



# BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair  
Tegin L. Teich, Executive Director, MPO Staff

## **TECHNICAL MEMORANDUM**

**DATE:** December 17, 2020  
**TO:** Boston Region Metropolitan Planning Organization  
**FROM:** Seth Asante, MPO Staff  
**RE:** Selection of FFY 2021 LRTP Priority Corridor Study Location

### **1 BACKGROUND**

During the development of the Boston Region Metropolitan Planning Organization's (MPO) Long-Range Transportation Plan (LRTP), *Destination 2040*, the MPO staff identified the existing needs for all transportation modes in the region.<sup>1</sup> The results were compiled in the LRTP Needs Assessment, which is used to guide the MPO's decision-making process for selecting transportation projects to fund in future Transportation Improvement Programs (TIP). The MPO goals that guided the development of the LRTP Needs Assessment include the following:

- Safety—make all modes safe
- Preservation—maintain and modernize the system
- Capacity Management and Mobility—use existing facility capacity more efficiently and increase healthy transportation capacity
- Clean Air/Clean Communities—create an environmentally friendly transportation system
- Transportation Equity—provide comparable transportation access and service quality among communities, regardless of income level or minority population
- Economic Vitality—ensure our transportation network serves as a strong foundation for economic vitality

Based on previous and ongoing transportation-planning work—including the MPO's Congestion Management Process (CMP) and planning studies—MPO staff identified several priority arterial roadway segments that require

---

<sup>1</sup> *Destination 2040: The New Long-Range Transportation Plan of the Boston Region Metropolitan Planning Organization* was adopted by the Boston Region MPO in August 2019.

**Civil Rights, nondiscrimination, and accessibility information is on the last page.**

maintenance, modernization, and safety and mobility improvements. These locations are documented in the LRTP Needs Assessment.

To address problems on some of these arterial segments, the *Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment* study was included in the federal fiscal year (FFY) 2021 Unified Planning Work Program (UPWP).<sup>2</sup> This memorandum presents the results of the selection process and a recommendation for a location to study to the MPO board for discussion.

By focusing on arterial segments, planners can evaluate multimodal transportation needs comprehensively (with the goal of creating Complete Streets). A holistic approach to analyzing problems and forming recommendations ensures that the needs of all transportation users are considered. Ultimately, this approach will result in roadways where it is safe to cross the street and walk or bicycle to shops, schools, train stations, and recreational facilities, and where buses can run on time. Typically, the recommended improvements are within a roadway's right-of-way and the interests and support of stakeholders are also considered.

## 2 SELECTION PROCEDURE

The process for selecting study locations consisted of three steps:

1. MPO staff gathered and assembled data about the arterial segments from the LRTP Needs Assessment and used the data to identify and prioritize the segments in need of improvements.
2. Staff examined the arterial segments more closely by applying specific criteria.
3. Staff scored each arterial segment and assigned a priority of *low*, *medium*, or *high* to each segment.

Details about each step in the process are provided below.

### 2.1 Gathering Data and Identifying Potential Arterial Segments

MPO staff identified 43 arterial segments in 33 municipalities in the Boston region based on the following data sources:

- The Massachusetts Department of Transportation (MassDOT) Road Inventory File and 2013–17 crash database were used to assemble the following information for each arterial segment: roadway jurisdiction,

---

<sup>2</sup> The FFY 2021 UPWP was endorsed by the Boston Region MPO on June 16, 2020.

National Highway System status, average daily traffic (ADT), high-crash locations, and crash rates.

- The MPO's CMP data on arterial congestion were used to determine average travel speeds, travel-time index (travel time in the peak period divided by travel time during free-flow conditions), and speed index (average travel speed divided by the speed limit) on each arterial segment.
- The MPO's data on gaps in the bike network and data on the location of MassDOT's bike facilities were used to identify bicyclists' needs, including locations where connectivity between bicycle facilities and bicyclists' accommodations could be improved.
- Data on Massachusetts Bay Transportation Authority (MBTA) bus service performance and passenger loads were used to determine the percentage of bus trips that do not adhere to the schedule (in other words, that provide late service) or do not adhere to passenger load standards (resulting in crowding).
- Data on MBTA bus routes, subway lines, and commuter rail lines were used to identify which arterial segments serve MBTA buses or stations.
- Data on the MPO's transportation equity analysis zones were used to identify areas of concern as relates to transportation equity.
- Data selected from MassDOT's project-information database, the MPO's FFY 2021–25 TIP project database, MPO planning studies and other studies, and municipal websites were used to obtain data on projects, studies, and TIP projects that are planned or programmed for each arterial segment.

Table 1 (attached) presents the data and information gathered about each of the arterial segments:

- Municipality
- Metropolitan Area Planning Council (MAPC) subregion
- Jurisdiction
- MassDOT district office
- Number of top-200 high-crash locations
- Number of crash clusters that are eligible for Highway Safety Improvement Program (HSIP) funding
- Travel-time index
- Transit service performance

- Proximity to a transportation equity analysis zone (within one-half mile distance)
- Relevant studies or projects within or near the segment

Table 1 also includes the score and priority rating that were determined by applying the selection criteria. The processes for scoring and assigning priority ratings to segments are described below.

## 2.2 Selection Criteria

MPO staff examined the arterial segments more closely by applying the following six criteria and assigning points based on the number of criteria that apply to each location.

1. *Safety Conditions, 0–4 points (each of the four criteria is worth one point)*
  - Location has a higher-than-average crash rate for its functional class
  - Location contains an HSIP-eligible crash cluster
  - Location is identified in the Massachusetts *Top High-Crash Locations Report*
  - Location has a significant number of pedestrian and bicycle crashes per year (two or more per mile) or contains one or more HSIP-eligible bike-pedestrian crash cluster
2. *Congested Conditions, 0–2 points (each of the two criteria is worth one point)*
  - Travel-time index is at least 1.3
  - Travel-time index is at least 2.0
3. *Multimodal Significance, 0–3 points (each of the three criteria is worth one point)*
  - Location currently supports transit, bicycle, or pedestrian activities
  - Location needs to have improved transit, bicycle, or pedestrian facilities
  - Location has a high volume of truck traffic serving regional commerce
4. *Regional Significance, 0–4 points (each of the four criteria is worth one point)*
  - Location is in the National Highway System
  - Location carries a significant portion of regional traffic (ADT is greater than 20,000)
  - Location lies within 0.5 miles of a transportation equity analysis zone
  - Location is essential for the region’s economic, cultural, or recreational development

5. *Regional Equity, 0–2 points (each of the two criteria is worth one point)*
  - Location is in an MAPC subregion for which there has not been a Priority Corridors study
  - Location is in an MAPC subregion for which there has not been a Priority Corridors study in the previous three years
6. *Implementation Potential, 0–3 points (each of the three criteria is worth one point)*
  - Location is proposed or endorsed for study by the agency that administers the roadway
  - Location is proposed or endorsed by its MAPC subregional group and is a priority for that subregional group
  - Other stakeholders strongly support improvements for the location

### 2.3 Rating Potential Roadways

MPO staff rated arterial segments with a total score of 11 or fewer points as *low* priority; those with a score of 12 to 13 points as *medium* priority; and those with a total score of 14 or more points as *high* priority. Staff gave 6 arterial segments a high-priority rating based on safety and operational needs, multimodal and regional significance, regional equity, and support for improvements from agencies and municipalities. Staff then examined high-priority segments more closely and excluded arterials for which there were projects meeting any of the following criteria from further consideration for this cycle of the Priority Corridors study: recently completed, in construction, in design, under study, or programmed in the TIP with the 25 percent design completed.

Staff also evaluated the pedestrian accommodation and safety improvement needs for the segment with the highest score by applying the MPO's Pedestrian Report Card Assessment and Bicycle Level-of-Service Metric (Bicycle Report Card).<sup>3</sup> These locations highly qualify based on pedestrian and bicycle accommodation or safety improvement requirements. Appendix A contains detailed results of the assessments for Route 9 in Framingham and Natick, the arterial segment with the highest score. Based on this evaluation, staff recommends studying the segment on Route 9 in Framingham and Natick. Figure 1 shows the study area with seven HSIP intersection crash clusters.

---

<sup>3</sup> Ryan Hicks and Casey-Marie Claude, Boston Region Metropolitan Planning Organization, *Pedestrian Level-of-Service Memorandum*, January 19, 2017; Casey-Marie Claude, Boston Region Metropolitan Planning Organization, *Development of a Scoring System for Bicycle Travel in the Boston Region*, November 8, 2018.

### **3 ARTERIAL SEGMENT SELECTED FOR STUDY: ROUTE 9 IN FRAMINGHAM AND NATICK**

The arterial segment on Route 9 in Framingham and Natick received a total score of 16, based on the selection criteria (safety, congestion, multimodal and regional significance, regional equity, and implementation potential). Route 9 runs east and west through Framingham and Natick and it serves residential, commercial, industrial, educational, and recreational areas. Within the selected corridor, there are several transportation equity zones that exceed the threshold of the MPO, including low-income households, minority, low English proficiency, and carless households.

Being a principal arterial, Route 9 carries local and commuter traffic to and from Boston and connects major north-south road Routes 27, 30, and 126, Main Street/Edgell Road, Speen Street, and Oak Street. Staff's evaluation indicates that there are safety and mobility problems in the segment. Seven locations along the segment contain HSIP-eligible crash clusters, two of which are in the top 200 of intersection crash clusters in Massachusetts. Also, accommodation for bicyclists is poor and better bicycle connections are needed in the corridor. Pedestrian accommodations need improvement as there are gaps in the sidewalk network.

MassDOT Highway District 3 has been fielding inquiries about improving the safety of pedestrian and bicycles along the corridor, pedestrian signal equipment, and phasing/timing changes. District 3, City of Framingham, and Town of Natick are looking for solutions to the problems (see Appendix B). MPO staff would focus on segments where safety and people who bike or walk would benefit the most. MPO staff would work with stakeholders to identify the problems and develop solutions that could be incorporated into MassDOT project number 609402. The recommended arterial segment meets the selection criteria of this study, especially by supporting the transportation improvement priorities of the MPO's LRTP.

### **4 NEXT STEPS**

After the MPO board discusses this recommendation, staff will meet with officials from the City of Framingham, Town of Natick, and MassDOT and other stakeholders to discuss the study specifics, conduct field visits, collect data, identify needs, and develop solutions.

SA/sa

Table 1  
Figure 1

Appendix A—Route 9 pedestrian and bicycle levels of service  
Appendix B—Letter of support

The Boston Region Metropolitan Planning Organization (MPO) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination under any program or activity that receives federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, Federal Transit Administration, or both, prohibit discrimination on the basis of age, sex, and disability. The Boston Region MPO considers these protected populations in its Title VI Programs, consistent with federal interpretation and administration. In addition, the Boston Region MPO provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with U.S. Department of Transportation policy and guidance on federal Executive Order 13166.

The Boston Region MPO also complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 sections 92a, 98, 98a, which prohibits making any distinction, discrimination, or restriction in admission to, or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry. Likewise, the Boston Region MPO complies with the Governor's Executive Order 526, section 4, which requires that all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.

A complaint form and additional information can be obtained by contacting the MPO or at [http://www.bostonmpo.org/mpo\\_non\\_discrimination](http://www.bostonmpo.org/mpo_non_discrimination). To request this information in a different language or in an accessible format, please contact

Title VI Specialist  
Boston Region MPO  
10 Park Plaza, Suite 2150  
Boston, MA 02116  
[civilrights@ctps.org](mailto:civilrights@ctps.org)  
857.702.3700 (voice)  
617.570.9193 (TTY)

**TABLE 1**  
**Arterial Segments Considered for Study: Priority Corridors for Long-Range Transportation Plan Needs Assessment Study**

Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Number of Top-200 High-Crash Locations 2015-17	Number of HSIP-Eligible Crash Clusters 2015-17**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Transportation Equity Priority Area	Study, Project, or TIP Project	Safety Conditions***	Congested Conditions***	Multimodal Significance***	Regional Significance***	Regional Equity***	Implementation Potential***	Score	Priority Rating	Summary of Comments
Route 9	Framingham and Natick	MWRC	3	MassDOT	Yes	2	2	7	3.47	MWRTA Routes 1, 2, 3, 7, and 9	No data	Yes	MassDOT Project #609402, Framingham-Natick resurfacing and related work on Route 9; programmed FFY 2025. MassDOT Project #607732, Framingham-Natick Cochituate Rail Trail, the project involves construction of 2.4 miles of rail trail and includes a grade separated crossing at Routes 9 and 30; in construction. MassDOT Project #608006, Framingham Pedestrian Hybrid Beacon Installation at Route 9 and Maynard Road and the Framingham Fire Station; in design. MassDOT Project #608281, Installation of adaptive traffic control signal equipment, vehicle detection, and communication equipment at 5 traffic signals in Framingham and Natick on Route 9; in construction. MassDOT Project #608836, Drainage improvements on Route 9 at Route 126 interchange and salt shed relocation (Phase 1); in design.	3	2	3	4	1	3	16	High	This arterial segment was selected because staff's evaluation indicates that there are safety and mobility problems in the segment. Eight locations along the segment contain HSIP-eligible crash clusters, two of which are in the top 200 of intersection crash clusters in Massachusetts. Also, accommodation for people who bicycle is poor and better bicycle connections are needed in the corridor. Accommodations for people who walk need improvement as there are gaps in the sidewalk network. MassDOT Highway District 3 has been fielding inquiries about improving the safety of people who bicycle or walk along the corridor and better signal equipment and phasing/timing changes. Within the selected corridor, there are several transportation equity zones that exceed threshold of the MPO. Recommendations from the study could be incorporated into MassDOT project number 609402.
Route 37	Braintree	SSC	6	MassDOT	Yes	2	1	2	2.73	MBTA bus Routes 230 and 236 and travel on or across the segment.	Yes	Yes	MassDOT Project #608651, Adaptive traffic signal control on Route 37 (Granite Street). Installation of adaptive traffic control signal equipment, vehicle detection, communication equipment, and managing software at seven traffic signals on Route 37; in construction.  MassDOT Project #607684, Bridge replacement, B-21-017, Washington Street (Route 37) over MBTA/CSX railroad; preliminary design.	3	2	2	4	2	2	15	High	The arterial segment has a 5- to 6-foot shoulder on either side of the roadway for most of the corridor. There are sidewalks on either side of the roadway throughout the corridor. In addition, MassDOT is installing adaptive traffic control signal equipment, vehicle detection, communication equipment, and managing software at seven traffic signals on Route 37, a project that is under construction.
Route 16	Medford	ICC	4	MassDOT	Yes	2, 3	1	7	3.04	MBTA bus Routes 90, 97, 99, 100, 106, 108, 110, 112, and 134  MBTA rapid transit on the Orange Line at Wellington and on the Red Line at Porter Square; MBTA commuter rail at West Medford and Porter Square	Yes	Yes	MassDOT Project #604660, Everett-Medford-Bridge Replacements, Revere Beach Parkway (Route 16), E-12-004=M-12-018 over the Malden River (Woods Memorial Bridge) and M-12-017 over MBTA and Rivers Edge Drive—The purpose of this project is to replace the existing non-operating draw bridge with a new fixed bridge. The project is under construction. MassDOT Project #605531, Structure maintenance, E-12-004=M-12-018, Revere Beach Parkway (Route 16) over the Malden River (Woods Memorial Draw Bridge); in construction.	4	2	3	4	0	2	15	High	In FFY 2019, MPO staff studied Route 16 in Chelsea and Everett and suggested improvements to address safety, congestion, multimodal transportation, and pedestrian and bicycle accommodations. The section of Route 16 in Medford has five HSIP intersection clusters, including two pedestrian clusters. The roadway experiences congestion and high truck volumes. It also carries vehicular, pedestrian, and bicycle traffic to Wellington Station. Studying this segment in Medford will provide MassDOT with improvement concepts to comprehensively address safety, capacity management and mobility, and pedestrian and bicycle accommodations in the corridor.
Route 3A	Burlington	NSPC	4	MassDOT	Yes	3	0	2	1.67	MBTA bus Routes 350, 351, and 354 travel on or across the segment.	Yes	Yes	MassDOT Project #608068, will install an adaptive traffic control signal system on Cambridge Street, Middlesex Turnpike, and Burlington Mall Road. The project includes the installation of compatible traffic signal control equipment, video detection, communication devices and software to integrate 11 MassDOT and 16 Town-owned traffic signal locations into one adaptive signal system. The project is in construction.	3	1	3	4	2	1	14	High	On this segment, there are no accommodations for bicycles, gaps in sidewalk network, and travel lanes that are very wide (drivers form two lanes in each direction). Land use is mixed along the corridor. There are three MBTA bus routes operating in the corridor. Pedestrian and bicycle crashes have occurred in the corridor. The installation of an adaptive traffic control signal system is underway on Cambridge Street, Middlesex Turnpike, and Burlington Mall Road to integrate 11 MassDOT and 16 Town-owned traffic signal locations into one adaptive signal system.
Route 18	Weymouth	SSC	6	MassDOT	Yes	3	3	8	2.55	MBTA bus Route 225 MBTA commuter rail at South Weymouth	Yes	Yes	MassDOT Project #601630, Reconstruction and widening on Route 18 (Main Street) from Highland Place to Route 139 (4.0 miles) includes replacing W-32-013, Route 18 over the Old Colony Railroad (MBTA); in construction.	4	2	2	4	2	0	14	High	This arterial segment was not selected because a MassDOT project, currently in construction, would address problems in the entire segment and no study is needed at this time.
Routes 38/129	Wilmington	NSPC	4	MassDOT and Wilmington	Yes	3	0	4	3.31	MBTA commuter rail at Wilmington, North Wilmington, Anderson/Woburn, and Reading	N/A	Yes	MassDOT Project #608051, Reconstruct Route 38 from Route 62 to the Woburn city line, add bike lanes, sidewalks, and turn lanes, and upgrade signals; programmed FFY 2024. MassDOT Project #609253, Intersection improvements at Lowell Street (Route 129) and Woburn Street; programmed FFY 2024. MassDOT Project #601732, Rehabilitation, Route 129 (Lowell Street) from Route 38 (Main Street) to Woburn Street; completed in 2009.	3	2	2	4	2	1	14	High	Several sections of the arterial have projects that are currently in design. These MassDOT projects would address problems in the corridor.
Route 2A/3	Arlington	ICC	4	Arlington	Yes	3	0	2	2.39	MBTA bus Routes 67, 77, 79, 80, 87, and 350 travel on or across the segment.	Yes	Yes	None	3	2	3	4	0	1	13	Medium	None
Route 203	Boston	ICC	6	MassDOT	Yes	3	5	13	2.94	MBTA bus Routes 14, 26, 201, 202, 215, and 217 travel on or across the segment.	Yes	Yes	MassDOT Project #606318, Intersection improvements at Gallivan Boulevard (Route 203) and Morton Street; in construction. MassDOT Project #608755, Intersection improvements Morton Street (Route 203) at Blue Hill Ave, at Courtland Road/Havelock Street, and at Harvard Street; programmed in the FFY 2019 TIP; in design. MassDOT Project #606896, Reconstruction on (Route 203) Gallivan Boulevard, from Neponset Circle to east of Morton Street intersection; in preliminary design. MassDOT Project #606897, Improvements on (Route 203) Morton Street, from west of Gallivan Boulevard to Shea Circle; in preliminary design.	4	2	2	4	0	1	13	Medium	The FFY 2012 Priority Corridors for LRTP Needs Assessment Study and several MassDOT projects in the corridor will address issues.
Route 2A	Cambridge	ICC	6	Cambridge and DCR	Yes	3	1	5	2.05	MBTA bus Routes 67, 77, 79, 80, 87, and 350 travel on or across the segment.	Yes	Yes	None	4	2	2	4	0	1	13	Medium	None



Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Number of Top-200 High-Crash Locations 2015-17	Number of HSIP-Eligible Crash Clusters 2015-17**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Transportation Equity Priority Area	Study, Project, or TIP Project	Safety Conditions***	Congested Conditions***	Multimodal Significance***	Regional Significance***	Regional Equity***	Implementation Potential***	Score	Priority Rating	Summary of Comments
Route 135	Framingham	MWRC	3	Framingham	Yes	3	1	2	1.63	MBTA commuter rail at Framingham. MWRTA Routes 4, 5, 6, and 11	No data	Yes	MassDOT Project #606109, Intersection improvements at Route 126/135/MBTA and CSX railroad.	4	1	2	4	1	1	13	Medium	MassDOT Project #606109: Intersection improvements at Route 126/135/MBTA and CSX railroad. Roadway has received improvements to address congestion and make it multimodal (accommodation for pedestrians and bicycles).
Route 107	Lynn	ICC	4	MassDOT and Lynn	Yes	3	4	11	1.87	MBTA bus Routes 424, 426, 435, 436, 441, 442, 450, 455, 456, 459, 429, and 435 MBTA commuter rail at River Works, Lynn/Central Square, and Swampscott Ferry service	Yes	Yes	MassDOT Project #808817, Resurfacing of Route 107 and related improvements; programmed FFY 2021. MassDOT Project #608927, Reconstruction of Route 107 in Lynn and Salem; in preliminary design. MassDOT project #609246, Rehabilitation of Western Avenue (Route 107); in preliminary design. MassDOT Project #604952, Bridge Replacement, Route 107 over the Saugus River; programmed 2019. MassDOT Project #26710, Bridge Replacement, Route 107 over the Saugus River (Fox Hill Bridge), completed spring 2013.	4	1	3	4	0	1	13	Medium	This arterial segment was not selected for study because a Route 107 Corridor Study in Lynn and Salem has been completed by MassDOT recently and the proposed improvements would be addressed under project #608927, which is in design.
Route 16	Milford	SWAP	3	MassDOT and Milford	Yes	3	0	4	3.58	MWRTA Route 14	No data	Yes	MassDOT Project #607428, Resurfacing and intersection improvements on Route 16 (Main Street), from Water Street west to approximately 120 feet west of the Milford/Hopedale town line and the intersection of Route 140; programmed FFY 2019. MassDOT Project #606142, Signal and intersection improvements on Route 16 (Main Street and East Main Street) at six locations; completed in 2013.	3	2	2	4	1	1	13	Medium	This corridor is not recommended for study. The corridor received improvements in 2013 based on a CTPS study and currently a MassDOT resurfacing and intersection improvement project has been programmed for FFY 2019.
Route 3A	Quincy	ICC	6	MassDOT, DCR, and Quincy	Yes	3	1	8	2.76	MBTA bus Routes 210, 211, 212, 214, 216, 217, 220, 221, 222, 225, 230, 236, 238, and 245 MBTA Red Line rapid transit at Quincy Center MBTA commuter rail at Quincy Center	Yes	Yes	MassDOT Project #608569, Intersection improvements at Route 3A (Southern Artery) and Broad Street; programmed FFY 2022 TIP. MassDOT Project #605729, Intersection and signal improvements at Hancock Street and East/West Squantum streets; completed in 2015. An FFY 2012 CTPS safety and operations study addressed problems at the Route 3A and Coddington Street intersection.	4	2	2	4	0	1	13	Medium	Route 3A (Hancock Street and Southern Artery) has received several improvement projects and was the focus of a CTPS study. The location was suggested in the 2017 MPO outreach program.
Route 28	Randolph	TRIC	6	MassDOT and Randolph	Yes	3	3	8	2.00	MBTA bus Routes 240 and 238 MBTA commuter rail at Holbrook/Randolph BAT Route 12	Yes	Yes	MassDOT Project #609399, Resurfacing and related work on Route 28; in preliminary design. Arterial Coordination Study, CTPS study (2010).	4	2	2	4	0	1	13	Medium	The location has received several MassDOT projects and CTPS studies and it is not recommended for study.
Route 114	Salem	NSTF	4	MassDOT and Salem	Yes	2, 3	0	3	2.06	MBTA bus Routes 450, 451, 455, 456, and 465 MBTA commuter rail at Salem and Beverly; Ferry service	Yes	Yes	MassDOT Project #608521, Bridge Maintenance, North Street (Route 114) over Bridge Street (Route 107) and MBTA, in construction. MassDOT Project #605332, Bridge Replacement (Route 114) North Street over North River; in design stage.	3	2	2	4	1	1	13	Medium	This roadway has Complete Streets improvements, including sidewalks and bicycle lanes on either side of the roadway. The section that requires improvements to improve safety, capacity management and mobility, and accommodate bicycles is between Bridge Street (Route 107) and Route 128.
Route 16	Wellesley	MWRC	6	MassDOT and Wellesley	Yes	3	0	0	2.57	MBTA commuter rail at Wellesley Square, Wellesley Hills, Wellesley Farms and Waltham	N/A	Yes	MassDOT Project #94762, Bridge Rehabilitation, Br# W-13-014 Route 16 (Washington Street) over Route 9 including relocation of retaining wall.	3	2	2	4	1	1	13	Medium	The location was suggested in 2014 LRTP outreach through verbal comments at a 495/MetroWest Partnership meeting.
Route 20	Weston	MWRC	6	MassDOT	Yes	3	0	2	3.06	MBTA bus Route 70 MBTA commuter rail at Waltham and Kendal Green	Yes	Yes	Intersection improvements on Boston Post Road (Route 20) at Wellesley Street; in design stage.	3	2	2	4	1	1	13	Medium	A congestion study was suggested through UPWP and LRTP outreach in 2012, 2013, and 2014 by MAGIC; a formal letter was submitted and verbal comments were made at an MWRC subregion meeting. A suggestion to study this location was resubmitted in a comment on the Draft FFY 2014 UPWP and during the 2017 MPO outreach program.
Route 3A	Weymouth	SSC	6	MassDOT	Yes	3	0	1	1.74	30 MBTA bus stops MBTA bus Routes 220, 221, and 222 MBTA commuter rail at Quincy Center, Weymouth Landing/East Braintree, and West Hingham Ferry service	Yes	Yes	MassDOT Project #608231, Reconstruction of Route 3A including pedestrian and traffic signal improvements; in design. MassDOT Project #604382, Route 3A (Washington Street) Bridge; in construction. MassDOT Project #608483, Work consists of resurfacing on Route 3A; in preliminary design.	2	2	2	4	2	1	13	Medium	A road safety audit was completed for Route 3A in Weymouth in September 2016. The audit identified the problems and needs on the roadway, and suggested short-, medium-, and long-term improvements. MassDOT Project #608321, in design, will address problems and needs identified in the corridor.
Route 60	Arlington	ICC	4	Arlington	Yes	3	0	1	3.92	MBTA bus Routes 67, 77, 79, 80, 88, and 350 travel on or across the segment	Yes	Yes	CTPS and MAPC Community Transportation Technical Assistance Program evaluated the high-crash location at the intersection at Massachusetts Avenue in March 2010. MassDOT Project #606885 reconstructed the intersection of Route 3 and Route 60; the project was completed in 2017.	3	2	3	3	0	1	12	Medium	None

Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Number of Top-200 High-Crash Locations 2015-17	Number of HSIP-Eligible Crash Clusters 2015-17**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Transportation Equity Priority Area	Study, Project, or TIP Project	Safety Conditions***	Congested Conditions***	Multimodal Significance***	Regional Significance***	Regional Equity***	Implementation Potential***	Score	Priority Rating	Summary of Comments
Route 2/3/3A/16	Cambridge	ICC	6	DCR	Yes	2	3	5	4.80	MBTA bus Routes 75, 71, 72, 73, 74, and 78 MBTA Red Line rapid transit MBTA commuter rail at Porter Square	Yes	Yes	DCR announced that the agency will conduct a traffic study of several intersections along Mount Auburn Street and Fresh Pond Parkway, in partnership with the City of Cambridge and the MBTA. The study will focus on safety measures, bus prioritization, and accessibility. MassDOT Project #608806, Multiuse Path Construction (Phase II), will create a multiuse greenway on the former B&M railroad right-of-way extending from Concord Avenue in Cambridge through the Fresh Pond Reservation, under Huron Avenue and Mount Auburn Street and into Watertown; this project is in construction. MassDOT Project #609290, Intersection improvements at Fresh Pond Parkway/Gerrys Landing Road, from Brattle Road to Memorial Drive.	3	2	2	4	0	1	12	Medium	The Fresh Pond Residents Alliance identified Fresh Pond Parkway and Alewife Brook Parkway as locations in need of transportation improvements. Concerns include pedestrian safety, particularly for young students who walk to Shady Hill School, because of high traffic volumes, environmental issues, and lack of livability.
Route 16	Chelsea and Everett	ICC	4	MassDOT	Yes	2	7	8	1.99	MBTA bus Routes 97, 99, 106, 110, 112, 104, 105, and 109 MBTA Orange Line rapid transit at Wellington and MBTA commuter rail at Chelsea	Yes	Yes	FFY 2019 Priority Corridor for LRTP Needs Assessment Study (Chelsea and Everett)	3	1	3	4	0	1	12	Medium	FFY 2019 Priority Corridors for LRTP Needs Assessment Study (Concord and Lincoln)
Route 2	Concord	MAGIC	4	MassDOT	Yes	2	0	2	5.93	MBTA commuter rail at West Concord, Concord, and Lincoln	N/A	Yes	MassDOT Project #602984, Crosby's Corner (Route 2 at Route 2A) Improvements; in construction. MassDOT Project #608015, Reconstruction and widening on Route 2, from Sandy Pond Road to Bridge over MBTA/B&M railroad. MassDOT Project #602091, Concord Rotary; in preliminary design. MassDOT Project #604069, Bridge Replacement over Sudbury River; in preliminary design. MassDOT Project #606223, Bruce Freeman Rail Trail Construction (Phase II-B) in Acton and Concord, will connect the trail across Route 2; programmed in the FFY 2019 TIP; in design.	2	2	2	4	1	1	12	Medium	FFY 2013 Priority Corridors for LRTP Needs Assessment Study (Concord and Lincoln)  Route 2 was suggested during MPO outreach as a route experiencing congestion that affects MAGIC communities as well as Cambridge.  There are many projects and studies conducted for this corridor, including the Route 2 (Crosby's Corner) improvements and Concord Rotary upgrade and improvements.
Route 99	Everett	ICC	4	Everett	Yes	3	0	1	2.23	MBTA bus Routes 97, 99, 104, 105, 106, 109, 110, and 112 travel on or across the segment	Yes	Yes	MassDOT Project #602383 reconstructed Route 99 with a traffic signal upgrade, from Second Street to the Malden city line; completed in 2008. MassDOT Project #602382 reconstructed Route 99 from Sweetser Circle to the Alford Street Bridge in 2013; completed spring 2013.	2	2	3	4	0	1	12	Medium	This roadway is not recommended for study because MassDOT completely reconstructed Route 99 with signal improvements from Alford Street Bridge to the Malden city line. Route 99 (Lower Broadway) has also received improvements, including pedestrian and bicycle accommodation, as a result of the Encore Boston Harbor mitigation improvements.
Route 3A	Hingham	SSC	5	MassDOT	Yes	3	0	2	1.69	MBTA commuter rail at Cohasset, Nantasket Junction, West Hingham, and East Weymouth Ferry service MBTA bus Routes 220 and 221	Yes	Yes	MassDOT Project #605168, Improvements on Route 3A from Otis Street/Cole Road including Summer Street and rotary; Rockland Street to George Washington Boulevard; in preliminary design. MassDOT Project #603137, Intersection Improvements on Route 3A at Kirby Street. There has been local interest in installing a traffic signal at this intersection; in preliminary design.	2	1	2	4	2	1	12	Medium	In FFY 2015, a subregional priority roadway study was conducted for Route 3A in Hingham and Hull.  The location received strong support from the Towns of Hingham and Hull, as well as the South Shore Coalition and the MassDOT Highway Division District 5 Office.
Route 16	Holliston	MWRC	3	MassDOT and Holliston	Yes	3	0	2	1.76	MWRTA Routes 6 and 14	No data	Yes	2011 CTPS study, Route 126 Corridor: Transportation Improvement Study. 2008 CTPS study, Washington Street (Route 16/126) at Hollis Street.	2	1	2	4	1	2	12	Medium	This location has MassDOT projects and CTPS studies, which have not been implemented.  The 495/MetroWest Partnership expressed interest in a Route 16 study.  The section that experiences the most crashes is the town center portion (under Holliston jurisdiction). A road safety audit
Route 28	Milton	ICC and TRIC	6	MassDOT and Milton	Yes	3	1	4	2.48	MBTA bus Routes 240, 245, 24, 28, 29, 30, and 31 MBTA Red Line rapid transit at Mattapan/Ashmont Station, BAT Route 12	Yes	Yes	MassDOT Project #607342, Intersection and Signal Improvements at Route 28 (Randolph Avenue) and Chickatabut Road; programmed FFY 2022. MassDOT Project #609396, Resurfacing and related work on Route 28; programmed FFY 2024. MassDOT Project # 106901, Reconstruction on Route 28 (Randolph Avenue) from Reedsdale Road to Quincy town line; completed in 2008.	4	2	3	3	0	0	12	Medium	This arterial segment was studied in FFY 2020. There are four HSIP intersection clusters in the segment. There is no accommodation for bicycles in the segment, which presents a significant connectivity problem because several of the side streets have bicycle lanes. There are peak period traffic congestion problems that create safety, operations, and mobility issues for the residents. The Town of Milton and MassDOT have expressed their support and will participate in the study. In addition, recommendations from the study could be incorporated into MassDOT Project #609396 or a new project.
Route 1	Norwood	TRIC	5	MassDOT	Yes	3	0	5	3.85	MBTA commuter rail at Islington, Dedham Corp. Center, Endicott, Norwood Depot, Norwood Central, Windsor Gardens, and Plimptonville	N/A	Yes	MassDOT's I-95 South Corridor Study, provided a comprehensive evaluation of the I-95 and Route 1 corridors south of Route 128 that included a recommended plan of short-term and long-term improvements; June 2010. MassDOT Project #609371, Median Jersey barrier and fencing upgrade; programmed FFY 2019. MassDOT Project #608052, Route 1 at Morse Street (approved by PRC November 2014); programmed FFY 2023. MassDOT Project #605857, Route 1 at University Avenue and Everett Street; programmed FFY 2022. MassDOT Project #605321, Bridge Preservation, Route 1 over the Neponset River; in design stage. MassDOT Project #606545, Median Jersey barrier and fencing upgrade; completed in 2012.	2	2	3	4	0	1	12	Medium	The location has MassDOT projects and studies and it is not recommended for study.

Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Number of Top-200 High-Crash Locations 2015-17	Number of HSP-Eligible Crash Clusters 2015-17**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Transportation Equity Priority Area	Study, Project, or TIP Project	Safety Conditions***	Congested Conditions***	Multimodal Significance***	Regional Significance***	Regional Equity***	Implementation Potential***	Score	Priority Rating	Summary of Comments
Route 114	Peabody	NSTF	4	MassDOT and Peabody	Yes	3	0	1	3.60	MBTA bus Routes 435, 465	Yes	Yes	MassDOT Project # 608567, Improvements at Route 114 at Sylvan Street, Cross Street, Northshore Mall, Loris Road, Route 128 Interchange, and Esquire Drive; programmed FFY 2022.	3	2	2	3	1	1	12	Medium	Route 114 in Peabody was listed as a potential corridor in need of signal progression and improvements to accommodate pedestrians and bicyclists. However, the arterial segment was not selected because, according to MassDOT Highway District 4, a road safety audit was completed for the segment in August 2016 and a consultant has started design work as part of project #608567, which is programmed for FFY 2022.
Route 16 (Revere Beach Parkway)	Revere	ICC	4	MassDOT	Yes	2	0	1	2.93	MBTA bus Routes 110 and 116 travel on or across the segment MBTA rapid transit on Blue Line MBTA commuter rail at Chelsea	Yes	Yes	None	2	2	3	4	0	1	12	Medium	This location is not recommended for study because the Suffolk Downs Redevelopment project is evaluating several scenarios that would affect traffic on Route 16 and Route 1A.
Route 107	Salem	NSTF	4	MassDOT and Salem	Yes	3	0	2	2.84	MBTA bus Routes 450, 456, 461, and 465 MBTA commuter rail at Salem and Beverly Ferry service	Yes	Yes	Route 107 Corridor Study in Salem and Lynn; completed in 2016. MassDOT Project #608059, Stormwater improvements along Route 107 (Salem Bypass Road); in construction. MassDOT Project #608650, Adaptive Signal Controls on Route 107 (Highland Avenue); in construction. MassDOT Project #608817, Resurfacing and related work on Route 107; programmed FFY 2022 TIP. MassDOT Project #608927, reconstruction of Route 107; in preliminary design.	3	2	2	4	1	0	12	Medium	This arterial segment is not recommended for study. The Route 107 corridor in Lynn and Salem was studied in 2016 and many of the recommendations have advanced into MassDOT projects. Also, there is a FFY 2022 TIP project programmed for the corridor.
Route 1A	Salem	NSTF	4	MassDOT and Salem	Yes	2	0	0	1.59	16 MBTA bus stops MBTA bus Route 455 MBTA commuter rail at Salem Ferry service	Yes	Yes	MassDOT Project #605146, Reconstruction of Canal Street from Washington Street and Mill Street to Loring Avenue (Route 1A) and Jefferson Street; completed in 2018. MassDOT Project #601017, Reconstruction of Route 1A (Bridge Street) from the Beverly/Salem Bridge to Washington Street (6,000 feet); completed in 2013.	3	1	2	4	1	1	12	Medium	This arterial segment was not selected because the southern end of this arterial segment is included in the study of Route 1A at Vinnin Square in Marblehead and in Swampscott; this location was selected as the subject of the FFY 2016 Priority Corridors Study. The intersection of Route 1A and Jefferson Street and Canal Street was reconstructed in 2018.
Route 16	Sherborn	SWAP	3	Sherborn	Yes	3	0	2	3.20	None	N/A	Yes	None	2	2	1	4	1	2	12	Medium	This location was suggested during 2014 LRTP outreach at a 495/MetroWest Partnership meeting.  The section that experiences the most crashes and congestion is in the town center, where Route 16 and Route 27 combine and split.
Route 20	Waltham	ICC	6	MassDOT and Waltham	Yes	3	0	4	2.45	MBTA bus Routes 70, 170, and 505 travel on or across the segment.	Yes	Yes	City of Waltham Transportation Master Plan, January 2017.	3	2	2	4	0	1	12	Medium	This location is not recommended for study because this location had been studied and improvements proposed in the Waltham Transportation Master Plan.
Route 60	Medford	ICC	4	Medford	No	3	0	0	3.00	MBTA bus Routes 95, 101, 134, 326, and 710 MBTA commuter rail at West Medford and Porter Square	Yes	Yes	None	3	2	3	2	0	1	11	Low	None
Route 138	Milton	ICC and TRIC	6	MassDOT	Yes	2	0	2	2.41	MBTA bus Routes 245 and 716 MBTA commuter rail at Route 128 Station  MBTA Red Line rapid transit at Mattapan Station	Yes	Yes	MassDOT Project #608484, Roadway Improvements on Route 138, is planned to be funded through the Boston Region Metropolitan Planning Organization's FFY 2020 Transportation Improvement Program; the project will also incorporate work planned originally for Project #607763 (described below); programmed FFY 2020.  FFY 2018 LRTP Priority Corridor Study	2	2	2	4	0	1	11	Low	FFY 2018 Priority Corridors for LRTP Needs Assessment Study. MassDOT Project #608484, Roadway Improvements on Route 138, programmed for FFY 2020, will address problems and needs in the corridor.
Route 9	Newton	ICC	6	MassDOT	Yes	2	0	3	4.98	MWRTA Route 1 MBTA bus Routes 60, 51, 52, and 59 travel on or across the segment MBTA Green Line	Yes	Yes	MassDOT Project #608821, Resurfacing and related work on Route 9; in preliminary design. MassDOT Project #604327, Resurfacing and Related Work on Route 9 (Boylston Street) from the Wellesley/Newton city line to Newton/Brookline city line; completed in summer 2012. MassDOT Project #606635, Reconstruction of Highland Avenue, Needham Street, and Charles River Bridge, from Webster Street to Route 9; programmed FFY 2019.	2	2	2	4	0	1	11	Low	According to MassDOT District 6, improvements were recently made to accommodate new developments. An analysis of the new existing conditions would be helpful to compare with the future projected conditions.
Route 129	Reading	NSPC	4	MassDOT and Reading	Yes	3	0	0	1.82	MBTA bus Route 136 MBTA commuter rail at Wakefield, Reading, and Woburn	Yes	Yes	No projects	3	1	2	2	2	1	11	Low	None

Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Number of Top-200 High-Crash Locations 2015-17	Number of HSIP-Eligible Crash Clusters 2015-17**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Transportation Equity Priority Area	Study, Project, or TIP Project	Safety Conditions***	Congested Conditions***	Multimodal Significance***	Regional Significance***	Regional Equity***	Implementation Potential***	Score	Priority Rating	Summary of Comments
Route 1	Walpole	TRIC	5	MassDOT	Yes	3	0	1	1.53	MBTA commuter rail at Sharon and Walpole	N/A	Yes	MassDOT's I-95 South Corridor Study presented a comprehensive evaluation of the I-95 and Route 1 corridors south of Route 128 and included a recommended plan of short-term and long-term improvements; June 2010. MassDOT Project #608480, Resurfacing and related work on Route 1; programmed FFY 2020. MassDOT Project #608599, Stormwater Improvements to treat discharges from Route 1, I-95, and Route 1A to the Neponset River and an Unnamed Tributary; programmed FFY 2022.	2	1	3	4	0	1	11	Low	The location has MassDOT projects and studies and was not recommended for study by MassDOT Highway District 5.
Route 9	Wellesley	MWRC	6	MassDOT	Yes	2	0	3	1.77	MBTA commuter rail at Wellesley Hills and Wellesley Farms MWRTA bus Route 1	No data	Yes	MassDOT Project #608180, Resurfacing on Route 9, from limit of add-a-lane to east of Overbrook intersection; in construction. MassDOT Project #606530, Drainage improvements along Route 9 Boulder Brook Culvert (design only); in design. MassDOT Project #607340, Resurfacing and related work on Route 9 from Dearborn Street to Natick town line; in preliminary design. MassDOT Project #609402, Resurfacing and related work on Route 9; in preliminary design. MassDOT Project #94762, Bridge Rehabilitation, Route 16 (Washington Street) over Route 9, including relocation of retaining wall; completed summer 2010. MAPC Land Use/Corridor Study (fall 2013).	2	1	2	4	1	1	11	Low	MassDOT has completed a preliminary assessment of this corridor that will develop into 25 percent design plans for roadway improvements.
Route 1	Westwood	TRIC	6	MassDOT	Yes	3	0	0	3.49	MBTA commuter rail at Islington	N/A	Yes	MassDOT's I-95 South Corridor Study provided a comprehensive evaluation of the I-95 and Route 1 corridors south of Route 128 and included a recommended plan of short-term and long-term improvements; June 2010. MassDOT Project #603162, Route 128 Add-a-Lane Bridges (Bridge III), Route 1 and 1A over I-95/128; completed in 2012.	2	2	2	4	0	1	11	Low	This segment is the subject of MassDOT projects and studies.
Route 117	Bolton	MAGIC	3	Bolton			0	1	1.70	None	N/A	Yes	None	2	1	2	3	1	1	10	Low	None
Route 62	Concord	MAGIC	4	Concord	Yes	3	0	1	2.65	MBTA commuter rail at Concord and West Concord	N/A	Yes	MassDOT Project #604646, Reconstruction of Main Street (Route 62) from Water Street to the Acton town line; completed 2010.	2	2	2	2	1	1	10	Low	None
Route 135	Natick	MWRC	3	MassDOT and Natick	Yes	3	0	2	1.97	MWRTA bus Routes 10 and 11 MBTA commuter rail at Natick and West Natick	No data	Yes	MassDOT Project #600573 reconstructed Route 135 in Natick in 2008. More extensive improvements were proposed in the downtown area, on East Central Street between North Main Street and Union Street, including signal upgrades, new sidewalks, pavement rehabilitation, and shoulders; Contract #32302 was completed; all construction operations were suspended (as of June 30, 2007). 2010 CTPS study, West Central Street (Route 135) at Speen Street.	3	1	2	2	1	1	10	Low	There is congestion in the downtown area. The likely focus area would be on the intersection of Route 135 at Route 27 and the intersection of Route 135 at Speen Street because of the crash history of those locations.

**Notes:**

**\*Functional Class**

2 = principal arterial. 3 = principal arterial other (rural minor arterial or urban principal arterial). 5 = minor arterial (urban minor arterial or rural major collector).

**\*\*Number of HSIP-eligible crash clusters**

HSIP-eligible crash clusters are defined by MassDOT as crash clusters that rank within the top five percent of crash clusters for each regional planning agency, based on the Equivalent Property Damage Only (EDPO) index. In the EDPO index, property damage only crashes are awarded one point each, crashes involving injuries are given five points each, and fatal crashes are given 10 points each. In the Boston region, the 896 intersections in the top five percent have crash clusters with a minimum EDPO value of 42.

**\*\*\*Selection Criteria**

Safety Conditions: Segment has a high crash rate for its functional class, contains an HSIP-eligible crash location, a top-200 high-crash location, and/or a significant number or HSIP-eligible clusters of pedestrian or bicycle crashes.

Congested Conditions: Segment has a Travel Time Index of at least 1.3 and/or of at least 2.0, that is, which signify that it experiences delays during peak periods.

Multimodal Significance: Segment supports transit or bicycle or pedestrian activities, has a need to improve these activities, and/or has a high volume of truck traffic serving regional commerce.

Regional Significance: Segment is in the National Highway System, carries a significant proportion of regional traffic, lies within 0.5 miles of environmental justice transportation analysis zones, and/or is essential for regional economic, cultural, or recreational development in the area.

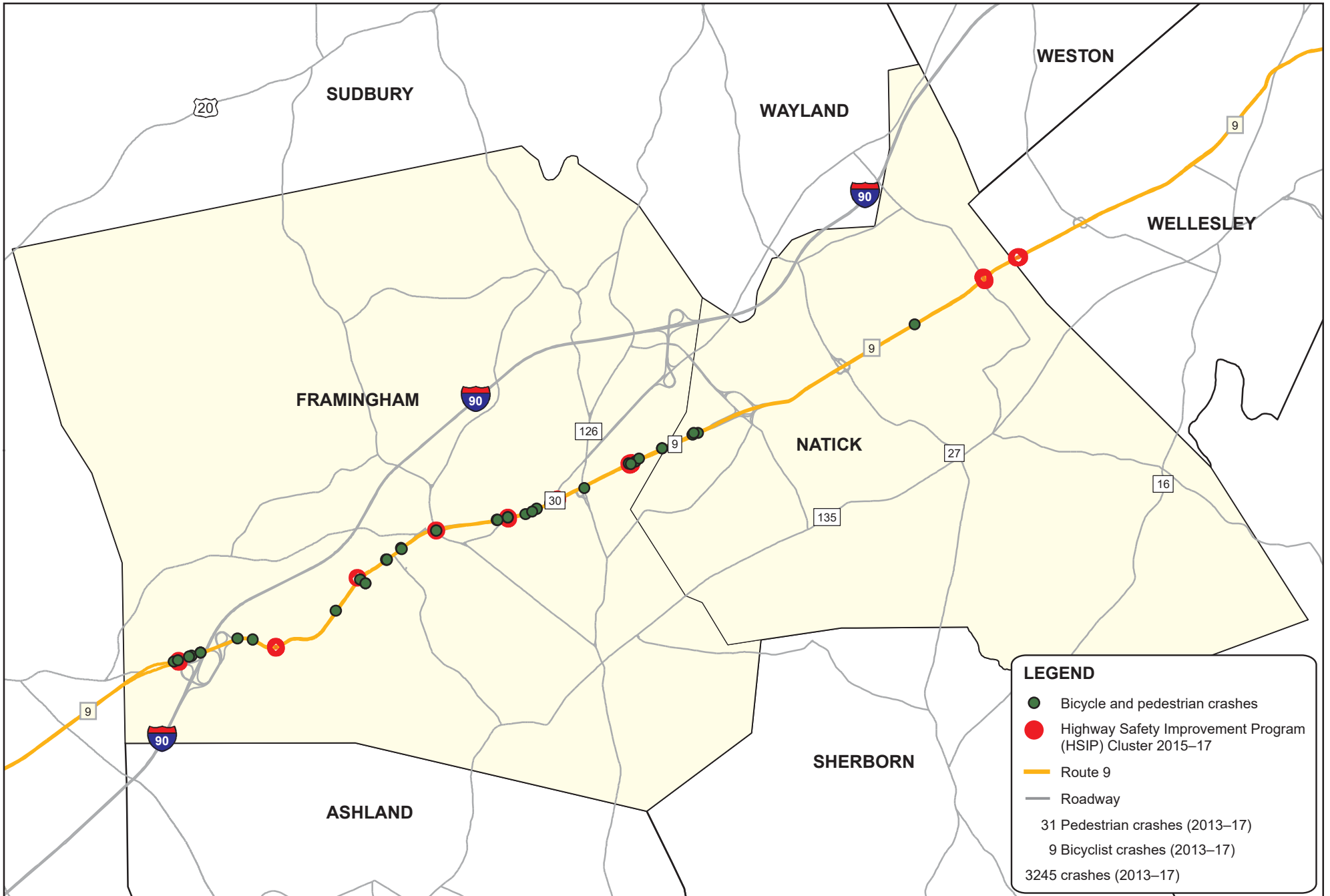
Regional Equity: Location is in a subregion that has not had a priority corridor study before, or location is in a subregion that has not had a priority corridor study in the last three years.

Implementation Potential: Improvements to the segment are proposed or endorsed by the roadway administrative agency (agencies), proposed or endorsed by the subregion and are a priority for the subregion, and/or have strong support from other stakeholders.

**Acronyms**

ADA = Americans with Disabilities Act. BAT = Brockton Area Transit Authority. CTPS = Central Transportation Planning Staff. DCR = Department of Conservation and Recreation. FFY = federal fiscal year. HSIP = Highway Safety Improvement Program. ICC = Inner Core Committee. LRTP = Long-Range Transportation Plan. MAGIC = Minuteman Advisory Group on Interlocal Coordination. MAPC = Metropolitan Area Planning Council. MassDOT = Massachusetts Department of Transportation. MBTA = Massachusetts Bay Transportation Authority. MPO = Boston Region Metropolitan Planning Organization. MWRC = MetroWest Regional Collaborative. MWRTA = MetroWest Regional Transit Authority. NSPC = North Suburban Planning Council. NSTF = North Shore Task Force. PRC = MassDOT Project Review Committee. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TIP = Transportation Improvement Program. TRIC = Three Rivers Interlocal Council. UPWP = Unified Planning Work Program.

Source: Central Transportation Planning Staff.



**FIGURE 1**  
Crashes 2013–17



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION



# Pedestrian Report Card Assessment (PRCA): Roadway Segment

## Roadway Segment Location

Route 9 in Framingham

Grading Categories <sup>[1]</sup>	Score	Rating
Safety	0.4	Low
System Preservation	2.0	Fair
Capacity Management and Mobility	1.9	Fair
Economic Vitality	2.0	Fair

Transportation Equity <sup>[2]</sup>	
High Priority Area	√
Moderate Priority Area	
Low Priority Area	

**Central Transportation Planning Staff (CTPS) to the Boston Region MPO:**  
[www.ctps.org](http://www.ctps.org) | 857.702.3700 | [ctps@ctps.org](mailto:ctps@ctps.org)

**Ryan Hicks, Congestion Management Process Manager:**  
[www.ctps.org/cmp](http://www.ctps.org/cmp) | 857.702.3661 | [rhicks@ctps.org](mailto:rhicks@ctps.org)

**Casey Claude, Bicycle and Pedestrian Program Manager:**  
[www.ctps.org/bicycle-pedestrian-activities](http://www.ctps.org/bicycle-pedestrian-activities) | 857.702.3707 | [cclaude@ctps.org](mailto:cclaude@ctps.org)

[1] **Poor** = 0 to 1.7; **Fair** = 1.7 < 2.3; **Good** = 2.3 to 3.0  
 [2] **Low** = 0 or 1 Factor; **Moderate** = 2 or 3 Factors; **High** = 4 or 5 Factors

# Grading Categories: Scoring Breakdown Roadway Segment

Capacity Management and Mobility			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Sidewalk Presence	50%	2.5	1.25
Crosswalk Presence	33%	1.0	0.33
Walkway Width	17%	2.0	0.34
<b>GRADING CATEGORY TOTAL<sup>[2]</sup></b> (Sidewalk Presence Score * 0.5) + (Crosswalk Presence Score * 0.33) + (Walkway Width Score * 0.17)	<b>100%</b>		<b>1.92</b>

Economic Vitality			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Pedestrian Volumes	50%	2.0	1.0
Adjacent Bicycle Accommodations	50%	2.0	1.0
<b>GRADING CATEGORY TOTAL<sup>[2]</sup></b> (Pedestrian Volumes Score * 0.5) + (Adjacent Bicycle Accommodations Score * 0.5)	<b>100%</b>		<b>2.0</b>

Safety			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Pedestrian Crashes	60%	0	0
Pedestrian-Vehicle Buffer	20%	1.0	0.2
Vehicle Travel Speed	20%	1.0	0.2
<b>GRADING CATEGORY TOTAL<sup>[2]</sup></b> (Pedestrian Crashes Score * 0.6) + (Pedestrian-Vehicle Buffer Score * 0.2) + (Vehicle Travel Speed Score * 0.2)	<b>100%</b>		<b>0.4</b>

System Preservation			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Sidewalk Condition	100%	2	2

Transportation Equity Factors <sup>[3]</sup>	
Area Condition	Yes/No
Low-Income Population ≥ 32.32%	√
Minority Population ≥ 28.19%	√
More than 6.69% of Population > 75 Years of Age	√
More than 16.15% of Households w/o Vehicle	√
Within ¼ Mile of School/College	√

[1] Poor = 1.0; Fair = 2.0; Good = 3.0

[2] Poor = 0 to 1.7; Fair = 1.7 < 2.3; Good = 2.3 to 3.0

[3] Use these factors to determine Transportation Equity priority level (front)



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION



# Bicycle Report Card

## Roadway Segment Location

Route 9 Framingham

Grading Categories	Score	Grade
Safety	17	F
System Preservation	50	F
Capacity Management and Mobility	50	F
Economic Vitality	50	F

## Transportation Equity

High Priority Area	√
Moderate Priority Area	
Low Priority Area	

Central Transportation Planning Staff (CTPS) to the Boston Region MPO:  
[www.ctps.org](http://www.ctps.org) | 857.702.3700 | [ctps@ctps.org](mailto:ctps@ctps.org)

Casey Claude, Bicycle and Pedestrian Program Manager:  
[www.ctps.org/bicycle-pedestrian-activities](http://www.ctps.org/bicycle-pedestrian-activities) | 857.702.3707 | [cclaude@ctps.org](mailto:cclaude@ctps.org)

### Grading

- A: 90–100 *Excellent*
- B: 80–89 *Satisfactory*
- C: 70–79 *Acceptable*
- D: 60–69 *Needs Improvement*
- F: 59–0 *Not recommended for bicycle travel*

### Transportation Equity Priority

- High:** Four (4) or Five (5) Factors
- Moderate:** Two (2) or Three (3) Factors
- Low:** Zero (0) or One (1) Factor



# Grading Categories: Scoring Breakdown

Capacity Management and Mobility			
Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	50%	0	0
Proximity to Bike Network	33%	100	33
Proximity to Transit	17%	100	17
<b>Total</b>	<b>100%</b>		<b>50</b>

Economic Vitality			
Performance Measure	Percentage	Points	Grade
Bike Rack Presence	50%	0	0
Land Use	50%	100	50
<b>Total</b>	<b>100%</b>		<b>50</b>

## Grading

A: 90–100 *Excellent*

B: 80–89 *Satisfactory*

C: 70–79 *Acceptable*

D: 60–69 *Needs Improvement*

F: 59–0 *Not recommended for bicycle travel*

## Transportation Equity Priority

**High:** Four (4) or Five (5) Factors

**Moderate:** Two (2) or Three (3) Factors

**Low:** Zero (0) or One (1) Factor

Safety			
Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	33%	0	0
Absence of Bicycle Crashes	33%	0	0
Bicyclist Operating Space	17%	50	8.5
Number of Travel Lanes	17%	50	8.6
<b>Total</b>	<b>100%</b>		<b>17</b>

System Preservation			
Performance Measure	Percentage	Points	Grade
Bicycle Facility Continuity	50%	50	25
Bicycle Facility Condition	50%	50	25
<b>Total</b>	<b>100%</b>		<b>50</b>

Transportation Equity Priority	
Area Condition	Yes/No
Low Income Population => 32.32%	✓
Minority Population => 28.19%	✓
18.2%+ of Population < 16 Years Old	✓
16.15%+ of Households w/o Vehicle	✓
Within ¼ Mile of School/College	✓



# Pedestrian Report Card Assessment (PRCA): Roadway Segment



## Roadway Segment Location

Route 9 in Natick

Grading Categories <sup>[1]</sup>	Score	Rating
Safety	1.7	Fair
System Preservation	2.0	Fair
Capacity Management and Mobility	1.9	Fair
Economic Vitality	2.0	Fair

Transportation Equity <sup>[2]</sup>	
High Priority Area	√
Moderate Priority Area	
Low Priority Area	

Central Transportation Planning Staff (CTPS) to the Boston Region MPO:  
[www.ctps.org](http://www.ctps.org) | 857.702.3700 | [ctps@ctps.org](mailto:ctps@ctps.org)

Ryan Hicks, Congestion Management Process Manager:  
[www.ctps.org/cmp](http://www.ctps.org/cmp) | 857.702.3661 | [rhicks@ctps.org](mailto:rhicks@ctps.org)

Casey Claude, Bicycle and Pedestrian Program Manager:  
[www.ctps.org/bicycle-pedestrian-activities](http://www.ctps.org/bicycle-pedestrian-activities) | 857.702.3707 | [cclaude@ctps.org](mailto:cclaude@ctps.org)

[1] Poor = 0 to 1.7; Fair = 1.7 < 2.3; Good = 2.3 to 3.0

[2] Low = 0 or 1 Factor; Moderate = 2 or 3 Factors; High = 4 or 5 Factors

# Grading Categories: Scoring Breakdown Roadway Segment

Capacity Management and Mobility			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Sidewalk Presence	50%	2.5	1.25
Crosswalk Presence	33%	1.0	0.33
Walkway Width	17%	2.0	0.34
<b>GRADING CATEGORY TOTAL<sup>[2]</sup></b> (Sidewalk Presence Score * 0.5) + (Crosswalk Presence Score * 0.33) + (Walkway Width Score * 0.17)	<b>100%</b>		<b>1.92</b>

Economic Vitality			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Pedestrian Volumes	50%	2.0	1.0
Adjacent Bicycle Accommodations	50%	2.0	1.0
<b>GRADING CATEGORY TOTAL<sup>[2]</sup></b> (Pedestrian Volumes Score * 0.5) + (Adjacent Bicycle Accommodations Score * 0.5)	<b>100%</b>		<b>2.0</b>

Safety			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Pedestrian Crashes	60%	2.0	1.2
Pedestrian-Vehicle Buffer	20%	1.5	0.3
Vehicle Travel Speed	20%	1.0	0.2
<b>GRADING CATEGORY TOTAL<sup>[2]</sup></b> (Pedestrian Crashes Score * 0.6) + (Pedestrian-Vehicle Buffer Score * 0.2) + (Vehicle Travel Speed Score * 0.2)	<b>100%</b>		<b>1.7</b>

System Preservation			
Performance Measure <sup>[1]</sup>	Percentage	Score (out of 3.0)	Rating
Sidewalk Condition	100%	2	2

Transportation Equity Factors <sup>[3]</sup>	
Area Condition	Yes/No
Low-Income Population ≥ 32.32%	√
Minority Population ≥ 28.19%	√
More than 6.69% of Population > 75 Years of Age	√
More than 16.15% of Households w/o Vehicle	√
Within ¼ Mile of School/College	√

[1] Poor = 1.0; Fair = 2.0; Good = 3.0

[2] Poor = 0 to 1.7; Fair = 1.7 < 2.3; Good = 2.3 to 3.0

[3] Use these factors to determine Transportation Equity priority level (front)



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION



# Bicycle Report Card

## Roadway Segment Location

Route 9 Natick

Grading Categories	Score	Grade
Safety	17	F
System Preservation	50	F
Capacity Management and Mobility	50	F
Economic Vitality	50	F

## Transportation Equity

High Priority Area	√
Moderate Priority Area	
Low Priority Area	

### Grading

- A: 90–100 *Excellent*
- B: 80–89 *Satisfactory*
- C: 70–79 *Acceptable*
- D: 60–69 *Needs Improvement*
- F: 59–0 *Not recommended for bicycle travel*

### Transportation Equity Priority

- High:** Four (4) or Five (5) Factors
- Moderate:** Two (2) or Three (3) Factors
- Low:** Zero (0) or One (1) Factor

Central Transportation Planning Staff (CTPS) to the Boston Region MPO:  
[www.ctps.org](http://www.ctps.org) | 857.702.3700 | [ctps@ctps.org](mailto:ctps@ctps.org)

Casey Claude, Bicycle and Pedestrian Program Manager:  
[www.ctps.org/bicycle-pedestrian-activities](http://www.ctps.org/bicycle-pedestrian-activities) | 857.702.3707 | [cclaude@ctps.org](mailto:cclaude@ctps.org)

# Grading Categories: Scoring Breakdown

Capacity Management and Mobility			
Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	50%	0	0
Proximity to Bike Network	33%	100	33
Proximity to Transit	17%	100	17
<b>Total</b>	<b>100%</b>		<b>50</b>

Economic Vitality			
Performance Measure	Percentage	Points	Grade
Bike Rack Presence	50%	0	0
Land Use	50%	100	50
<b>Total</b>	<b>100%</b>		<b>50</b>

## Grading

- A: 90–100 *Excellent*
- B: 80–89 *Satisfactory*
- C: 70–79 *Acceptable*
- D: 60–69 *Needs Improvement*
- F: 59–0 *Not recommended for bicycle travel*

## Transportation Equity Priority

- High:** Four (4) or Five (5) Factors
- Moderate:** Two (2) or Three (3) Factors
- Low:** Zero (0) or One (1) Factor

Safety			
Performance Measure	Percentage	Points	Grade
Bicycle Facility Presence	33%	0	0
Absence of Bicycle Crashes	33%	0	0
Bicyclist Operating Space	17%	50	8.5
Number of Travel Lanes	17%	50	8.6
<b>Total</b>	<b>100%</b>		<b>17</b>

System Preservation			
Performance Measure	Percentage	Points	Grade
Bicycle Facility Continuity	50%	50	25
Bicycle Facility Condition	50%	50	25
<b>Total</b>	<b>100%</b>		<b>50</b>

Transportation Equity Priority	
Area Condition	Yes/No
Low Income Population => 32.32%	✓
Minority Population => 28.19%	✓
18.2%+ of Population < 16 Years Old	✓
16.15%+ of Households w/o Vehicle	✓
Within ¼ Mile of School/College	✓

**From:** [Frawley, Joseph R. \(DOT\)](#)  
**To:** [Chen-Yuan Wang](#)  
**Cc:** [Mark Abbott](#); [Seth Asante](#); [Kinahan, Erin \(DOT\)](#); [Sullivan, Ann E. \(DOT\)](#); [Frost, Arthur A. \(DOT\)](#)  
**Subject:** RE: Suggestions for FFY 2021 MPO Corridor Study Locations  
**Date:** Tuesday, August 4, 2020 8:21:00 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---

Hi Chen-Yuan,

I hope all is well with you also during this time. A corridor that the District would recommend studying further is Route 9 in the City of Framingham and Town of Natick. The District has fielding inquiries about improving the safety of pedestrian and bicycles along the corridor with lower-cost fixes such as pavement marking modifications (for bikes), pedestrian signal equipment and phasing / timing changes. There are also several locations along the corridor that are high crash locations and usually on MassDOT's Top 200 Intersection Crash Cluster list, so it would help us if the study could include safety-based recommendations, particularly at the high crash locations. In addition, the District was recently asked to look closer at potential short to mid-term improvements at the Route 9 / Route 126 interchange in Framingham.

If CTPS decides to include this on the potential locations to study list, we would be happy to provide more background about efforts that are already underway and which locations along the corridor might need more focus.

Thanks,  
Joe



---

**From:** Chen-Yuan Wang <[cwang@ctps.org](mailto:cwang@ctps.org)>  
**Sent:** Monday, July 13, 2020 9:31 AM  
**To:** 'Frawley, Joseph (DOT)' <[joseph.frawley@state.ma.us](mailto:joseph.frawley@state.ma.us)>  
**Cc:** 'Mark Abbott' <[mabbott@ctps.org](mailto:mabbott@ctps.org)>; 'Seth Asante' <[sasante@ctps.org](mailto:sasante@ctps.org)>;  
'erin.kinahan@state.ma.us' <[erin.kinahan@state.ma.us](mailto:erin.kinahan@state.ma.us)>  
**Subject:** Suggestions for FFY 2021 MPO Corridor Study Locations

Hi Joe,

Hope everything goes well during this usual period. We are now collecting potential locations for both of the MPO FFY 2021 Priority Corridor and Subregional Roadway studies (FFY21 MPO programs attached). As in the past years, we appreciate your suggestion of any locations that the District is interested in exploring potential improvements. If convenient, please get back to us in a couple of weeks. Meanwhile, we will discuss with you once we compile a short list of the potential locations.

Best regards. Chen-Yuan

**Chen-Yuan Wang** | Chief Transportation Planner  
CENTRAL TRANSPORTATION PLANNING STAFF  
857.702.3698 | [cwang@ctps.org](mailto:cwang@ctps.org)  
[www.ctps.org/bostonmpo](http://www.ctps.org/bostonmpo)



*Please be advised that the Massachusetts Secretary of State considers e-mail to be a public record, and therefore subject to the Massachusetts Public Records Law, M.G.L. c. 66 § 10.*