selection of transportation projects, as well as analyses of the entire group of projects that are funded with Regional Target dollars.

2 TE populations are identified using US Census and American Community Survey data. LEP status is calculated for the population age five and older, disability status is calculated for the noninstitutionalized population, and poverty status is calculated for those whose poverty status can be determined. All other TE populations are tabulated from the entire MPO region population.

3 For conciseness, people who identify as minority are referred to as the "minority population" in the remainder of this document. The minority population includes those who identify as Hispanic or Latino/a/x and/or a race other than White.

4 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.

Transportation Equity Project Evaluation

Prior to the development of the FFYs 2022–26 TIP, MPO staff revised the criteria used to evaluate projects being considered for funding with Regional Target funds. 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). The criteria were developed over the course of a year through an extensive public outreach process that prioritized gathering input from TE populations. During the first round of public engagement, staff gathered input about the transportation challenges and burdens that people experience. Staff then used that information to develop preliminary criteria that addressed these burdens and challenges. Then, staff returned to the public to get feedback on whether the new criteria captured the challenges and burdens that they had previously discussed.

As a result of this process, supported by extensive discussions with the MPO board, the TE criteria were revised and expanded in several key ways:

- The share of the TE score as a percentage of a project’s maximum possible score increased from nine percent to about 20 percent.⁵
- Projects receive points based on the extent to which they provide benefits for or reduce burdens on TE populations. Impacts are identified through the evaluation criteria in the Safety, Capacity Management and Mobility, Clean Air and Sustainable Communities, and System Preservation goal areas that were identified during public outreach as important to TE populations. Previous TE criteria awarded points only based on the proximity of TE populations to the project.
- The TE criteria are integrated into the criteria in the other goal areas rather than existing as a stand-alone set of criteria, reflecting the nature of TE. Unlike the other criteria, which purely evaluate transportation outcomes, the TE criteria evaluate who is affected by those outcomes.

Table 6-1 shows the criteria within the other goal areas for which projects are scored based on their impacts to TE populations, grouped by investment program.

⁵ This scoring system is different from that used for the MPO’s Community Connections Program, which has a different set of evaluation criteria.

Table 6-1: Criteria Used in Transportation Equity Scoring

MPO Goal Area	Bicycle Network and Pedestrian Connections Program	Complete Streets Program	Intersection Improvements Program	Major Infrastructure Program
Capacity Management and Mobility	<ul style="list-style-type: none"> Improves pedestrian network/ADA accessibility Improves bicycle network 	<ul style="list-style-type: none"> Reduces transit passenger delay Invests in new transit assets Improves pedestrian network/ADA accessibility Improves bicycle network 	<ul style="list-style-type: none"> Reduces transit passenger delay Invests in new transit assets Improves pedestrian network/ADA accessibility Improves bicycle network 	<ul style="list-style-type: none"> Reduces transit passenger delay Invests in new transit assets Improves pedestrian network/ADA accessibility Improves bicycle network
Clean Air and Sustainable Communities	Reduces transportation-related emissions (CO, VOCs, and PM2.5)	Reduces transportation-related emissions (CO, VOCs, and PM2.5)	Reduces transportation-related emissions (CO, VOCs, and PM2.5)	Reduces transportation-related emissions (CO, VOCs, and PM2.5)
Safety	<ul style="list-style-type: none"> Improves pedestrian safety Improves bicycle safety 	<ul style="list-style-type: none"> Addresses a severe-crash location Improves pedestrian safety Improves bicycle safety 	<ul style="list-style-type: none"> Addresses a severe-crash location Improves pedestrian safety Improves bicycle safety 	<ul style="list-style-type: none"> Addresses a severe-crash location Improves pedestrian safety Improves bicycle safety
System Preservation	<ul style="list-style-type: none"> Incorporates resiliency elements Improves connectivity to critical facilities Improves existing pedestrian facilities 	<ul style="list-style-type: none"> Incorporates resiliency elements Improves existing transit assets Improves connectivity to critical facilities Improves existing pedestrian facilities 	<ul style="list-style-type: none"> Incorporates resiliency elements Improves existing transit assets Improves connectivity to critical facilities Improves existing pedestrian facilities 	<ul style="list-style-type: none"> Incorporates resiliency elements Improves existing transit assets Improves connectivity to critical facilities Improves existing pedestrian facilities

Note: The Community Connections Program is not included here as projects are evaluated using a separate set of criteria. The Transit Modernization Program is not included here as evaluation criteria have not yet been developed for that program.

ADA = Americans with Disabilities Act. CO = carbon monoxide. PM = particulate matter. VOC = volatile organic compounds.

Transportation Equity Analyses

As required by federal regulations, the MPO assesses the impacts of all of the Regional Target-funded projects, as a group, in each TIP on TE populations. In addition, these analyses help the MPO to better understand the extent to which investments meet the MPO's stated TE goal and objectives. This information can inform future changes or updates to MPO work or decision-making. New to this TIP are additional data on how performance has changed during several TIP development cycles. As new tools are identified and analyses are developed, they will be added to subsequent TIPs.

Most of the MPO's FFYs 2022–26 Regional Target funds are invested in highway projects (which includes all roadway projects and off-street paths), except for \$10 million for the Community Connections Program, \$11 million for the Transit Modernization Program, and \$27 million allocated to the Massachusetts Bay Transportation Authority's Green Line Extension. While the TIP has reserved Regional Target funds for the Transit Modernization Program, projects have not yet been identified and so are not included in this TIP. This is also the case for the funding allocated to the outer years of the Community Connections Program for which projects 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. 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.

GEOGRAPHICAL ANALYSES

Transportation Equity Populations in the Boston Region

Table 6-2 shows the total number of people in the Boston region who belong to each TE population, as well as their percentage of the Boston region's population.

Table 6-2: Transportation Equity Populations in the Boston Region

TE Population Group	TE Population	Boston Region Population	Percentage of Total Boston Region Population
Minority Population	870,459	3,087,796	28.2%
People with Low Incomes	683,548	2,973,530	23.0%
People with LEP	308,770	2,915,559	10.6%
People Age 75 or Older	206,578	3,087,796	6.7%
People Age 17 or Younger	636,761	3,087,796	20.6%
People with Disabilities	306,776	3,056,697	10.0%

LEP = limited English proficiency. TE = transportation equity.

Sources: 2010 US Census and 2010–14 American Community Survey.

Figures 6-1 to 6-6 show the percentage of each equity 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 age 75 or older, people 17 or younger, and people with disabilities are dispersed throughout the region.

Figure 6-1: Percentage of the Minority Population in the Boston Region

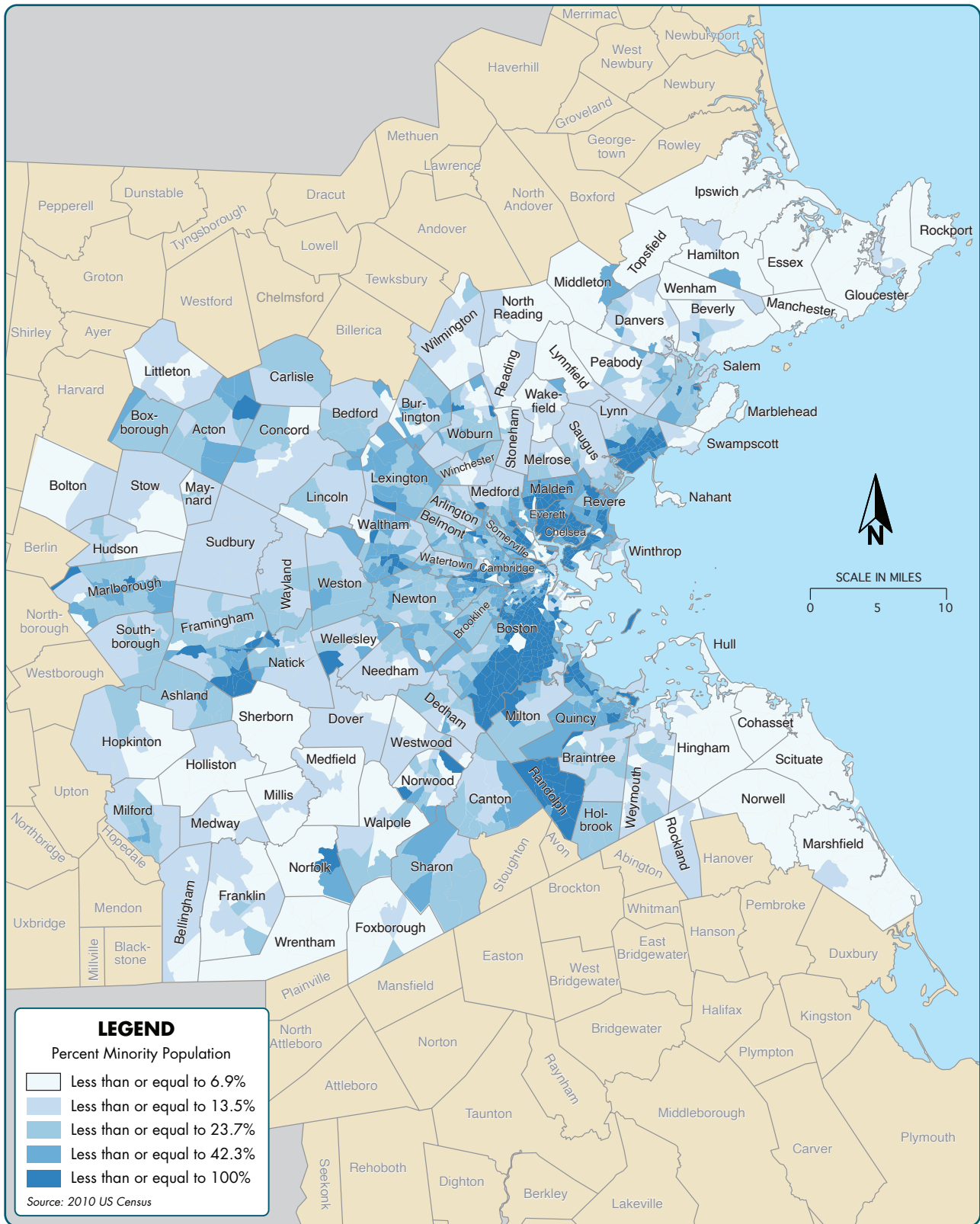


Figure 6-2: Percentage of People with Low Incomes in the Boston Region

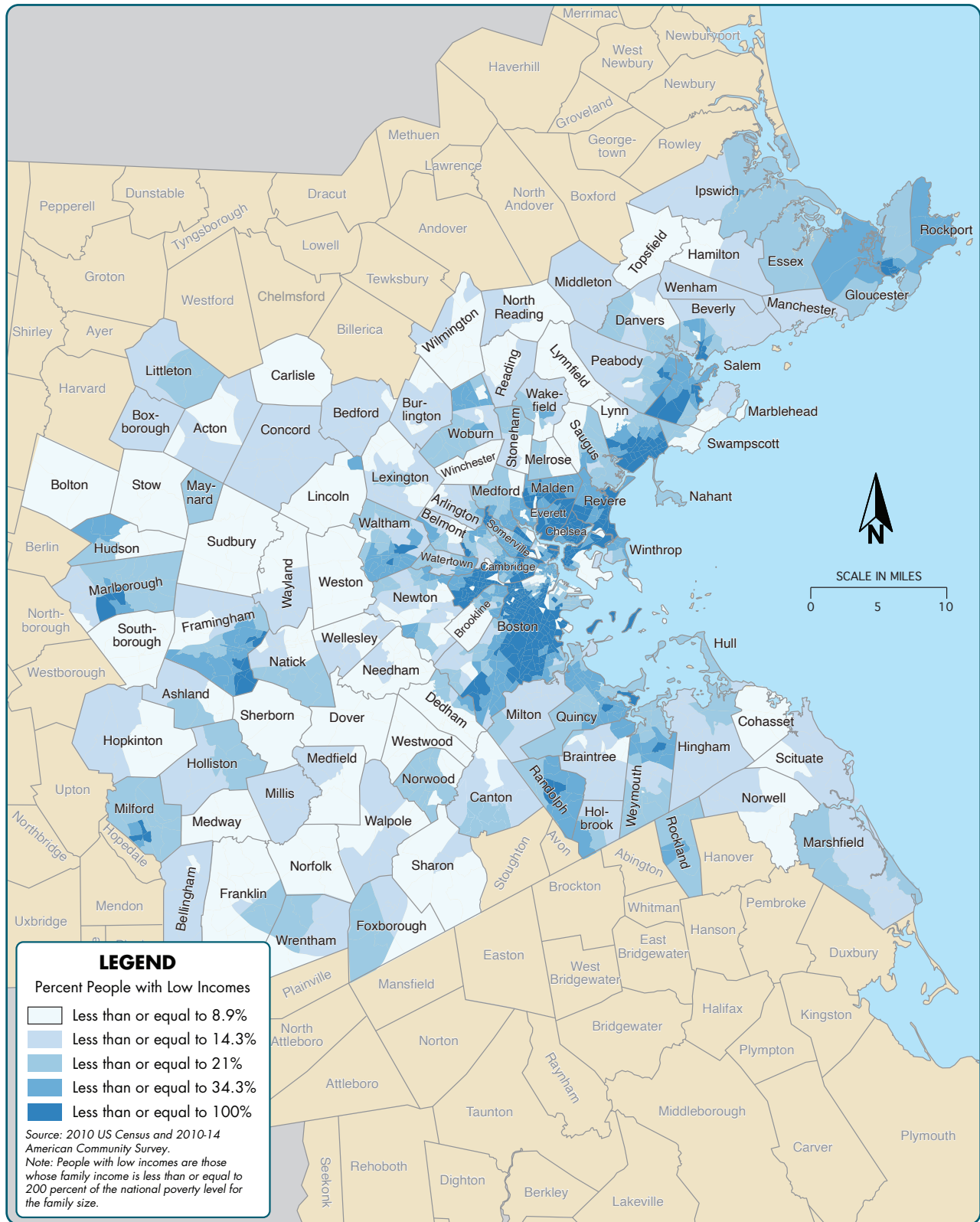


Figure 6-3: Percentage of People with LEP in the Boston Region

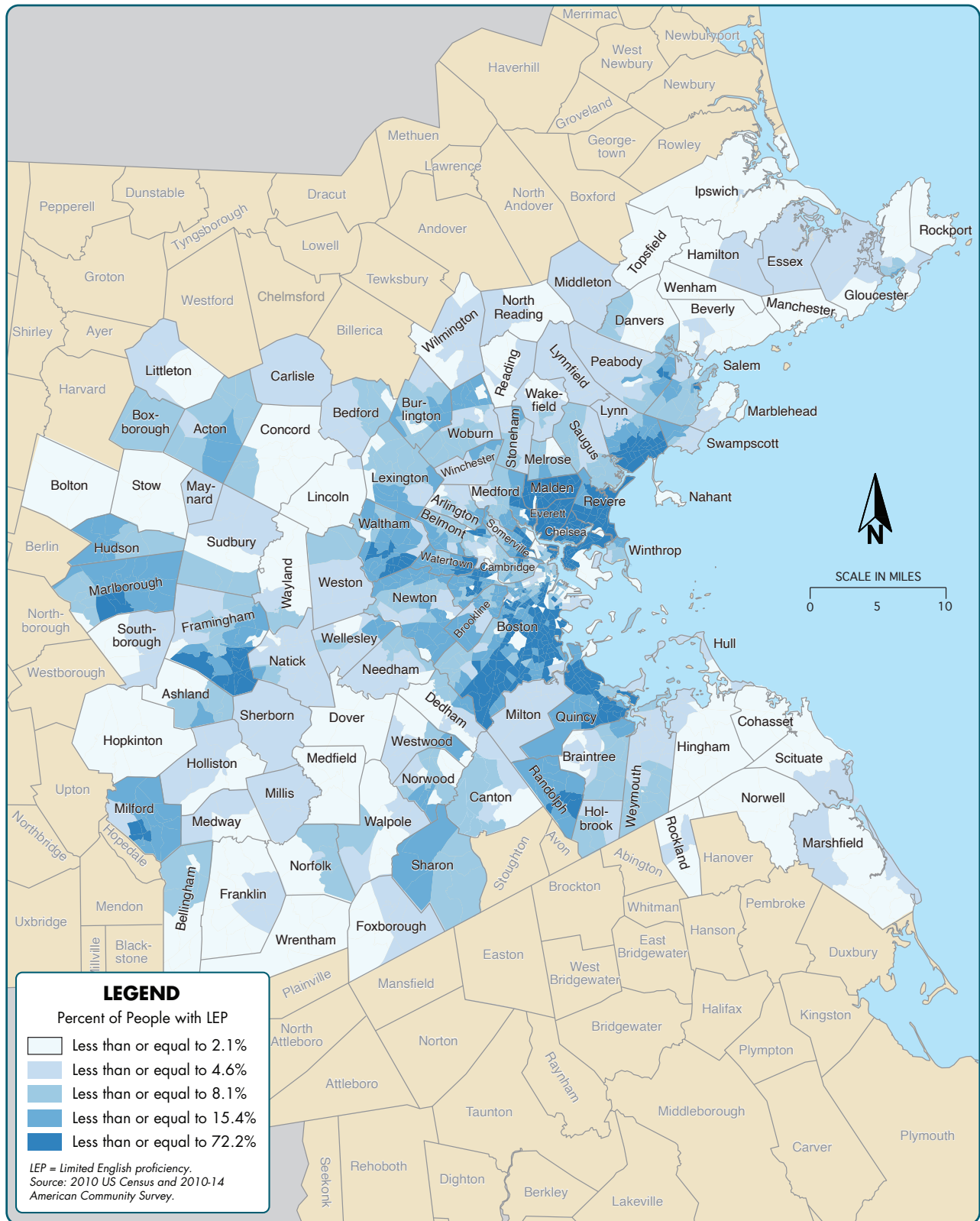


Figure 6-4: Percentage of People Age 75 or Older in the Boston Region

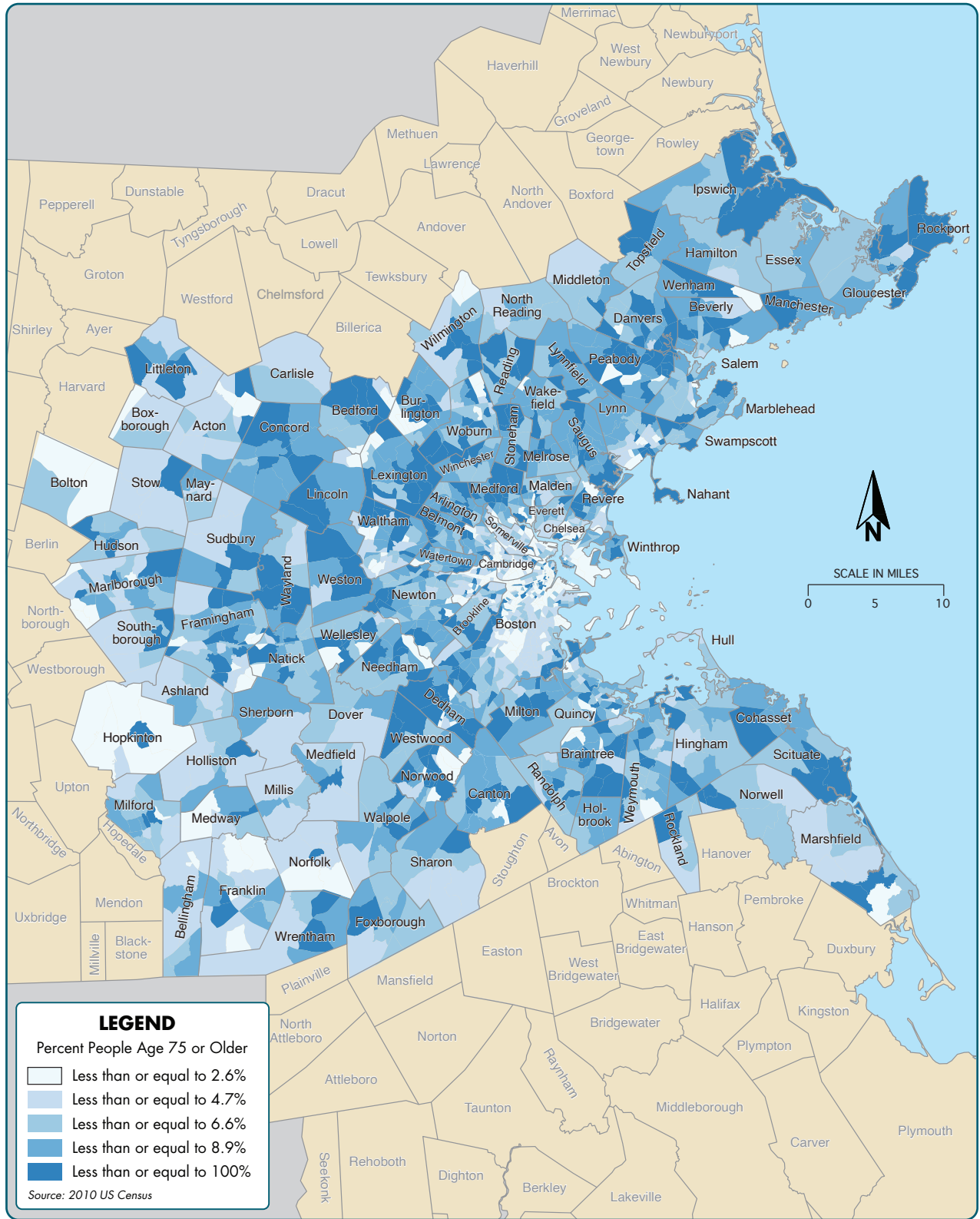


Figure 6-5: Percentage of People Age 17 Or Younger in the Boston Region

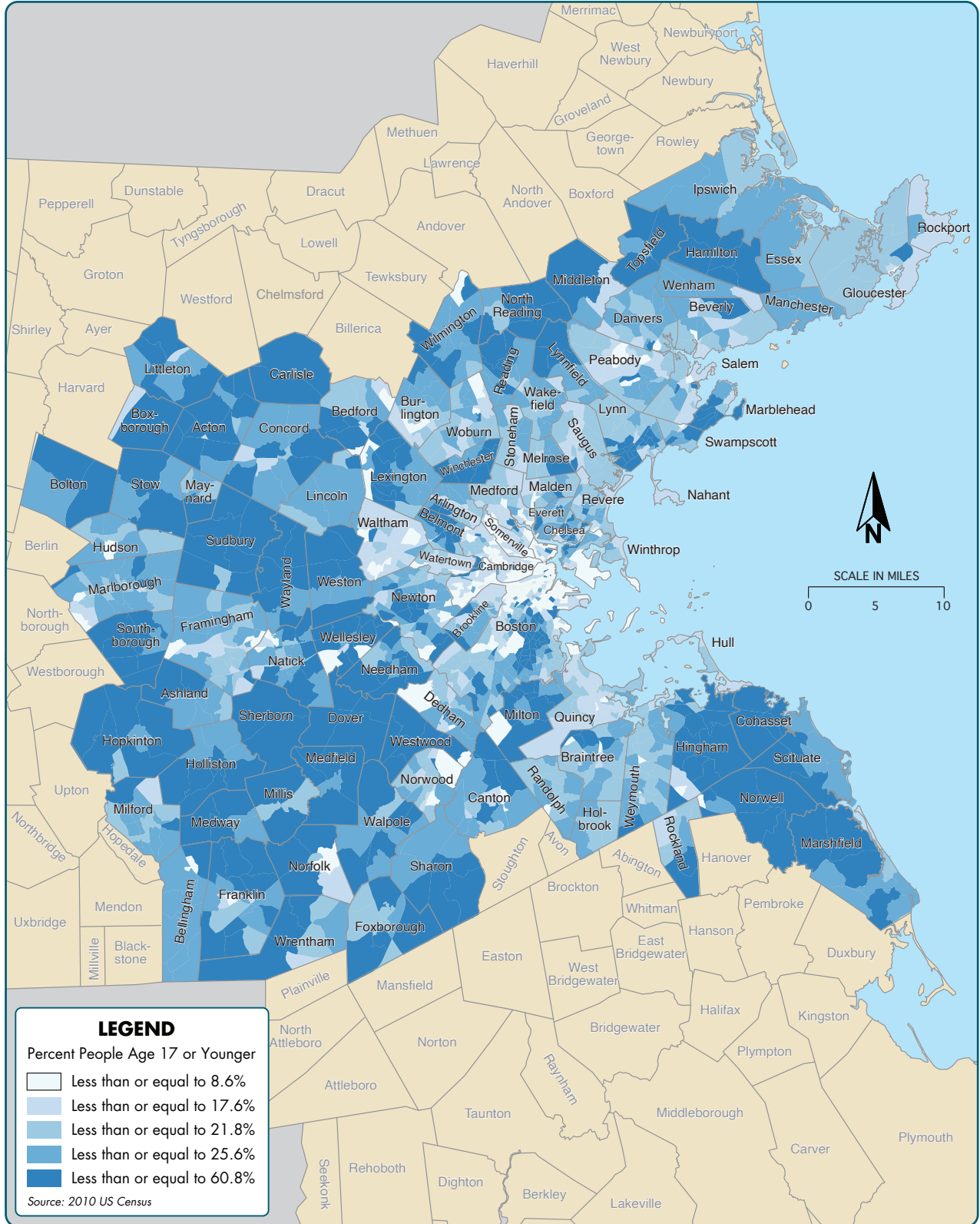
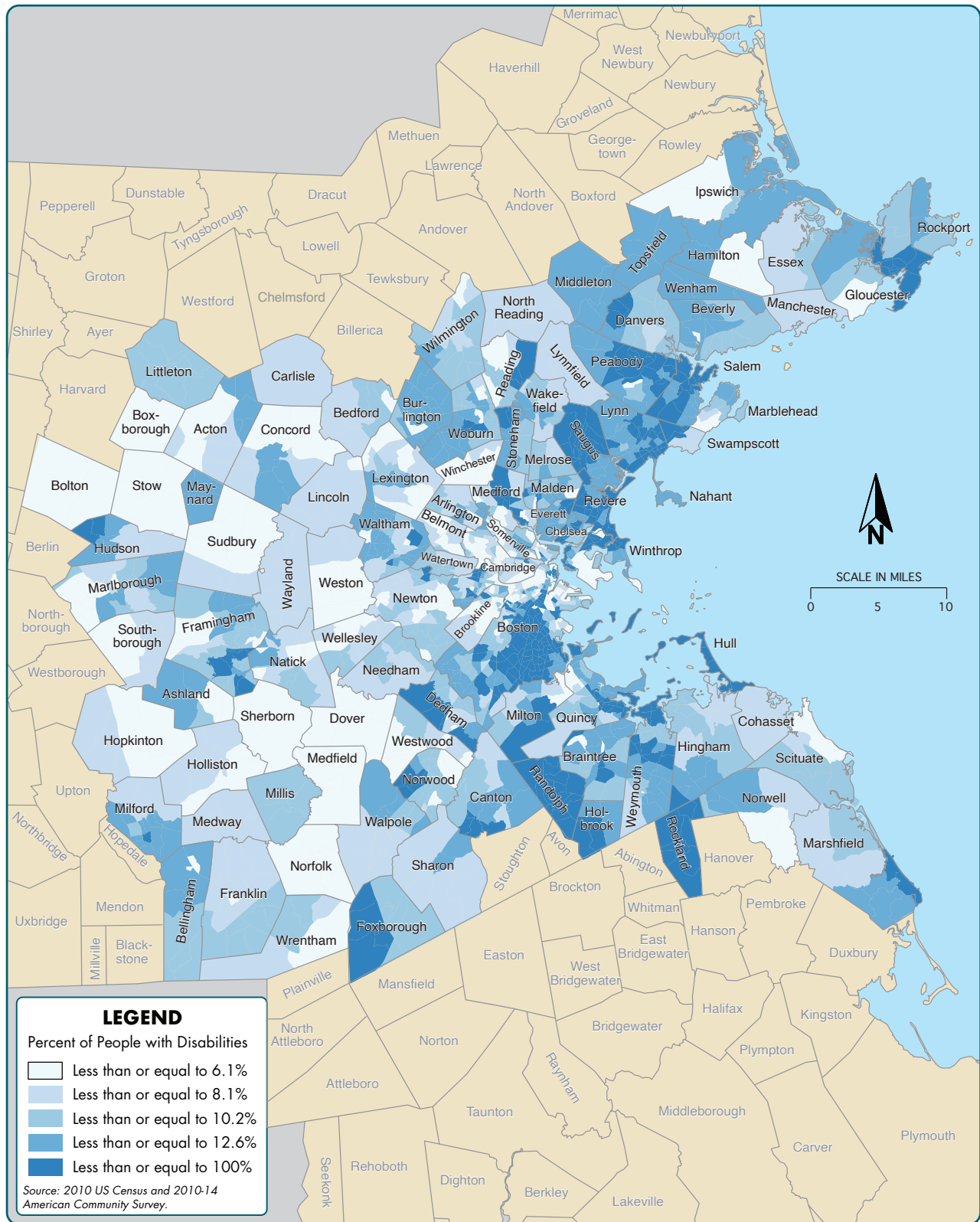


Figure 6-6: Percentage of People with Disabilities in the Boston Region



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 likely a fairly accurate 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 localized regardless of investment program, such as 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 6-3 shows the percentage of TE populations who live within a half-mile of Regional Target-funded projects. The results show that for the minority population, people with low incomes, people with LEP, and people age 17 or younger, the percentage of people within a half-mile exceeds the regionwide average. For people age 75 or older and people with disabilities, it is slightly below the regionwide average.

Table 6-3: Transportation Equity Populations Served or Impacted by Regional Target-funded Projects

TE Population Group	TE Population	Total Population	Percentage of TE Population	Percentage of Boston Region Total Population
Minority Population	257,600	693,564	37.1%	28.2%
People with Low Incomes	200,607	658,975	30.4%	23.0%
People with LEP	108,171	655,124	16.5%	10.6%
People Age 75 or Older	41,359	693,564	6.0%	6.7%
People Age 17 or Younger	122,819	693,564	17.7%	16.1%
People with Disabilities	67,889	687,851	9.9%	10.0%

Note: This table does not include projects in the Transit Modernization Program, as those projects have not yet been identified, or those in the outer years of the Community Connections Program that have yet to be identified.

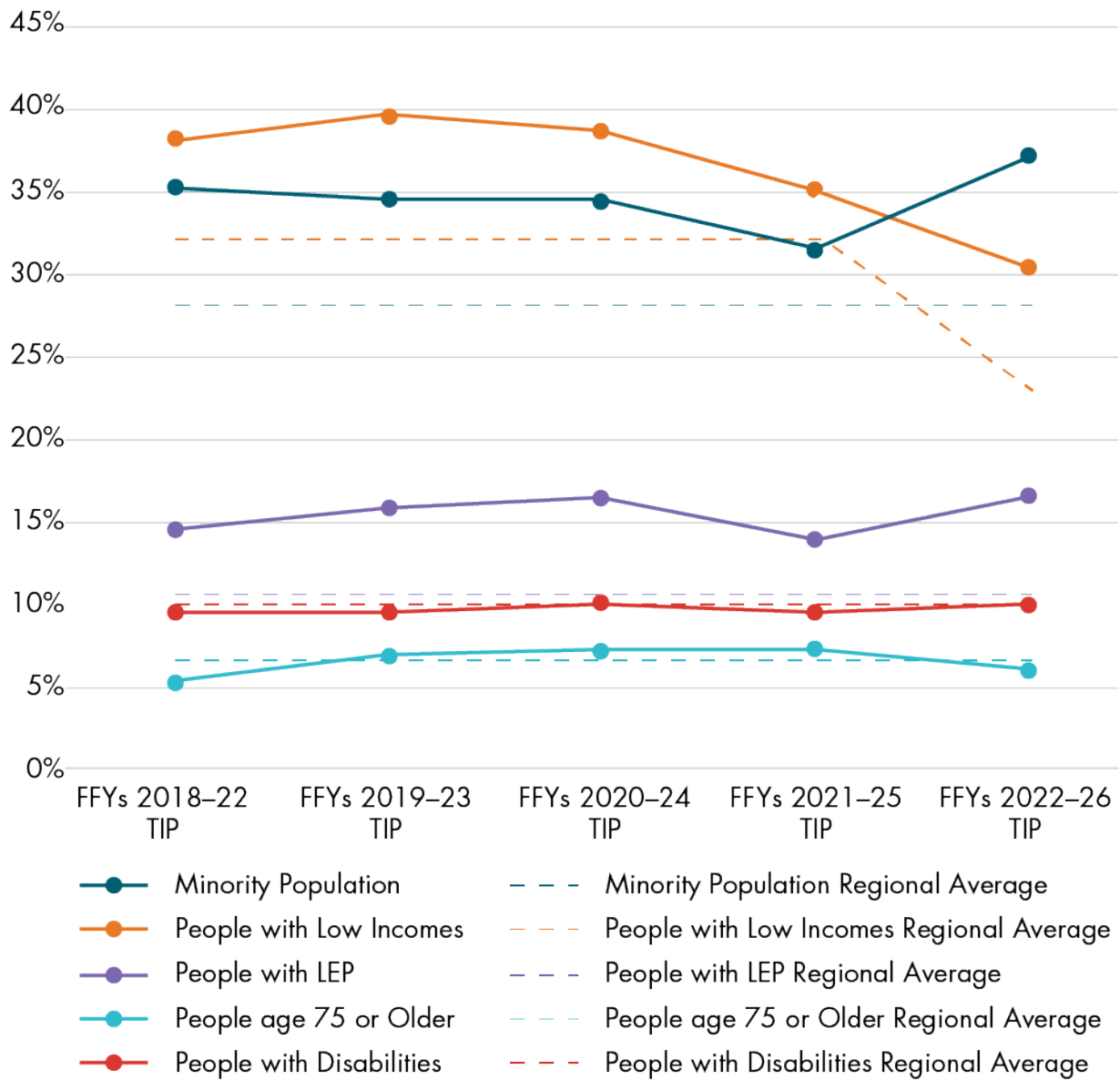
LEP = limited English proficiency. TE = transportation equity.

Sources: 2010 US Census, 2010–14 American Community Survey, and the Boston Region MPO.

Figure 6-7 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, and 2022–26 TIPs.⁶ In general, funding allocated to TE populations based on their proximity to Regional Target-funded projects has held steady over the past five years. For the minority population and people with LEP, funding has increased slightly in the current TIP over previous years. For people with low incomes, there has been a few percentage points decrease since the FFYs 2018–22 TIP, although it has remained above the average for the region. The decrease largely reflects changes to the methodology used to determine the number of people with low incomes. (See the note in Figure 6-7.) For people age 75 or older and people with disabilities, the percentage has continued to hover around the regionwide average over the past five years. (Data for people age 17 or younger were not included in the analysis prior to the FFYs 2022–26 TIP, so temporal data are not available.)

⁶ 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 for previous TIPs.

Figure 6-7: Change in the Percentage of Transportation Equity Populations Served or Impacted by Regional Target Projects



Notes: People age 17 or younger were not considered a TE population until the FFYs 2022-26 TIP, so are not included here. Additionally, starting in the FFYs 2022-26 TIP, people with low incomes are defined based on their poverty status for their family size. (Formerly it was based on household income.) The decrease in the percentage of people with low incomes served or impacted by projects in the FFYs 2022-26 TIP is largely due to this change. The change in the regional average shown in the figure reflects this change as well. For information about the data for the FFYs 2018-22, 2019-23, 2020-24, and 2021-25 TIPs, [see the respective documents](#).

For the FFYs 2021-25 and 2022-26 TIPs, the figure does not include projects in the Transit Modernization Program, as those projects have not yet been identified, or projects in the outer years of the Community Connections Program that also have yet to be identified.

FFY = federal fiscal year. LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Sources: 2010 US Census, 2010-14 American Community Survey, and the Boston Region MPO.

Table 6-4 shows the percentage of the population served or impacted by Regional Target-funded projects that are TE populations in each investment program. Numbers in orange indicate values below the average for all Regional Target-funded projects, while numbers in green indicate values above the average. Numbers in grey indicate values equal to the average. The percentage varies across investment programs. Relative to the average of all Regional Target-funded projects, Bicycle Network and Pedestrian Connections serve or impact a greater share of people age 75 or older (13.3 percent), people age 17 or younger (19.5 percent), and people with disabilities (12.9 percent). Complete Streets projects serve or impact a greater share across all TE populations except people age 75 or older (5.7 percent). Intersection Improvement projects serve or impact a greater share of people age 75 or older (10.4 percent) and people age 17 or younger (20.3 percent). Major Infrastructure projects serve or impact a greater share of people with low incomes (30.6 percent) and people with LEP (17.4 percent). Finally, Community Connections projects serve or impact a greater share of the minority population (38.7 percent), people age 75 or older (6.1 percent), and people age 17 or younger (18.9 percent). Overall, Complete Streets projects serve or impact the greatest share of TE populations among the investment programs.

Table 6-4: Percentage of Transportation Equity Populations Served or Impacted by Regional Target Projects, by Investment Program

Investment Program	Number of Projects	Percentage of Minority Population	Percentage of People with Low Incomes	Percentage of People with LEP	Percentage of People Age 75 or Older	Percentage of People Age 18 or Younger	Percentage of People with Disabilities
Bicycle Network and Pedestrian Connections	4	13.7%	17.1%	15.8%	13.3%	19.5%	12.9%
Complete Streets	21	38.0%	36.4%	17.3%	5.7%	17.8%	10.6%
Intersection Improvements	8	17.1%	15.6%	5.3%	10.4%	20.3%	9.4%
Major Infrastructure	3	33.6%	30.6%	17.4%	4.8%	12.7%	9.3%
Community Connections	10	38.7%	28.9%	16.5%	6.1%	18.9%	9.7%
All Regional Target-funded Projects	46	37.1%	30.4%	16.5%	6.0%	17.7%	9.9%

Notes: The Major Infrastructure Program includes both roadway and public transit projects. This analysis does not include figures for the Transit Modernization Program, as those projects have not yet been identified, or for projects in the outer years of the Community Connections Program that also have yet to be identified.

LEP = limited English proficiency. TIP = Transportation Improvement Program.

Sources: 2010 U S Census, 2010–14 American Community Survey, and the Boston Region MPO.

TRANSPORTATION EMISSION IMPACTS ANALYSIS

Table 6-5 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 for TE populations and their non-TE counterparts. Reductions are reported in kilograms per 1,000 people and are aggregate figures for all projects. The table also shows the percentage change in emissions since the FFYs 2021–25 TIP went into effect. The results show that the minority population, people with low incomes, people with LEP, and people with disabilities would experience a 100 percent decrease in emissions compared to the previous year’s TIP. However, in this year’s TIP the minority population, people with low incomes, people

with LEP, and people ages 17 or under would continue to experience less of an absolute decrease in emissions than their non-TE counterparts. While the data show a decrease in emissions exposure over the previous year’s TIP, there is still an opportunity for improvement so that TE populations receive a comparable decrease relative to their non-TE counterparts.

Table 6-5: Reduction in Carbon Monoxide, Volatile Organic Compounds, and Nitrogen Oxide Emissions per 1,000 People

Population Group	Emissions Reduction per 1,000 People (kilograms)	Percentage Change Compared to Emissions in FFYs 2021–25 TIP
Minority Population	-47.6	-109%
Nonminority Population	-51.6	-81%
People with Low Incomes	-51.2	-134%
People with Medium to High Incomes	-53.4	-42%
People with LEP	-49.1	-173%
People Fluent in English	-53.8	-81%
People age 75 or Older	-60.0	-67%
People Under the Age of 75	-49.5	-90%
People age 17 or Younger	-47.4	N/A
People age 18 or Older	-50.7	N/A
People with Disabilities	-51.2	-101%
People without Disabilities	-50.5	-86%

Notes: This analysis does not include projects in the Transit Modernization Program, as those projects have not yet been identified, or projects in the outer year of the Community Connections Program that also have yet to be identified. Emissions for the youth population was not analyzed in the FFYs 2021–25 TIP.

FFY = federal fiscal year. LEP = limited English proficiency. N/A = not applicable. TIP = Transportation Improvement Program.

Source: Boston Region MPO’s Congestion Mitigation and Air Quality analyses.

FUNDING DISTRIBUTION ANALYSES

The results of the analyses reported in this section show how Regional Target funds are distributed to TE populations based on the percentage of the population served by the Regional Target-funded projects. The MPO has programmed approximately \$518 million in Regional Target funding in the FFYs 2022–26 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 6-6 shows how this funding is allocated to TE populations relative to their shares of the regionwide population. The data show mixed results. The percentage of funding benefiting the minority population, people with LEP, people age 17 or younger, and people with disabilities is less than their shares of the regionwide population. The minority population in particular receives disproportionately less funding—21.3 percent—even though this population makes up 28.2 percent of the regionwide population. Conversely, people with low incomes and people age 75 or older receive a higher percentage of funding than their share of the regionwide population.

Table 6-6: Percent of Funding Allocated to Transportation Equity Populations

TE Population Group	Percentage of Funding	Percentage of Regionwide Population
Minority Population	21.3%	28.2%
People with Low Incomes	22.7%	20.3%
People with LEP	9.5%	10.6%
People Age 75 or Older	7.8%	6.7%
People Age 17 or Younger	17.9%	20.6%
People with Disabilities	9.5%	10.0%

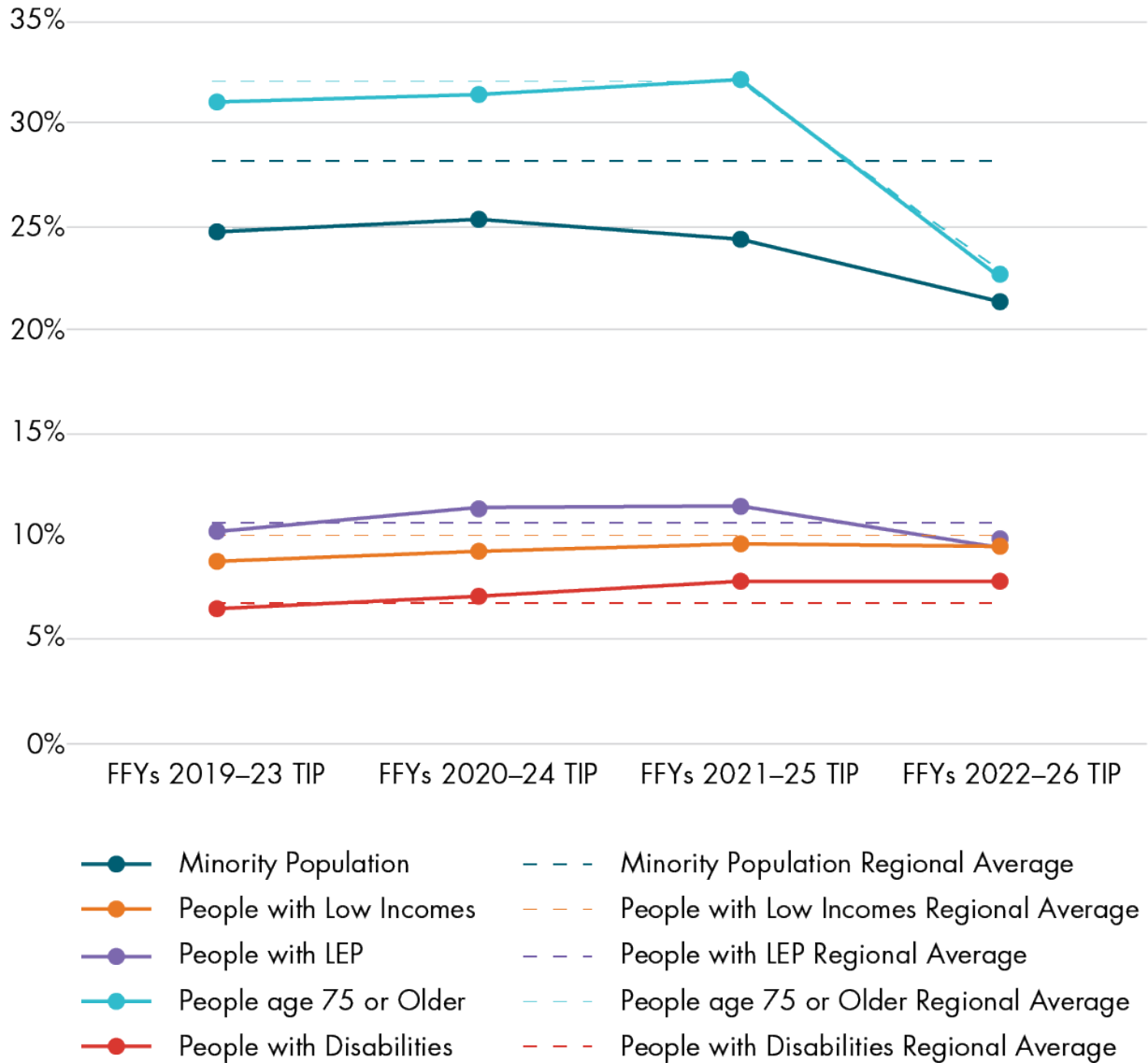
Note: This analysis does not include funds allocated to the Transit Modernization Program, as individual projects have not been identified, or funds that are allocated to the outer years of the Community Connections Program for which projects have yet to be identified.

LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Sources: 2010 U S Census, 2010–14 American Community Survey, and the Boston Region MPO.

Figure 6-8 shows the percentage of funding allocated to TE populations based on the percent of people who live in the project areas (within one-half mile) for the FFYs 2019–23, 2020–24, 2021–25, and 2022–26 TIPs. Funding has generally remained steady around the regionwide average for people with low incomes, people age 75 or older, people with disabilities, and people with LEP. However, for the minority population it has decreased slightly during the past two TIP funding cycles, and it remains several percentage points below the regionwide average. For people with low incomes, the nine-percentage-point decrease since the FFYs 2018–22 TIP largely reflects changes to the methodology used to determine the number of people with low incomes starting in the FFYs 2022–26 TIP. (See the note in Figure 6-8 for more details.)

Figure 6-8: Change in the Percentage of Funding Allocated to Transportation Equity Populations



Notes: People age 17 or younger were not considered as a TE population until the FFYs 2022–26 TIP cycle, so they are not included in the figure. Additionally, starting in the FFYs 2022–26 TIP, people with low incomes are defined based on their poverty status for their family size. (Formerly it was based on household income.) The decrease in percent of the low-income population served in FFYs 2022–26 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](#).

This analysis does not include funds allocated to the Transit Modernization Program, as individual projects have not been identified, or funds that are allocated to the outer years of the Community Connections Program for which projects have yet to be identified.

FFY = federal fiscal year. LEP = limited English proficiency. TE = transportation equity. TIP = Transportation Improvement Program.

Sources: 2010 U S Census, 2010–14 American Community Survey, and the 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 Long-Range Transportation Plan (LRTP) and will continue to refine the analysis in FFYs 2021 and 2022. Development of the LRTP analysis will inform further analyses of TIP equity performance. Much of this work will likely involve accessibility analyses and analyses of health impacts. Staff anticipates continuing to track the results of these analyses over time and enhancing them each year.



Appendix A

Project Prioritization and Scoring

INTRODUCTION

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) 2022–26 TIP.

To be considered for funding by the MPO, a project must fulfill certain basic criteria. For projects evaluated through the MPO's Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure investment programs

- 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; and
- the project must be at 25 percent design or demonstrate the level of detail of a project near this threshold. Documentation illustrating this level of design, such as Functional Design Reports, project locus maps and designs, operations analyses, and Highway Capacity Manual data sheets showing future build and no-build scenarios must be submitted.

For projects evaluated through the MPO's Community Connections Program

- the project 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 (for operational projects);
- the project 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 project must demonstrate that it will have a positive impact on air quality, as this program is funded using federal Congestion Mitigation and Air Quality funds; and
- the project proponent must demonstrate its 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 in November and provides a snapshot of information available on projects at that stage in TIP development. For these reasons, some projects that get evaluated for funding may not appear in the *Universe*, as more project information may become available after this time. In addition, some projects that appear on the Universe list may not be scored 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.

Once a project in the *Universe* provides sufficient design documentation and is an active municipal or state priority for funding, it can be evaluated by MPO staff. The evaluation criteria used to score projects are based on the MPO's goals and objectives. 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 for these changes 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 now shown in separate tables in this appendix as follows: Bicycle Network and Pedestrian Connections (Table A-3); Community Connections (Table A-5); Complete Streets (Table A-7); Intersection Improvements (Table A-9); and Major Infrastructure (Table A-11).

After the projects are scored, 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 2022–26 TIP for programming in the MPO's Bicycle Network and Pedestrian Connections (Table A-4), Community Connections (Table A-6), Complete Streets (Table A-8), Intersection Improvements (Table A-10), and Major Infrastructure (Table A-12) investment programs are summarized on the following pages.

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 2022–26 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—including scores showing the relationships between these projects and the MPO's goal areas—are available in the funding tables and project descriptions included in Chapter 3. A summary of performance-related information for the FFYs 2022–26 Regional Target projects is included in Chapter 4, and greenhouse gas (GHG) information for these projects is available in Appendix B.



Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2021-25 TIP
 Project listed in FFYs 2021-25 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Inner Core									
Complete Streets									
Boston	MassDOT	Reconstruction on Gallivan Boulevard (Route 203), from Neponset Circle to East of Morton Street Intersection	606896	PRC approved (2012)	\$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)	\$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 (9/28/17)"	\$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)	\$5,750,000	6		N/A	
Brookline	Brookline	Rehabilitation of Washington Street	610932	PRC approved (2020)	\$25,888,631	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	Yes
Chelsea	Chelsea	Reconstruction of Spruce Street, from Everett Avenue to Williams Street	610675	PRC approved (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	N/A	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Chelsea	Chelsea	Park Street & Pearl Street Reconstruction	611983	PRC approved (2021)	\$10,451,525	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Chelsea	Chelsea	Reconstruction of Marginal Street	N/A	Pre-PRC	N/A	6		N/A	
Lynn	Lynn	Reconstruction of Western Avenue (Route 107)	609246	PRC approved (2018)	\$36,205,000	4	Project programmed in LRTP (FFYs 2025-29) but no longer considered Major Infrastructure by MPO.	76	Yes
Lynn, Salem	MassDOT	Reconstruction of Route 107	608927	PRC approved (2017)	\$38,155,000	4	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Melrose	Melrose	Reconstruction of Lebanon Street, from Lynde Street to Malden City Line)	N/A	Pre-PRC	N/A	4	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Newton	Newton	Reconstruction of Washington Street, from Church Street to Chestnut Street	N/A	Pre-PRC	N/A	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Newton, Brookline	MassDOT	Resurfacing and Related Work on Route 9	608821	PRC approved (2017)	\$7,337,000	6		N/A	

Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects (cont., 2)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2021-25 TIP
 Project listed in FFYs 2021-25 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Revere	Revere	Reconstruction of Ocean Ave, Revere Street, and Revere Beach Boulevard	N/A	Pre-PRC	N/A	4	Project at conceptual stage.	N/A	
Saugus	MassDOT	Pedestrian Improvements on Main Street/Route 1	610534	PRC approved (2019)	\$1,319,288	4		N/A	
Winthrop	Winthrop	Reconstruction & Improvements on Route 145	609446	PRC approved (2019)	\$7,565,512	6		N/A	
Intersection Improvements									
Boston, Brookline	Boston, Brookline	Mountfort St. and Commonwealth Ave. Connection	608956	PRC approved (2017)	\$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)	\$7,000,000	6		N/A	
Medford	Medford	Intersection Improvements at Main Street and South Street	611974	PRC approved (2021)	\$8,498,000	4	Project location studied by CTPS.	N/A	
Newton	MassDOT	Traffic Signal and Safety Improvements at Interchange 17 (Newton Corner)	609288	PRC approved (2018)	\$14,000,000	6		N/A	
Quincy	MassDOT	Intersection Improvements at Route 3A (Southern Artery) and Broad Street	608569	PRC Approved (2016)	\$3,132,000	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Quincy	Quincy	Intersection Improvements at Willard Street and Ricciuti Drive	610823	PRC Approved (2020)	\$1,544,650	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Bicycle and Pedestrian									
Belmont	Belmont	Community Path, Belmont Component of the MCRT (Phase 1)	609204	PRC approved (2018)	\$16,703,600	4		42	Yes
Boston	MassDOT	Leverett Circle Pedestrian Bridge over Route 28, I-93 Ramps and Storrow Drive	606703	PRC approved (2012)	\$11,040,000	6		N/A	
Lynn, Nahant	Lynn, Nahant	Northern Strand Extension	610919	25% submitted (7/2/20)	\$9,363,750	4	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Major Infrastructure									
Revere, Malden	MassDOT	Improvements on Route 1 (NB) Add-A-Lane	610543	PRC approved (2019)	\$7,210,000	4	Project not programmed in LRTP.	N/A	
Somerville	Somerville	McGrath Boulevard Project	607981	PRC approved (2014)	\$88,250,000	4	LRTP project (FFYs 2025-29)	74	Yes

Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects (cont., 3)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2021-25 TIP

 Project listed in FFYs 2021-25 TIP universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Minuteman Advisory Group on Interlocal Coordination									
Complete Streets									
Lexington	Lexington	Route 4/225 (Bedford Street) and Hartwell Avenue	N/A	Pre-PRC	\$30,557,000	4	L RTP project (FFYs 2030–34). New for FFYs 2021–25 TIP evaluation cycle.		
Intersection Improvements									
Littleton	Littleton	Intersection Improvements at Route 119/Beaver Brook Road	610702	PRC approved (2020)	\$3,120,110	3	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Bicycle and Pedestrian									
Concord	Concord	Assabet River Pedestrian Bridge	N/A	Pre-PRC	\$2,000,000-\$3,600,000	4	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Major Infrastructure									
Acton	MassDOT	Improvements at Route 2 Eastbound Ramps at Route 27	610553	PRC approved (2019)	\$3,480,000	3	Project not programmed in L RTP (meets MPO roadway classification requirement). New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Concord	Concord	Reconstruction & Widening on Route 2, from Sandy Pond Road to Bridge over MBTA/B&M Railroad	608015	PRC approved (2014)	\$8,000,000	4	Project not programmed in L RTP (meets MPO roadway classification requirement).	N/A	
MetroWest Regional Collaborative									
Complete Streets									
Weston	Weston	Reconstruction on Route 30	608954	25% submitted (10/16/2020)	\$8,117,562	6		57	Yes
Intersection Improvements									
Framingham	MassDOT	Roundabout Construction at Salem End Road, Badger Road and Gates Street	609280	PRC approved (2018)	\$2,520,000	3		N/A	
Weston	Weston	Intersection Improvements - Boston Post Road (Route 20) at Wellesley Street	608940	25% submitted (5/26/2020)	\$1,219,250	6		40	Yes
Bicycle and Pedestrian									
Natick	Natick	Cochituate Rail Trail Extension, from MBTA Station to Mechanic Street	610691	PRC approved (4/30/2020)	\$4,500,110	3	New for FFYs 2022-26 TIP evaluation cycle.	N/A	

Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects (cont., 4)

■ Subregion
 ■ MPO Investment Program
 ■ New project in TIP universe
 ■ Project evaluated for FFYs 2021-25 TIP

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Major Infrastructure									
Framingham	Framingham	Intersection Improvements at Route 126 and Route 135/MBTA and CSX Railroad	N/A	Pre-PRC	\$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% submitted (2/12/2020)	\$45,097,350	3	L RTP project (FFYs 2025–29). High priority for District 3. 25% design is a resubmission.	66	Yes
North Suburban Planning Council									
Complete Streets									
Burlington, Billerica	MassDOT	Resurfacing and Related Work on Route 3A	610704	PRC approved (2020)	\$3,669,400	4	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Lynnfield	Lynnfield	Reconstruction of Summer Street	609381	PRC approved (2019)	\$21,521,921	4		N/A	
Reading	Reading	Reading Downtown Improvement Project	N/A	Pre-PRC	\$7-\$8 million	4	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Wakefield	Wakefield	Main Street Reconstruction	610545	PRC approved (2019)	\$26,382,000	4	Project scored as Major Infrastructure for FFYs 2021-25 TIP, but is classified as a Complete Streets project for FFYs 2022-26 TIP (no L RTP programming needed).	59	Yes
Intersection Improvements									
Stoneham	Stoneham	Intersection Improvements at Main Street (Route 38), Franklin Street, and Central Street	N/A	Pre-PRC	N/A	4	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Major Infrastructure									
Burlington	MassDOT	Improvements at I-95 (Route 128)/Route 3 Interchange	609516	PRC approved (2019)	\$3,001,500	4		N/A	
Reading	MassDOT	Improvements on I-95	609527	PRC approved (2019)	\$14,980,000	4		N/A	
North Shore Task Force									
Complete Streets									
Beverly, Manchester-by-the-Sea	MassDOT	Resurfacing and Related Work on Route 127	607707	PRC approved (2013)	\$2,300,000	4		N/A	

Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects (cont., 5)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2021-25 TIP
 Project listed in FFYs 2021-25 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Danvers	Danvers	Reconstruction on Collins Street, from Sylvan Street to Centre and Holten Streets	602310	75% submitted (3/5/2010)	\$5,183,121	4	Updated 75% design submission needed for project to move forward. Last scored for FFYs 2020-24 TIP.	46	
Ipswich	Ipswich	Roadway Improvements on County Street Including Rehabilitation of Bridge I-01-005	611975	PRC approved (2021)	\$5,653,500	4	New for FFYs 2022-26 TIP evaluation cycle.	N/A	Yes
Marblehead	Marblehead	Bridge Replacement, M-04-001, Village Street over Marblehead Rail Trail (Harold B. Breare Bridge)	N/A	Pre-PRC	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)	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)	\$4,350,000	4		46	Yes
Salem	MassDOT	Reconstruction of Bridge Street, from Flint Street to Washington Street	5399	25% submitted (8/20/04)	\$24,810,211	4		N/A	
Salem	Salem	Boston Street Improvements	609437	PRC approved (2019)	\$12,480,000	4		69	Yes
Wenham	Wenham	Safety Improvements on Route 1A	609388	PRC approved (2019)	\$5,075,000	4		N/A	
Wenham	Wenham	Roadway Reconstruction on Larch Row and Dodges Row	N/A	Pre-PRC	\$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)	\$2,135,440	4		N/A	
Bicycle and Pedestrian									
Swampscott	Swampscott	Rail Trail Construction	610666	PRC approved (2019)	\$7,700,000	4		34	Yes
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)	\$4,000,200	5		N/A	
Hull	Hull	Corridor Improvements along Nantasket Avenue from Mountford Road to A Street	N/A	Pre-PRC; PNF submitted (6/30/16)	N/A	5		N/A	

Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects (cont., 6)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2021-25 TIP
 Project listed in FFYs 2021-25 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Weymouth	MassDOT	Reconstruction on Route 3A, including Pedestrian and Traffic Signal Improvements	608231	PRC approved (2016)	\$10,780,100	6		N/A	
Weymouth	MassDOT	Resurfacing and Related Work on Route 3A	608483	PRC approved (2016)	\$2,400,000	6		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)	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)	\$4,025,000	3		N/A	
Millis	Millis	Town Center Improvements	N/A	Pre-PRC	N/A	3	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Wrentham	Wrentham	Traffic and Safety Improvement along Route 1	N/A	Pre-PRC	N/A	5	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Intersection Improvements									
Wrentham	Wrentham	Intersection Improvements on Route 1A at North and Winter Street	610676	PRC approved (2019)	N/A	5	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Wrentham	Wrentham	Intersection Improvements at Randall Road and Route 1A	N/A	Pre-PRC	\$2,649,000	5	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Wrentham	Wrentham	Downtown Intersection Improvement Project	N/A	Pre-PRC	N/A	5	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Bicycle and Pedestrian									
Hopkinton	Hopkinton	Campus Trail Connector, Shared Use Trail Construction	611932	PRC approved (2020)	\$1,750,700	3	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Major Infrastructure									
Bellingham	MassDOT	Ramp Construction & Relocation, I-495 at Route 126 (Hartford Avenue)	604862	PRC approved (2006)	\$13,543,400	3	High priority for District 3	N/A	

Table A-1: FFYs 2022-26 Transportation Improvement Program (TIP) Universe of Projects (cont., 7)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2021-25 TIP
 Project listed in FFYs 2021-25 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	MassDOT Design Status	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Scores for FFYs 2022-26 TIP?
Wrentham	Wrentham	I-495 North Slip Ramp Improvements at Route 1A	N/A	Pre-PRC	N/A	5	New for FFYs 2022-26 TIP evaluation cycle. Project at conceptual stage.	N/A	
Three Rivers Interlocal Council									
Complete Streets									
Canton, Milton	MassDOT	Roadway Improvements on Route 138	608484	PRC Approved (2016)	\$18,467,500	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Milton	MassDOT	Reconstruction on Granite Avenue, from Neponset River to Squantum Street	608406	25% submitted (2/10/17)	\$3,665,146	6		N/A	
Milton	Milton	Adams Street Improvements, from Randolph Avenue to Eliot Street	610823	PRC Approved (2020)	\$1,544,650	6	New for FFYs 2022-26 TIP evaluation cycle.	N/A	
Westwood	Westwood	Reconstruction of Canton Street and Everett Street	608158	PRC approved (2015)	\$2,880,000	6		N/A	
Intersection Improvements									
Milton	Milton	Intersection Improvements - Squantum Street at Adams Street	608955	PRC approved (2017)	\$1,192,062	6		33	Yes
Westwood	Westwood	Traffic Signal Improvements on Route 109	608947	25% submitted (6/5/19)	\$814,400	6	Revised 25% design needed.	31	
Major Infrastructure									
Canton, Westwood	MassDOT	Interchange Improvements at I-95 / I-93 / University Avenue / I-95 Widening	87790	25% submitted (7/25/14)	\$202,205,994	6	Project not programmed in LRTP. Last scored for FFYs 2020-24 TIP.	47	

Table A-2: FFYs 2022–26 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
607738	Bedford–Minuteman Bikeway Extension	Bicycle and Pedestrian	Extend the bikeway by making a portion of Railroad Avenue accessible to bikes and by constructing 8,800 feet of bikeway on the Reformatory Branch Trail.	Bedford	2022	N/A	This project is expected to improve safety for bicyclists and pedestrians. It will add more than two miles to the Minuteman Bikeway. By extending the Boston region’s bicycle and pedestrian network, the project is expected to increase non-SOV travel. It is also expected to reduce CO2 and other transportation-related emissions.
608164	Sudbury– Bruce Freeman Rail Trail, Phase 2D	Bicycle and Pedestrian	Construct a trail from the Concord Town Line to Station Road, including by improving structures and at-grade crossings.	Sudbury	2022	N/A	This project is expected to improve safety for bicyclists and pedestrians. It will add more than four miles to the Bruce Freeman Rail trail and connect to Phase 2C of the trail. By extending the region’s bicycle network, this project is expected to increase non-SOV travel. It is also expected to reduce CO2 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	N/A	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 CO2 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	N/A	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 reduce CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 2)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608887	Burlington–Rehabilitation and Related Work on Route 126, from Douglas Drive to Route 140	Complete Streets	Improve pavement condition and bicycle and pedestrian accommodations in the project corridor.	Bellingham	2022	N/A	This project is expected to improve safety, including for bicyclists and pedestrians. It will improve two lane-miles of NHS pavement. It will also improve or add sidewalks and add bicycle accommodations to the corridor, which may help increase non-SOV travel. Signal improvements and geometry changes may support reliability on neighboring NHS corridors. This project is also expected to reduce CO2 and other transportation-related emissions.
608348	Beverly–Rehabilitation 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 2015–17 HSIP all-mode crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. It includes signal and geometry improvements that may support increased reliability and reduced PHED on nearby Route 62. It will also provide bicycle-on-shoulder lanes and improved sidewalks, which may encourage non-SOV travel. This project is also expected to reduce CO2 and other transportation-related emissions.
606453	Boston–Improvements on Boylston Street	Complete Streets	Improve the roadway cross section, signals, and bicycle and pedestrian accommodations in the project corridor.	Boston	2023	N/A	The project area overlaps a 2015–17 HSIP all-mode crash cluster location and a 2008–17 HSIP bicycle 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 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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 3)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608076	Chelsea–Reconstruction of Broadway, from City Hall to the Revere City Line	Complete Streets	Reconstruct one mile of Broadway, improve sidewalks, and create bicycle accommodations.	Chelsea	2022	N/A	The project area overlaps three 2008–17 HSIP pedestrian crash cluster locations and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve two lane-miles of substandard pavement on the NHS. It will also improve substandard sidewalks and add bicycle lanes in the corridor, which may encourage non-SOV travel. The project is expected to reduce CO2 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 2015–17 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 CO2 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 CO2 and other transportation-related emissions.
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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 4)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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 establishing a small roundabout at the intersection of Route 3A and Summer Street. 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 CO2 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 of these features may encourage non-SOV travel. The project is also expected to reduce CO2 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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 5)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609252	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 four 2015–17 all-mode HSIP crash cluster locations and two 2008–17 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 address reliability needs 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 CO2 and other transportation-related emissions.
602077	Lynn–Reconstruction on Route 129 (Lynnfield Street)	Complete Streets	Improve safety features, drainage, curbing, pedestrian accommodations, intersection improvements, and other elements in the corridor, which runs from Colonial Avenue to south of Floyd Avenue.	Lynn	2022	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve nearly two lane-miles of substandard pavement on the NHS. It will also upgrade substandard sidewalks and add bicycle lanes to the corridor, which may encourage non-SOV travel. This project is also expected to reduce CO2 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 2015–17 all-mode HSIP crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. Geometric and signal improvements are expected to improve reliability on unreliable NHS segments in the project area. 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. These improvements are expected to reduce CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 6)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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 area overlaps two 2015–17 all-mode HSIP crash cluster locations, and 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, and 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 CO2 and other transportation-related emissions.
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 accommodations.	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.
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	2023–24	N/A	The project area overlaps one 2015–17 all-mode HSIP crash cluster location, two 2008–17 HSIP pedestrian crash cluster locations, and one 2008–17 HSIP bicycle crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. This project is expected to 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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 7)

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	2025–26	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 CO2 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 overlaps a 2008–17 HSIP pedestrian crash cluster location, and it 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 CO2 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 2015–17 all-mode HSIP crash cluster location and a 2008–17 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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 8)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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 2015–17 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 CO2 and other transportation-related emissions.
S12116	128 Business Council– Alewife Wayfinding Improvements	Community Connections	Provide wayfinding measures at the MBTA Alewife station with directional information and real-time shuttle information, alerting passengers of upcoming arrivals and departures and supporting their use of 128 Business Council shuttles.	Cambridge	2022	N/A	This project may encourage non-SOV trips by enhancing amenities and information people can use to access 128 Business Council shuttles. As more people make use of these shuttles, PHED may decrease and reliability may improve on NHS routes in the 128 Business Council service area, including Route 2.
S12122	Acton– Parking Management System	Community Connections	Implement digital parking management products to improve efficiency of permitting and enforcement processes, which will increase convenience for commuters and Acton’s internal parking management team.	Acton	2022	N/A	As technology improves, this online parking management portal may be able to provide real-time parking availability information available to commuters. This may help to reduce congestion and potentially PHED in the area surrounding the Acton commuter rail station, which includes NHS roadways, and it may encourage more non-SOV trips by making it easier for drivers to park and access MBTA commuter rail.
S12115	Arlington, Newton, Watertown–BlueBikes Expansion	Community Connections	Install nine BlueBikes bikeshare stations.	Arlington, Newton, Watertown	2022	N/A	This project may increase non-SOV travel by providing a new bicycling option in these municipalities and is expected to reduce CO2 and other transportation-related emissions.
S12121	Brookline– Transit App Education Program	Community Connections	Provide technology training for older adults to use transit applications (apps) on their smartphones.	Brookline	2022	N/A	This project may increase non-SOV travel in the region by enabling older adults to travel more confidently on foot or by public transit.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 9)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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	2022–24	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 CO2 and other transportation-related emissions.
S12119	MBTA– Main Street Transit Signal Priority in Everett and Malden	Community Connections	Update signal equipment to enable transit signal priority on up to nine signals along Main Street in Malden and Everett.	Everett, Malden	2022	N/A	This project is on the NHS and may improve reliability and reduce PHED by improving bus reliability and movement. It may help increase non-SOV travel in the region by making the bus a more attractive travel option in the Main Street corridor. It is expected to reduce CO2 and other transportation-related emissions.
S12117	MBTA–Systemwide Bike Racks	Community Connections	Increase bicycle parking capacity and improve bicycle parking facilities at up to 40 MBTA stations.	MBTA Systemwide	2022	N/A	This project may increase non-SOV travel in the region by enhancing bicycle amenities and supporting connections to the transit network. It is expected to reduce CO2 and other transportation-related emissions.
S12118	Malden, Medford– BlueBikes Expansion	Community Connections	Install six BlueBikes bikeshare stations.	Malden, Medford	2022	N/A	This project may increase non-SOV travel by providing a new bicycling option in these municipalities and is expected to reduce CO2 and other transportation-related emissions.
S12125	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 (past) 2022–23	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 CO2 and other transportation-related emissions.
S12120	Wellesley– Bicycle Infrastructure	Community Connections	Improve bicycle facilities by installing covered bicycle racks at Wellesley Middle School.	Wellesley	2022	N/A	This project may increase non-SOV travel in the region by enhancing bicycle amenities near MBTA commuter rail stations.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 10)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608229	Acton– Intersection Improvements at Massachusetts Avenue (Route 111) and Main Street (Route 27) (Kelley’s Corner)	Intersection Improvements	Add turn lanes, reduce and consolidate curb cuts, improve signage and wayfinding, and provide accommodations for vehicles, bicyclists, and pedestrians.	Acton	2022	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve sidewalks and is expected to add bicycle accommodations, which may encourage non-SOV travel. 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 is expected to reduce CO2 and other transportation-related emissions.
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) & 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 and add new sidewalks at the intersection, along with new bike lanes, all of which 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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 11)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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 CO2 and other transportation-related emissions.
608443	Littleton– Intersection Improvements on Route 2A at Willow Road and Bruce Street	Intersection Improvements	Improve safety and pavement condition by reconstructing the skewed intersection and adding a new signal system. Provide crosswalks and bicycle and pedestrian accommodations.	Littleton, Ayer (outside MPO region)	2022	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve one-half of a lane-mile of substandard pavement on the NHS. The geometric improvements included in the project are expected to help reduce delay and potentially PHED on the NHS. The project will add shared use paths near the intersection, which may encourage non-SOV travel. It is expected to reduce CO2 and other transportation-related emissions.
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 with University Avenue and Everett Street. Constructing an additional travel lane in each direction on Route 1, lengthen left-turn lanes, upgrade pedestrian crossings and bicycle amenities, and rehabilitate sidewalks.	Norwood	2025–26	The Route 1 corridor in Norwood is identified as a priority bottlenecks in the Destination 2040 Needs Assessment. This location was studied in “Route 1 at Everett Street and University Avenue” (CTPS, 2014).	The project area overlaps a 2015–17 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 CO2 and other transportation-related emissions.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 12)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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 reconstructed 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, add new sidewalks and add bicycle accommodations in the project area, all of which may encourage non-SOV travel. The project is expected to reduce CO2 and other transportation-related emissions.
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, constructing 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 Destination 2040 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 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. It will improve more than half of a lane-mile of pavement on the NHS. 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 CO2 and other transportation-related emissions.
1570	Green Line Extension to College Avenue with the Union Square Spur*	Major Infrastructure: Flex to Transit	Extend the MBTA Green Line from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville.	Cambridge, Medford, and Somerville	2017–2021 (past) 2022	This project is included in Destination 2040, the MPO’s LRTP, and Focus40, the MBTA’s 25-year investment plan.	This project may increase non-SOV travel because it will expand a transit alternative to SOV travel. It may also reduce PHED and improve reliability on the NHS by providing an alternative supporting travel to and from Boston. This project was analyzed as part of a set of recommended LRTP projects, and MPO staff estimate that this set will decrease CO2 emissions in the region compared to a no-build scenario.

Table A-2: FFYs 2022–26 Regional Target Projects and Their Relationships to Plans and Performance Measures (cont., 13)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
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 corridor.	Boston	2023–26	This project is included in Destination 2040, the MPO’s L RTP.	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 11 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 add 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 L RTP projects, and MPO staff estimate that this set will decrease CO2 emissions in the region compared to a no-build scenario.
606476	Boston– Sumner Tunnel Reconstruction*	Major Infrastructure: Roadway	Repair existing deterioration in the Sumner Tunnel by reconstructing the roadway pavement, replacing existing jet fans with modern enhancements, and repairing cracking and corrosion on the tunnel’s walls and ceiling.	Boston	2022	This project is included in Destination 2040, the MPO’s L RTP.	This project supports safety by improving the condition of the tunnel. It will improve more than two miles of pavement on the NHS network.

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 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 FFYs 2021–25 TIP criteria: 190 or less (good), 191 to 320 (fair or substandard), greater than 320 (poor or substandard).

* 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. IRI = International Roughness Index. MassDOT = Massachusetts Department of Transportation. MBTA = Massachusetts Bay Transportation Authority. MPO = Metropolitan Planning Organization. N/A = Not Applicable. NHS = National Highway System. Non-SOV = non-single-occupancy vehicle. PHED = peak hours of excessive delay.

Source: Boston Region MPO.

Table A-3: FFYs 2022–26 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)	Project improves pedestrian safety (up to 5 points)	Project improves safety for all users (up to 3 points)	
	+5 High total effectiveness of bicycle safety improvements	+5 High total effectiveness of pedestrian safety improvements	+3 Project includes three or more eligible multimodal safety improvements	
	+3 Medium total effectiveness of bicycle safety improvements	+3 Medium total effectiveness of pedestrian safety improvements	+2 Project includes two eligible multimodal safety improvements	
	+1 Low total effectiveness of bicycle safety improvements	+1 Low total effectiveness of pedestrian safety improvements	+1 Project includes one eligible multimodal safety improvement	
	+0 Project does not implement bicycle safety improvements	+0 Project does not implement pedestrian safety improvements	+0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	Bonus (up to 2 points)	Bonus (up to 2 points)	Bonus (up to 3 points)	
	+2 Improves bicycle safety at bicycle HSIP cluster	+2 Improves pedestrian safety at pedestrian HSIP cluster	+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	

Table A-3: FFYs 2022–26 TIP Evaluation Criteria: Bicycle Network and Pedestrian Connections Program (cont., 2)

MPO Goal Area				
System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 14 points)				
Criterion	<p>Project incorporates resiliency elements into its design (up to 5 points)</p> <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 <hr/> +1 Project improves stormwater infrastructure <hr/> +1 Project implements innovative resiliency solutions <hr/> +1 Project designed to meet a range of future climate projections <hr/> +1 Project demonstrates regional coordination on resiliency 	<p>Project improves connectivity to critical facilities (up to 2 points)</p> <ul style="list-style-type: none"> +2 Project improves access to critical facilities 	<p>Project improves existing pedestrian facilities (up to 5 points)</p> <ul style="list-style-type: none"> +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 	<p>Project improves other existing assets (up to 2 points)</p> <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
Equity Multiplier?	Yes	Yes	Yes	No
MPO Goal Area				
Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)				
Criterion	<p>Project improves pedestrian network and ADA accessibility (up to 5 points)</p> <ul style="list-style-type: none"> +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 	<p>Project improves bicycle network (up to 5 points)</p> <ul style="list-style-type: none"> +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 		

Table A-3: FFYs 2022–26 TIP Evaluation Criteria: Bicycle Network and Pedestrian Connections Program (cont., 2)

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 CO ₂ (up to 4 points) +4 300 or more annual tons of CO ₂ reduced +3 100–299 annual tons of CO ₂ reduced +2 50–99 annual tons of CO ₂ reduced +1 Less than 50 annual tons of CO ₂ reduced 0 No expected impact -1 Less than 50 annual tons of CO ₂ increased -4 50 or more annual tons of CO ₂ 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 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-3: FFYs 2022–26 TIP Evaluation Criteria: Bicycle Network and Pedestrian Connections Program (cont., 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) +2 Project improves bicycle access to or within a site <hr/> +2 Project improves pedestrian access to or within a site	Project serves existing employment and population centers (up to 4 points) +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	Project demonstrates proponent investment (up to 2 points) +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	Project promotes access to affordable housing opportunities (up to 3 points) +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-4: FFYs 2022–26 TIP Project Evaluation Results: Bicycle Network and Pedestrian Connections

	Belmont - Community Path, Belmont Component of the MCRT (Phase 1) [609204]		Swampscott - Rail Trail Construction [610666]	
Bicycle Network and Pedestrian Connections Project Scoring	Base Score	Equity Score	Base Score	Equity Score
SAFETY: Transportation by all modes will be safe.				
Project improves bicycle safety (up to 7 points)	5	2.5	5	2.5
Project improves pedestrian safety (up to 7 points)	5	2.5	5	2.5
Project improves safety for all users (up to 6 points)	3		3	
Safety Base Score (up to 20 points)	13		13	
Safety Equity Score - Unscaled (up to 14 points)		5		5
SYSTEM PRESERVATION: Maintain and modernize the transportation system and plan for its resiliency.				
Project incorporates resiliency elements into its design (up to 5 points)	2	1	2	1
Improves connectivity to critical facilities (up to 2 points)	2	1	2	1
Project improves existing pedestrian facilities (up to 5 points)	0	0	0	0
Project improves other existing assets (up to 2 points)	1		1	
System Preservation Base Score (up to 14 points)	5		5	
System Preservation Equity Score - Unscaled (up to 12 points)		2		2

Table A-4: FFYs 2022–26 TIP Project Evaluation Results: Bicycle Network and Pedestrian Connections (cont., 2)

	Belmont - Community Path, Belmont Component of the MCRT (Phase 1) [609204]		Swampscott - Rail Trail Construction [610666]	
Bicycle Network and Pedestrian Connections Project Scoring	Base Score	Equity Score	Base Score	Equity Score
CAPACITY MANAGEMENT/MOBILITY: Use existing facility capacity more efficiently and increase healthy transportation options.				
Project improves pedestrian network and ADA accessibility (up to 9 points)	9	4.5	9	4.5
Project improves bicycle network (up to 9 points)	9	4.5	9	4.5
Capacity Management Base Score (up to 18 points)	18		18	
Capacity Management Equity Score - Unscaled (up to 18 points)		9		9
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.				
Project reduces CO2 (up to 4 points)	1		3	
Project reduces other transportation-related emissions (up to 6 points)	3	1.5	5	2.5
Project enhances natural environment (up to 4 points)	3		4	
Clean Air Base Score (up to 14 points)	7		12	
Clean Air Equity Score - Unscaled (up to 6 points)		1.5		2.5
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.				
Project serves sites targeted for future development (up to 4 points)	4		0	
Project serves existing employment and population centers (up to 4 points)	2		4	

Table A-4: FFYs 2022–26 TIP Project Evaluation Results: Bicycle Network and Pedestrian Connections (cont., 3)

Bicycle Network and Pedestrian Connections Project Scoring	Belmont - Community Path, Belmont Component of the MCRT (Phase 1) [609204]		Swampscott - Rail Trail Construction [610666]	
	Base Score	Equity Score	Base Score	Equity Score
Project demonstrates proponent investment (up to 3 points)	1		2	
Project promotes access to affordable housing opportunities (up to 3 points)	2		1	
Economic Vitality Base Score (up to 14 points)	9		7	
Economic Vitality Equity Score (up to 0 points)				
Total Base Score (up to 80 points)	52		55	
Total Equity Score - Unscaled (up to 50 points)		17.5		18.5
Total Equity Score - Scaled (up to 20 points)		7.0		7.4
FINAL SCORE	59		62.4	

Table A-5: Evaluation Criteria for FFY 2022 Community Connections Program

Project Eligibility Verification			
	Test	Data to Use	Scoring
Each project funded through this program must show an air quality benefit when analyzed through the MPO's air quality analysis process. Projects must be ready to begin implementation during FFY 2022 (October 1, 2021-September 30, 2022).	Air Quality Analysis	Varies by type of project	If the project demonstrates an air quality benefit based on the spreadsheet analysis, then it is eligible for funding through the MPO's Community Connections program.
	Proponent's Project Management Capacity	Information from application	If the application provides sufficient information to judge these capabilities, and staff judge the proponent capable, the project is eligible.
Objective	Criteria	Data to Use	Subcriteria/Scoring
SCORING CRITERIA (90 possible points)			
NETWORK OR CONNECTIVITY VALUE (18 points)			
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.	Connection to existing activity hubs and residential developments (9/6 points)	Application materials, CTPS GIS layers reflecting relevant destinations and employment and population density	<p>Projects can earn points for any combination of conditions, up to the noted overall maximum.</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-5: Evaluation Criteria for FFY 2022 Community Connections Program (cont., 2)

	Connection to existing transit hubs (6 points)	Application materials, CTPS GIS layers reflecting transit stops and routes	<p>Projects can earn points for any combination of conditions, up to the noted overall maximum.</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
	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

Table A-5: Evaluation Criteria for FFY 2022 Community Connections Program (cont., 3)

	Inclusion in MPO plans (6 points)	Application materials, LRTP Needs Assessment, UPWP Database, MAPC plans	Project earns points for each condition met. +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	+3 If the project is included as a need or priority in MassDOT or other statewide planning studies
TRANSPORTATION EQUITY (15 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 (15 points)	Application materials, CTPS GIS layers	See detailed scoring criteria handout: https://drive.google.com/file/d/11E9VIOqpX-V5QOL2SEstMyvcpd77yhQI/view?usp=sharing
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	This criterion will be scored by MPO staff based on materials and narrative provided in the project application, considering factors such as: <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
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

Table A-5: Evaluation Criteria for FFY 2022 Community Connections Program (cont., 4)

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.

ADA = Americans with Disabilities Act. CMAQ = Congestion Mitigation and Air Quality Improvement Program. CTPS = Central Transportation Planning Staff. FFY = federal fiscal year. GIS = geographic information systems. GTFS = general transit feed specification. LRTP = Long-Range Transportation Plan. MAPC = Metropolitan Area Planning Council. MassDOT = Massachusetts Department of Transportation. MBTA = Massachusetts Bay Transportation Authority. MPO = Metropolitan Planning Organization. MVP = Municipal Vulnerability Program. SOV = single occupancy vehicle. TAD = Traffic and Design. TAZ = transportation analysis zone. TIP = Transportation Improvement Program.

Table A-6: FFY 2022 Project Evaluation Results: Community Connections

Project Type (Point/Area)		Point Projects									Area Projects					
		BlueBikes Expansion (Malden, Medford)	Main Street Transit Signal Priority (Everett, Malden)	Watertown Shuttle Service (Watertown)	Salem Street Transit Signal Priority (Malden)	MBTA Systemwide Bicycle Racks (MBTA)	Transit App Education Program (Brookline)	Wellesley Bicycle Infrastructure (Wellesley)	Stow Shuttle (Stow)	Acton Parking Management System (Acton)	Salem Skipper Microtransit Service (Salem)	Montachusett RTA Microtransit Service (MART)	Everett Citywide Transportation Management Association (Everett)	Boston Microtransit Service (Boston)		
Criterion	Maximum Points Possible	Points Awarded									Maximum Points Possible	Points Awarded				
Project eligibility verification																
Passes AQ Analysis (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Project proponent has staff capacity (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Network/Connectivity Value																
Connection to existing activity hubs and residential developments	6	6	6	6	6	6	6	4.75	0.5	0	9	8	2	8	8	
Connection to existing transit hubs	6	6	5	6	6	6	6	2	2	3	9	6	6	9	9	
Connection to other transportation infrastructure	6	6	6	6	6	6	2	2	1	6	N/A	N/A	N/A	N/A	N/A	
Coordination or cooperation between multiple entities																
Number of collaborating entities	9	3	6	3	3	0	3	0	0	0	9	9	6	9	0	

Table A-6: FFY 2022 Project Evaluation Results: Community Connections (cont., 2)

Project Type (Point/Area)		Point Projects									Area Projects				
Project Name (Municipality/Proponent)		BlueBikes Expansion (Malden, Medford)	Main Street Transit Signal Priority (Everett, Malden)	Watertown Shuttle Service (Watertown)	Salem Street Transit Signal Priority (Malden)	MBTA Systemwide Bicycle Racks (MBTA)	Transit App Education Program (Brookline)	Wellesley Bicycle Infrastructure (Wellesley)	Stow Shuttle (Stow)	Acton Parking Management System (Acton)		Salem Skipper Microtransit Service (Salem)	Montachusett RTA Microtransit Service (MART)	Everett Citywide Transportation Management Association (Everett)	Boston Microtransit Service (Boston)
Criterion	Maximum Points Possible	Points Awarded									Maximum Points Possible	Points Awarded			
Project consists of collaborators from multiple sectors	3	0	0	0	0	0	0	0	0	0	3	3	3	3	3
Each listed collaborator has provided a formal letter of support to the MPO	3	3	3	3	3	0	3	0	0	0	3	0	3	0	0
Inclusion in and consistency with local and regional plans															
Inclusion in local plans	6	3	6	3	6	6	0	3	3	3	6	6	3	6	3
Inclusion in MPO plans	6	3	6	3	3	6	6	3	3	3	6	3	3	3	3
Inclusion in statewide plans	3	0	3	0	0	0	0	0	0	0	3	0	0	0	0
Project serves a demographic of transportation equity concern, as identified by the MPO															
Project serves a demographic of transportation equity concern, as identified by the MPO	15	9	12	9	9	12	9	6	6	6	15	9	9	9	15

Table A-6: FFY 2022 Project Evaluation Results: Community Connections (cont., 3)

Project Type (Point/Area)		Point Projects									Area Projects				
Project Name (Municipality/Proponent)		BlueBikes Expansion (Malden, Medford)	Main Street Transit Signal Priority (Everett, Malden)	Watertown Shuttle Service (Watertown)	Salem Street Transit Signal Priority (Malden)	MBTA Systemwide Bicycle Racks (MBTA)	Transit App Education Program (Brookline)	Wellesley Bicycle Infrastructure (Wellesley)	Stow Shuttle (Stow)	Acton Parking Management System (Acton)	Maximum Points Possible	Salem Skipper Microtransit Service (Salem)	Montachusett RTA Microtransit Service (MART)	Everett Citywide Transportation Management Association (Everett)	Boston Microtransit Service (Boston)
Criterion	Maximum Points Possible	Points Awarded									Maximum Points Possible	Points Awarded			
Mode shift															
Various	12	12	12	7	12	12	4	12	6	2	12	7	10	8	4
Demand projections															
Overall Estimate	6	6	0	6	0	0	0	0	3	3	6	6	6	0	3
Evaluation of Estimate	6	6	0	3	0	0	0	0	3	3	6	6	6	0	6
Budget sheet															
Absent/Present/Incomplete	10	10	10	10	10	10	10	10	10	0	10	10	10	10	10
Grand Total	97	73	72	65	64	64	49	42.75	37.5	29	97	73	67	65	64

Table A-7: FFYs 2022–26 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) +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	Project addresses high-crash location (up to 3 points) +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	Project addresses truck-related safety issue (up to 2 points) +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	Project improves bicycle safety (up to 2 points) +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	Project improves pedestrian safety (up to 2 points) +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	Project improves safety for all users (up to 2 points) +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: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 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)
	<p>+1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan</p> <hr/> <p>+1 Project improves stormwater infrastructure</p> <hr/> <p>+1 Project implements innovative resiliency solutions</p> <hr/> <p>+1 Project designed to meet a range of future climate projections</p> <hr/> <p>+1 Project demonstrates regional coordination on resiliency</p>	<p>+1 Project improves an evacuation route, diversion route, or alternate diversion route</p>	<p>+1 Project improves access to critical facilities</p>	<p>+2 Project makes significant improvements to existing transit assets</p> <p>+1 Project makes moderate improvements to existing transit assets</p> <p>+0 Project does not modernize or improve the condition of existing transit assets</p>	<p>+3 Existing pedestrian facilities are in poor condition and improvements are included in the project</p> <p>+2 Existing pedestrian facilities are in fair condition and improvements are included in the project</p> <p>+1 Existing pedestrian facilities are in good condition and improvements are included in the project</p> <p>+0 Project does not improve existing pedestrian facilities</p>	<p>+2 Project improves existing bridge(s) from poor to good condition through rehabilitation or replacement</p> <p>+1 Project improves existing bridge(s) from fair to good condition through rehabilitation or replacement</p> <p>0 Project does not include bridge improvements</p>	<p>+2 Current roadway condition is poor and pavement improvements are included in the project</p> <p>+1 Current roadway condition is fair and pavement improvements are included in the project</p> <p>+0 Current roadway condition is good</p>	<p>+2 Project improves three or more other assets</p> <p>+1 Project improves one or two other assets</p> <p>+0 Project does not meet or address criteria</p>
Bonus/Penalty (if applicable)	<p>Penalty</p> <p>-1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding</p>	N/A	N/A	N/A		<p>Bonus (up to 1 point)</p> <p>+1 Project reduces or removes vehicle weight/height restrictions OR improves bridge on a key roadway</p>	<p>Bonus (up to 1 point)</p> <p>+1 Project improves pavement on a key corridor OR improves roadway substructure</p>	N/A
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	No

Table A-7: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 3)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	<p>Project reduces transit passenger delay (up to 3 points)</p> <p>+3 Project results in significant passenger delay reductions</p> <p>+2 Project results in moderate passenger delay reductions</p> <p>+1 Project results in limited passenger delay reductions</p> <p>+0 Project does not make meaningful reductions in passenger delay</p>	<p>Project invests in New Transit Assets (up to 2 points)</p> <p>+2 Project makes significant investments in new transit assets</p> <p>+1 Project makes moderate investments in new transit assets</p> <p>+0 Project does not invest in new transit assets</p>	<p>Project improves pedestrian network and ADA accessibility (up to 3 points)</p> <p>+3 Project adds new sidewalks on high-utility link</p> <p>+2 Project adds new sidewalks on medium-utility link</p> <p>+1 Project adds new sidewalks on low-utility link</p> <p>+0 Project does not improve pedestrian network</p>	<p>Project improves bicycle network (up to 3 points)</p> <p>+3 Project adds new separated bicycle facility (including shared-use paths)</p> <p>+2 Project adds new buffered bicycle facility</p> <p>+1 Project adds new standard bicycle facility</p> <p>+0 Project does not improve bicycle network</p>	<p>Project improves truck movement (up to 2 points)</p> <p>+2 Project significantly improves truck movement</p> <p>+1 Project somewhat improves truck movement</p> <p>+0 Project makes minimal improvements to truck movement or does not address criteria</p>	<p>Project addresses unreliable corridor (up to 1 point)</p> <p>+1 Project addresses a corridor with a level of travel time reliability above 1.25</p> <p>+0 Project does not meet or address criteria</p>	
Bonus/Penalty (if applicable)	<p>Bonus/Penalty (+/- up to 1 point)</p> <p>+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor</p> <p>-1 Project increases transit vehicle delays or negatively impacts transit vehicle movement</p>	N/A	<p>Bonus (up to 1 point)</p> <p>+1 Project closes a gap in the pedestrian network</p> <p>+1 Project enhances ADA accessibility beyond minimum required standards</p> <p>+1 Project creates or improves pedestrian connection to transit</p>	<p>Bonus (up to 1 point)</p> <p>+1 Project closes a gap in the bicycle network</p> <p>+1 Project creates or improves a bicycle connection to transit</p> <p>+1 Project makes accommodations for bicycle parking or bicycle share station</p> <p>+1 Project is on a high-utility link</p>	<p>Bonus (up to 1 point)</p> <p>+1 Project addresses key freight corridor or makes accommodations for freight deliveries</p>	N/A	
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

Table A-7: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 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-7: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 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) +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	Project serves existing employment and population centers (up to 3 points) +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	Project demonstrates proponent investment (up to 2 points) +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	Project promotes access to affordable housing opportunities (up to 3 points) +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 TIP Project Evaluation Results: Complete Streets

Complete Streets Project Scoring	Brookline - Rehabilitation of Washington Street [610932]		Chelsea - Park Street & Pearl Street Reconstruction [611983]		Ipswich - Roadway Improvements on County Street [611975]		Lynn - Reconstruction of Western Avenue (Route 107) [609246]		Manchester-by-the-Sea - Bridge Replacement, M-02-001 (8AM), Central Street (Route 127) Over Saw Mill Brook [610671]		Salem - Boston Street Improvements [609437]		Wakefield - Main Street Reconstruction [610545]		Weston - Reconstruction on Route 30 [608954]	
	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score
SAFETY: Transportation by all modes will be safe.																
Project addresses severe-crash location (up to 3 points)	2	1	2	2	1	0.5	3	3	1	0.5	2	1.5	2	1	2	1
Project addresses high-crash location (up to 3 points)	3		3		1		3		3		2		3		0	
Project addresses truck-related safety issue (up to 2 points)	1		1		1		2		0		1		0		2	
Project improves bicycle safety (up to 3 points)	3	1.5	2	2	1	0.5	2	2	0	0	2	1.5	2	1	2	1
Project improves pedestrian safety (up to 3 points)	3	1.5	3	3	2	1	3	3	2	1	2	1.5	3	1.5	2	1
Project improves safety for all users (up to 4 points)	2		2		1		3		1		3		3		3	
Safety Base Score (up to 18 points)	14		13		7		16		7		12		13		11	
Safety Equity Score - Unscaled (up to 9 points)		4		7		2		8		1.5		4.5		3.5		3
SYSTEM PRESERVATION: Maintain and modernize the transportation system and plan for its resiliency.																
Project incorporates resiliency elements into its design (up to 5 points)	2	1	4	4	2	1	3	3	3	1.5	5	3.75	3	1.5	2	1

Table A-8: FFYs 2022–26 TIP Project Evaluation Results: Complete Streets (cont., 2)

Complete Streets Project Scoring	Brookline - Rehabilitation of Washington Street [610932]		Chelsea - Park Street & Pearl Street Reconstruction [611983]		Ipswich - Roadway Improvements on County Street [611975]		Lynn - Reconstruction of Western Avenue (Route 107) [609246]		Manchester-by-the-Sea - Bridge Replacement, M-02-001 (8AM), Central Street (Route 127) Over Saw Mill Brook [610671]		Salem - Boston Street Improvements [609437]		Wakefield - Main Street Reconstruction [610545]		Weston - Reconstruction on Route 30 [608954]	
	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score
Improves evacuation route (up to 1 point)	0		0		0		0		1		1		0		0	
Improves connectivity to critical facilities (up to 1 point)	1	0.5	1	1	1	0.5	1	1	1	0.5	1	0.75	1	0.5	1	0.5
Project improves existing transit assets (up to 2 points)	1	0.5	1	1	0	0	1	1	0	0	1	0.75	1	0.5	0	0
Project improves existing pedestrian facilities (up to 3 points)	2	1	3	3	3	1.5	3	3	3	1.5	2	1.5	0	0	3	1.5
Project improves existing bridges (up to 3 points)	0		0		3		0		2		0		0		0	
Project improves existing pavement condition (up to 3 points)	3		3		2		3		3		3		3		2	
Project improves other existing assets (up to 2 points)	2		2		1		2		1		2		2		2	
System Preservation Base Score (up to 20 points)	11		14		12		13		14		15		10		10	
System Preservation Equity Score - Unscaled (up to 11 points)		3		9		3		8		3.5		6.75		2.5		3

Table A-8: FFYs 2022–26 TIP Project Evaluation Results: Complete Streets (cont., 3)

Complete Streets Project Scoring	Brookline - Rehabilitation of Washington Street [610932]		Chelsea - Park Street & Pearl Street Reconstruction [611983]		Ipswich - Roadway Improvements on County Street [611975]		Lynn - Reconstruction of Western Avenue (Route 107) [609246]		Manchester-by-the-Sea - Bridge Replacement, M-02-001 (8AM), Central Street (Route 127) Over Saw Mill Brook [610671]		Salem - Boston Street Improvements [609437]		Wakefield - Main Street Reconstruction [610545]		Weston - Reconstruction on Route 30 [608954]	
	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score
CAPACITY MANAGEMENT/MOBILITY: Use existing facility capacity more efficiently and increase healthy transportation options.																
Project reduces transit passenger delay (up to 4 points)	3	1.5	4	4	0	0	2	2	0	0	1	0.75	1	0.5	0	0
Project invests in New Transit Assets (up to 2 points)	2	1	2	2	0	0	1	1	0	0	0	0	0	0	0	0
Project improves pedestrian network and ADA accessibility (up to 4 points)	1	0.5	1	1	4	2	1	1	1	0.5	4	3	1	0.5	4	2
Project improves bicycle network (up to 4 points)	4	2	3	3	4	2	3	3	0	0	4	3	4	2	4	2
Project improves truck movement (up to 3 points)	1		0		0		1		1		1		0		1	
Project addresses unreliable corridor (up to 1 point)	0		1		0		0		0		1		0		1	
Capacity Management Base Score (up to 18 points)	11		11		8		8		2		11		6		10	
Capacity Management Equity Score - Unscaled (up to 14 points)		5		10		4		7		0.5		6.75		3		4
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.																
Project reduces CO2 (up to 3 points)	1		1		1		3		0		-1		-1		2	

Table A-8: FFYs 2022–26 TIP Project Evaluation Results: Complete Streets (cont., 4)

	Brookline - Rehabilitation of Washington Street [610932]		Chelsea - Park Street & Pearl Street Reconstruction [611983]		Ipswich - Roadway Improvements on County Street [611975]		Lynn - Reconstruction of Western Avenue (Route 107) [609246]		Manchester-by-the-Sea - Bridge Replacement, M-02-001 (8AM), Central Street (Route 127) Over Saw Mill Brook [610671]		Salem - Boston Street Improvements [609437]		Wakefield - Main Street Reconstruction [610545]		Weston - Reconstruction on Route 30 [608954]	
Complete Streets Project Scoring	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score
Project reduces other transportation-related emissions (up to 5 points)	3	1.5	3	3	3	1.5	5	5	0	0	-3	-2.25	-3	-1.5	4	2
Project enhances natural environment (up to 4 points)	2		2		4		3		2		4		4		3	
Clean Air Base Score (up to 12 points)	6		6		8		11		2		0		0		9	
Clean Air Equity Score - Unscaled (up to 5 points)		1.5		3		1.5		5		0		-2.25		-1.5		2
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.																
Project serves sites targeted for future development (up to 3 points)	3		3		0		3		1		3		2		0	
Project serves existing employment and population centers (up to 3 points)	3		3		3		3		3		3		3		0	
Project demonstrates proponent investment (up to 3 points)	0		1		0		0		2		1		2		1	
Project promotes access to affordable housing opportunities (up to 3 points)	2		3		2		3		1		3		2		2	
Economic Vitality Base Score (up to 12 points)	8		10		5		9		7		10		9		3	
Economic Vitality Equity Score (up to 0 points)																

Table A-8: FFYs 2022–26 TIP Project Evaluation Results: Complete Streets (cont., 5)

	Brookline - Rehabilitation of Washington Street [610932]		Chelsea - Park Street & Pearl Street Reconstruction [611983]		Ipswich - Roadway Improvements on County Street [611975]		Lynn - Reconstruction of Western Avenue (Route 107) [609246]		Manchester-by-the-Sea - Bridge Replacement, M-02-001 (8AM), Central Street (Route 127) Over Saw Mill Brook [610671]		Salem - Boston Street Improvements [609437]		Wakefield - Main Street Reconstruction [610545]		Weston - Reconstruction on Route 30 [608954]	
Complete Streets Project Scoring	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score	Base Score	Equity Score
Total Base Score (up to 80 points)	50		54		40		57		32		48		38		43	
Total Equity Score - Unscaled (up to 39 points)		13.5		29		10.5		28		5.5		15.75		7.5		12.0
Total Equity Score - Scaled (up to 20 points)		6.9		14.9		5.4		14.4		2.8		8.1		3.8		6.2
FINAL SCORE	56.9		68.9		45.4		71.4		34.8		56.1		41.8		49.2	

Table A-9: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets 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	

Table A-9: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 2)

Equity Multiplier?	Yes	No	No	Yes	Yes	No	
MPO Goal Area System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 17 points)							
Criterion	<p>Project incorporates resiliency elements into its design (up to 5 points)</p> <p>+1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan</p> <hr/> <p>+1 Project improves stormwater infrastructure</p> <hr/> <p>+1 Project implements innovative resiliency solutions</p> <hr/> <p>+1 Project designed to meet a range of future climate projections</p> <hr/> <p>+1 Project demonstrates regional coordination on resiliency</p>	<p>Improves evacuation route (up to 1 point)</p> <p>+1 Project improves an evacuation route, diversion route, or alternate diversion route</p>	<p>Improves connectivity to critical facilities (up to 1 point)</p> <p>+1 Project improves access to critical facilities</p>	<p>Project improves existing transit assets (up to 2 points)</p> <p>+2 Project makes significant improvements to existing transit assets</p> <p>+1 Project makes moderate improvements to existing transit assets</p> <p>+0 Project does not modernize or improve the condition of existing transit assets</p>	<p>Project improves existing pedestrian facilities (up to 3 points)</p> <p>+3 Existing pedestrian facilities are in poor condition and improvements are included in the project</p> <p>+2 Existing pedestrian facilities are in fair condition and improvements are included in the project</p> <p>+1 Existing pedestrian facilities are in good condition and improvements are included in the project</p> <p>+0 Project does not improve existing pedestrian facilities</p>	<p>Project improves existing pavement condition (up to 2 points)</p> <p>+2 Current roadway condition is poor and pavement improvements are included in the project</p> <p>+1 Current roadway condition is fair and pavement improvements are included in the project</p> <p>+0 Current roadway condition is good</p>	<p>Project improves other existing assets (up to 2 points)</p> <p>+2 Project improves three or more other assets</p> <p>+1 Project improves one or two other assets</p> <p>+0 Project does not meet or address criteria</p>

Table A-9: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 3)

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		Bonus (up to 1 point) +1 Project improves pavement on a key corridor OR improves roadway substructure	N/A
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No
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) +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	Project invests in New Transit Assets (up to 2 points) +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	Project improves pedestrian network and ADA accessibility (up to 3 points) +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	Project improves bicycle network (up to 3 points) +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	Project improves truck movement (up to 2 points) +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	Project addresses unreliable corridor (up to 1 point) +1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	

Table A-9: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 4)

Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point) +1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement	N/A	Bonus (up to 1 point) +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	Bonus (up to 1 point) +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	Bonus (up to 1 point) +1 Project addresses key freight corridor or makes accommodations for freight deliveries	N/A	
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

Table A-9: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 5)

MPO Goal Area Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 12 points)							
Criterion	<p>Project reduces CO2 (up to 3 points)</p> <p>+3 750 or more annual tons of CO2 reduced</p> <p>+2 250-749 annual tons of CO2 reduced</p> <p>+1 Less than 250 annual tons of CO2 reduced</p> <p>0 No impact</p> <p>-1 Less than 250 annual tons of CO2 increased</p> <p>-3 250 or more annual tons of CO2 increased</p>	<p>Project reduces other transportation-related emissions (up to 3 points)</p> <p>+3 1,000 or more total kilograms of VOC, NOx, CO reduced</p> <p>+2 250-999 total kilograms of VOC, NOx, CO reduced</p> <p>+1 Less than 250 total kilograms of VOC, NOx, CO reduced</p> <p>0 No impact</p> <p>-1 Less than 250 total kilograms of VOC, NOx, CO increased</p> <p>-3 250 or more total kilograms of VOC, NOx, CO increased</p>	<p>Enhances Natural Environment (up to 4 points)</p> <p>+1 Project improves water quality</p> <hr/> <p>+1 Project selects a design alternative that avoids impacts to sensitive natural areas</p> <hr/> <p>+1 Project reduces urban heat island effect</p> <hr/> <p>+1 Project increases access to parks, open space, or other natural assets</p>				
Bonus/Penalty (if applicable)	N/A	<p>Bonus/Penalty (up to 2 points)</p> <p>+2 Project reduces NOx emissions in area in top 20% of regional NOx levels</p> <p>-2 Project increases NOx emissions in area in top 20% of regional NOx levels</p>	<p>Penalty</p> <p>-1 Project is anticipated to lead to negative environmental outcomes</p>				

Table A-9: FFYs 2022–26 TIP Evaluation Criteria: Complete Streets Program (cont., 6)

Equity Multiplier?	No	Yes	No				
MPO Goal Area Economic Vitality: Ensure our transportation network provides a strong foundation for economic vitality. (Up to 12 points)							
Criterion	<p>Project serves sites targeted for future development (up to 3 points)</p> <p>+1 Project improves bicycle access to or within a site</p> <hr/> <p>+1 Project improves pedestrian access to or within a site</p> <hr/> <p>+1 Project improves transit access to or within a site</p>	<p>Project serves existing employment and population centers (up to 3 points)</p> <p>+3 Project mostly serves an existing area of concentrated development</p> <p>+1 Project partly serves an existing area of concentrated development</p> <p>+0 Project does not serve an existing area of concentrated development</p>	<p>Project demonstrates proponent investment (up to 2 points)</p> <p>+2 20 percent or more of the project cost is provided</p> <p>+1 Less than 20 percent of the project cost is provided</p> <p>+0 No non-TIP funding is provided by the project proponent</p>	<p>Project promotes access to affordable housing opportunities (up to 3 points)</p> <p>+3 10.4% or more of housing units are affordable in project area</p> <p>+2 6.6-10.3% of housing units are affordable in project area</p> <p>+1 1-6.5% of housing units are affordable in project area</p> <p>+0 Less than 1% of housing units are affordable in project area</p>			
Bonus/Penalty (if applicable)	N/A	N/A	<p>Bonus (up to 1 point)</p> <p>+1 Project proponent supports design process through pilot project OR robust community outreach process</p>	N/A			
Equity Multiplier?	No	No	No	No			

Total Base Points Possible 80
 Total Equity Points Possible 20
 Total Possible Points 100

Table A-10: FFYs 2022–26 TIP Project Evaluation Results: Intersection Improvements

	Milton - Intersection Improvements Squantum Street at Adams Street [608955]		Weston - Intersection Improvements Boston Post Road (Route 20) at Wellesley Street [608940]	
Intersection Improvements Project Scoring	Base Score	Equity Score	Base Score	Equity Score
SAFETY: Transportation by all modes will be safe.				
Project addresses severe-crash location (up to 3 points)	1	0.5	2	1
Project addresses high-crash location (up to 3 points)	1		3	
Project addresses truck-related safety issue (up to 2 points)	0		0	
Project improves bicycle safety (up to 4 points)	2	1	2	1
Project improves pedestrian safety (up to 4 points)	3	1.5	3	1.5
Project improves safety for all users (up to 5 points)	2		3	
Safety Base Score (up to 21 points)	9		13	
Safety Equity Score - Unscaled (up to 9 points)		3		3.5
SYSTEM PRESERVATION: Maintain and modernize the transportation system and plan for its resiliency.				
Project incorporates resiliency elements into its design (up to 5 points)	1	0.5	2	1
Improves evacuation route (up to 1 point)	0		0	
Improves connectivity to critical facilities (up to 1 point)	1	0.5	1	0.5
Project improves existing transit assets (up to 2 points)	1	0.5	0	0

Table A-10: FFYs 2022–26 TIP Project Evaluation Results: Intersection Improvements (cont., 2)

Intersection Improvements Project Scoring	Milton - Intersection Improvements Squantum Street at Adams Street [608955]		Weston - Intersection Improvements Boston Post Road (Route 20) at Wellesley Street [608940]	
	Base Score	Equity Score	Base Score	Equity Score
Project improves existing pedestrian facilities (up to 3 points)	2	1	3	1.5
Project improves existing pavement condition (up to 3 points)	2		2	
Project improves other existing assets (up to 2 points)	1		1	
System Preservation Base Score (up to 17 points)	8		9	
System Preservation Equity Score - Unscaled (up to 11 points)		2.5		3
CAPACITY MANAGEMENT/MOBILITY: Use existing facility capacity more efficiently and increase healthy transportation options.				
Project reduces transit passenger delay (up to 4 points)	-1	-0.5	0	0
Project invests in New Transit Assets (up to 2 points)	1	0.5	1	0.5
Project improves pedestrian network and ADA accessibility (up to 4 points)	1	0.5	4	2
Project improves bicycle network (up to 4 points)	3	1.5	2	1
Project improves truck movement (up to 3 points)	0		2	
Project addresses unreliable corridor (up to 1 point)	1		1	
Capacity Management Base Score (up to 18 points)	5		10	

Table A-10: FFYs 2022–26 TIP Project Evaluation Results: Intersection Improvements (cont., 3)

	Milton - Intersection Improvements Squantum Street at Adams Street [608955]		Weston - Intersection Improvements Boston Post Road (Route 20) at Wellesley Street [608940]	
Intersection Improvements Project Scoring	Base Score	Equity Score	Base Score	Equity Score
Capacity Management Equity Score - Unscaled (up to 14 points)		2		3.5
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.				
Project reduces CO2 (up to 3 points)	1		1	
Project reduces other transportation-related emissions (up to 3 points)	3	1.5	3	1.5
Project enhances natural environment (up to 4 points)	0		2	
Clean Air Base Score (up to 12 points)	4		6	
Clean Air Equity Score - Unscaled (up to 5 points)		1.5		1.5
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.				
Project serves sites targeted for future development (up to 3 points)	0		0	
Project serves existing employment and population centers (up to 3 points)	3		0	
Project demonstrates proponent investment (up to 2 points)	0		0	
Project promotes access to affordable housing opportunities (up to 3 points)	1		2	
Economic Vitality Base Score (up to 12 points)	4		2	
Economic Vitality Equity Score (up to 0 points)				

Table A-10: FFYs 2022–26 TIP Project Evaluation Results: Intersection Improvements (cont., 4)

Intersection Improvements Project Scoring	Milton - Intersection Improvements Squantum Street at Adams Street [608955]		Weston - Intersection Improvements Boston Post Road (Route 20) at Wellesley Street [608940]	
	Base Score	Equity Score	Base Score	Equity Score
Total Base Score (up to 80 points)	30		40	
Total Equity Score - Unscaled (up to 41 points)		9		11.5
Total Equity Score - Scaled (up to 20 points)		4.4		5.6
FINAL SCORE	34.4		45.6	

Table A-11: FFYs 2022–26 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	For corridor projects: +3 Crash rate of 6.45 or greater	+2 High total effectiveness of truck safety improvements	+2 High total effectiveness of bicycle safety improvements	+2 High total effectiveness of pedestrian safety improvements	+2 Project includes three or more eligible multimodal safety improvements		
	+2 EPDO value of 250 to 999	+2 Crash rate between 4.25 and 6.45	+1 Medium total effectiveness of truck safety improvements	+1 Medium total effectiveness of bicycle safety improvements	+1 Medium total effectiveness of pedestrian safety improvements	+1 Project includes one or two eligible multimodal safety improvements		
	+1 EPDO value of less than 250	+1 Crash rate between 2.05 and 4.25	+0 Low total effectiveness or no implementation of truck safety improvements	+0 Low total effectiveness or no inclusion of bicycle safety improvements	+0 Low total effectiveness or no inclusion of pedestrian safety improvements	+0 Project does not include any eligible multimodal safety improvements		
	+0 No EPDO value	+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						

Table A-11: FFYs 2022–26 TIP Evaluation Criteria: Major Infrastructure Program (cont., 2)

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		
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) +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	Improves evacuation route (up to 1 point) +1 Project improves an evacuation route, diversion route, or alternate diversion route	Improves connectivity to critical facilities (up to 1 point) +1 Project improves access to critical facilities	Project improves existing transit assets (up to 2 points) +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	Project improves existing pedestrian facilities (up to 3 points) +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	Project improves existing bridges (up to 2 points) +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	Project improves existing pavement condition (up to 2 points) +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	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

Table A-11: FFYs 2022–26 TIP Evaluation Criteria: Major Infrastructure Program (cont., 3)

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		Bonus (up to 1 point) +1 Project reduces or removes vehicle weight/height restrictions OR improves bridge on a key roadway	Bonus (up to 1 point) +1 Project improves pavement on a key corridor OR improves roadway substructure	N/A
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	No
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) +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	Project invests in New Transit Assets (up to 2 points) +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	Project improves pedestrian network and ADA accessibility (up to 3 points) +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	Project improves bicycle network (up to 3 points) +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	Project improves truck movement (up to 2 points) +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	Project addresses unreliable corridor (up to 1 point) +1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria		

Table A-11: FFYs 2022–26 TIP Evaluation Criteria: Major Infrastructure Program (cont., 4)

Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point) +1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement	N/A	Bonus (up to 1 point) +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	Bonus (up to 1 point) +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	Bonus (up to 1 point) +1 Project addresses key freight corridor or makes accommodations for freight deliveries	N/A		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No		
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					

Table A-11: FFYs 2022–26 TIP Evaluation Criteria: Major Infrastructure Program (cont., 5)

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					
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) +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	Project serves existing employment and population centers (up to 3 points) +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	Project demonstrates proponent investment (up to 2 points) +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	Project promotes access to affordable housing opportunities (up to 3 points) +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				

Table A-11: FFYs 2022–26 TIP Evaluation Criteria: Major Infrastructure Program (cont., 6)

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-12: FFYs 2022–26 TIP Project Evaluation Results: Major Infrastructure

		Natick - Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements [605313]		Somerville - McGrath Boulevard Project [607981]	
Major Infrastructure Project Scoring		Base Score	Equity Score	Base Score	Equity Score
SAFETY: Transportation by all modes will be safe.					
Project addresses severe-crash location (up to 3 points)	3	1.5	2	1.5	
Project addresses high-crash location (up to 3 points)	3		1		
Project addresses truck-related safety issue (up to 2 points)	1		0		
Project improves bicycle safety (up to 3 points)	2	1	3	2.25	
Project improves pedestrian safety (up to 3 points)	2	1	3	2.25	
Project improves safety for all users (up to 4 points)	2		4		
Safety Base Score (up to 18 points)	13		13		
Safety Equity Score - Unscaled (up to 9 points)		3.5		6	
SYSTEM PRESERVATION: Maintain and modernize the transportation system and plan for its resiliency.					
Project incorporates resiliency elements into its design (up to 5 points)	1	0.5	3	2.25	
Improves evacuation route (up to 1 point)	0		1		
Improves connectivity to critical facilities (up to 1 point)	1	0.5	1	0.75	

Table A-12: FFYs 2022–26 TIP Project Evaluation Results: Major Infrastructure (cont., 2)

		Natick - Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements [605313]		Somerville - McGrath Boulevard Project [607981]	
Major Infrastructure Project Scoring		Base Score	Equity Score	Base Score	Equity Score
Project improves existing transit assets (up to 2 points)	0	0	1	0.75	
Project improves existing pedestrian facilities (up to 3 points)	3	1.5	2	1.5	
Project improves existing bridges (up to 3 points)	3		2		
Project improves existing pavement condition (up to 3 points)	2		3		
Project improves other existing assets (up to 2 points)	2		2		
System Preservation Base Score (up to 20 points)	12		15		
System Preservation Equity Score - Unscaled (up to 11 points)		2.5		5.25	
CAPACITY MANAGEMENT/MOBILITY: Use existing facility capacity more efficiently and increase healthy transportation options.					
Project reduces transit passenger delay (up to 4 points)	1	0.5	1	0.75	
Project invests in New Transit Assets (up to 2 points)	0	0	1	0.75	
Project improves pedestrian network and ADA accessibility (up to 4 points)	4	2	4	3	
Project improves bicycle network (up to 4 points)	4	2	4	3	
Project improves truck movement (up to 3 points)	1		0		
Project addresses unreliable corridor (up to 1 point)	1		0		

Table A-12: FFYs 2022–26 TIP Project Evaluation Results: Major Infrastructure (cont., 3)

		Natick - Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements [605313]		Somerville - McGrath Boulevard Project [607981]	
Major Infrastructure Project Scoring		Base Score	Equity Score	Base Score	Equity Score
Capacity Management Base Score (up to 18 points)		11		10	
Capacity Management Equity Score - Unscaled (up to 14 points)			4.5		7.5
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.					
Project reduces CO2 (up to 3 points)		2		1	
Project reduces other transportation-related emissions (up to 5 points)		4	2	4	3
Project enhances natural environment (up to 4 points)		2		3	
Clean Air Base Score (up to 12 points)		8		8	
Clean Air Equity Score - Unscaled (up to 5 points)			2		3
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.					
Project serves sites targeted for future development (up to 3 points)		0		3	
Project serves existing employment and population centers (up to 3 points)		3		3	
Project demonstrates proponent investment (up to 3 points)		0		1	
Project promotes access to affordable housing opportunities (up to 3 points)		3		2	
Economic Vitality Base Score (up to 12 points)		6		9	

Table A-12: FFYs 2022–26 TIP Project Evaluation Results: Major Infrastructure (cont., 4)

Major Infrastructure Project Scoring		Natick - Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements [605313]		Somerville - McGrath Boulevard Project [607981]	
		Base Score	Equity Score	Base Score	Equity Score
Economic Vitality Equity Score (up to 0 points)					
Total Base Score (up to 80 points)		50		55	
Total Equity Score - Unscaled (up to 39 points)			12.5		21.8
Total Equity Score - Scaled (up to 20 points)			6.4		11.2
FINAL SCORE			56.4		66.2

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING																																										
SAFETY: Transportation by all modes will be safe.																																												
<p>Reduce the number and severity of crashes, 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</p> <p>+4 EPDO value between 200 and 299</p> <p>+3 EPDO value between 100 and 199</p> <p>+2 EPDO value between 50 and 99</p> <p>+1 EPDO value less than 50</p> <p>+0 No EPDO value</p>																																										
	<p>Crash Rate (intersections and corridors) (0–5 points)</p>	<p>Intersection:</p> <table border="1" data-bbox="1588 667 2331 919"> <thead> <tr> <th>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>< 0.36</td> <td>< 0.21</td> </tr> </tbody> </table> <p>Corridor:</p> <table border="1" data-bbox="1588 989 2331 1312"> <thead> <tr> <th>Evaluation Score</th> <th>Interstate Other Freeways Expressways</th> <th>Principal Arterials-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>	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	< 0.36	< 0.21	Evaluation Score	Interstate Other Freeways Expressways	Principal Arterials-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
Evaluation Score	Signalized	Unsignalized																																										
+5	≥ 1.69	≥ 1.36																																										
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+1	0.36 - 0.55	0.21 - 0.37																																										
+0	< 0.36	< 0.21																																										
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+1	0.40 - 0.59	2.05 - 3.15																																										
+0	< 0.40	< 2.05																																										
	<p>Improves truck-related safety issue (0–5 points)</p>	<p>+3 High total effectiveness of truck safety countermeasures</p> <p>+2 Medium total effectiveness of truck safety countermeasures</p> <p>+1 Low total effectiveness of truck safety countermeasures</p> <p>+0 Does not implement truck safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below:</p> <p>+2 Improves truck safety at HSIP Cluster</p>																																										

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived) (cont., 2)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
	Improves bicycle safety (0–5 points)	+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 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
	Improves pedestrian safety (0–5 points)	+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 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
	Improves safety or removes an at-grade railroad crossing (0–5 points)	+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
SAFETY (30 possible points)		

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived) (cont., 3)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
SYSTEM PRESERVATION: Maintain and modernize the transportation system and plan for its resiliency.		
Maintain the transportation system, including roadway, transit, and active transportation infrastructure, in a state of good repair	Improves substandard roadway bridge(s) (0–3 points)	+3 Condition is structurally deficient and improvements are included in the project +1 Condition is functionally obsolete and improvements are included in the project +0 Does not improve substandard bridge or does not include a bridge
Modernize transportation infrastructure across all modes	Improves substandard pavement (up to 6 points)	+6 IRI rating greater than 320: Poor condition and pavement improvements are included in the project +4 IRI rating between 320 and 191: Fair condition and pavement improvements are included in the project +0 IRI rating less than 190: Good or better condition
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)	Improves substandard traffic signal equipment (0–6 points)	+6 Poor condition and improvements are included in the project +4 Fair condition and improvements are included in the project +0 Does not meet or address criteria
	Improves transit asset(s) (0–3 points)	+2 Brings transit asset into state of good repair +1 Meets an identified-need in an asset management plan +0 Does not meet or address criteria
	Improves substandard sidewalk(s) (0–3 points)	+3 Poor condition and sidewalk improvements are included in the project +2 Fair condition and sidewalk improvements are included in the project +0 Sidewalk condition is good or better
	Improves emergency response (0–2 points)	+1 Project improves an evacuation route, diversion route, or alternate diversion route +1 Project improves an access route to or in proximity to an emergency support location
	Improves ability to respond to extreme conditions (0–6 points)	+2 Addresses flooding problem and/or sea level rise and enables facility to function in such a condition +1 Brings facility up to current seismic design standards +1 Addresses critical transportation infrastructure +1 Protects freight network elements +1 Implements hazard mitigation or climate adaptation plans

SYSTEM PRESERVATION (29 possible points)

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived) (cont., 4)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
CAPACITY MANAGEMENT/MOBILITY: Use existing facility capacity more efficiently and increase healthy 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>Reduces transit vehicle delay (0–4 points)</p>	<p>+3 5 hours or more of daily transit vehicle delay reduced +2 1-5 hours of daily transit vehicle delay reduced +1 Less than one hour of daily transit vehicle delay reduced +0 Does not reduce transit delay</p> <p>If project scores points above, then it is eligible for additional points below: +1 Improves one or more key bus route(s)</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>Improves pedestrian network and ADA accessibility (0–5 points)</p>	<p>+2 Adds new sidewalk(s) (including shared-use paths) +2 Improves ADA accessibility +1 Closes a gap in the pedestrian network +0 Does not improve pedestrian network</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>Improves bicycle network (0–4 points)</p>	<p>+3 Adds new physically separated bicycle facility (including shared-use paths) +2 Adds new buffered bicycle facility +1 Adds new standard bicycle facility +1 Closes a gap in the bicycle network +0 Does not improve bicycle network</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>Improves intermodal accommodations/connections to transit (0–6 points)</p>	<p>+6 Meets or addresses criteria to a high degree +4 Meets or addresses criteria to a medium degree +2 Meets or addresses criteria to a low degree +0 Does not meet or address criteria</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>Improves truck movement (0–4 points)</p>	<p>+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</p> <p>If project scores points above, then it is eligible for additional points below: +1 Addresses MPO-identified bottleneck location</p>
<p>Eliminate bottlenecks on the freight network, improve freight reliability, and enhance freight intermodal connections</p>	<p>Reduces vehicle congestion (0–6 points)</p>	<p>+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</p>
CAPACITY MANAGEMENT/MOBILITY (29 possible points)		

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived) (cont., 5)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.		
<p>Reduce GHGs generated in the Boston region by all transportation modes as outlined in the Global Warming Solutions Act</p> <p>Reduce other transportation-related pollutants</p> <p>Minimize negative environmental impacts of the transportation system, when possible</p> <p>Support land-use policies consistent with smart and healthy growth</p>	<p>Reduces CO₂ (-5–5 points)</p>	<p>+5 1,000 or more annual tons of CO₂ reduced</p> <p>+4 500-999 annual tons of CO₂ reduced</p> <p>+3 250-499 annual tons of CO₂ reduced</p> <p>+2 100-249 annual tons of CO₂ reduced</p> <p>+1 Less than 100 annual tons of CO₂ reduced</p> <p>0 No impact</p> <p>-1 Less than 100 annual tons of CO₂ increased</p> <p>-2 100-249 annual tons of CO₂ increased</p> <p>-3 250-499 annual tons of CO₂ increased</p> <p>-4 500-999 annual tons of CO₂ increased</p> <p>-5 1,000 or more annual tons of CO₂ increased</p>
	<p>Reduces other transportation-related emissions (VOC, NO_x, CO) (-5–5 points)</p>	<p>+5 2,000 or more total kilograms of VOC, NO_x, CO reduced</p> <p>+4 1,000-1,999 total kilograms of VOC, NO_x, CO reduced</p> <p>+3 500-999 total kilograms of VOC, NO_x, CO reduced</p> <p>+2 250-499 total kilograms of VOC, NO_x, CO reduced</p> <p>+1 Less than 250 total kilograms of VOC, NO_x, CO reduced</p> <p>0 No impact</p> <p>-1 Less than 250 total kilograms of VOC, NO_x, CO increased</p> <p>-2 250-499 total kilograms of VOC, NO_x, CO increased</p> <p>-3 500-999 total kilograms of VOC, NO_x, CO increased</p> <p>-4 1,000-1,999 total kilograms of VOC, NO_x, CO increased</p> <p>-5 2,000 or more total kilograms of VOC, NO_x, CO increased</p>
	<p>Addresses environmental impacts (0–4 points)</p>	<p>+1 Addresses water quality</p> <p>+1 Addresses cultural resources/open space</p> <p>+1 Addresses wetlands/resource areas</p> <p>+1 Addresses wildlife preservation/protected habitats</p> <p>+0 Does not meet or address criteria</p>
	<p>Is in an EOEEA-certified "Green Community" (0–2 points)</p>	<p>+2 Project is located in a "Green Community"</p> <p>+0 Project is not located in a "Green Community"</p>
CLEAN AIR/SUSTAINABLE COMMUNITIES (16 possible points)		

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived) (cont., 6)

OBJECTIVE	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 or non-discrimination populations</p>
TRANSPORTATION EQUITY (12 possible points)		
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.		
<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> <hr/> <p>Provides for development consistent with the compact growth strategies of MetroFuture (0–5 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> <hr/> <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>

Table A-13: Evaluation Criteria for FFYs 2021–25 TIP and Prior TIP Cycles (Archived) (cont., 7)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
	Provides multimodal access to an activity center (0–4 points)	+1 Provides transit access (within a quarter mile) to an activity center +1 Provides truck access to an activity center +1 Provides bicycle access to an activity center +1 Provides pedestrian access to an activity center +0 Does not provide multimodal access
	Leverages other investments (non-TIP funding) (0–3 points)	+3 Meets or addresses criteria to a high degree (>30% of the project cost) +2 Meets or addresses criteria to a medium degree (10-30% of the project cost) +1 Meets or addresses criteria to a low degree (<10% of the project cost) +0 Does not meet or address criteria
ECONOMIC VITALITY (18 possible points)		
TOTAL SCORE (134 possible points)		

Table A-14: Evaluation Criteria for FFY 2021 Community Connections Program (Archived)

Blues = Criteria that apply to all projects
 Yellows = Criteria for capital projects
 Browns = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
PROJECT ELIGIBILITY VERIFICATION		
Each project funded through this program must show an air quality benefit when analyzed through the MPO’s air quality analysis process. 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.	Air Quality Analysis	Projects must pass a spreadsheet-based air quality benefit test based on a variety of data inputs customized to the type of project.
	Proponent’s Project Management Capacity	Names, experience, and time commitment of project management staff, as provided by the proponent.
GENERAL SCORING CRITERIA (30 possible points)		
Network or connectivity value (6 points)		
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.	Connection to existing activity hubs and residential developments (2 points)	Proximity of the project or service to employment, residential, and civic activity hubs, such as dense areas of employment or housing.
	Connection to existing transit hubs (2 points)	Proximity of the project to transit service, with added incentive for connecting to frequent or high-quality service.
	Connection to other transportation infrastructure (2 points)	Proximity of the project to sidewalk or protected or off-road bicycle infrastructure.
Coordination or cooperation between multiple entities (5 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 (5 points)	Number and variety (judged by sector of origin) of entities collaborating to support the project.

Table A-14: Evaluation Criteria for FFY 2021 Community Connections Program (Archived) (cont., 2)

OBJECTIVE	CRITERIA	FACTORS
Inclusion in and consistency with local and regional plans (5 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 (2 points)	Whether the project is included as a need or priority in a local comprehensive plan.
	Inclusion in MPO plans (2 points)	Whether the project is identified as a need in the LRTP Needs Assessment or recommended in an MPO or MAPC study.
	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-14: Evaluation Criteria for FFY 2021 Community Connections Program (Archived) (cont., 3)

OBJECTIVE	CRITERIA	FACTORS
Lifecycle cost-effectiveness (10 points)		
<p>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.</p>	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)		
<p>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.</p>	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-14: Evaluation Criteria for FFY 2021 Community Connections Program (Archived) (cont., 4)

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) requires 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 outlines programs to attain the 25 percent reduction by 2020—including a 7.6 percent reduction to be 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, and 2021–25. 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 2022–26 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, including a description of each project’s anticipated CO₂ impacts, are discussed in Chapter 3. The following tables display the GHG impact analyses of projects funded in the FFYs 2022–26 Highway Program (Table B-1) and Transit Program (Table B-2). Table B-3 summarizes the GHG impact analyses of highway projects completed in FFY 2021. Table B-4 summarizes the GHG impact analyses of transit projects completed in FFY 2021. 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 2022–26 Programmed Projects

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description
S12122	Acton - Acton Parking Management System	Qualitative		Qualitative decrease in emissions
608229	Acton - Intersection and Signal Improvements at Kelley's Corner	Quantified	111,958	Quantified decrease in emissions from Complete Streets project
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
S12115	Arlington, Newton, Watertown - BlueBikes Expansion	Quantified	6,570	Quantified decrease in emissions from bicycle and pedestrian infrastructure
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
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
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
608348	Beverly - Reconstruction of Bridge St	Quantified	387,153	Quantified decrease in emissions from Complete Streets project
606902	Boston - Bridge Reconstruction/Rehab, B-16-181, West Roxbury Parkway over MBTA	Qualitative		No assumed impact/negligible impact on emissions
608197	Boston - Bridge Rehabilitation, B-16-107, Canterbury St over Amtrak Railroad	Qualitative		No assumed impact/negligible impact on emissions
604173	Boston - Bridge Replacement, B-16-016, North Washington Street over the Boston Inner Harbor	Qualitative		No assumed impact/negligible impact on emissions
610537	Boston - Ellis Elementary Traffic Calming (SRTS)	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
607759	Boston - Intersection Improvements at the VFW Parkway and Spring St	Qualitative		Qualitative decrease in emissions

Table B-1: Greenhouse Gas Regional Highway Project Tracking: FFYs 2022–26 Programmed Projects (cont., 2)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
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
606226	Boston - Reconstruction of Rutherford Ave, from City Square to Sullivan Square	Quantified		LRTP 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
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
612050	Braintree, Weymouth - Resurfacing and Related Work on Route 3	Qualitative		No assumed impact/negligible impact on emissions
S12121	Brookline - Transit App Education Program	Qualitative		No assumed impact/negligible impact on emissions
612034	Burlington, Woburn - Interstate Maintenance and Related Work on I-95	Qualitative		No assumed impact/negligible impact on emissions
S12116	Cambridge - Alewife Wayfinding Improvements	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 Neponset River	Qualitative		No assumed impact/negligible impact on emissions
S12114	Canton - Royall Street Shuttle	Qualitative	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
608599	Canton, Norwood - Stormwater Improvements along Route 1 and Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
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
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 St to Henry Turner Bailey Rd	Quantified	5,849	Quantified decrease in emissions from Complete Streets project
608495	Concord, Lexington, Lincoln - Resurfacing and Related Work on Route 2A	Qualitative		No assumed impact/negligible impact on emissions

Table B-1: Greenhouse Gas Regional Highway Project Tracking: FFYs 2022–26 Programmed Projects (cont., 3)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
608818	Danvers - Resurfacing and Related Work on Route 114	Qualitative		No assumed impact/negligible impact on emissions
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
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
609257	Everett - Reconstruction of Beacham Street	Quantified	4,038	Quantified decrease in emissions from Complete Streets project
S12119	Everett, Malden - Main Street Transit Signal Priority	Quantified	715,743	Quantified decrease in emissions from transit signal priority project
608480	Foxborough - Resurfacing and Related Work on Route 1	Qualitative		No assumed impact/negligible impact on emissions
608889	Framingham - Traffic Signal Installation at Edgell Road and Central Street	Quantified	233,257	Quantified decrease in emissions from Complete Streets project
609402	Framingham, Natick - Resurfacing and Related Work on Route 9	Qualitative		No assumed impact/negligible impact on emissions
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		L RTP project included in the statewide model
605743	Ipswich - Resurfacing and Related Work on Central and South Main Streets	Quantified	4,356	Quantified decrease in emissions from Complete Streets project
609054	Littleton - Reconstruction of Foster Street	Quantified	1,140	Quantified decrease in emissions from Complete Streets project
608443	Littleton, Ayer - Intersection Improvements on Route 2A at Willow Rd and Bruce St	Quantified	52,101	Quantified decrease in emissions from traffic operational improvement
609254	Lynn - Intersection Improvements at Two Intersections on Broadway	Quantified	73,291	Quantified decrease in emissions from traffic operational improvement
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
609252	Lynn - Rehabilitation of Essex Street	Quantified	411,394	Quantified decrease in emissions from Complete Streets project
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

Table B-1: Greenhouse Gas Regional Highway Project Tracking: FFYs 2022–26 Programmed Projects (cont., 4)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
609060	Lynnfield, Peabody, Danvers - Guide and Traffic Sign Replacement on Interstate 95/Route 128 (Task 'A' Interchange)	Qualitative		No assumed impact/negligible impact on emissions
S12118	Malden, Medford - BlueBikes Expansion	Quantified	2,028	Quantified decrease in emissions from bike share project
612001	Medford - Milton Fuller Roberts Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
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
607342	Milton - Intersection and Signal Improvements at Route 28 (Randolph Ave) and Chickatawbut Road	Qualitative		Qualitative decrease in emissions
610680	Natick - Lake Cochituate Path	Quantified	1,749	Quantified decrease in emissions from bicycle and pedestrian infrastructure
611997	Newton - Horace Mann Elementary School Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
S12125	Newton - Newton Microtransit Service	Quantified	24,809	Quantified decrease in emissions from new/additional transit service
610674	Newton - Reconstruction of Commonwealth Avenue	Quantified	16,846	Quantified decrease in emissions from Complete Streets project
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
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
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
605857	Norwood - Intersection Improvements at Route 1 and University Avenue/Everett St	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

Table B-1: Greenhouse Gas Regional Highway Project Tracking: FFYs 2022–26 Programmed Projects (cont., 5)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description
609211	Peabody - Independence Greenway Extension	Quantified	36,651	Quantified decrease in emissions from bicycle and pedestrian infrastructure
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 St	Quantified	150,913	Quantified decrease in emissions from Complete Streets project
608707	Quincy - Reconstruction of Sea St	Quantified	-30,437	Quantified increase in emissions
608208	Quincy, Milton, Boston - Interstate Maintenance and Related Work on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
608498	Quincy, Weymouth, Braintree - Resurfacing and Related Work on Route 53	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
S12124	Regionwide - Community Connections Program	Qualitative		No assumed impact/negligible impact on emissions
S12113	Regionwide - Transit Modernization Program	Qualitative		No assumed impact/negligible impact on emissions
S12117	Regionwide - MBTA Systemwide Bike Racks	Quantified	42,656	Quantified decrease in emissions from bicycle infrastructure
612100	Revere - Improvements at Beachmont Veterans Elementary (SRTS)	Qualitative		Qualitative decrease in emissions
612075	Salem - Bridge Replacement, S-01-024, Jefferson Avenue over Parallel Street	Qualitative		No assumed impact/negligible impact on emissions
608562	Somerville - Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway	Qualitative		No assumed impact/negligible impact on emissions
S10780	Somerville, Medford - Green Line Extension Project - Extension to College Ave with the Union Square Spur	Quantified		LRTP project included in the statewide model
612028	Stoneham - Deck Replacement and Superstructure Repairs, S-27-006 (2 2), (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		No assumed impact/negligible impact on emissions
608255	Stow - Bridge Replacement, S-29-011, Box Mill Road over Elizabeth Brook	Qualitative		No assumed impact/negligible impact on emissions
608164	Sudbury, Concord - Bike Path Construction (Bruce Freeman Rail Trail)	Quantified	49,903	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

Table B-1: Greenhouse Gas Regional Highway Project Tracking: FFYs 2022–26 Programmed Projects (cont., 6)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description
607329	Wakefield-Lynnfield - 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
607777	Watertown - Rehabilitation of Mount Auburn St (Route 16)	Quantified	634,598	Quantified decrease in emissions from Complete Streets project
S12120	Wellesley - Bicycle Infrastructure	Quantified	2,069	Quantified decrease in emissions from bicycle infrastructure
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
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) & 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 2022–26 Programmed Projects

This table is under development. It will contain the GHG impact analyses of projects funded in the Transit Program.

Table B-3: Greenhouse Gas Regional Highway Project Tracking: Completed Projects

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO ₂ 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

Table B-3: Greenhouse Gas Regional Highway Project Tracking: Completed Projects (cont., 2)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
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
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 *

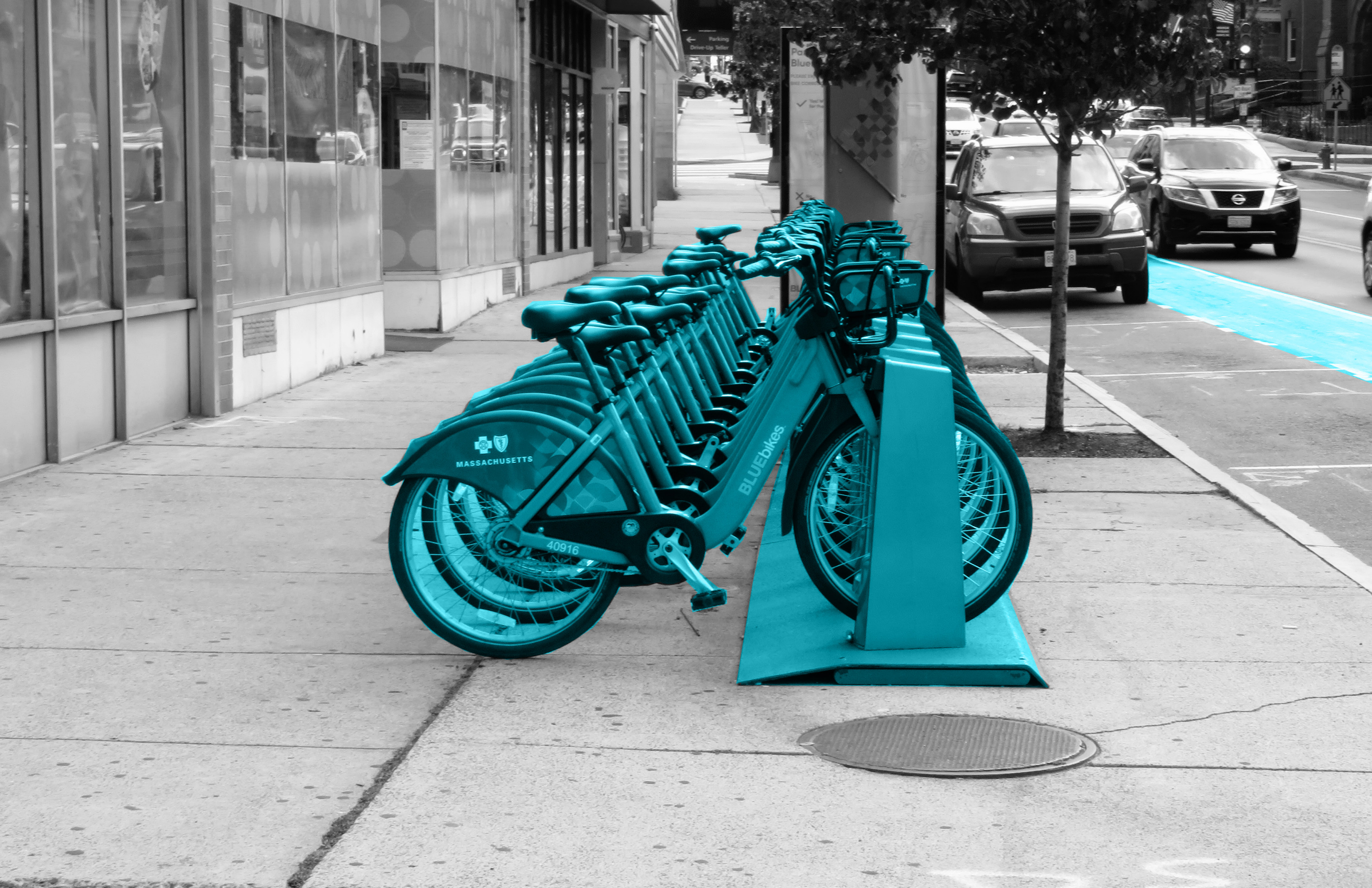
Table B-3: Greenhouse Gas Regional Highway Project Tracking: Completed Projects (cont., 3)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
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*
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		LRTP project included in the statewide model	2021*

*Project is anticipated to be advertised for construction bids in FFY 2021.

Table B-4: Greenhouse Gas Regional Transit Project Tracking: Completed Projects

This table is under development. It will summarize the GHG impact analyses of transit projects completed in FFY 2020.





Appendix C

Public Outreach and Comment

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/tipdev. 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 2022–26 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 2022–26 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 outreach 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 outreach activities for the FFYs 2022–26 TIP in September 2020 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.

Table C-1: Public Comments Received during Development of the FFYs 2022–26 Transportation Improvement Program

This table will be included in the draft that is released for public review.

SUMMARY OF COMMENTS RECEIVED DURING TIP PUBLIC REVIEW PERIOD

The MPO board will vote to release a draft FFYs 2022–26 TIP document for public review at its May 6, 2021, meeting. This vote will initiate an official 21-day public review period, which will begin on or around May 10, 2021, and close on or around May 31, 2021. 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 June 3, 2021, 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 2022–26 TIP

This table will be included in the final version of the document when it is posted to the MPO’s website following a vote for endorsement.



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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) 2021 and 2025, 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. *(Following the MPO's endorsement of the FFYs 2022–26 TIP, this funding analysis will be updated to reflect the distribution of the MPO's Regional Target Program funding and all federal highway funding programmed from FFY 2022 through FFY 2026.)* Funding amounts shown include the state's matching funds that leverage the available federal funds.

Table D-1 shows the breakdown of the MPO's Regional Target Program funding and all federal highway funding for each municipality in the Boston region. Figures D-1 through D-4 summarize this data by subregion and municipality type.

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: Regional Distribution of Target Funding by Subregion (FFYs 2021–25)

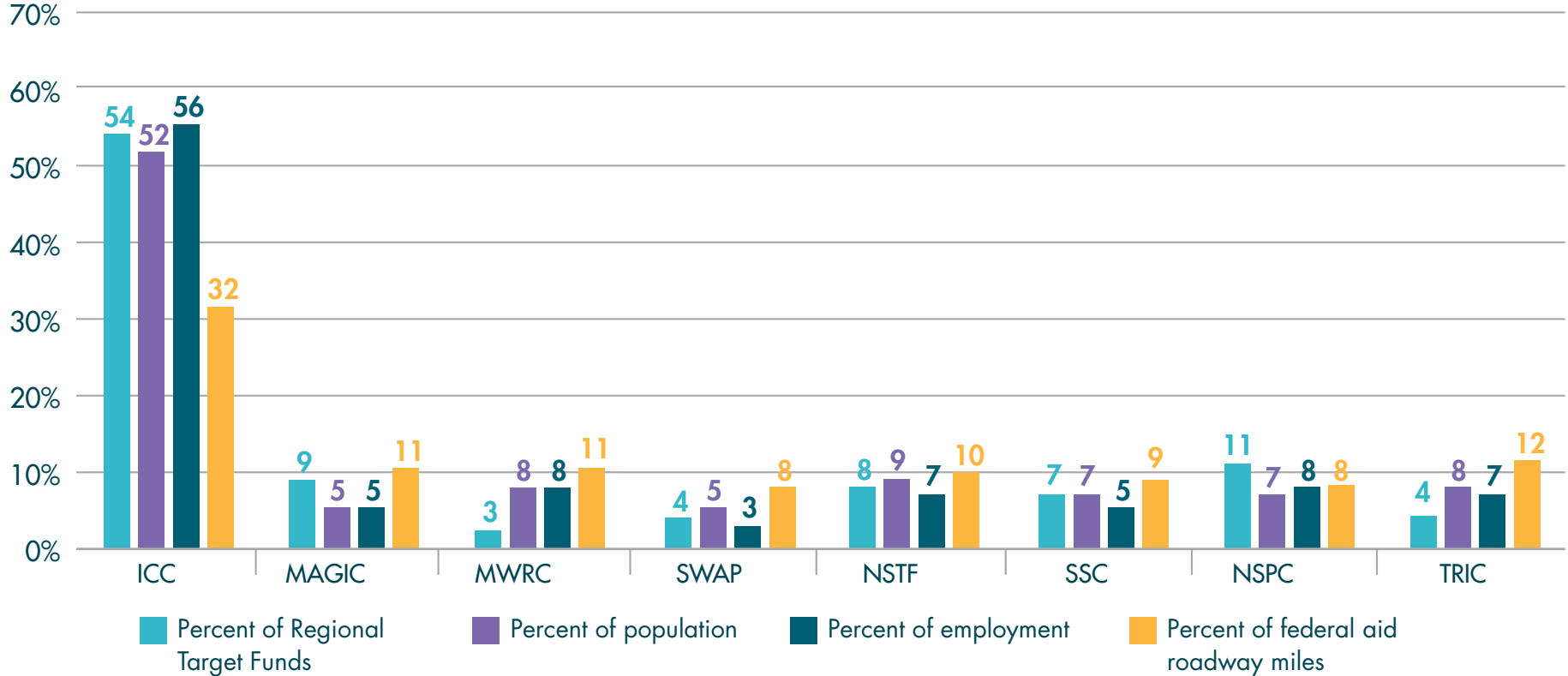


Figure D-2: Regional Distribution of Target Funding by Municipality Type (FFYs 2021–25)

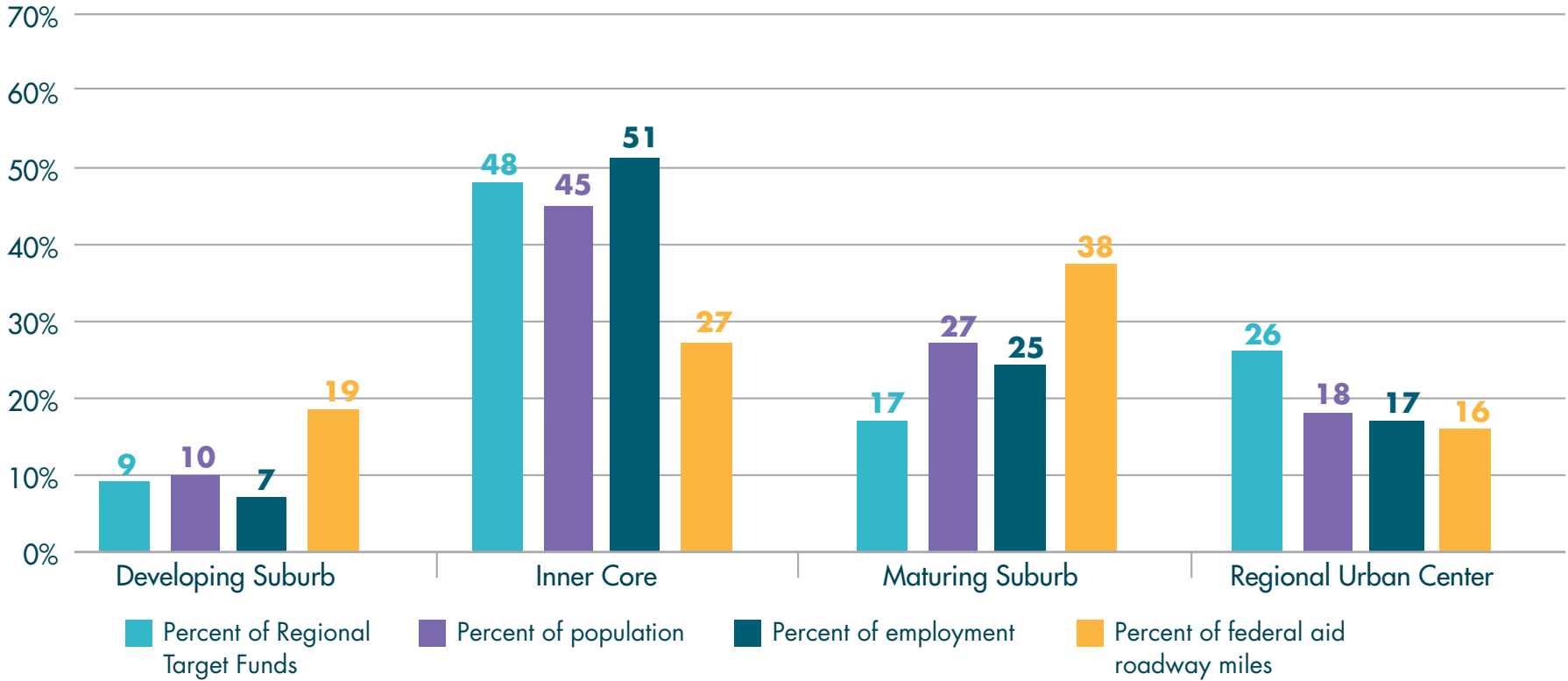


Figure D-3: All Federal Highway Funding in the Boston Region by Subregion (FFYs 2021–25)

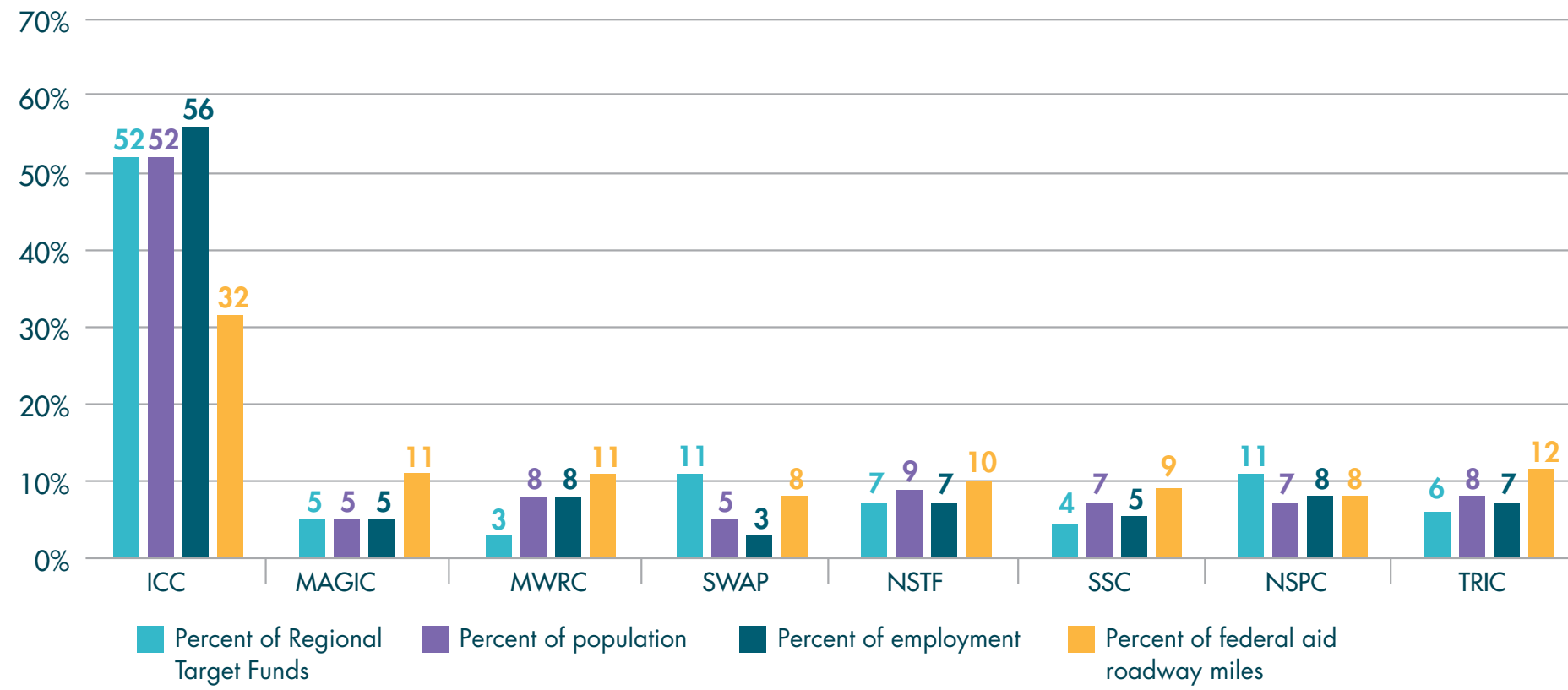


Figure D-4: All Federal Highway Funding in the Boston Region by Municipality Type (FFYs 2021–25)

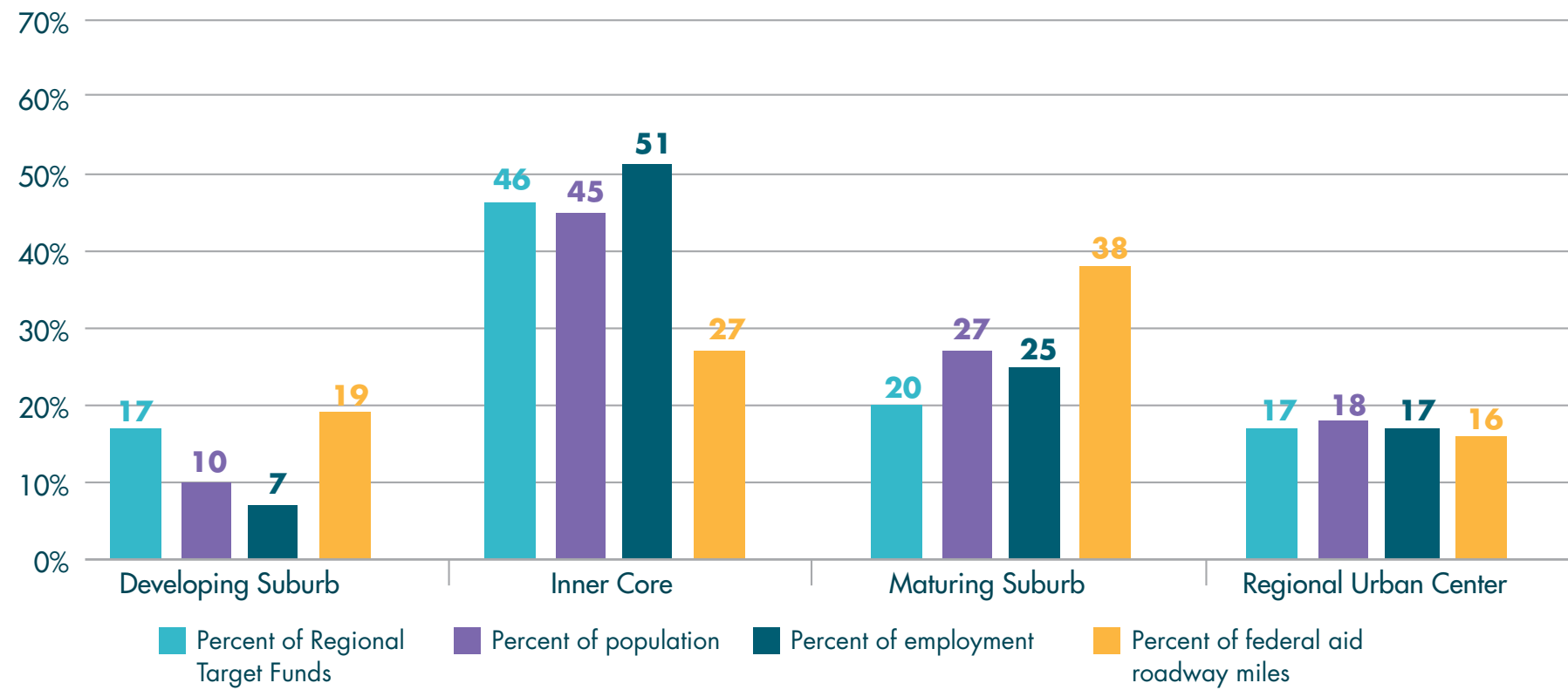


Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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%	\$138,552,739	26.4%	\$157,548,149	23.8%	\$296,100,888	24.9%
Hopkinton	SWAP	Developing Suburb	0.5%	0.5%	1.0%	\$0	0.0%	\$112,423,489	17.0%	\$112,423,489	9.5%
Somerville	Inner Core	Inner Core	2.5%	1.2%	1.2%	\$13,778,441	2.6%	\$48,287,064	7.3%	\$62,065,505	5.2%
Lynn	Inner Core	Regional Urban Center	2.9%	1.3%	1.3%	\$24,628,537	4.7%	\$26,574,686	4.0%	\$51,203,223	4.3%
Wilmington	NSPC	Maturing Suburb	0.7%	1.0%	1.3%	\$13,701,721	2.6%	\$34,356,868	5.2%	\$48,058,589	4.0%
Chelsea	Inner Core	Inner Core	1.1%	0.8%	0.6%	\$11,301,176	2.2%	\$36,432,991	5.5%	\$47,734,167	4.0%
Woburn	NSPC	Regional Urban Center	1.2%	2.2%	1.5%	\$40,426,385	7.7%	\$5,605,038	0.8%	\$46,031,423	3.9%
Everett	Inner Core	Inner Core	1.3%	0.7%	0.6%	\$39,792,222	7.6%	0	0.0%	\$39,792,222	3.3%
Peabody	NSTF	Regional Urban Center	1.7%	1.3%	1.4%	\$25,645,824	4.9%	\$4,648,369	0.7%	\$30,294,193	2.5%
Watertown	Inner Core	Inner Core	1.0%	1.1%	0.6%	\$28,453,423	5.4%	\$0	0.0%	\$28,453,423	2.4%
Medford	Inner Core	Inner Core	1.8%	1.0%	1.5%	\$13,676,856	2.6%	\$10,886,615	1.6%	\$24,563,471	2.1%
Norwood	TRIC	Regional Urban Center	0.9%	1.3%	1.0%	\$17,270,371	3.3%	\$1,818,611	0.3%	\$19,088,982	1.6%
Cambridge	Inner Core	Inner Core	3.4%	6.0%	1.8%	\$452,280	0.1%	\$18,215,780	2.7%	\$18,668,060	1.6%
Acton	MAGIC	Maturing Suburb	0.7%	0.5%	1.1%	\$15,331,125	2.9%	\$2,614,644	0.4%	\$17,945,769	1.5%
Quincy	Inner Core	Regional Urban Center	3.0%	2.6%	2.1%	\$5,843,442	1.1%	\$10,865,937	1.6%	\$16,709,379	1.4%
Wrentham	SWAP	Developing Suburb	0.4%	0.3%	1.0%	\$16,187,418	3.1%	\$0	0.0%	\$16,187,418	1.4%

Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25) (cont., 2)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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)
Framingham	MetroWest	Regional Urban Center	2.2%	2.5%	2.5%	\$13,824,478	2.6%	\$2,092,810	0.3%	\$15,917,288	1.3%
Milton	TRIC	Maturing Suburb	0.9%	0.3%	1.3%	\$0	0.0%	\$15,206,652	2.3%	\$15,206,652	1.3%
Hingham	SSC	Maturing Suburb	0.7%	0.7%	1.3%	\$14,746,200	2.8%	\$0	0.0%	\$14,746,200	1.2%
Newton	Inner Core	Inner Core	2.8%	3.0%	2.6%	\$840,333	0.2%	\$13,757,919	2.1%	\$14,598,252	1.2%
Sudbury	MAGIC	Maturing Suburb	0.6%	0.5%	1.0%	\$12,886,676	2.5%	\$0	0.0%	\$12,886,676	1.1%
Marlborough	MetroWest	Regional Urban Center	1.2%	1.6%	2.0%	\$0	0.0%	\$11,744,328	1.8%	\$11,744,328	1.0%
Cohasset	SSC	Developing Suburb	0.2%	0.1%	0.5%	\$11,691,837	2.2%	\$0	0.0%	\$11,691,837	1.0%
Stoneham	NSPC	Maturing Suburb	0.7%	0.4%	0.8%	\$0	0.0%	\$11,658,581	1.8%	\$11,658,581	1.0%
Bedford	MAGIC	Maturing Suburb	0.4%	1.1%	0.8%	\$11,000,168	2.1%	\$0	0.0%	\$11,000,168	0.9%
Essex	NSTF	Developing Suburb	0.1%	0.1%	0.2%	\$0	0.0%	\$10,659,471	1.6%	\$10,659,471	0.9%
Randolph	TRIC	Maturing Suburb	1.0%	0.5%	1.0%	\$0	0.0%	\$10,416,142	1.6%	\$10,416,142	0.9%
Dedham	TRIC	Maturing Suburb	0.8%	0.9%	1.1%	\$5,157,564	1.0%	\$4,388,063	0.7%	\$9,545,627	0.8%
Saugus	Inner Core	Maturing Suburb	0.9%	0.6%	0.8%	\$0	0.0%	\$9,294,446	1.4%	\$9,294,446	0.8%
Littleton	MAGIC	Developing Suburb	0.3%	0.3%	1.0%	\$5,759,352	1.1%	\$2,614,644	0.4%	\$8,373,996	0.7%
Hull	SSC	Maturing Suburb	0.3%	0.1%	0.4%	\$8,223,422	1.6%	0	0.0%	\$8,223,422	0.7%

Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25) (cont., 3)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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)
Beverly	NSTF	Regional Urban Center	1.3%	1.2%	1.2%	\$7,942,866	1.5%	\$271,952	0.0%	\$8,214,818	0.7%
Winchester	NSPC	Maturing Suburb	0.7%	0.5%	0.6%	\$0	0.0%	\$8,047,857	1.2%	\$8,047,857	0.7%
Foxborough	TRIC	Developing Suburb	0.5%	0.7%	1.3%	\$0	0.0%	\$7,169,843	1.1%	\$7,169,843	0.6%
Sharon	TRIC	Maturing Suburb	0.6%	0.2%	1.1%	\$42,000	0.0%	\$6,873,593	1.0%	\$6,915,593	0.6%
Middleton	NSTF	Developing Suburb	0.3%	0.3%	0.5%	\$0	0.0%	\$6,667,883	1.0%	\$6,667,883	0.6%
Burlington	NSPC	Maturing Suburb	0.8%	2.2%	1.3%	\$806,400	0.2%	\$5,605,038	0.8%	\$6,411,438	0.5%
Bellingham	SWAP	Developing Suburb	0.5%	0.3%	0.9%	\$6,398,158	1.2%	\$0	0.0%	\$6,398,158	0.5%
Winthrop	Inner Core	Inner Core	0.6%	0.1%	0.3%	\$5,931,953	1.1%	\$0	0.0%	\$5,931,953	0.5%
Ipswich	NSTF	Developing Suburb	0.4%	0.3%	0.7%	\$5,702,076	1.1%	\$0	0.0%	\$5,702,076	0.5%
Canton	TRIC	Maturing Suburb	0.7%	1.2%	1.1%	\$534,820	0.1%	\$4,436,543	0.7%	\$4,971,363	0.4%
Gloucester	NSTF	Regional Urban Center	0.9%	0.6%	1.0%	\$0	0.0%	\$4,964,309	0.7%	\$4,964,309	0.4%
Manchester	NSTF	Developing Suburb	0.2%	0.1%	0.4%	\$0	0.0%	\$4,964,309	0.7%	\$4,964,309	0.4%
Wenham	NSTF	Developing Suburb	0.2%	0.1%	0.4%	\$0	0.0%	\$4,964,309	0.7%	\$4,964,309	0.4%
Lynnfield	NSPC	Maturing Suburb	0.4%	0.3%	0.6%	\$0	0.0%	\$4,648,369	0.7%	\$4,648,369	0.4%
Holbrook	SSC	Maturing Suburb	0.3%	0.1%	0.3%	\$3,036,628	0.6%	\$1,527,250	0.2%	\$4,563,878	0.4%

Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25) (cont., 4)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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)
Danvers	NSTF	Maturing Suburb	0.9%	1.4%	1.5%	\$0	0.0%	\$3,874,428	0.6%	\$3,874,428	0.3%
Natick	MetroWest	Maturing Suburb	1.1%	1.3%	1.2%	\$0	0.0%	\$3,715,698	0.6%	\$3,715,698	0.3%
Stow	MAGIC	Developing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$3,592,584	0.5%	\$3,592,584	0.3%
Hamilton	NSTF	Developing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$3,256,397	0.5%	\$3,256,397	0.3%
Weston	MetroWest	Maturing Suburb	0.4%	0.2%	1.3%	\$0	0.0%	\$2,763,888	0.4%	\$2,763,888	0.2%
Braintree	SSC	Maturing Suburb	1.2%	1.5%	1.4%	\$0	0.0%	\$2,726,256	0.4%	\$2,726,256	0.2%
Weymouth	SSC	Maturing Suburb	1.7%	1.0%	1.5%	\$0	0.0%	\$2,726,256	0.4%	\$2,726,256	0.2%
Maynard	MAGIC	Maturing Suburb	0.3%	0.2%	0.3%	\$0	0.0%	\$2,661,282	0.4%	\$2,661,282	0.2%
Boxborough	MAGIC	Developing Suburb	0.2%	0.2%	0.4%	\$0	0.0%	\$2,614,644	0.4%	\$2,614,644	0.2%
Salem	NSTF	Regional Urban Center	1.3%	1.1%	0.7%	\$0	0.0%	\$2,250,000	0.3%	\$2,250,000	0.2%
Reading	NSPC	Maturing Suburb	0.8%	0.4%	0.8%	\$2,161,390	0.4%	\$0	0.0%	\$2,161,390	0.2%
Belmont	Inner Core	Inner Core	0.8%	0.4%	0.6%	\$0	0.0%	\$1,529,472	0.2%	\$1,529,472	0.1%
Medway	SWAP	Developing Suburb	0.4%	0.2%	0.6%	\$0	0.0%	\$1,487,008	0.2%	\$1,487,008	0.1%
Swampscott	NSTF	Maturing Suburb	0.4%	0.2%	0.3%	\$0	0.0%	\$1,337,074	0.2%	\$1,337,074	0.1%
Scituate	SSC	Maturing Suburb	0.6%	0.2%	1.0%	\$1,299,093	0.2%	\$0	0.0%	\$1,299,093	0.1%

Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25) (cont., 5)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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)
Ashland	MetroWest	Maturing Suburb	0.5%	0.3%	0.5%	\$1,269,327	0.2%	\$0	0.0%	\$1,269,327	0.1%
Arlington	Inner Core	Inner Core	1.4%	0.5%	0.8%	\$113,333	0.0%	\$1,072,752	0.2%	\$1,186,085	0.1%
Concord	MAGIC	Maturing Suburb	0.6%	0.7%	1.1%	\$100,000	0.0%	\$1,082,816	0.2%	\$1,182,816	0.1%
Westwood	TRIC	Maturing Suburb	0.5%	0.5%	0.7%	\$0	0.0%	\$1,114,286	0.2%	\$1,114,286	0.1%
Lexington	MAGIC	Maturing Suburb	1.0%	1.1%	1.9%	\$0	0.0%	\$1,082,816	0.2%	\$1,082,816	0.1%
Lincoln	MAGIC	Maturing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$1,082,816	0.2%	\$1,082,816	0.1%
Marblehead	NSTF	Maturing Suburb	0.6%	0.3%	0.5%	\$622,284	0.1%	\$0	0.0%	\$622,284	0.1%
Revere	Inner Core	Inner Core	1.7%	0.5%	1.3%	\$0	0.0%	\$350,914	0.1%	\$350,914	0.0%
Malden	Inner Core	Inner Core	1.9%	0.8%	1.0%	\$230,915	0.0%	\$0	0.0%	\$230,915	0.0%
Wellesley	MetroWest	Maturing Suburb	0.9%	0.9%	0.9%	\$85,054	0.0%	\$0	0.0%	\$85,054	0.0%
Brookline	Inner Core	Inner Core	1.9%	0.9%	1.3%	\$43,620	0.0%	\$0	0.0%	\$43,620	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%
Dover	SWAP	Developing Suburb	0.2%	0.0%	0.5%	\$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%
Holliston	MetroWest	Developing Suburb	0.4%	0.3%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%

Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25) (cont., 6)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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)
Hudson	MAGIC	Developing Suburb	0.6%	0.5%	0.7%	\$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%
Milford	SWAP	Regional Urban Center	0.9%	0.8%	1.2%	\$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%
Nahant	Inner Core	Maturing Suburb	0.1%	0.0%	0.2%	\$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%
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%
Sherborn	SWAP	Developing Suburb	0.1%	0.0%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%

Table D-1: Federal Highway Programming for Municipalities in the Boston Region (FFYs 2021–25) (cont., 7)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	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)
Southborough	MetroWest	Maturing Suburb	0.3%	0.4%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Topsfield	NSTF	Developing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Wakefield	NSPC	Maturing Suburb	0.8%	0.8%	0.9%	\$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%
Waltham	Inner Core	Inner Core	2.0%	3.0%	1.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Wayland	MetroWest	Maturing Suburb	0.4%	0.2%	0.7%	\$0	0.0%	\$0	0.0%	\$0	0.0%

**CURBSIDE
PICK UP
ONLY
DRIVER
MUST STAY
WITH CAR**





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) 2022.

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 4 for more information about these federally required performance measures, the MPO’s performance targets, and how these measures and targets relate to the projects programmed in this TIP.

1990 Clean Air Act Amendments

The Clean Air Act, most recently amended in 1990, forms the basis of the United State's 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 MPO 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 (TCMs) are in effect in the region. TCMs are strategies that reduce transportation-related air pollution and fuel use by reducing vehicle-miles traveled and improving roadway operations. The Massachusetts SIP identifies TCMs in the Boston region. 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 (see below). See Chapter 5 for more information on conformity and greenhouse gas reporting.

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. (See Chapter 6 for this analysis.) 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 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 these 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 also released the *Massachusetts Bicycle Transportation Plan* and the *Massachusetts Pedestrian Transportation Plan*, both of which define roadmaps, initiatives, and action plans to improve bicycle and pedestrian transportation in the Commonwealth. The MPO seeks to support the goals of MassDOT's modal plans when making funding decisions in the TIP through its investment programs, specifically through its Bicycle Network and Pedestrian Connections program and its Transit Modernization program.

Global Warming Solutions Act

The Global Warming Solutions Act (GWSA) makes Massachusetts a leader in setting aggressive and enforceable GHG reduction targets and implementing policies and initiatives to achieve these targets. In keeping with this law, the Massachusetts Executive Office of Energy and Environmental Affairs, in consultation with other state agencies and the public, developed the *Massachusetts Clean Energy and Climate Plan for 2020*. This implementation plan, released on December 29, 2010 (and updated in 2015), establishes the following targets for overall statewide GHG emission reductions:

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

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

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

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

The Commonwealth's 10 MPOs (and three non-metropolitan planning regions) are integrally involved in supporting the GHG reductions mandated under the GWSA. The MPOs seek to realize these objectives by prioritizing projects in the LRTP and TIP that will help reduce emissions from the transportation sector. The Boston Region MPO uses its TIP project evaluation criteria to score projects based on their GHG emissions impacts, multimodal Complete Streets accommodations, and ability to support smart growth development. Tracking and evaluating GHG emissions by project will enable the MPOs to anticipate GHG impacts of planned and programmed projects. See 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 utilize 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 (UPWP), 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 National Highway System (NHS). The report also made recommendations for reducing congestion, including addressing local and regional bottlenecks, redesigning bus networks within the systems operated by the Massachusetts Bay Transportation Authority (MBTA) and the other regional transit authorities, increasing MBTA capacity, and investigating congestion pricing mechanisms such as managed lanes. These recommendations guide multiple new efforts within MassDOT and the MBTA and are actively considered by the Boston Region MPO when making planning and investment decisions.

Regional Guidance and Priorities

Focus40, The MBTA's Program for Mass Transportation

On March 18, 2019, MassDOT and the MBTA released *Focus40*, the MBTA's Program for Mass Transportation (PMT), which is the 25-year investment plan that aims to position the MBTA to meet the transit needs of the Greater Boston region through 2040. Complemented by the MBTA's Strategic Plan and other internal and external policy and planning initiatives, *Focus40* serves as a comprehensive plan guiding all capital planning initiatives at the MBTA. These initiatives include the RailVision plan, which will inform the vision for the future of the MBTA's commuter rail system; the Better Bus Project, the plan to 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.

MetroFuture

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

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

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 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.

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 impacts become apparent, state and regional partners' guidance and priorities are likely to be adjusted.



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BUS STOP



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 Fiscal and Management Control Board of the Massachusetts Bay Transportation Authority. 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 **Massachusetts Bay Transportation Authority (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. As of this writing, the FMCB's mandate has not been extended further.

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

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

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

The **Metropolitan Area Planning Council (MAPC)** is the regional planning agency for the Boston region. It is composed of the chief executive officer (or a designee) of each of the cities and towns in the MAPC's planning region, 21 gubernatorial appointees, and 12 ex-officio members. It has statutory responsibility for comprehensive regional planning in its region under Chapter 40B of the 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 Woburn**), 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.



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 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 2022–26 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).

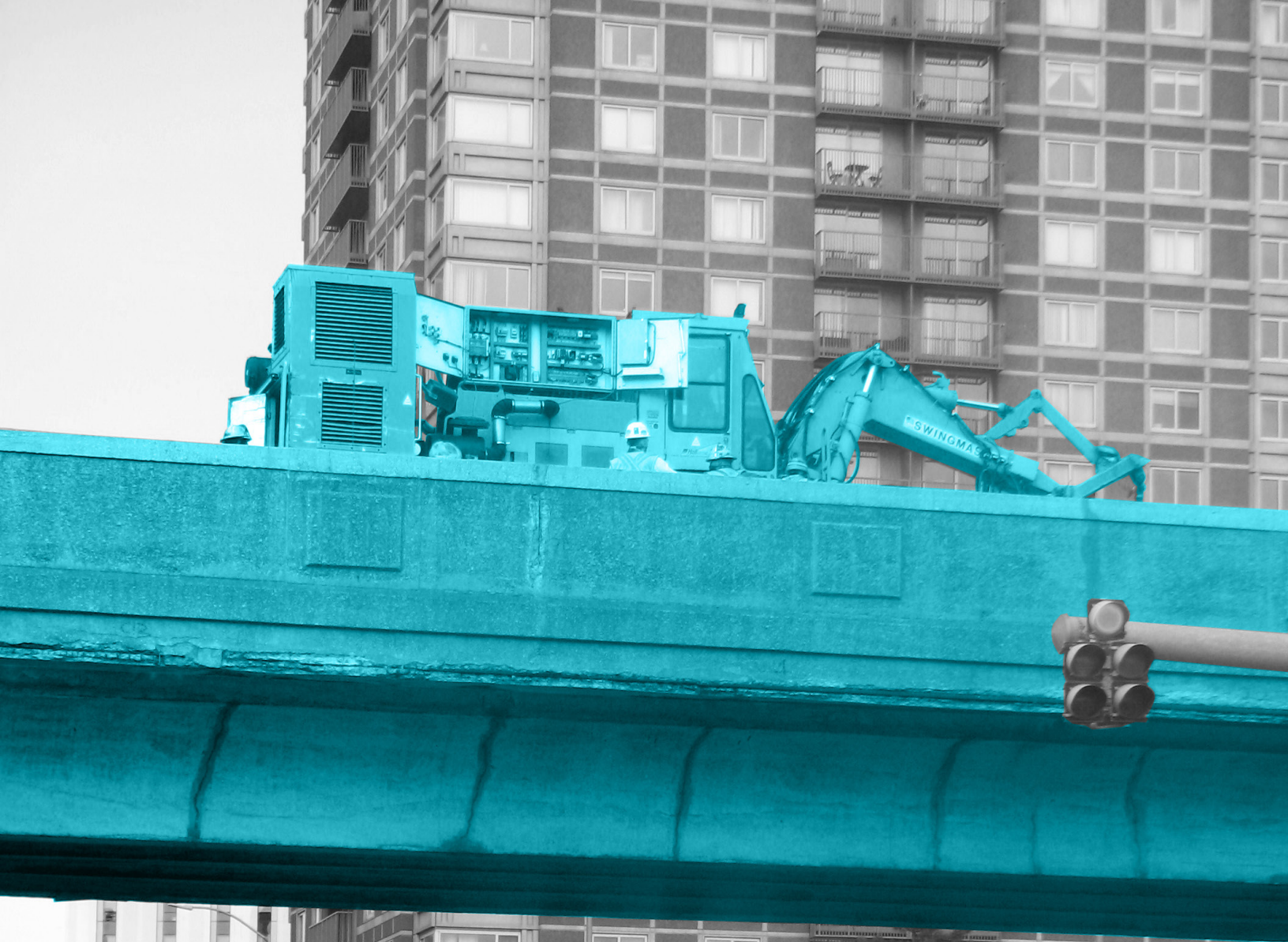


Table G-1: FFYs 2022–26 Operations and Maintenance Summary: MassDOT
(This table will be included in the Final Draft)

Table G-2: FFYs 2022–26 Operations and Maintenance Summary: MBTA

Category	FY22-FY26	FY22	FY23	FY24	FY25	FY26
Operations and Maintenance Revenues (\$M)						
Fare Revenue	1,926	200	350	450	462	465
Non-Fare Revenue	509	70	105	109	111	114
Sales Tax and Local Assessments	6,980	1,354	1,374	1,394	1,415	1,443
Additional State Assistance	635	127	127	127	127	127
Federal Relief & One-Time Revenue	1,311	605	503	203	-	-
Total Revenue	11,360	2,355	2,459	2,283	2,115	2,149
Operations and Maintenance Costs (\$M)						
Wages, Materials, and Services and Contracts	9,748	1,887	1,897	1,937	1,995	2,032
Debt Service	2,767	468	562	548	577	612
Total Costs	12,514	2,355	2,459	2,485	2,573	2,643
Difference Between Revenues and Costs	(1,154)	1	(0)	(202)	(458)	(495)

Notes:

- Totals may not sum due to rounding
- FY22 estimates subject to FMCB review and based on FY22 preliminary presentation to the FMCB on 4/26/21
- FY23-FY26 spending and revenue estimates based on March Annual Pro Forma presentation to the FMCB on 3/8/21
- Additional state assistance displayed as part of total revenue consistent with monthly reporting to the FMCB in FY21
- Federal relief & One-Time Revenue includes CARES Act funds, CRRSAA funds, and ARP funds along with a planned transfer of Operating Deficiency Reserve funds, along with FEMA reimbursement revenues for COVID-19 expenses
- Federal relief & one-time revenue: The MBTA has an estimated allocation of one-time federal COVID-19 relief funding totaling \$1,973M with \$827M from the Coronavirus Aid, Relief, and Economic Security (CARES) Act from March 27, 2020, \$301M from the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (CRRSAA) from December 27, 2020, and a projected \$845M from the American Rescue Plan (ARP) Act from March 11, 2021. Additionally, the one-time revenue category includes FEMA reimbursement for COVID-19 expenses like PPE and cleaning costs estimated at \$34M along with a planned one-time transfer of Operating Deficiency Fund reserves of \$365M.
- 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 3 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 2018–26 Operations and Maintenance Summary: MWRTA

Operating Revenue	Actual	Actual	Actual	Budgeted	Proposed Budget (4/23/2021)	Projected	Projected	Projected
	FY18	FY19	FY20	FY21	FY 22	FY 23	FY24	FY25
Farebox	\$583,915	\$607,985	\$479,129	\$574,429	\$607,986	\$623,186	\$638,765	\$654,734
Section 5339								
Section 5307	\$2,190,895	\$1,534,066	\$922,968			\$1,718,260	\$2,629,760	\$2,514,930
Section 5311								
CMAQ/TDM								
Cares Act Operating			\$825,000	\$3,298,479	\$3,050,045	\$74,955		
CRRSAA Proceeds						\$1,337,046		
Fully Funded Brokerage								
Job Access/Reverse Commute								
New Freedom	\$91,000	\$-						
Advertising	\$68,705	\$87,950	\$80,250	\$85,920	\$90,589	\$92,853	\$95,175	\$97,554
Interest Income	\$4,419	\$7,168	\$5,307	\$5,950	\$990			
Rental Income	\$87,500	\$123,844	\$108,364	\$108,000	\$118,000	\$118,000	\$118,000	\$118,000
Parking Revenue	\$298,054	\$274,999	\$206,328	\$219,271	\$274,599	\$281,464	\$288,501	\$295,713
State Operating Assistance	\$2,662,611	\$3,542,451	\$3,474,631	\$2,604,946	\$3,112,505	\$3,190,318	\$3,670,076	\$3,761,827
Local Assessment	\$3,979,120	\$4,078,598	\$3,876,600	\$4,172,695	\$4,072,853	\$4,174,675	\$4,279,041	\$4,386,017
Other: (Define)	\$736,128	\$688,727	\$534,505	\$421,386	\$490,816	\$503,087	\$515,664	\$528,555
TOTAL	\$10,702,347	\$10,945,787	\$10,513,083	\$11,491,076	\$11,818,383	\$12,113,843	\$12,234,981	\$12,357,331
Other - Operating (examples)								
Ins. Recoveries, misc.	\$1,140	\$25,904	\$10,624	\$12,749	\$10,943	\$11,216	\$11,497	\$11,784
Gain on Sale of Fixed Assets								
ID Income								
Miscellaneous	\$4,234	\$13,142	\$4,283	\$610				
Vending	\$6,544	\$5,254	\$4,687	\$4,587	\$5,254	\$5,386	\$5,520	\$5,658
Fuel Tax Rebate	\$129,953	\$53,733	\$31,334	\$37,601	\$31,334	\$32,117	\$32,920	\$33,743
Vehicle Repair Reimbursement	\$64,783	\$68,892	\$74,162	\$74,083	\$66,178	\$67,832	\$69,528	\$71,266
MAPC Reimbursement	\$22,342	\$-						

Operating Revenue	Actual	Actual	Actual	Budgeted	Proposed Budget (4/23/2021)	Projected	Projected	Projected
	FY18	FY19	FY20	FY21	FY 22	FY 23	FY24	FY25
HST Revenue	\$59,120	\$1,251						
CDL Workforce Development	\$50,000	\$17,500						
Hudson Shuttle	\$125,000	\$-						
Mass Bay Community College Shuttle	\$170,727	\$212,789	\$176,674	\$128,611	\$212,789	\$218,109	\$223,562	\$229,151
Travel Training Initiative	\$24,324	\$84,262	\$76,048	\$70,942	\$100,000	\$102,500	\$105,063	\$107,689
5310 ADA Above and Beyond	\$77,961	\$172,038						
Solar Renew Energy Credit Rev		\$260	\$52,770	\$55,704	\$52,770	\$54,089	\$55,441	\$56,828
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	\$10,500	\$11,548	\$11,836	\$12,132	\$12,436
Rebate Income		\$4,869						
MW Health Foundation Training Grant			\$26,000	\$26,000				
Other Operating Revenue	\$736,128	\$688,727	\$534,505	\$421,386	\$490,816	\$503,087	\$515,664	\$528,555
Operating Expenses	\$10,702,347	\$10,945,787	\$10,513,083	\$11,491,076	\$11,818,383	\$12,113,843	\$12,234,981	\$12,357,331

Table G-4: FFYs 2020–25 Operations and Maintenance Summary: CATA

	Actual	Current (Budgeted)	Projected	Projected	Projected	Projected
	2020	2021	2022	2023	2024	2025
Farebox	\$143,035	\$160,000	\$120,000	\$190,000	\$190,000	\$190,000
Section 5307	\$18,238	\$193,718	\$200,227	\$220,654	\$230,970	\$241,544
Section 5311	\$-	\$-	\$-	\$-	\$-	\$-
CMAQ/TDM	\$-	\$-	\$-	\$-	\$-	\$-
Fully Funded	\$-	\$-	\$-	\$-	\$-	\$-
MassDOT	\$-	\$-	\$96,680	\$100,000	\$100,000	\$100,000
Discretionary Grant						
Community Transit Grant	\$-	\$46,874	\$97,024	\$50,000	\$50,000	\$50,000
Auxiliary Revenues *	\$724,028	\$540,765	\$910,387	\$500,000	\$500,000	\$500,000
Interest Income	\$2,688	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
State Contract Assistance **	\$1,426,794	\$1,506,637	\$1,506,637	\$1,544,303	\$1,582,910	\$1,622,483
Local Assessment	\$590,570	\$776,078	\$795,480	\$815,367	\$835,751	\$856,645
Total	\$2,905,353	\$3,226,072	\$3,728,435	\$3,422,324	\$3,491,632	\$3,562,672
Operating Expenses ***	Previous	Current	Year Two	Year Three	Year Four	Year Five
	2020	2021	2022	2023	2024	2025
	\$2,905,353	\$3,226,072	\$3,728,435	\$3,422,324	\$3,491,632	\$3,562,672

* 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; an dother miscellaneous expense items

