

APPENDIX A

Project Prioritization and Scoring

As described in Chapter 2, the Transportation Improvement Program (TIP) development and project prioritization and funding process consists of numerous phases and is supported by several different funding sources. This appendix includes information about transportation projects that the Boston Region Metropolitan Planning Organization (MPO) considered for funding through the Highway Discretionary (Regional Target) Program in the federal fiscal years (FFYs) 2023–27 TIP.

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

- The Massachusetts Department of Transportation’s Project Review Committee must have approved the project or must plan to review it.
- The project proponent must be a municipality or state agency.
- The project must be at the 25-percent design stage or demonstrate the level of detail of a project near this threshold (for example, through the submission of functional design reports, project locus maps and designs, operations analyses, or Highway Capacity Manual data sheets showing future build and no-build scenarios).

For projects evaluated through the MPO’s Community Connections Program, the following criteria apply:

- The project proponent must submit a complete application for funding to MPO staff, along with supporting documentation such as geographic files depicting the project area and budgeting worksheets.
- The proponent must be a municipality, transportation management association (TMA), or regional transit authority (RTA). Other entities, such as nonprofit organizations, may apply in partnership with a municipality, TMA, or RTA that has agreed to serve as a project proponent and fiscal manager.
- The proponent must demonstrate that the project will have a positive impact on air quality, as this program is funded using federal Congestion Mitigation and Air Quality funds.
- The proponent must demonstrate readiness and institutional capacity to manage the project sustainably.

If a project meets the above criteria, it is presented to the MPO board in the *Universe of Projects* (Table A-1) to be considered for funding. This project list is presented to the MPO board in November and provides a snapshot of information available on projects at that stage in the TIP development. Some projects that get evaluated for funding may not appear in the *Universe*, as more project information may become available following the compilation of the *Universe*. In addition, some projects that appear on the *Universe* list may not be evaluated in a given year

if these projects are not actively being advanced by municipal or state planners or if they are not at the minimum required level of design for evaluation. Community Connections projects are not included in the Universe because proponents of those projects apply for funding through a discrete application process, the submission deadline for which is after the presentation of the Universe to the MPO board.

Once a proponent provides sufficient design documentation for a project in the *Universe* and the municipality or state is actively prioritizing the project for funding, the project can be evaluated by MPO staff. The evaluation criteria used to score projects are based on the MPO's goals and objectives. After the projects are evaluated, the scores are shared with project proponents, posted on the MPO's website, and presented to the MPO board for review and discussion. The scores for projects evaluated during development of the FFYs 2023–27 TIP for programming in the MPO's Bicycle Network and Pedestrian Connections, Complete Streets, Intersection Improvements, and Major Infrastructure investment programs are summarized in Table A-3. Scores for projects that applied for funding through the MPO's Community Connections Program during the FFYs 2023–27 TIP cycle are summarized in Table A-4.

As has been mentioned throughout this document, the MPO board approved a suite of changes to the TIP project selection criteria in October 2020. One of the central goals was to create distinct criteria for each investment program to allow for evaluations to be conducted in ways that better reflect the nuances of different types of transportation projects. For this reason, the project selection criteria for each investment program are shown in separate tables in this appendix as follows: Bicycle Network and Pedestrian Connections (Table A-5); Community Connections (Table A-6); Complete Streets (Table A-7); Intersection Improvements (Table A-8); and Major Infrastructure (Table A-9). Archived project evaluation criteria for all investment programs, which were discontinued in October 2020 after the FFYs 2021–25 TIP cycle, are shown in Tables A-10 and A-11.

In addition to project scores, several other factors are taken into consideration by the MPO when selecting projects for funding. Table A-2 describes many of these elements, including the relationships between the MPO's FFYs 2023–27 Regional Target projects and the MPO's Long-Range Transportation Plan (LRTP), studies and technical assistance conducted by MPO staff through the Unified Planning Work Program (UPWP), the federally required performance measures discussed in Chapter 4, and Massachusetts' modal plans. These projects are listed by MPO investment program. More details about each of these projects are available in the funding tables and project descriptions included in Chapter 3. Performance-related information for the FFYs 2023–27 Regional Target projects is included in Chapter 4, and information about greenhouse gas (GHG) emissions for these projects is available in Appendix B.



**Table A-1
FFYs 2023-27 Transportation Improvement Program (TIP) Universe of Projects**

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Inner Core										
Complete Streets										
Boston	Boston	Reconstruction of Albany Street	N/A	Pre-PRC	2021	N/A	6	Pursuing 2022 PRC approval.	N/A	
Boston	MassDOT	Reconstruction on Gallivan Boulevard (Route 203), from Neponset Circle to East of Morton Street Intersection	606896	PRC approved (2012)	2018	\$11,500,000	6	Resulted from FFY 2012 Addressing Priority Corridors MPO Study	N/A	
Boston	MassDOT	Improvements on Morton Street (Route 203), from West of Gallivan Boulevard to Shea Circle	606897	PRC approved (2012)	2018	\$11,500,000	6	Resulted from FFY 2012 Addressing Priority Corridors MPO Study	N/A	
Boston	Boston	Roadway Improvements along Commonwealth Avenue (Route 30), from Alcorn Street to Warren/Kelton Streets (Phase 3 & Phase 4)	608449	25% submitted (9/28/2017)	2017 or earlier	\$31,036,006	6	Last scored for FFYs 2020-24 TIP.	56	
Boston	MassDOT	Gallivan Boulevard (Route 203) Safety Improvements, from Washington Street to Granite Avenue	610650	PRC approved (2019)	2019	\$5,750,000	6	Priority for District 6. Road safety audit being initiated.	N/A	
Brookline	Brookline	Rehabilitation of Washington Street	610932	PRC approved (2020)	2020	\$25,888,631	6		56.9	Yes
Chelsea	Chelsea	Reconstruction of Spruce Street, from Everett Avenue to Williams Street	610675	PRC approved (2019)	2019	\$5,408,475	6		N/A	
Chelsea	Chelsea	Reconstruction of Everett Avenue and 3rd Street, from Broadway to Ash Street	N/A	Pre-PRC	2020	N/A	6		N/A	
Chelsea	Chelsea	Park Street & Pearl Street Reconstruction	611983	PRC approved (2021)	2020	\$10,451,525	6		68.9	Yes
Chelsea	Chelsea	Reconstruction of Marginal Street	N/A	Pre-PRC	2019	N/A	6		N/A	

(Table A-1 cont., 2)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Lynn	Lynn	Reconstruction of Western Avenue (Route 107)	609246	PRC approved (2018)	2018	\$36,205,000	4	Project programmed in LRTP (FFYs 2025-29) but no longer considered Major Infrastructure by MPO.	71.4	Yes
Lynn, Salem	MassDOT	Reconstruction of Route 107	608927	PRC approved (2017)	2020	\$38,155,000	4		N/A	
Melrose	Melrose	Reconstruction of Lebanon Street, from Lynde Street to Malden City Line	N/A	Pre-PRC	2020	N/A	4	Project at conceptual stage.	N/A	
Newton	Newton	Reconstruction of Washington Street, from Church Street to Chestnut Street	N/A	Pre-PRC	2020	N/A	6		N/A	
Revere	Revere	Reconstruction of Ocean Ave, Revere Street, and Revere Beach Boulevard	N/A	Pre-PRC	2020	N/A	4	Project at conceptual stage.	N/A	
Winthrop	Winthrop	Reconstruction & Improvements on Route 145	609446	PRC approved (2019)	2019	\$7,565,512	6		N/A	
Intersection Improvements										
Boston, Brookline	Boston, Brookline	Mounifort St. & Commonwealth Ave. Connection	608956	PRC approved (2017)	2018	\$916,883	6		N/A	
Cambridge	DCR	Intersection Improvements at Fresh Pond Parkway/Gerry's Landing Road, from Brattle Street to Memorial Drive	609290	PRC approved (2018)	2019	\$7,000,000	6	Short-term improvements being initiated. Project may be candidate for funding in future year.	N/A	
Everett	MassDOT	Intersection Improvements on Route 16	611969	PRC approved (2021)	2021	\$15,300,000	4		N/A	
Medford	Medford	Intersection Improvements at Main Street and South Street	611974	PRC approved (2021)	2019	\$8,498,000	4	Project location studied by CTPS. Priority for municipality.	N/A	
Newton	MassDOT	Traffic Signal and Safety Improvements at Interchange 127 (Newton Corner)	609288	PRC approved (2018)	2019	\$14,000,000	6		N/A	

(Table A-1 cont., 3)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Quincy	MassDOT	Intersection Improvements at Route 3A (Southern Artery) and Broad Street	608569	PRC approved (2016)	2020	\$2,900,000	6	Priority for District 6.	N/A	
Quincy	Quincy	Intersection Improvements at Willard Street and Ricciuti Drive	610823	PRC approved (2020)	2020	\$1,544,650	6	Project at conceptual stage. 25% design advancing.	N/A	
Bicycle and Pedestrian										
Belmont	Belmont	Community Path, Belmont Component of the MCRT (Phase 1)	609204	25% submitted (11/3/2021)	2018	\$16,703,600	4		59	Yes
Boston	Boston	Fenway Multi-Use Path Phase III	N/A	Pre-PRC	2021	N/A	6	Project at conceptual stage.	N/A	
Everett, Somerville	DCR	Mystic River Bicycle and Pedestrian Crossing	612004	PRC approved (2021)	2021	\$38,218,334	4		N/A	
Lynn, Nahant	Lynn, Nahant	Northern Strand Extension	610919	DPH (11/17/2021)	2020	\$9,363,750	4		N/A	
Medford	Medford	Shared Use Path Connection at the Route 28/ Wellington Underpass	611982	PRC approved (2021)	2021	\$3,625,000	4		N/A	
Major Infrastructure										
Boston	Boston	Bridge Replacement, Meridian Street Over Chelsea Creek (Andrew P. McArdle Bridge)	N/A	Pre-PRC	2021	N/A	6	Project not programmed in LRTP (likely to meet MPO definition for Major Infrastructure based on cost)	N/A	
Revere, Malden	MassDOT	Improvements on Route 1 (NB) Add-A-Lane	610543	PRC approved (2019)	2019	\$7,210,000	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
Revere, Saugus	Revere, Saugus	Roadway Widening on Route 1 North (Phase 2)	611999	PRC approved (2021)	2021	\$2,397,600	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
Somerville	Somerville	McGrath Boulevard Project	607981	PRC approved (2014)	2017 or earlier	\$88,250,000	4	LRTP project (FFYs 2025-29)	66.2	Yes

(Table A-1 cont., 4)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Minuteman Advisory Group on Interlocal Coordination										
Complete Streets										
Lexington	Lexington	Route 4/225 (Bedford Street) and Hartwell Avenue	N/A	Pre-PRC	2019	\$30,557,000	4	Project programmed in LRTP (FFYs 2030-34) but no longer considered Major Infrastructure by MPO.	N/A	
Intersection Improvements										
Littleton	Littleton	Intersection Improvements at Route 119/ Beaver Brook Road	610702	PRC approved (2020)	2020	\$3,120,110	3	MassDOT agreed to fund design after 25% design approved.	N/A	
Bicycle and Pedestrian										
Concord	Concord	Assabet River Pedestrian Bridge	N/A	Pre-PRC	2020	\$2,000,000-\$3,600,000	4	Project at conceptual stage.	N/A	
Major Infrastructure										
Acton	MassDOT	Intersection Improvements at Route 2 and Route 27 Ramps	610553	PRC approved (2019)	2020	\$3,480,000	3	Project not programmed in LRTP (meets MPO roadway classification requirement). Priority for District 3 and Town of Acton.	N/A	
Concord	Concord	Reconstruction & Widening on Route 2, from Sandy Pond Road to Bridge over MBTA/B&M Railroad	608015	PRC approved (2014)	2019	\$8,000,000	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
MetroWest Regional Collaborative										
Complete Streets										
Weston	Weston	Reconstruction on Route 30	608954	25% submitted (10/19/2020)	2018	\$15,203,814	6	Design Public Hearing targeted for January/February 2022.	49.2	Yes

(Table A-1 cont., 5)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Holliston	Holliston	Reconstruction of Concord Street (Route 126)	N/A	Pre-PRC	2021	N/A	3	Added through subregional outreach. Project is municipal priority, as it's tied to necessary below-grade sewer work.	N/A	
Intersection Improvements										
Framingham	MassDOT	Roundabout Construction at Salem End Road, Badger Road and Gates Street	609280	PRC approved (2018)	2019	\$2,520,000	3		N/A	
Weston	Weston	Intersection Improvements - Boston Post Road (Route 20) at Wellesley Street	608940	25% resubmitted (8/20/2021)	2018	\$2,394,045	6	Design Public Hearing targeted for December 2021.	45.6	Yes
Weston	Weston	Intersection Improvements - Signalization of Route 20 at Highland Street	N/A	Pre-PRC	2021	N/A	6	Added through subregional outreach.	N/A	
Bicycle and Pedestrian										
Natick	Natick	Cochituate Rail Trail Extension, from MBTA Station to Mechanic Street	610691	PRC approved (4/30/2020)	2020	\$4,500,110	3		N/A	
Major Infrastructure										
Framingham	Framingham	Intersection Improvements at Route 126/135/MBTA and CSX Railroad	606109	PRC approved (2010)	2019	\$115,000,000	3	L RTP project (FFYs 2030-34).	N/A	
Natick	Natick	Bridge Replacement, Route 27 (North Main Street) over Route 9 (Worcester Street) and Interchange Improvements	605313	25% resubmitted (2/12/2020)	2018	\$45,097,350	3	L RTP project (FFYs 2025-29). High priority for District 3. Updated 25% design anticipated February 2022.	56.4	Yes
North Suburban Planning Council										
Complete Streets										
Burlington	Burlington	Town Center Complete Streets Improvements	N/A	Pre-PRC	2021	N/A	4		N/A	

(Table A-1 cont., 6)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Burlington, Billerica	MassDOT	Resurfacing and Related Work on Route 3A	610704	25% submitted (1/12/2021)	2020	\$4,406,512	4		N/A	
Lynnfield	Lynnfield	Reconstruction of Summer Street	609381	PRC approved (2019)	2019	\$21,521,921	4		N/A	
Reading	Reading	Reading Downtown Improvement Project	N/A	Pre-PRC	2020	\$7-\$8 million	4	Project at conceptual stage.	N/A	
Stoneham	Stoneham	Reconstruction of South Main Street, from Town Center to South Street	N/A	Pre-PRC	2021	N/A	4		N/A	
Wakefield	Wakefield	Main Street Reconstruction	610545	PRC approved (2019)	2020	\$26,382,000	4		41.8	Yes
Winchester	Winchester	Town Center Complete Streets Improvements	N/A	Pre-PRC	2021	N/A	4		N/A	
Intersection Improvements										
Stoneham	Stoneham	Intersection Improvements at Main Street (Route 28), Franklin Street, and Central Street	N/A	Pre-PRC	2020	N/A	4	Project at conceptual stage.	N/A	
Bicycle and Pedestrian										
Stoneham, Wakefield	Stoneham, Wakefield	Mystic Highlands Greenway Project	N/A	Pre-PRC	2021	N/A	4		N/A	
Major Infrastructure										
Burlington	MassDOT	Improvements at I-95 (Route 128)/ Route 3 Interchange	609516	PRC approved (2019)	2019	\$3,001,500	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
Reading	MassDOT	Improvements on I-95	609527	PRC approved (2019)	2019	\$14,980,000	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	

(Table A-1 cont., 7)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
North Shore Task Force										
Complete Streets										
Beverly, Manchester-by-the-Sea	MassDOT	Resurfacing and Related Work on Route 127	607707	PRC approved (2013)	2018	\$2,300,000	4		N/A	
Danvers	Danvers	Reconstruction on Collins Street, from Sylvan Street to Centre and Holten Streets	602310	75% submitted (3/5/2010)	2017 or earlier	\$5,183,121	4	Updated 75% design submission needed for project to move forward. Last scored for FFYs 2020-24 TIP.	46	
Ipswich	Ipswich	Reconstruction of County Road, from South Main Street to East Street	611975	PRC approved (2021)	2020	\$5,653,500	4		45.4	Yes
Ipswich	Ipswich	Argilla Road Adaptation Project	N/A	Pre-PRC	2021	\$4,000,000	4	Municipal priority for funding.	N/A	
Marblehead	Marblehead	Bridge Replacement, M-04-001, Village Street over Marblehead Rail Trail (Harold B. Breare Bridge)	N/A	Pre-PRC	2019	N/A	4	Project at conceptual stage.	N/A	
Manchester-by-the-Sea	Manchester-by-the-Sea	Pine Street - Central Street (Route 127) to Rockwood Heights Road	N/A	Pre-PRC; PNF submitted (12/27/16)	2017 or earlier	N/A	4		N/A	
Manchester-by-the-Sea	Manchester-by-the-Sea	Bridge Replacement, M-02-001 (8AM), Central Street (route 127) over Saw Mill Brook	610671	PRC approved (2019)	2019	\$4,350,000	4		34.8	Yes
Salem	MassDOT	Reconstruction of Bridge Street, from Flint Street to Washington Street	5399	25% submitted (8/20/2004)	2017 or earlier	\$24,810,211	4		N/A	
Salem	Salem	Boston Street Improvements	609437	25% resubmitted (10/7/2021)	2019	\$12,480,000	4		56.1	Yes
Wenham	Wenham	Safety Improvements on Route 1A	609388	25% submitted (12/21/2020)	2019	\$3,629,036	4		N/A	

(Table A-1 cont., 8)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Wenham	Wenham	Roadway Reconstruction on Larch Row and Dodges Row	N/A	Pre-PRC	2019	\$800,000	4	Project at conceptual stage.	N/A	
Intersection Improvements										
Essex	Essex	Targeted Safety Improvements on Route 133 (John Wise Avenue)	609315	PRC approved (2019)	2019	\$2,135,440	4		N/A	
Bicycle and Pedestrian										
Peabody, Salem	Peabody, Salem	Riverwalk Project	N/A	Pre-PRC	2021	N/A	4	MVP grant issued for project design.	N/A	
Swampscott	Swampscott	Rail Trail Construction	610666	25% submitted (1/27/2021)	2019	\$7,700,000	4		62.4	Yes
Major Infrastructure										
Beverly	Beverly	Route 128 and Brimbal Avenue Interchange Project (Phase II)	N/A	Pre-PRC	2021	N/A	4	Project not programmed in LRTP (meets MPO roadway classification requirement).	N/A	
South Shore Coalition										
Complete Streets										
Holbrook	Holbrook	Corridor Improvements and Related Work on South Franklin Street (Route 37) from Snell Street to King Road	608543	PRC approved (2017)	2018	\$4,000,200	5		N/A	
Rockland	Rockland	Reconstruction of VFW Drive/Weymouth Street, from Union Street to the Hingham Town Line	N/A	Pre-PRC	2021	\$12,100,000	5		N/A	
Weymouth	MassDOT	Reconstruction on Route 3A, Including Pedestrian and Traffic Signal Improvements	608231	PRC approved (2016)	2017 or earlier	\$10,780,100	6	Pre-25% package submitted in July 2021.	N/A	

(Table A-1 cont., 9)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Weymouth	MassDOT	Resurfacing and Related Work on Route 3A	608483	PRC approved (2016)	2018	\$2,400,000	6		N/A	
Intersection Improvements										
Cohasset	Cohasset	Intersection Improvements at Route 3A and King Street	N/A	Pre-PRC	2021	N/A	5	Added through subregional outreach.	N/A	
Hull	Hull	Intersection Improvements at George Washington Boulevard and Barnstable Road/ Logan Avenue	N/A	Pre-PRC	2021	N/A	5	Added through subregional outreach.	N/A	
South West Advisory Planning Committee										
Complete Streets										
Bellingham	Bellingham	South Main Street (Route 126) - Elm Street to Douglas Drive Reconstruction	N/A	Pre-PRC; PNF submitted (3/13/17)	2017 or earlier	N/A	3		N/A	
Franklin	MassDOT	Resurfacing and Intersection Improvements on Route 140, from Beaver Street to I-495 Ramps	607774	PRC approved (2014)	2018	\$4,025,000	3		N/A	
Medway	Medway	Improvements on Route 109 West of Highland Street	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Milford	MassDOT	Resurfacing and Related Work on Route 16	612091	PRC approved (2021)	2021	\$4,192,500	3		N/A	
Millis	Millis	Town Center Improvements	N/A	Pre-PRC	2020	N/A	3	Project at conceptual stage.	N/A	
Wrentham	Wrentham	Resurfacing and Related Work on Route 1	608497	PRC approved (2016)	2020	N/A	5	25% design anticipated July 2022.	N/A	

(Table A-1 cont., 10)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Intersection Improvements										
Medway	Medway	Traffic Signalization at Trotter Drive and Route 109	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Sherborn	Sherborn	Intersection Improvements at Route 16 and Maple Street	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Wrentham	Wrentham	Intersection Improvements on Route 1A at North and Winter Street	610676	25% submitted (8/13/2021)	2020	\$2,649,000	5		N/A	Yes
Wrentham	Wrentham	Intersection Improvements at Randall Road and Route 1A	N/A	Pre-PRC	2020	\$2,649,000	5	Project at conceptual stage.	N/A	
Wrentham	Wrentham	Intersection Improvements at Route 1A and Route 140	N/A	Pre-PRC	2020	N/A	5	Project at conceptual stage.	N/A	
Bicycle and Pedestrian										
Franklin	Franklin	Southern New England Trunk Trail (SNETT) Extension, from Grove Street to Franklin Town Center	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.		
Hopkinton	Hopkinton	Campus Trail Connector, Shared Use Trail Construction	611932	PRC approved (2020)	2020	\$1,750,700	3		N/A	
Norfolk, Walpole, and Wrentham	Norfolk	Metacomet Greenway	N/A	Pre-PRC	2021	N/A	5	Project at conceptual stage.	N/A	
Sherborn	Sherborn	Upper Charles River Trail Extension to Framingham City Line	N/A	Pre-PRC	2021	N/A	3	Project at conceptual stage.	N/A	
Major Infrastructure										
Bellingham	MassDOT	Ramp Construction & Relocation, I-495 at Route 126 (Hartford Avenue)	604862	PRC approved (2006)	2017 or earlier	\$13,543,400	3	High priority for District 3	N/A	

(Table A-1 cont., 11)

 Subregion

 MPO Investment Program

 New project in TIP universe

 Project evaluated for FFYs 2022-26 TIP

 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Wrentham	Wrentham	I-495 North Slip Ramp Improvements at Route 1A	N/A	Pre-PRC	2020	N/A	5	Project at conceptual stage.	N/A	
Three Rivers Interlocal Council										
Complete Streets										
Canton, Milton	MassDOT	Roadway Improvements on Route 138	608484	PRC approved (2016)	2020	\$18,467,500	6	Milton also in ICC subregion. Project a high priority for the TRIC subregion. District is working to refine scope.	N/A	
Medfield	Medfield	Reconstruction of Route 109	N/A	Pre-PRC	2021	N/A	3	Added through subregional outreach.	N/A	
Milton	MassDOT	Reconstruction on Granite Avenue, from Neponset River to Squantum Street	608406	25% submitted (2/10/2017)	2017 or earlier	\$3,665,146	6	Milton also in ICC subregion.	N/A	
Milton	Milton	Adams Street Improvements, from Randolph Avenue to Eliot Street	610820	PRC approved (2020)	2020	\$1,799,330	6	Milton also in ICC subregion.	N/A	
Needham	Needham	Reconstruction of Highland Avenue, from Webster Street to Great Plains Avenue	612536	PRC approved (2021)	2021	\$10,402,402	6	Needham also in ICC subregion.	N/A	
Westwood	Westwood	Reconstruction of Canton Street	608158	PRC reapproved (2021)	2017 or earlier	\$14,254,274	6	Priority for municipality.	N/A	
Intersection Improvements										
Foxborough	Foxborough	Intersection Signalization at Route 140 (Commercial Street) and Walnut Street	N/A	Pre-PRC	2021	\$5,000,000	5	Added through subregional outreach. Town has advanced design outside of TIP process. District supports project.	N/A	
Medfield	Medfield	Intersection Improvements at West Street and North Meadows Road (Route 27)	N/A	Pre-PRC	2021	N/A	3	Added through subregional outreach.	N/A	

(Table A-1 cont., 12)

Subregion
 MPO Investment Program
 New project in TIP universe
 Project evaluated for FFYs 2022-26 TIP
 Project listed in 2022-26 universe, but not evaluated

Municipality	Project Proponent	Project Name	PROJIS	Design Status (as of 11/12/21)	Year Added to Universe	Cost Estimate	Highway District	Notes	Previous Evaluation Score	Score for FFYs 2023-27 TIP?
Milton	Milton	Intersection Improvements - Squantum Street at Adams Street	608955	25% submitted (11/19/2020)	2018	\$2,311,203	6	Milton also in ICC subregion.	34.4	Yes
Bicycle and Pedestrian										
Canton	Canton	Warner Trail Extension, from Sharon to Blue Hills Reservation	N/A	Pre-PRC	2021	N/A	6	Added through subregional outreach. Feasibility study currently underway.	N/A	
Major Infrastructure										
Canton, Westwood	MassDOT	Interchange Improvements at I-95 / I-93 / University Avenue / I-95 Widening	87790	25% submitted (7/25/14)	2017 or earlier	\$202,205,994	6	Project not programmed in LRTP. Last scored for FFYs 2020-24 TIP.	47	

Table A-2
FFYs 2023–27 Regional Target Projects and Their Relationships to Plans and Performance Measures

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609204	Belmont–Community Path, Belmont Component of the MCRT (Phase 1)	Bicycle and Pedestrian	Connect the Fitchburg Cutoff Bike Path at Brighton Street with the Clark Street pedestrian bridge west of Belmont Center. Construct an underpass beneath the commuter rail tracks at Channing Road and Alexander Avenue.	Belmont	2026	This project will extend the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project is expected to improve safety for bicyclists and pedestrians, including by constructing an underpass to allow for safe passage beneath the commuter rail tracks. It will add more than a mile of community path and connect to the existing Fitchburg Cutoff Bike Path. By extending and improving the region’s bicycle network and improving access to local destinations, this project is expected to increase non-SOV travel. It is also expected to reduce 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	This project will extend the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project is expected to improve safety for bicyclists and pedestrians. It will create more than a mile of bike trail network and bring the Independence Greenway’s total length to eight miles. By extending the region’s bicycle network, this project is expected to increase non-SOV travel. It is also expected to reduce 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	This project will extend the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project will create nearly two miles of multi-use trail, connect other segments of the Independence Greenway, and create a link to the Border to Boston trail. By connecting these sections of the regional bike network, this project is expected to increase non-SOV travel. Improved signalization near ramps to Route 1 may help facilitate motorized and nonmotorized traffic flow and reduce PHED on this NHS corridor. This project is also expected to improve safety for bicyclists and pedestrians and to reduce CO2 and other transportation-related emissions.
610666	Swampscott–Rail Trail Construction	Bicycle and Pedestrian	Create a 2.1-mile rail trail that connects to the existing Marblehead Rail Trail. Construct a pedestrian bridge at Paradise Road (Route 1A).	Swampscott	2027	This project would connect sections of the MassDOT Off-Street High Comfort Bike Network, as identified in the 2019 Massachusetts Bicycle Plan.	This project will create a 2.1 mile multi-use trail that connects to the existing Marblehead Rail Trail and provides an off-road trail segment for the East Coast Greenway. By connecting these sections of the regional bike network and supporting access to local destinations, this project is expected to increase non-SOV travel. This project is also expected to improve safety for bicyclists and pedestrians and to reduce CO2 and other transportation-related emissions.
S12702	Acton–Bicycle Parking along the Bruce Freeman Rail Trail	Community Connections	Install three bike racks at key locations along Great Road and the Bruce Freeman Rail Trail.	Acton	2023	N/A	This project may increase non-SOV travel in the region by enhancing bicycle amenities on the region’s bicycle network. This project is also expected to reduce CO2 and other transportation-related emissions.
S12704	Belmont–Chenery Middle School Bicycle Parking	Community Connections	Install a shelter over an existing bicycle rack at Chenery Middle School, which may serve as a proof-of-concept for future bicycle parking expansion.	Belmont	2023	N/A	This project may increase non-SOV travel in the region by enhancing bicycle amenities. It is also expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 2)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
S12695	Cambridge–Bluebikes Station Replacement and System Expansion	Community Connections	Install two new BlueBikes bikeshare stations and replace five existing stations to ensure a state-of-good-repair.	Cambridge	2023	N/A	This project may increase non-SOV travel by enhancing and expanding bicycling options in Cambridge. It is also expected to reduce CO2 and other transportation-related emissions.
S12114	Canton–Royall Street Shuttle	Community Connections	Establish a shuttle service connecting Canton’s Royall Street employment cluster with the MBTA Route 128 commuter rail station and Ashmont, Mattapan Trolley, and Quincy Adams rapid transit stations.	Canton	2022 (Past) 2023–24	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Canton. It is expected to reduce CO2 and other transportation-related emissions.
S12700	Cape Ann Transportation Authority (CATA)–CATA On Demand Microtransit Service Expansion	Community Connections	Expand existing CATA On Demand microtransit service to Rockport and to an additional neighborhood in Gloucester, and to help customers reach a wider array of essential destinations.	Gloucester, Rockport	2023–25	N/A	This project may increase non-SOV travel by expanding CATA’s microtransit service to new areas and supporting its ability to serve customers beyond those commuting to transit or specific employment centers. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Gloucester and Rockport. This project is expected to reduce CO2 and other transportation-related emissions.
S12696	Malden, Medford–BlueBikes System Expansion	Community Connections	Construct three new BlueBikes bikeshare stations in Medford and one in Malden.	Malden, Medford	2023	N/A	This project may increase non-SOV travel by expanding bicycling options in Medford and Malden. It is expected to reduce CO2 and other transportation-related emissions.
S12701	MetroWest Regional Transit Authority (MWRTA)–CatchConnect Microtransit Service Expansion	Community Connections	Expand MWRTA’s CatchConnect microtransit service to Hudson and Marlborough, which will support connections to MWRTA’s fixed-route network.	Hudson, Marlborough	2023–25	N/A	This project may increase non-SOV travel by expanding microtransit service to new areas. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Hudson and Marlborough. This project is expected to help reduce CO2 emissions.
S12703	Montachusett Regional Transit Authority (MART)–MART Microtransit Service	Community Connections	Establish an on-demand microtransit service that will serve Bolton, Boxborough, Littleton, and Stow.	Bolton, Boxborough, Littleton, Stow	2023–25	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Boxborough, Bolton, Littleton, and Stow. It is expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 3)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
S12125	Newton–Newton Microtransit Service	Community Connections	Implement a new dynamically routed microtransit service that will provide shared, first- and last-mile rides between three MBTA rail lines and the Wells Avenue Business District before expanding citywide.	Newton	2021–22 (past) 2023	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Newton. It is expected to reduce CO2 and other transportation-related emissions.
S12694	Newton–NewMo Microtransit Service Expansion	Community Connections	Expand an existing Newton-wide microtransit service (see project S12125) to include stops in six neighboring municipalities.	Newton [adding service to Boston, Needham, Waltham, Watertown, Wellesley, and Weston]	2023–25	N/A	This project may increase non-SOV travel by expanding the reach of Newton’s existing microtransit service. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in multiple MPO communities. This project is expected to reduce CO2 and other transportation-related emissions.
S12698	Salem–BlueBikes System Expansion	Community Connections	Construct three new BlueBikes bikeshare stations to expand the bikeshare network in Salem.	Salem	2023	N/A	This project may increase non-SOV travel by expanding bicycling options in Salem. It is expected to reduce CO2 and other transportation-related emissions.
S12699	Stoneham–Stoneham Shuttle Service	Community Connections	Create a shuttle service to foster east-west connections between Stoneham and neighboring communities.	Stoneham	2023–25	N/A	This project may increase non-SOV travel by providing a new transit option. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes Stoneham. It is expected to help reduce CO2 and other transportation-related emissions.
S12697	Watertown–Pleasant Street Shuttle Service Expansion	Community Connections	Expand a recently-launched shuttle service along the Pleasant Street corridor in Watertown by reducing headways. Support the service’s transition to using electric vehicles.	Cambridge, Watertown	2023–25	N/A	This project may increase non-SOV travel by supporting more frequent service on the Pleasant Street corridor. It may reduce PHED and improve reliability on the NHS by providing an alternative to SOV travel on NHS routes in Cambridge and Watertown. It is expected to reduce CO2 and other transportation-related emissions.
608348	Beverly–Reconstruction of Bridge Street	Complete Streets	Improve the roadway cross section, pavement, signals, and bicycle and pedestrian accommodations in the project corridor.	Beverly	2023	N/A	The project area overlaps a 2017–19 HSIP all-mode crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. The project improves signal and geometry improvements that may support increased reliability and reduced PHED on nearby Route 62, which is on the NHS. It will also provide bicycle-on-shoulder lanes and improved sidewalks, which may encourage non-SOV travel. This project is also expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 4)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
606453	Boston–Improvements on Boylston Street	Complete Streets	Improve the roadway cross section, signals, and bicycle and pedestrian accommodations in the project corridor.	Boston	2024	N/A	The project area overlaps a 2017–19 HSIP all-mode crash cluster location, a 2010–19 HSIP bicycle crash cluster location, and a 2010–19 HSIP pedestrian crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than two lane miles of substandard NHS pavement, will address reliability needs on an unreliable NHS segment, and may also reduce PHED on that segment. It will improve substandard sidewalks and add bicycle lanes in the project corridor; these features are expected to increase non-SOV travel. The project is also expected to reduce CO2 and other transportation-related emissions.
610932	Brookline–Rehabilitation of Washington Street	Complete Streets	Replace signals, reconstruct sidewalks and pavement, and provide protected bicycle facilities and dedicated bus pull-out spaces in the Washington Street corridor between Washington Square and Brookline Village.	Brookline	2027	N/A	The project area overlaps two 2010–19 HSIP bicycle crash cluster locations and a 2010–19 HSIP pedestrian crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve substandard sidewalks, implement bicycle lanes, upgrade signals to include TSP, and add bus shelters to the corridor; these features are expected to increase non-SOV travel. The project is expected to reduce CO2 and other transportation-related emissions.
611983	Chelsea–Park and Pearl Street Reconstruction	Complete Streets	Improve safety and mobility on Park and Pearl Street by improving signals and roadway geometry, reconstructing sidewalks, and adding bicycle facilities.	Chelsea	2027	N/A	The project area overlaps a 2017–19 HSIP all-mode crash cluster location, a 2010–19 HSIP bicycle crash cluster location, and two 2010–19 HSIP pedestrian crash cluster locations. The project is expected to improve safety performance, including for bicyclists and pedestrians. The project will reconstruct sidewalks, improve bicycle amenities, and implement TSP; these features are expected to increase non-SOV travel. The project is expected to reduce 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 2017–19 HSIP all-mode crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to add sidewalks and bicycle lanes in the project corridor, which may encourage non-SOV travel. The project is expected to reduce 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.

(Table A-2 cont., 5)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609257	Everett–Rehabilitation of Beacham Street, from Route 99 to Chelsea City Line	Complete Streets	Reconstruct Beacham Street to reduce vehicular collisions and improve bicycle and pedestrian travel.	Everett	2025	N/A	This project is expected to improve transportation safety, including for bicyclists and pedestrians. It will improve substandard sidewalks and include a shared-use path—both features may encourage non-SOV travel and improve safety performance. The project is expected to reduce CO2 and other transportation-related emissions.
605168	Hingham–Intersection Improvements at Route 3A/Summer Street Rotary	Complete Streets	Improve multimodal access between Hingham Center, residential areas, and Hingham Harbor and make safety improvements, including by establishing a small roundabout at the intersection of Route 3A and Summer Street.	Hingham	2025	This project location was studied in “Summer Street/George Washington Boulevard Subregional Priority Roadway Study in Hingham and Hull” (CTPS, 2016).	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than a lane mile of substandard pavement on the NHS, and the geometric improvements included in the project are expected to help reduce delay and potentially PHED on the NHS. The project is expected to improve substandard sidewalks, add new sidewalks, and add bicycle accommodations, including a shared-use path. These features may support increases in non-SOV travel. The project is also expected to reduce 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 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.
603739	Lynn–Rehabilitation of Essex Street	Complete Streets	Make key bicycle and pedestrian safety improvements and operational improvements, such as signal upgrades, in the project corridor.	Lynn	2024	N/A	The project area overlaps five 2017–19 all-mode HSIP crash cluster locations and three 2010–19 HSIP pedestrian crash cluster locations. The project is expected to improve safety performance, including for bicyclists and pedestrians. Planned improvements to signals and roadway geometry in the corridor may help improve reliability on nearby unreliable NHS segments and may also reduce PHED on those segments. It is expected to reconstruct substandard sidewalks and add bicycle lanes; these features are expected to increase non-SOV travel. This project is also expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 6)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609246	Lynn– Reconstruction of Western Avenue	Complete Streets	Reconstruct Western Avenue between Centre Street and Eastern Avenue. Improve signal timing, intersection design, and bus stop locations. Implement bicycle and ADA-compliant pedestrian improvements.	Lynn	2027	N/A	The project area overlaps five 2017–19 all-mode HSIP crash cluster locations, two 2010–19 HSIP pedestrian crash cluster locations and one 2010–19 HSIP bicycle crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians, and it will improve nearly 4 lane miles of substandard pavement on the NHS. The signal improvements included in the project are expected reduce delay and may help reduce PHED and improve reliability on the NHS. It will reconstruct sidewalks and add bike lanes, TSP, and bus amenities; these features are expected to increase non-SOV travel. This project is also expected to reduce 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 2017–19 all-mode HSIP crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. The project is also expected to upgrade substandard sidewalks, add new sidewalks, and add shared-use paths; these features are expected to increase non-SOV travel.
110980	Newton, Weston– Commonwealth Avenue (Route 30) over the Charles River	Complete Streets	Replace a deteriorated bridge over the Charles River. Reconstruct the Route 30 corridor in the vicinity of the I-95 and I-90 interchange, including several I-95 on-ramps. Improve sidewalks and pedestrian amenities, add a bike lane, and develop a segment of shared-use path along the Charles River.	Newton, Weston	2024	N/A	The project area overlaps a 2017–19 all-mode HSIP crash cluster locations and the project is expected to improve safety performance, including for bicyclists and pedestrians. It will replace a deteriorated NHS bridge structure and will improve one lane mile of substandard pavement on the NHS. Signal and geometric improvements on Route 30 and reconfiguration of the I-95 ramps may reduce PHED and improve reliability on the NHS. The shared-use path, sidewalk improvements, and bike lane included in the project are expected to increase non-SOV travel. This project is expected to reduce CO2 and other transportation-related emissions.
608933	Peabody– Rehabilitation of Central Street	Complete Streets	Reconstruct pavement and sidewalks, provide bicycle accommodations, upgrade signals, and improve other features within the project corridor.	Peabody	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve nearly two lane miles of pavement on the NHS. Upgrades to signals and other elements may address improve reliability on unreliable NHS segments within the project corridor and potentially reduce PHED. The project will upgrade existing sidewalks and add bike lanes; these features are expected to increase non-SOV travel. This project is expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 7)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608707	Quincy–Reconstruction of Sea Street	Complete Streets	Improve safety in the project corridor by modifying roadway geometry, upgrading signals, constructing median islands, reconstructing sidewalks, and providing bicycle.	Quincy	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve sidewalks, which may encourage non-SOV travel. This project is expected to reduce transportation-related pollutants and precursor emissions, including carbon monoxide, nitrous oxide, and volatile organic compounds.
609432	Salem–Boston Street Improvements	Complete Streets	Incorporate complete streets elements and a separated bicycle path into the corridor. Add a new signal at Boston Street and Aborn Street and upgrade existing signals at other intersections along the corridor.	Salem	2026	N/A	The project area overlaps a 2010–19 HSIP pedestrian crash cluster location, and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve more than a lane mile of substandard NHS pavement. The project includes signal and geometry improvements and is expected to reduce delay, which may reduce PHED and improve reliability on the NHS. It will implement sidewalks on both sides of the corridor and add separated bicycle facilities; these features are expected to increase non-SOV travel. This project is expected to reduce CO2 and other transportation-related emissions.
607777	Watertown–Rehabilitation of Mount Auburn Street (Route 16)	Complete Streets	Reconstruct the corridor from the Cambridge city line to east of Watertown Square. Revise roadway geometry; implement a roadway diet, safety improvements, and bicycle and pedestrian accommodations; and upgrade traffic signal equipment.	Watertown	2023	This project changes network capacity and is considered regionally significant for air quality modeling.	The project area overlaps one 2010–19 HSIP pedestrian crash cluster locations and is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than six lane miles of pavement on the NHS. Signal and other improvements included in the project may improve reliability on unreliable NHS segments within the project corridor and potentially reduce PHED. The project will improve sidewalks and provide bicycle accommodations; these features are expected to increase non-SOV travel. This project is expected to reduce CO2 and other transportation-related emissions.
608954	Weston–Reconstruction on Route 30	Complete Streets	Reconstruct Route 30 within the Town of Weston. Implement geometric improvements and signal additions or upgrades at intersections. Construct a shared-use path the length of the project corridor.	Weston	2026	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It includes geometric and signal improvements and is expected to reduce delay, which may help reduce PHED and improve reliability on nearby NHS segments. The shared-use path and pedestrian improvements included in the project are expected to increase non-SOV travel. This project is expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 8)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608051	Wilmington (MassDOT)–Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line	Complete Streets	Add bicycle lanes, provide sidewalks, improve traffic signals, and reconstruct turn lanes within the project corridor.	Wilmington	2025	Sections of the Route 38 and 129 corridors in Wilmington are identified as priority bottlenecks in the 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).	<p>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.</p> <p>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.</p>
607244	Winthrop–Revere Street Roadway Improvements	Complete Streets	Reconstruct and reclaim pavement; reconstruct sidewalks; and improve intersections and bicycle and pedestrian accommodations in the project corridor.	Winthrop	2023	N/A	The project area is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than a mile of substandard sidewalks and add bicycle accommodations, which may encourage non-SOV travel. It is expected to reduce 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 2017–19 all-mode HSIP crash cluster location and a 2010–19 HSIP pedestrian crash cluster location. The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve nearly two lane miles of substandard pavement on the NHS. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will reconstruct sidewalks to support pedestrian safety and mobility. It is also expected to include bicycle accommodations and to reduce CO2 and other transportation-related emissions.
603739	Wrentham (MassDOT)–Construction of Interstate 495/Route 1A Ramps	Complete Streets	Construct ramps at the interchange of Route 1A and Interstate 495 to accommodate increased traffic volumes resulting from nearby development.	Wrentham	2024	This project area was studied as part of “Route 1A Corridor Study in Wrentham” (CTPS, 2017).	The project area overlaps two 2017–19 all-mode HSIP crash cluster locations and the project is expected to improve safety performance, including for bicyclists and pedestrians. The project is expected to reduce vehicle delay and may support reductions of PHED on nearby NHS roadways. It will add sidewalks and bicycle lanes, which may support non-SOV travel. It is also expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 9)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
608436	Ashland–Rehabilitation and Rail Crossing Improvements on Cherry Street	Intersection Improvements	Improve the safety features on Cherry Street and Main Street to establish a Federal Railroad Administration Quiet Zone surrounding the railroad crossings on those two roadways. Install roadway medians, enhance existing railroad crossing signals and gates, reconstruct pavement, construct sidewalks, and improve drainage in the project area.	Ashland	2024	N/A	The project is expected to improve safety performance at a railroad crossing location, including for bicyclists and pedestrians.
608067	Burlington, Woburn–Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street	Intersection Improvements	Reconstruct the intersection and all traffic signal equipment. Enhance roadway geometry to provide exclusive turn lanes for intersection approaches. Reconstruct existing sidewalks, construct new sidewalks, and add bicycle lanes and ADA-compliant bus stops, where feasible.	Burlington, Woburn	2025	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. The project is expected to improve existing sidewalks and add new sidewalks at the intersection, as well as add new bike lanes; all of these features may encourage non-SOV travel. The geometric improvements included in the project are expected to help reduce delay and potentially PHED on nearby NHS routes. The project is expected to reduce CO2 and other transportation-related emissions.
608889	Framingham–Traffic Signal Installation at Edgell Road and Central Street	Intersection Improvements	Install traffic signals and make geometric improvements at the intersection of Edgell Road and Central Street. Add bicycle lanes, cross walks, and ensure sidewalks are ADA/AAB-compliant.	Framingham	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It also includes improvements to bicycle and pedestrian accommodations to support non-motorized travel through the intersection, which may encourage non-SOV travel. The project is expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 10)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
605857	Norwood–Intersection Improvements at Route 1 and University Avenue/ Everett Street	Intersection Improvements	Upgrade traffic signals and make associated geometric improvements at the intersection of Route 1, University Avenue and Everett Street. Construct an additional travel lane in each direction on Route 1, lengthen left-turn lanes, upgrade pedestrian crossings and bicycle amenities, and rehabilitate sidewalks.	Norwood, Westwood	2025–26	The Route 1 corridor in Norwood is identified as a priority bottleneck in the Destination 2040 Needs Assessment. This location was studied in “Route 1 at Everett Street and University Avenue” (CTPS, 2014).	The project area overlaps a 2017–19 all-mode HSIP crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve nearly three lane miles of pavement on the NHS. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will improve substandard sidewalks and add new sidewalks and bicycle accommodations, all of which may encourage non-SOV travel. It is expected to reduce CO2 and other transportation-related emissions.
606130	Norwood–Intersection Improvements at Route 1A and Upland Road/ Washington Street and Prospect Street/ Fulton Street	Intersection Improvements	Make intersection improvements at two locations on Route 1A. Install traffic and pedestrian signals and widen Washington Street and Upland Road to accommodate turn lanes. Reconstruct existing sidewalks to meet ADA/ AAB standards.	Norwood	2023	N/A	The project is expected to improve safety performance, including for bicyclists and pedestrians. It will upgrade existing sidewalks, and add new sidewalks and bicycle accommodations in the project area, all of which may encourage non-SOV travel. The project is expected to reduce CO2 and other transportation-related emissions.
608940	Weston–Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	Intersection Improvements	Address safety, congestion, and connectivity concerns at the intersection of Route 20, Boston Post Road, and Wellesley Street by installing a new signal system, implementing geometric improvements, replacing and adding sidewalks, and adding bicycle lanes.	Weston	2026	This project intersects a priority bottleneck location identified in the Destination 2040 Needs Assessment.	The project area overlaps a 2017–19 all-mode HSIP crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will improve and add sidewalks and add bicycle lanes; these features may encourage non-SOV travel. It is expected to reduce CO2 and other transportation-related emissions.

(Table A-2 cont., 11)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
609253	Wilmington–Intersection Improvements at Lowell Street (Route 129) and Woburn Street	Intersection Improvements	Improve traffic safety and efficiency at the intersection of Lowell Street (Route 129) and Woburn Street by making geometric modifications to the roadway, installing new pedestrian signals, adding crosswalks, and providing bicycle lanes.	Wilmington	2023	Sections of the Route 38 and 129 corridors are identified as priority bottlenecks in the 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 2017–19 all-mode HSIP crash cluster location and the project is expected to improve safety performance, including for bicyclists and pedestrians. It will improve more than half of a lane mile of pavement on the NHS. Signal and geometric improvements included in the project may improve reliability on unreliable NHS segments within the project area and potentially reduce PHED. The project will improve existing sidewalks, and it is expected to add new sidewalks and bicycle lanes, all of which may encourage non-SOV travel. The project is expected to reduce CO2 and other transportation-related emissions.
606226	Boston–Reconstruction of Rutherford Avenue	Major Infrastructure: Roadway	Reconstruct Rutherford Avenue from Sullivan Square to the North Washington Street Bridge to create a multimodal urban boulevard.	Boston	2025–27	This project is included in Destination 2040, the MPO’s LRTP. This project changes network capacity and is considered regionally significant for air quality modeling.	The project is expected to improve safety performance, including for bicyclists and pedestrians. It is expected to improve four NHS bridge structures and more than 7 lane miles of NHS pavement. The project area overlaps many NHS segments considered to be unreliable, and the project includes changes to roadway geometry and signals that are expected to improve reliability on the NHS and potentially reduce PHED. The project will improve existing sidewalks and is expected to add new sidewalks and a range of bicycle and pedestrian accommodations within the corridor, all of which are expected to increase non-SOV travel. It was analyzed as part of a set of recommended LRTP projects, and MPO staff estimate that this set will decrease CO2 emissions in the region compared to a no-build scenario.
607981	Somerville–McGrath Boulevard Reconstruction	Major Infrastructure:	Remove the existing McCarthy Viaduct and replace it with an at-grade urban boulevard. Rationalize intersections, improve signalization, and create off-street pedestrian and bicycle facilities. Improve bus operations by installing floating/in-lane bus stops, transit signal priority, and bus queue-jump lanes at key intersections.	Somerville	2027	This project is included in Destination 2040, the MPO’s LRTP. This project changes network capacity and is considered regionally significant for air quality modeling.	The project area overlaps a 2017–19 all-mode HSIP crash cluster location, a 2010–19 HSIP pedestrian crash cluster location, and a 2010–19 HSIP bicycle crash cluster location. It is expected to improve safety performance, including for bicyclists and pedestrians. It will improve one NHS bridge and improve more than four lane miles of substandard pavement on the NHS. The geometric and signal improvements included in the project may reduce PHED and improve reliability on this portion of the NHS network. The project will improve bus operations and amenities, reconstruct and reconfigure sidewalks, and add off-street bicycle and pedestrian facilities; these features are expected to increase non-SOV travel. It was analyzed as part of a set of recommended LRTP projects, and MPO staff estimate that this set will decrease CO2 emissions in the region compared to a no-build scenario.

(Table A-2 cont., 12)

ID	Project Name	MPO Investment Program	Project Description	MPO Municipalities	Programming Year (FFY)	Planning Relationships	Relationships to Performance Measures
S12706	Boston– Forest Hills Improvement Project*	Transit Modernization	Make platform repairs, replace elevators and construct a new elevator/stair tower to connect the station’s upper and lower busways. Implement accessibility, wayfinding, safety, and station brightening upgrades. Improve the station roof.	Boston	2024	Forest Hills station improvements are listed the MBTA’s 2018 Transit Asset Management Plan (see Appendix F: Project-Based Listing of Investment Priorities.)	This project makes safety, state-of-good-repair, and modernization improvements to one of the MBTA’s passenger facilities. These upgrades may increase ridership by making the station more accessible to all users and easier to navigate, which may increase transit ridership and non-SOV travel.
S12705	Lynn– Lynn Station Improvements, Phase II	Transit Modernization	Reconstruct the existing rail platform. Construct two new elevators. Upgrade lighting and other amenities. Make structural repairs to the viaduct northeast of the station.	Lynn	2023	Lynn Station improvements are listed the MBTA’s 2018 Transit Asset Management Plan (see Appendix F: Project-Based Listing of Investment Priorities.)	This project makes safety, state-of-good-repair, and modernization improvements to one of the MBTA’s passenger facilities. These upgrades may increase ridership by making the station more accessible to all users and easier to navigate, which may increase transit ridership and non-SOV travel.

Notes: HSIP cluster locations are identified by MassDOT. Substandard pavement and sidewalk designations are based on data provided by MassDOT and project proponents and on MPO assessments conducted for TIP evaluations. The estimated lane miles of substandard NHS pavement improved is based on MPO staff’s assessment of pavement condition in the project area and their assessment of the portion of the project on the NHS. The IRI thresholds used to classify pavement are based on the TIP criteria the MPO adopted in 2020: less than 95 is good, 95 to 170 is fair, and greater than 170 is poor.

* The MPO is contributing funds to this project, which is generally funded by MassDOT or the MBTA.

AAB = Architectural Access Board. ADA = Americans with Disabilities Act. CO2 = carbon dioxide. CTPS = Central Transportation Planning Staff. FFY = federal fiscal year. HSIP = Highway Safety Improvement Program. IRI = International Roughness Index. MassDOT = Massachusetts Department of Transportation. MBTA = Massachusetts Bay Transportation Authority. MCRT = Mass Central Rail Trail. MPO = metropolitan planning organization. N/A = not applicable. NHS = National Highway System. PHED = peak hours of excessive delay. SOV = single-occupancy vehicle. TSP = transit signal priority.

Source: Boston Region MPO staff.

**Table A-3
FFYs 2023–27 TIP Project Evaluation Results: Multiple MPO Investment Programs**

Proponent	Project Number	Project Name	MAPC Subregion	Project Status (as of 3/17/22)	Project Cost	Cost/Lane Mile*	Total Score	Total Base Score	Total Equity Score	Safety	Safety Equity Score	System Preservation and Modernization	System Preservation Equity Score	Capacity Management and Mobility	Capacity Management Equity Score	Clean Air and Sustainable Communities	Clean Air Equity Score	Economic Vitality	
Bicycle Network and Pedestrian Connections Program																			
Swampscott	610666	Rail Trail Construction	NSTF	25% Rejected 1/27/21	\$7,700,000	\$3.67 million	66.4	59	7.4	13	2	5	0.8	18	3.6	12	1	11	
Belmont	609204	Community Path, Belmont Component of the MCRT (Phase 1)	ICC	25% Submitted 1/5/22	\$18,780,698	\$13.81 million	64.6	57	7.6	15	2	8	1.4	18	3.6	7	0.6	9	
Possible Points							100	80	20	20	5.6	14	4.8	18	7.2	14	2.4	14	
Complete Streets Program																			
Lynn	609246	Reconstruction of Western Avenue	ICC	PRC Approved 12/6/18	\$40,980,000	\$10.25 million	74.9	63	11.9	18	3.5	14	3	10	3.5	11	1.9	10	
Chelsea	611983	Park and Pearl Street Reconstruction	ICC	PRC Approved 1/28/21	\$10,451,525	\$15.59 million	69.9	55	14.9	14	3.6	14	4.6	11	5.1	6	1.6	10	
Salem, Peabody	609437	Boston Street Improvements	NSTF	25% Resubmitted 10/7/21	\$12,480,000	\$7.85 million	67.8	57	10.8	12	2.7	15	3.5	11	3.5	8	1.1	11	
Brookline	610932	Rehabilitation of Washington Street	ICC	PRC Approved 9/24/20	\$25,888,631	\$10.79 million	62.4	55	7.4	14	2.1	13	2.1	11	2.5	7	0.7	10	
Weston	608954	Reconstruction on Route 30	MWRC	25% Submitted 10/19/20	\$15,203,814	\$1.79 million	49.2	43	6.2	11	1.6	10	1.6	10	2	9	1	3	
Ipswich	611975	Roadway Improvements on County Street	NSTF	PRC Approved 1/28/21	\$5,653,500	\$6.28 million	45.4	40	5.4	7	1	12	1.6	8	2	8	0.8	5	
Wakefield	610545	Main Street Reconstruction	NSPC	PRC Approved 12/19/19	\$26,382,000	\$6.58 million	40.8	37	3.8	12	1.7	10	1.3	6	1.6	0	-0.8	9	
Manchester-by-the-Sea	610671	Bridge Replacement, Central Street over Saw Mill Brook	NSTF	PRC Approved 12/19/19	\$4,350,000	\$36.25 million	34.8	32	2.8	7	0.8	14	1.7	2	0.3	2	0	7	
Possible Points							100	80	20	18	4.6	20	5.6	18	7.2	12	2.6	12	

(Table A-3 cont., 2)

Proponent	Project Number	Project Name	MAPC Subregion	Project Status (as of 3/17/22)	Project Cost	Cost/Lane Mile*	Total Score	Total Base Score	Total Equity Score	Safety	Safety Equity Score	System Preservation and Modernization	System Preservation Equity Score	Capacity Management and Mobility	Capacity Management Equity Score	Clean Air and Sustainable Communities	Clean Air Equity Score	Economic Vitality	
Intersection Improvements Program																			
Weston	608940	Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	MWRC	25% Resubmitted 5/18/21	\$1,219,250	\$4.20 million	50.6	45	5.6	15	1.7	9	1.5	10	1.7	8	0.7	3	
Milton	608955	Intersection Improvements, Squantum Street at Adams Street	ICC/TRIC	25% Submitted 11/29/20	\$2,311,250	\$16.51 million	34.4	30	4.4	9	1.5	8	1.2	5	1	4	0.7	4	
Possible Points							100	80	20	21	5.4	17	5.4	18	6.8	12	2.4	12	
Major Infrastructure Program																			
Somerville (MassDOT)	607981	McGrath Boulevard Reconstruction	ICC	PRC Approved 5/9/14	\$88,250,000	\$9.81 million	72.2	63	9.2	13	2.1	19	2.7	13	3.3	8	1.1	10	
Natick (MassDOT)	605313	Bridge Replacement, Route 27 over Route 9 and Interchange Improvements	MWRC	25% Resubmitted 2/12/20	\$45,097,350	\$14.69 million	57.7	51	6.7	13	1.8	13	1.5	11	2.3	8	1.1	6	
Possible Points							100	80	20	18	4.6	20	5.6	18	7.2	12	2.6	12	

Table A-4
FFYs 2023–27 TIP Project Evaluation Results: Community Connections Program

Proponent	Project Name	MAPC Subregion	Project Cost	Cost/Monthly User**	Total Score	Connectivity	Coordination	Plan Implementation	Transportation Equity	Mode Shift and Demand Projection	Fiscal Sustainability
Newton	NewMo Microtransit Service Expansion	ICC	\$712,459	\$101	87	18	14	12	9	24	10
Cambridge	Bluebikes Station Replacement and System Expansion	ICC	\$349,608	\$27	78	18	4.5	12.5	9	24	10
Medford/ Malden	Bluebikes System Expansion	ICC	\$145,821	\$81	78	17	12	6	9	24	10
Watertown	Pleasant Street Shuttle Service Expansion	ICC	\$801,758	\$990	78	18	12	9	9	20	10
Salem	Bluebikes System Expansion	NSTF	\$119,629	\$399	77	13	15	6	9	24	10
Stoneham	Stoneham Shuttle Service	NSPC	\$637,453	\$247	72	15	12	12	6	17	10
CATA	CATA On Demand Microtransit Service Expansion	NSTF	\$650,633	\$434	61.75	10.75	6	9	6	20	10
MWRTA	CatchConnect Microtransit Service Expansion	MWRC	\$360,130	\$240	59	12	3	9	9	16	10
Acton	Bicycle Parking along the Bruce Freeman Rail Trail	MAGIC	\$8,017	\$7	58	6	2	9	9	22	10
MART	Montachusett RTA Microtransit Service	MAGIC	\$1,052,849	\$675	57	7	15	3	6	16	10
Belmont	Chenery Middle School Bicycle Parking	ICC	\$4,376	\$12	49.75	4.75	6	5	6	18	10
Possible Points					100	18	15	15	18	24	10

***All cost/user calculations are based on the demand estimates submitted by project proponents during the application process. For transit operating projects, cost/user is based on ridership after 6 months of service.*

Table A-5
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Bicycle Network and Pedestrian Connections Program

MPO Goal Area Safety: Transportation by all modes will be safe. (Up to 20 points)				
Criterion	Project improves bicycle safety (up to 5 points) +5 High total effectiveness of bicycle safety improvements +3 Medium total effectiveness of bicycle safety improvements +1 Low total effectiveness of bicycle safety improvements +0 Project does not implement bicycle safety improvements	Project improves pedestrian safety (up to 5 points) +5 High total effectiveness of pedestrian safety improvements +3 Medium total effectiveness of pedestrian safety improvements +1 Low total effectiveness of pedestrian safety improvements +0 Project does not implement pedestrian safety improvements	Project improves safety for all users (up to 3 points) +3 Project includes three or more eligible multimodal safety improvements +2 Project includes two eligible multimodal safety improvements +1 Project includes one eligible multimodal safety improvement +0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	Bonus (up to 2 points) +2 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 2 points) +2 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 3 points) +3 Addresses safety at multiple all-mode HSIP clusters OR a top-200 crash location +2 Addresses safety at one all-mode HSIP cluster	
Equity Multiplier?	Yes	Yes	No	

MPO Goal Area System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 14 points)				
Criterion	Project incorporates resiliency elements into its design (up to 5 points) +1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections +1 Project demonstrates regional coordination on resiliency	Project improves connectivity to critical facilities (up to 2 points) +2 Project improves access to critical facilities	Project improves existing pedestrian facilities (up to 5 points) +5 Existing pedestrian facilities are in poor condition and improvements are included in the project +3 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities	Project improves other existing assets (up to 2 points) +2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria
Bonus/Penalty (if applicable)	Penalty -1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding	N/A	N/A	N/A
Equity Multiplier?	Yes	Yes	Yes	No

(Table A-5 cont., 2)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)				
Criterion	Project improves pedestrian network and ADA accessibility (up to 5 points) +5 Project adds new shared-use path +3 Project adds new high-quality sidewalks +1 Project adds new standard sidewalks +0 Project does not improve pedestrian network	Project improves bicycle network (up to 5 points) +5 Project adds new separated bicycle facility (including shared-use paths) +3 Project adds new buffered bicycle facility +1 Project adds new standard bicycle facility +0 Project does not improve bicycle network		
Bonus/Penalty (if applicable)	Bonus (up to 4 points) +4 Project closes a gap in the pedestrian network +3 Project improves ADA accessibility beyond minimum required standards +2 Project creates or improves a pedestrian connection to transit +1 Project extends existing pedestrian network	Bonus (up to 4 points) +4 Project closes a gap in the bicycle network +2 Project creates or improves a bicycle connection to transit +2 Project extends existing bicycle network +1 Project makes accommodations for bicycle parking or a bicycle share station		
Equity Multiplier?	Yes	Yes		

MPO Goal Area Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 14 points)				
Criterion	Project reduces CO2 (up to 4 points) +4 300 or more annual tons of CO2 reduced +3 100–299 annual tons of CO2 reduced +2 50–99 annual tons of CO2 reduced +1 Less than 50 annual tons of CO2 reduced +0 No expected impact -1 Less than 50 annual tons of CO2 increased -4 50 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 4 points) +4 1,500 or more total annual kilograms of other emissions reduced +3 750–1499 total annual kilograms of other emissions reduced +2 250–749 total annual kilograms of other emissions reduced +1 Less than 250 total annual kilograms of other emissions reduced +0 No impact -1 Less than 250 total annual kilograms of other emissions increased -4 250 or more total annual kilograms of other emissions increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural asset	
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes	
Equity Multiplier?	No	Yes	No	

(Table A-5 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)	Project serves existing employment and population centers (up to 4 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)
	+2 Project improves bicycle access to or within a site +2 Project improves pedestrian access to or within a site	+4 Project mostly serves an existing area of concentrated development +2 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project OR robust community outreach process	N/A
Equity Multiplier?	No	No	No	No
Total Base Points Possible	80			
Total Equity Points Possible	20			
Total Possible Points	100			

Table A-6
Evaluation Criteria for FFYs 2022 and 2023 Community Connections Program

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
NETWORK OR CONNECTIVITY VALUE (18 points)			
<p>The primary purpose of the Community Connections Program is to close gaps in the transportation network, especially those in the first or last mile between transit and a destination. Projects will be awarded points based on how effectively a proposed project closes different types of gaps and makes travel easier or more efficient.</p>	<p>Connection to existing activity hubs and residential developments (9/6 points)</p>	<p>Application materials, CTPS GIS layers reflecting relevant destinations and employment and population density</p>	<p><i>Projects can earn points for any combination of conditions, up to the noted overall maximum.</i></p> <p>Area projects (up to 9 points)</p> <p>0 If the project area includes* no dense employment concentrations, or dense residential concentrations, or Major Civic Destinations.</p> <p>+2 for each dense employment concentration OR dense residential concentration included in the project area, up to a maximum of 6 points</p> <p>+1 if the project targets a specific dense employment concentration, OR dense residential concentration, or Major Civic Destination</p> <p>+.25 points for each Major Civic Destination included in the project area, up to a maximum of 2 points</p> <p>Point projects (up to 6 points)</p> <p>0 points if the project has no locations/stops within** ½ mile of a dense employment concentration OR a dense residential concentration</p> <p>+1 point for each location/stop within ½ mile of a dense employment concentration OR a dense residential concentration, up to a maximum of 4 points</p> <p>+2 points for each location/stop within ¼ mile of a dense employment concentration OR a dense residential concentration, up to a maximum of 4 points</p> <p>+.25 points for each location/stop within a ½ mile of a Major Civic Destination, up to a maximum of 1 point</p> <p>+.5 points for each location/stop within a ¼ mile of a Major Civic Destination, up to a maximum of 1 point</p> <p>*A project area includes a dense employment or residential concentration if it contains more than 50% of a transportation analysis zone (TAZ) that meets employment or residential density thresholds</p> <p>**For dense employment or residential concentrations, "Within" is defined as the location being within the specified distance of the centroid of the relevant TAZs</p>

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
<p>The primary purpose of the Community Connections Program is to close gaps in the transportation network, especially those in the first or last mile between transit and a destination. Projects will be awarded points based on how effectively a proposed project closes different types of gaps and makes travel easier or more efficient.</p>	<p>Connection to existing transit hubs (6 points)</p>	<p>Application materials, CTPS GIS layers reflecting transit stops and routes</p>	<p><i>Projects can earn points for any combination of conditions, up to the noted overall maximum.</i></p> <p>Area Projects (up to 9 points)</p> <ul style="list-style-type: none"> 0 if the project area does not include any transit stops for any mode +1 for each bus stop with infrequent service in the project area, up to a maximum of 4 points +2 for each commuter rail station in the project area, up to a maximum of 4 points +3 for each bus stop with frequent service in the project area, up to a maximum of 6 points +4 for each rapid transit stop in the project area, up to a maximum of 8 points <p>Point Projects (up to 6 points)</p> <ul style="list-style-type: none"> 0 if none of the project locations are within 1/2 mile of any transit stations/routes +1 if there is one bus stop with infrequent service within 1/2 mile of a project location +2 if there are multiple instances of a bus stop with infrequent service within 1/2 mile of a project location +3 if there is a commuter rail station within 1/2 mile of a project location +4 if there is a bus stop with frequent service within 1/4 mile of a project location +5 if there are multiple instances of bus stops with frequent service within 1/4 mile of a project location +6 if there is at least one rapid transit stop within 1/4 mile of a project location

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
	Connection to other transportation infrastructure (6 points)	Application materials, CTPS GIS layers including bicycle infrastructure (derived from MAPC trailmap and other sources) and MassDOT road inventory with enhanced sidewalk data	<p>Area Projects (not eligible for points in this subcriterion) n/a</p> <p>Point Projects (up to 6 points)</p> <ul style="list-style-type: none"> 0 if none of the project locations are within 250 feet of sidewalks or protected bicycle infrastructure +1 for each project location within 250 feet of a sidewalk, up to a maximum of 2 points +1 for each project location within 250 feet of protected bicycle infrastructure, up to a maximum of 2 points +2 if any project location is within 250 feet of BOTH a sidewalk and protected bicycle infrastructure
Coordination or cooperation between multiple entities (15 points)			
The MPO prioritizes collaboration among different entities in the transportation planning process. Cooperative project planning and execution is particularly important for first-mile and last-mile connections of the type that the Community Connections Program is intended to facilitate. The cooperation can involve actors from both the public and private sectors.	Number of collaborating entities (15 points)	Application materials	<ul style="list-style-type: none"> +3 for each collaborating entity beyond the sponsor, up to a maximum of 9 points -15 for Bus Lane, TSP, or E-Link projects that do not have a letter of support from the MBTA <p>Additionally</p> <ul style="list-style-type: none"> +3 If the project consists of collaborators from multiple sectors (i.e., public and private, or public and nonprofit) +3 If each listed collaborator has provided a formal letter of support to the MPO
Inclusion in and consistency with local and regional plans (15 points)			
A comprehensive planning process is important to ensure that projects occur in an environment of collaboration and careful consideration rather than independently. This criterion proposes to award points based on the extent to which a proposed project has been included in prior plans at both the local and regional levels, and whether it meets the goals of those plans.	Inclusion in local plans (6 points)	Application materials, local plans	<p>Project is scored based on the best condition it meets.</p> <ul style="list-style-type: none"> +3 if the project supports a theme, idea, or concept in a local comprehensive plan or equivalent document. +6 If the project is specifically included as a need or priority in a local comprehensive plan or equivalent document
	Inclusion in MPO plans (6 points)	Application materials, LRTP Needs Assessment, UPWP Database, MAPC plans	<p>Project earns points for each condition met.</p> <ul style="list-style-type: none"> +3 If the project is identified as a need in a current or previous LRTP Needs Assessment or another regional plan +3 if the project or a large element thereof is recommended in MPO/MAPC technical studies
	Inclusion in statewide plans (3 point)	Application materials, LRTP Needs Assessment	<ul style="list-style-type: none"> +3 If the project is included as a need or priority in MassDOT or other statewide planning studies

OBJECTIVE SCORING CRITERIA (90 possible points)	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
TRANSPORTATION EQUITY (18 points)			
The MPO seeks to prioritize investments that benefit equity populations, while minimizing any burdens associated with MPO-funded projects for these populations.	Serves one or more transportation equity demographics, as identified by the MPO (18 points)	Application materials, CTPS GIS layers	See detailed scoring criteria handout: https://docs.google.com/document/d/1YXBvJoj2FM2UJp0qd88Ew_nKR5OscyS/
GENERATION OF MODE SHIFT (12 points)			
Another primary purpose of the Community Connection Program is to enable modal shift from SOV to transit or other modes. This criterion awards points based on the project's effectiveness at creating mode shift and/or enabling trips that were previously impossible by non-SOV modes.	Allow new trips that would not be otherwise possible without a car (12 points)	Application materials	<p>This criterion will be scored by MPO staff based on materials and narrative provided in the project application, considering factors such as:</p> <ul style="list-style-type: none"> • Whether the project competes with or complements existing transit service • If the project brings non-SOV transportation options to an area that previously had few or none • Whether the project provides complementary connections to existing non-SOV transportation services and infrastructure • Whether the project serves a particular, identified transportation purpose that includes or facilitates mode shift • If relevant, whether the project shows it has a viable path to fiscal independence at the end of the MPO grant period • Reliability of projected local or other non-MPO financial contributions • If the project serves a population that travels through the project area but does not live adjacent to or within it • The quality and innovation of the project's marketing plan, when relevant

OBJECTIVE	CRITERIA	DATA TO USE	SUBCRITERIA/SCORING
SCORING CRITERIA (90 possible points)			
DEMAND PROJECTION (12 points)			
Gaining an understanding of how many transportation network users a project will reach is crucial for understanding its cost-effectiveness.	Overall demand estimate (6 points)	Application materials	0 If the application contains no estimates of demand or usage +3 If the application contains estimates of demand or usage, but no documentation of methods used to create them or background information +6 If the application contains estimates of demand or usage that are backed by extensive documentation of methods used to create the estimates and/or other relevant background information
	Staff evaluation of demand estimate (6 points)	Application materials	0 If staff judge that demand/usage projections are unrealistic or not present +3 if staff judge that demand/usage projections are somewhat realistic +6 If staff judge that demand/usage projections are realistic
BUDGET SHEET (10 points)			
	Quality of information provided (10 points)	Application materials	0 if there is no budget sheet present or the budget sheet does not contain useful information +5 if the budget sheet is incomplete or inaccurate, but usable with work +10 if the budget sheet is completed with all necessary information

Definitions

Area projects: Those that are geographically defined as a polygon, rather than delivered at a particular point or points. Examples: microtransit covering an entire town, or an education project for a neighborhood.

Point projects: Those that are delivered at a particular point or points and can be geographically defined as such. Examples: bike racks, fixed-route transit (the stops are the points)

Population density concentration: any TAZ with more than 4,000 people per square mile.

Employment density concentration: any TAZ with more than 4,000 jobs per square mile

Frequent service: Follows the MBTA Service Delivery Policy. Stops with frequent service defined are defined in a CTPS layer used in pilot round CC scoring and for the Destination 2040 Needs Assessment. This layer measures frequency at the stop level rather than the route level; that is, a stop with four buses per hour, from two different routes, is considered a frequent stop.

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-7
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Complete Streets Program

MPO Goal Area	Safety: Transportation by all modes will be safe. (Up to 18 points)							
Criterion	Project addresses severe-crash location (up to 3 points)	Project addresses high-crash location (up to 3 points)	Project addresses truck-related safety issue (up to 2 points)	Project improves bicycle safety (up to 2 points)	Project improves pedestrian safety (up to 2 points)	Project improves safety for all users (up to 2 points)		
	+3 EPDO value of 1000 or more +2 EPDO value of 250 to 999 +1 EPDO value of less than 250 +0 No EPDO value	+3 Crash rate of 6.45 or greater +2 Crash rate between 4.25 and 6.45 +1 Crash rate between 2.05 and 4.25 +0 Crash rate below 2.05	+2 High total effectiveness of truck safety improvements +1 Medium total effectiveness of truck safety improvements +0 Low total effectiveness or no implementation of truck safety improvements	+2 High total effectiveness of bicycle safety improvements +1 Medium total effectiveness of bicycle safety improvements +0 Low total effectiveness or no inclusion of bicycle safety improvements	+2 High total effectiveness of pedestrian safety improvements +1 Medium total effectiveness of pedestrian safety improvements +0 Low total effectiveness or no inclusion of pedestrian safety improvements	+2 Project includes three or more eligible multimodal safety improvements +1 Project includes one or two eligible multimodal safety improvements +0 Project does not include any eligible multimodal safety improvements		
Bonus/Penalty (if applicable)	N/A	N/A	N/A	Bonus (up to 1 point) +1 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 1 point) +1 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 2 points) +2 Addresses safety at multiple all-mode HSIP clusters OR a top-200 crash location +1 Addresses safety at one all-mode HSIP cluster		
Equity Multiplier?	Yes	No	No	Yes	Yes	No		

(Table A-7 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 avement condition (up to 2 points)	Project improves other existing assets (up to 2 points)	
	<ul style="list-style-type: none"> +1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections + Project demonstrates regional coordination on resiliency 	<ul style="list-style-type: none"> +1 Project improves an evacuation route, diversion route, or alternate diversion route 	<ul style="list-style-type: none"> +1 Project improves access to critical facilities 	<ul style="list-style-type: none"> +2 Project makes significant improvements to existing transit assets +1 Project makes moderate improvements to existing transit assets +0 Project does not modernize or improve the condition of existing transit assets 	<ul style="list-style-type: none"> +3 Existing pedestrian facilities are in poor condition and improvements are included in the project +2 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities 	<ul style="list-style-type: none"> +2 Project improves existing bridge(s) from poor to good condition through rehabilitation or replacement +1 Project improves existing bridge(s) from fair to good condition through rehabilitation or replacement 0 Project does not include bridge improvements 	<ul style="list-style-type: none"> +2 Current roadway condition is poor and pavement improvements are included in the project +1 Current roadway condition is fair and pavement improvements are included in the project +0 Current roadway condition is good 	<ul style="list-style-type: none"> +2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria 	
Bonus/Penalty (if applicable)	Penalty	N/A	N/A	N/A		Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	<ul style="list-style-type: none"> -1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding 					<ul style="list-style-type: none"> +1 Project reduces or removes vehicle weight/height restrictions or improves bridge on a key roadway 	<ul style="list-style-type: none"> +1 Project improves pavement on a key corridor or improves roadway substructure 		
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	No	

(Table A-7 cont., 3)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	Project reduces transit passenger delay (up to 3 points)	Project invests in New Transit Assets (up to 2 points)	Project improves pedestrian network and ADA accessibility (up to 3 points)	Project improves bicycle network (up to 3 points)	Project improves truck movement (up to 2 points)	Project addresses unreliable corridor (up to 1 point)	
	+3 Project results in significant passenger delay reductions +2 Project results in moderate passenger delay reductions +1 Project results in limited passenger delay reductions +0 Project does not make meaningful reductions in passenger delay	+2 Project makes significant investments in new transit assets +1 Project makes moderate investments in new transit assets +0 Project does not invest in nw transit assets	+3 Project adds new sidewalks on high-utility link +2 Project adds new sidewalks on medium-utility link +1 Project adds new sidewalks on low-utility link +0 Project does not improve pedestrian network	+3 Project adds new separated bicycle facility (including shared-use paths) +2 Project adds new buffered bicycle facility +1 Project adds newstandard bicycle facility +0 Project does not improve bicycle network	+2 Project significantly improves truck movement +1 Project somewhat improves truck movement +0 Project makes minimal improvements to truck movement or does not address criteria	+1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point)	N/A	Bonus (up to 1 point)	Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement		+1 Project closes a gap in the pedestrian network +1 Project enhances ADA accessibility beyond minimum required standards +1 Project creates or improves pedestrian connection to transit	+1 Project closes a gap in the bicycle network +1 Project creates or improves a bicycle connection to transit +1 Project makes accommodations for bicycle parking or bicycle share station +1 Project is on a high-utility link	+1 Project addresses key freight corridor or makes accommodations for freight deliveries		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

(Table A-7 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 al tons of CO2 reduced 0 No impact -1 Less than 250 annual tons of CO2 increased -3 250 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 3 points) +3 1,000 or more total kilograms of VOC, NOx, CO reduced +2 250-999 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -3 250 or more total kilograms of VOC, NOx, CO increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural assets				
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes				
Equity Multiplier?	No	Yes	No				

(Table A-7 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)	Project serves existing employment and population centers (up to 3 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)				
	+1 Project improves bicycle access to or within a site +1 Project improves pedestrian access to or within a site +1 Project improves transit access to or within a site	+3 Project mostly serves an existing area of concentrated development +1 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area				
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project or robust community outreach process	N/A				
Equity Multiplier?	No	No	No	No				

Total Base Points Possible	80
Total Equity Points Possible	20
Total Possible Points	100

**Table A-8:
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Intersection Improvements Program**

MPO Goal Area							
Safety: Transportation by all modes will be safe. (Up to 21 points)							
Criterion	Project addresses severe-crash location (up to 3 points)	Project addresses high-crash location (up to 3 points)	Project addresses truck-related safety issue (up to 2 points)	Project improves bicycle safety (up to 3 points)	Project improves pedestrian safety (up to 3 points)	Project improves safety for all users (up to 3 points)	
	+3 EPDO value of 300 or more +2 EPDO value of 100 to 299 +1 EPDO value of less than 100 +0 No EPDO value	Signalized Intersection: +3 Crash rate of 1.69 or greater +2 Crash rate between 1.02 and 1.69 +1 Crash rate between 0.35 and 1.02 +0 Crash rate below 0.35 Unsignalized Intersection: +3 Crash rate of 1.36 or greater +2 Crash rate between 0.78 and 1.36 +1 Crash rate between 0.20 and 0.78 +0 Crash rate below 0.20	+2 High total effectiveness of truck safety improvements +1 Medium total effectiveness of truck safety improvements +0 Low total effectiveness or no implementation of truck safety improvements	+3 High total effectiveness of bicycle safety improvements +2 Medium total effectiveness of bicycle safety improvements +1 Low total effectiveness of bicycle safety improvements +0 Project does not include bicycle safety improvements	+3 High total effectiveness of pedestrian safety improvements +2 Medium total effectiveness of pedestrian safety improvements +1 Low total effectiveness of pedestrian safety improvements +0 Project does not include pedestrian safety improvements	+3 Project includes three or more eligible multimodal safety improvements +2 Project includes two eligible multimodal safety improvements +1 Project includes one eligible multimodal safety improvement +0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	N/A	N/A	N/A	Bonus (up to 1 point) +1 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 1 point) +1 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 2 points) +2 Addresses safety at multiple all-mode HSIP clusters or a top-200 crash location +1 Addresses safety at one all-mode HSIP cluster	
Equity Multiplier?	Yes	No	No	Yes	Yes	No	

(Table A-8 cont., 2)

MPO Goal Area							
System Preservation: Maintain and modernize the transportation system and plan for its resiliency. (Up to 17 points)							
Criterion	Project incorporates resiliency elements into its design (up to 5 points)	Improves evacuation route (up to 1 point)	Improves connectivity to critical facilities (up to 1 point)	Project improves existing transit assets (up to 2 points)	Project improves existing pedestrian facilities (up to 3 points)	Project improves existing pavement condition (up to 2 points)	Project improves other existing assets (up to 2 points)
	+1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections +1 Project demonstrates regional coordination on resiliency	+1 Project improves an evacuation route, diversion route, or alternate diversion route	+1 Project improves access to critical facilities	+2 Project makes significant improvements to existing transit assets +1 Project makes moderate improvements to existing transit assets +0 Project does not modernize or improve the condition of existing transit assets	+3 Existing pedestrian facilities are in poor condition and improvements are included in the project +2 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities	+2 Current roadway condition is poor and pavement improvements are included in the project +1 Current roadway condition is fair and pavement improvements are included in the project +0 Current roadway condition is good	+2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria
Bonus/Penalty (if applicable)	Penalty -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

(Table A-8 cont., 3)

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	Project reduces transit passenger delay (up to 3 points)	Project invests in New Transit Assets (up to 2 points)	Project improves pedestrian network and ADA accessibility (up to 3 points)	Project improves bicycle network (up to 3 points)	Project improves truck movement (up to 2 points)	Project addresses unreliable corridor (up to 1 point)	
	+3 Project results in significant passenger delay reductions +2 Project results in moderate passenger delay reductions +1 Project results in limited passenger delay reductions +0 Project does not make meaningful reductions in passenger delay	+2 Project makes significant investments in new transit assets +1 Project makes moderate investments in new transit assets +0 Project does not invest in new transit assets	+3 Project adds new sidewalks on high-utility link +2 Project adds new sidewalks on medium-utility link +1 Project adds new sidewalks on low-utility link +0 Project does not improve pedestrian network	+3 Project adds new separated bicycle facility (including shared-use paths) +2 Project adds new buffered bicycle facility +1 Project adds new standard bicycle facility +0 Project does not improve bicycle network	+2 Project significantly improves truck movement +1 Project somewhat improves truck movement +0 Project makes minimal improvements to truck movement or does not address criteria	+1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point)	N/A	Bonus (up to 1 point)	Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement		+1 Project closes a gap in the pedestrian network +1 Project enhances ADA accessibility beyond minimum required standards +1 Project creates or improves pedestrian connection to transit	+1 Project closes a gap in the bicycle network +1 Project creates or improves a bicycle connection to transit +1 Project makes accommodations for bicycle parking or bicycle share station +1 Project is on a high-utility link	+1 Project addresses key freight corridor or makes accommodations for freight deliveries		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

MPO Goal Area Clean Air/Sustainable Communities: Create an environmentally friendly transportation system. (Up to 12 points)							
Criterion	Project reduces CO2 (up to 3 points) +3 750 or more annual tons of CO2 reduced +2 250-749 annual tons of CO2 reduced +1 Less than 250 annual tons of CO2 reduced 0 No impact -1 Less than 250 annual tons of CO2 increased -3 250 or more annual tons of CO2 increased	Project reduces other transportation-related emissions (up to 3 points) +3 1,000 or more total kilograms of VOC, NOx, CO reduced +2 250-999 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -3 250 or more total kilograms of VOC, NOx, CO increased	Enhances Natural Environment (up to 4 points) +1 Project improves water quality +1 Project selects a design alternative that avoids impacts to sensitive natural areas +1 Project reduces urban heat island effect +1 Project increases access to parks, open space, or other natural assets				
Bonus/Penalty (if applicable)	N/A	Bonus/Penalty (up to 2 points) +2 Project reduces NOx emissions in area in top 20% of regional NOx levels -2 Project increases NOx emissions in area in top 20% of regional NOx levels	Penalty -1 Project is anticipated to lead to negative environmental outcomes				
Equity Multiplier?	No	Yes	No				

(Table A-8 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)	Project serves existing employment and population centers (up to 3 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)			
	+1 Project improves bicycle access to or within a site +1 Project improves pedestrian access to or within a site +1 Project improves transit access to or within a site	+3 Project mostly serves an existing area of concentrated development +1 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area			
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project or robust community outreach process	N/A			
Equity Multiplier?	No	No	No	No			
Total Base Points Possible	80						
Total Equity Points Possible	20						
Total Possible Points	100						

**Table A-9
FFYs 2022–26 and 2023–27 TIP Evaluation Criteria: Major Infrastructure Program**

MPO Goal Area Safety: Transportation by all modes will be safe. (Up to 18 points)							
Criterion	Project addresses severe-crash location (up to 3 points)	Project addresses high-crash location (up to 3 points)	Project addresses truck-related safety issue (up to 2 points)	Project improves bicycle safety (up to 2 points)	Project improves pedestrian safety (up to 2 points)	Project improves safety for all users (up to 2 points)	
	+3 EPDO value of 1000 or more +2 EPDO value of 250 to 999 +1 EPDO value of less than 250 +0 No EPDO value	For corridor projects: +3 Crash rate of 6.45 or greater +2 Crash rate between 4.25 and 6.45 +1 Crash rate between 2.05 and 4.25 +0 Crash rate below 2.05 For intersection and interchange projects: Signalized Intersection: +3 Crash rate of 1.69 or greater +2 Crash rate between 1.02 and 1.69 +1 Crash rate between 0.35 and 1.02 +0 Crash rate below 0.35 Unsignalized Intersection: +3 Crash rate of 1.36 or greater +2 Crash rate between 0.78 and 1.36 +1 Crash rate between 0.20 and 0.78 +0 Crash rate below 0.20	+2 High total effectiveness of truck safety improvements +1 Medium total effectiveness of truck safety improvements +0 Low total effectiveness or no implementation of truck safety improvements	+2 High total effectiveness of bicycle safety improvements +1 Medium total effectiveness of bicycle safety improvements +0 Low total effectiveness or no inclusion of bicycle safety improvements	+2 High total effectiveness of pedestrian safety improvements +1 Medium total effectiveness of pedestrian safety improvements +0 Low total effectiveness or no inclusion of pedestrian safety improvements	+2 Project includes three or more eligible multimodal safety improvements +1 Project includes one or two eligible multimodal safety improvements +0 Project does not include any eligible multimodal safety improvements	
Bonus/Penalty (if applicable)	N/A	N/A	N/A	Bonus (up to 1 point) +1 Improves bicycle safety at bicycle HSIP cluster	Bonus (up to 1 point) +1 Improves pedestrian safety at pedestrian HSIP cluster	Bonus (up to 2 points) +2 Addresses safety at multiple all-mode HSIP clusters OR a top-200 crash location +1 Addresses safety at one all-mode HSIP cluster	
Equity Multiplier?	Yes	No	No	Yes	Yes	No	

(Table A-9 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)
	<ul style="list-style-type: none"> +1 Project implements recommendation(s) as identified in a Hazard Mitigation Plan, Municipal Vulnerability Plan, or climate adaptation plan +1 Project improves stormwater infrastructure +1 Project implements innovative resiliency solutions +1 Project designed to meet a range of future climate projections +1 Project demonstrates regional coordination on resiliency 	<ul style="list-style-type: none"> +1 Project improves an evacuation route, diversion route, or alternate diversion route 	<ul style="list-style-type: none"> +1 Project improves access to critical facilities 	<ul style="list-style-type: none"> +2 Project makes significant improvements to existing transit assets +1 Project makes moderate improvements to existing transit assets +0 Project does not modernize or improve the condition of existing transit assets 	<ul style="list-style-type: none"> +3 Existing pedestrian facilities are in poor condition and improvements are included in the project +2 Existing pedestrian facilities are in fair condition and improvements are included in the project +1 Existing pedestrian facilities are in good condition and improvements are included in the project +0 Project does not improve existing pedestrian facilities 	<ul style="list-style-type: none"> +2 Project improves existing bridge(s) from poor to good condition through rehabilitation or replacement +1 Project improves existing bridge(s) from fair to good condition through rehabilitation or replacement 0 Project does not include bridge improvements 	<ul style="list-style-type: none"> +2 Current roadway condition is poor and pavement improvements are included in the project +1 Current roadway condition is fair and pavement improvements are included in the project +0 Current roadway condition is good 	<ul style="list-style-type: none"> +2 Project improves three or more other assets +1 Project improves one or two other assets +0 Project does not meet or address criteria
Bonus/Penalty (if applicable)	<p>Penalty</p> <ul style="list-style-type: none"> -1 Project is located in an existing or projected flood zone and doesn't specify how the project will address future flooding 	N/A	N/A	N/A		<p>Bonus (up to 1 point)</p> <ul style="list-style-type: none"> +1 Project reduces or removes vehicle weight/height restrictions or improves bridge on a key roadway 	<p>Bonus (up to 1 point)</p> <ul style="list-style-type: none"> +1 Project improves pavement on a key corridor or improves roadway substructure 	N/A
Equity Multiplier?	Yes	No	Yes	Yes	Yes	No	No	No

MPO Goal Area Capacity Management/Mobility: Use existing facility capacity more efficiently and increase healthy transportation options. (Up to 18 points)							
Criterion	Project reduces transit passenger delay (up to 3 points)	Project invests in New Transit Assets (up to 2 points)	Project improves pedestrian network and ADA accessibility (up to 3 points)	Project improves bicycle network (up to 3 points)	Project improves truck movement (up to 2 points)	Project addresses unreliable corridor (up to 1 point)	
	+3 Project results in significant passenger delay reductions +2 Project results in moderate passenger delay reductions +1 Project results in limited passenger delay reductions +0 Project does not make meaningful reductions in passenger delay	+2 Project makes significant investments in new transit assets +1 Project makes moderate investments in new transit assets +0 Project does not invest in new transit assets	+3 Project adds new sidewalks on high-utility link +2 Project adds new sidewalks on medium-utility link +1 Project adds new sidewalks on low-utility link +0 Project does not improve pedestrian network	+3 Project adds new separated bicycle facility (including shared-use paths) +2 Project adds new buffered bicycle facility +1 Project adds new standard bicycle facility +0 Project does not improve bicycle network	+2 Project significantly improves truck movement +1 Project somewhat improves truck movement +0 Project makes minimal improvements to truck movement or does not address criteria	+1 Project addresses a corridor with a level of travel time reliability above 1.25 +0 Project does not meet or address criteria	
Bonus/Penalty (if applicable)	Bonus/Penalty (+/- up to 1 point)	N/A	Bonus (up to 1 point)	Bonus (up to 1 point)	Bonus (up to 1 point)	N/A	
	+1 Project invests in bus-priority infrastructure on MPO-identified priority corridor -1 Project increases transit vehicle delays or negatively impacts transit vehicle movement		+1 Project closes a gap in the pedestrian network +1 Project enhances ADA accessibility beyond minimum required standards +1 Project creates or improves pedestrian connection to transit	+1 Project closes a gap in the bicycle network +1 Project creates or improves a bicycle connection to transit +1 Project makes accommodations for bicycle parking or bicycle share station +1 Project is on a high-utility link	+1 Project addresses key freight corridor or makes accommodations for freight deliveries		
Equity Multiplier?	Yes	Yes	Yes	Yes	No	No	

(Table A-9 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-9 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)	Project serves existing employment and population centers (up to 3 points)	Project demonstrates proponent investment (up to 2 points)	Project promotes access to affordable housing opportunities (up to 3 points)				
	+1 Project improves bicycle access to or within a site +1 Project improves pedestrian access to or within a site +1 Project improves transit access to or within a site	+3 Project mostly serves an existing area of concentrated development +1 Project partly serves an existing area of concentrated development +0 Project does not serve an existing area of concentrated development	+2 20 percent or more of the project cost is provided +1 Less than 20 percent of the project cost is provided +0 No non-TIP funding is provided by the project proponent	+3 10.4% or more of housing units are affordable in project area +2 6.6-10.3% of housing units are affordable in project area +1 1-6.5% of housing units are affordable in project area +0 Less than 1% of housing units are affordable in project area				
Bonus/Penalty (if applicable)	N/A	N/A	Bonus (up to 1 point) +1 Project proponent supports design process through pilot project or robust community outreach process	N/A				
Equity Multiplier?	No	No	No	No				

Total Base Points Possible	80
Total Equity Points Possible	20
Total Possible Points	100

Table A-10
Evaluation Criteria for FFYs 2021-25 TIP Development

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING																																										
SAFETY: Transportation by all modes will be safe.																																												
<p>Reduce the number and severity of crashes and safety incidents for all modes</p> <p>Reduce serious injuries and fatalities from transportation</p> <p>Make investments and support initiatives that help protect transportation customers, employees, and the public from safety and security threats</p>	<p>Crash severity value: EPDO index (0–5 points)</p>	<p>+5 EPDO value of 300 or more +4 EPDO value between 200 and 299 +3 EPDO value between 100 and 199 +2 EPDO value between 50 and 99 +1 EPDO value less than 50 +0 No EPDO value</p>																																										
	<p>Crash rate (intersections and corridors) (0–5 points)</p>	<table border="1"> <thead> <tr> <th>Intersection Evaluation Score</th> <th>Signalized</th> <th>Unsignalized</th> </tr> </thead> <tbody> <tr> <td>+5</td> <td>≥ 1.69</td> <td>≥ 1.36</td> </tr> <tr> <td>+4</td> <td>1.31–1.69</td> <td>1.03–1.36</td> </tr> <tr> <td>+3</td> <td>0.93–1.31</td> <td>0.70–1.03</td> </tr> <tr> <td>+2</td> <td>0.55–0.93</td> <td>0.37–0.70</td> </tr> <tr> <td>+1</td> <td>0.36–0.55</td> <td>0.21–0.37</td> </tr> <tr> <td>+0</td> <td>< 0.36v</td> <td>< 0.21</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Corridor Evaluation Score</th> <th>Interstate Other Freeways Expressways</th> <th>Principal Arterials or Other Minor Arterials Major–Minor Collectors</th> </tr> </thead> <tbody> <tr> <td>+5</td> <td>≥ 1.81</td> <td>≥ 6.45</td> </tr> <tr> <td>+4</td> <td>1.40–1.81</td> <td>5.35–6.45</td> </tr> <tr> <td>+3</td> <td>1.00–1.40</td> <td>4.25–5.35</td> </tr> <tr> <td>+2</td> <td>0.59–1.00</td> <td>3.15–4.25</td> </tr> <tr> <td>+1</td> <td>0.40–0.59</td> <td>2.05–3.15</td> </tr> <tr> <td>+0</td> <td>< 0.40</td> <td>< 2.05</td> </tr> </tbody> </table>	Intersection Evaluation Score	Signalized	Unsignalized	+5	≥ 1.69	≥ 1.36	+4	1.31–1.69	1.03–1.36	+3	0.93–1.31	0.70–1.03	+2	0.55–0.93	0.37–0.70	+1	0.36–0.55	0.21–0.37	+0	< 0.36v	< 0.21	Corridor Evaluation Score	Interstate Other Freeways Expressways	Principal Arterials or Other Minor Arterials Major–Minor Collectors	+5	≥ 1.81	≥ 6.45	+4	1.40–1.81	5.35–6.45	+3	1.00–1.40	4.25–5.35	+2	0.59–1.00	3.15–4.25	+1	0.40–0.59	2.05–3.15	+0	< 0.40	< 2.05
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<p>Improves truck-related safety issue (0–5 points)</p>	<p>+3 High total effectiveness of truck safety countermeasures +2 Medium total effectiveness of truck safety countermeasures +1 Low total effectiveness of truck safety countermeasures +0 Does not implement truck safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below: +2 Improves truck safety at HSIP Cluster</p>																																											
<p>Improves bicycle safety (0–5 points)</p>	<p>+3 High total effectiveness of bicycle safety countermeasures +2 Medium total effectiveness of bicycle safety countermeasures +1 Low total effectiveness of bicycle safety countermeasures +0 Does not implement bicycle safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below: +2 Improves bicycle safety at HSIP Bicycle Cluster +1 Improves bicycle safety at HSIP Cluster</p>																																											
<p>Improves pedestrian safety (0–5 points)</p>	<p>+3 High total effectiveness of pedestrian safety countermeasures +2 Medium total effectiveness of pedestrian safety countermeasures +1 Low total effectiveness of pedestrian safety countermeasures +0 Does not implement pedestrian safety countermeasures</p> <p>If project scores points above, then it is eligible for additional points below: +2 Improves pedestrian safety at HSIP Pedestrian Cluster +1 Improves pedestrian safety at HSIP Cluster</p>																																											
<p>Improves safety or removes an at-grade railroad crossing (0–5 points)</p>	<p>+5 Removes an at-grade railroad crossing +3 Significantly improves safety at an at-grade railroad crossing +1 Improves safety at an at-grade railroad crossing +0 Does not include a railroad crossing</p>																																											
SAFETY (30 possible points)																																												

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
SYSTEM PRESERVATION AND MODERNIZATION: Maintain and modernize the transportation system and plan for its resiliency.		
<p>Maintain the transportation system, including roadway, transit, and active transportation infrastructure, in a state of good repair</p> <p>Modernize transportation infrastructure across all modes</p> <p>Prioritize projects that support planned response capability to existing or future extreme conditions (sea level rise, flooding, and other natural and security-related man-made impacts)</p>	<p>Improves substandard roadway bridge(s) (0–3 points)</p>	<p>+3 Condition is structurally deficient and improvements are included in the project</p> <p>+1 Condition is functionally obsolete and improvements are included in the project</p> <p>+0 Does not improve substandard bridge or does not include a bridge</p>
	<p>Improves substandard pavement (0–6 points)</p>	<p>+6 IRI rating greater than 320: Poor condition and pavement improvements are included in the project</p> <p>+4 IRI rating between 320 and 191: Fair condition and pavement improvements are included in the project</p> <p>+0 IRI rating less than 190: Good or better condition</p>
	<p>Improves substandard traffic signal equipment (0–6 points)</p>	<p>+6 Poor condition and improvements are included in the project</p> <p>+4 Fair condition and improvements are included in the project</p> <p>+0 Does not meet or address criteria</p>
	<p>Improves transit asset(s) (0–3 points)</p>	<p>+2 Brings transit asset into state of good repair</p> <p>+1 Meets an identified-need in an asset management plan</p> <p>+0 Does not meet or address criteria</p>
	<p>Improves substandard sidewalk(s) (0–3 points)</p>	<p>+3 Poor condition and sidewalk improvements are included in the project</p> <p>+2 Fair condition and sidewalk improvements are included in the project</p> <p>+0 Sidewalk condition is good or better</p>
	<p>Improves emergency response (0–2 points)</p>	<p>+1 Project improves an evacuation route, diversion route, or alternate diversion route</p> <p>+1 Project improves an access route to or in proximity to an emergency support location</p>
	<p>Improves ability to respond to extreme conditions (0–6 points)</p>	<p>+2 Addresses flooding problem and/or sea level rise and enables facility to function in such a condition</p> <p>+1 Brings facility up to current seismic design standards</p> <p>+1 Addresses critical transportation infrastructure</p> <p>+1 Protects freight network elements</p> <p>+1 Implements hazard mitigation or climate adaptation plans</p>
	SYSTEM PRESERVATION AND MODERNIZATION (29 possible points)	

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
CAPACITY MANAGEMENT AND MOBILITY: Use existing facility capacity more efficiently and increase transportation options.		
<p>Improve access to and accessibility of all modes, especially transit and active transportation</p> <p>Support roadway management and operations strategies to improve travel reliability, mitigate congestion, and support non-single-occupant-vehicle travel</p> <p>Emphasize capacity management through low-cost investments; prioritize projects that focus on lower-cost operations/ management-type improvements such as intersection improvements, transit priority, and Complete Streets solutions</p> <p>Improve reliability of transit</p> <p>Increase percentage of population and employment within one-quarter mile of transit stations and stops</p> <p>Support community-based and private-initiative services to meet first- and last-mile, reverse commute, and other non-traditional transportation needs, including those of people 75 years old or older and people with disabilities</p> <p>Support strategies to better manage automobile and bicycle parking capacity and usage at transit stations</p> <p>Fund improvements to bicycle and pedestrian networks aimed at creating a connected network of bicycle and accessible sidewalk facilities by expanding existing facilities and closing gaps</p> <p>Increase percentage of population and places of employment with access to facilities on the bicycle network</p> <p>Eliminate bottlenecks on the freight network, improve freight reliability, and enhance freight intermodal connections</p>	<p>Reduces transit vehicle delay (0–4 points)</p>	<p>+3 5 hours or more of daily transit vehicle delay reduced +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>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>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>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>

Table A-10 (cont., 4)

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
	Improves truck movement (0–4 points)	+3 Meets or addresses criteria to a high degree +2 Meets or addresses criteria to a medium degree +1 Meets or addresses criteria to a low degree +0 Does not meet or address criteria If project scores points above, then it is eligible for additional points below: +1 Addresses MPO-identified bottleneck location
	Reduces vehicle congestion (0–6 points)	+6 400 hours or more of daily vehicle delay reduced +4 100–400 hours of daily vehicle delay reduced +2 Less than 100 hours of daily vehicle delay reduced +0 Does not meet or address criteria
CAPACITY MANAGEMENT AND MOBILITY (29 possible points)		
CLEAN AIR/SUSTAINABLE COMMUNITIES: Create an environmentally friendly transportation system.		
Reduce greenhouse gases generated in the Boston region by all transportation modes Reduce other transportation-related pollutants Minimize negative environmental impacts of the transportation system Support land use policies consistent with smart, healthy, and resilient growth	Reduces CO2 (-5–5 points)	+5 1,000 or more annual tons of CO2 reduced +4 500–999 annual tons of CO2 reduced +3 250–499 annual tons of CO2 reduced +2 100–249 annual tons of CO2 reduced +1 Less than 100 annual tons of CO2 reduced 0 No impact -1 Less than 100 annual tons of CO2 increased -2 100–249 annual tons of CO2 increased -3 250–499 annual tons of CO2 increased -4 500–999 annual tons of CO2 increased -5 1,000 or more annual tons of CO2 increased
	Reduces other transportation-related emissions (VOC, NOx, CO) (-5–5 points)	+5 2,000 or more total kilograms of VOC, NOx, CO reduced +4 1,000–1999 total kilograms of VOC, NOx, CO reduced +3 500–999 total kilograms of VOC, NOx, CO reduced +2 250–499 total kilograms of VOC, NOx, CO reduced +1 Less than 250 total kilograms of VOC, NOx, CO reduced 0 No impact -1 Less than 250 total kilograms of VOC, NOx, CO increased -2 250–499 total kilograms of VOC, NOx, CO increased -3 500–999 total kilograms of VOC, NOx, CO increased -4 1,000–1999 total kilograms of VOC, NOx, CO increased -5 2,000 or more total kilograms of VOC, NOx, CO increased
	Addresses environmental impacts (0–4 points)	+1 Addresses water quality +1 Addresses cultural resources/open space +1 Addresses wetlands/resource areas +1 Addresses wildlife preservation/protected habitats +0 Does not meet or address criteria
	Is in an EOEEA-certified "Green Community" (0–2 points)	+2 Project is located in a "Green Community" +0 Project is not located in a "Green Community"
	CLEAN AIR/SUSTAINABLE COMMUNITIES (16 possible points)	

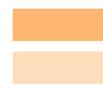
OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
TRANSPORTATION EQUITY: Ensure that all people receive comparable benefits from, and are not disproportionately burdened by, MPO investments, regardless of race, color, national origin, age, income, ability, or sex.		
<p>Prioritize MPO investments that benefit equity populations</p> <p>Minimize potential harmful environmental, health, and safety effects of MPO funded projects for all equity populations</p> <p>Promote investments that support transportation for all ages (age-friendly communities)</p> <p>Promote investments that are accessible to all people regardless of ability</p>	<p>Serves Title VI/non-discrimination populations (-10-12 points)</p>	<p>+2 Serves minority (high concentration) population (>2,000 people)</p> <p>+1 Serves minority (low concentration) population (≤ 2,000 people)</p> <p>+2 Serves low-income (high concentration) population (>2,000 people)</p> <p>+1 Serves low-income (low concentration) population (≤ 2,000 people)</p> <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> <p>+2 Serves elderly (high concentration) population (>2,000 people)</p> <p>+1 Serves elderly (low concentration) population (≤ 2,000 people)</p> <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> <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> <p>+0 Does not serve Title VI or non-discrimination populations</p> <p>-10 Creates a burden for Title VI/non -discrimination populations</p>
TRANSPORTATION EQUITY (12 possible points)		
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.		

(Table A-10 cont., 6)

OBJECTIVES	CRITERIA	SUBCRITERIA/SCORING
<p>Respond to mobility needs of the workforce population</p> <p>Minimize the burden of housing and transportation costs for residents in the region</p> <p>Prioritize transportation investments that serve residential, commercial, and logistics targeted development sites and "Priority Places" identified in the MBTA's Focus 40 plan</p> <p>Prioritize transportation investments consistent with compact-growth strategies of the regional transportation plan</p>	<p>Serves targeted development site (0–6 points)</p>	<p>+2 Provides new transit access to or within site</p> <p>+1 Improves transit access to or within site</p> <p>+1 Provides for bicycle access to or within site</p> <p>+1 Provides for pedestrian access to or within site</p> <p>+1 Provides for improved road access to or within site</p> <p>+0 Does not provide any of the above measures</p>
	<p>Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)</p>	<p>+2 Mostly serves an existing area of concentrated development</p> <p>+1 Partly serves an existing area of concentrated development</p> <p>+1 Supports local zoning or other regulations that are supportive of smart growth development</p> <p>+2 Complements other local financial or regulatory support that fosters economic revitalization in a manner consistent with smart growth development principles</p> <p>+0 Does not provide any of the above measures</p>
	<p>Provides multimodal access to an activity center (0–4 points)</p>	<p>+1 Provides transit access (within a quarter mile) to an activity center</p> <p>+1 Provides truck access to an activity center</p> <p>+1 Provides bicycle access to an activity center</p> <p>+1 Provides pedestrian access to an activity center</p> <p>+0 Does not provide multimodal access</p>
	<p>Leverages other investments (non-TIP funding) (0–3 points)</p>	<p>+3 Meets or addresses criteria to a high degree (>30 percent of the project cost)</p> <p>+2 Meets or addresses criteria to a medium degree (10–30 percent of the project cost)</p> <p>+1 Meets or addresses criteria to a low degree (< 10 percent of the project cost)</p> <p>+0 Does not meet or address criteria</p>
	<p>ECONOMIC VITALITY (18 possible points)</p>	
<p>TOTAL SCORE (134 possible points)</p>		

Table A-11
Evaluation Criteria for FFY 2021 Community Connections Program

 Blues = Criteria that apply to all projects

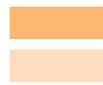
 Oranges = Criteria for capital projects

 Greens = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
PROJECT ELIGIBILITY VERIFICATION		
<p>Each project funded through this program must show an air quality benefit when analyzed through the MPO's air quality analysis process.</p> <p>Projects must be ready to begin construction or operation by October 2020. Project sponsors or proponents must demonstrate that they have gained support from stakeholders and have the institutional capacity to carry out the project within the MPO timeframe.</p>	<p>Air Quality Analysis</p>	<p>Projects must pass a spreadsheet-based air quality benefit test based on a variety of data inputs customized to the type of project.</p>
	<p>Proponent's Project Management Capacity</p>	<p>Names, experience, and time commitment of project management staff, as provided by the proponent.</p>
GENERAL SCORING CRITERIA (30 possible points)		
Network or connectivity value (6 points)		
<p>The primary purpose of the Community Connections Program is to close gaps in the transportation network, especially those in the first or last mile between transit and a destination. Projects will be awarded points based on how effectively a proposed project closes different types of gaps and makes travel easier or more efficient.</p>	<p>Connection to existing activity hubs and residential developments (2 points)</p>	<p>Proximity of the project or service to employment, residential, and civic activity hubs, such as dense areas of employment or housing.</p>
	<p>Connection to existing transit hubs (2 points)</p>	<p>Proximity of the project to transit service, with added incentive for connecting to frequent or high-quality service.</p>
	<p>Connection to other transportation infrastructure (2 points)</p>	<p>Proximity of the project to sidewalk or protected or off-road bicycle infrastructure.</p>
Coordination or cooperation between multiple entities (5 points)		
<p>The MPO prioritizes collaboration among different entities in the transportation planning process. Cooperative project planning and execution is particularly important for first-mile and last-mile connections of the type that the Community Connections Program is intended to facilitate. The cooperation can involve actors from both the public and private sectors.</p>	<p>Number of collaborating entities (5 points)</p>	<p>Number and variety (judged by sector of origin) of entities collaborating to support the project.</p>
Inclusion in and consistency with local and regional plans (5 points)		
<p>A comprehensive planning process is important to ensure that projects occur in an environment of collaboration and careful consideration rather than independently. This criterion proposes to award points based on the extent to which a proposed project has been included in prior plans at both the local and regional levels, and whether it meets the goals of those plans.</p>	<p>Inclusion in local plans (2 points)</p>	<p>Whether the project is included as a need or priority in a local comprehensive plan.</p>
	<p>Inclusion in MPO plans (2 points)</p>	<p>Whether the project is identified as a need in the LRTP Needs Assessment or recommended in an MPO or MAPC study.</p>

(Table A-11 cont., 2)

 Blues = Criteria that apply to all projects

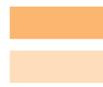
 Oranges = Criteria for capital projects

 Greens = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
	Inclusion in statewide plans (1 point)	Whether the project is included as a need or priority in a MassDOT or other statewide study.
Transportation equity (5 points)		
The MPO seeks to target investments to areas that benefit a high percentage of low-income and minority populations; minimize any burdens associated with MPO-funded projects in low-income and minority areas; and break down barriers to participation in MPO-decision making.	Serves a demographic of transportation equity concern, as identified by the MPO (5 points)	The extent to which the project serves equity populations.
Generation of mode shift (4 points)		
Another primary purpose of the Community Connection Program is to enable modal shift from SOV to transit or other modes. This criterion would award points based on the project's effectiveness at creating mode shift and/or enabling trips that were previously impossible by non-SOV modes.	Allow new trips that would not be otherwise possible without a car (4 points)	Whether the project adds to overall non-automotive mobility by creating new connections or making trips possible that were not previously, without detracting from or competing with existing transit options.
Demand projection (4 points)		
Gaining an understanding of how many transportation network users a project will reach is crucial for understanding its cost-effectiveness.	Overall demand estimate (2 points)	Presence of demand/usage estimates and quality of analysis used to support them in the application materials.
	Staff evaluation of demand estimate (2 points)	Whether staff judge the demand/usage projections realistic.
TYPE-SPECIFIC EVALUATION CRITERIA: CAPITAL PROJECTS (30 points)		
SAFETY BENEFITS (12 points)		
Bicycle safety (6 points)		
Improving safety on the regional transportation network is one of the MPO's key goals. This criterion would award points to projects that improve safety for the most vulnerable users of the network – people walking and people riding bicycles. An overall score of the effectiveness of bicycle safety countermeasures will be made through professional judgement comparing existing facilities, safety issues, use, and desired/anticipated use to the proposed bicycle safety countermeasures planned to be implemented as part of the project.	Total effectiveness of bicycle safety countermeasures (6 points)	Existing and potential bicyclist usage of the infrastructure and effectiveness of the expected safety improvements.
Pedestrian safety (6 points)		
An overall score of the effectiveness of pedestrian safety countermeasures will be made through professional judgement comparing existing facilities, safety issues, use, and desired/anticipated use to the proposed pedestrian safety countermeasures planned to be implemented as part of the project.	Total effectiveness of pedestrian safety countermeasures (6 points)	Existing and potential pedestrian usage of the infrastructure and effectiveness of the expected safety improvements.

(Table A-11 cont., 3)

 Blues = Criteria that apply to all projects

 Oranges = Criteria for capital projects

 Greens = Criteria for operating projects

OBJECTIVE	CRITERIA	FACTORS
Lifecycle cost-effectiveness (10 points)		
In addition to the initial construction costs, the MPO is concerned that projects funded through the Community Connection Program remain fiscally sustainable after MPO-awarded funding runs out. Projects proposed to the program should be cost-effective compared to potential alternatives, and proponents should demonstrate that local maintenance budgets will be able to accommodate the increased costs of maintaining the project.	Lifecycle Alternatives Analysis (5 Points)	Presence of a cost-effectiveness analysis in the application and whether the analysis is qualitative or quantitative.
	Maintenance budget and plan (5 Points)	Identification of a maintenance plan for the project, including the entity responsible for it and a source of funds.
Resilience to weather and environmental hazards (8 points)		
Resilience in the face of increasingly destructive storms and weather hazards is a growing concern in the Boston region, and is codified in the MPO's System Preservation goal. Project proponents should demonstrate that their project will not cause damage to a sensitive ecosystem and that it will be able to resist damage from extreme weather events.	Impact on areas of environmental concern (6 points)	Magnitude of the project's environmental impact, positive or negative.
	Relationship to resilience plans (2 points)	Whether the project is included in local resilience plans.
TYPE-SPECIFIC CRITERIA: OPERATIONAL PROJECTS		
Long-Term Financial Plan (12 points)		
	Annual operating costs (2 points)	Whether the estimate of operating costs is present and realistic.
	Annual maintenance costs (1 point)	Whether the estimate of maintenance costs is present and realistic.
	All other costs (1 point)	Whether the estimate of other costs is present and realistic.
	Fare structure (2 points)	Presence of a detailed description of the proposed fare structure and explanation thereof.
	Plan for fiscal sustainability (6 points)	Whether the application identifies full funding for the project (reflecting a local match to MPO funds) for 0, 1, 2, 3 or more years.
Service Plan (10 points)		
	Service Plan (4 points)	Presence of details on: <ul style="list-style-type: none"> • Plans for ADA compliance • Frequency and routing of service • How the service plans meet the need of projected riders
	Operational/contracting plan (4 points)	Presence of details on administrative and/or contracting plans and the background of the operator.
	Marketing plan (2 points)	Presence of a detailed description of a marketing plan.

(Table A-11 cont., 4)

 Blues = Criteria that apply to all projects


 Oranges = Criteria for capital projects


 Greens = Criteria for operating projects


OBJECTIVE	CRITERIA	FACTORS
Performance Monitoring Plan (8 points)		
	Data management plan (3 points)	Inclusion of plans for data collection, analysis for monitoring service, and sharing the data with the MPO.
	Passenger survey (2 points)	Whether the application describes plans for a ridership survey and the frequency with which it will be administered.
	Trip-level boarding counts (1 point)	Presence of plans for trip-level data collection.
	Stop-level data collection (1 point)	Presence of plans for stop-level data collection.
	Marketing evaluation (1 point)	Presence of plans for an evaluation of the marketing effort.

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.

APPENDIX B

Greenhouse Gas Monitoring and Evaluation

BACKGROUND

The Global Warming Solutions Act of 2008 (GWSA) required statewide reductions in greenhouse gas (GHG) emissions of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. As part of the GWSA, the Executive Office of Energy and Environmental Affairs developed the Massachusetts Clean Energy and Climate Plan (CECP), which outlined programs to attain the 25 percent reduction by 2020—including a 7.6 percent reduction attributed to the transportation sector.

The Commonwealth's 13 metropolitan planning organizations (MPOs) are integrally involved in helping to achieve GHG emissions reductions mandated under the GWSA. The MPOs work closely with the Massachusetts Department of Transportation (MassDOT) and other involved agencies to develop common transportation goals, policies, and projects that will help to reduce GHG emissions levels statewide, and meet the specific requirements of the GWSA regulation, *Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation (310 CMR 60.05)*. The purpose of this regulation is to assist the Commonwealth in achieving its adopted GHG emissions reduction goals by requiring the following:

- MassDOT must demonstrate that its GHG emissions reduction commitments and targets are being achieved.
- Each MPO must evaluate and track the GHG emissions and impacts of both its Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP).
- Each MPO, in consultation with MassDOT, must develop and use procedures to prioritize and select projects for its LRTP and TIP based on factors that include GHG emissions and impacts.

The Commonwealth's MPOs are meeting the requirements of this regulation through the transportation goals and policies contained in their LRTPs, the major projects planned in their LRTPs, and the mix of new transportation projects that are programmed and implemented through their TIPs.

The GHG tracking and evaluation processes enable the MPOs and MassDOT to identify the anticipated GHG impacts of the planned and programmed projects, and to use GHG impacts as criteria to prioritize transportation projects. This approach is consistent with the GHG emissions reduction policies that promote healthy transportation modes through prioritizing and programming an appropriate balance of roadway, transit, bicycle, and pedestrian investments, as well as policies that support smart growth development patterns by creating a balanced multimodal transportation system.

REGIONAL TRACKING AND EVALUATING LONG-RANGE TRANSPORTATION PLANS

MassDOT coordinated with MPOs and regional planning agencies to implement GHG tracking and to evaluate projects during the development of the LRTPs that were adopted in September

2011. This collaboration continued during the development of the LRTPs and amendments adopted in 2016, and for the TIPs produced for federal fiscal years (FFYs) 2016–19, 2017–21, 2018–22, 2019–23, 2020–24, 2021–25, and 2022–26. Working together, MassDOT and the MPOs have attained the following milestones:

- As a supplement to the 2016 LRTPs and Amendment One to the Boston Region MPO’s LRTP, *Charting Progress to 2040*, the MPOs have completed modeling and developed long-range statewide projections for GHG emissions produced by the transportation sector. The Boston Region MPO’s travel demand model and the statewide travel demand model were used to project GHG emissions levels for 2018, 2019, and 2020 No-Build (base conditions). These projections were developed as part of amendments to 310 CMR 60.05 (adopted in August 2017 by the Massachusetts Department of Environmental Protection) to demonstrate that aggregate transportation GHG emissions reported by MassDOT will meet established annual GHG emissions targets.
- All of the MPOs have discussed climate change, addressed GHG emissions reduction projections in their LRTPs, and prepared statements affirming their support for reducing GHG emissions as a regional goal.

TRACKING AND EVALUATING THE TRANSPORTATION IMPROVEMENT PROGRAM

In addition to monitoring the GHG impacts of projects in the LRTP that will add capacity to the transportation system, it also is important to monitor and evaluate the GHG impacts of all transportation projects that are programmed in the TIP. The TIP includes both the larger, capacity-adding projects from the LRTP and smaller projects, which are not included in the LRTP but that may affect GHG emissions. The principal objective of this tracking is to enable the MPOs to evaluate the expected GHG impacts of different projects and to use this information as criteria to prioritize and program projects in future TIPs.

In order to monitor and evaluate the GHG impacts of TIP projects, MassDOT and the MPOs have developed approaches for identifying anticipated GHG emissions impacts of different types of projects. Since carbon dioxide (CO₂) is the largest component of GHG emissions overall and is the focus of regulation 310 CMR 60.05, CO₂ has been used to measure the GHG emissions impacts of transportation projects in the TIP and LRTP.

All TIP projects have been sorted into two categories for analysis: 1) projects with quantified CO₂ impacts, and 2) projects with assumed CO₂ impacts. Projects with quantified impacts consist of capacity-adding projects from the LRTP and projects from the TIP that underwent a Congestion Mitigation and Air Quality Improvement (CMAQ) program spreadsheet analysis. Projects with assumed impacts are those that would be expected to produce a minor decrease or increase in emissions, and those that would be assumed to have no CO₂ impact.

Travel Demand Model

Projects with quantified impacts include capacity-adding projects in the LRTP that were analyzed using the Boston Region MPO's travel demand model set. No independent calculations were done for these projects during the development of the TIP.

Off-Model Methods

MassDOT's Office of Transportation Planning provided spreadsheets that are used to determine projects' eligibility for funding through the CMAQ program. Typically, MPO staff uses data from projects' functional design reports, which are prepared at the 25-percent design phase, to conduct these calculations. Staff used these spreadsheets to calculate estimated projections of CO₂ for each project, in compliance with GWSA regulations. These estimates are shown in Tables B-1 and B-2. A note of "to be determined" is shown for those projects for which a functional design report was not yet available.

As part of the development of the FFYs 2023–27 TIP, analyses were done for the types of projects described below. A summary of steps performed in the analyses is provided.

Traffic Operational Improvement

For an intersection reconstruction or signalization project that typically reduces delay and, therefore, idling, the following steps are taken:

- Step 1: Calculate the AM peak hour total intersection delay (seconds)
- Step 2: Calculate the PM peak hour total intersection delay (seconds)
- Step 3: Select the peak hour with the longer intersection delay
- Step 4: Calculate the selected peak hour total intersection delay with improvements
- Step 5: Calculate the vehicle delay in hours per day (assumes peak hour delay is 10 percent of daily delay)
- Step 6: Input the emissions factors for arterial idling speed from the US Environmental Protection Agency's Motor Vehicle Emission Simulator (MOVES)
- Step 7: Calculate the net emissions change in kilograms per day
- Step 8: Calculate the net emissions change in kilograms per year (seasonally adjusted)
- Step 9: Calculate the cost effectiveness (first year cost per kilogram of emissions reduced)

Pedestrian and Bicycle Infrastructure

For a shared-use path that would enable more walking and biking trips and reduce automobile trips, the following steps are taken:

- Step 1: Calculate the estimated number of one-way trips based on the percentage of workers residing in the communities served by the facility and the communities' bicycle and pedestrian commuter mode share
- Step 2: Calculate the reduction in vehicle-miles traveled per day and per year (assumes each trip is the length of the facility and that the facility operates 200 days per year)
- Step 3: Input the MOVES emissions factors for the average commuter travel speed (assumes 35 miles per hour)
- Step 4: Calculate the net emissions change in kilograms per year (seasonally adjusted)
- Step 5: Calculate the cost effectiveness (first year cost per kilogram of emissions reduced)

Bus Replacement

For a program that replaces old buses with new buses that reduce emissions or run on cleaner fuel, the following steps are taken:

- Step 1: Input the MOVES emissions factors for the average bus travel speed (assumes 18 miles per hour) for both the old model year bus and the new model year bus
- Step 2: Calculate the fleet vehicle-miles per day based on the vehicle revenue-miles and operating days per year
- Step 3: Calculate the net emissions change in kilograms per year (seasonally adjusted)
- Step 4: Calculate the cost effectiveness (first-year cost per kilogram of emissions reduced)

Other Types of Projects

Calculations may be performed on the project types listed below; however, there are no projects of these types in this TIP:

- New and Additional Transit Service: A new bus or shuttle service that reduces automobile trips
- Park-and-Ride Lot: A facility that reduces automobile trips by encouraging high-occupancy vehicle (HOV) travel via carpooling or transit
- Alternative Fuel Vehicles: New vehicle purchases that replace traditional gas or diesel vehicles with alternative fuel or advanced technology vehicles
- Anti-Idling Strategies: Strategies that include incorporating anti-idling technology into fleets and using light-emitting diode (LED) lights on trucks for the purpose of illuminating worksites

- **Bike-share Projects:** Programs in which bicycles are made available for shared use to individuals on a short-term basis, allowing each bicycle to serve several users per day
- **Induced Travel:** Projects associated with a roadway capacity change that gives rise to new automobile trips
- **Speed Reduction Projects:** Projects that result in slower vehicle travel speeds and, therefore, reduced emissions
- **Transit Signal Priority Projects:** Technology at signalized intersections or along corridors that affect bus travel times
- **Truck Stop Electrification:** Provides truck drivers with necessary services, such as heating, air conditioning, or appliances, without requiring them to idle their engines

ANALYZING PROJECTS WITH ASSUMED IMPACTS

Qualitative Decrease or Increase in Carbon Dioxide Emissions

Projects with assumed CO₂ impacts are those that could produce a minor decrease or increase in emissions, but the change in emissions cannot be calculated with any precision. Examples include a bicycle rack installation, Safe Routes to School project, or transit marketing or customer service improvement. These projects are categorized as producing an assumed nominal increase or decrease in emissions.

No Carbon Dioxide Impact

Projects that do not change the capacity or use of a facility—for example, a resurfacing project that restores a roadway to its previous condition, or a bridge rehabilitation or replacement that restores the bridge to its previous condition—are assumed to have no CO₂ impact.

More details about these projects are discussed in Chapter 3. The following tables display the GHG impact analyses of projects funded in the FFYs 2023–27 Highway Program (Table B-1) and Transit Program (Table B-2). Table B-3 summarizes the GHG impact analyses of highway projects completed before FFY 2023. Table B-4 summarizes the GHG impact analyses of transit projects completed before FFY 2023. A project is considered completed when the construction contract has been awarded or the transit vehicles have been purchased.

**Table B-1
Greenhouse Gas Regional Highway Project Tracking: FFYs 2023–27 Programmed Projects**

Project ID Number	Project Name	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description
S12702	Acton - Bicycle Parking along the Bruce Freeman Rail Trail	Quantified	1,024	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607748	Acton - Intersection and Signal Improvements on Route 2 and Route 111 (Massachusetts Ave) at Piper Rd and Taylor Rd	Qualitative		Qualitative decrease in emissions
610722	Acton, Boxborough, Littleton - Pavement Preservation Route 2	Qualitative		No assumed impact/negligible impact on emissions
609531	Arlington - Stratton School Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
612099	Ashland - Bridge Replacement, A-14-006, Cordaville Road over Sudbury River	Qualitative		No assumed impact/negligible impact on emissions
608436	Ashland - Rehabilitation and Rail Crossing Improvements on Cherry Street	Qualitative		No assumed impact/negligible impact on emissions
612173	Bellingham - Bridge Replacement, B-06-022, Maple Street over Interstate 495	Qualitative		No assumed impact/negligible impact on emissions
S12704	Belmont - Chenery Middle School Bicycle Parking	Quantified	771	Quantified decrease in emissions from bicycle and pedestrian infrastructure
609204	Belmont - Community Path, Belmont Component of the MCRT (Phase 1)	Quantified	26,347	Quantified decrease in emissions from bicycle and pedestrian infrastructure
608514	Beverly - Bridge Replacement, B-11-001, Bridge Street over Bass River (Hall-Whitaker Drawbridge)	Qualitative		No assumed impact/negligible impact on emissions
608348	Beverly - Reconstruction of Bridge St	Quantified	387,153	Quantified decrease in emissions from Complete Streets project
605276	Beverly, Salem - Drawbridge Replacement/Rehabilitation of B-11-005=S-01-013, Kernwood Avenue over Danvers River	Qualitative		No assumed impact/negligible impact on emissions
S12703	Bolton, Boxborough, Littleton, Stow - Montachusett RTA Microtransit Service	Quantified	TBD	Quantified decrease in emissions from new/additional transit service
612663	Boston - Bridge Preservation, B-16-053 (4T3), Brookline Avenue over Interstate 90 and Railroad	Qualitative		No assumed impact/negligible impact on emissions
612664	Boston - Bridge Preservation, B-16-179, Austin Street over Interstate 93, and B-16-281, Interstate 93 Upper and Lower Deck	Qualitative		No assumed impact/negligible impact on emissions
612662	Boston - Bridge Preservation, B-16-235 (39T and 3A0), Route 1A over Chelsea Street/ Bremen Street and Railroad	Qualitative		No assumed impact/negligible impact on emissions
606902	Boston - Bridge Reconstruction/Rehab, B-16-181, West Roxbury Parkway over MBTA	Qualitative		No assumed impact/negligible impact on emissions
606496	Boston - Bridge Rehabilitation, B-16-052, Bowker Overpass over Mass. Pike, MBTA/CSX, and Ipswich Street and Ramps	Qualitative		No assumed impact/negligible impact on emissions

Table B-1 (cont., 2)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
608197	Boston - Bridge Rehabilitation, B-16-107, Canterbury St over Amtrak Railroad	Qualitative		No assumed impact/negligible impact on emissions
606901	Boston - Bridge Replacement, B-16-109, River Street Bridge over MBTA/AMTRAK	Qualitative		No assumed impact/negligible impact on emissions
612519	Boston - Bridge Replacement, B-16-165, Blue Hill Avenue over Railroad	Qualitative		No assumed impact/negligible impact on emissions
606728	Boston - Bridge Replacement, B-16-365, Storrow Drive over Bowker Ramps	Qualitative		No assumed impact/negligible impact on emissions
612624	Boston - Deck Replacement, B-16-056, Cambridge Street Over Interstate 90, Includes Preservation of B-16-057, Lincoln Street Pedestrian Overpass over Interstate 90	Qualitative		No assumed impact/negligible impact on emissions
610537	Boston - Ellis Elementary Traffic Calming (SRTS)	Qualitative		Qualitative decrease in emissions
S12706	Boston - Forest Hills Improvement Project	Qualitative		Qualitative decrease in emissions
611954	Boston - Guide and Traffic Sign Replacement on I-90/I-93 within Central Artery/Tunnel System	Qualitative		No assumed impact/negligible impact on emissions
606453	Boston - Improvements on Boylston St, from Intersection of Brookline Ave and Park Dr to Ipswich St	Quantified	1,920,790	Quantified decrease in emissions from Complete Streets project
606226	Boston - Reconstruction of Rutherford Ave, from City Square to Sullivan Square	Quantified		L RTP project included in the statewide model
606476	Boston - Roadway, Ceiling, Arch & Wall Reconstruction and Other Control Systems in Sumner Tunnel	Qualitative		No assumed impact/negligible impact on emissions
608208	Boston, Milton, Quincy - Interstate Maintenance and Related Work on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
608009	Boxborough - Bridge Replacement, B-18-002, Route 111 over Interstate 495	Qualitative		No assumed impact/negligible impact on emissions
607684	Braintree - Bridge Replacement, B-21-017, Washington Street (ST 37) over MBTA/CSX Railroad	Qualitative		No assumed impact/negligible impact on emissions
612196	Braintree - Bridge Replacement, B-21-067, JW Maher Highway over Monaquot River	Qualitative		No assumed impact/negligible impact on emissions
608498	Braintree, Quincy, Weymouth - Resurfacing and Related Work on Route 53	Qualitative		No assumed impact/negligible impact on emissions
612050	Braintree, Weymouth - Resurfacing and Related Work on Route 3	Qualitative		No assumed impact/negligible impact on emissions
S12210	Brookline - Improvements at William H. Lincoln School (SRTS)	Qualitative		Qualitative decrease in emissions

Table B-1 (cont., 3)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
610932	Brookline - Rehabilitation of Washington Street	Quantified	36,431	Quantified decrease in emissions from Complete Streets project
609516	Burlington - Improvements at Interstate 95 (Route 128)/Route 3 Interchange	Qualitative		No assumed impact/negligible impact on emissions
612034	Burlington, Woburn - Interstate Maintenance and Related Work on Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
S12695	Cambridge - Bluebikes Station Replacement and System Expansion	Quantified	20,484	Quantified decrease in emissions from bicycle and pedestrian infrastructure
606449	Cambridge - Bridge Replacement, C-01-008, First Street Bridge and C-01-040, Land Boulevard Bridge/Broad Canal Bridge	Qualitative		No assumed impact/negligible impact on emissions
611987	Cambridge - Bridge Replacement, C-01-026, Memorial Drive over Brookline Street	Qualitative		No assumed impact/negligible impact on emissions
610776	Cambridge - Superstructure Replacement, C-01-031, US Route 3/Route 16/Route 2 over MBTA Red Line	Qualitative		No assumed impact/negligible impact on emissions
609438	Canton - Bridge Replacement, C-02-042, Revere Court over West Branch of the Neponset River	Qualitative		No assumed impact/negligible impact on emissions
610541	Canton - Interim Interchange Improvements at Interstate 95/Route 128/Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
S12114	Canton - Royall Street Shuttle	Quantified	702,115	Quantified decrease in emissions from new/additional transit service
609053	Canton, Dedham, Norwood - Highway Lighting Improvements at Interstate 93 and Interstate 95/Route 128	Qualitative		No assumed impact/negligible impact on emissions
612615	Canton, Milton - Roadway Reconstruction on Route 138, From Royall Street to Dollar Lane	Qualitative		Qualitative decrease in emissions
612051	Canton, Milton, Randolph - Interstate Maintenance and Related Work on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
608952	Chelsea - Bridge Superstructure Replacement, C-09-013, Washington Avenue, Carter Street, and County Road/Route 1	Qualitative		No assumed impact/negligible impact on emissions
S12211	Chelsea - Improvements at Mary C. Burke Elementary (SRTS)	Qualitative		Qualitative decrease in emissions
611983	Chelsea - Park and Pearl Street Reconstruction	Quantified	10,214	Quantified decrease in emissions from Complete Streets project
609532	Chelsea - Targeted Safety Improvements and Related Work on Broadway, from Williams Street to City Hall Avenue	Quantified	-25,503	Quantified increase in emissions
608007	Cohasset, Scituate - Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A) from Beechwood Street to Henry Turner Bailey Road	Quantified	5,849	Quantified decrease in emissions from Complete Streets project

Table B-1 (cont., 4)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
612607	Danvers - Rail Trail West Extension (Phase 3)	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610782	Danvers, Middleton - Bridge Replacement, D-03-009=M-20-005, Andover Street (SR 114) over Ipswich River	Qualitative		No assumed impact/negligible impact on emissions
608818	Danvers, Middleton - Resurfacing and Related Work on Route 114	Qualitative		No assumed impact/negligible impact on emissions
S12212	Dedham - Improvements at Avery Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
607899	Dedham - Pedestrian Improvements Along Bussey St, Including Superstructure Replacement, D-05-010, Bussey Street over Mother Brook	Quantified	3,331	Quantified decrease in emissions from bicycle and pedestrian infrastructure
611969	Everett - Intersection Improvements on Route 16	Qualitative		Qualitative decrease in emissions
609257	Everett - Reconstruction of Beacham Street	Quantified	4,038	Quantified decrease in emissions from Complete Streets project
608480	Foxborough - Resurfacing and Related Work on Route 1	Qualitative		No assumed impact/negligible impact on emissions
S12640	Framingham - High-Risk At-Grade Railroad Crossing Countermeasures on Route 126	Qualitative		No assumed impact/negligible impact on emissions
S12205	Framingham - Improvements at Harmony Grove Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
608889	Framingham - Traffic Signal Installation at Edgell Road and Central Street	Quantified	233,257	Quantified decrease in emissions from traffic operational improvement
609402	Framingham, Natick - Resurfacing and Related Work on Route 9	Qualitative		No assumed impact/negligible impact on emissions
S12700	Gloucester, Rockport - CATA On Demand Microtransit Service Expansion	Quantified	TBD	Quantified decrease in emissions from new/additional transit service
609467	Hamilton - Bridge Replacement, H-03-002, Winthrop Street over Ipswich River	Qualitative		No assumed impact/negligible impact on emissions
605168	Hingham - Improvements on Route 3A from Otis Street/Cole Road, Including Summer Street and Rotary; Rockland Street to George Washington Boulevard	Quantified	284,736	Quantified decrease in emissions from Complete Streets project
607977	Hopkinton, Westborough - Reconstruction of Interstate 90/Interstate 495 Interchange	Quantified		LRTP project included in the statewide model
S12701	Hudson, Marlborough - MWRTA CatchConnect Microtransit Service Expansion	Quantified	11,936	Quantified decrease in emissions from new/additional transit service
605743	Ipswich - Resurfacing and Related Work on Central and South Main Streets	Quantified	4,356	Quantified decrease in emissions from Complete Streets project
603722	Lexington - Bridge Replacement, L-10-010, Route 2A (Marrett Road) over Interstate 95/Route 128	Qualitative		No assumed impact/negligible impact on emissions

Table B-1 (cont., 5)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
609054	Littleton - Reconstruction of Foster Street	Quantified	1,140	Quantified decrease in emissions from Complete Streets project
609254	Lynn - Intersection Improvements at Two Intersections on Broadway	Quantified	73,291	Quantified decrease in emissions from traffic operational improvement
S12705	Lynn - Lynn Station Improvements Phase II	Qualitative		Qualitative decrease in emissions
609246	Lynn - Reconstruction of Western Avenue	Quantified	902,708	Quantified decrease in emissions from Complete Streets project
609252	Lynn - Rehabilitation of Essex Street	Quantified	411,394	Quantified decrease in emissions from Complete Streets project
612599	Lynn - Targeted Safety and Multimodal Improvements (Playbook Priority Corridors)	Qualitative		Qualitative decrease in emissions
610919	Lynn, Nahant - Northern Strand Extension	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607329	Lynnfield, Wakefield - Rail Trail Extension, from the Galvin Middle School to Lynnfield/Peabody Town Line	Quantified	158,032	Quantified decrease in emissions from bicycle and pedestrian infrastructure
S12696	Malden, Medford - Bluebikes System Expansion	Quantified	2,637	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610543	Malden, Revere - Improvements at Route 1 (Northbound)	Qualitative		No assumed impact/negligible impact on emissions
604564	Maynard - Bridge Replacement, M-10-004, Route 62 (Main Street) over the Assabet River	Qualitative		No assumed impact/negligible impact on emissions
611974	Medford - Intersection Improvements at Main Street and South Street	Qualitative		Qualitative decrease in emissions
612001	Medford - Milton Fuller Roberts Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
611982	Medford - Shared-Use Path Connection at the Route 28/Wellington Underpass	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
612499	Medford - South Medford Connector Bike Path	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610726	Medford, Winchester, Stoneham - Interstate Pavement Preservation on Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
609530	Medway - Holliston Street and Cassidy Lane Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
608522	Middleton - Bridge Replacement, M-20-003, Route 62 (Maple Street) over Ipswich River	Qualitative		No assumed impact/negligible impact on emissions
608045	Milford - Rehabilitation on Route 16, from Route 109 to Beaver Street	Quantified	-16,555	Quantified increase in emissions

Table B-1 (cont., 6)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
607342	Milton - Intersection and Signal Improvements at Route 28 (Randolph Ave) and Chickatawbut Road	Qualitative		Qualitative decrease in emissions
608955	Milton - Intersection Improvements, Squantum Street at Adams Street	Quantified	104,106	Quantified decrease in emissions from traffic operational improvement
612178	Natick - Bridge Replacement, N-03-010, Speen Street over Railroad MBTA/CSX	Qualitative		No assumed impact/negligible impact on emissions
605313	Natick - Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements	Quantified	539,400	Quantified decrease in emissions from traffic operational improvement
610680	Natick - Lake Cochituate Path	Quantified	1,749	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607420	Natick - Superstructure Replacement, N-03-012, Boden Lane over CSX/MBTA	Qualitative		No assumed impact/negligible impact on emissions
612182	Newton - Bridge Replacement, N-12-040, Boylston Street Over Green Line D Branch	Qualitative		No assumed impact/negligible impact on emissions
611997	Newton - Horace Mann Elementary School Improvements (SRTS)	Qualitative		Qualitative decrease in emissions
S12694	Newton - NewMo Microtransit Service Expansion	Quantified	24,809	Quantified decrease in emissions from new/additional transit service
S12125	Newton - Newton Microtransit Service	Quantified	24,809	Quantified decrease in emissions from new/additional transit service
610674	Newton - Reconstruction of Commonwealth Avenue (Route 30), from East of Auburn Street to Ash Street	Quantified	16,846	Quantified decrease in emissions from Complete Streets project
110980	Newton, Weston - Bridge Rehabilitation, N-12-010=W-29-005, Commonwealth Avenue (Route 30) over the Charles River	Quantified	TBD	Quantified decrease in emissions from Complete Streets project
608609	Newton, Westwood - Steel Superstructure Cleaning (Full Removal) and Painting of Two Bridges: N-12-056 and W-31-006	Qualitative		No assumed impact/negligible impact on emissions
605321	Norwood - Bridge Preservation, N-25-026, Providence Highway (State Route 1) over the Neponset River	Qualitative		No assumed impact/negligible impact on emissions
605857	Norwood - Intersection Improvements at Route 1 and University Avenue/Everett Street	Quantified	1,092,131	Quantified decrease in emissions from traffic operational improvement
606130	Norwood - Intersection Improvements at Route 1A and Upland Road/Washington Street and Prospect Street/Fulton Street	Quantified	131,840	Quantified decrease in emissions from traffic operational improvement
609211	Peabody - Independence Greenway Extension	Quantified	36,651	Quantified decrease in emissions from bicycle and pedestrian infrastructure

Table B-1 (cont., 7)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
610544	Peabody - Multi-Use Path Construction of Independence Greenway at Interstate 95 and Route 1	Quantified	24,423	Quantified decrease in emissions from bicycle and pedestrian infrastructure
608933	Peabody - Rehabilitation of Central Street	Quantified	150,913	Quantified decrease in emissions from Complete Streets project
608707	Quincy - Reconstruction of Sea Street	Quantified	-30,437	Quantified increase in emissions
612049	Randolph - Resurfacing and Related Work on Route 24	Qualitative		No assumed impact/negligible impact on emissions
609399	Randolph - Resurfacing and Related Work on Route 28	Qualitative		No assumed impact/negligible impact on emissions
609527	Reading - Improvements on Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
S12124	Regionwide - Community Connections Program	Qualitative		Impact on emissions will be calculated when specific projects are chosen for funding through this program
S12113	Regionwide - Transit Modernization Program	Qualitative		Impact on emissions will be calculated when specific projects are chosen for funding through this program
612184	Revere - Bridge Replacement, R-05-015, Revere Beach Parkway over Broadway	Qualitative		No assumed impact/negligible impact on emissions
612100	Revere - Improvements at Beachmont Veterans Elementary (SRTS)	Qualitative		Qualitative decrease in emissions
612523	Revere - State Road Beachmont Connector	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
S12698	Salem - Bluebikes System Expansion	Quantified	460	Quantified decrease in emissions from bicycle and pedestrian infrastructure
609437	Salem - Boston Street Improvements	Quantified	58,786	Quantified decrease in emissions from Complete Streets project
612075	Salem - Bridge Replacement, S-01-024, Jefferson Avenue over Parallel Street	Qualitative		No assumed impact/negligible impact on emissions
S12209	Sharon - Improvements at Cottage Street Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
612496	Somerville - Bridge Preservation, S-17-031, Interstate 93 (Northbound and Southbound) from Route 28 to Temple Street (Phase 2)	Qualitative		No assumed impact/negligible impact on emissions
607981	Somerville - McGrath Boulevard Construction	Quantified	136,345	Quantified decrease in emissions from Complete Streets project
608562	Somerville - Signal and Intersection Improvements on Interstate 93 at Mystic Avenue and McGrath Highway (Top 200 Crash Location)	Qualitative		Qualitative decrease in emissions

Table B-1 (cont., 8)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
612028	Stoneham - Deck Replacement and Superstructure Repairs, S-27-006 (2I2), (ST 28) Fellsway West over Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
610665	Stoneham - Intersection Improvements at Route 28 (Main Street), North Border Road and South Street	Qualitative		Qualitative decrease in emissions
S12699	Stoneham - Stoneham Shuttle Service	Quantified	TBD	Quantified decrease in emissions from new/additional transit service
608255	Stow - Bridge Replacement, S-29-011, Box Mill Road over Elizabeth Brook	Qualitative		No assumed impact/negligible impact on emissions
610660	Sudbury, Wayland - Mass Central Rail Trail (MCRT)	Quantified	TBD	Quantified decrease in emissions from bicycle and pedestrian infrastructure
610666	Swampscott - Rail Trail Construction	Quantified	138,430	Quantified decrease in emissions from bicycle and pedestrian infrastructure
612076	Topsfield - Bridge Replacement, T-06-013, Perkins Row over Mile Brook	Qualitative		No assumed impact/negligible impact on emissions
612048	Waltham - Interstate Maintenance and Related Work in Interstate 95	Qualitative		No assumed impact/negligible impact on emissions
608564	Watertown - Intersection Improvements at Route 16 and Galen Street	Qualitative		Qualitative decrease in emissions
S12697	Watertown - Pleasant Street Shuttle Service Expansion	Quantified	183,575	Quantified decrease in emissions from new/additional transit service
607777	Watertown - Rehabilitation of Mount Auburn St (Route 16)	Quantified	634,598	Quantified decrease in emissions from Complete Streets project
608940	Weston - Intersection Improvements at Boston Post Road (Route 20) at Wellesley Street	Quantified	102,453	Quantified decrease in emissions from traffic operational improvement
608954	Weston - Reconstruction on Route 30	Quantified	357,681	Quantified decrease in emissions from Complete Streets project
607327	Wilmington - Bridge Replacement, W-38-002, Route 38 (Main Street) over the B&M Railroad	Qualitative		No assumed impact/negligible impact on emissions
608929	Wilmington - Bridge Replacement, W-38-003, Butters Row over MBTA	Qualitative		No assumed impact/negligible impact on emissions
608703	Wilmington - Bridge Replacement, W-38-029 (2KV), ST 129 Lowell Street over Interstate 93	Qualitative		No assumed impact/negligible impact on emissions
609253	Wilmington - Intersection Improvements at Lowell Street (Route 129) and Woburn Street	Quantified	494,211	Quantified decrease in emissions from traffic operational improvement
608051	Wilmington - Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line	Quantified	492,160	Quantified decrease in emissions from Complete Streets project

Table B-1 (cont., 9)

Project ID Number	Project Name	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
607244	Winthrop - Reconstruction and Related Work Along Winthrop Street and Revere Street Corridor	Quantified	252,816	Quantified decrease in emissions from Complete Streets project
610662	Woburn - Roadway and Intersection Improvements at Woburn Common, Route 38 (Main Street), Winn Street, Pleasant Street, and Montvale Avenue	Quantified	736,275	Quantified decrease in emissions from traffic operational improvement
608067	Woburn, Burlington - Intersection Reconstruction at Route 3 (Cambridge Road) and Bedford Road and South Bedford Street	Quantified	168,263	Quantified decrease in emissions from traffic operational improvement
603739	Wrentham - Construction of Interstate 495/Route 1A Ramps	Quantified	1,233,486	Quantified decrease in emissions from traffic operational improvement

**Table B-2
Greenhouse Gas Regional Transit Project Tracking: FFYs 2023–27 Programmed Projects**

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
CATA	Acquire - Shop Equipment / Computers / Software	Qualitative		No assumed impact/negligible impact on emissions
CATA	Replace 30' Buses/Trolleys (2)	Quantified	530	Quantified decrease in emissions from bus replacement
CATA	Buy Assoc. Capital Maintenance Items	Qualitative		No assumed impact/negligible impact on emissions
CATA	Preventive Maintenance	Qualitative		No assumed impact/negligible impact on emissions
CATA	Repave Parking Lot	Qualitative		No assumed impact/negligible impact on emissions
CATA	Repave Parking Lot	Qualitative		No assumed impact/negligible impact on emissions
CATA	Replace 30-foot Buses (3)	Quantified	1,278	Quantified decrease in emissions from bus replacement
MBTA	Elevator Program	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bus Overhaul Program (156 Hybrid, 175 CNG, 44 60ft Hybrid)	Quantified	TBD	To be determined
MBTA	Procurement of 40 ft Enhanced Electric Hybrid Buses - FFY 2023 to FFY 2027	Quantified	TBD	To be determined
MBTA	DMA Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Midlife Overhaul of 25 New Flyer Allison Hybrid 60ft Articulated Buses	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Overhaul of 155 Option New Flyer Buses	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Procurement of Bi-Level Commuter Rail Coaches	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Mattapan HSL Transformation	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Signal Program - Red/Orange Line	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Charlestown Bus - Seawall Rehab	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Harvard Square Busway Repairs	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Harvard/Central Elevator	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Hingham Ferry Dock Modification	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bridges - Design	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (cont., 2)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MBTA	East Cottage Street Bridge	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Emergency Bridge Design / Inspection & Rating	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Norfolk Avenue Bridge	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Structural Repairs Systemwide	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Tunnel Inspection Systemwide	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Train Protection	Qualitative		No assumed impact/negligible impact on emissions
MBTA	45 High Street - Data Center Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Alewife Crossing Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Worcester Line Track and Station Accessibility Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Central Tunnel Track and Signal Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Systemwide Asset Management Program Phase 4	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Power Systems Resiliency Program	Qualitative		No assumed impact/negligible impact on emissions
MBTA	MCRS2 v17 and Business Process Update	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Red Line Interlock Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Codman Yard Expansion and Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Downtown Crossing Vertical Transportation Improvements Phase 2	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Elevator Program Multiple Location Design	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Lynn Station & Parking Garage Improvements Phase II	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Newton Commuter Rail Stations	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Newton Highlands Green Line Station Accessibility Project	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Ruggles Station Improvements Phase 2	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (cont., 3)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MBTA	South Attleboro Station Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	MBTA Catamaran Overhauls	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Mattapan Trolley Select System Upgrade	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Blue Line Vehicle Mid-Life Overhaul	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Blue Line Infrastructure Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Quincy Bus Facility Modernization	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Arborway Bus Facility - Design Funding	Qualitative		No assumed impact/negligible impact on emissions
MBTA	North Cambridge Bus Facility Modernization	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bus Priority Project Construction	Quantified	TBD	Emissions reduction will be analyzed when bus priority locations have been determined
MBTA	North Station Draw 1 Bridge Replacement	Quantified	TBD	Elements of the project, including construction of a pedestrian bridge, will be analyzed when project design advances
MBTA	Longfellow Approach	Qualitative		No assumed impact/negligible impact on emissions
MBTA	East Street Bridge Replacement (Dedham)	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Bridge Program Pipeline - Rehabilitation, Repair and Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Systemwide Culvert Inspection and Load Rating	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Future Rolling Stock Fleet (25 Commuter Rail)	Quantified	TBD	Emissions reduction will be analyzed based on the type of Commuter Rail cars (electrified or multi-mode)
MBTA	Rolling Stock - Locomotive and Coach State of Good Repair and Resiliency	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Central Tunnel Signal - 25 Cycle	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Traction Power Substation Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	South Boston to Forest Hills Duct Bank Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Ashmont Branch Track Replacement	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (cont., 4)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MBTA	Braintree Line Track Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Unit Substation Replacement Project	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Oak Grove Station Vertical Transportation Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Forest Hills Improvement Project	Qualitative		No assumed impact/negligible impact on emissions
MBTA	E Branch Accessibility & Capacity Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	B Branch Accessibility & Capacity Improvements	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Riverside Vehicle Maintenance Facility Modifications & Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Green Line Extension Vehicle Maintenance Facility Modifications & Upgrades	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Lake Street Complex Demolition and Reconfiguration	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Reservoir Yard and Non-Revenue Track Optimization and Reconfiguration	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Commuter Rail Facilities State of Good Repair	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Procurement of 40ft Battery Electric Buses and Related Infrastructure	Quantified	TBD	To be determined
MBTA	Systemwide Tunnel Flood Mitigation Program	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Option Order Procurement of 194 New Flyer Hybrid 40ft Buses	Quantified	TBD	To be determined
MBTA	Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881)	Quantified	TBD	To be determined
MBTA	Green Line Type 10 Light Rail Fleet Replacement	Qualitative		No assumed impact/negligible impact on emissions
MBTA	Reliability Centered Maintenance Blue, Orange and Red Line	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Terminal, Intermodal (Transit) - Framingham Commuter Rail Station	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Terminal, Intermodal (Transit) - Blandin	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Technology Support/Capital Outreach	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Non-Fixed Route ADA Paratransit Service	Qualitative		No assumed impact/negligible impact on emissions

Table B-2 (cont., 5)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description
MWRTA	Front Entrance Blandin (FEB) Project	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Buy Replacement Van (16)	Quantified	TBD	To be determined
MWRTA	AFC Transition	Qualitative		No assumed impact/negligible impact on emissions
MWRTA	Buy Replacement Van (10)	Quantified	TBD	To be determined
MWRTA	Buy Replacement Van (14)	Quantified	TBD	To be determined
MWRTA	MWRTA Modernization - Fleet Electrification	Qualitative		Qualitative decrease in emissions

**Table B-3
Greenhouse Gas Regional Highway Project Tracking: Completed Projects**

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
606134	Boston- Traffic Signal Improvements on Blue Hill Ave and Warren St	Qualitative		Qualitative decrease in emissions	2019
608651	Braintree- Adaptive Signal Controls on Route 37 (Granite Street)	Qualitative		Qualitative decrease in emissions	2019
605110	Brookline- Intersection and Signal Improvements at Route 9 and Village Square (Gateway East)	Quantified	67,056	Quantified decrease in emissions from Complete Streets project	2019
605287	Chelsea - Route 1 Viaduct Rehabilitation (Southbound/Northbound) on C-09-007 and C-09-011	Qualitative		No assumed impact/negligible impact on emissions	2019
600518	Hingham - Intersection Improvements at Derby St, Whiting St, and Gardner St	Quantified	-145,683	Quantified increase in emissions	2019
604952	Lynn-Saugus - Bridge replacement, L-18-016=S-05-008, Route 107 over the Saugus River (AKA – Belden G. Bly Bridge)	Qualitative		No assumed impact/negligible impact on emissions	2019
607133	Quincy - Superstructure Replacement, Q-01-039, Robertson Street over I-93/US 1/SR 3	Qualitative		No assumed impact/negligible impact on emissions	2019
604989	Southborough - Reconstruction of Main St (Route 30), from Sears Rd to Park St	Quantified	231,813	Quantified decrease in emissions from Complete Streets project	2019
608823	Wellesley- Newton- Weston - Pavement Resurfacing and Related Work on I-95	Qualitative		No assumed impact/negligible impact on emissions	2019
609222	Arlington – Spy Pond Sediment Removal	Qualitative		No assumed impact/negligible impact on emissions	2020
604123	Ashland - Reconstruction on Route 126 (Pond St) from Framingham Town Line to Holliston Town Line	Quantified	148,097	Quantified decrease in emissions from Complete Streets project	2020
608347	Beverly - Intersection improvements at 3 locations: Cabot St (Route 1A/97) at Dodge St (Route 1A), County Way, Longmeadow Rd and Scott St, McKay St at Balch St and Veterans Memorial Bridge (Route 1A) at Rantoul, Cabot, Water, and Front Sts	Quantified	582,422	Quantified decrease in emissions from traffic operational improvement	2020
604173	Boston - Bridge Replacement, B-16-016, North Washington Street over the Boston Inner Harbor	Qualitative		No assumed impact/negligible impact on emissions	2020
608608	Braintree - Highway Lighting Improvements at I-93/Route 3 Interchange	Qualitative		No assumed impact/negligible impact on emissions	2020
607954	Danvers - Bridge Replacement, D-03-018, ST 128 over Waters River	Qualitative		No assumed impact/negligible impact on emissions	2020
608378	Danvers, Topsfield, Boxford, Rowley - Interstate Maintenance and Related Work on Interstate 95	Qualitative		No assumed impact/negligible impact on emissions	2020

Table B-3 (cont., 2)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
607428	Hopedale, Milford - Resurfacing and Intersection Improvements on Route 16 (Main St), from Water St West to Approximately 120 Feet West of the Milford/Hopedale Town Line and the Intersection of Route 140	Quantified	201,148	Quantified decrease in emissions from Complete Streets project	2020
606043	Hopkinton - Signal and Intersection Improvements on Route 135	Quantified	1,298,625	Quantified decrease in emissions from Complete Streets project	2020
608275	Malden - Exchange St Downtown Improvement Project	Quantified	13,519	Quantified decrease in emissions from Complete Streets project	2020
608835	Medford - Improvements at Brook Elementary School	Qualitative		Qualitative decrease in emissions	2020
606635	Needham, Newton - Reconstruction of Highland Ave, Needham St and Charles River Bridge, N-04-002, from Webster St (Needham) to Route 9 (Newton)	Quantified	1,186,210	Quantified decrease in emissions from Complete Streets project	2020
609101	Peabody - Pavement Preservation and Related Work on Route 128	Qualitative		No assumed impact/negligible impact on emissions	2020
608205	Reading to Lynnfield - Guide and Traffic Sign Replacement on a Section of I-95 (SR 128)	Qualitative		No assumed impact/negligible impact on emissions	2020
608743	Salem - Improvements at Bates Elementary School	Qualitative		Qualitative decrease in emissions	2020
605342	Stow - Bridge Replacement, Route 62 (Gleasondale Rd) over the Assabet River	Qualitative		No assumed impact/negligible impact on emissions	2020
602261	Walpole - Reconstruction on Route 1A (Main Street), from the Norwood Town Line to Route 27, Includes W-03-024 over the Neponset River	Quantified	230,473	Quantified decrease in emissions from Complete Streets project	2020
608791	Winchester - Improvements at Vinson-Owen Elementary School	Qualitative		Qualitative decrease in emissions	2020
MBTA	Boston - Columbus Avenue Bus Lane Construction	Quantified	98,855	Quantified decrease in emissions from transit priority project	2021
607888	Boston - Multi-use Path Construction on New Fenway	Quantified	54,724	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2021
610724	Chelmsford, Medford, Somerville, Stoneham - Interstate Pavement Preservation on Interstate 93 and Interstate 495	Qualitative		No assumed impact/negligible impact on emissions	2021
S10788	Concord - Bruce Freeman Rail Trail Bike Shelters	Quantified	2,707	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2021
S10786	Cambridge - Concord Avenue Transit Signal Priority	Quantified	645,520	Quantified decrease in emissions from traffic operational improvement	2021

Table B-3 (cont., 3)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
607652	Everett - Reconstruction of Ferry St, South Ferry St and a Portion of Elm St	Quantified	435,976	Quantified decrease in emissions from Complete Streets project	2021
608210	Foxborough, Plainville, Wrentham, Franklin – Interstate Maintenance Resurfacing Work on Interstate 495	Qualitative		No assumed impact/negligible impact on emissions	2021
608228	Framingham - Reconstruction of Union Ave, from Proctor St to Main St	Quantified	-217,978	Quantified increase in emissions	2021
606501	Holbrook - Reconstruction of Union St (Route 139), from Linfield St to Centre St and Water St	Quantified	4,097	Quantified decrease in emissions from Complete Streets project	2021
601607	Hull - Reconstruction of Atlantic Ave and Related Work	Quantified	6,586	Quantified decrease in emissions from Complete Streets project	2021
608146	Marblehead - Intersection Improvements at Pleasant St and Village, Vine, and Cross Streets	Quantified	531	Quantified decrease in emissions from traffic operational improvement	2021
607305	Reading - Intersection Signalization at Route 28 and Hopkins St	Quantified	7,088	Quantified decrease in emissions from traffic operational improvement	2021
S10787	Sharon - Carpool Marketing	Qualitative		Qualitative reduction in emissions	2021
S10785	Somerville - Davis Square Signal Improvements	Quantified	4,214	Quantified decrease in emissions from Complete Streets project	2021
607761	Swampscott - Intersection and Signal Improvements at Route 1A (Paradise Rd) at Swampscott Mall	Qualitative		Qualitative decrease in emissions	2021
604996	Woburn - Bridge Replacement, W-43-017, New Boston Street over MBTA	Quantified		L RTP project included in the statewide model	2021
S12122	Acton - Acton Parking Management System	Qualitative		Qualitative decrease in emissions	2022
608229	Acton - Intersection and Signal Improvements at Kelley's Corner	Quantified	111,958	Quantified decrease in emissions from Complete Streets project	2022*
S12115	Arlington, Newton, Watertown - BlueBikes Expansion	Quantified	6,570	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022
608443	Ayer, Littleton - Intersection Improvements on Route 2A at Willow Rd and Bruce St	Quantified	52,101	Quantified decrease in emissions from traffic operational improvement	2022*
607738	Bedford - Minuteman Bikeway Extension from Loomis St to the Concord Town Line	Quantified	21,098	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*

Table B-3 (cont., 4)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
608887	Bellingham - South Main St (Route 126) - Douglas Dr to Mechanic St reconstruction (Route 140)	Quantified	24,363	Quantified decrease in emissions from Complete Streets project	2022
604173	Boston - Bridge Replacement, B-16-016, North Washington Street over the Boston Inner Harbor	Qualitative		No assumed impact/negligible impact on emissions	2022
608943	Boston - Neponset River Greenway Construction, Including New Bridge B-16-309 (C6Y) over Dorchester Bay	Quantified	239,055	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*
607670	Boston - Superstructure Replacement, B-16-067 (3GV), Maffa Way and B-16-068=S-17-027 (3GW), Mystic Avenue over Orange and MBTA/BMRR	Qualitative		No assumed impact/negligible impact on emissions	2022*
609090	Boston, Milton, Quincy - Highway Lighting System Replacement on Interstate 93, from Neponset Avenue to the Braintree Split	Qualitative		No assumed impact/negligible impact on emissions	2022*
S12121	Brookline - Transit App Education Program	Qualitative		No assumed impact/negligible impact on emissions	2022
S12116	Cambridge - Alewife Wayfinding Improvements	Qualitative		No assumed impact/negligible impact on emissions	2022
S10780	Cambridge, Somerville - Green Line Extension Project - Extension to College Ave with the Union Square Spur	Quantified		L RTP project included in the statewide model	2022
608599	Canton, Norwood - Stormwater Improvements along Route 1 and Interstate 95	Qualitative		No assumed impact/negligible impact on emissions	2022
608078	Chelsea - Reconstruction on Broadway (Route 107) from City Hall to Revere city line	Quantified	93,278	Quantified decrease in emissions from Complete Streets project	2022
608495	Concord, Lexington, Lincoln - Resurfacing and Related Work on Route 2A	Qualitative		No assumed impact/negligible impact on emissions	2022*
609060	Danvers, Lynnfield, Peabody - Guide and Traffic Sign Replacement on Interstate 95/Route 128 (Task 'A' Interchange)	Qualitative		No assumed impact/negligible impact on emissions	2022
S12119	Everett, Malden - Main Street Transit Signal Priority	Quantified	715,743	Quantified decrease in emissions from transit signal priority project	2022
602077	Lynn - Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square	Quantified	12,761	Quantified decrease in emissions from Complete Streets project	2022*
604952	Lynn, Saugus - Bridge Replacement, L-18-016=S-05-008, Route 107 over the Saugus River (AKA - Belden G. Bly Bridge)	Qualitative		No assumed impact/negligible impact on emissions	2022

Table B-3 (cont., 5)

Project ID Number	Project Name	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
S12118	Malden, Medford - BlueBikes Expansion	Quantified	2,028	Quantified decrease in emissions from bike share project	2022
609066	Newton, Weston - Multi-Use Trail Connection, from Recreation Road to Upper Charles River Greenway Including Reconstruction of Pedestrian Bridge N-12-078=W-29-062	Quantified	378	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*
608866	Newton, Weston - Steel Superstructure Cleaning (Full Removal) and Painting of Three bridges: N-12-051, W-29-011, and W-29-028	Qualitative		No assumed impact/negligible impact on emissions	2022
S12117	Regionwide - MBTA Systemwide Bike Racks	Quantified	42,656	Quantified decrease in emissions from bicycle infrastructure	2022
608164	Sudbury, Concord - Bike Path Construction (Bruce Freeman Rail Trail)	Quantified	49,903	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2022*
S12120	Wellesley - Bicycle Infrastructure	Quantified	2,069	Quantified decrease in emissions from bicycle infrastructure	2022

*Project is anticipated to be advertised for construction bids in FFY 2022.

**Table B-4
Greenhouse Gas Regional Transit Project Tracking: Completed Projects**

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
CATA	Buy replacement 30-foot buses (3)	Quantified	60,730	Quantified decrease in emissions from bus replacement	2018
MWRTA	Buy replacement -less than 30-foot CNG buses (6)	Quantified	125,266	Quantified decrease in emissions from bus replacement	2018
MWRTA	Buy replacement paratransit vehicles (9)	Quantified	23,069	Quantified decrease in emissions from bus replacement	2018
CATA	Buy Replacement 35-foot Bus (2)	Quantified	40,487	Quantified decrease in emissions from bus replacement	2019
MWRTA	Buy Replacement Capitol Bus	Quantified	1,894	Quantified decrease in emissions from bus replacement	2019
CATA	Buy Replacement Van (2)	Quantified	724	Quantified decrease in emissions from bus replacement	2020
MBTA	Option Order Procurement of 194 New Flyer Hybrid 40 ft Buses	Quantified	TBD	To be determined	2020
MBTA	Procurement of Battery Electric 40ft Buses and Related infrastructure	Quantified	TBD	To be determined	2020
MBTA	Green Line Type 10 Light Rail Fleet Replacement	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Robert Street Bridge	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	GL B-Branch Infrastructure Improve	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	GL C-Branch Surface Improve	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	GL E-Branch Surface Improve	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Green Line (Non-GLX) Grade Crossings	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Green Line D Branch Track and Signal Replacement	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Forest Hills Improvement Project	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Green Line B-Branch Consolidation	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Natick Center Station Accessibility Project	Qualitative		No assumed impact/negligible impact on emissions	2020

Table B-4 (cont., 2)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
MBTA	Oak Grove Station Vertical Transportation Improvements	Qualitative		No assumed impact/negligible impact on emissions	2020
MBTA	Somerville-Medford - Green Line Extension Project - Extension to College Ave with the Union Square Spur	Quantified		L RTP project included in the statewide model	2022
MBTA	Bridge Bundling Contract	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Emergency Bridge Repair	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Gloucester Drawbridge Replacement	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Tunnel Rehabilitation	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	F40 Commuter Rail Locomotive Overhaul	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Systemwide Asset Management Program Phase 3	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	North Station Terminal Signal	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Systemwide Radio	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Silver Line Gateway - Phase 2	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Symphony Station Improvements	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Worcester Union Station Accessibility and Infrastructure Improvements	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Bridge Bundling Contract	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Dorchester Avenue Bridge	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Saugus Drawbridge Replacement	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Systemwide Bridge Inspection and Rating	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	South Elm Street Bridge Replacement	Qualitative		No assumed impact/negligible impact on emissions	2022

Table B-4 (cont., 3)

Regional Transit Authority	Project Description	GHG Analysis Type	GHG CO ₂ Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
MBTA	SCADA Upgrades	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Braintree and Quincy Adams Garage Rehabilitation	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Wollaston Station / Quincy Center Garage Demolition	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Winchester Center Station	Qualitative		No assumed impact/negligible impact on emissions	2022
MBTA	Overhaul of 33 Kawasaki 900 Series Bi-Level Coaches	Qualitative		No assumed impact/negligible impact on emissions	2022

APPENDIX C

Public Engagement and Comments

OVERVIEW

In the course of developing the Transportation Improvement Program (TIP), the staff of the Boston Region Metropolitan Planning Organization (MPO) regularly engages with municipalities and the general public to provide information about the milestones, deadlines, and key decision points in the development process. Staff publicly shares materials and information used by the MPO board for decision-making via the TIP development web page: www.bostonmpo.org/tip-dev. This process affords the public ongoing opportunities to provide input to the MPO board during the development of the TIP and prior to the release of the draft TIP for the official public review period. This appendix documents the input received during the development of the FFYs 2023–27 TIP and comments received during the public review period.

In light of the changing conditions for public engagement due to the COVID-19 pandemic, MPO staff greatly increased the use of virtual public involvement (VPI) tactics such as online workshops and virtual information sessions. All Boston Region MPO meetings throughout the FFYs 2023–27 TIP development cycle were hosted remotely, allowing project proponents and members of the public to participate via internet or telephone and provide comments without the need to travel to attend a meeting in person. MPO staff have received significant feedback from many stakeholders in support of the continued provision of virtual engagement options going forward.

When in-person MPO meetings resume, staff intend to facilitate a hybrid meeting setup to allow for both in-person and online participation by project proponents and the public. Whenever possible, staff also plan on transitioning public engagement events, such as workshops, focus groups, information sessions, and presentations, to a hybrid model. These efforts should continue to provide a greater level of accessibility and transparency to the TIP process than is achievable through in-person meetings alone.

SUMMARY OF COMMENTS RECEIVED DURING TIP DEVELOPMENT

MPO staff-initiated engagement activities for the FFYs 2023–27 TIP in September 2021 and maintained communication with municipal, state agency, and public stakeholders throughout the TIP development process. The primary direct-engagement events at which staff received input were the virtual subregional committee meetings held by the Metropolitan Area Planning Council (MAPC) and the TIP How-To virtual information sessions with municipal TIP contacts and Massachusetts Department of Transportation (MassDOT) district project engineers. These events offered individuals the opportunity to directly engage with staff to ask questions, voice concerns, provide suggestions, and propose new projects for funding.

The MPO board held a series of discussions at its regular meetings as the TIP was developed in stages that focused on project solicitation, project evaluation, and programming of funds. Staff informed the public at each stage via its standard communication channels (email, Twitter, Instagram, and the MPO website). As a result, the MPO received a number of oral and written comments while developing the draft TIP. The comments directed to the MPO board are summarized below in Table C-1.

In addition to the MPO's standard public engagement efforts conducted annually as a part of the development of the new TIP, the MPO provided a new avenue for engagement in the months

leading up to the FFYs 2023–27 TIP cycle through the creation of the TIP Project Cost Ad Hoc Committee. (See Chapter 2 for more information on this committee’s work.) This committee began hosting public meetings in June 2021, immediately following the endorsement of the FFYs 2022–26 TIP. These meetings offered all stakeholders, including the public, a chance to engage the committee in its policymaking efforts, bringing an even greater level of public participation to the MPO’s TIP process. The committee’s final policy proposals were released for a 21-day public comment period in September 2021. Comments received on those proposals are included in Table C-1 below.

Table C-1
Public Comments Received during Development of the FFYs 2023–27 TIP

Project	Name	Support Oppose Request Concern	Comment
Projects under consideration for TIP funding (FFYs 2023–27)			
Bicycle Parking along the Bruce Freeman Rail Trail (Acton) (#S12702)	Municipal: Franny Osman, Acton Transportation Advisory Committee; Mary Smith, Acton Green Advisory Board	Support	Supports inclusion of Acton’s bicycle parking project in the FFYs 2023–27 TIP. Notes that this project will help Acton work towards several town-wide goals, including reduced greenhouse gas emissions, improved bicycle access, and greater connectivity to local recreation, businesses, and transit services.
Chenery Middle School Bicycle Parking (Belmont) (#S12704)	Municipal: Catherine Bowen, Belmont School Committee; David Coleman, Belmont Transportation Advisory Committee; Ben Ligon, Chenery Middle School Teacher Organizations: Belmont High School Climate Action Club; Chenery Middle School PTO; Dean Hickman, Chair, Sustainable Belmont Belmont resident: Jeff Roth	Support	Supports inclusion of Chenery Middle School’s bicycle parking project in the FFYs 2023–27 TIP. Highlights the benefits of the project, including supporting increased bicycling to school, reduced auto traffic near the school, improved safety, and a reduction in emissions.

(Table C-1, cont., 2)

Project	Name	Support Oppose Request Concern	Comment
Community Path, Belmont Component of the MCRT (Phase 1) (Belmont) (#609204)	<p>Legislative: Sen. Will Brownsberger; Rep. Dave Rogers</p> <p>Municipal: Marty Bitner, Belmont Energy Committee; Catherine Bowen, Belmont School Committee; Amy Checkoway, Belmont School Committee Chair; Wesley Chin, Belmont Department of Public Health; Glenn Clancy, Belmont Director of Community Development; David Coleman, Belmont Transportation Advisory Committee; Bonnie Friedman, Belmont Community Path Project Committee; Patrice Garvin, Belmont Town Administrator; Russ Leino, Belmont Community Path Project Committee; Gloria Leipzig, Chair, Belmont Housing Authority; Bill Lovallo, Belmont High School Building Committee; Mark Paolillo, Belmont Select Board; Vincent Stanton, Belmont Community Path Project Committee</p> <p>Organizations: Belmont High School Climate Action Club, Friends of the Belmont Community Path</p> <p>Belmont residents: Edin Insanic, Jeff Roth</p>	Support	Supports inclusion of the Belmont Community Path in the FFYs 2023–27 TIP. Benefits of the project include increased connectivity to transit, educational facilities, and local businesses; expansion of the regional bicycle network and the filling in of a missing gap of the MCRT between Cambridge and Waltham; safety improvements for bicyclists and pedestrians; increased mode shift opportunities; increased recreational opportunities; improved health of Path users; and the creation of new public space in Belmont Center. The project will improve safe travel for Belmont students and allow mainly off-road travel into downtown Boston. Cites the robust public process that has been undertaken by the Town in support of the project.

(Table C-1, cont., 3)

Project	Name	Support Oppose Request Concern	Comment
Community Path, Belmont Component of the MCRT (Phase 1) (Belmont) (#609204)	Belmont residents: Paul Cobuzzi, Eunice Flanders, Allison Lenk, Aleida Leza, Naomi Okugawa, Darin Takemoto, Margaret Merrie Waters, Wayne Wild, Xiaoyun Xie	Oppose	Opposes the design of the Belmont Community Path and the project's potential inclusion in the FFYs 2023–27 TIP. States the Town of Belmont and the Community Path Project Committee (CPPC) have not conducted adequate outreach to project abutters, that abutters are not represented at the CPPC, and that the project's design process has not been fully responsive to abutters' concerns. The proposed design, in which the Community Path runs along the north side of the commuter rail tracks, will adversely affect project abutters; the project would about Belmont High School if moved to the south side of the tracks. Adverse impacts to abutters include noise and light pollution, decreased property values, increased litter, drainage problems, damage to private property including mature trees, and increased crime. Additional concerns include safety issues due to the proximity of the Path to the commuter rail tracks and the project cost. Concerns also exist about the necessary right of way for the project and the extent to which there will be impacts on abutters' properties.
Rehabilitation of Washington Street (Brookline) (#610932)	Legislative: Rep. Tommy Vitolo Municipal: Rich Benevento, WorldTech Engineering, on behalf of the Town of Brookline; Erin Gallentine, Brookline Commissioner of Public Works; Robert King, Brookline Director of Engineering and Transportation; James Lee, Brookline Commission on Disability; David Trevvett, Brookline Pedestrian Advisory Committee Brookline residents: Shonali Guadino, Jeff Wachter	Support	Supports inclusion of the Rehabilitation of Washington Street in the FFYs 2023–27 TIP. Cites the importance of Washington Street as a key commercial corridor in Brookline and the importance of the project in enhancing safety, mobility, resiliency, and accessibility for all. Highlights the improvements this project will make for people walking, bicycling, and taking transit and the robust support for the project locally.

(Table C-1, cont., 3)

Project	Name	Support Oppose Request Concern	Comment
Bluebikes Station Replacement and System Expansion (Cambridge) (#S12695)	Organizations: Alewife Transportation Management Association, Harvard Square Business Association	Support	Supports inclusion of Cambridge's Bluebikes project in the FFYs 2023–27 TIP. Notes the importance of the Bluebikes system for promoting sustainable multimodal access to key destinations throughout Cambridge and across the region, including both Alewife and Harvard Square. Highlight that this project will continue to expand the system to provide Bluebikes access to more people while also ensuring the existing system continues to meet users' needs by maintaining a state of good repair for highly used stations and docks.
Reconstruction of Western Avenue (Lynn) (#609246)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the City of Lynn; Aaron Clausen, City of Lynn	Support	Supports inclusion of the Reconstruction of Western Avenue in the FFYs 2022-26 TIP. Notes that Western Avenue is an important multimodal connector throughout the North Shore. Highlights the extent to which the project will advance equity, sustainability, safety, and economic vitality in Lynn by adding new or improved accommodations for people walking, bicycling and taking transit. Cites the broad support for the project locally.
BlueBikes System Expansion (Malden and Medford) (#S12696)	Municipal: Mayor Breanna Lungo-Koehn, City of Medford; Medford Bicycle Advisory Commission; Tim McGivern, Chair, Medford Complete Streets Committee; Stephen Winslow, Malden City Councillor Organization: Bike to the Sea, Lyft	Support	Supports inclusion of Medford and Malden's BlueBikes expansion project in the FFYs 2023–27 TIP. Highlights the importance of this project in enhancing access to the Northern Strand Trail, creating new alternative transportation options, and fostering greater connectivity between Medford and Malden and the surrounding Bluebikes communities, including so residents can access critical services, employment opportunities, and local businesses.
Montachusett RTA Microtransit Service (MART) (#S12703)	Organization: Bruno Fisher, Deputy Administrator, Montachusett RTA	Support	Supports inclusion of MART's microtransit project in the FFYs 2023–27 TIP. Notes that this project will complement MART's existing fixed-route service in the region while supporting better access to critical services and employment opportunities for local residents.

(Table C-1, cont., 4)

Project	Name	Support Oppose Request Concern	Comment
CatchConnect Microtransit Service Expansion (MWRTA) (#S12701)	Legislative: Sen. Karen Spilka, Rep. Carmine Gentile Municipal: Kristina Johnson, Director of Planning and Community Development, Town of Hudson; Meghan Jop, Executive Director of General Government Services, Town of Wellesley; Thatcher Kezer III, Chief Operating Officer, City of Framingham Organization: MetroWest Center for Independent Living; Joseph Nolan, Chair, MWRTA Advisory Board	Support	Supports inclusion of MWRTA's microtransit expansion project in the FFYs 2023–27 TIP. Highlights the importance of this project for expanding non-single-occupancy vehicle options, creating better connectivity across the MetroWest region, and improving access to jobs and services. The project will allow the existing service to expand to new communities while improving last-mile connections to other existing fixed-route MWRTA service in the region.
Bridge Replacement, Route 27 Over Route 9 and Interchange Improvements (Natick) (#605313)	Municipal: Natick Select Board Chair Karen Adelman-Foster; Jeremy Marsette, Natick Director of Public Works; Josh Ostroff, Natick Transportation Advisory Committee; Eric Sofen, Natick Trails Committee	Support	Supports inclusion of the reconstruction of the Route 9 and Route 27 interchange in Natick in the FFYs 2023–27 TIP. Cites the deteriorating condition of the Route 27 bridge today and the existing safety and accessibility issues plaguing the interchange. Highlights the importance of the project for improving connectivity and safety for people walking and bicycling and the critical nature of this project not just for Natick, but as a key connection in the region.
Newmo Microtransit Service Expansion (Newton) (#S12694)	Municipal: Mayor Ruthanne Fuller, City of Newton; Steve Magoon, Acting City Manager, City of Watertown Organizations: Charles River Regional Chamber; University of Massachusetts Amherst - Mount Ida Campus; Friends of Leo J. Martin Skiing	Support	Supports inclusion of Newton's microtransit expansion project in the FFYs 2023–27 TIP. Notes that this project will support the expansion of existing NewMo service to neighboring communities and key regional destinations while increasing the ability of the service to fill first- and last-mile gaps in the transportation network. Highlights the importance of the service for those who cannot drive, including seniors, low-income residents, youth, and people with disabilities. Cites the success of the existing service as a reason to further invest in this model.

(Table C-1, cont., 5)

Project	Name	Support Oppose Request Concern	Comment
Bluebikes System Expansion (Salem) (#S12698)	Municipal: City of Salem Bicycling Advisory Committee Organizations: BlueCross BlueShield of Massachusetts, Destination Salem, Salem State University	Support	Supports inclusion of Salem’s Bluebikes system expansion project in the FFYs 2023–27 TIP. Notes the importance of this project for promoting healthy, sustainable transportation options in Salem, as it would help to create a critical mass of Bluebikes stations locally for the network to be successful. Highlights that this project will help advance key local planning goals while providing an additional mobility option for visitors to Salem.
McGrath Boulevard Construction (Somerville) (#607981)	Municipal: Mayor Katjana Ballantyne, City of Somerville	Support	Supports inclusion of the McGrath Boulevard project in the FFYs 2023–27 TIP. Highlighted the difficulty and safety concerns of crossing McGrath without a car and as a route to school, and challenges for pedestrians and cyclists. Stated that the project is a regional project with regionwide benefits, and has seen strong support from the MPO board and community in past years.
Stoneham Shuttle Service (Stoneham) (#S12699)	Legislative: Rep. Michael Day, Sen. Jason Lewis Municipal: Stoneham Select Board; Erin Wortman, Stoneham Director of Planning and Community Development, Organizations: Greater Boston Stage Company, Middlesex Investment Partners, Nobility Hill Tavern, Stoneham Chamber of Commerce, Stoneham Community Development Corporation, Zoo New England	Support	Supports inclusion of Stoneham’s shuttle service project in the FFYs 2023–27 TIP. Notes that Stoneham seeks to address first- and last-mile connections for residents and businesses, build east-west capacity into existing MBTA service in Stoneham to increase local mobility, and enhance transportation equity throughout the area. Cites the broad public support for this project, as evidenced by the multi-stakeholder project application.

(Table C-1, cont., 6)

Project	Name	Support Oppose Request Concern	Comment
Swampscott Rail Trail (Swampscott) (#610666)	<p>Legislative: Sen. Brendan Crighton</p> <p>Municipal: Sean Fitzgerald, Town Administrator; Marzie Galazka, Director, Swampscott Community and Economic Development; Tania Lillak, Chair, Swampscott Open Space and Recreation Plan Committee; Suzanne Wright, Swampscott School Committee</p> <p>Organizations: East Coast Greenway Alliance, Friends of the Swampscott Rail Trail, Solomon Foundation, Swampscott Conservanc"</p>	Support	Supports inclusion of the Swampscott Rail Trail in the FFYs 2023–27 TIP. The project will connect to the Northern Strand Community Trail and the Marblehead Rail Trail, and increase connectivity within Swampscott by providing safe connections to local businesses, transit, and recreational and educational facilities. In addition, the trail will provide open space in a densely populated community and provide opportunities for recreational and healthy activity. The project includes environmental-friendly aspects, including an edible walking forest and pollinator garden. The project is largely supported by community; the Town Meeting approved the project by a vote of 210 to 56.
Pleasant Street Shuttle Service Expansion (Watertown) (#S12697)	<p>Municipal: Mark Sideris, Watertown City Council President</p> <p>Organizations: Amstel Heritage Watertown; Sophia Gallimore, Watertown TMA; Lincoln Property Company; Paradigm Properties; Watertown Mews; WeDriveU</p>	Support	Supports inclusion of Watertown’s shuttle service project in the FFYs 2023–27 TIP. Cites the importance of this project in shortening headways and increasing ridership by adding a second vehicle to the route. Highlights that the electrification of the service supported by this project is in alignment with the town’s comprehensive plan and climate change mitigation efforts. Cites that the project provides critical connectivity between transit hubs on a fast-growing corridor in Watertown.

(Table C-1, cont., 7)

Project	Name	Support Oppose Request Concern	Comment
Intersection Improvements Boston Post Road (Route 20) at Wellesley Street (Weston) (#608940)	Municipal: Meghan Jop, Executive Director of General Government Services, Town of Wellesley	Support	Supports inclusion of Weston's intersection improvement project at Route 20 and Wellesley Street in the FFYs 2023–27 TIP. Highlights the importance of this project not just for Weston, but for the whole region, as this intersection is a key connection point between several municipalities. Notes the improvements the project will make to safety and traffic congestion in the area.
Currently programmed projects (FFYs 2022–26)			
Rehabilitation of Bridge Street (Beverly) (#608348)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the City of Beverly	Support	Supports continued inclusion of the Rehabilitation of Bridge Street in the FFYs FFYs 2023–27 TIP. Highlights that the project is on track for advertisement in FFY 2023. States that the cost increase seen during the FFYs 2023–27 TIP cycle for this project is not due to a change in project scope, but rather due to increasing material costs.
Reconstruction of Rutherford Avenue (Boston) (#606226)	Boston resident: Dan Jaffe	Concern	Expresses concern that the proposed delay of the Reconstruction of Rutherford Avenue in Boston from FFY 2023 to FFY 2025 will negatively impact the Charlestown neighborhood, including by perpetuating conditions that are currently unsafe and that are not meeting the needs of local residents. States that the currently proposed design for this project is in line with the neighborhood's goals and is the result of abundant feedback from local residents over many years. Requests that the project not be delayed any longer and that the City of Boston move forward with existing designs.
Rehabilitation of Central Street (Peabody) (#608933)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the City of Peabody	Support	Supports continued inclusion of the Rehabilitation of Central Street in the FFYs 2023–27 TIP. Highlights that the project is on track for advertisement in FFY 2023, with 75 percent design plans anticipated to be submitted by May 2022.

(Table C-1, cont., 8)

Project	Name	Support Oppose Request Concern	Comment
Rehabilitation of Mount Auburn Street (Watertown) (#607777)	Municipal: Rich Benevento, WorldTech Engineering, on behalf of the Town of Watertown	Support	Supports continued inclusion of the Rehabilitation of Mount Auburn Street in the FFYs 2023–27 TIP. Highlights that coordination with all stakeholders, including the MBTA, remains ongoing and that the project is on track for advertisement in FFY 2023, with 75 percent design plans anticipated to be submitted in May or June 2022.
Intersection Improvements at Lowell Street (Route 129) and Woburn Street (Wilmington) (#609253)	Municipal: Valerie Gingrich, Director of Planning and Conservation, Town of Wilmington	Support	Supports the continued inclusion of the intersection improvement project at Lowell Street and Woburn Street in the FFYs 2023–27 TIP. Acknowledges the cost increase for the project during the FFYs 2023–27 TIP cycle and requests that the MPO continue to support the project at the higher cost. Notes that the cost increase is due to several factors, including adjustments to the project’s proposed drainage system, increasing unit costs, and increasing costs to relocate utilities. Notes that the project remains critical for enhancing safety at this key intersection.
Other Comments			
Support for Projects in Natick	Municipal: Natick Select Board Chair Karen Adelman-Foster	Support	Expresses support for several projects in Natick, including the Natick Center Cochituate Rail Trail connection (#610691), Lake Cochituate Path (#610680), Boden Lane Bridge (#607420), Spring Street Bridge (#610869), and Speen Street Bridge (#612178). Cites the importance of each of these projects in promoting safe, efficient mobility in Natick.

(Table C-1, cont., 9)

Project	Name	Support Oppose Request Concern	Comment
TIP Project Cost Ad Hoc Committee	Belmont residents: Cosmo Caterino, Aleida Leza	Support	Expresses support for the MPO’s proposed cost-change policies, citing the desire to see these policies support a greater degree of MPO oversight over project costs and project development processes. States that increased MPO scrutiny over project costs should support projects that are more fiscally responsible.
TIP Project Cost Ad Hoc Committee	Municipal: Catherine Bowen, Belmont School Committee Member	Concern	Expresses broad support for the MPO’s proposed cost-change policies, but cites concerns that the MPO’s requirement that projects submit 25 percent design plans prior to being funded may have a chilling effect on the overall number of municipalities pursuing funding through the TIP process.

SUMMARY OF COMMENTS RECEIVED DURING TIP PUBLIC REVIEW PERIOD

The MPO board will vote to release a draft FFYs 2023–27 TIP document for public review at its April 28, 2022, meeting. This vote will initiate an official 21-day public review period, which will begin on or around May 2, 2022, and close on or around May 23, 2022. The comments received during this public review period will be summarized in Table C-2. Draft responses from the MPO to the commenters will be presented at the May 26, 2022, MPO meeting and will be included in this section when the final version of the document is posted to the MPO’s website following a vote for endorsement.

Table C-2 Public Comments Received during the Public Review Period for the Draft FFYs 2023–27 TIP

Table C-2 will summarize the comments received by the MPO from the public during the TIP public review period. This table will be included in the final FFYs 2023–27 TIP, which will be endorsed by the MPO after the conclusion of the public review period.

APPENDIX D

Geographic Distribution of TIP Funding

OVERVIEW OF CONTENTS

Appendix D provides information about the geographic distribution of federal highway funding in the Boston region between federal fiscal years (FFYs) 2023 and 2027, including the distribution of the Boston Region MPO's Regional Target Program funding (the MPO's discretionary funding) and funding for projects and programs prioritized by the Massachusetts Department of Transportation. Funding amounts shown include the state's matching funds that leverage the available federal funds.

Figures D-1 through D-4 summarize the distribution of the MPO's Regional Target Program funding and all federal highway funding by subregion. Funding is shown for the time period covered by this TIP (FFYs 2023–27) and over a longer time horizon (FFYs 2011–27). Table D-1 shows the breakdown of this data for each municipality in the Boston region for FFYs 2023–27.

PURPOSE

The analysis presented here provides details about how the MPO has allocated its federal transportation highway dollars across its geographic region by showing which municipalities and areas of the Boston region have received highway funding for the construction of transportation projects. This data was first compiled for FFYs 2008-13 in response to the Boston Region MPO's 2014 Certification Review by the Federal Highway Administration and Federal Transit Administration.

Figure D-1
Distribution of Regional Target Funding by Subregion (FFYs 2023–27)

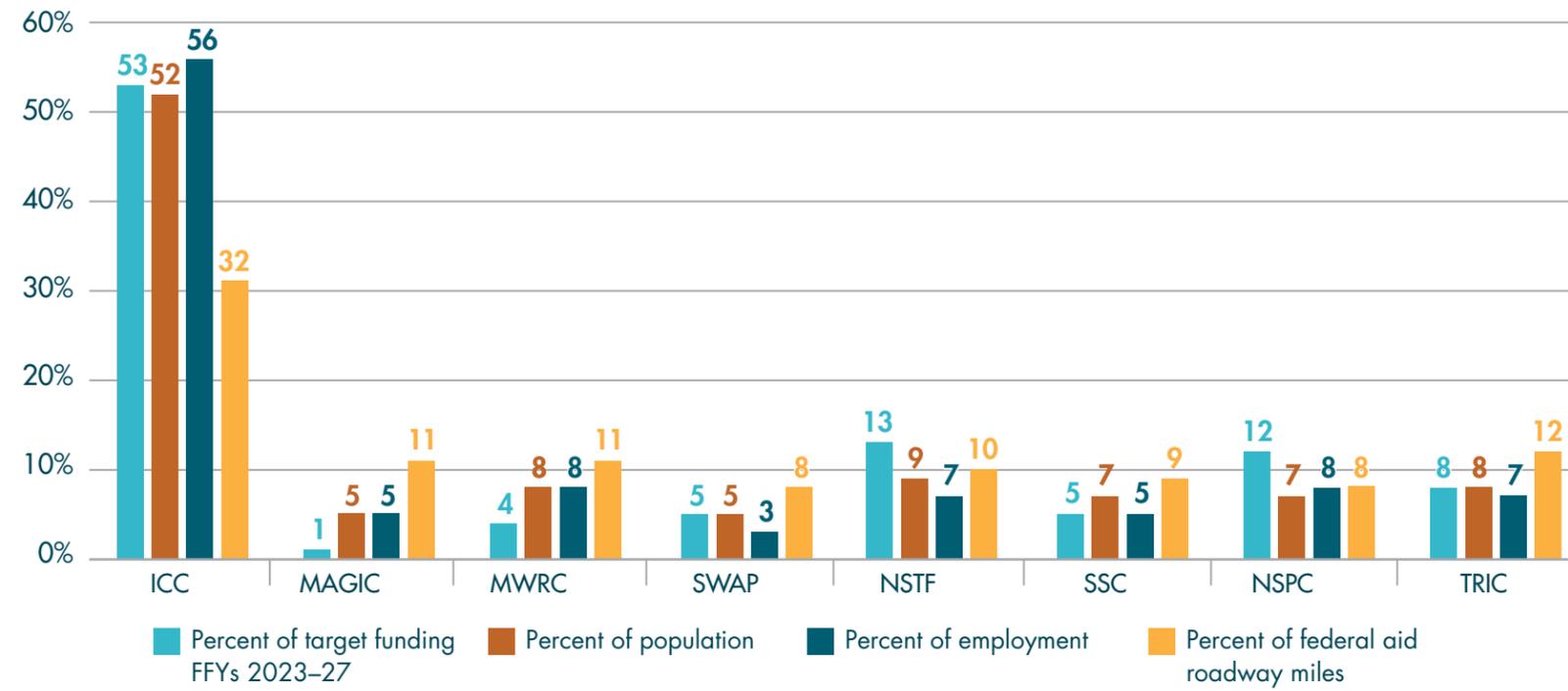


Figure D-2
Distribution of All Federal Highway Funding in the Boston Region by Subregion (FFYs 2023–27)

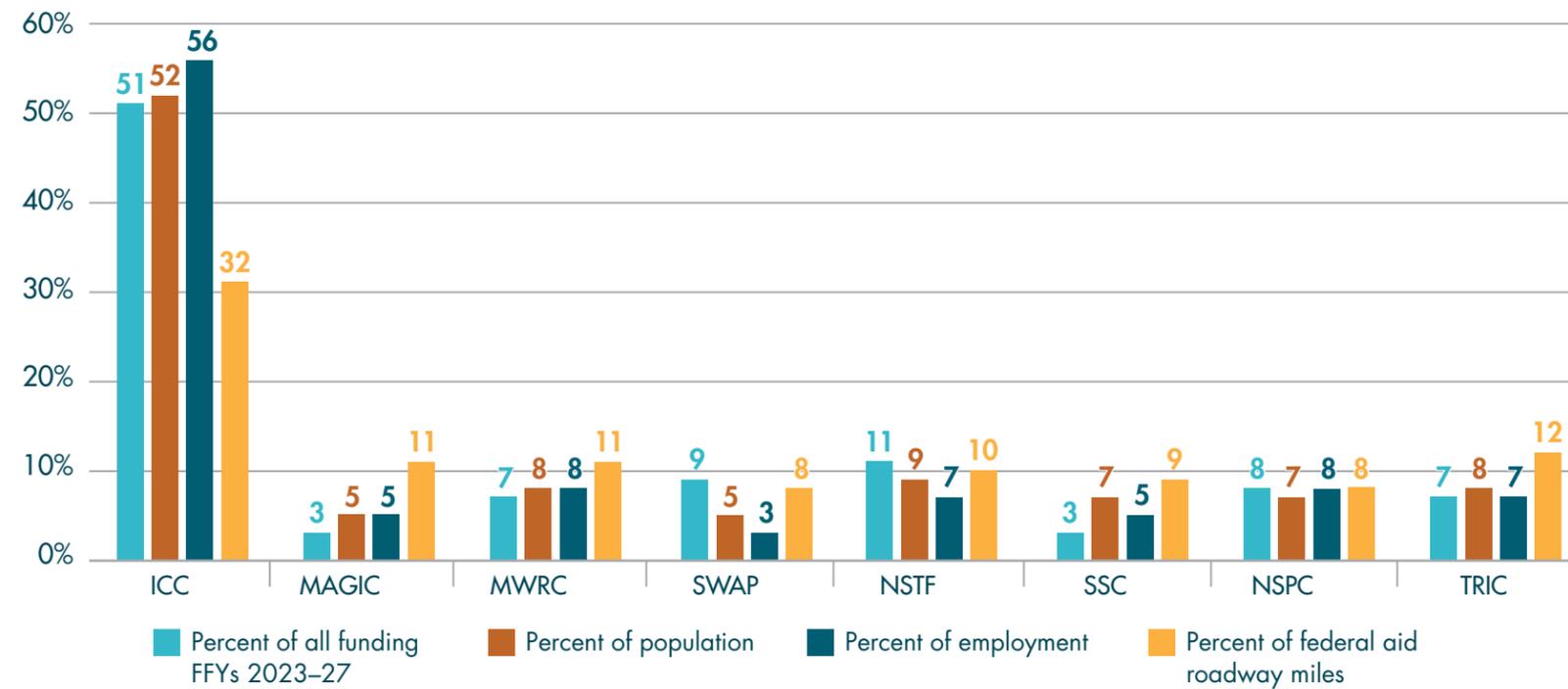


Figure D-3
Distribution of Regional Target Funding by Subregion (FFYs 2011-27)

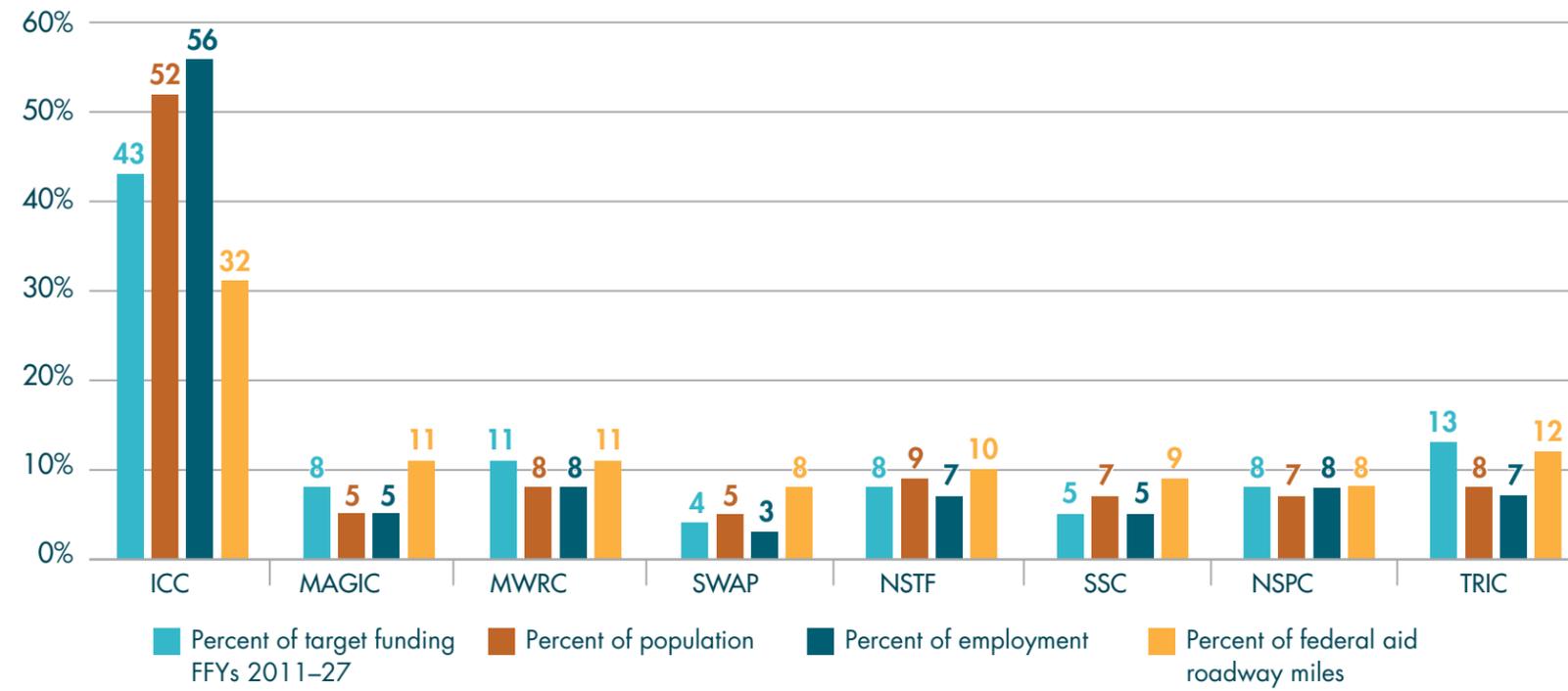
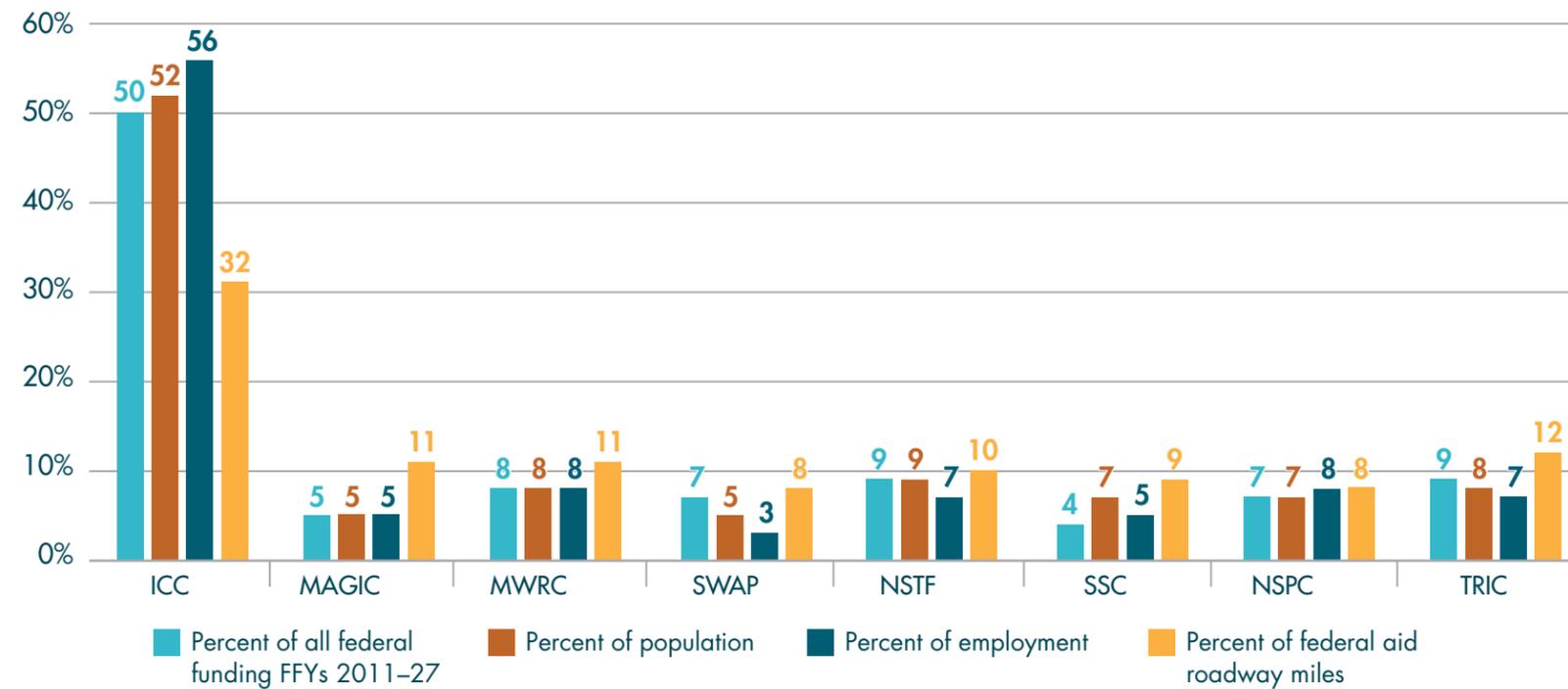


Figure D-4
Distribution of All Federal Highway Funding in the Boston Region by Subregion (FFYs 2011-27)



**Table D-1
Federal Highway Programming for Municipalities in the Boston Region (FFYs 2023–27)**

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Boston	Inner Core	Inner Core	20.0%	31.2%	11.1%	\$108,449,011	20.7%	\$291,622,743	19.1%	\$400,071,754	19.5%
Somerville	Inner Core	Inner Core	2.5%	1.2%	1.2%	\$20,000,000	3.8%	\$209,381,819	13.7%	\$229,381,819	11.2%
Hopkinton	SWAP	Developing Suburb	0.5%	0.5%	1.0%	\$0	0.0%	\$147,018,157	9.6%	\$147,018,157	7.2%
Beverly	NSTF	Regional Urban Center	1.3%	1.2%	1.2%	\$12,594,932	2.4%	\$87,711,718	5.8%	\$100,306,650	4.9%
Natick	MetroWest	Maturing Suburb	1.1%	1.3%	1.2%	\$0	0.0%	\$89,799,350	5.9%	\$89,799,350	4.4%
Cambridge	Inner Core	Inner Core	3.4%	6.0%	1.8%	\$349,608	0.1%	\$81,254,354	5.3%	\$81,603,962	4.0%
Wilmington	NSPC	Maturing Suburb	0.7%	1.0%	1.3%	\$31,085,535	5.9%	\$38,799,452	2.5%	\$69,884,987	3.4%
Salem	NSTF	Regional Urban Center	1.3%	1.1%	0.7%	\$7,108,429	1.4%	\$50,930,758	3.3%	\$58,039,187	2.8%
Lynn	Inner Core	Regional Urban Center	2.9%	1.3%	1.3%	\$32,602,000	6.2%	\$19,033,076	1.2%	\$51,635,076	2.5%
Norwood	TRIC	Regional Urban Center	0.9%	1.3%	1.0%	\$32,790,150	6.3%	\$4,855,382	0.3%	\$37,645,532	1.8%
Milton	TRIC	Maturing Suburb	0.9%	0.3%	1.3%	\$0	0.0%	\$36,673,224	2.4%	\$36,673,224	1.8%
Peabody	NSTF	Regional Urban Center	1.7%	1.3%	1.4%	\$32,464,982	6.2%	\$0	0.0%	\$32,464,982	1.6%
Chelsea	Inner Core	Inner Core	1.1%	0.8%	0.6%	\$12,123,769	2.3%	\$20,045,148	1.3%	\$32,168,917	1.6%
Framingham	MetroWest	Regional Urban Center	2.2%	2.5%	2.5%	\$2,484,704	0.5%	\$29,476,827	1.9%	\$31,961,531	1.6%
Brookline	Inner Core	Inner Core	1.9%	0.9%	1.3%	\$30,030,812	5.7%	\$1,305,823	0.1%	\$31,336,635	1.5%
Watertown	Inner Core	Inner Core	1.0%	1.1%	0.6%	\$28,252,285	5.4%	\$3,080,230	0.2%	\$31,332,515	1.5%

(Table D-1 cont., 2)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Medford	Inner Core	Inner Core	1.8%	1.0%	1.5%	\$72,911	0.0%	\$30,420,970	2.0%	\$30,493,880	1.5%
Revere	Inner Core	Inner Core	1.7%	0.5%	1.3%	\$0	0.0%	\$29,858,991	2.0%	\$29,858,991	1.5%
Woburn	NSPC	Regional Urban Center	1.2%	2.2%	1.5%	\$22,326,115	4.3%	\$6,474,344	0.4%	\$28,800,459	1.4%
Everett	Inner Core	Inner Core	1.3%	0.7%	0.6%	\$10,168,416	1.9%	\$17,748,000	1.2%	\$27,916,416	1.4%
Braintree	SSC	Maturing Suburb	1.2%	1.5%	1.4%	\$0	0.0%	\$25,850,441	1.7%	\$25,850,441	1.3%
Randolph	TRIC	Maturing Suburb	1.0%	0.5%	1.0%	\$0	0.0%	\$24,908,198	1.6%	\$24,908,198	1.2%
Quincy	Inner Core	Regional Urban Center	3.0%	2.6%	2.1%	\$6,052,562	1.2%	\$18,265,308	1.2%	\$24,317,870	1.2%
Canton	TRIC	Maturing Suburb	0.7%	1.2%	1.1%	\$325,719	0.1%	\$23,937,776	1.6%	\$24,263,495	1.2%
Newton	Inner Core	Inner Core	2.8%	3.0%	2.6%	\$1,042,574	0.2%	\$22,595,183	1.5%	\$23,637,757	1.2%
Belmont	Inner Core	Inner Core	0.8%	0.4%	0.6%	\$21,038,758	4.0%	\$0	0.0%	\$21,038,758	1.0%
Lexington	MAGIC	Maturing Suburb	1.0%	1.1%	1.9%	\$0	0.0%	\$20,456,262	1.3%	\$20,456,262	1.0%
Weston	MetroWest	Maturing Suburb	0.4%	0.2%	1.3%	\$18,393,832	3.5%	\$0	0.0%	\$18,393,832	0.9%
Reading	NSPC	Maturing Suburb	0.8%	0.4%	0.8%	\$0	0.0%	\$17,376,800	1.1%	\$17,376,800	0.8%
Stoneham	NSPC	Maturing Suburb	0.7%	0.4%	0.8%	\$796,817	0.2%	\$15,414,505	1.0%	\$16,211,322	0.8%
Waltham	Inner Core	Inner Core	2.0%	3.0%	1.6%	\$0	0.0%	\$16,082,742	1.1%	\$16,082,742	0.8%
Burlington	NSPC	Maturing Suburb	0.8%	2.2%	1.3%	\$6,046,915	1.2%	\$9,595,904	0.6%	\$15,642,819	0.8%

(Table D-1 cont., 3)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Hingham	SSC	Maturing Suburb	0.7%	0.7%	1.3%	\$15,596,549	3.0%	\$0	0.0%	\$15,596,549	0.8%
Wrentham	SWAP	Developing Suburb	0.4%	0.3%	1.0%	\$15,587,884	3.0%	\$0	0.0%	\$15,587,884	0.8%
Boxborough	MAGIC	Developing Suburb	0.2%	0.2%	0.4%	\$0	0.0%	\$15,284,656	1.0%	\$15,284,656	0.7%
Bellingham	SWAP	Developing Suburb	0.5%	0.3%	0.9%	\$0	0.0%	\$14,249,535	0.9%	\$14,249,535	0.7%
Cohasset	SSC	Developing Suburb	0.2%	0.1%	0.5%	\$11,258,807	2.2%	\$0	0.0%	\$11,258,807	0.5%
Milford	SWAP	Regional Urban Center	0.9%	0.8%	1.2%	\$10,119,616	1.9%	\$0	0.0%	\$10,119,616	0.5%
Dedham	TRIC	Maturing Suburb	0.8%	0.9%	1.1%	\$6,314,855	1.2%	\$3,143,758	0.2%	\$9,458,613	0.5%
Weymouth	SSC	Maturing Suburb	1.7%	1.0%	1.5%	\$0	0.0%	\$9,018,690	0.6%	\$9,018,690	0.4%
Swampscott	NSTF	Maturing Suburb	0.4%	0.2%	0.3%	\$8,932,000	1.7%	\$0	0.0%	\$8,932,000	0.4%
Middleton	NSTF	Developing Suburb	0.3%	0.3%	0.5%	\$0	0.0%	\$8,508,556	0.6%	\$8,508,556	0.4%
Danvers	NSTF	Maturing Suburb	0.9%	1.4%	1.5%	\$0	0.0%	\$8,015,758	0.5%	\$8,015,758	0.4%
Winchester	NSPC	Maturing Suburb	0.7%	0.5%	0.6%	\$0	0.0%	\$7,302,504	0.5%	\$7,302,504	0.4%
Ipswich	NSTF	Developing Suburb	0.4%	0.3%	0.7%	\$5,490,888	1.0%	\$1,567,895	0.1%	\$7,058,783	0.3%
Foxborough	TRIC	Developing Suburb	0.5%	0.7%	1.3%	\$0	0.0%	\$6,894,080	0.5%	\$6,894,080	0.3%

(Table D-1 cont., 3)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Acton	MAGIC	Maturing Suburb	0.7%	0.5%	1.1%	\$8,017	0.0%	\$6,752,478	0.4%	\$6,760,495	0.3%
Winthrop	Inner Core	Inner Core	0.6%	0.1%	0.3%	\$6,617,959	1.3%	\$0	0.0%	\$6,617,959	0.3%
Littleton	MAGIC	Developing Suburb	0.3%	0.3%	1.0%	\$3,992,645	0.8%	\$2,521,264	0.2%	\$6,513,909	0.3%
Lynnfield	NSPC	Maturing Suburb	0.4%	0.3%	0.6%	\$0	0.0%	\$6,180,338	0.4%	\$6,180,338	0.3%
Wakefield	NSPC	Maturing Suburb	0.8%	0.8%	0.9%	\$0	0.0%	\$6,180,338	0.4%	\$6,180,338	0.3%
Ashland	MetroWest	Maturing Suburb	0.5%	0.3%	0.5%	\$1,222,315	0.2%	\$3,965,472	0.3%	\$5,187,787	0.3%
Nahant	Inner Core	Maturing Suburb	0.1%	0.0%	0.2%	\$0	0.0%	\$4,681,875	0.3%	\$4,681,875	0.2%
Malden	Inner Core	Inner Core	1.9%	0.8%	1.0%	\$72,911	0.0%	\$4,181,800	0.3%	\$4,254,711	0.2%
Stow	MAGIC	Developing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$3,454,408	0.2%	\$3,454,408	0.2%
Topsfield	NSTF	Developing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$3,258,119	0.2%	\$3,258,119	0.2%
Hudson	MAGIC	Developing Suburb	0.6%	0.5%	0.7%	\$0	0.0%	\$2,970,998	0.2%	\$2,970,998	0.1%
Marlborough	MetroWest	Regional Urban Center	1.2%	1.6%	2.0%	\$0	0.0%	\$2,970,998	0.2%	\$2,970,998	0.1%
Medway	SWAP	Developing Suburb	0.4%	0.2%	0.6%	\$0	0.0%	\$2,807,468	0.2%	\$2,807,468	0.1%
Sudbury	MAGIC	Maturing Suburb	0.6%	0.5%	1.0%	\$0	0.0%	\$2,262,001	0.1%	\$2,262,001	0.1%
Wayland	MetroWest	Maturing Suburb	0.4%	0.2%	0.7%	\$0	0.0%	\$2,262,001	0.1%	\$2,262,001	0.1%

(Table D-1 cont., 4)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Hamilton	NSTF	Developing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$1,567,895	0.1%	\$1,567,895	0.1%
Maynard	MAGIC	Maturing Suburb	0.3%	0.2%	0.3%	\$0	0.0%	\$1,520,953	0.1%	\$1,520,953	0.1%
Sharon	TRIC	Maturing Suburb	0.6%	0.2%	1.1%	\$0	0.0%	\$1,436,915	0.1%	\$1,436,915	0.1%
Arlington	Inner Core	Inner Core	1.4%	0.5%	0.8%	\$0	0.0%	\$1,302,209	0.1%	\$1,302,209	0.1%
Scituate	SSC	Maturing Suburb	0.6%	0.2%	1.0%	\$1,250,979	0.2%	\$0	0.0%	\$1,250,979	0.1%
Westwood	TRIC	Maturing Suburb	0.5%	0.5%	0.7%	\$0	0.0%	\$1,071,429	0.1%	\$1,071,429	0.1%
Bedford	MAGIC	Maturing Suburb	0.4%	1.1%	0.8%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Bolton	MAGIC	Developing Suburb	0.2%	0.1%	0.7%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Carlisle	MAGIC	Developing Suburb	0.2%	0.0%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Concord	MAGIC	Maturing Suburb	0.6%	0.7%	1.1%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Dover	SWAP	Developing Suburb	0.2%	0.0%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Essex	NSTF	Developing Suburb	0.1%	0.1%	0.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Franklin	SWAP	Developing Suburb	1.0%	0.8%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Gloucester	NSTF	Regional Urban Center	0.9%	0.6%	1.0%	\$0	0.0%	\$0	0.0%	\$0	0.0%

(Table D-1 cont., 5)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Holbrook	SSC	Maturing Suburb	0.3%	0.1%	0.3%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Holliston	MetroWest	Developing Suburb	0.4%	0.3%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Hull	SSC	Maturing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Lincoln	MAGIC	Maturing Suburb	0.2%	0.1%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Manchester	NSTF	Developing Suburb	0.2%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Marblehead	NSTF	Maturing Suburb	0.6%	0.3%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Marshfield	SSC	Maturing Suburb	0.8%	0.3%	1.0%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Medfield	TRIC	Maturing Suburb	0.4%	0.2%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Melrose	Inner Core	Inner Core	0.9%	0.3%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Millis	SWAP	Developing Suburb	0.3%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Needham	TRIC	Maturing Suburb	0.9%	1.0%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Norfolk	SWAP	Developing Suburb	0.4%	0.2%	0.5%	\$0	0.0%	\$0	0.0%	\$0	0.0%
North Reading	NSPC	Maturing Suburb	0.5%	0.4%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Norwell	SSC	Developing Suburb	0.3%	0.5%	0.8%	\$0	0.0%	\$0	0.0%	\$0	0.0%

(Table D-1 cont., 6)

MPO Municipality	Subregion	Community Type	Pct Pop.	Pct Empl.	Percent Federal Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Rockland	SSC	Developing Suburb	0.6%	0.4%	0.6%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Rockport	NSTF	Developing Suburb	0.2%	0.1%	0.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Saugus	Inner Core	Maturing Suburb	0.9%	0.6%	0.8%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Sherborn	SWAP	Developing Suburb	0.1%	0.0%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Southborough	MetroWest	Maturing Suburb	0.3%	0.4%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Walpole	TRIC	Developing Suburb	0.8%	0.6%	1.2%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Wellesley	MetroWest	Maturing Suburb	0.9%	0.9%	0.9%	\$0	0.0%	\$0	0.0%	\$0	0.0%
Wenham	NSTF	Developing Suburb	0.2%	0.1%	0.4%	\$0	0.0%	\$0	0.0%	\$0	0.0%



APPENDIX E

Regulatory and Policy Framework

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

REGULATORY FRAMEWORK

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

Federal Regulations and Guidance

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

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

1. **Safety:** Achieve significant reduction in traffic fatalities and serious injuries on all public roads
2. **Infrastructure condition:** Maintain the highway infrastructure asset system in a state of good repair
3. **Congestion reduction:** Achieve significant reduction in congestion on the National Highway System
4. **System reliability:** Improve efficiency of the surface transportation system
5. **Freight movement and economic vitality:** Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
6. **Environmental sustainability:** Enhance performance of the transportation system while protecting and enhancing the natural environment
7. **Reduced project delivery delays:** Reduce project costs, promote jobs and the economy, and expedite movement of people and goods by accelerating project completion by eliminating delays in the project development and delivery process, including by reducing regulatory burdens and improving agencies' work practices

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

FAST Act: Planning Factors

The MPO gives specific consideration to the federal planning factors, described in Title 23, section 134, of the US Code (23 USC § 134), when developing all documents that program federal transportation funds. In accordance with the legislation, studies and strategies undertaken by the MPO shall

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

The Boston Region MPO has also incorporated these federal planning factors into its vision, goals, and objectives.

FAST Act: Performance-Based Planning and Programming

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

Bipartisan Infrastructure Law (BIL): Planning Emphasis Areas

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

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

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

1990 Clean Air Act Amendments

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

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

Air quality conformity determinations must be performed for capital improvement projects that receive federal funding and for those that are considered regionally significant, regardless of the funding source. These determinations must show that projects in the MPO's Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) will not cause or contribute to any new air quality violations; will not increase the frequency or severity of any existing air quality violations in any area; and will not delay the timely attainment of air quality standards in any area. The policy, criteria, and procedures for demonstrating air quality conformity in the Boston region were established in Title 40, parts 51 and 53, of the Code of Federal Regulations.

On April 1, 1996, the EPA classified the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville as in attainment for carbon monoxide (CO) emissions. Subsequently, a CO maintenance plan was set up through the Massachusetts SIP to ensure that emission levels did not increase. While the maintenance plan was in effect, past TIPs and LRTPs included an air quality conformity analysis for these communities. As of April 1, 2016, however, the 20-year maintenance period for this CO maintenance area expired and transportation conformity is no longer required for this pollutant in these communities. This ruling is documented in a letter from the EPA dated May 12, 2016.

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

On February 16, 2018, the US Court of Appeals for the DC Circuit issued a decision in *South Coast Air Quality Management District v. EPA*, which struck down portions of the 2008 Ozone National Ambient Air Quality Standards (NAAQS) SIP Requirements Rule concerning the ozone NAAQS. Those portions of the SIP Requirements Rule included transportation conformity

requirements associated with the EPA's revocation of the 1997 ozone NAAQS. Massachusetts was designated as an attainment area in accord with the 2008 ozone NAAQS but as a nonattainment or maintenance area as relates to the 1997 ozone NAAQS. As a result of this court ruling, MPOs in Massachusetts must once again demonstrate conformity for ozone when developing LRTPs and TIPs.

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

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

Nondiscrimination Mandates

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

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

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 requires that no person be excluded from participation in, be denied the benefits of, or be subjected to discrimination on the basis of race, color, or national origin, under any program or activity provided by an agency receiving federal financial assistance. Executive Order 13166—*Improving Access to Services for Persons with Limited English Proficiency*, dated August 11, 2000, extends Title VI protections to people who, as a result of their nationality, have limited English proficiency. Specifically, it calls for improved access to federally assisted programs and activities, and it requires MPOs to develop and implement a system through which people with limited English proficiency can meaningfully participate in the transportation planning process. This requirement includes the development of a Language Assistance Plan that documents the organization’s process for providing meaningful language access to people with limited English proficiency who access their services and programs.

Environmental Justice Executive Order

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

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

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

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

Americans with Disabilities Act

Title III of the ADA “prohibits states, MPOs, and other public entities from discriminating on the basis of disability in the entities’ services, programs, or activities,” and requires all transportation projects, plans, and programs to be accessible to people with disabilities. Therefore, MPOs must consider the mobility needs of people with disabilities when programming federal funding for

studies and capital projects. MPO-sponsored meetings must also be held in accessible venues and be conducted in a manner that provides for accessibility. Also, MPO materials must be made available in accessible formats.

Other Nondiscrimination Mandates

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

State Guidance and Priorities

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

Choices for Stewardship: Recommendations to Meet the Transportation Future

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

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

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

Massachusetts Strategic Highway Safety Plan

The *Massachusetts 2018 Strategic Highway Safety Plan* (SHSP) identifies the state's key safety needs and guides investment decisions to achieve significant reductions in highway fatalities and serious injuries on all public roads. The SHSP establishes statewide safety goals and objectives

and key safety emphasis areas, and it draws on the strengths of all highway safety partners in the Commonwealth to align and leverage resources to address the state's safety challenges collectively. The Boston Region MPO considers SHSP goals, emphasis areas, and strategies when developing its plans, programs, and activities.

MassDOT Modal Plans

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

Global Warming Solutions Act

The GWSA makes Massachusetts a leader in setting aggressive and enforceable GHG reduction targets and implementing policies and initiatives to achieve these targets. In keeping with this law, the Massachusetts Executive Office of Energy and Environmental Affairs (EEA), in consultation with other state agencies and the public, developed the *Massachusetts Clean Energy and Climate Plan for 2020*. This implementation plan, released on December 29, 2010 (and updated in 2015), establishes the following targets for overall statewide GHG emission reductions:

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

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

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

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

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

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

Healthy Transportation Policy Initiatives

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

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

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

Congestion in the Commonwealth 2019

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

Regional Guidance and Priorities

Focus40, The MBTA's Program for Mass Transportation

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

MetroCommon 2050

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

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

The Boston Region MPO's Congestion Management Process

The purpose of the Congestion Management Process (CMP) is to monitor and analyze performance of facilities and services, develop strategies for managing congestion based on the results of traffic monitoring, and move those strategies into the implementation stage by

providing decision-makers in the region with information and recommendations for improving the transportation system's performance. The CMP monitors roadways and park-and-ride facilities in the Boston region for safety, congestion, and mobility, and identifies problem locations. The CMP is described in more detail in the Unified Planning Work Program (UPWP). Studies undertaken through the CMP are often the inspiration for discrete studies funded through the UPWP. Needs identified through the MPO's CMP can also be addressed by projects funded in the TIP.

Coordinated Public Transit-Human Services Transportation Plan

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

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

State and Regional COVID-19 Adaptations

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

APPENDIX F

Boston Region Metropolitan Planning Organization Membership

VOTING MEMBERS

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

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

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

The **MBTA**, created in 1964, is a body politic and corporate, and a political subdivision of the Commonwealth. Under the provisions of Chapter 161A of the Massachusetts General Laws, it has the statutory responsibility within its district of operating the public transportation system, preparing the engineering and architectural designs for transit development projects, and constructing and operating transit development projects. The MBTA district comprises 175 communities, including all of the 97 cities and towns of the Boston Region MPO area.

In April 2015, as a result of a plan of action to improve the MBTA, a five-member Fiscal and Management Control Board (FMCB) was created. The FMCB was created to oversee and improve the finances, management, and operations of the MBTA. The FMCB's authorizing statute called for an initial three-year term, with the option for the board to request that the governor approve a single two-year extension. In 2017, the FMCB's initial mandate, which would have expired in June 2018, was extended for two years, through June 30, 2020. In 2020, the FMCB's mandate was extended a second time for an additional period of one year, through June 30, 2021.

Following the expiration of the FMCB's extended mandate, the MBTA Board of Directors was formed as a permanent replacement to provide oversight for the agency. By statute, the board consists of seven members, including the Secretary of Transportation as an ex-officio member. The MBTA Advisory Board appoints one member who has municipal government experience in

the MBTA's service area and experience in transportation operations, transportation planning, housing policy, urban planning, or public or private finance. The governor appoints the remaining five board members, which include an MBTA rider and member of an environmental justice population, and a person recommended by the President of the American Federation of Labor and Congress of Industrial Organizations.

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

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

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

The **City of Boston**, six elected cities (currently **Beverly, Everett, Framingham, Newton, Somerville, and Burlington**), and six elected towns (currently **Acton, Arlington, Brookline, Medway, Norwood, and Rockland**) represent the 97 municipalities in the Boston Region MPO area. The City of Boston is a permanent MPO member and has two seats. There is one elected municipal seat for each of the eight MAPC subregions and four seats for at-large elected municipalities (two cities and two towns). The elected at-large municipalities serve staggered three-year terms, as do the eight municipalities representing the MAPC subregions.

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

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

APPENDIX G

Operations and Maintenance Summary

OVERVIEW

In addition to the capital programs detailed throughout this document, highway and transit agencies in the Boston region are required to submit operations and maintenance (O&M) information for FFYs 2021–26 to the Boston Region Metropolitan Planning Organization (MPO) to satisfy federal requirements for the certification of the Transportation Improvement Program (TIP). These O&M tables outline the operating revenues for each agency, including farebox collections; federal, state, and local operating funds; interest income; and other auxiliary revenues from activities such as advertising and leasing. These tables also include a summary of the operating expenses for each agency with both revenues and expenses detailed for each fiscal year. This appendix documents the FFYs 2023–27 TIP O&M information for the Massachusetts Department of Transportation (MassDOT), Massachusetts Bay Transportation Authority (MBTA), MetroWest Regional Transit Authority (MWRTA), and Cape Ann Transportation Authority (CATA).

Table G-1
FFYs 2023–27 TIP Operations and Maintenance Summary: MassDOT

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 1: Non-Federal Aid					
Section I - Non Federal Aid Maintenance Projects - State Bondfunds					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$78,719	\$114,000	\$52,000	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$47,360,434	\$22,008,112	\$7,019,328	\$345,318	\$-
Bridge Maintenance - Deck Repairs	\$13,072,586	\$8,334,358	\$5,311,045	\$443,585	\$-
Bridge Maintenance - Joints	\$3,793,035	\$2,804,206	\$1,208,481	\$68,432	\$-
Bridge Preservation	\$2,882,033	\$11,816,698	\$4,974,667	\$317,981	\$-
Drawbridge Maintenance	\$5,575,223	\$2,560,174	\$-	\$-	\$-
Painting - Structural	\$6,162,363	\$1,605,861	\$-	\$-	\$-
Structures Maintenance	\$284,948	\$142,680	\$-	\$-	\$-
04 - Capacity					
Highway Relocation	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Major Widening	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$6,669,216	\$5,718,204	\$1,651,487	\$114,754	\$-
07 - Intersection Improvements					
Traffic Signals	\$3,488,759	\$2,224,126	\$1,914,764	\$94,957	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 2)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$625,000	\$695,000	\$65,316	\$-	\$-
Resurfacing	\$6,415,673	\$4,437,466	\$3,658,730	\$956,730	\$-
Resurfacing DOT Owned Non-Interstate	\$5,222,136	\$3,704,756	\$1,345,715	\$178,272	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$1,966,347	\$1,455,089	\$310,866	\$-	\$-
Contract Highway Maintenance	\$3,190,450	\$3,000,531	\$1,668,618	\$100,901	\$-
Crack Sealing	\$1,672,864	\$1,194,760	\$706,377	\$109,600	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$7,341,532	\$6,292,153	\$1,154,896	\$103,925	\$-
Dredging	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$3,429,456	\$4,146,615	\$1,845,428	\$278,197	\$-
Highway Sweeping	\$963,234	\$1,007,278	\$141,245	\$-	\$-
Landscaping	\$233,427	\$600,000	\$244,014	\$-	\$-
Mowing and Spraying	\$2,002,002	\$1,038,229	\$357,576	\$29,565	\$-
Sewer and Water	\$3,904	\$20,843	\$10,580	\$-	\$-
Tree Trimming	\$3,939,855	\$2,625,059	\$722,777	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - No Added Capacity	\$6,001	\$-	\$-	\$-	\$-
Hwy Reconstr - Restr and Rehab	\$646,014	\$109,047	\$265,670	\$177,113	\$-
Roadway - Reconstr - Sidewalks and Curbing	\$1,879,857	\$748,676	\$-	\$-	\$-

(Table G-1, cont., 3)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
13 - Safety Improvements					
Electrical	\$398,549	\$-	\$-	\$-	\$-
Impact Attenuators	\$1,068,681	\$911,141	\$346,248	\$129,196	\$-
Lighting	\$3,735,830	\$2,267,423	\$1,281,166	\$116,870	\$-
Pavement Marking	\$3,332,465	\$3,166,821	\$1,623,975	\$343,891	\$-
Safety Improvements	\$227,620	\$33,595	\$-	\$-	\$-
Sign Installation/Upgrading	\$545,832	\$833,711	\$827,507	\$65,739	\$-
Structural Signing	\$359,312	\$129,607	\$-	\$-	\$-
Section I Total:	\$138,573,354	\$95,746,219	\$38,708,474	\$3,975,025	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$83,800,000	\$95,000,000	\$95,000,000	\$95,000,000	\$95,000,000
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$34,400,000	\$35,440,000	\$36,510,000	\$37,610,000	\$38,740,000
Section II Total:	\$118,200,000	\$130,440,000	\$131,510,000	\$132,610,000	\$133,740,000
Grand Total NFA:	\$256,773,354	\$226,186,219	\$170,218,474	\$136,585,025	\$133,740,000

(Table G-1, cont., 4)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 2: Federal Aid					
Section I - Federal Aid Maintenance Projects					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$3,805,564	\$502,504	\$2,357,142	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$1,038,762	\$952,198	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$-	\$-	\$-	\$-	\$-
Bridge Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$3,401,816	\$378,207	\$-	\$-	\$-
Structures Maintenance	\$238,348	\$2,860,181	\$1,430,090	\$-	\$-
04 - Capacity					
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$-	\$-	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-

(Table G-1 ,cont., 5)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Culvert Replacement	\$-	\$-	\$-	\$-	\$-
Drainage	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$-	\$-	\$-	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-
Lighting	\$5,557,056	\$9,931	\$978,483	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-
Safety Improvements	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 6)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts plus Expenditures within MPO boundaries					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$583,693	\$99,450	\$-	\$-	\$-
Section I Total:	\$13,586,477	\$3,850,272	\$5,804,478	\$952,198	\$-
Grand Total Federal Aid:	\$13,586,477	\$3,850,272	\$5,804,478	\$952,198	\$-

(Table G-1, cont., 6)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 1: Non-Federal Aid					
Section I - Non Federal Aid Maintenance Projects - State Bondfunds					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$78,719	\$114,000	\$52,000	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$36,405,775	\$18,815,892	\$6,183,863	\$345,318	\$-
Bridge Maintenance - Deck Repairs	\$13,072,586	\$8,334,358	\$5,311,045	\$443,585	\$-
Bridge Maintenance - Joints	\$3,793,035	\$2,804,206	\$1,208,481	\$68,432	\$-
Bridge Preservation	\$722,817	\$1,510,000	\$635,000	\$-	\$-
Drawbridge Maintenance	\$5,575,223	\$2,560,174	\$-	\$-	\$-
Painting - Structural	\$4,516,054	\$1,605,861	\$-	\$-	\$-
Structures Maintenance	\$284,948	\$142,680	\$-	\$-	\$-
04 - Capacity					
Highway Relocation	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Major Widening	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$4,429,468	\$2,368,944	\$929,429	\$114,754	\$-
07 - Intersection Improvements					
Traffic Signals	\$3,488,759	\$2,224,126	\$1,914,764	\$94,957	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 7)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$625,000	\$695,000	\$65,316	\$-	\$-
Resurfacing	\$6,415,673	\$4,437,466	\$3,658,730	\$956,730	\$-
Resurfacing DOT Owned Non-Interstate	\$5,203,927	\$3,704,756	\$1,345,715	\$178,272	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$1,966,347	\$1,455,089	\$310,866	\$-	\$-
Contract Highway Maintenance	\$3,055,450	\$2,387,018	\$1,154,312	\$72,342	\$-
Crack Sealing	\$1,672,864	\$1,194,760	\$706,377	\$109,600	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$6,789,520	\$5,478,547	\$1,040,684	\$103,925	\$-
Dredging	\$-	\$-	\$-	\$-	\$-
Drilling & Boring	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$3,429,456	\$4,146,615	\$1,845,428	\$278,197	\$-
Highway Sweeping	\$963,234	\$1,007,278	\$141,245	\$-	\$-
Landscaping	\$233,427	\$600,000	\$244,014	\$-	\$-
Mowing and Spraying	\$1,984,043	\$822,728	\$177,992	\$29,565	\$-
Sewer and Water	\$3,904	\$20,843	\$10,580	\$-	\$-
Tree Trimming	\$3,939,855	\$2,625,059	\$722,777	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - No Added Capacity	\$6,001	\$-	\$-	\$-	\$-
Hwy Reconstr - Restr and Rehab	\$646,014	\$109,047	\$265,670	\$177,113	\$-
Roadway - Reconstr - Sidewalks and Curbing	\$1,879,857	\$748,676	\$-	\$-	\$-

(Table G-1, cont., 8)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
13 - Safety Improvements					
Electrical	\$398,549	\$-	\$-	\$-	\$-
Impact Attenuators	\$1,068,681	\$842,686	\$181,956	\$47,050	\$-
Lighting	\$3,735,830	\$2,267,423	\$1,281,166	\$116,870	\$-
Pavement Marking	\$3,332,465	\$3,166,821	\$1,623,975	\$343,891	\$-
Safety Improvements	\$227,620	\$33,595	\$-	\$-	\$-
Sign Installation/Upgrading	\$467,832	\$573,711	\$646,592	\$65,739	\$-
Structural Signing	\$359,312	\$129,607	\$-	\$-	\$-
Section I Total:	\$120,772,243	\$76,926,966	\$31,657,976	\$3,546,339	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$83,800,000	\$95,000,000	\$95,000,000	\$95,000,000	\$95,000,000
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$34,400,000	\$35,440,000	\$36,510,000	\$37,610,000	\$38,740,000
Section II Total:	\$118,200,000	\$130,440,000	\$131,510,000	\$132,610,000	\$133,740,000
Grand Total NFA:	\$238,972,243	\$207,366,966	\$163,167,976	\$136,156,339	\$133,740,000

(Table G-1, cont., 9)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 2: Federal Aid					
Section I - Federal Aid Maintenance Projects					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$2,557,469	\$502,504	\$-	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$-	\$-	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$-	\$-	\$-	\$-	\$-
Bridge Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$3,401,816	\$378,207	\$-	\$-	\$-
Structures Maintenance	\$-	\$-	\$-	\$-	\$-
04 - Capacity					
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$-	\$-	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 10)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Crack Sealing	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$-	\$-	\$-	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-
Lighting	\$-	\$-	\$-	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 11)

Operating and Maintenance Expenditures as of March 2022					
Statewide and District Contracts					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Safety Improvements	\$-	\$-	\$-	\$-	\$-
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$583,693	\$99,450	\$-	\$-	\$-
Section I Total:	\$6,542,978	\$980,161	\$-	\$-	\$-
Grand Total Federal Aid:	\$6,542,978	\$980,161	\$-	\$-	\$-

(Table G-1, cont., 12)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 1: Non-Federal Aid					
Section I - Non Federal Aid Maintenance Projects - State Bondfunds					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$232,327	\$610,000	\$396,913	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$-	\$-	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$1,169,837	\$3,118,136	\$2,431,780	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$-	\$-	\$-	\$-	\$-
Structures Maintenance	\$-	\$-	\$-	\$-	\$-
04 - Capacity					
Highway Relocation	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Major Widening	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$3,249,260	\$722,058	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 13)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Crack Sealing	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$552,012	\$813,606	\$114,211	\$-	\$-
Dredging	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$17,958	\$215,500	\$179,584	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - No Added Capacity	\$-	\$-	\$-	\$-	\$-
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
Roadway - Reconstr - Sidewalks and Curbing	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 14)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-
Lighting	\$-	\$-	\$-	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-
Safety Improvements	\$-	\$-	\$-	\$-	\$-
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$-	\$-	\$-	\$-	\$-
Section I Total:	\$1,972,134	\$8,006,503	\$3,844,546	\$-	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$-	\$-	\$-	\$-	\$-
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$-	\$-	\$-	\$-	\$-
Section II Total:	\$-	\$-	\$-	\$-	\$-
Grand Total NFA:	\$1,972,134	\$8,006,503	\$3,844,546	\$-	\$-

(Table G-1, cont., 15)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Part 2: Federal Aid					
Section I - Federal Aid Maintenance Projects					
01 - ADA Retrofits					
Sidewalk Construction and Repairs	\$-	\$-	\$-	\$-	\$-
02 - Bicycles and pedestrians program					
Bikeway/Bike Path Construction	\$-	\$-	\$-	\$-	\$-
03 - Bridge					
Bridge Maintenance	\$1,248,095	\$-	\$2,357,142	\$-	\$-
Bridge Maintenance - Deck Repairs	\$-	\$-	\$-	\$-	\$-
Bridge Maintenance - Joints	\$-	\$-	\$-	\$-	\$-
Bridge Preservation	\$-	\$-	\$-	\$-	\$-
Bridge Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drawbridge Maintenance	\$-	\$-	\$-	\$-	\$-
Painting - Structural	\$-	\$-	\$-	\$-	\$-
Structures Maintenance	\$-	\$-	\$-	\$-	\$-
04 - Capacity					
Hwy Reconstr - Added Capacity	\$-	\$-	\$-	\$-	\$-
05 - Facilities					
Vertical Construction (Ch 149)	\$-	\$-	\$-	\$-	\$-
07 - Intersection Improvements					
Traffic Signals	\$-	\$-	\$-	\$-	\$-
08 - Interstate Pavement					
Resurfacing Interstate	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 16)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
09 - Intelligent Transportation Systems Program					
Intelligent Transportation System	\$-	\$-	\$-	\$-	\$-
10 - Non-interstate DOT Pavement Program					
Milling and Cold Planing	\$-	\$-	\$-	\$-	\$-
Resurfacing	\$-	\$-	\$-	\$-	\$-
Resurfacing DOT Owned Non-Interstate	\$-	\$-	\$-	\$-	\$-
11 - Roadway Improvements					
Asbestos Removal	\$-	\$-	\$-	\$-	\$-
Catch Basin Cleaning	\$-	\$-	\$-	\$-	\$-
Contract Highway Maintenance	\$-	\$-	\$-	\$-	\$-
Crack Sealing	\$-	\$-	\$-	\$-	\$-
Culvert Maintenance	\$-	\$-	\$-	\$-	\$-
Culvert Reconstruction/Rehab	\$-	\$-	\$-	\$-	\$-
Drainage	\$-	\$-	\$-	\$-	\$-
Guard Rail & Fencing	\$-	\$-	\$-	\$-	\$-
Highway Sweeping	\$-	\$-	\$-	\$-	\$-
Landscaping	\$-	\$-	\$-	\$-	\$-
Mowing and Spraying	\$-	\$-	\$-	\$-	\$-
Sewer and Water	\$-	\$-	\$-	\$-	\$-
Tree Trimming	\$-	\$-	\$-	\$-	\$-
12 - Roadway Reconstruction					
Hwy Reconstr - Restr and Rehab	\$-	\$-	\$-	\$-	\$-
13 - Safety Improvements					
Electrical	\$-	\$-	\$-	\$-	\$-
Impact Attenuators	\$-	\$-	\$-	\$-	\$-

(Table G-1, cont., 17)

Operating and Maintenance Expenditures as of March 2022					
Boston Region					
Program Group/Sub Group	Est SFY 2022 Spending	Est SFY 2023 Spending	Est SFY 2024 Spending	Est SFY 2025 Spending	Est SFY 2026 Spending
Lighting	\$5,557,056	\$9,931	\$978,483	\$-	\$-
Pavement Marking	\$-	\$-	\$-	\$-	\$-
Safety Improvements	\$-	\$-	\$-	\$-	\$-
Sign Installation/Upgrading	\$-	\$-	\$-	\$-	\$-
Structural Signing	\$-	\$-	\$-	\$-	\$-
Section I Total:	\$6,805,151	\$9,931	\$3,335,626	\$-	\$-
Section II - Non Federal Aid Highway Operations - State Operating Budget Funding					
Snow and Ice Operations & Materials					
	\$-	\$-	\$-	\$-	\$-
District Maintenance Payroll					
Mowing, Litter Mgmt, Sight Distance Clearing, Etc.	\$-	\$-	\$-	\$-	\$-
Section II Total:	\$-	\$-	\$-	\$-	\$-
Grand Total NFA:	\$6,805,151	\$9,931	\$3,335,626	\$-	\$-

Table G-2
FFYs 2023–27 TIP Operations and Maintenance Summary: MBTA

Category	FY23-FY27	FY23	FY24	FY25	FY26	FY27
Operations and Maintenance Revenues (\$M)						
Fare Revenue	2,589	472	504	518	533	561
Non-Fare Revenue	521	98	103	105	107	109
Sales Tax and Local Assessments	7,754	1,459	1,504	1,549	1,596	1,645
Additional State Assistance	635	127	127	127	127	127
Federal Relief & One-Time Revenue	437	316	121			
Total Revenue	11,936	2,473	2,359	2,300	2,363	2,442
Operations and Maintenance Costs (\$M)						
Wages, Materials, and Services and Contracts	10,611	1,939	2,035	2,134	2,218	2,286
Debt Service	2,904	533	560	571	613	627
Total Costs	13,515	2,472	2,595	2,705	2,831	2,913
Difference Between Revenues and Costs	(1,579)	0	(236)	(406)	(467)	(471)

1. FY23-FY27 spending and revenue estimates based on Scenario 2 ridership projections as of the December Annual Pro Forma presentation to the Board on 12/15/21
2. Additional state assistance displayed as part of total revenue
3. Federal relief & One-Time Revenue includes CARES Act funds, CRRSAA funds, and ARPA funds along with a planned transfer of Operating Deficiency Reserve funds, along with FEMA reimbursement revenues for COVID-19 expenses
4. Federal relief & one-time revenue: The MBTA has an estimated allocation of one-time federal COVID-19 relief funding totaling \$1,988M 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 \$860M from the American Rescue Plan (ARP) Act from March 11, 2021.
5. Sales Tax: The dedicated revenues from the state sales tax are equal to whichever is greater, the amount of actual sales tax receipts generated from the statewide sales tax dedicated to the MBTA, or a base revenue amount. The annual amount of dedicated sales tax revenues that the MBTA receives is subject to annual upward adjustment to a maximum 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 2023–27 TIP Operations and Maintenance Summary: MWRTA

Operating Revenue	Actual	Actual	Actual	Per Approved Budget	Projected	Projected	Projected	Projected	Projected
	FY19	FY20	FY21	FY 22	FY 23	FY24	FY25	FY26	FY27
Farebox	\$607,985	\$479,129	\$20,701	\$442,513	\$455,989	\$467,389	\$479,074	\$491,051	\$503,327
Section 5339									
Section 5307	\$1,534,066	\$922,968					\$2,514,930	\$2,395,392	\$2,395,392
Section 5311									
CMAQ/TDM									
Cares /Crrsaa/American Rescue Plan		\$825,000	\$2,550,000	\$2,453,706	\$4,277,394	\$3,021,989			
Advertising	\$87,950	\$80,250	\$78,425	\$83,794	\$96,425	\$98,836	\$101,307	\$103,839	\$106,435
Interest Income	\$7,168	\$5,307	\$882	\$875	\$1,321	\$1,354			
Rental Income	\$123,844	\$108,364	\$84,257	\$108,000	\$84,419	\$86,530	\$118,000	\$118,000	\$118,000
Parking Revenue	\$274,999	\$206,328	\$200,075	\$252,270	\$195,873	\$200,770	\$205,789	\$210,934	\$216,208
State Operating Assistance	\$3,542,451	\$3,474,631	\$3,514,840	\$3,939,264	\$3,192,206	\$3,672,011	\$3,763,811	\$3,857,907	\$3,954,354
Local Assessment	\$4,078,598	\$3,876,600	\$3,036,067	\$4,072,853	\$3,599,300	\$3,689,283	\$3,781,515	\$3,876,053	\$3,972,954
Other: (Define)	\$688,727	\$534,505	\$391,202	\$421,987	\$232,805	\$238,625	\$244,591	\$250,705	\$256,973
TOTAL	\$10,945,787	\$10,513,083	\$9,876,449	\$11,775,262	\$12,135,734	\$11,476,787	\$11,209,017	\$11,303,881	\$11,523,643
Other - Operating (examples)									
Ins. Recoveries, misc.	\$25,904	\$10,624	\$3,391	\$3,400	\$2,258	\$2,314	\$2,372	\$2,431	\$2,492
Gain on Sale of Fixed Assets									
ID Income									
Miscellaneous	\$13,142	\$4,283							
Vending	\$5,254	\$4,687	\$3,333	\$5,254	\$2,078	\$2,130	\$2,183	\$2,237	\$2,293
Fuel Tax Rebate	\$53,733	\$31,334	\$19,937	\$20,000	\$18,848	\$19,319	\$19,802	\$20,297	\$20,805
Vehicle Repair Reimbursement	\$68,892	\$74,162	\$49,501	\$68,892	\$48,943	\$50,166	\$51,420	\$52,706	\$54,023
MAPC Reimbursement	\$-								
HST Revenue	\$1,251								

(Table G-3, cont., 2)

Operating Revenue	Actual	Actual	Actual	Per Approved Budget	Projected	Projected	Projected	Projected	Projected
	FY19	FY20	FY21	FY 22	FY 23	FY24	FY25	FY26	FY27
CDL Workforce Development	\$17,500								
Hudson Shuttle	\$-								
Mass Bay Community College Shuttle	\$212,789	\$176,674		\$212,789		\$-	\$-	\$-	\$-
Travel Training Initiative	\$84,262	\$76,048	\$78,594	\$48,867	\$100,000	\$102,500	\$105,063	\$107,689	\$110,381
5310 ADA Above and Beyond	\$172,038								
Solar Renew Energy Credit Rev	\$260	\$52,770	\$50,762	\$52,284	\$49,361	\$50,595	\$51,860	\$53,156	\$54,485
First Mile Last Mile Operating Grant	\$11,653								
Rte 20 Operating Grant	\$3,603								
Mass Dot Shuttle Reimbursement	\$6,200	\$66,375							
COA Training Revenue	\$7,377	\$11,548	\$8,843	\$10,500	\$11,318	\$11,601	\$11,891	\$12,188	\$12,493
Rebate Income	\$4,869								
MW Health Foundation Training Grant		\$26,000							
MAPC Grant Revenue			\$176,842						
Other Operating Revenue	\$688,727	\$534,505	\$391,202	\$421,987	\$232,805	\$238,625	\$244,591	\$250,705	\$256,973
Operating Expenses	\$10,945,787	\$10,513,083	\$9,876,449	\$11,818,383	\$12,135,734	\$11,476,787	\$11,209,017	\$11,303,881	\$11,523,643

Table G-4
FFYs 2023–27 TIP Operations and Maintenance Summary: CATA

	Previous (Actual)	Current (Budgeted)	Year Two (Projected)	Year Three (Projected)	Year Four (Projected)	Year Five (Projected)
	2021	2022	2023	2024	2025	2026
Farebox	\$66,825	\$120,000	\$190,000	\$190,000	\$190,000	\$190,000
Section 5307	\$144,821	\$250,992	\$501,984	\$514,534	\$527,397	\$540,582
Section 5311	\$-	\$-	\$-	\$-	\$-	\$-
CMAQ/TDM	\$-	\$-	\$-	\$-	\$-	\$-
Fully Funded	\$-	\$-	\$-	\$-	\$-	\$-
MassDOT Discretionary Grant	\$-	\$96,680	\$-	\$-	\$-	\$-
Community Transit Grant	\$46,874	\$97,024	\$50,000	\$50,000	\$50,000	\$50,000
Auxiliary Revenues *	\$2,822,586	\$762,156	\$500,000	\$500,000	\$500,000	\$500,000
Interest Income	\$10,641	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
State Contract Assistance **	\$1,465,569	\$1,506,637	\$1,544,303	\$1,582,910	\$1,622,483	\$1,663,045
Local Assessment	\$775,531	\$795,480	\$815,367	\$835,751	\$856,645	\$878,061
Total	\$5,332,847	\$3,630,969	\$3,603,654	\$3,675,195	\$3,748,525	\$3,823,688
Operating Expenses ***	Previous	Current	Year Two	Year Three	Year Four	Year Five
	2021	2022	2023	2024	2025	2026
	\$5,332,847	\$3,630,969	\$3,603,654	\$3,675,195	\$3,748,525	\$3,823,688

* Auxiliary Revenues include contract transportation (HST, Beverly Shuttle, adult day care, etc), rental income, advertising

** Operating Assistance provided by the state

*** Description of Operating Expenses: Salaries and wages; fringe benefit; legal, accounting, and professional services; promotional/marketing; insurance; equipment; non-capitalized maintenance/repair; fuel costs; tire costs; office supplies and equipment; interest expense; management fees; travel and training; and other miscellaneous expense items