



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair
Karl H. Quackenbush, Executive Director, MPO Staff

TECHNICAL MEMORANDUM

DATE: May 18, 2017
TO: Boston Region Metropolitan Planning Organization
FROM: Seth Asante, MPO Staff
RE: Selection of Study Locations for the FFY 2017 *Addressing Priority Corridors for the Long-Range Transportation Plan Needs Assessment Study*

1 BACKGROUND

During the development of the Boston region's Long-Range Transportation Plan (LRTP), *Charting Progress to 2040*, the staff of the Boston Region Metropolitan Planning Organization (MPO) identified the existing needs for all transportation modes in the Boston region.¹ 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 (TIPs).

Some of the current mobility requirements of the Boston region that were identified in the LRTP Needs Assessment include the following:

- Maintaining and modernizing roadways that currently have high levels of congestion and safety problems
- Increasing the mode share of walking and bicycling, and improving the quality of pedestrian and bicycling facilities
- Improving the efficiency of transit service and adherence to schedules

Based on previous and ongoing transportation-planning work—including the MPO's Congestion Management Process and planning studies—MPO staff identified several priority arterial roadway segments that require 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) 2017 Unified Planning Work

¹ Boston Region Metropolitan Planning Organization, *Charting Progress to 2040: The New Long-Range Transportation Plan of the Boston Region Metropolitan Planning Organization*, endorsed by the Boston Region MPO on July 30, 2015.

Program (UPWP).² This memorandum presents the results of Task 2 of the work program for that study.³ Task 2 involves presenting a recommendation for locations to study to the MPO board for discussion.

By focusing on arterial segments rather than intersections, 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 public transportation users—including pedestrians, bicyclists, and motorists—are considered. Ultimately, this approach will result in roadways where it is safe to cross the street and walk or cycle 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. They take into account the needs of abutters and users, and the interests and support of stakeholders.

2 PROCEDURE FOR SELECTING STUDY LOCATIONS

The process for selecting study locations consisted of three steps. First, MPO staff assembled data about the arterial segments identified in the LRTP Needs Assessment and used the data to prioritize the roadway segments. Next, MPO staff examined the arterial segments more closely by applying specific criteria. Finally, 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

MPO staff identified 53 arterial segments in 39 municipalities in the Boston region based on the following data sources:

- The Massachusetts Department of Transportation (MassDOT) 2016 Road Inventory File and 2010–14 crash database was used to assemble the following information for each arterial segment: roadway jurisdiction, National Highway System status, average daily traffic (ADT), high-crash locations, and crash rates.
- The MPO’s Congestion Management Process data on arterial congestion were used to determine average travel speeds, travel time index (travel

² Boston Region Metropolitan Planning Organization, Unified Planning Work Program, Federal Fiscal Year 2017, endorsed by the Boston Region Metropolitan Planning Organization on July 28, 2016.

³ Karl H. Quackenbush, CTPS Executive Director, memorandum of a work program to the Boston Region Metropolitan Organization, “Addressing Priority Corridors for the Long-Range Transportation Plan Needs Assessment: Federal Fiscal Year (FFY) 2017,” December 15, 2016.

time in the peak period divided by travel time at 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 bike facilities were used to identify needs for the bicycle mode, including locations where connectivity between bicycle facilities could be improved and where bicyclists' accommodations could be improved.
- Data on 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 Environmental Justice (EJ) transportation analysis zones were used to identify areas of concern as relates to environmental justice.
- Data selected from MassDOT's project-information database, the MPO's FFY 2017–21 TIP projects, 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 on each arterial segment, including the following:

- municipality
- Metropolitan Area Planning Council (MAPC) subregion
- jurisdiction
- MassDOT district office
- crash rate per million vehicle-miles traveled
- 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 an EJ transportation analysis zone (within a 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 Applying 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:

- *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

- *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

- *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

- *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 an EJ transportation analysis zone
 - Location is essential for the region's economic, cultural, or recreational development

- *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.

- *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 Scoring and Rating

Arterial segments that have a total score of 10 or fewer points were rated *low* priority; those with a score of 11 to 12 points were rated *medium* priority; and those with a total score 13 or more points were rated *high* priority. Thirteen arterial segments were given a high-priority rating by MPO staff based on safety and operational needs, multimodal and regional significance, regional equity, and support for improvements from agencies and municipalities. The high-priority segments were then examined more closely, and arterials that had projects meeting any of the following criteria were excluded 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.

The three arterial segments with the highest scores were

- Route 138 in Canton;
- Route 3A in Weymouth; and
- Routes 4 and 225 in Bedford and Lexington.

Staff also evaluated the pedestrian accommodation and safety improvement needs for these segments by applying the MPO's recently developed Pedestrian Report Card Assessment.⁴ All three locations highly qualify based on pedestrian accommodation or safety improvement requirements. Appendix A contains detailed results of the assessments. Based on this evaluation, MPO staff recommend studying the segment on Route 138 in Canton.

3 ARTERIAL SEGMENT SELECTED FOR STUDY: ROUTE 138 IN CANTON

Route 138 in Canton runs parallel to Route 24; it serves several communities including Milton to the north and Stoughton and Easton to the south. In Canton, the roadway serves varying land uses including, residential, recreational,

⁴ Ryan Hicks and Casey-Marie Claude, Boston Region Metropolitan Organization, *Pedestrian Level-of-Service Memorandum*, January 19, 2017.

commercial and industrial, and educational uses. Presently, the evaluation results indicate that there are safety, capacity, and mobility problems in the segment. Four locations along the segment contain HSIP-eligible crash clusters and the segment has a higher-than-average crash rate for its functional class. Several intersections in the segment are congested, which leads to long traffic queues during peak travel periods. Accommodations for pedestrians and bicyclists are poor.

MassDOT Highway Division District 6 supports this study and asked the MPO staff to identify problems related to safety and operations, and to identify solutions that could be implemented by MassDOT in tandem with a future roadway resurfacing project. The Town of Canton is considering pedestrian improvements in the corridor and has expressed support for and willingness to participate in a study of this arterial segment (see Appendix B).

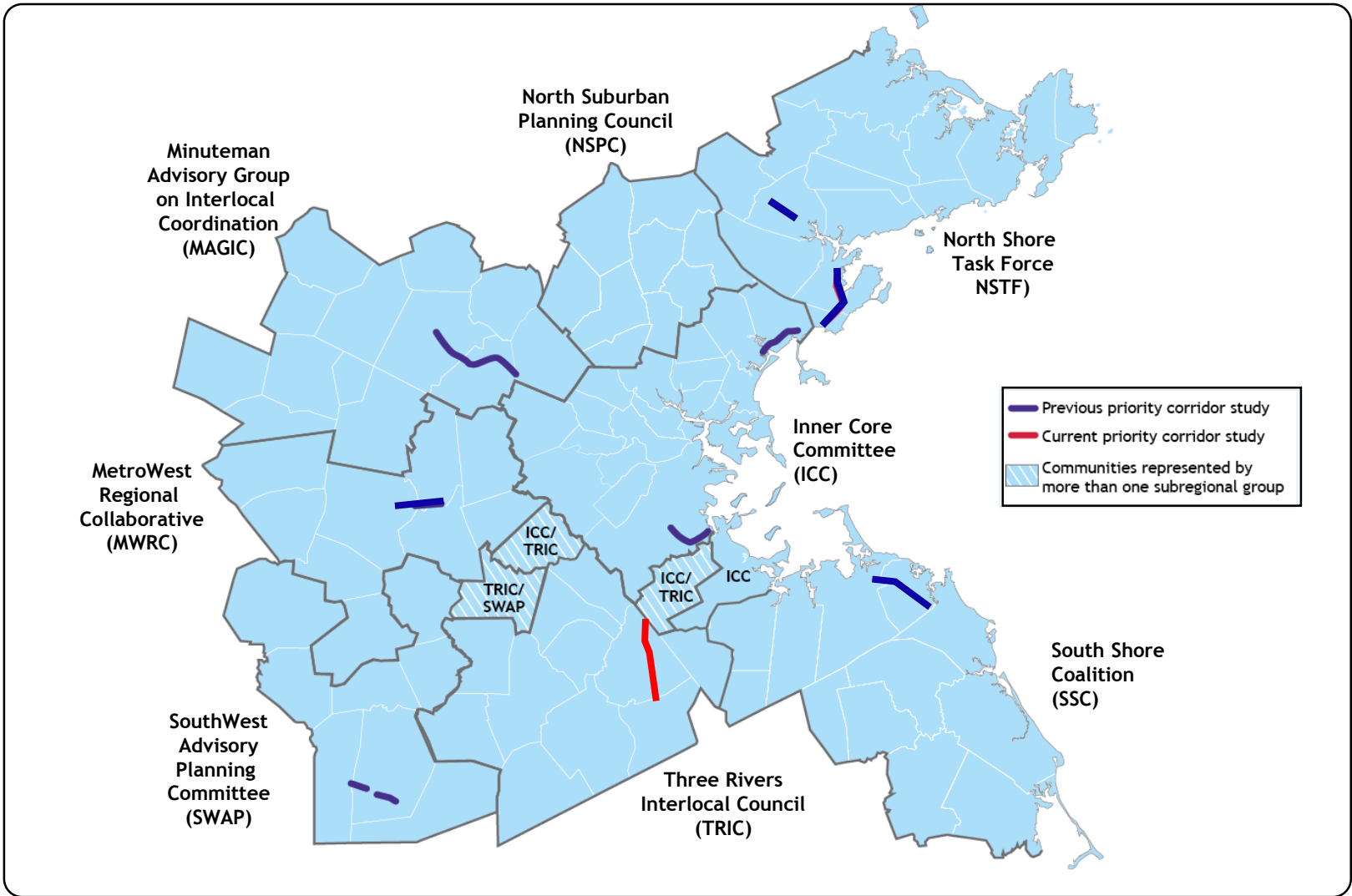
The recommended arterial segment on Route 138 in Canton meets the selection criteria of this study, especially by supporting the transportation improvement priorities of the MPO's LRTP. While the work program for this study assumed that "as many as two" arterial segments would be selected, the MPO staff does not propose studying a second arterial segment because Route 138 in Canton is about five miles long and this study would require considerable resources for evaluating alternative improvement plans.

Figure 1 shows the general locations of previous Priority Corridor studies, and the location identified for this year's study. Note that the arterial segment selected for this year's study is located in a subregion in which there has never been a Priority Corridor study.

4 NEXT STEPS

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

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BOSTON REGION MPO




FIGURE 1
Previous and Current L RTP Priority Corridor Studies
By MAPC Subregion

Route 138
 L RTP Priority Corridors
 Study

TABLE 1
Arterial Segments Considered for Study: Priority Corridors for Long-Range Transportation Plan Needs Assessment Study
(Arterial Segment Selected for Study is Highlighted in Green)

Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Crash Rate (MVT)	Number of Top-200 High-Crash Locations 2012-14**	Number of HSIP-Eligible Crash Clusters 2012-14**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Environmental Justice Zone	Study, Project, or TIP Project	Safety Conditions	Congested Conditions	Multimodal Significance	Regional Significance	Regional Equity	Implementation Potential	Score	Priority Rating	Summary of Comments
Route 138	Canton	TRIC	6	MassDOT	Yes	3, 2	3.8	0	4	2.26	MBTA Commuter Rail at Route 128, Canton Junction, and Canton Center	N/A	None	MassDOT Project #603883, Reconstruction on Route 138, from I-93 to Dan Road; in preliminary design MassDOT Project #605807, Improvements on Route 138 from Randolph Street to Washington Street; completed in 2011 MassDOT Project #602745, Improvements and Signalization, Route 138 at Washington Street and at Randolph Street; completed in spring 2009 Route 138 Corridor Study, CTPS study (July 2001)	3	2	3	3	2	3	16	High	Many locations in the segment need pedestrian and bicycle improvements. In addition, several intersections in the segment have congestion and safety issues. The Town of Canton is looking at pedestrian improvements in the corridor and has expressed unanimous support for the study. MassDOT Highway District 6 is in support of this study to identify problems and solutions that can be implemented in tandem with a future resurfacing project in the segment.
Route 16 (Revere Beach Parkway and Mystic Valley Parkway)	Medford	ICC	4	DCR	Yes	2, 3	3.8	2	4	2.59	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 EJ zones are located at the ends of the segment in Somerville and Everett and 0.2 miles away in Medford.	DCR announced a \$500,000 comprehensive study of the parkway system for bike lanes in FFY 2015. The goals of the study include updating traffic information, assessing parkway conditions, and assessing and understanding deficiencies along the heavily cycled parkways.	4	2	3	4	0	1	14	High	This arterial segment was not selected because it is part of the Mystic River Working Group Study. In addition, the Wynn Everett DEIR (2015) includes intersection improvements and mitigated traffic operations for Revere Beach Parkway and Mystic Valley Parkway.
Route 3A	Weymouth	SSC	6	MassDOT	Yes	3	3.5	0	3	1.30	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 An EJ zone in Quincy is 0.2 miles from the segment.	MassDOT Project #608321, The intent of this project is to reconstruct Route 3A and address poor traffic operations along the corridor. The project will also upgrade accommodations for bicyclists and pedestrians; in preliminary design MassDOT Project #604382, Route 3A (Washington Street) Bridge; construction ends winter 2016/2017 MassDOT Project #608483, Work consists of resurfacing on Route 3A; in preliminary design MassDOT Project #602703, Bridge Rehabilitation, Route 3A (Lincoln Street) over the Weymouth Back River; completed in autumn 2006	3	1	2	4	1	3	14	High	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 District 6 indicated that a study would probably be redundant as the audit provided the information needed to advance Project #608321 in design.
Routes 4 and 225	Bedford and Lexington	MAGIC	4	MassDOT and Town	Yes (part)	3, 5	4.2	1	3	1.30	Three MBTA bus stops MBTA bus Route 62	Yes	None	Great Road Project: Master Plan and Conceptual Design, prepared by VHB for the Town of Bedford in 2011, in preliminary design The MassDOT-administered section, from I-95 to Hartwell Avenue, was the subject of a Town study (Hartwell Avenue Traffic Mitigation Plan -- Bedford Street Concept Plan), and a road safety audit was performed for this segment in November 2011	3	1	2	3	2	2	13	High	This arterial segment was not selected because it did not have the support of MassDOT District 4 and also sections of it had already been studied. The Town of Bedford requested in FFY 2017 that the MPO study this arterial segment from I-95 in Lexington to Loomis Street in Bedford. The MAGIC subregion requested that the FFY 2012 UPWP and FFY 2013 UPWP include a study of Routes 4 and 225. The MassDOT section from I-95 to Hartwell Avenue was the subject of a Town study.
Route 16 (Revere Beach Parkway)	Everett	ICC	4	DCR	Yes	2	3.7	1	7	1.38	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 The entire segment lies within EJ zones.	DCR announced a \$500,000 comprehensive study of the parkway system for bike lanes in FFY 2015. The goals of the study include updated traffic information, assessment of parkway conditions, and assessment and understanding of deficiencies along the heavily cycled parkways.	4	1	3	4	0	1	13	High	This arterial segment was not selected because it is part of the Mystic River Working Group Study. In addition, the Wynn Everett DEIR (2015) includes intersection improvements and mitigated traffic operations for Revere Beach Parkway and Mystic Valley Parkway.
Route 9	Framingham	MWRC	3	MassDOT	Yes	2	2.8	0	7	2.23	MWRTA bus Routes 1, 2, 3, 7, and 9	None	Yes Over half the route lies within or adjacent to an EJ zone.	MAPC Land Use/Route 9 Corridor Study (fall 2013) MassDOT Project #603865 is located in Framingham at the intersection of Route 9 and Temple Street; in preliminary design MassDOT Project #608006 Pedestrian Hybrid Beacon Installation at Route 9 and Maynard Road; 25% design stage MassDOT Project #604991, Resurfacing and Related Work on Route 9, includes wheelchair ramp upgrades, additional sidewalks/repairs, and signal improvements; completed in autumn 2011	2	2	3	4	1	1	13	High	This arterial segment was not selected because according to MassDOT District 3, most of the intersections on this corridor have already been studied. In addition, MPO staff studied Route 30 in Framingham and Natick under the FFY 2013 Priority Corridors for LRTP Needs Assessment.
Route 9	Natick	MWRC	3	MassDOT	Yes	2	4.4	1	10	2.32	MWRTA bus Routes 1, 4, 9, and 10	None	Yes One EJ zone is 0.5 miles away.	MAPC Land Use/Route 9 Corridor Study (fall 2013) MassDOT Project #608821, Installation of adaptive traffic control signal equipment, vehicle detection, communication equipment, and managing software at 5 traffic signals (3 in Framingham and 2 in Natick) on Route 9; in construction. MassDOT Project #605091, Work consists of bridge repairs on 4 bridges over Route 9 and Speen Street, in preliminary design MassDOT Project #601586 was completed in autumn 2015. MassDOT Project #605313 will reconstruct the Route 9/Route 27 interchange; 25% project design stage. MassDOT Project #604991, Resurfacing and Related Work on Route 9, includes wheelchair ramp upgrades, additional sidewalks/repairs, and signal improvements; completed in 2011	4	2	1	4	1	1	13	High	This segment was not selected because according to MassDOT District 3, the installation of an adaptive traffic control system for five signals and the reconstruction of the Route 9 and Oak Street intersection are currently under construction. The Route 9 and Route 27 interchange is currently in design.

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Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Crash Rate (MVMT)	Number of Top-200 High-Crash Locations 2012-14	Number of HSIP-Eligible Crash Clusters 2012-14**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Environmental Justice Zone	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	Norwood	TRIC	5	MassDOT	Yes	3	0.8	1	4	2.69	MBTA Commuter Rail at Islington, Dedham Corp Center, Endicott, Norwood Depot, Norwood Central, Windsor Gardens, and Plimptonville	N/A	Yes One EJ zones lies adjacent to the southern end of the segment.	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 #608052, Route 1 at Morse Street (approved by PRC Nov. 2014); in preliminary design MassDOT Project #605857, Route 1 at University Avenue and Everett Street; Town design is at pre-25% MassDOT Project #605321, Bridge Preservation, Route 1 over the Neponset River; in design stage	2	2	2	4	2	1	13	High	The location has MassDOT projects and studies and it is not recommended for study.
Route 3A	Quincy	ICC	6	MassDOT, DCR, and City	Yes	3	5.0	1	4	1.31	MBTA bus Routes 201, 202, 210, 211, 212, 217, 275, 276 and 217 MBTA Red Line Rapid Transit at Quincy Center, Wollaston, and North Quincy MBTA Commuter Rail at Quincy Center	Yes	Yes The entire segment lies within or near EJ zones.	MassDOT Project #605729, Intersection and signal improvements at Hancock Street and East/West Squantum streets. The project consists of widening and improvements to the intersection of Hancock Street with East and West Squantum Streets and improvements along Hancock Street to the MBTA access drive; completed in fall 2015. MassDOT Project #606518, As part of the Quincy Redevelopment project, the city plans to construct a new bridge over the existing MBTA tracks that will connect the downtown area at Market Square and Hancock Street. The main goal of the new bridge will be improved pedestrian conditions along Hancock Street; 25% package received (as of 12/16/2016) An FFY 2012 CTPS safety and operations study addressed problems at Route 3A and Coddington Street intersection.	4	1	2	4	0	2	13	High	Route 3A (Hancock Street) is part of the Quincy Redevelopment project; study completed in April 2011
Route 28	Randolph	TRIC	6	MassDOT and Town	Yes	3	4.6	0	6	1.46	50 MBTA bus stops MBTA bus Routes 240 and 238 MBTA Commuter Rail at Holbrook/Randolph BAT Route 12	Yes	Yes The entire segment lies within EJ Zones.	MassDOT Project #603716, Resurfacing and Related Work on a Section of Route 28; completed 2007/2008 Conceptual TIP #1002, Route 28 (N. Main Street) Bridge Conceptual TIP #1010, Route 28 (N. Main Street) and Liberty Street intersections Conceptual TIP #1011, Route 28 (N. Main Street) and West Street intersection FFY 2008 Safety and Operations Analyses at Intersections study Arterial Coordination Study, CTPS study (2010)	3	1	2	4	2	1	13	High	The location has several MassDOT projects and CTPS studies and it is not recommended for study.
Route 114	Salem	NSTF	4	MassDOT and City	Yes	2,3	10.4	1	5	1.35	18 MBTA bus stops MBTA bus Routes 450, 451, 455, 456, 459, and 465 MBTA Commuter Rail at Salem and Beverly Ferry service	Yes	Yes Half the segment abuts EJ zones.	Transportation Improvement Study for Routes 1A, 114, and 107 and Other Roadways in Downtown Salem, 2005 CTPS study MassDOT Project #605332, Bridge Replacement (Route 114) North Street over North River; in preliminary design	4	1	2	4	0	2	13	High	This arterial segment was not selected because of regional equity -the NSTF subregion was the recipient of the FFY 2016 L RTP Priority Corridor study. This location was suggested for study in 2012 UPWP outreach via an NSTF letter. NSTF suggested that a study on Routes 114/1A and Route 127 from Swampscott to Gloucester would include suggestions about how to improve bike facilities and bike-to-rail connections in this heavily traveled tourist region. This builds on the NSTF's primary recommendation for that year and the anticipated popularity of the Essex Coastal Scenic Byway in the region.
Route 1	Walpole	TRIC	5	MassDOT	Yes	3	1.2	1	3	1.38	MBTA Commuter Rail at Sharon and Walpole	N/A	Yes One EJ zones lies adjacent to the southern end of the segment.	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; in preliminary design MassDOT Project #608599, Stormwater Improvements to treat discharges from Route 1, I-95 and Route 1A to the Neponset River and an Unnamed Tributary; in preliminary design	2	1	3	4	2	1	13	High	The location has MassDOT projects and studies and was not recommended for study by MassDOT Highway District 5.
Route 18	Weymouth	SSC	6	MassDOT	Yes	3	6.5	0	10	1.44	Nine MBTA bus stops MBTA bus Route 225 MBTA Commuter Rail at South Weymouth	Yes	Yes EJ zones lie adjacent to the segment.	Programmed TIP (2017) and MassDOT Project #601630, Reconstruction and Widening on Route 18 (Main Street), from Highland Place to Route 139; construction begins summer 2017 MassDOT Project #603161, Signalization and Improvements on Route 18 (Three Locations) at West Street, Park Avenue, and Columbian Street; completed in spring 2009 MassDOT Project #603738, Traffic Signal Improvements on Route 18 at Pond Street and Pleasant Street; completed in summer 2006	3	1	3	4	1	1	13	High	This arterial segment was not selected because according to MassDOT District 6, a MassDOT project is underway, and no project is needed at this time.

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Alewife Brook Parkway	Cambridge	ICC	6	DCR	Yes	2	9.3	0	3	2.41	MBTA bus Routes 79, 350, 62, 67, 74, 76, 78, 84, and 351 MBTA Rapid Transit on the Red Line MBTA Commuter Rail at Porter Square	Yes	Yes Most of the segment lies within or adjacent to EJ zones.	Alewife Studies, Phase II, CTPS study (2009). DCR announced a comprehensive study of the parkway system for bike lanes. MassDOT Project #605637, Improvements at Route 2 and Route 16. The purpose of this project is to perform minor widening, eliminate a merge condition, and improve throughput capacity and vehicle queue storage at the intersection of Route 2 and Route 16 (Alewife Brook Parkway); under construction.	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 of young students who walk to Shady Hill School because of high traffic volumes, environmental issues, and lack of livability.
Route 16	Holliston	MWRC	3	MassDOT and Town	Yes	3	4.6	1	2	1.46	MWRTA bus Route 6	None	None	MassDOT Project #605745, Reconstruction of Route 16 from Quail Run to the Sherborn town line; in preliminary design MassDOT Project #602462 will enhance safety and improve efficiency by installing a new traffic signal at the intersection of Route 16 at Route 126 and at Oak Street in Holliston; 25% design stage (as of 12/08/1999) 2011 CTPS study, Route 126 Corridor: Transportation Improvement Study 2008 CTPS study, Washington Street (Route 16/126) at Hollis Street	4	1	1	3	1	2	12	Medium	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 Town jurisdiction). A road safety audit was performed for the town center portion in December 2012.
Route 107	Lynn	ICC	4	MassDOT and Town	Yes	3	20.6	3	21	1.19	MBTA bus Routes 424, 426, 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 The entire segment lies within EJ zones.	MassDOT Project #604952, Bridge Replacement, Route 107 over the Saugus River; Design exception submitted (as of 01/26/2017); The construction will begin in autumn 2018. MassDOT Project #26710, Bridge Replacement, Route 107 over the Saugus River (Fox Hill Bridge); completed spring 2013 MassDOT Project #603938, Western Avenue Bridge over Saugus River (Fox Hill Bridge) TIP Project #374, Lynn Garage (transit)	4	0	3	4	0	1	12	Medium	This arterial segment was not selected for study because there is an ongoing Route 107 Corridor Study in Lynn and Salem, which is being conducted by MassDOT in conjunction with Lynn and Salem.
Route 16	Newton	ICC	6	MassDOT and City	Yes	3	4.2	0	4	1.52	MBTA Routes 59, 170, 505, 553, 554, and 556 MBTA Green Line Rapid Transit MBTA Commuter Rail at West Newton	Yes	Yes An EJ zone lies adjacent to the segment.	MassDOT Project #606780, Bridge Rehabilitation, Route 16 (Washington Street) over I-90, MBTA/CSX Corporation and Access Road; 25% package comments to DE (as of 02/19/2016). Conceptual TIP #1067, Washington Street (Phase 2), from Commonwealth Avenue to Perkins Street	3	1	2	4	0	2	12	Medium	In FFY 2014, a subregional study was conducted on Washington Street in Newton. The location was suggested in 2014 LRTP outreach through verbal comments at a 495/MetroWest Partnership meeting.
Route 114	Peabody	NSTF	4	MassDOT and Town	Yes	2	4.0	2	8	1.30	Three MBTA bus stops MBTA bus Routes 435, 465	Yes	Yes Half the segment abuts an EJ zone.	MassDOT Project # 608567, Improvements at Route 114 at Sylvan Street, Cross Street, Northshore Mall, Loris Road, Route 128 Interchange and Esquire Drive, in design	4	1	2	3	0	2	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 is started design work as part of project #608567.
Route 1A	Swampscott	NSTF	4	MassDOT and Town	Yes	2	3.0	0	2	1.30	27 MBTA bus stops MBTA bus Routes 441 and 448 MBTA Commuter Rail at Swampscott and Lynn/Central Square	Yes	Yes	MassDOT Project #607761, Intersection and Signal Improvement at Route 1A (Paradise Road) at Swampscott Mall; in preliminary design	2	1	2	4	0	3	12	Medium	FFY 2016 LRTP Priority Corridor Study The Towns of Swampscott and Marblehead and the City of Salem requested this study to identify problems and solutions that can be implemented in tandem with MassDOT and the communities. Location was suggested in 2016 UPWP and TIP outreach. MassDOT Highway Division District 4 has jurisdiction of Route 1A and supports this study. The NSTF supports this study.
Route 16	Wellesley	MWRC	6	MassDOT and Town	Yes	4	7.8	0	5	1.45	MBTA Commuter Rail at Wellesley Square, Wellesley Hills, and Wellesley Farms MWRTA Route 8	N/A	Yes The southern end of the segment lies in an EJ zone.	MassDOT Project #94762, Bridge Rehabilitation, Route 16 (Washington Street) over Route 9, including relocation of retaining wall; completed summer 2010. MassDOT Project #600712, Reconstruction of Route 16 from Grantland Road to the Newton City Line. The work consisted of paving, drainage improvements, sidewalk reconstruction, traffic signals, and ornamental lighting on Route 16. A signal was installed at the Washington Street/Walnut Street intersection, and the pedestrian crossing 150 feet south of Hillside Road was upgraded, completed in 2004.	3	1	2	3	1	2	12	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	2.6	0	2	2.43	MBTA bus Route 70 MBTA Commuter Rail at Waltham and Kendal Green	Yes	Yes An EJ Zone is located 0.1 mi from the end of the segment.	No projects	1	2	2	4	1	2	12	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. The location was resubmitted in a comment on Draft FFY 2014 UPWP.

TABLE 1
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Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Crash Rate (MVT)	Number of Top-200 High-Crash Locations 2012-14	Number of HSIP-Eligible Crash Clusters 2012-14**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Environmental Justice Zone	Study, Project, or TIP Project	Safety Conditions	Congested Conditions	Multimodal Significance	Regional Significance	Regional Equity	Implementation Potential	Score	Priority Rating	Summary of Comments
Route 129	Wilmington	NSPC	4	MassDOT and Town	Yes	3	6.1	0	7	1.30	MBTA Commuter Rail at Wilmington, North Wilmington, Anderson/Woburn, and Reading	N/A	None	MassDOT Project #601732, Rehabilitation, Route 129 (Lowell Street) from Route 38 (Main Street) to Woburn Street. The project includes full-depth reconstruction and widening, accessible (ADA-compliant) sidewalks, new tree plantings, and bicycle accommodation within the newly paved shoulders. The intersection of Route 129 and 38 was realigned with new traffic signals and the bridge over Maple Meadow Brook was replaced; completed in 2009. MassDOT Project #608051 will reconstruct Route 38 from Route 62 to the Woburn city line and will add bike lanes, sidewalks, turn lanes, and signal upgrades; in preliminary design.	3	1	2	3	2	1	12	Medium	N/A
Route 2	Acton	MAGIC	3	MassDOT	Yes	2	1.3	0	1	3.35	MBTA Commuter Rail at South Acton and West Concord	N/A	Yes	MassDOT Project #604472, Resurfacing and Related Work on Route 2 (includes all of Acton); completed in spring 2014 MassDOT Project #607748, Intersection and Signal Improvements on Route 2 and Route 111 at Piper Road and Taylor Road; in preliminary design MassDOT Project #604609, Traffic Sign Replacement and Safety Improvements on Route 2; completed in summer 2009 TIP Project #606223, Bruce Freeman Rail Trail Construction (Phase II-B) in Acton and Concord to connect the trail across Route 2, programmed in FFY 2018 TIP	1	2	2	4	1	1	11	Medium	Location has MassDOT projects. A MassDOT road safety audit is scheduled for the Piper Road/Taylor Road intersection; the project is in the preliminary design phase. The MAGIC subregion expressed interest in a Route 2 study.
Route 60	Arlington	ICC	4	Town	Yes	3	5.7	0	1	1.34	Eight MBTA bus stops MBTA bus Routes 67, 62, 76, 77, 78, 79, 80, 84, and 350	Yes	Yes	CTPS and MAPC Community Transportation Technical Assistance Program evaluated the high-crash location at the intersection at Massachusetts Avenue, March 2010. MassDOT Project #606885, The contractor is planning to finish the rest of the bike route symbols and electric work, weather permitting (as of 01/06/2017); in construction.	3	1	3	3	0	1	11	Medium	N/A
Route 2 (Fresh Pond Parkway)	Cambridge	ICC	6	DCR	Yes	2	1.8	1	3	1.51	MBTA bus Routes 75, 71, 72, 73, 74, and 78 MBTA Red Line Rapid Transit MBTA Commuter Rail at Porter Square	Yes	Yes Two EJ zones are located within 0.5 miles of the segment.	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. Conceptual TIP project #987 would acquire Minuteman Path right-of-way in Watertown to connect Minuteman Bikeway from Arlington, Cambridge, and Watertown to Dr. Paul Dudley White Bike Path in Boston.	3	1	2	4	0	1	11	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 of young students who walk to Shady Hill School because of high traffic volumes, environmental issues, and lack of livability.
Route 16 (Revere Beach Parkway)	Chelsea	ICC	6	DCR	Yes	2	2.9	2	3	1.77	MBTA bus Routes 112 and 111 MBTA Commuter Rail at Chelsea	Yes	Yes The entire segment lies within EJ zone.	The Lower North Shore Transportation Improvement Study, CTPS study (2000) DCR announced a comprehensive study of the parkway system for bike lanes.	3	1	3	4	0	0	11	Medium	This arterial segment was not selected because it is part of the Mystic River Working Group Study. In addition, the Wynn Everett DEIR (2015) includes intersection improvements and mitigated traffic operations for Revere Beach Parkway and Mystic Valley Parkway.
Route 99	Everett	ICC	4	City	Yes	3	2.6	0	3	2.40	40 MBTA bus stops MBTA bus Routes 97, 104, 105, 109, 110, 112, 99, and 106	Yes	Yes The entire segment lies within EJ zones.	MassDOT Project #602383 reconstructed Route 99 with a traffic signal upgrade, from Second Street to the Malden city line in 2008; completed autumn 2007; All work is complete except punch list work (as of 02/15/2008) MassDOT Project #601580 reconstructed Route 99 from Sweetser Circle to Second Street in 2004; completed in summer 2004. MassDOT Project #602382 reconstructed Route 99 from Sweetser Circle to the Alford Street Bridge in 2013; completed spring 2013.	2	2	2	4	0	1	11	Medium	Not recommended for study because the MassDOT projects listed completely reconstructed Route 99 with signal improvements from Alford Street Bridge to the Malden city line.
Route 3A	Hingham	SSC	5	MassDOT	Yes	3	1.6	0	1	1.30	MBTA Commuter Rail at Cohasset, Nantasket Junction, West Hingham, and East Weymouth Ferry service	N/A	None	There are two approved projects that are not advancing in 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. MassDOT Project #605168, Intersection Improvements at Route 3A/Summer Street Rotary. The Town's consultant prepared preliminary concepts for proposals at this location; in preliminary design.	1	1	2	3	1	3	11	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 1A (Lynnway)	Lynn	ICC	4	MassDOT and DCR	Yes	2, 3, and 5	1.5	1	6	1.36	35 MBTA bus stops MBTA bus Routes 426, 439, 441, 442, 448, 449 MBTA Commuter Rail at River Works, Lynn/ Central Square, and Swampscott Ferry service	Yes	Yes The entire segment lies within EJ zones.	TIP Project #1321, Route 1A Lynnway at Blossom Street; conceptual TIP Project #1322, Route 1A Lynnway intersection at Market Street; conceptual	3	1	2	4	0	1	11	Medium	This arterial segment was not selected because it was the subject of an MPO corridor study under the FFY 2015 Priority Corridors Study for LRTP Needs Assessment.

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Arterial Segment	Community	MAPC Subregion	MassDOT District	Jurisdiction	National Highway System	Functional Class*	Crash Rate (MVT)	Number of Top-200 High-Crash Locations 2012-14	Number of HSIP-Eligible Crash Clusters 2012-14**	Travel Time Index	Transit Service	Crowded or Late Bus	In or Near Environmental Justice Zone	Study, Project, or TIP Project	Safety Conditions	Congested Conditions	Multimodal Significance	Regional Significance	Regional Equity	Implementation Potential	Score	Priority Rating	Summary of Comments
Route 28	Milton	ICC and TRIC	6	MassDOT and Town	Yes	3	4.2	0	1	1.30	51 MBTA bus stops MBTA bus Routes 240, 245, 24, 28, 26, 30, 31, and 33 MBTA Red Line Rapid Transit at Mattapan/Ashmont Station BAT Route 12	Yes	Yes EJ zones are located at the northern end.	MassDOT Project #607342, Intersection and Signal Improvements at Route 28 (Randolph Avenue) and Chickatabut Road; in preliminary design MassDOT Project #106901, Roadway Reconstruction on Route 28 (Randolph Avenue) from Reedsdale Road to Milton/Quincy town line; completed 2008 Conceptual TIP #1008, Reconstruct the Intersection of Blue Hills Parkway and Brook Road	2	1	2	3	1	2	11	Medium	This arterial segment was not selected because there have been several improvements in this segment in recent years.
Route 138	Milton	ICC and TRIC	6	MassDOT	Yes	2	4.2	0	1	1.58	MBTA bus Route 245 MBTA Commuter Rail at Route 128 Station MBTA Red Line Rapid Transit at Mattapan Station	Yes	Yes Half of the segment is contained within EJ zones.	MassDOT Project #607763, Intersection and Signal Improvements at Two Locations: Route 138 (Blue Hill Avenue) at Atherton Street and Bradley Road and Route 138 (Blue Hill Avenue) at Milton Street and Dollar Lane, programmed in FFY 2019 TIP; in the preliminary design phase.	3	1	2	3	1	1	11	Medium	Congestion issues have been identified on this route, from the I-93 interchange to Mattapan Square.
Route 9	Newton	ICC	6	MassDOT	Yes	2	2.3	0	8	1.73	Six MBTA bus stops MBTA bus Routes 60, 52, and 59 MBTA Green Line	Yes	Yes An EJ zone in Brookline is 0.3 mi from the segment.	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 #601704, Reconstruction and Signal Improvements on Walnut Street, from Homer Street to Route 9; in design; 25% package received (as of 12/23/2013) MassDOT Project #606635, Reconstruction of Highland Avenue, Needham Street, and Charles River Bridge, from Webster Street to Route 9; 75% package received (as of 09/23/2016). MassDOT Project #604327, resurfaced this segment, including updates to guardrails and improvements to the existing drainage structures; construction was completed in 2012.	2	1	3	4	0	1	11	Medium	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 1A	Revere	ICC	4	MassDOT	Yes	2	2.1	0	1	3.17	15 MBTA bus stops MBTA bus Routes 110, 116, 117, 411, 424, 426, 439, 441, 442, 448, 449, 450, and 455 MBTA Rapid Transit on Blue Line MBTA Commuter Rail at Chelsea and River Works	Yes	Yes The entire segment lies within EJ zones.	CTPS Lower North Shore Transportation Improvement Study proposed improvements for Route 1A in Revere in October 2000; an update may be necessary. Conceptual TIP Project #982, Mahoney Circle (Bell Circle) Grade Separation	2	2	2	4	0	1	11	Medium	This arterial segment was not selected because it is part of the Mystic River Working Group Study. In addition, the Wynn Everett DEIR (2015) includes intersection improvements and mitigated traffic operations for Revere Beach Parkway and Mystic Valley Parkway.
Route 16 (Revere Beach Parkway)	Revere	ICC	4	DCR	Yes	2	1.8	0	4	1.43	MBTA bus Routes 110, 116, 117, 119, 424, 426, 428, 448, 449, 450, 455, and 459 MBTA Rapid Transit on Blue Line MBTA Commuter Rail at Chelsea	Yes	Yes The entire segment lies within EJ Zones.	DCR announced a \$500,000 comprehensive study of the parkway system for bike lanes in FFY 2015. The goals of the study include updating traffic information, assessing parkway conditions, and assessing and understanding deficiencies along the heavily cycled parkways. The Wynn Everett DEIR (2015) includes intersection improvements and mitigated traffic operations for Revere Beach Parkway and Mystic Valley Parkway.	2	1	3	4	0	1	11	Medium	This arterial segment was not selected because it is part of the Mystic River Working Group Study. In addition, the Wynn Everett DEIR (2015) includes intersection improvements and mitigated traffic operations for Revere Beach Parkway and Mystic Valley Parkway.
Route 1A	Salem	NSTF	4	MassDOT and Town	Yes	2	7.1	0	1	1.32	16 MBTA bus stops MBTA bus Routes 455 and 459 MBTA Commuter Rail at Salem Ferry service	Yes	Yes The entire segment lies within EJ zones.	CTPS Lower North Shore Transportation Improvement Study proposed improvements for Route 1A in Revere in October 2000; an update may be necessary.	3	1	2	4	0	1	11	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.
Route 135	Wellesley	MWRC	6	MassDOT and Town	Yes	3	7.3	0	2	1.30	MBTA Commuter Rail at Natick, Wellesley Square, and Wellesley Hills MWRTA bus Route 8	None	Yes Most of the segment lies adjacent to EJ zones.	No projects	3	1	2	3	1	1	11	Medium	None
Memorial Drive (Routes 2 and 3)	Cambridge	ICC	6	DCR	Yes	2	3.6	0	4	1.30	MBTA bus Routes 747, 1, 47, 64, 66, 70, 70A, 71, 73, 86, and 701 MBTA Rapid Transit available on the Red and Green Lines MBTA Commuter Rail at North Station, Back Bay, Yawkey, Porter Square, and Belmont	Yes	Yes Most of the segment lies within or adjacent to EJ Zones.	DCR announced a \$500,000 comprehensive study of the parkway system for bike lanes in FFY 2015. The goals of the study include updating traffic information, assessing parkway conditions, and assessing and understanding deficiencies along the heavily cycled parkways.	3	1	2	4	0	0	10	Low	None

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Route 2	Concord	MAGIC	4	MassDOT	Yes	2	1.0	0	7	2.68	MBTA Commuter Rail at West Concord, Concord, and Lincoln	N/A	Yes. One EJ zone is adjacent to the segment.	MassDOT Project #602894, Crosby's Corner (Route 2 at Route 2A) Improvements; under construction; MassDOT Project #602091, Concord Rotary; in preliminary design MassDOT Project #604069, Bridge Replacement over Sudbury River; in preliminary design MassDOT Project #604630, Resurfacing and Related Work on Route 2; completed in 2010 MassDOT Project #604472, Resurfacing and Related Work on Route 2; completed in 2014 Programmed (March 2014) TIP Project #606223: Bruce Freeman Rail Trail Construction (Phase II-B) in Acton and Concord, will connect the trail across Route 2, in preliminary design	1	2	2	4	1	0	10	Low	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 135	Natick	MWRC	3	Town	Yes	3	7.9	1	3	1.33	MWRTA bus Routes 10 and 11 MBTA Commuter Rail at Natick and West Natick	None	None	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 have been suspended (as of 06/30/2007) 2010 CTPS study, West Central Street (Route 135) at Speen Street.	4	1	2	1	1	1	10	Low	Congestion in the downtown area; 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.
Route 1	Sharon	TRIC	5	MassDOT	Yes	3	1.3	0	1	1.38	MBTA Commuter Rail at Sharon and Walpole	N/A	None	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 #603622, Bridge Rehabilitations, Route 1/Route I-95; completed in 2010	1	1	3	2	2	1	10	Low	Segment has MassDOT projects and studies.
Route 9	Wellesley	MWRC	6	MassDOT	Yes	2	3.8	0	11	1.31	MBTA Commuter Rail at Wellesley Hills and Wellesley Farms MWRTA bus Route 1	None	None	MassDOT Project #601586, Intersection Improvements at Route 9 (Worcester Street) and Oak Street, from 1500 feet West of Oak Street to 300 feet East of Overbrook Drive; construction ended in spring 2015 MassDOT Project #607340, Resurfacing on Route 9, from Dearborn Street to the Natick town line; in preliminary design MassDOT Project #606530, Drainage Improvements along Route 9 Boulder Creek Culvert (Design Only); 25% design stage (as of 06/10/2015) CTPS study; Route 9 Corridor in Wellesley, 2003 MAPC Land Use/Corridor Study (fall 2013)	2	1	2	3	1	1	10	Low	MassDOT has a preliminary assessment of this corridor that will develop into 25% design plans for roadway improvements.
Route 62	Bedford	MAGIC	4	MassDOT and Town	No	5	7.0	0	0	1.31	Three MBTA bus stops MBTA bus Route 62	Yes	None	Great Road Project: Master Plan and Conceptual Design, prepared by Vanasse Hagen Brustlin Inc. (VHB) for the Town of Bedford in 2011. The plan was to improve pedestrian and bicycle access, recommend streetscape improvements that would highlight the "Center" of Bedford while taking into consideration traffic flow through the area, crosswalk locations, intersection and traffic control improvements, property access, and parking.	2	1	2	2	1	1	9	Low	Forms part of Routes 4 and 225 arterial segment.
Route 30 between I-90 and Route 9	Framingham	MWRC	3	Town	Yes (part)	3	1.4	0	1	1.30	MWRTA bus Routes 10 and 11 MBTA Commuter Rail at Natick and West Natick	None	Yes. The southern leg of the segment lies within an EJ Zone.	FFY 2013 Priority Corridors for LRTP Needs Assessment Study MassDOT Project #86450, Roadway Reconstruction and Related Work on sections of Route 126 and Route 30 (includes traffic signal improvements at the intersection); construction ended in summer 2005.	1	1	2	3	1	1	9	Low	This location is not recommended for study because of an FFY 2013 Priority Corridors for LRTP Needs Assessment Study that was performed for the corridor. Framingham and Natick have advanced some of the recommendations into projects.
Route 2	Lincoln	MAGIC	4	MassDOT	Yes	2	0.6	0	3	2.68	MBTA Commuter Rail at Concord and Lincoln	N/A	None	MassDOT Project #602894, Crosby's Corner (2 at 2A) Improvements; under construction MassDOT Project #604629, Resurfacing and Related Work on Route 2; completed in 2010 FFY 2013 Priority Corridors for LRTP Needs Assessment Study (Concord and Lincoln)	1	2	2	2	1	1	9	Low	Route 2 was suggested during MPO outreach as a route experiencing congestion that affects MAGIC communities and Cambridge. There are many projects and studies conducted for this corridor, including the Route 2 (Crosby's Corner) improvements.
Route 129	Reading	NSPC	4	MassDOT and Town	Yes	3	3.9	0	1	1.56	11 MBTA bus stops MBTA bus Route 136 MBTA Commuter Rail at Wakefield, Reading, and Woburn	Yes	None	No projects	2	1	2	1	2	1	9	Low	None

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Route 1	Westwood	TRIC	6	MassDOT	Yes	3	1.2	0	0	1.30	None	N/A	None	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	0	1	2	3	2	1	9	Low	Segment has MassDOT projects and studies.
Route 3A	Cohasset	SSC	5	MassDOT	Yes	3	4.0	0	2	1.09	MBTA Commuter Rail at Nantasket Junction, Cohasset, and North Scituate	N/A	None	FFY 2013 Subregional Priority Corridor Study. MassDOT Project #608007, Corridor Improvements and Related Work on Justice Cushing Highway (Route 3A), from Beechwood Street to the Scituate town line, includes new traffic signal equipment and pedestrian and bicycle accommodation; preliminary design The corridor is within the limits of MassDOT Project #605664, Resurfacing and Related Work on Route 3A (Duxbury town line northerly to Scituate town line); 100% design stage; no construction funding identified	2	0	2	2	1	1	8	Low	FFY 2013 Subregional Priority Corridor study was conducted within the segment. MassDOT District 5 comments note two approved projects: MassDOT Projects #608007 (in preliminary design stage) and Project #605664 (100% design stage).
Route 16	Natick	MWRC	3	Town	Yes	3	1.5	0	0	1.19	None	N/A	Yes	No projects	0	0	2	3	1	2	8	Low	The 495/MetroWest Partnership expressed interest in a Route 16 study. Specific issues in this segments include improvements to accommodate pedestrians and bicyclists.
Route 62	Concord	MAGIC	4	Town	Yes	3	4.3	0	0	1.31	MBTA Commuter Rail at Concord and West Concord	N/A	None	No projects	2	1	1	1	1	1	7	Low	None
Route 3A	Marshfield	SSC	5	MassDOT	Yes	3	2.2	0	2	1.09	GATRA bus MBTA Commuter Rail at Greenbush	None	None	The corridor is within the limits of MassDOT Project #605664, Resurfacing and Related Work on Route 3A (Duxbury town line northerly to Scituate town line), work includes patching and microsurfacing, shoulder reconstruction, and drainage structures; 100% design stage; no construction funding identified	1	0	2	2	1	1	7	Low	None
Route 16	Sherborn	SWAP	3	Town	Yes	3	1.7	0	1	1.35	None	N/A	None	2002 CTPS study, Traffic Congestion in SWAP Subregion; Sherborn Town Center Traffic-Flow Improvement Study Conceptual TIP #915, Washington Street (Route 16)	1	1	1	2	0	2	7	Low	Location was suggested in 2014 LRTP outreach at a 495/MetroWest Partnership meeting. The section that experiences the most crashes and congestion is the town center portion, where Route 16 and Route 27 combine and split.
Route 9	Southborough	MWRC	3	MassDOT	Yes	2	1.5	0	0	1.83	MWRTA bus Route 7	None	None	MAPC Land Use/Route 9 Corridor Study (fall 2013). The CTPS Safety and Operations at Intersections study evaluated congestion and safety issues at the Route 9/Oak Hill Road/Central Street intersection in FFY 2012. MassDOT's I-495/Route 9 study, November 2013. The western section of Route 9 in Southborough between the I-95 interchange and Crystal Pond Road was evaluated for short-term and long-term improvements as part of this study. MassDOT Project #607172, Resurfacing and Related Work on Route 9, from Westborough to just west of White Bagley Road; construction ends in summer 2016	0	1	2	2	1	0	6	Low	Most of the intersections on this corridor have already been studied, as MassDOT District 3 has noted.
Route 3A	Scituate	SSC	5	MassDOT	Yes	3	1.1	0	0	1.04	MBTA Commuter Rail at Greenbush, North Scituate, and Cohasset	N/A	None	FFY 2013 Subregional Priority Corridor Study The corridor is within the limits of MassDOT Project #605664, Resurfacing and Related Work on Route 3A (Duxbury town line northerly to Scituate town line); no construction funding identified. Work includes patching and microsurfacing, shoulder reconstruction, and drainage structures; 100% design stage.	0	0	2	1	1	1	5	Low	The FFY 2013 Subregional Priority Corridors Study was conducted within the segment. MassDOT District 5 comments refer to MassDOT Project #605664 (in the 100% design stage).

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, i.e., 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 in 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.

***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)

Abbreviations

AADT = Annual average daily traffic. ADA = Americans with Disabilities Act. ADT = Average daily traffic. BAT = Brockton Areas Transit Authority. CTPS = Central Transportation Planning Staff. DCR = Department of Conservation and Recreation. DEIR = Draft Environmental Impact Report. EJ = Environmental justice. ENHC = Essex National Heritage Commission. EPDO = Equivalent property damage only. FFY = Federal fiscal year. GATRA = Greater Attleboro Taunton Regional Transit Authority. 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. MVMT = Million vehicle-miles traveled. MWRC = MetroWest Regional Collaborative. MWRTA = MetroWest Regional Transit Authority. NSPC = North Suburban Planning Council. NSTF = North Shore Task Force. PRC = MassDOT Project Review Committee. RSA = Road safety audit. RTA = Regional transit authority. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TIP = Transportation Improvement Program. TRIC = Three Rivers Interlocal Council. UPWP = Unified Planning Work Program.

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 (EPDO) index. In the EPDO index, property damage only crashes are awarded one point each, crashes involving injuries are given five points each, and fatal crashes are given ten points each. In the Boston region the 896 intersections in the top five percent have crash clusters with a minimum EPDO value of 42.

Source: Central Transportation Planning Staff.