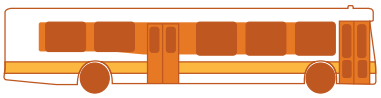

APPENDIX A
BUS
LANE



APPENDIX A

PROJECT PRIORITIZATION AND SCORING

INTRODUCTION

As described in Chapter 2, the Transportation Improvement Program (TIP) development and project prioritization and funding process consists of numerous phases and is supported by several different funding sources. This appendix includes information about transportation construction 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) 2020-24 TIP. In order to be considered for funding by the MPO, a project must fulfill certain basic criteria:

- The Massachusetts Department of Transportation's Project Review Committee must have approved the project or have plans to review it.
- The project should fall into one of the investment categories established in the Boston Region MPO's Long-Range Transportation Plan (LRTP): Complete Streets, Intersection Improvements, Bicycle Network and Pedestrian Connections, Major Infrastructure, or Community Transportation/Parking/Clean Air and Mobility.[1]

If a project meets the above criteria, it is presented to the MPO board in the Universe of Unprogrammed Projects (Table A-1) to be considered for funding.

Once a project in that list nears the 25 percent design stage, the required information is available for evaluation and scoring by MPO staff. The evaluation criteria used to score projects are based on the MPO's goals and objectives (Table A-2). After the projects are scored, the scores are shared with project proponents, posted on the MPO's website, and presented to the MPO board for review and discussion. The scores for projects evaluated during development of the FFYs 2020-24 TIP are summarized in Table A-3.

The next step in project prioritization is development of the First-Tier List of Projects (Table A-4). In addition to summarizing the project scores, the First-Tier List of Projects presents geographic, cost, readiness, and other information about each project that the MPO board can use to inform decisions about how to prioritize projects for funding in the TIP.

1 These are the investment categories established in the LRTP, *Charting Progress to 2040*. An updated LRTP, *Destination 2040*, will be adopted in July 2019 and may have updated or new investment categories.

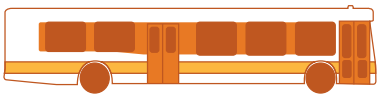


Table A-1
Universe of Unprogrammed Projects
(as presented to the Boston Region MPO board on February 7, 2019)

Municipality	Project Proponent	Project Name	PROJIS/ TIP ID	Design Status	Cost Estimate	MAPC Subregion	MassDOT Highway District	Evaluate in 2018/2019	MPO Investment Program
Inner Core									
Newton	Newton	Reconstruction and Signal Improvements on Walnut St, from Homer St to Route 9	601704	25% design	$ 4,648,360	ICC	6		Complete Streets
Boston	Boston	Neponset River Greenway (Phase 3)	608943	PRC-approved	$ 4,972,500	ICC	6	X	Bicycle and Pedestrian
Everett	Everett	Reconstruction of Beacham St from Broadway to the Chelsea City Line	609257	Pre-PRC; PRC-approval expected Dec. 2018	$ 9,180,000	ICC	4	X	Complete Streets
Lynn	Lynn	Traffic and Safety Improvements at Two Locations on Broadway	609254	Pre-PRC; PRC-approval expected Dec. 2018	$ 5,870,300	ICC	4	X	Intersection Improvements
Lynn	Lynn	Rehabilitation of Essex St	609252	Pre-PRC; PRC-approval expected Dec. 2018	$ 16,925,000	ICC	4	X	Complete Streets
Belmont	Belmont	Community Path, Belmont Component of the MCRT (Phase 1)	609204	PRC approved	$ 16,703,600	ICC	4		Bicycle and Pedestrian
Boston	Boston	Reconstruction of Tremont St, from Court St to Boylston St	601274	25% design	$ 2,681,260	ICC	6		Complete Streets
Boston, Brookline	Boston, Brookline	Mountfort St and Commonwealth Ave Connection	608956	PRC approved (2017)	$ 916,883	ICC	6		Intersection Improvements
Boston	Boston	Reconstruction of Tremont St, from Stuart St to Marginal Rd (1,830 ft.)	601507	PRC approved (1996)	$ 4,400,000	ICC	6		Complete Streets
Boston	Boston	Traffic Signal Improvements at Eight Locations	606556	PRC approved	$ 3,603,960	ICC	6		Intersection Improvements
Boston	MassDOT	Leverett Circle Pedestrian Bridge over Route 28, I-93 Ramps and Storrow Dr	606703	PRC approved	$ 11,040,000	ICC	6		Bicycle and Pedestrian
Boston	Boston	Reconstruction on (Route 203) Gallivan Boulevard, from Neponset Cir to East of Morton St Intersection	606896	PRC approved	$ 11,500,000	ICC	6		Complete Streets
Boston	Boston	Improvements on (Route 203) Morton St, from West of Gallivan Blvd to Shea Cir	606897	PRC approved	$ 11,500,000	ICC	6		Complete Streets
Cambridge	Cambridge	Innovation Boulevard Streetscape and Pedestrian Improvements, between Main St and Binney St (Phase I)	604993	25% design	$ 992,163	ICC	6		Complete Streets
Chelsea	Chelsea	Beacham and Williams St Reconstruction	609083	PRC approved	$ 8,281,525	ICC	6		Complete Streets
Chelsea	Chelsea	Reconstruction of Beacham St, from Spruce St to the Everett City Line	na	Pre-PRC	-	ICC	6		Complete Streets
Newton	Newton	Reconstruction on Route 30 (Commonwealth Ave), from Weston Town Line to Auburn St	600932	PRC approved (1996)	$ 2,208,000	ICC	6		Complete Streets
Newton	Newton	Improvements of Route 128/I-95 and Grove St	607940	PRC approved (2014)	$ 10,000,055	ICC	6		Complete Streets
Newton, Brookline	MassDOT	Resurfacing and Related Work on Route 9, from Dearborn St to Natick Town Line	608821	PRC approved	$ 7,337,000	ICC	6		Complete Streets

Table A-1
Universe of Unprogrammed Projects
(as presented to the Boston Region MPO board on February 7, 2019) (cont. 2)

Municipality	Project Proponent	Project Name	PROJIS/ TIP ID	Design Status	Cost Estimate	MAPC Subregion	MassDOT Highway District	Evaluate in 2018/2019	MPO Investment Program
Minuteman Advisory Group on Interlocal Coordination									
Littleton	Littleton	Reconstruction of Foster St	609054	PRC approved	$ 3,600,000	MAGIC	3	X	Complete Streets
MetroWest Regional Collaborative									
Framingham	MassDOT	Pedestrian Hybrid Beacon Installation at Route 9 and Maynard Rd	608006	25% design	$ 886,228	MWRC	3		Bicycle and Pedestrian
Marlborough	MassDOT	Intersection and Signal Improvements on Route 20 (East Main St/ Boston Post Rd) at Concord Rd	604231	25% design	$ 1,706,600	MWRC	3		Intersection Improvements
Ashland	Ashland	Rehabilitation and Rail Crossing Improvements on Cherry St	608436	PRC approved	$ 990,000	MWRC	3	X	Bicycle and Pedestrian
Framingham	Framingham	Traffic Signal Installation at Edgell Rd at Central St	608889	PRC approved	$ 1,680,000	MWRC	3	X	Intersection Improvements
Wellesley	MassDOT	Resurfacing and Related Work on Route 9, from Dearborn St to Natick Town Line	607340	PRC approved	$ 16,462,400	MWRC	6		Complete Streets
Weston	Weston	Intersection Improvements - Boston Post Rd (Route 20) at Wellesley St	608940	PRC approved	$ 1,219,250	MWRC	6		Intersection Improvements
Weston	MassDOT	Reconstruction on Route 30	608954	PRC approved	$ 8,117,562	MWRC	6		Complete Streets
North Suburban Planning Council									
Wilmington	Wilmington	Reconstruction on Route 38 (Main St), from Route 62 to the Woburn City Line	608051	25% design	$ 10,802,316	NSPC	4	X	Complete Streets
Wilmington	Wilmington	Intersection Improvements at Lowell St and Woburn St	609253	Pre-PRC; PRC-approval expected Dec. 2018	$ 3,400,000	NSPC	4	X	Intersection Improvements
Woburn	Woburn	Middlesex Canal Park Improvements, from Alfred St to School St (Phase II - Segment 5)	606304	PRC approved (2010)	$ 799,820	NSPC	4		Bicycle and Pedestrian
Woburn	MassDOT	Intersection Reconstruction at Route 3 (Cambridge Rd) and Bedford Rd and South Bedford St	608067	PRC approved (2014)	$ 1,440,000	NSPC	4		Intersection Improvements
North Shore Task Force									
Danvers	Danvers	Reconstruction on Collins St, from Sylvan St to Centre and Holten Sts	602310	75% design	$ 5,183,121	NSTF	4		Complete Streets
Peabody	MassDOT	Independence Greenway Extension	609211	PRC approved	$ 1,921,075	NSTF	4	X	Bicycle and Pedestrian
Beverly, Manchester-by-the-Sea	MassDOT	Resurfacing and Related Work on Route 127	607707	PRC approved	$ 2,300,000	NSTF	4		Complete Streets
Manchester-by-the-Sea	Manchester-by-the-Sea	Pine Street - Central St (Route 127) to Rockwood Heights Rd	na	Pre-PRC; PNF submitted 12/27/16	-	NSTF	4		Complete Streets

Table A-1
Universe of Unprogrammed Projects
(as presented to the Boston Region MPO board on February 7, 2019) (cont. 3)

Municipality	Project Proponent	Project Name	PROJIS/ TIP ID	Design Status	Cost Estimate	MAPC Subregion	MassDOT Highway District	Evaluate in 2018/2019	MPO Investment Program
South Shore Coalition									
Hingham	Hingham	Improvements on Route 3A from Otis St/Cole Rd, including Summer St and Rotary; Rockland St to George Washington Blvd	605168	PRC approved (2009)	$ 7,500,001	SSC	5		Complete Streets
Holbrook	Holbrook	Corridor Improvements and Related Work on South Franklin St (Route 37) from Snell St to King Rd	608543	PRC approved	$ 4,000,200	SSC	5		Complete Streets
Hull	Hull	Corridor Improvements along Nantasket Ave from Moutford Rd to A St	na	Pre-PRC; PNF submitted 6/30/16		SSC	5		Complete Streets
Weymouth	Weymouth	Reconstruction on Route 3A, including Pedestrian and Traffic Signal Improvements	608231	PRC approved	$ 10,780,100	SSC	6		Complete Streets
Weymouth	MassDOT	Resurfacing and Related Work on Route 3A	608483	PRC approved	$ 2,400,000	SCC	6		Complete Streets
South West Advisory Planning Committee									
Milford	MassDOT	Rehabilitation on Route 16, from Route 109 to Beaver St	608045	PRC approved (2014)	$ 2,700,000	SWAP	3		Complete Streets
Bellingham	Bellingham	South Main St (Route 126) - Elm St to Douglas Dr Reconstruction	na	Pre-PRC; PNF submitted 3/13/17	-	SWAP	3		Complete Streets
Franklin	MassDOT	Resurfacing and Intersection Improvements on Route 140, from Beaver St to I-495 Ramps	607774	PRC approved	$ 4,025,000	SWAP	3		Complete Streets
Three Rivers Interlocal Council									
Westwood	Westwood	Reconstruction of Canton St and Everett St	608158	PRC approved (2015)	$ 2,880,000	TRIC	6		Complete Streets
Westwood	MassDOT	Traffic Signal Improvements on Route 109	608947	PRC approved	$ 453,600	TRIC	6		Intersection Improvements
Multiple Subregions									
Newton, Weston	MassDOT	Multi-use Trail Connection, from Recreation Road to Upper Charles River Greenway including Reconstruction of Pedestrian Bridge N-12-078=W-29-062	609066	PRC approved	$ 2,661,498	ICC, MWRC	6	X	Bicycle and Pedestrian
Milton	Milton	Intersection Improvements - Squantum St at Adams St	608955	PRC approved (2017)	$ 979,763	ICC, TRIC	6		Intersection Improvements
Milton	MassDOT	Reconstruction on Granite Ave, from Neponset River to Squantum St	608406	25% design	$ 3,665,146	ICC, TRIC	6		Complete Streets

Already evaluated; reconsider for programming

Evaluate for the first time this year

Not evaluated; no data for evaluation

MAPC = Metropolitan Area Planning Council. MassDOT = Massachusetts Department of Transportation. PNF = Project Need Form. PRC = MassDOT Project Review Committee. PROJIS=MassDOT project information system.

MAPC subregions: ICC = Inner Core Committee. MAGIC = Minuteman Advisory Group on Interlocal Coordination. MWRC = MetroWest Regional Collaborative. NSPC = North Suburban Planning Council. NSTF = North Shore Task Force. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TRIC = Three Rivers Interlocal Council.

Table A-2
TIP Project Evaluation Criteria

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
SAFETY: Transportation by all modes will be safe.		
Reduce the number and severity of crashes, for all modes Reduce serious injuries and fatalities from transportation Protect transportation customers and employees from safety and security threats	Crash Severity Value: EPDO index (0–5 points)	+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
	Crash Rate (either intersection or corridor): (0–5 points)	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 / < 0.36 / < 0.21 Corridor: Evaluation Score / Interstate Other Freeways Expressways / Principal Arterials-Other Minor Arterials Major-Minor Collectors +5 / ≥ 1.81 / ≥ 6.45 +4 / 1.40 - 1.81 / 5.35 - 6.45 +3 / 1.00 - 1.40 / 4.25 - 5.35 +2 / 0.59 - 1.00 / 3.15 - 4.25 +1 / 0.40 - 0.59 / 2.05 - 3.15 +0 / < 0.40 / < 2.05
	Improves truck-related safety issue (0–5 points)	+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 If project scores points above, then it is eligible for additional points below: +2 Improves truck safety at HSIP Cluster

Table A-2
TIP Project Evaluation Criteria (cont. 2)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
	Improves bicycle safety (0–5 points)	+3 High total effectiveness of bicycle safety countermeasures +2 Medium total effectiveness of bicycle safety countermeasures +1 Low total effectiveness of bicycle safety countermeasures +0 Does not implement bicycle safety countermeasures
		If project scores points above, then it is eligible for additional points below: +2 Improves bicycle safety at HSIP Bicycle Cluster +1 Improves bicycle safety at HSIP Cluster
	Improves pedestrian safety (0–5 points)	+3 High total effectiveness of pedestrian safety countermeasures +2 Medium total effectiveness of pedestrian safety countermeasures +1 Low total effectiveness of pedestrian safety countermeasures +0 Does not implement pedestrian safety countermeasures
		If project scores points above, then it is eligible for additional points below: +2 Improves pedestrian safety at HSIP Pedestrian Cluster +1 Improves pedestrian safety at HSIP Cluster
	Improves safety or removes an at-grade railroad crossing (0–5 points)	+5 Removes an at-grade railroad crossing +3 Significantly improves safety at an at-grade railroad crossing +1 Improves safety at an at-grade railroad crossing +0 Does not include a railroad crossing
SAFETY (30 possible points)		

EPDO = Equivalent Property Damage Only; HSIP = Highway Safety Improvement Program

Table A-2
TIP Project Evaluation Criteria (cont. 3)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
SYSTEM PRESERVATION: Maintain the transportation system.		
Improve the condition of on- and off-system bridges Improve pavement condition on the MassDOT-monitored roadway system Maintain and modernize capital assets throughout the system Maintain and modernize capital assets throughout the system (surface condition of sidewalks) 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 hazards) Protect freight network elements, such as port facilities, that are vulnerable to climate-change impacts	Improves substandard roadway bridge(s) (0–3 points)	+3 Condition is structurally deficient and improvements are included in the project +1 Condition is functionally obsolete and improvements are included in the project +0 Does not improve substandard bridge or does not include a bridge
	Improves substandard pavement (up to 6 points)	+6 IRI rating greater than 320: Poor condition and pavement improvements are included in the project +4 IRI rating between 320 and 191: Fair condition and pavement improvements are included in the project +0 IRI rating less than 190: Good or better condition
	Improves substandard traffic signal equipment (0–6 points)	+6 Poor condition — improvements are included in the project +4 Fair condition — improvements are included in the project +0 Does not meet or address criteria
	Improves transit asset(s) (0–3 points)	+2 Brings transit asset into state of good repair +1 Meets an identified need in an Asset Management Plan +0 Does not meet or address criteria
	Improves substandard sidewalk(s) (0–3 points)	+3 Poor condition and sidewalk improvements are included in the project +2 Fair condition and sidewalk improvements are included in the project +0 Sidewalk condition is good or better
	Improves emergency response (0–2 points)	+1 Project improves an evacuation route, diversion route, or alternate diversion route +1 Project improves an access route to or in proximity to an emergency support location
	Improves ability to respond to extreme conditions (0–6 points)	+2 Addresses flooding problem and/or sea level rise and enables facility to function in such a condition +1 Brings facility up to current seismic design standards +1 Addresses critical transportation infrastructure +1 Protects freight network elements +1 Implements hazard mitigation or climate adaptation plans
SYSTEM PRESERVATION (29 possible points)		

IRI = International Roughness Index

Table A-2
TIP Project Evaluation Criteria (cont. 4)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
CAPACITY MANAGEMENT/MOBILITY: Use existing facility capacity more efficiently and increase healthy transportation options.		
Improve reliability of transit Implement roadway management and operations strategies, constructing improvements to the bicycle and pedestrian network, and supporting community-based transportation Create connected network of bicycle and accessible sidewalk facilities (at both regional and neighborhood scale) by expanding existing facilities and closing gaps Increase automobile and bicycle parking capacity and usage at transit stations Increase the percentage of population and places of employment within one-quarter mile of transit stations and stops Increase the percentage of population and employment with access to bicycle facilities Improve access to and accessibility of transit and active modes Enhance intermodal connections Support community-based and private-initiative services and programs to meet last-mile, reverse-commute and other non-traditional transit and transportation needs, including those of the elderly and persons with disabilities Eliminate bottlenecks on the freight network	Reduces transit vehicle delay (0–4 points)	+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
		If project scores points above, then it is eligible for additional points below: +1 Improves one or more key bus route(s)
	Improves pedestrian network and ADA accessibility (0–5 points)	+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
	Improves bicycle network (0–4 points)	+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
	Improves intermodal accommodations/connections to transit (0–6 points)	+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
	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/MOBILITY (29 possible points)		

ADA = Americans with Disabilities Act

Table A-2
TIP Project Evaluation Criteria (cont. 5)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
CLEAN AIR/CLEAN COMMUNITIES: Create an environmentally friendly transportation system.		
Reduce GHGs generated in the Boston region by all transportation modes as outlined in the Global Warming Solutions Act Reduce other transportation-related pollutants Minimize negative environmental impacts of the transportation system, when possible Support land-use policies consistent with smart and healthy growth	Reduces CO_2 (-5–5 points)	+5 1,000 or more annual tons of CO_2 reduced +4 500-999 annual tons of CO_2 reduced +3 250-499 annual tons of CO_2 reduced +2 100-249 annual tons of CO_2 reduced +1 Less than 100 annual tons of CO_2 reduced 0 No impact -1 Less than 100 annual tons of CO_2 increased -2 100-249 annual tons of CO_2 increased -3 250-499 annual tons of CO_2 increased -4 500-999 annual tons of CO_2 increased -5 1,000 or more annual tons of CO_2 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 1,000-1,999 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 1,000-1,999 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 or open space
		+1 Addresses wetlands or resource areas
		+1 Addresses wildlife preservation or 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/CLEAN COMMUNITIES (16 possible points)		

CO = carbon monoxide; CO_2 = carbon dioxide; EOEEA = Executive Office of Energy and Environmental Affairs; GHG = greenhouse gas; NOx = nitrogen oxides; VOCs = volatile organic compounds.

Table A-2
TIP Project Evaluation Criteria (cont. 6)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
TRANSPORTATION EQUITY: Provide comparable access and service quality among communities, regardless of income level or minority population.		
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 Break down barriers to participation in MPO-decision making	Serves Title VI/non-discrimination populations (-10–12 points) Regional Thresholds: - Elderly: 6.7% - Minority: 28.2% - People with a disability: 10.0% - Limited-English proficiency population: 10.6% - Low-income households: 32.2% - Zero-vehicle households: 16.1%	+2 Serves minority (high concentration) population (> 2,000 people) +1 Serves minority (low concentration) population (≤ 2,000 people)
		+2 Serves low-income (high concentration) population (> 2,000 people) +1 Serves low-income (low concentration) population (≤ 2,000 people)
		+2 Serves limited-English proficiency (high concentration) population (> 1,000 people) +1 Serves limited-English proficiency (low concentration) population (≤ 1,000 people)
		+2 Serves elderly (high concentration) population (> 2,000 people) +1 Serves elderly (low concentration) population (≤ 2,000 people)
		+2 Serves zero-vehicle households (high concentration) population (> 1,000 people) +1 Serves zero-vehicle households (low concentration) population (≤ 1,000 people)
		+2 Serves persons with disabilities (high concentration) population (> 1,000 people) +1 Serves persons with disabilities (low concentration) population (≤ 1,000 people)
		+0 Does not serve Title VI or non-discrimination populations -10 Creates a burden for Title VI or non-discrimination populations
TRANSPORTATION EQUITY (12 possible points)		
ECONOMIC VITALITY: Ensure our transportation network provides a strong foundation for economic vitality.		
Prioritize transportation investments that serve targeted development sites Prioritize transportation investments that support development consistent with the compact growth strategies of MetroFuture Minimize the burden of housing and transportation costs for residents in the region	Serves targeted development site (0–6 points)	+2 Provides new transit access to or within site +1 Improves transit access to or within site +1 Provides for bicycle access to or within site +1 Provides for pedestrian access to or within site +1 Provides for improved road access to or within site +0 Does not provide any of the above measures
	Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)	+2 Mostly serves an existing area of concentrated development +1 Partly serves an existing area of concentrated development +1 Supports local zoning or other regulations that are supportive of smart growth development +2 Complements other local financial or regulatory support that fosters economic revitalization in a manner consistent with smart growth development principles +0 Does not provide any of the above measures

Table A-2
TIP Project Evaluation Criteria (cont. 7)

OBJECTIVE	CRITERIA	SUBCRITERIA/SCORING
	Provides multimodal access to an activity center (0–4 points)	+1 Provides transit access (within a quarter mile) to an activity center
		+1 Provides truck access to an activity center
		+1 Provides bicycle access to an activity center
		+1 Provides pedestrian access to an activity center
		+0 Does not provide multimodal access
	Leverages other investments (non-TIP funding) (0–3 points)	+3 Meets or addresses criteria to a high degree (>30% of the project cost) +2 Meets or addresses criteria to a medium degree (10-30% of the project cost) +1 Meets or addresses criteria to a low degree (<10% of the project cost) +0 Does not meet or address criteria
ECONOMIC VITALITY (18 possible points)		
TOTAL SCORE (134 possible points)		

Table A-3
TIP Project Evaluation Results

TIP ID	Municipality	Proponent	Project Name	Project Cost	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	Crash Severity Value: EPDO Index (0–5 points)	Crash Rate (0–5 points)	Improves truck safety (0–5 points)	Improves bicycle safety (0–5 points)	Improves pedestrian safety (0–5 points)	Improves railroad crossing safety (0–5 points)	System Preservation Score (29 possible points)	Improves substandard roadway bridge(s) (0–3 points)	Improves substandard pavement (0–6 points)	Improves substandard traffic signals (0–6 points)	Improves transit asset(s) (0–3 points)	Improves substandard sidewalk(s) (0–3 points)	Improves emergency response (0–2 points)	Improves ability to respond to extreme conditions (0–6 points)	Capacity Management/Mobility Score (29 possible points)	Reduces transit vehicle delay (0–4 points)	Improves pedestrian network and ADA accessibility (0–5 points)	Improves bicycle network (0–4 points)	Improves intermodal connections to transit (0–6 points)	Improves truck movement (0–4 points)	Reduces vehicle congestion (0–6 points)	Clean Air/Sustainable Communities Score (16 possible points)	Reduces CO_2 emissions (-5–5 points)	Reduces other transportation-related emissions (-5–5 points)	Addresses environmental impacts (0–4 points)	Located in an EOEEA-certified "Green Community" (0–2 points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)	Serves targeted development site (0–6 points)	Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)	Provides intermodal access to activity center (0–4 points)	Leverages other investments (non-TIP funding) (0–3 points)
(Projects grouped by MPO Investment Category)																																								
Bicycle/Pedestrian																																								
608943*	Boston	DCR	Neponset River Greenway (Phase 3)	$4,972,500	42	42	11	3	0	0	4	4	0	4	0	0	0	0	3	1	0	9	0	5	4	0	0	0	10	3	4	1	2	7	1	0	1	0	0
609211*	Peabody	Peabody	Independence Greenway Extension	$1,921,075	31	34	9	1	2	0	3	3	0	4	0	0	0	0	3	1	0	9	0	5	4	0	0	0	4	1	1	2	0	4	4	0	2	2	0
608006	Framingham	MassDOT	Pedestrian Hybrid Beacon Installation at Route 9 and Maynard Rd	$886,228	26	26	11	2	4	0	0	4	1	6	0	0	4	0	0	1	1	2	0	2	0	0	0	0	2	0	0	0	2	1	4	0	2	2	0
609066*	Weston	MassDOT	Multi-Use Trail Connection (Recreation Rod to Upper Charles River Greenway, including Reconstruction of Pedestrian Bridge)	$2,661,498	24	24	6	0	0	0	3	3	0	3	0	0	0	0	3	0	0	9	0	5	4	0	0	0	4	1	1	0	2	2	0	0	0	0	0
Complete Streets																																								
609252*	Lynn	Lynn	Rehabilitation of Essex St	$16,952,000	61	66	19	5	5	0	4	5	0	17	0	6	6	1	3	1	0	9	2	2	1	2	0	2	8	3	4	1	0	10	3	0	3	0	0

Table A-3
TIP Project Evaluation Results (cont. 2)

TIP ID	Municipality	Proponent	Project Name	Project Cost	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	Crash Severity Value: EPDO Index (0–5 points)	Crash Rate (0–5 points)	Improves truck safety (0–5 points)	Improves bicycle safety (0–5 points)	Improves pedestrian safety (0–5 points)	Improves railroad crossing safety (0–5 points)	System Preservation Score (29 possible points)	Improves substandard roadway bridge(s) (0–3 points)	Improves substandard pavement (0–6 points)	Improves substandard traffic signals (0–6 points)	Improves transit asset(s) (0–3 points)	Improves substandard sidewalk(s) (0–3 points)	Improves emergency response (0–2 points)	Improves ability to respond to extreme conditions (0–6 points)	Capacity Management/Mobility Score (29 possible points)	Reduces transit vehicle delay (0–4 points)	Improves pedestrian network and ADA accessibility (0–5 points)	Improves bicycle network (0–4 points)	Improves intermodal connections to transit (0–6 points)	Improves truck movement (0–4 points)	Reduces vehicle congestion (0–6 points)	Clean Air/Sustainable Communities Score (16 possible points)	Reduces CO_2 emissions (-5–5 points)	Reduces other transportation-related emissions (-5–5 points)	Addresses environmental impacts (0–4 points)	Located in an EOEEA-certified "Green Community" (0–2 points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)	Serves targeted development site (0–6 points)	Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)	Provides intermodal access to activity center (0–4 points)	Leverages other investments (non-TIP funding) (0–3 points)
608051*	Wilmington	Wilmington	Reconstruction of Route 38 (Main St), from Route 62 to the Woburn City Line	$10,802,316	51	59	15	4	2	3	2	4	0	12	0	2	4	0	3	1	2	13	0	5	2	4	0	2	10	4	3	3	0	1	8	3	1	2	2
605168	Hingham	Hingham	Intersection Improvements at Route 3A/Summer St Rotary	$7,500,001	55	55	10	3	1	0	3	3	0	16	0	4	4	0	3	1	4	17	2	4	4	1	0	6	10	3	2	3	2	0	2	0	0	2	0
609257*	Everett	Everett	Rehabilitation of Beacham St, from Route 99 to Chelsea City Line	$9,180,000	54	54	19	1	5	4	4	4	1	10	0	6	0	0	3	1	0	13	0	5	4	0	4	0	4	1	1	0	2	7	1	0	1	0	0
601704	Newton	Newton	Reconstruction and Signal Improvements on Walnut St, from Homer St to Route 9	$4,648,360	45	45	14	4	3	3	2	2	0	12	0	6	4	0	2	0	0	7	0	0	1	6	0	0	4	-1	1	2	2	0	8	3	2	3	0
602310	Danvers	Danvers	Reconstruction of Collins St, from Sylvan St to Centre and Holten Sts	$5,183,121	44	44	8	1	2	1	2	2	0	12	0	6	6	0	0	0	0	12	0	4	1	2	1	4	5	2	1	2	0	2	5	1	2	2	0
608045	Milford	MassDOT	Rehabilitation on Route 16, from Route 109 to Beaver St	$2,700,000	43	43	20	5	5	4	2	4	0	7	0	0	4	0	2	1	0	9	1	5	1	0	2	0	-1	-1	-1	-1	1	0	3	5	3	1	1	0
609054*	Littleton	Littleton	Reconstruction of Foster St	$3,522,546	37	38	12	1	2	0	3	3	3	3	0	0	0	0	3	0	0	11	0	5	4	2	0	0	5	1	1	1	2	1	6	4	2	0	0

Table A-3
TIP Project Evaluation Results (cont. 3)

TIP ID	Municipality	Proponent	Project Name	Project Cost	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	Crash Severity Value: EPDO Index (0–5 points)	Crash Rate (0–5 points)	Improves truck safety (0–5 points)	Improves bicycle safety (0–5 points)	Improves pedestrian safety (0–5 points)	Improves railroad crossing safety (0–5 points)	System Preservation Score (29 possible points)	Improves substandard roadway bridge(s) (0–3 points)	Improves substandard pavement (0–6 points)	Improves substandard traffic signals (0–6 points)	Improves transit asset(s) (0–3 points)	Improves substandard sidewalk(s) (0–3 points)	Improves emergency response (0–2 points)	Improves ability to respond to extreme conditions (0–6 points)	Capacity Management/Mobility Score (29 possible points)	Reduces transit vehicle delay (0–4 points)	Improves pedestrian network and ADA accessibility (0–5 points)	Improves bicycle network (0–4 points)	Improves intermodal connections to transit (0–6 points)	Improves truck movement (0–4 points)	Reduces vehicle congestion (0–6 points)	Clean Air/Sustainable Communities Score (16 possible points)	Reduces CO_2 emissions (-5–5 points)	Reduces other transportation-related emissions (-5–5 points)	Addresses environmental impacts (0–4 points)	Located in an EOEEA-certified "Green Community" (0–2 points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)	Serves targeted development site (0–6 points)	Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)	Provides intermodal access to activity center (0–4 points)	Leverages other investments (non-TIP funding) (0–3 points)
Intersection Improvements																																								
609253*	Wilmington	Wilmington	Intersection Improvements at Lowell St (Route 129) and Woburn St	$3,400,000	49	53	13	2	3	1	3	4	0	12	0	2	6	0	3	0	1	16	0	5	2	0	3	6	9	4	3	2	0	1	2	0	2	0	0
608889*	Framingham	Framingham	Traffic Signal Installation at Edgell Rd and Central St	$1,680,000	26	41	9	1	2	1	2	3	0	10	0	4	0	0	3	0	3	7	0	3	1	0	1	2	9	3	2	2	2	2	4	0	1	0	3
609254*	Lynn	Lynn	Traffic and Safety Improvements at Two Locations on Broadway	$5,870,300	34	39	13	3	4	0	2	4	0	13	0	4	6	0	3	0	0	7	0	2	1	2	0	2	2	1	1	0	0	1	3	0	3	0	0
608436*	Ashland	Ashland	Rehabilitation and Rail Crossing Improvements on Cherry St	$990,000	38	38	12	1	4	0	1	3	3	10	0	6	0	0	3	1	0	5	0	5	0	0	0	0	2	0	0	0	2	1	8	2	3	0	3
604231	Marlborough	MassDOT	Intersection and Signal Improvements on Route 20 (East Main St/Boston Post Rd) at Concord Rd	$1,706,600	35	35	5	1	2	0	0	2	0	6	0	4	0	0	2	0	0	8	1	2	0	0	1	4	6	2	1	1	2	3	7	3	3	1	0
Major Infrastructure																																								
607981	Somerville	Somerville	McGrath Blvd Project	$82,500,000	74	74	15	3	4	0	4	4	0	12	0	4	6	0	2	0	0	19	0	5	4	6	0	4	6	1	3	0	2	10	12	4	5	3	0

Table A-3
TIP Project Evaluation Results (cont. 4)

TIP ID	Municipality	Proponent	Project Name	Project Cost	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	Crash Severity Value: EPDO Index (0–5 points)	Crash Rate (0–5 points)	Improves truck safety (0–5 points)	Improves bicycle safety (0–5 points)	Improves pedestrian safety (0–5 points)	Improves railroad crossing safety (0–5 points)	System Preservation Score (29 possible points)	Improves substandard roadway bridge(s) (0–3 points)	Improves substandard pavement (0–6 points)	Improves substandard traffic signals (0–6 points)	Improves transit asset(s) (0–3 points)	Improves substandard sidewalk(s) (0–3 points)	Improves emergency response (0–2 points)	Improves ability to respond to extreme conditions (0–6 points)	Capacity Management/Mobility Score (29 possible points)	Reduces transit vehicle delay (0–4 points)	Improves pedestrian network and ADA accessibility (0–5 points)	Improves bicycle network (0–4 points)	Improves intermodal connections to transit (0–6 points)	Improves truck movement (0–4 points)	Reduces vehicle congestion (0–6 points)	Clean Air/Sustainable Communities Score (16 possible points)	Reduces CO_2 emissions (-5–5 points)	Reduces other transportation-related emissions (-5–5 points)	Addresses environmental impacts (0–4 points)	Located in an EOEEA-certified "Green Community" (0–2 points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)	Serves targeted development site (0–6 points)	Provides for development consistent with the compact growth strategies of MetroFuture (0–5 points)	Provides intermodal access to activity center (0–4 points)	Leverages other investments (non-TIP funding) (0–3 points)
609246*	Lynn	Lynn	Reconstruction of Western Ave (Route 107)	$36,205,000	64	70	17	5	5	0	2	5	0	16	0	4	6	1	3	2	0	14	2	2	1	2	1	6	9	4	5	0	0	10	4	0	3	1	0
608449	Boston	Boston	Improvements along Commonwealth Ave (Route 30), from Alcorn St to Warren/ Kelton Sts (Phases 3 and 4)	$31,036,006	64	64	14	2	1	0	5	3	3	12	0	4	4	0	2	2	0	11	0	0	4	6	1	0	8	2	3	1	2	8	11	4	4	3	0
605313	Natick	Natick	Bridge Replacement, Route 27 (North Main St) over Route 9 (Worcester St) and Interchange Improvements	$25,897,370	60	60	20	5	5	3	3	4	0	19	3	6	6	0	3	0	1	10	0	4	1	4	1	0	4	-1	1	2	2	1	6	0	3	3	0
87790	Canton, Westwood	MassDOT	Interchange Improvements at I-95 / I-93 / University Ave / I-95 Widening	###########	48	48	18	5	0	5	4	4	0	6	3	0	0	0	0	0	3	17	0	5	4	4	4	0	-1	-2	-5	4	2	1	7	3	1	3	0
601513	Saugus	Saugus	Interchange Reconstruction at Walnut St and Route 1 (Phase II)	$19,581,123	43	43	11	3	3	0	2	3	0	11	0	4	6	0	0	1	0	9	1	4	1	0	1	2	6	1	1	2	2	2	4	0	1	3	0
604638	Danvers, Peabody	MassDOT	Mainline Improvements on Route 128 (Phase II)	$24,031,419	36	36	14	5	4	5	0	0	0	8	3	4	0	0	0	1	0	5	1	0	0	0	2	2	3	1	1	1	0	3	3	1	1	1	0

* Projects evaluated for the first time in FFY 2019. All other projects were re-evaluated in FFY 2019 with updated data and project information, where available.

Abbreviations: ADA = Americans with Disabilities Act. DCR = Department of Conservation and Recreation. EOEEA = Executive Office of Energy and Environmental Affairs. EPDO = Equivalent Property Damage Only. MassDOT = Massachusetts Department of Transportation.

Table A-4
Final Project Evaluation Results and First-Tier List

TIP ID	Municipality	Proponent	Project Name[a]	Project Cost	Design Status	Year of PRC Approval	Earliest FFY of Advertising for Construction Contract[a]	MAPC Subregion[b]	MAPC Community Type[c]	MassDOT Highway District	CTPS Study	Location-Specific LRTP-Identified Need[d]	Relationship to National Highway System	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	System Preservation Score (29 possible points)	Capacity Management/Mobility Score (29 possible points)	Clean Air/Sustainable Communities Score (16 possible points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)
(Projects grouped by MPO Investment Category)																					
Bicycle/Pedestrian																					
608943*	Boston	DCR	Neponset River Greenway (Phase 3)	$4,972,500	PRC Approved	2017	2024	ICC	IC	6				42	42	11	4	9	10	7	1
609211*	Peabody	Peabody	Independence Greenway Extension	$1,921,075	PRC Approved	2018	2024	NSTF	RUC	4				31	34	9	4	9	4	4	4
608006	Framingham	MassDOT	Pedestrian Hybrid Beacon Installation at Route 9 and Maynard Rd	$886,228	25% Submitted	2014	2024	MWRC	RUC	3			On NHS	**26**	**26**	11	6	2	2	1	4
609066*	Weston	MassDOT	Multi-Use Trail Connection (Recreation Rd to Upper Charles River Greenway, including Reconstruction of Pedestrian Bridge)	$2,661,498	25% Submitted	2018	2024	MWRC	MS	6				24	24	6	3	9	4	2	0
Complete Streets																					
609252*	Lynn	Lynn	Rehabilitation of Essex Street	$16,952,000	PRC Approved	2018	2024	ICC	RUC	4		Safety	Partially on NHS	**61**	**66**	19	17	9	8	10	3
608051*	Wilmington	Wilmington	Reconstruction of Route 38 (Main St), from Route 62 to the Woburn City Line	$10,802,316	25% Submitted	2014	2023	NSPC	MS	4		CMM	On NHS	**51**	**59**	15	12	13	10	1	8
605168	Hingham	Hingham	Intersection Improvements at Route 3A/Summer St Rotary	$7,500,001	PRC Approved	2009	2024	SSC	MS	5	X		Partially on NHS	**55**	**55**	10	16	17	10	0	2
609257*	Everett	Everett	Rehabilitation of Beacham Street, from Route 99 to Chelsea City Line	$9,180,000	PRC Approved	2018	2024	ICC	IC	4				54	54	19	10	13	4	7	1
601704	Newton	Newton	Reconstruction and Signal Improvements on Walnut St, from Homer St to Route 9	$4,648,360	25% Submitted	1996	2024	ICC	IC	6				45	45	14	12	7	4	0	8

Table A-4
Final Project Evaluation Results and First-Tier List (cont. 2)

TIP ID	Municipality	Proponent	Project Name[a]	Project Cost	Design Status	Year of PRC Approval	Earliest FFY of Advertising for Construction Contract[a]	MAPC Subregion[b]	MAPC Community Type[c]	MassDOT Highway District	CTPS Study	Location-Specific LRTP-Identified Need[d]	Relationship to National Highway System	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	System Preservation Score (29 possible points)	Capacity Management/Mobility Score (29 possible points)	Clean Air/Sustainable Communities Score (16 possible points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)
602310	Danvers	Danvers	Reconstruction of Collins St, from Sylvan St to Centre and Holten Sts	$5,183,121	75% Approved	1997	2024	NSTF	MS	4				44	44	8	12	12	5	2	5
608045	Milford	MassDOT	Rehabilitation on Route 16, from Route 109 to Beaver St	$2,700,000	PRC Approved	2014	2024	SWAP	RUC	3			Partially on NHS	**43**	**43**	**20**	**7**	**9**	**-1**	**3**	**5**
609054*	Littleton	Littleton	Reconstruction of Foster St	$3,522,546	PRC Approved		2024	MAGIC	DS	3				37	38	12	3	11	5	1	6
Intersection Improvements																					
609253*	Wilmington	Wilmington	Intersection Improvements at Lowell St (Route 129) and Woburn St	$3,400,000	PRC Approved	2018	2024	NSPC	MS	4	X	CMM	On NHS	**49**	**53**	**13**	**12**	**16**	**9**	1	2
608889*	Framingham	Framingham	Traffic Signal Installation at Edgell Road and Central St	$1,680,000	25% Submitted	2017	2022	MWRC	RUC	3				26	41	9	10	7	9	2	4
609254*	Lynn	Lynn	Traffic and Safety Improvements at Two Locations on Broadway	$5,870,300	PRC Approved	2018	2024	ICC	RUC	4				34	39	13	13	7	2	1	3
608436*	Ashland	Ashland	Rehabilitation and Rail Crossing Improvements on Cherry St	$990,000	PRC Approved	2017	2024	MWRC	MS	3				38	38	12	10	5	2	1	8
604231	Marlborough	MassDOT	Intersection and Signal Improvements on Route 20 (East Main St/Boston Post Rd) at Concord Rd	$1,706,600	25% Submitted	2007	2024	MWRC	RUC	3	X		Partially on NHS	**35**	**35**	**5**	**6**	8	6	3	7
Major Infrastructure																					
607981	Somerville	Somerville	**McGrath Boulevard Project**	$82,500,000	PRC Approved	No Date	2026-30	ICC	IC	4			On NHS	**74**	74	15	12	19	6	10	12
609246*	Lynn	Lynn	Reconstruction of Western Ave (Route 107)	$36,205,000	PRC Approved	2018	n/a	ICC	RUC	4		Safety	On NHS	**64**	**70**	**17**	**16**	**14**	**9**	**10**	**4**

Table A-4
Final Project Evaluation Results and First-Tier List (cont. 3)

TIP ID	Municipality	Proponent	Project Name[a]	Project Cost	Design Status	Year of PRC Approval	Earliest FFY of Advertising for Construction Contract[a]	MAPC Subregion[b]	MAPC Community Type[c]	MassDOT Highway District	CTPS Study	Location-Specific LRTP-Identified Need[d]	Relationship to National Highway System	Initial Total Score (134 possible points)	Revised Total Score (134 possible points)	Safety Score (30 possible points)	System Preservation Score (29 possible points)	Capacity Management/Mobility Score (29 possible points)	Clean Air/Sustainable Communities Score (16 possible points)	Transportation Equity Score (12 possible points)	Economic Vitality Score (18 possible points)
608449	Boston	Boston	Improvements along Commonwealth Ave (Route 30), from Alcorn St to Warren/Kelton Sts (Phases 3 and 4)	$31,036,006	25% Submitted	2016	n/a	ICC	IC	6			On NHS	64	64	14	12	11	8	8	11
605313	Natick	Natick	**Bridge Replacement, Route 27 (North Main St) over Route 9 (Worcester St) and Interchange Improvements**	$25,897,370	25% Submitted	2011	2024	MWRC	MS	3			On NHS	60	60	20	19	10	4	1	6
87790	Canton, Westwood	MassDOT	Interchange Improvements at I-95 / I-93 / University Ave / I-95 Widening	$202,205,994	25% Submitted	2011	n/a	TRIC	MS	6		CMM	On NHS	48	48	18	6	17	-1	1	7
601513	Saugus	Saugus	Interchange Reconstruction at Walnut St and Route 1 (Phase II)	$19,581,123	75% Submitted	1995	n/a	ICC	MS	4			On NHS	43	43	11	11	9	6	2	4
604638	Danvers, Peabody	MassDOT	Mainline Improvements on Route 128 (Phase II)	$24,031,419	100% Submitted	2005	n/a	NSTF	RUC	4			On NHS	36	36	14	8	5	3	3	3

* Projects evaluated for the first time in FFY 2019. All other projects were re-evaluated in FFY 2019 with updated data and project information, where available.

[a] The major infrastructure projects in bold are programmed in the Long-Range Transportation Plan, *Charting Progress to 2040*. The other major infrastructure projects would have to be programmed in the LRTP before being programmed in the TIP.

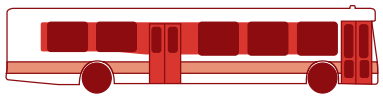
[b] MAPC subregions: ICC = Inner Core Committee. MAGIC = Minuteman Advisory Group on Interlocal Coordination. MWRC = MetroWest Regional Collaborative. NSPC = North Suburban Planning Council. NSTF = North Shore Task Force. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TRIC = Three Rivers Interlocal Council.

[c] MAPC community types: DS = developing suburb. IC = inner core; MS = maturing suburb. RUC = regional urban center.

[d] MPO staff noted whether a project may address an identified LRTP capacity management and/or mobility (CMM) need by comparing project locations to top priority bottleneck locations analyzed for the draft *Destination 2040* Needs Assessment. Staff noted whether a project may address an identified LRTP safety need by comparing project locations to top all-mode, bicycle, pedestrian, or truck crash cluster locations analyzed for the draft Destination 2040 Needs Assessment

Other abbreviations: CTPS = Central Transportation Planning Staff. DCR = Department of Conservation and Recreation. LRTP = Long-Range Transportation Plan. MAPC = Metropolitan Area Planning Council. MassDOT = Massachusetts Department of Transportation. PRC = MassDOT Project Review Committee.

APPENDIX B



APPENDIX B
GREENHOUSE GAS MONITORING AND EVALUATION

BACKGROUND

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

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

- MassDOT to demonstrate that its GHG emissions reduction commitments and targets are being achieved
- Each MPO to 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, to 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 2016 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 multi-modal 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, and 2020–24. 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 (CO_2) is the largest component of GHG emissions overall and is the focus of regulation 310 CMR 60.05, CO_2 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 CO_2 impacts, and 2) projects with assumed CO_2 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 CO_2 impact.

TRACKING AND EVALUATING THE TRANSPORTATION IMPROVEMENT PROGRAM

Travel Demand Model

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

Off-Model Methods

MassDOT's Office of Transportation Planning provided spreadsheets that are used to determine projects' eligibility for funding through the CMAQ program. Typically, MPO staff uses data from projects' functional design reports, which are prepared at the 25-percent design phase, to conduct these calculations. Staff used these spreadsheets to calculate estimated projections of CO_2 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 2020–24 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: Technology that 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 CO_2 Emissions

Projects with assumed CO_2 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 CO_2 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 CO_2 impact.
More details about these projects, including a description of each project's anticipated CO_2 impacts, are discussed in Chapter 3. The following tables display the GHG impact analyses of projects funded in the FFYs 2020–24 Highway Program (Table B-1) and Transit Program (Table B-2). Table B-3 summarizes the GHG impact analyses of highway projects completed in FFY 2019. Table B-4 summarizes the GHG impact analyses of transit projects completed in FFY 2019. 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

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
608229	Acton - Intersection and signal improvements at Kelley's Corner	Quantified	111,958	Quantified decrease in emissions from Complete Streets project
607748	Acton - Intersection and signal improvements on Route 2 and Route 111 (Massachusetts Ave) at Piper Rd and Taylor Rd	Qualitative		Qualitative decrease in emissions
609222	Arlington – Spy Pond Sediment Removal	Qualitative		No assumed impact/ negligible impact on emissions
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
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
608948	Bellingham - Franklin – Southern New England Trunk Trail (SNETT) Construction	Quantified	TBD	TBD
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
608911	Belmont - Improvements at Wellington Elementary School (SRTS)	Qualitative		Qualitative decrease in emissions
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
608348	Beverly - Rehabilitation of Bridge St	Quantified	387,153	Quantified decrease in emissions from Complete Streets project
606902	Boston - Bridge Reconstruction/Rehab, B-16-181, West Roxbury Parkway over MBTA	Qualitative		No assumed impact/ negligible impact on emissions
604173	Boston - Bridge replacement, B-16-016, North Washington St Bridge over the Boston Inner Harbor	Qualitative		No assumed impact/ negligible impact on emissions
606728	Boston - Bridge replacement, B-16-365, Bowker Overpass over Storrow Drive (eastbound)	Qualitative		No assumed impact/ negligible impact on emissions

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 2)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
606476	Roadway, Ceiling & Wall Reconstruction, New Jet Fans, and other Control Systems in Sumner Tunnel	Qualitative		No assumed impact/ negligible impact on emissions
608614	Boston - Bridge substructure repairs, B-16-179, Austin St over I-93 ramps, MBTA commuter rail and Orange Line	Qualitative		No assumed impact/ negligible impact on emissions
606453	Boston - Improvements on Boylston St, from Intersection of Brookline Ave and Park Dr to Ipswich St	Quantified	1,920,790	Quantified decrease in emissions from Complete Streets project
607759	Boston - Intersection improvements at the VFW Parkway and Spring St	Qualitative		Qualitative decrease in emissions
608943	Boston - Neponset River Greenway (Phase 3)	Quantified	239,055	Quantified decrease in emissions from bicycle and pedestrian infrastructure
606226	Boston - Reconstruction of Rutherford Ave, from City Square to Sullivan Square	Quantified		LRTP project included in the statewide model
608197	Boston - Superstructure replacement, B-16-107, Canterbury St over Amtrak/ MBTA	Qualitative		No assumed impact/ negligible impact on emissions
607888	Boston-Brookline - Multi-use path construction on New Fenway	Quantified	54,724	Quantified decrease in emissions from bicycle and pedestrian infrastructure
609090	Boston-Milton-Quincy - Highway lighting system replacement on Interstate 93, from Neponset Ave to the Braintree split	Qualitative		No assumed impact/ negligible impact on emissions
608608	Braintree - Highway Lighting Improvements at I-93/Route 3 Interchange	Qualitative		No assumed impact/ negligible impact on emissions
608482	Cambridge-Somerville - Resurfacing and related work on Route 28	Qualitative		No assumed impact/ negligible impact on emissions
TBD	Canton - Bridge Replacement, C-02-042, Revere Court over East Branch Neponset River	Qualitative		No assumed impact/ negligible impact on emissions
609053	Canton-Dedham-Norwood - Highway lighting improvements at Interstate 93 and Interstate 95/Route 128	Qualitative		No assumed impact/ negligible impact on emissions
608484	Canton-Milton - Resurfacing and related work on Route 138	Qualitative		No assumed impact/ negligible impact on emissions

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 3)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
608611	Canton-Milton-Randolph - Replacement and rehabilitation of the highway lighting system at the Route 24 and Interstate 93 interchange	Qualitative		No assumed impact/ negligible impact on emissions
608599	Canton-Sharon-Foxborough-Norwood-Walpole – Storm water improvements along Route 1, Route 1A, and Interstate 95	Qualitative		No assumed impact/ negligible impact on emissions
608078	Chelsea - Reconstruction on Broadway (Route 107) from City Hall to Revere city line	Quantified	93,278	Quantified decrease in emissions from Complete Streets project
605287	Chelsea - Route 1 Viaduct rehabilitation (southbound/northbound) on C-09-007 and C-09-011	Qualitative		No assumed impact/ negligible impact on emissions
608007	Cohasset - Corridor improvements and related work on Justice Cushing Highway (Route 3A) from Beechwood St to Henry Turner Bailey Rd	Quantified	5,849	Quantified decrease in emissions from Complete Streets project
BN1800	Community Transportation Program	Quantified	TBD	TBD
608495	Concord-Lexington-Lincoln - Resurfacing and related work on Route 2A	Qualitative		No assumed impact/ negligible impact on emissions
608818	Danvers - Resurfacing and related work on Route 114	Qualitative		No assumed impact/ negligible impact on emissions
608378	Danvers-Topsfield-Boxford-Rowley - Interstate maintenance and related work on Interstate 95	Qualitative		No assumed impact/ negligible impact on emissions
607899	Dedham - Pedestrian improvements along Bussy St	Quantified	3,331	Quantified decrease in emissions from bicycle and pedestrian infrastructure
607901	Dedham - Pedestrian improvements along Elm St and Rustcraft Rd corridors	Quantified	14,046	Quantified decrease in emissions from bicycle and pedestrian infrastructure
608596	Essex - Superstructure replacement, E-11-001 (2TV), Route 133\Main St over Essex River	Qualitative		No assumed impact/ negligible impact on emissions
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
609257	Everett - Rehabilitation of Beacham St, from Route 99 to Chelsea city line	Quantified	4,038	Quantified decrease in emissions from Complete Streets project

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 4)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
608210	Foxborough-Plainville-Wrentham-Franklin – Interstate maintenance resurfacing work on Interstate 495	Qualitative		No assumed impact/ negligible impact on emissions
608480	Foxborough-Walpole - Resurfacing and related work on Route 1	Qualitative		No assumed impact/ negligible impact on emissions
608228	Framingham - Reconstruction of Union Ave, from Proctor St to Main St	Quantified	-217,978	Quantified increase in emissions
608889	Framingham - Traffic Signal Installation at Edgell Rd and Central St	Quantified	233,257	Quantified decrease in emissions from Complete Streets project
609402	Framingham-Natick - Resurfacing and Related Work on Route 9	Qualitative		No assumed impact/ negligible impact on emissions
TBD	Hamilton - Bridge Replacement, Winthrop Street over Ipswich River	Qualitative		No assumed impact/ negligible impact on emissions
605168	Hingham - Intersection Improvements at Route 3A/Summer Street Rotary	Quantified	284,736	Quantified decrease in emissions from Complete Streets project
608498	Hingham-Weymouth-Braintree - Resurfacing and related work on Route 53	Qualitative		No assumed impact/ negligible impact on emissions
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
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
606043	Hopkinton - Signal and intersection improvements on Route 135	Quantified	1,298,625	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
601607	Hull - Reconstruction of Atlantic Ave and related work	Quantified	6,586	Quantified decrease in emissions from Complete Streets project
605743	Ipswich - Resurfacing and related work on Central and South Main Sts	Quantified	4,356	Quantified decrease in emissions from Complete Streets project

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 5)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
609054	Littleton - Reconstruction of Foster St	Quantified	1,140	Quantified decrease in emissions from Complete Streets project
608443	Littleton/Ayer - Intersection improvements on Route 2A at Willow Rd and Bruce St	Quantified	52,102	Quantified decrease in emissions from traffic operational improvement
609254	Lynn - Intersection Improvements at Two Intersections on Broadway	Quantified	73,291	Quantified decrease in emissions from traffic operational improvement
602077	Lynn - Reconstruction on Route 129 (Lynnfield St), from Great Woods Rd to Wyoma Square	Quantified	12,761	Quantified decrease in emissions from Complete Streets project
609252	Lynn - Rehabilitation of Essex St	Quantified	411,394	Quantified decrease in emissions from Complete Streets project
607477	Lynnfield- Peabody - Resurfacing and related work on Route 1	Qualitative		No assumed impact/ negligible impact on emissions
609060	Lynnfield-Peabody-Danvers - Guide and traffic sign replacement on Interstate 95/Route 128 (Task 'A' interchange)	Qualitative		No assumed impact/ negligible impact on emissions
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
608275	Malden - Exchange St Downtown Improvement Project	Quantified	13,519	Quantified decrease in emissions from Complete Streets project
608146	Marblehead - Intersection improvements at Pleasant St and Village, Vine, and Cross St	Quantified	531	Quantified decrease in emissions from traffic operational improvement
608566	Marlborough - Improvements at Route 20 (East Main St) at Curtis Ave	Qualitative		Qualitative decrease in emissions
608467	Marlborough - Resurfacing and related work on Route 20	Qualitative		No assumed impact/ negligible impact on emissions
608637	Maynard - Bridge replacement, M-10-006, carrying Florida Rd over the Assabet River	Qualitative		No assumed impact/ negligible impact on emissions
608835	Medford - Improvements at Brook Elementary School	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

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 6)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
608045	Milford - Rehabilitation on Route 16, from Route 109 to Beaver St	Quantified	-38,500	Quantified increase in emissions
607342	Milton - Intersection and signal improvements at Route 28 (Randolph Ave and Chickatawbut Rd	Qualitative		Qualitative decrease in emissions
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
608610	Newton - Steel superstructure cleaning (full removal) and painting of N-12-055	Qualitative		No assumed impact/ negligible impact on emissions
609066	Newton - Weston - Multi-Use Trail Connection, from Recreation Road to Upper Charles River Greenway including Reconstruction of Ped Bridge N-12-078=W-29-062	Quantified	TBD	TBD
608866	Newton-Weston - Steel superstructure cleaning (full removal) and painting of 3 bridges: N-12-051, W-29-011, and W-29-028	Qualitative		No assumed impact/ negligible impact on emissions
608609	Newton-Westwood - Steel superstructure cleaning (full removal) and painting of 2 bridges: N-12-056 and W-31-006	Qualitative		No assumed impact/ negligible impact on emissions
608052	Norwood - Intersection and signal improvements at Route 1 (Providence Highway) and Morse St	Qualitative		Qualitative decrease in emissions
605857	Norwood - Intersection improvements at Route 1 and University Ave/ Everett St	Quantified	1,092,131	Quantified decrease in emissions from traffic operational improvement
606130	Norwood - Intersection improvements at Route 1A and Upland Rd	Quantified	72,964	Quantified decrease in emissions from traffic operational improvement
608567	Peabody - Improvements at Route 114 at Sylvan St, Cross St, Northshore Mall, Loris Rd, Route 128 interchange, and Esquire Dr	Qualitative		Qualitative decrease in emissions
609211	Peabody - Independence Greenway Extension	Quantified	36,651	Quantified decrease in emissions from bicycle and pedestrian infrastructure
609101	Peabody - Pavement preservation and related work on Route 128	Qualitative		No assumed impact/ negligible impact on emissions

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 7)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
608933	Peabody - Rehabilitation of Central St	Quantified	150,913	Quantified decrease in emissions from Complete Streets project
609058	Peabody to Gloucester - Guide and traffic sign replacement on Route 128	Qualitative		No assumed impact/ negligible impact on emissions
608569	Quincy - Intersection improvements at Route 3A (Southern Artery) and Broad St	Qualitative		Qualitative decrease in emissions
608707	Quincy - Reconstruction of Sea St	Quantified	-30,437	Quantified increase in emissions
608208	Quincy-Milton-Boston - Interstate maintenance and related work on Interstate 93	Qualitative		No assumed impact/ negligible impact on emissions
609396	Randolph - Milton - Resurfacing and related work on Route 28	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
607305	Reading - Intersection signalization at Route 28 and Hopkins St	Quantified	7,088	Quantified decrease in emissions from traffic operational improvement
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
608743	Salem - Improvements at Bates Elementary School	Qualitative		Qualitative decrease in emissions
608817	Salem-Lynn - Resurfacing and related work on Route 107	Qualitative		No assumed impact/ negligible impact on emissions
608079	Sharon - Bridge Replacement, S-09-003 (40N), Moskwonikut St over Amtrak/ MBTA	Qualitative		No assumed impact/ negligible impact on emissions
608562	Somerville - Signal and Intersection Improvements on I-93 at Mystic Ave and McGrath Highway	Quantified	TBD	TBD
BN1570	Somerville-Medford - Green Line Extension Project - extension to College Ave with the Union Square spur	Quantified		LRTP project included in the statewide model
605342	Stow - Bridge replacement, Route 62 (Gleasondale Rd) over the Assabet River	Qualitative		No assumed impact/ negligible impact on emissions

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 8)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
608255	Stow - Bridge Replacement, S-29-011, Box Mill Road over Elizabeth Brook	Qualitative		No assumed impact/ negligible impact on emissions
608164	Sudbury - Bike path construction (Bruce Freeman Rail Trail)	Quantified	49,903	Quantified decrease in emissions from bicycle and pedestrian infrastructure
608895	Sudbury - Stow - Hudson – Mass Central Rail Trail Wayside	Quantified	TBD	TBD
607761	Swampscott - Intersection and signal improvements at Route 1A (Paradise Rd) at Swampscott Mall	Qualitative		Qualitative decrease in emissions
607329	Wakefield-Lynnfield - Rail Trail Extension, from the Galvin Middle School to Lynnfield/Peabody town line	Quantified	158,032	Quantified decrease in emissions from bicycle and pedestrian infrastructure
602261	Walpole - Reconstruction on Route 1A (Main St), 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
608564	Watertown - Intersection improvements at Route 16 and Galen St	Qualitative		Qualitative decrease in emissions
607777	Watertown - Rehabilitation of Mount Auburn St (Route 16)	Quantified	536,769	Quantified decrease in emissions from Complete Streets project
609102	Wenham-Manchester-Essex-Gloucester - Pavement preservation and related work on Route 128	Qualitative		No assumed impact/ negligible impact on emissions
607327	Wilmington - Bridge replacement, W-38-002, Route 38 (Main St) 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 St over I-93	Qualitative		No assumed impact/ negligible impact on emissions
609253	Wilmington - Intersection Improvements at Lowell St (Route 128) and Woburn St	Quantified	494,197	Quantified decrease in emissions from Complete Streets project
608051	Wilmington - Reconstruction of Route 38 (Main St), from Route 62 to the Woburn City Line	Quantified	492,160	Quantified decrease in emissions from Complete Streets project
608791	Winchester - Improvements at Vinson-Owen Elementary School	Qualitative		Qualitative decrease in emissions

Table B-1
Greenhouse Gas Regional Highway Project Tracking (cont. 9)

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO_2 Impact (kg/yr)	GHG Impact Description
607244	Winthrop - Revere St Roadway Improvements	Quantified	252,816	Quantified decrease in emissions from Complete Streets project
604996	Woburn - Bridge replacement, W-43-017, New Boston St over MBTA	Quantified		LRTP project included in the statewide model
603739	Wrentham - Construction of Interstate 495/Route 1A ramps	Quantified	1,233,486	Quantified decrease in emissions from traffic operational improvement

Greenhouse Gas Regional Highway Project Tracking

CO_2 = carbon dioxide; GHG = greenhouse gas; kg = kilogram; LRTP = Long-Range Transportation Plan; TBD = to be determined; yr = year.

Table B-2
Greenhouse Gas Regional Transit Project Tracking

This table is under development. It will contain the GHG impact analyses of projects funded in the Transit Program.

Table B-3
Greenhouse Gas Regional Highway "Completed" Project Tracking

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
29492	Bedford-Billerica - Middlesex Turnpike improvements, from Crosby Dr north to Manning Rd, includes reconstruction of B-04-006 (Phase III)	Quantified	LRTP	LRTP project included in the statewide model	2017
604761	Boston - Multi-Use Trail Construction (South Bay Harbor), from Ruggles Station to Fort Point Channel	Quantified	767,491	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2017
607309	Hingham- Reconstruction and related work on Derby St, from Pond Park Rd to Cushing St	Quantified	-113,400	Quantified decrease in emissions from Complete Streets project	2017
604810	Marlborough - Reconstruction of Route 85 (Maple St)	Quantified	589,680	Quantified decrease in emissions from Complete Streets project	2017
607754	Milton - Intersection and Signal Improvements at Granite Ave and Squantum St	Quantified		TBD	2017
602165	Stoneham - Signal and intersection improvements at Route 28/North St	Quantified	139,709	Quantified decrease in emissions from traffic operational improvement	2017
607999	Revere – Improvements at Garfield Elementary and Middle School (SRTS)	Qualitative		Qualitative Decrease in Emissions	2017
608004	Watertown - Safe Routes to School (Hosmer Elementary)	Qualitative		Qualitative Decrease in Emissions	2017
608003	Weymouth - Safe Routes to School (Pingree Elementary)	Qualitative		Qualitative Decrease in Emissions	2017
601630	Weymouth- Abington - Reconstruction and Widening on Route 18 (Main St), from Highland Pl to Route 139	Quantified	LRTP	LRTP project included in the statewide model	2017
604935	Woburn - Reconstruction of Montvale Ave, from Interstate 93 interchange to Central St (approximately 1,850 feet)	Quantified	98,885	Quantified decrease in emissions from Complete Streets project	2017
607732	Cochituate Rail Trail, Phase Two, Including Pedestrian Bridge, N-30-014, Over Route 9 and F-07-033=N-03-029 over Route 30	Quantified	62,441	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	2018

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG CO2 Impact (kg/yr)	GHG Impact Description	FFY of Contract Award
608013	Quincy - Intersection Improvements at Sea St and Quincy Shore	Quantified	701,528	Quantified decrease in emissions from traffic operational improvement	2018
608352	Salem - Canal Street Rail Trail construction (Phase 2)	Quantified	6,651	Quantified decrease in emissions from bicycle and pedestrian infrastructure	2018
607507	Wakefield - Bridge Deck Replacement, W-01-021 (2MF) Hopkins Street over I-95 / ST 128	Qualitative		Qualitative Decrease in Emissions	2018
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 St)	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
600518	Hingham - Intersection improvements at Derby St, Whiting St, and Gardner St	Quantified	-145,683	Quantified increase in emissions	2019
607133	Quincy - Superstructure Replacement, Q-01-039, Robertson St over I-93/US 1/SR 3	Qualified		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

Greenhouse Gas Regional Highway "Completed" Project Tracking

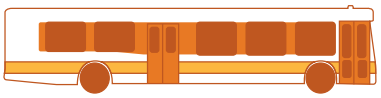
CO_2 = carbon dioxide; GHG = greenhouse gas; kg = kilogram; LRTP = Long-Range Transportation Plan; yr = year

Table B-4
Greenhouse Gas Regional Transit "Completed" Project Tracking

This table is under development. It will summarize the GHG impact analyses of transit projects completed in FFY 2019.


SCHOOL BUS
MS251
BUS STOPS
AT ALL RR CROSSINGS
STAY BACK
100-FEET
BUS
LANE

APPENDIX C



APPENDIX C
PUBLIC OUTREACH AND COMMENTS

OVERVIEW OF CONTENTS

In the course of the 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 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 give input to the MPO board 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 2020-24 TIP as well as comments received during the public review period.

SUMMARY OF COMMENTS RECEIVED DURING TIP DEVELOPMENT

MPO staff initiated outreach activities for the FFYs 2020–24 TIP in September 2018 and maintained communication with municipal, state agency, and public stakeholders throughout the TIP development process. The primary in-person and direct-engagement events at which staff received input were the subregional committee meetings held by the Metropolitan Area Planning Council (MAPC) and the TIP How-To conference call workshops with municipal TIP contacts, MAPC subregional coordinators, and MassDOT district project engineers. These events offered individuals the opportunity to directly engage with staff to ask questions, voice concerns, provide suggestions, and propose projects.

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, and the MPO website). As a result, the MPO received oral and written comments while developing the draft TIP. The comments directed to the MPO board are summarized below in Table C-1.

Table C-1
Public Comments Received during Development of the FFYs 2020-24 Transportation Improvement Program

Project	Name	Support/ Oppose/ Request	Comment
Projects being considered for programming in the FFYs 2020-24 TIP			
Rehabilitation and Rail Crossing Improvements on Cherry Street (Ashland)	Legislative: Senate President Karen E. Spilka Municipal: Yolanda Greaves, Board of Selectmen; Doug Small, Ashland DPW Director; Sara Hines, Pond Street Working Group Organization: Paul Milewski, Green International Affiliates; Alan Cloutier, Stantec Inc.	Support	Supports inclusion of the Rehabilitation and Rail Crossing Improvements on Cherry Street in the FFYs 2020-24 TIP. The project will improve noise issues in the area and provide sidewalks where none currently exist.
Rehabilitation of Beacham Street, from Route 99 to Chelsea C.L. (Everett)	Legislative: Sen. Sal DiDomenico; Rep. Joseph W. McGonagle, Jr. Municipal: Mayor Carlo DeMaria, City of Everett; Jay Monty, Everett Transportation Planner Organization: Mystic River Watershed Association, LivableStreets Alliance, Boston Cyclists Union	Support	Supports inclusion of the Rehabilitation of Beacham Street in the FFYs 2020-24 TIP. Beacham Street is critically important to regional commerce, providing freight access as well as connections to businesses and jobs in the Island End section of Everett. Existing sidewalks are discontinuous and do not extend throughout the length of the corridor; in addition, the heavy truck usage of the roadway poses safety risks to cyclists. The proposed improvements are essential to the retention of industrial businesses and jobs in the area and the future redevelopment of the Lower Broadway district.
Intersection Improvements at Route 3A/ Summer Street Rotary (Hingham)	Municipal: Roger Fernandes, Hingham Town Engineer	Support	Supports inclusion of the Intersection Improvements at Route 3A/Summer Street Rotary in the FFYs 2020-24 TIP. Safety is a major concern at the project location. Due to narrow lanes and a lack of a median, motorists have a forty percent chance of injury if a crash occurs. The project design is fully funded and there are no ROW or utility relocation concerns. In addition, the Town of Hingham conducted a successful test pilot using temporary measures to gauge public reaction and improved safety.

Project	Name	Support/ Oppose/ Request	Comment
Reconstruction of Foster Street (Littleton)	Municipal: Anthony M. Ansaldi, Jr., Interim Town Administrator, Town of Littleton; Keith Bergman, Former Littleton Town Administrator	Support	Supports inclusion of the Reconstruction of Foster Street in the FFYs 2020-24 TIP. The project is vital to the continued development of the Littleton commuter rail station area and the continued efforts to expand the Town's Complete Streets program.
Reconstruction of Essex Street, from Eastern Ave. to Rockaway/Joyce St. (Lynn)	Legislative: Rep. Peter L. Capano Municipal: Mayor Thomas M. McGee, City of Lynn; Meaghen Hamill, Chief of Staff, Lynn Mayor's Office Organization: Rich Benevento, WorldTech Engineering	Support	Supports inclusion of the Reconstruction of Essex Street in the FFYs 2020-24 TIP. Essex Street provides connections to the Lynn commuter rail station, and the project area includes two Top 200 crash locations. The project will improve traffic operations and enhance safety for all modes of transportation.
Reconstruction of Western Avenue, from Market Square to Eastern Ave. (Lynn)	Legislative: Rep. Peter L. Capano Municipal: Mayor Thomas M. McGee, City of Lynn; Meaghen Hamill, Chief of Staff, Lynn Mayor's Office Organization: Rich Benevento, WorldTech Engineering	Request	Requests inclusion of the Reconstruction of Western Avenue in the FFYs 2020-24 TIP. Western Avenue is an important regional corridor, connecting Salem to Boston, and the project area includes four Top 200 statewide crash locations. The project will improve traffic operations and enhance safety for all modes of transportation.
Traffic & Safety Improvements at Broadway, Euclid Ave., and Jenness St. (Lynn)	Legislative: Rep. Peter L. Capano Municipal: Mayor Thomas M. McGee, City of Lynn; Meaghen Hamill, Chief of Staff, Lynn Mayor's Office Organization: Rich Benevento, WorldTech Engineering	Support	Supports inclusion of the Traffic and Safety Improvements at Broadway, Euclid Avenue, and Jenness Street in the FFYs 2020-24 TIP. The project will improve traffic operations and enhance safety for all modes of transportation.
Independence Greenway Extension (Peabody)	Municipal: Mayor Edward A. Bettencourt, Jr., City of Peabody; Brendan Callahan, Peabody Assistant Director of Planning Organization: East Coast Greenway Alliance	Support	Supports inclusion of the Independence Greenway Extension in the FFYs 2020-24 TIP. The project will close a key gap in the East Coast Greenway, and further the vision of extending the existing Independence Greenway to Downtown Peabody. The proposed portion of the Greenway will provide a viable multi-modal transportation alternative for Downtown Peabody residents to the North Shore Mall, providing an economic benefit for the Peabody business community.

Project	Name	Support/ Oppose/ Request	Comment
Intersection Improvements at Lowell Street and Woburn Street (Wilmington)	Legislative: Sen. Bruce Tarr, Rep. David Robertson, Rep. Kenneth Gordon Municipal: Kevin A. Caira, Chair, Wilmington Board of Selectmen; Jeffrey Hull, Wilmington Town Manager; Paul Alunni, Wilmington Town Engineer; Valerie Gingrich, Wilmington Director of Planning	Support	Supports inclusion of the Intersection Improvements at Lowell Street and Woburn Street in the FFYs 2020-24 TIP. The intersection provides connections between commercial, industrial, and residential districts as well as commuter access to I-93, Route 38, and the Wilmington commuter rail station. The project will improve safety for all modes of transportation and reduce the number of angled crashes occurring at the intersection.
Reconstruction of Route 38 (Main Street) (Wilmington)	Legislative: Sen. Bruce Tarr, Rep. David Robertson, Rep. Kenneth Gordon Municipal: Kevin A. Caira, Chair, Wilmington Board of Selectmen; Jeffrey Hull, Wilmington Town Manager; Paul Alunni, Wilmington Town Engineer; Valerie Gingrich, Wilmington Director of Planning	Support	Supports inclusion of the Reconstruction of Route 38 in the FFYs 2020-24 TIP. The corridor serves as a conduit to the commercial center of the Town, with various retail, restaurant, commercial, and recreation land uses along its length. The proposed project will reduce traffic congestion, improve safety for all modes of transportation, and improve bike/ped connectivity.
Currently programmed projects			
Intersection and Signal Improvements at Kelley's Corner, Route 111, and Route 27 (Acton)	Municipal: Kristen Guichard, Acton Senior Planner; John Mangiaratti, Acton Town Manager; Matt Selby, Acton Director of Land Use and Economic Development; Paul Campbell, Acton Town Engineer	Support	Supports continued inclusion of the Intersection Improvements at Kelley's Corner in the FFY 2022 TIP element. The April 1, 2019 Acton Town Meeting saw an 89% vote in favor of supplemental funding for engineering, design, and appraisal services for the project. 75% design plans are underway and the Town expects to meeting the schedule for advertisement in FFY 2022.
Intersection and Signal Improvements at Kelley's Corner, Route 111, and Route 27 (Acton)	Acton resident: Kathy Adams	Request	Requests that plans for the Intersection and Signal Improvements at Kelley's Corner (FFY 2022) do not call for the removal of old trees in the project area. Newly planted trees will not provided the benefits of older trees.

Project	Name	Support/ Oppose/ Request	Comment
Reconstruction of Route 126 (Pond Street) (Ashland)	Legislative: Senate President Karen E. Spilka Municipal: Yolanda Greaves, Board of Selectmen; Doug Small, Ashland DPW Director; Sara Hines, Pond Street Working Group Organization: Paul Milewski, Green International Affiliates; Alan Cloutier, Stantec Inc.	Support	Supports continued inclusion of the Reconstruction of Route 126 in the FFY 2020 TIP element. The proposed improvements are essential to supporting economic growth and community stability. The Town is committed to working with MassDOT to ensure the project stays on track for FFY 2020; and plans to submit the 100% design in May 2019.
Rehabilitation and Related Work on Route 126, from Douglas Drive to Route 140 (Mechanic Street) (Bellingham)	Legislative: Rep. Ryan C. Fattman, Rep. Michael J. Soter Municipal: Daniel Spencer, Chair, Bellingham Board of Selectmen; Donald F. DiMartino, Bellingham DPW Director; Jim Kupfer, Bellingham Planner Organization: John Morgan, CHA Consulting, Inc.	Request	Requests programming the Rehabilitation and Related Work on Route 126 (FFY 2023) in an earlier TIP element. The project area currently lacks sidewalks and bicycle facilities, and the conditions of the corridor have deteriorated since the project was first proposed. The engineering for the project is fully funded, and CHA believes that the design could be at 100% by November 2020.
Reconstruction of Broadway, from City Hall to the Revere C.L. (Chelsea)	Municipal: Alex Train, Chelsea Assistant Director of Planning and Development	Support	Supports continued inclusion of the Reconstruction of Broadway in the FFY 2022 TIP element. The corridor includes numerous new developments and connects to the City of Chelsea's bus rapid transit service. However, the corridor is in a state of significant deterioration, lacks sidewalks and appropriate crossings, and includes several high crash locations. The City plans to precede the project with a series of utility improvements beginning in 2020.
Pedestrian Improvements along Bussey Street (Dedham)	Organization: TRIC	Support	Supports continued inclusion of the Pedestrian Improvements along Bussey Street in the FFY 2023 TIP element.

Project	Name	Support/ Oppose/ Request	Comment
Reconstruction of Union Avenue (Framingham)	Legislative: Senate President Karen E. Spilka Municipal: Eric Johnson, Framingham City Engineer; Peter Sellers, Framingham DPW Executive Director	Request	Requests continued inclusion of the Reconstruction of Union Avenue in the FFY 2021 TIP element, rather than reprogramming it in FFY 2022. The City of Framingham decided to remove a section of the project that would require legislative approval under Article 97 of the Amendments to the Massachusetts Constitution, in order to keep the project on track for advertisement in FFY 2021. The project area is crucial to the Framingham community, passing through the center of the city and connecting to Framingham State University. The project would ensure that Union Avenue meets MassDOT's Healthy Transportation Policy.
Reconstruction of Union Street (Route 139), from Linfield St. to Centre St./Water St. (Holbrook)	Legislative: Sen. John Keenan Municipal: Timothy Gordon, Holbrook Town Administrator; Chris Pellitteri, Holbrook Superintendent of Public Works Organization: Tony Lionetta, BETA Engineering Group	Request	Requests continued inclusion of the Reconstruction of Union Street in the FFY 2021 TIP element, rather than reprogramming it in FFY 2022. The 100% design will be submitted by July 2019 and work has begun on securing the ROW and appraisals. The project is a top priority for the Town of Holbrook and will improve drainage, ADA accessibility, and pedestrian safety.
Signal and Intersection Improvements on Route 135 (Hopkinton)	Municipal: David Daltorio, Hopkinton Town Engineer Organization: Matt Chase, VHB, Inc.	Support	Supports continued inclusion of the Signal and Intersection Improvements on Route 135 in the FFY 2020 TIP element. The community, Board of Selectmen, and Chamber of Commerce support the project despite the complexity of realigning this intersection and undergrounding power lines. The Town of Hopkinton is committed to working with MassDOT to advance the project.
Reconstruction of Atlantic Avenue (Hull)	Municipal: Phil Lemnios, Hull Town Manager Organization: John Morgan, CHA Consulting, Inc.	Request	Requests continued inclusion of the Reconstruction of Atlantic Avenue in the FFY 2021 TIP element, rather than reprogramming it in FFY 2022. The Town submitted the 100% design to MassDOT in March 2019 and is working to secure all easements in time for advertisement in FFY 2021.

Project	Name	Support/ Oppose/ Request	Comment
Intersection Improvements on Route 2A at Willow Road (Littleton & Ayer)	Municipal: Keith Bergman, Former Littleton Town Administrator	Support	Supports inclusion of the Intersection Improvements on Route 2A at Willow Road in the FFYs 2020-24 TIP. The project will improve traffic operations and safety.
Exchange Street Downtown Improvement Project (Malden)	Municipal: Mayor Gary Christenson, City of Malden; Deborah A. Burke, Executive Director, Malden Redevelopment Authority; Ryan O'Malley, Malden City Councilor	Support	Supports continued inclusion of the Exchange Street Downtown Improvement Project in the FFY 2020 TIP element. The project will support the City's continued efforts in reinvigorating Malden Center. The proposed improvements will enhance safety for all modes of transportation, in addition to providing better connections from the Malden Center MBTA station to the rest of Downtown Malden.
Intersection Improvements at Route 1 and University Avenue/Everett Street (Norwood)	Municipal: Mark Ryan, Norwood DPW Director Organization: TRIC	Support	Supports continued inclusion of the Intersection Improvements at Route 1 and University Avenue/ Everett Street in the FFY 2022 TIP element.
Intersection Improvements at Route 1A and Upland Rd/ Washington St and Prospect St/ Fulton St (Norwood)	Municipal: Mark Ryan, Norwood DPW Director Organization: TRIC	Support	Supports continued inclusion of the Intersection Improvements at Route 1A and Upload Road/ Washington Street in the FFY 2021 TIP element. The project is on schedule and has the total support of the Town of Norwood.
Bruce Freeman Rail Trail, Phase 2D (Sudbury)	Municipal: Beth Suedmeyer, Sudbury Environmental Planner; Len Simon, Sudbury Board of Selectmen Organization: Christine Corr, Friends of the Bruce Freeman Rail Trail	Support	Supports continued inclusion of the Bruce Freeman Rail Trail (Phase 2D) in the FFY 2022 TIP element. The Bruce Freeman Rail Trail is a regional project, connecting Lowell and Framingham through completed phases in Chelmsford, Westford, Carlisle, Acton, and Concord. The project is on schedule for advertisement in FY 2022.

Project	Name	Support/ Oppose/ Request	Comment
Reconstruction on Route 1A (Main Street) (Walpole)	Legislative: Sen. Paul R. Feeney; Rep. John H. Rogers; Rep. Louis L. Kafka; Rep. Paul McMurtry; Rep. Shawn Dooley; Tino Capobianco, Office of Sen. Paul R. Feeney; Bill Buckley, Office of Rep. John H. Rogers Municipal: Jim Johnson, Walpole Town Administrator Organization: TRIC	Support	Supports continued inclusion of the Reconstruction on Route 1A in the FFY 2020 TIP element. Route 1A is one of the Town's main commercial corridors, and the project area includes several residential areas and two public schools. The current condition of the corridor has caused traffic congestion and safety issues for vehicles and pedestrians. TRIC identified the project as their top priority.
Bridge Replacement, New Boston Street over MBTA (Woburn)	Legislative: Rep. Michelle Ciccolo; Rep. Richard M. Haggerty; Mason Heilman, Office of Rep. Ciccolo Municipal: Mayor Scott D. Galvin, City of Woburn	Support	Supports continued inclusion of the New Boston Street Bridge Replacement in the FFY 2021 TIP element. The New Boston Street Bridge is a key element to the success and vitality of the region. The proposed project will improve access to the Anderson Regional Transportation Center, create a north-south alternate route to I-93 and I-95, improve bike/ped access, and support commercial and industrial development in Woburn and Wilmington.
Currently unprogrammed			
Interchange Improvements at I-95/I-93/ University avenue and I-95 Widening (Canton & Westwood)	Legislative: Tino Capobianco, Office of Sen. Paul R. Feeney Municipal: Michael Jaillet, Westwood Town Administrator; Charles Aspinwall, Canton Town Administrator; Canton Board of Selectmen Organization: TRIC	Request	Requests inclusion of the Interchange Improvements at I-95/I-93/University Avenue and I-95 Widening in the FFYs 2020-24 TIP. The project is one of the top priorities for economic development in the region. Securing funding for the project is long overdue, and the full benefit of supplemental work on the I-95 northbound slip-ramp and the Add-a-Lane project will only be realized when the interchange is reconstructed. This project would fulfill the contractual commitment the Commonwealth made when the region was asked to support the construction of the Route 128 / University Park rail station and garage.

SUMMARY OF COMMENTS RECEIVED DURING TIP PUBLIC REVIEW PERIOD

[TEXT INCLUDES TENTATIVE DATES AND WILL BE REVISED FOR INCLUSION IN THE FINAL DOCUMENT, POST COMMENT PERIOD]

The MPO board voted to release a draft FFYs 2020-24 TIP document for public review at its April 25, 2019, meeting. This vote initiated an official 21-day public review period, which began on May 2, 2019, and closed on May 23, 2019. The comments received during this public review period and responses from the MPO to the commenters are summarized in Table C-2.

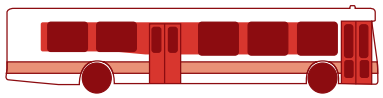
Table C-2
Public Comments Received during the Public Review Period for the Draft FFYs 2020-24 Transportation Improvement Program

[TO BE INCLUDED IN FINAL DOCUMENT, POST COMMENT PERIOD]

Table C-1
XX

\

APPENDIX D



APPENDIX D
GLOSSARY OF ACRONYMS

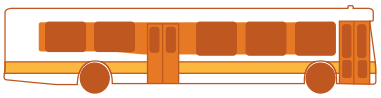
Acronym	Definition
3C	continuous, comprehensive, cooperative [metropolitan transportation planning process]
A&F	Administration and Finance Committee
AAB	Architectural Access Board
AADT	average annual daily traffic
ACS	American Community Survey [US Census Bureau data]
ADA	Americans with Disabilities Act of 1990
AFC	automated fare collection
BRT	bus rapid transit
BTD	Boston Transportation Department
CA/T	Central Artery/Tunnel [project also known as "the Big Dig"]
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CATA	Cape Ann Transportation Authority
CECP	Massachusetts Clean Energy and Climate Plan
CFR	Code of Federal Regulations
CIP	Capital Investment Plan [MassDOT]
CMAQ	Congestion Mitigation and Air Quality [federal funding program]
CMP	Congestion Management Process
CO	carbon monoxide
CO2	carbon dioxide
CTPS	Central Transportation Planning Staff
CY	calendar year
DCR	Department of Conservation and Recreation
DEIR	draft environmental impact report
DEP	Department of Environmental Protection [Massachusetts]
DOT	department of transportation
EDTTT	excessive delay threshold travel time
EJ	environmental justice
ENF	environmental notification form
EO	executive order
EOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
EOHED	Massachusetts Executive Office of Housing and Economic Development
EPA	Environmental Protection Agency [federal]
EPDO	equivalent property damage only [a traffic-related index]
FARS	Fatality Analysis and Reporting System [FHWA]
FAST Act	Fixing America's Surface Transportation Act
FDR	functional design report
FEIR	final environmental impact report
FFGA	full funding grant agreement
FFY	federal fiscal year
FHWA	Federal Highway Administration

Acronym	Definition
FMCB	MBTA Fiscal and Management Control Board
FR	Federal Register
FTA	Federal Transit Administration
GANS	grant anticipation notes [municipal bond financing]
GHG	greenhouse gas
GWSA	Global Warming Solutions Act of 2008 [Massachusetts]
HOV	high-occupancy vehicle
HSIP	Highway Safety Improvement Program [federal funding program]
ICC	Inner Core Committee [MAPC municipal subregion]
IPMT	Interim Project Management Team [Green Line Extension project]
IRI	International Roughness Index
ITS	intelligent transportation systems
LED	light-emitting diode
LEP	limited English proficiency
LOTTR	level of travel time ratio
LRTP	Long-Range Transportation Plan [MPO certification document]
MAGIC	Minuteman Advisory Group on Interlocal Coordination [MAPC municipal subregion]
MAP-21	Moving Ahead for Progress in the 21st Century Act
MAPC	Metropolitan Area Planning Council
MARPA	Massachusetts Association of Regional Planning Agencies
MassDOT	Massachusetts Department of Transportation
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MCCA	Massachusetts Convention Center Authority
MEPA	Massachusetts Environmental Policy Act
MGL	Massachusetts General Laws
MOVES	Motor Vehicle Emissions Simulator [EPA air quality model]
MPO	metropolitan planning organization [Boston Region MPO]
MWRC	MetroWest Regional Collaborative [MAPC municipal subregion]
MWRTA	MetroWest Regional Transit Authority
NAAQS	National Ambient Air Quality Standards
NH DOT	New Hampshire Department of Transportation
NHFP	National Highway Freight Program
NHPP	National Highway Performance Program
NHS	National Highway System
NMCOG	Northern Middlesex Council of Governments
NOx	nitrogen oxides
NPMRDS	National Performance Measure Research Data Set [FHWA]
NSPC	North Suburban Planning Council [MAPC municipal subregion]
NSTF	North Shore Task Force [MAPC municipal subregion]
NTD	National Transit Database
OTP	MassDOT Office of Transportation Planning
PBPP	performance-based planning and programming
PEHD	peak hours of excessive delay
PfP	Planning for Performance
PL	metropolitan planning funds [FHWA] or public law funds

Acronym	Definition
PMT	Program for Mass Transportation [MBTA]
ppm	parts per million
PRC	Project Review Committee [MassDOT]
PSAC	Project Selection Advisory Council [MassDOT]
PSI	Pavement Serviceability Index
PTASP	Public Transportation Agency Safety Plans
RMV	Registry of Motor Vehicles [MassDOT division]
RTA	regional transit authority
RTAC	Regional Transportation Advisory Council [of the Boston Region MPO]
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SEIR	Single Environmental Impact Report [MEPA]
SFY	state fiscal year
SHSP	Strategic Highway Safety Plan
SIP	State Implementation Plan
SOV	single-occupant vehicle
SPR	Statewide Planning and Research
SRTS	Safe Routes to School [federal program]
SSC	South Shore Coalition [MAPC municipal subregion]
STBGP	Surface Transportation Block Grant Program [federal funding program; replaced STP]
STIP	State Transportation Improvement Program
STP	Surface Transportation Program [federal funding program; replaced by STBGP]
SWAP	South West Advisory Planning Committee [MAPC municipal subregion]
TAM	transit asset management
TAMP	Transportation Asset Management Plan
TAP	Transportation Alternatives Program [federal funding program]
TCM	transportation control measure
TE	transportation equity
TERM	Transit Economic Requirements Model [FTA]
TIP	Transportation Improvement Program [MPO certification document]
TRIC	Three Rivers Interlocal Council [MAPC municipal subregion]
TTI	travel time index
TTTR	Truck Travel Time Reliability Index
ULB	Useful Life Benchmark
UPWP	Unified Planning Work Program [MPO certification document]
USC	United States Code
USDOT	United States Department of Transportation [oversees FHWA and FTA]
UZA	urbanized area
VMT	vehicle-miles traveled
VOCs	volatile organic compounds [pollutants]
VRM	vehicle revenue-miles
WMM	weMove Massachusetts [MassDOT planning initiative]
YMM	youMove Massachusetts [MassDOT planning initiative]


DO NOT
ENTER
$50.00 FINE
EXCLUDED WAY
MBTA BUSES ONLY
MBTA BUSES
ONLY
CAUTION
WIDE TURNS AND
FREQUENT STOPS

APPENDIX E



APPENDIX E

GEOGRAPHIC DISTRIBUTION OF TIP FUNDING

OVERVIEW OF CONTENTS

Appendix E provides information about the geographic distribution of federal highway funding in the Boston region between federal fiscal years (FFYs) 2020 and 2024, including the distribution of the Boston Region Metropolitan Planning Organization's (MPO) 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 E-1 through E-4 show the breakdown of the MPO's Regional Target Program funding and all federal highway funding in the Boston region by subregion and municipality type. The complete dataset showing funding for each individual municipality in the region is provided in Table E-1.

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.

METHODOLOGY

MPO staff took the following steps to develop the dataset:

- Recorded information about TIP projects and the amount of funding programmed in each FFY
- Calculated the amount of programmed funds associated with each municipality for each FFY
- Recorded the total amount of programmed funds for each municipality for each FFY
- Divided programmed funds equally by the number of municipalities located within the project area for projects that spanned multiple municipalities

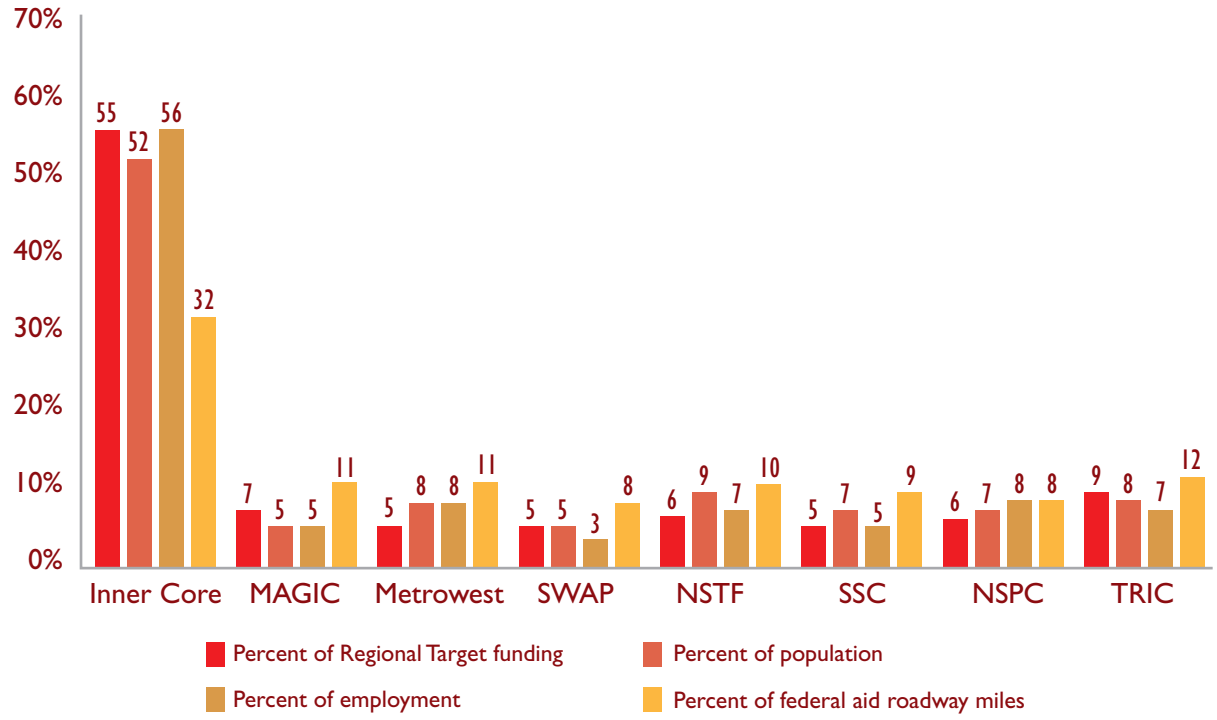
NEXT STEPS

The data summarized in this appendix could be used in various ways to help guide programming decisions for future TIPs. Some analyses that the MPO could perform in the future include

examining TIP funding by municipality and comparing that data to the number of road miles, the Chapter 90 apportionment, and the distribution of needs—as identified in the Needs Assessment of the Long-Range Transportation Plan—for each community.

A database that tracks the geographic distribution of TIP funding can serve as an important input into the funding decisions made each year. Along with the data described above, this data on geographic distribution of highway funding can help guide the MPO's public outreach and decision-making to help ensure that, over time, the transportation needs of the region are met equitably.

Figure E-1
Regional Distribution of Target Funding by Subregion FFYs 2020–24



Inner Core = Inner Core Committee. MAGIC = Minuteman Advisory Group on Interlocal Coordination. MetroWest = MetroWest Regional Collaborative. NSPC = North Shore Planning Council. NSTF = North Shore Task Force. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TRIC = Three Rivers Interlocal Council.

Figure E-2
Regional Distribution of Target Funding by Municipality Type FFYs 2020–24

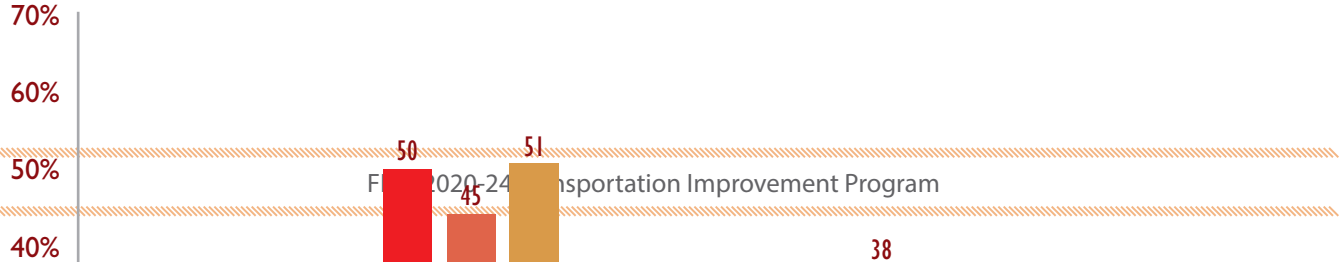
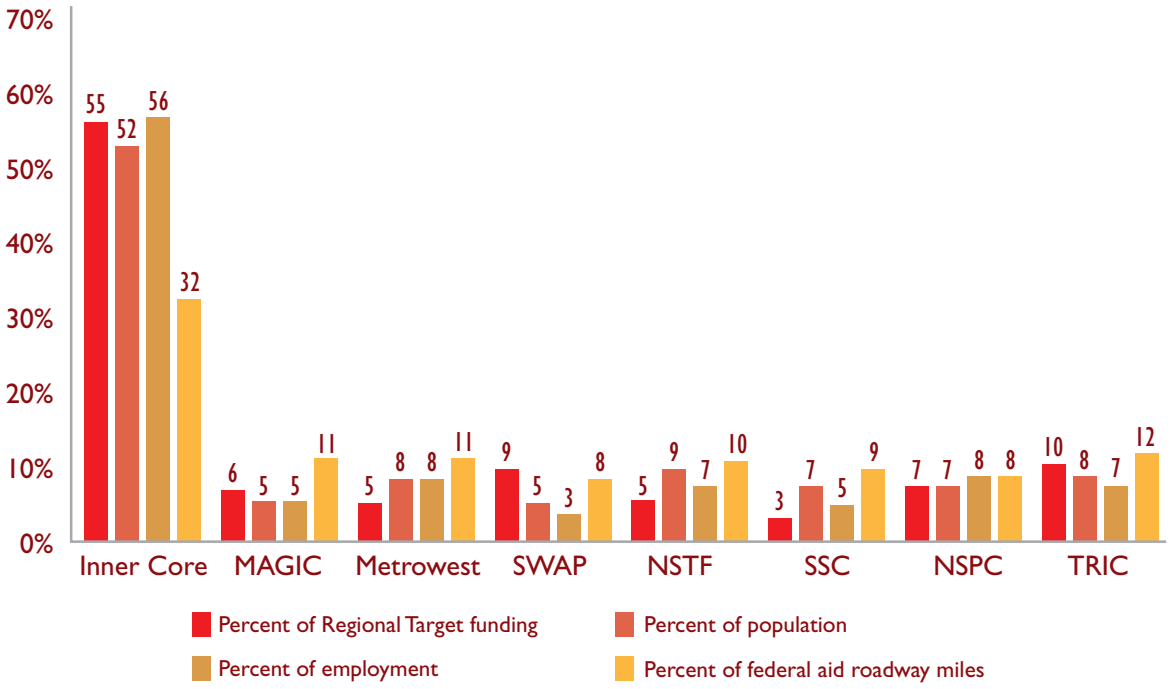


Figure E-3
All Federal Highway Funding in the Boston Region by Subregion FFYs 2020–24



Inner Core = Inner Core Committee. MAGIC = Minuteman Advisory Group on Interlocal Coordination. MetroWest = MetroWest Regional Collaborative. NSPC = North Shore Planning Council. NSTF = North Shore Task Force. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TRIC = Three Rivers Interlocal Council.

Figure E-4
All Federal Highway Funding in the Boston Region by Municipality Type FFYs 2020–24

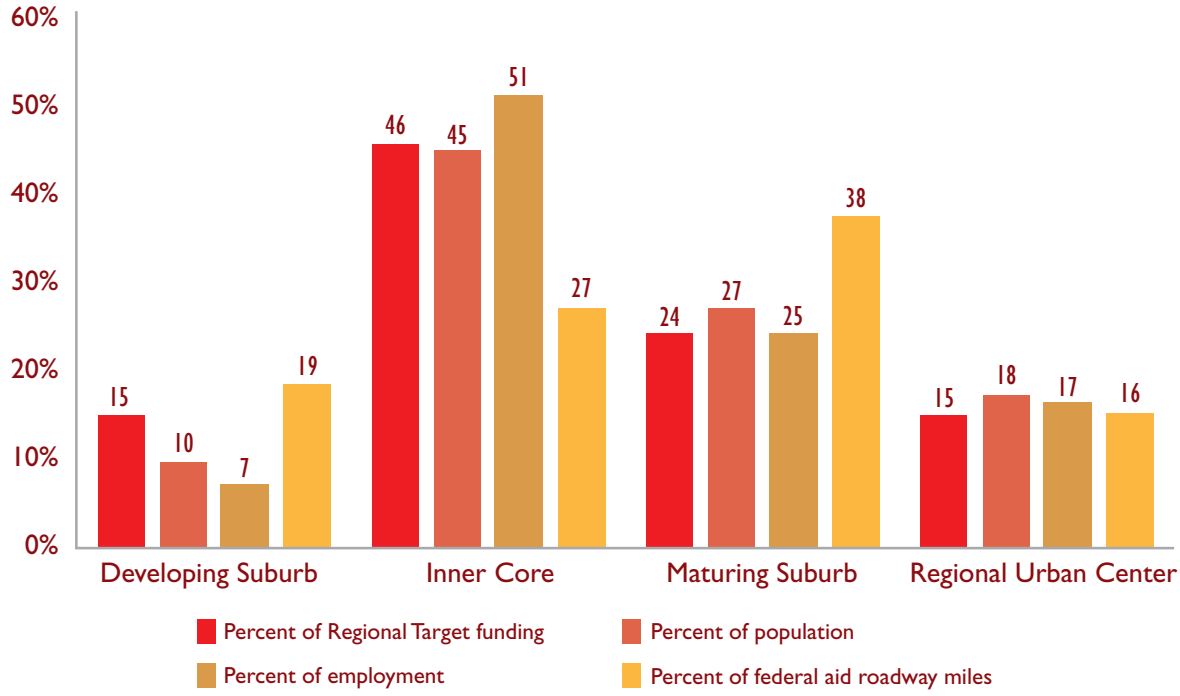


Table E-1
Federal Highway Programming for Municipalities in the Boston Region FFYs 2020–24

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	Percent Federal-Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Boston	Inner Core	Inner Core	20.0%	31.2%	11.1%	$142,653,482	27.2%	$251,653,579	31.7%	$394,307,061	29.9%
Hopkinton	SWAP	Developing Suburb	0.5%	0.5%	1.0%	$7,946,749	1.5%	$87,035,694	10.9%	$94,982,443	7.2%
Chelsea	Inner Core	Inner Core	1.1%	0.8%	0.6%	$9,669,765	1.8%	$69,145,821	8.7%	$78,815,586	6.0%
Lynn	Inner Core	Regional Urban Center	2.9%	1.3%	1.3%	$24,644,712	4.7%	$42,138,964	5.3%	$66,783,676	5.1%
Wilmington	NSPC	Maturing Suburb	0.7%	1.0%	1.3%	$16,042,594	3.1%	$33,082,195	4.2%	$49,124,789	3.7%
Saugus	Inner Core	Maturing Suburb	0.9%	0.6%	0.8%	$0	0.0%	$34,190,354	4.3%	$34,190,354	2.6%
Milton	TRIC	Maturing Suburb	0.9%	0.3%	1.3%	$0	0.0%	$27,554,878	3.5%	$27,554,878	2.1%
Everett	Inner Core	Inner Core	1.3%	0.7%	0.6%	$26,768,357	5.1%	$0	0.0%	$26,768,357	2.0%
Walpole	TRIC	Developing Suburb	0.8%	0.6%	1.2%	$19,906,002	3.8%	$6,329,417	0.8%	$26,235,419	2.0%
Somerville	Inner Core	Inner Core	2.5%	1.2%	1.2%	$16,377,067	3.1%	$8,721,613	1.1%	$25,098,680	1.9%
Framingham	MetroWest	Regional Urban Center	2.2%	2.5%	2.5%	$11,347,228	2.2%	$12,855,700	1.6%	$24,202,928	1.8%
Peabody	NSTF	Regional Urban Center	1.7%	1.3%	1.4%	$13,047,647	2.5%	$11,138,490	1.4%	$24,186,137	1.8%
Quincy	Inner Core	Regional Urban Center	3.0%	2.6%	2.1%	$6,292,937	1.2%	$15,445,156	1.9%	$21,738,093	1.6%
Acton	MAGIC	Maturing Suburb	0.7%	0.5%	1.1%	$15,141,463	2.9%	$5,657,725	0.7%	$20,799,188	1.6%
Cambridge	Inner Core	Inner Core	3.4%	6.0%	1.8%	$16,377,067	3.1%	$3,540,000	0.4%	$19,917,067	1.5%
Sudbury	MAGIC	Maturing Suburb	0.6%	0.5%	1.0%	$9,334,137	1.8%	$9,402,453	1.2%	$18,736,590	1.4%
Watertown	Inner Core	Inner Core	1.0%	1.1%	0.6%	$15,120,000	2.9%	$2,688,000	0.3%	$17,808,000	1.4%
Norwood	TRIC	Regional Urban Center	0.9%	1.3%	1.0%	$14,194,571	2.7%	$ 3,583,933	0.5%	$17,778,504	1.3%
Ashland	MetroWest	Maturing Suburb	0.5%	0.3%	0.5%	$17,453,325	3.3%	$0	0.0%	$17,453,325	1.3%
Medford	Inner Core	Inner Core	1.8%	1.0%	1.5%	$16,377,067	3.1%	$989,895	0.1%	$17,366,962	1.3%
Canton	TRIC	Maturing Suburb	0.7%	1.2%	1.1%	$0	0.0%	$16,868,965	2.1%	$16,868,965	1.3%
Woburn	NSPC	Regional Urban Center	1.2%	2.2%	1.5%	$15,482,660	3.0%	$0	0.0%	$15,482,660	1.2%
Newton	Inner Core	Inner Core	2.8%	3.0%	2.6%	$8,702,969	1.7%	$5,934,358	0.7%	$14,637,326	1.1%
Beverly	NSTF	Regional Urban Center	1.3%	1.2%	1.2%	$12,899,809	2.5%	$271,952	0.0%	$13,171,761	1.0%
Wrentham	SWAP	Developing Suburb	0.4%	0.3%	1.0%	$13,103,505	2.5%	$0	0.0%	$13,103,505	1.0%
Natick	MetroWest	Maturing Suburb	1.1%	1.3%	1.2%	$0	0.0%	$12,855,700	1.6%	$12,855,700	1.0%
Stow	MAGIC	Developing Suburb	0.2%	0.1%	0.6%	$0	0.0%	$12,542,112	1.6%	$12,542,112	1.0%
Hingham	SSC	Maturing Suburb	0.7%	0.7%	1.3%	$8,700,001	1.7%	$2,819,413	0.4%	$11,519,414	0.9%
Lynnfield	NSPC	Maturing Suburb	0.4%	0.3%	0.6%	$0	0.0%	$11,066,432	1.4%	$11,066,432	0.8%
Randolph	TRIC	Maturing Suburb	1.0%	0.5%	1.0%	$0	0.0%	$10,319,696	1.3%	$10,319,696	0.8%
Marlborough	MetroWest	Regional Urban Center	1.2%	1.6%	2.0%	$0	0.0%	$9,867,120	1.2%	$9,867,120	0.7%

Table E-1
Federal Highway Programming for Municipalities in the Boston Region FFYs 2020–24 (cont. 2)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	Percent Federal-Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Braintree	SSC	Maturing Suburb	1.2%	1.5%	1.4%	$0	0.0%	$9,552,235	1.2%	$9,552,235	0.7%
Dedham	TRIC	Maturing Suburb	0.8%	0.9%	1.1%	$4,368,780	0.8%	$4,829,746	0.6%	$9,198,526	0.7%
Needham	TRIC	Maturing Suburb	0.9%	1.0%	1.2%	$8,702,969	1.7%	$0	0.0%	$8,702,969	0.7%
Bedford	MAGIC	Maturing Suburb	0.4%	1.1%	0.8%	$8,234,946	1.6%	$0	0.0%	$8,234,946	0.6%
Cohasset	SSC	Developing Suburb	0.2%	0.1%	0.5%	$8,074,472	1.5%	$0	0.0%	$8,074,472	0.6%
Essex	NSTF	Developing Suburb	0.1%	0.1%	0.2%	$0	0.0%	$8,054,272	1.0%	$8,054,272	0.6%
Hull	SSC	Maturing Suburb	0.3%	0.1%	0.4%	$7,263,401	1.4%	$0	0.0%	$7,263,401	0.6%
Wakefield	NSPC	Maturing Suburb	0.8%	0.8%	0.9%	$0	0.0%	$7,040,375	0.9%	$7,040,375	0.5%
Bellingham	SWAP	Developing Suburb	0.5%	0.3%	0.9%	$4,380,828	0.8%	$1,600,800	0.2%	$5,981,628	0.5%
Sharon	TRIC	Maturing Suburb	0.6%	0.2%	1.1%	$0	0.0%	$5,860,487	0.7%	$5,860,487	0.4%
Winthrop	Inner Core	Inner Core	0.6%	0.1%	0.3%	$5,644,800	1.1%	$0	0.0%	$5,644,800	0.4%
Littleton	MAGIC	Developing Suburb	0.3%	0.3%	1.0%	$5,380,789	1.0%	$0	0.0%	$5,380,789	0.4%
Holbrook	SSC	Maturing Suburb	0.3%	0.1%	0.3%	$2,743,381	0.5%	$1,527,250	0.2%	$4,270,631	0.3%
Middleton	NSTF	Developing Suburb	0.3%	0.3%	0.5%	$0	0.0%	$4,073,920	0.5%	$4,073,920	0.3%
Hamilton	NSTF	Developing Suburb	0.3%	0.1%	0.4%	$0	0.0%	$3,698,544	0.5%	$3,698,544	0.3%
Foxborough	TRIC	Developing Suburb	0.5%	0.7%	1.3%	$0	0.0%	$3,641,707	0.5%	$3,641,707	0.3%
Gloucester	NSTF	Regional Urban Center	0.9%	0.6%	1.0%	$0	0.0%	$3,542,912	0.4%	$3,542,912	0.3%
Manchester	NSTF	Developing Suburb	0.2%	0.1%	0.4%	$0	0.0%	$3,542,912	0.4%	$3,542,912	0.3%
Wenham	NSTF	Developing Suburb	0.2%	0.1%	0.4%	$0	0.0%	$3,542,912	0.4%	$3,542,912	0.3%
Reading	NSPC	Maturing Suburb	0.8%	0.4%	0.8%	$1,750,419	0.3%	$1,500,000	0.2%	$3,250,419	0.2%
Milford	SWAP	Regional Urban Center	0.9%	0.8%	1.2%	$3,132,000	0.6%	$0	0.0%	$3,132,000	0.2%
Ipswich	NSTF	Developing Suburb	0.4%	0.3%	0.7%	$2,939,052	0.6%	$0	0.0%	$2,939,052	0.2%
Weymouth	SSC	Maturing Suburb	1.7%	1.0%	1.5%	$0	0.0%	$2,819,413	0.4%	$2,819,413	0.2%
Weston	MetroWest	Maturing Suburb	0.4%	0.2%	1.3%	$0	0.0%	$2,558,929	0.3%	$2,558,929	0.2%
Hudson	MAGIC	Developing Suburb	0.6%	0.5%	0.7%	$0	0.0%	$2,223,333	0.3%	$2,223,333	0.2%
Malden	Inner Core	Inner Core	1.9%	0.8%	1.0%	$1,988,532	0.4%	$0	0.0%	$1,988,532	0.2%
Brookline	Inner Core	Inner Core	1.9%	0.9%	1.3%	$0	0.0%	$1,672,686	0.2%	$1,672,686	0.1%
Winchester	NSPC	Maturing Suburb	0.7%	0.5%	0.6%	$0	0.0%	$1,671,716	0.2%	$1,671,716	0.1%
Maynard	MAGIC	Maturing Suburb	0.3%	0.2%	0.3%	$0	0.0%	$1,646,400	0.2%	$1,646,400	0.1%
Belmont	Inner Core	Inner Core	0.8%	0.4%	0.6%	$0	0.0%	$1,614,288	0.2%	$1,614,288	0.1%

Table E-1
Federal Highway Programming for Municipalities in the Boston Region FFYs 2020–24 (cont. 3)

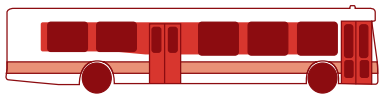
Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	Percent Federal-Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Franklin	SWAP	Developing Suburb	1.0%	0.8%	1.2%	$0	0.0%	$1,600,800	0.2%	$1,600,800	0.1%
Salem	NSTF	Regional Urban Center	1.3%	1.1%	0.7%	$0	0.0%	$1,523,721	0.2%	$1,523,721	0.1%
Danvers	NSTF	Maturing Suburb	0.9%	1.4%	1.5%	$0	0.0%	$1,168,877	0.1%	$1,168,877	0.1%
Swampscott	NSTF	Maturing Suburb	0.4%	0.2%	0.3%	$0	0.0%	$1,157,036	0.1%	$1,157,036	0.1%
Concord	MAGIC	Maturing Suburb	0.6%	0.7%	1.1%	$0	0.0%	$1,087,500	0.1%	$1,087,500	0.1%
Lexington	MAGIC	Maturing Suburb	1.0%	1.1%	1.9%	$0	0.0%	$1,087,500	0.1%	$1,087,500	0.1%
Lincoln	MAGIC	Maturing Suburb	0.2%	0.1%	0.6%	$0	0.0%	$1,087,500	0.1%	$1,087,500	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%
Arlington	Inner Core	Inner Core	1.4%	0.5%	0.8%	$0	0.0%	$950,000	0.1%	$950,000	0.1%
Scituate	SSC	Maturing Suburb	0.6%	0.2%	1.0%	$897,164	0.2%	$0	0.0%	$897,164	0.1%
Marblehead	NSTF	Maturing Suburb	0.6%	0.3%	0.5%	$786,568	0.2%	$0	0.0%	$786,568	0.1%
Dover	SWAP	Developing Suburb	0.2%	0.0%	0.5%	$0	0.0%	$271,952	0.0%	$271,952	0.0%
Bolton	MAGIC	Developing Suburb	0.2%	0.1%	0.7%	$0	0.0%	$0	0.0%	$0	0.0%
Boxborough	MAGIC	Developing Suburb	0.2%	0.2%	0.4%	$0	0.0%	$0	0.0%	$0	0.0%
Burlington	NSPC	Maturing Suburb	0.8%	2.2%	1.3%	$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%
Holliston	MetroWest	Developing Suburb	0.4%	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%
Medway	SWAP	Developing Suburb	0.4%	0.2%	0.6%	$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%
Nahant	Inner Core	Maturing Suburb	0.1%	0.0%	0.2%	$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%
Revere	Inner Core	Inner Core	1.7%	0.5%	1.3%	$0	0.0%	$0	0.0%	$0	0.0%
Rockland	SSC	Developing Suburb	0.6%	0.4%	0.6%	$0	0.0%	$0	0.0%	$0	0.0%
Rockport	NSTF	Developing Suburb	0.2%	0.1%	0.2%	$0	0.0%	$0	0.0%	$0	0.0%
Sherborn	SWAP	Developing Suburb	0.1%	0.0%	0.4%	$0	0.0%	$0	0.0%	$0	0.0%
Southborough	MetroWest	Maturing Suburb	0.3%	0.4%	1.2%	$0	0.0%	$0	0.0%	$0	0.0%

Table E-1
Federal Highway Programming for Municipalities in the Boston Region FFYs 2020–24 (cont. 4)

Municipality	Subregion	Community Type	Percent of Population	Percent of Employment	Percent Federal-Aid Roadway Miles (2016)	Regionally Prioritized Target Funding	Percent Regionally Prioritized Target Funding	State Prioritized Funding	Percent State Prioritized Funding	Total Funding (Regionally Prioritized and State Prioritized)	Percent Total Funding (Regionally Prioritized and State Prioritized)
Stoneham	NSPC	Maturing Suburb	0.7%	0.4%	0.8%	$0	0.0%	$0	0.0%	$0	0.0%
Topsfield	NSTF	Developing Suburb	0.2%	0.1%	0.6%	$0	0.0%	$0	0.0%	$0	0.0%
Waltham	Inner Core	Inner Core	2.0%	3.0%	1.6%	$0	0.0%	$0	0.0%	$0	0.0%
Wayland	MetroWest	Maturing Suburb	0.4%	0.2%	0.7%	$0	0.0%	$0	0.0%	$0	0.0%
Wellesley	MetroWest	Maturing Suburb	0.9%	0.9%	0.9%	$0	0.0%	$0	0.0%	$0	0.0%

Inner Core = Inner Core Committee, MAGIC = Minuteman Advisory Group on Interlocal Coordination, MetroWest = MetroWest Regional Collaborative, NSPC = North Shore Planning Council, NSTF = North Shore Task Force, SSC = South Shore Coalition, SWAP = South West Advisory Planning Committee, TRIC = Three Rivers Interlocal Council

APPENDIX F



APPENDIX F
REGULATORY FRAMEWORK AND MPO MEMBERSHIP

This appendix contains two elements: detailed background on the regulatory documents, legislation, and guidance that shape the Boston Region Metropolitan Planning Organization's (MPO) transportation planning process, and information on the permanent voting members of the MPO.

REGULATORY FRAMEWORK

The Boston Region MPO plays a critical role in helping the region move closer to achieving federal, state, and regional transportation goals. Therefore, an important part of the MPO's core work is to ensure that the MPO's planning activities align with federal and state regulatory guidance. This appendix describes all of the regulations, policies, and guidance taken into consideration by the MPO during development of the certification documents and other core work undertaken during federal fiscal year (FFY) 2020.

Federal Regulations and Guidance

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

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

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

completion by eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The Boston Region MPO has incorporated these national goals, where practicable, into its vision, goals, and objectives, which provide a framework for the MPO's planning processes.

FAST Act: Planning Factors

The MPO gives specific consideration to the federal planning factors (described in 23 USC 134) when developing all documents that program federal transportation funds. The FAST Act added two new planning factors to the eight factors established in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) transportation legislation. In accordance with the legislation, studies and strategies undertaken by the MPO shall

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

FAST Act: Performance-based Planning and Programming

The US 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.

1990 Clean Air Act Amendments

The Clean Air Act, most recently amended in 1990, forms the basis of the US air pollution control policy. The act identifies air quality standards, and the US Environmental Protection Agency (EPA) may designate geographic areas as attainment or nonattainment 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 in maintenance for a 20-year period to ensure that the standard is maintained in that area.

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

Air quality conformity determinations must be performed for capital improvement projects that receive federal funding and for those that are considered regionally significant, regardless of the funding source. These determinations must show that projects in the MPO's Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) will not cause or contribute to any new air quality violations; will not increase the frequency or severity of any existing air quality violations in any area; and will not delay the timely attainment of air quality standards in any area. The policy, criteria, and procedures for demonstrating air quality conformity in the MPO region were established in Title 40 of the Code of Federal Regulations (CFR), Parts 51 and 93.

As of April 1, 2016, the Boston Region MPO has been classified as being in attainment for carbon monoxide (CO), but a conformity determination must still be completed as there is a carbon monoxide maintenance plan in place and approved as part of the SIP. In the most recent LRTP, *Charting Progress to 2040*, the air quality conformity determination concluded that the emissions levels from the Boston area CO maintenance area, including emissions resulting from implementing the LRTP, are in conformance with the SIP according to state and federal conformity criteria. Specifically, the CO emissions that would be produced under the build scenarios that were modeled during the development of the LRTP were less than the projections for the years 2020 through 2040 for the nine cities in the Boston CO maintenance area. In accordance with Section 176(c) (4) of the Clean Air Act as amended in 1990, the Boston Region MPO has completed this review and hereby certifies that the LRTP and its latest conformity determination conditionally conform with federal (40 CFR Part 93) and Massachusetts regulations (310 CMR 60.03) and are consistent with the air quality goals in the Massachusetts SIP.

The MPO must also perform conformity determinations if transportation control measures (TCMs) are in effect in the region. TCMs are strategies that reduce transportation-related air pollution and fuel use by reducing vehicle-miles traveled and improving roadway operations. The Massachusetts SIP supports the attainment of air quality standards and identifies TCMs. 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.

On February 16, 2018, the US Court of Appeals for the DC Circuit issued a decision in *South Coast Air Quality Management District v. EPA*, which struck down portions of the 2008 Ozone National Ambient Air Quality Standards (NAAQS) SIP Requirements Rule concerning the ozone NAAQS. Those portions of the SIP Requirements Rule included transportation conformity requirements associated with EPA's revocation of the 1997 ozone NAAQS. Massachusetts was designated as an attainment area for 2008 Ozone NAAQS, but as a nonattainment or maintenance area for 1997 Ozone NAAQS. As a result, MPOs in Massachusetts must demonstrate conformity for ozone when developing LRTPs and TIPs. The MPOs in Massachusetts are also required to report on the TCMs as part of air quality conformity determinations in these documents. In addition, the MPOs are still required to perform air quality analyses for carbon dioxide as part of the state's Global Warming Solutions Act.

Nondiscrimination Mandates

The Boston Region MPO complies with Title VI of the Civil Rights Act of 1964, the American with Disabilities Act of 1990 (ADA), the Environmental Justice Executive Order (EJ EO), and other federal and state nondiscrimination statutes and regulations in all programs and activities it conducts. Per federal 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 takes steps in its communication practices and planning processes to provide for and facilitate participation of all persons in the region, including those protected by Title VI, ADA, the EJ EO, and other nondiscrimination mandates. The MPO also considers distribution of the potential beneficial and adverse effects to populations covered by these mandates when making decisions about the programming of federal funding, including funding for MPO-supported studies. The MPO conducts activities as part of its Transportation Equity Program to ensure that the MPO meets these requirements. The MPO staff also conducts the Massachusetts Department of Transportation (MassDOT) Title VI Program, and the Massachusetts Bay Transportation Authority (MBTA) Title VI Program monitoring. The major federal requirements 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, dated August 11, 2000, extends Title VI protections to persons who, as a result of national origin, have limited English-language proficiency (LEP). Specifically, it calls for improved access to federally assisted programs and activities, and requires MPOs to develop and implement a system through which people with LEP can meaningfully participate in the transportation planning process. This requirement includes the development of a Language Assistance Plan that documents the organization's process for providing meaningful language access to people with LEP that access their services and programs.

Environmental Justice Executive Order

Executive Order 12898, dated February 11, 1994, requires each federal agency to achieve environmental justice by identifying and addressing any disproportionately great 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 Americans with Disabilities Act (ADA) "prohibits states, MPOs, and other public entities from discriminating on the basis of disability in the entities' services, programs, or activities," and requires all transportation projects, plans, and programs to be accessible to people with disabilities. It means that the MPO must consider the mobility needs of people with disabilities when programming federal funding for studies and capital projects.

Title III of the ADA also requires all transportation projects, plans, and programs to be accessible to people with disabilities. For the MPO, this means MPO-sponsored meetings must be held in accessible buildings and be conducted in a manner that provides for accessibility. MPO materials must also be made available in accessible formats.

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.

We Move Massachusetts and Planning for Performance

We Move Massachusetts (WMM) is MassDOT's statewide strategic multimodal plan. The initiative is a product of the transportation reform legislation of 2009, the You Move Massachusetts civic engagement process, wider outreach to environmental justice and Title VI communities, and other outreach activities. In May 2014, MassDOT released *We Move Massachusetts: Planning for Performance, the Commonwealth of Massachusetts' 2040 LRTP*. WMM also incorporates performance management in investment decision-making to calculate the differences in performance outcomes resulting from different funding levels available to MassDOT.

MassDOT has expanded upon the incorporation of performance management in WMM by developing a Planning for Performance (PfP) tool to influence investments. The PfP tool is a scenario-planning tool, custom built for MassDOT, which forecasts asset conditions and allows capital planners within the divisions to consider the tradeoffs between investment strategies. The tool reports future conditions in comparison to the desired performance targets.

Massachusetts Strategic Highway Safety Plan (SHSP)

The *Massachusetts 2018 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 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 MBTA's commuter rail system). In 2018, MassDOT also released drafts of the *Statewide*

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 and GreenDOT Policy

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

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

In January 2015, the Massachusetts Department of Environmental Protection amended regulation 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.

MassDOT's also fulfills its responsibilities, defined in the *Massachusetts Clean Energy and Climate Plan for 2020,* through its GreenDOT Policy Directive, a comprehensive sustainability initiative that sets three principal objectives:

- **Reduce GHG emissions from the transportation sector.** MassDOT will achieve this objective by taking GHG emissions into account in all of its responsibilities, including strategic planning, project design and construction, and system operations.
- **Promote the healthy transportation modes of walking, bicycling, and taking public transit.** MassDOT will achieve this objective by pursuing multimodal Complete Streets design standards, providing choices in transportation services, and working with MPOs and other partners to balance funding for projects that serve drivers, pedestrians, bicyclists, and public transit riders.
- **Support smart growth development.** MassDOT will achieve this objective by working with MPOs and other partners to invest in transportation projects that make possible denser smart growth development patterns, which help reduce GHG emissions.

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.

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 *Charting Progress to 2040*, the Boston Region MPO has established investment programs—particularly its Complete Streets and Bicycle and Pedestrian programs—that support the implementation of Complete Streets projects. The UPWP programs support for these projects, such as the MPO's Bicycle and Pedestrian Support Activities program, corridor studies undertaken by MPO staff to make conceptual recommendations for Complete Streets treatments, and various discrete studies aimed at improving pedestrian and bicycle accommodations.

Regional Guidance and Priorities

Focus40, The MBTA's Program for Mass Transportation

Focus40 is the 25-year investment plan that aims to position the MBTA to meet the needs of the Greater Boston region through 2040. It is known officially as the Program for Mass Transportation (PMT). On July 30, 2018, the Massachusetts Department of Transportation (MassDOT) and the MBTA released a draft of the *Focus40* plan. The *Focus40* plan, which is guided by the MBTA's Strategic Plan and other internal and external policy and planning initiatives, will serve as a comprehensive playbook guiding all capital planning initiatives at the MBTA. This includes the *RailVision* plan, which will inform the vision for the future of the MBTA's commuter rail system; the Better Bus Project, the plan to improve the MBTA's bus network; and other plans. The Boston Region MPO continues to monitor the development of *Focus40* and

related MBTA modal plans to inform its decision making about transit capital investments, which are incorporated to the TIP and LRTP.

MetroFuture

MetroFuture, which was developed by the Metropolitan Area Planning Council (MAPC) and adopted in 2008, is the long-range plan for land use, housing, economic development, and environmental preservation for the Boston region. It includes a vision for the region's future and a set of strategies for achieving that vision, and is the foundation for land-use projections used in the MPO's LRTP, *Charting Progress to 2040*. MAPC is now developing *MetroCommon,* the next regional plan, which will build off of *MetroFuture* and include an updated set of strategies for achieving sustainable growth and equitable prosperity. The MPO will continue to consider *MetroFuture's* goals, objectives, and strategies in its planning and activities, and will monitor *MetroCommon* as it develops.

The 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 monitoring, and move those strategies into the implementation stage by providing decision makers in the region with information and recommendations for improving the transportation system's performance. The CMP monitors roadways and park-and-ride facilities in the Boston region for safety, congestion, and mobility, and identifies problem locations. The CMP is described in more detail in the UPWP, and studies undertaken through the CMP are often the inspiration for discrete studies funded through the UPWP.

VOTING MEMBERS OF THE BOSTON REGION MPO

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

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

- The **MassDOT Highway Division** has jurisdiction over the roadways, bridges, and tunnels formerly overseen by the Massachusetts Highway Department and the Massachusetts Turnpike Authority. The Highway Division also has jurisdiction over

many bridges and parkways that previously were under authority of the Department of Conservation and Recreation. The Highway Division is responsible for the design, construction, and maintenance of the Commonwealth's state highways and bridges. It is also responsible for overseeing traffic safety and engineering activities for the state highway system. These activities include operating the Highway Operations Control Center to ensure safe road and travel conditions.

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

The **MBTA**, created in 1964, is a body politic and corporate, and a political subdivision of the Commonwealth. Under the provisions of Chapter 161A of the Massachusetts General Laws (MGL), it has the statutory responsibility within its district of operating the public transportation system, preparing the engineering and architectural designs for transit development projects, and constructing and operating transit development projects. The MBTA district comprises 175 communities, including all of the 97 cities and towns of the Boston Region MPO area. In April 2015, as a result of a plan of action to improve the MBTA, a five-member Fiscal and Management Control Board (FMCB) was created. The FMCB was created to oversee and improve the finances, management, and operations of the MBTA. The FMCB's authorizing statute called for an initial three-year term, with the option for the board to request that the Governor approve a single two-year extension. In 2017, the FMCB's initial mandate, which would have expired in June 2018, was extended for two years, through June 30, 2020. The FMCB's goals target governance, finance, and agency structure and operations through recommended executive and legislative actions that embrace transparency and develop stability in order to earn public trust. By statute, the MBTA FMCB consists of five members, one with experience in transportation finance, one with experience in mass transit operations, and three who are also members of the MassDOT Board of Directors.

The **MBTA Advisory Board** was created by the Massachusetts Legislature in 1964 through the same legislation that created the MBTA. The Advisory Board consists of representatives of the 175 cities and towns that compose the MBTA district. 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 review of and comment on the MBTA's long-range plan, the PMT, proposed fare increases, and the annual MBTA Capital Investment Program; review of the MBTA's documentation of net operating investment per passenger; and review of the MBTA's operating budget. The MBTA Advisory Board advocates for the transit needs of its member communities and the riding public.

The **Massachusetts Port Authority (Massport)** has the statutory responsibility under Chapter 465 of the Acts of 1956, as amended, for planning, constructing, owning, and operating such transportation and related facilities as may be necessary for developing and improving

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

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

The **City of Boston**, seven elected cities (currently **Beverly, Braintree, Everett, Framingham, Newton, Somerville, and Woburn**), and five elected towns (currently **Arlington, Bedford, Lexington, Medway, and Norwood**) 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 LRTP, TIP, UPWP, 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 US Department of Transportation under pertinent legislation and the provisions of the FAST Act.