



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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

MEMORANDUM

DATE: April 16, 2015
TO: Boston Region Metropolitan Planning Organization
FROM: Sean Pfalzer, Transportation Improvement Program Manager,
MPO Staff
RE: Staff Recommendation for the FFYs 2016–19 Transportation
Improvement Program Highway Target Funding

The purpose of this memorandum is to present a staff recommendation for the MPO's Highway Target funds for federal fiscal years (FFYs) 2016–19 Transportation Improvement Program (TIP). This year's staff recommendation proposes transportation projects and programs to fund with the MPO's Regional Highway Target Funding over the upcoming four federal fiscal years of the TIP. In developing the staff recommendation, MPO staff worked with the target funding levels to:

- Address project schedule issues
- Allocate funding to current and ongoing TIP commitments
- Propose new projects to receive funding that advance the MPO's priorities

This memo proposes 11 new projects for the upcoming TIP. The newly proposed projects are primarily derived from this year's First-Tier List of Projects. This list includes projects that have earned the highest scores in the MPO's evaluation process and that could be made ready for advertising within the scope of the TIP.

REGIONAL HIGHWAY TARGET FUNDING

MassDOT released the draft Regional Highway Targets on March 17, 2015. The Regional Targets indicate that the Boston Region MPO has approximately \$350 million to spend on projects and programs in the FFYs 2016–19 TIP. Table 1 compares the funding levels of the current TIP and the FFYs 2016–19 TIP. As shown in the table, there are significant increases in target funding in FFYs 2017–18. In FFY 2019, the Regional Target remains higher than last year's levels, at approximately \$92.6 million.

TABLE 1.
Comparison of Regional Target Funding, Current vs. New

Total Regional Target	FFY 2016	FFY 2017	FFY 2018	FFY 2019	Total
Current Funds	\$75,009,821	\$75,009,821	\$75,009,821		
New Funds	\$75,009,821	\$88,759,294	\$92,626,333	\$92,626,333	\$349,021,781
Difference	\$0	\$13,749,473	\$17,616,512		

The Regional Highway Target Funds contain annual targets for three of the eligible funding programs: 1) Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 2) Highway Safety Improvement Program (HSIP), and 3) Transportation Alternatives Program (TAP). Under the federal transportation bill, Moving Ahead for Progress in the 21st Century Act (MAP-21), the CMAQ Program provides a flexible funding source for transportation projects and programs that help meet the requirements of the Clean Air Act; HSIP aims to achieve a significant reduction in traffic fatalities and serious injuries; and TAP supports the implementation of on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving bicycle and pedestrian access to public transportation, and safe-routes-to-school projects.

For the FFYs 2016–19 TIP, the funding targets remain the same for CMAQ and HSIP, and TAP increases in FFYs 2016-18. In developing the staff recommendation, staff considers project funding eligibility in order to allow the MPO to meet its funding targets.

TABLE 2.
Comparison of Regional Targets by Funding Program,
Current vs. New

Regional Target by Funding Program	FFY 2016	FFY 2017	FFY 2018	FFY 2019	Total
Current CMAQ Target	\$13,427,220	\$13,427,220	\$13,427,220		
New CMAQ Target	\$13,427,220	\$13,427,220	\$13,427,220	\$13,427,220	\$53,708,880
Difference	\$0	\$0	\$0		
Current HSIP Target	\$4,296,710	\$4,296,710	\$4,296,710		
New HSIP Target	\$4,296,710	\$4,296,710	\$4,296,710	\$4,296,710	\$17,186,840
Difference	\$0	\$0	\$0		
Current TAP Target	\$4,346,838	\$2,824,382	\$2,824,382		
New TAP Target	\$5,097,438	\$3,312,089	\$3,312,089	\$2,548,719	\$14,270,335
Difference	\$750,600	\$487,707	\$487,707		
Current Non-CMAQ/HSIP/TAP Funds	\$52,939,052	\$54,461,509	\$54,461,509		
New Non-CMAQ/HSIP/TAP Funds	\$52,188,452	\$67,723,275	\$71,590,315	\$72,353,684	\$263,855,726
Difference	-\$750,600	\$13,261,766	\$17,128,806		

The remaining portion of funding is eligible to be programmed under the Surface Transportation Program (STP) or the National Highway Performance Program (NHPP). The funding level for these two programs combined is capped at approximately \$264 million over FFYs 2016-19.

PROJECT SCHEDULE ISSUES

In working on a staff recommendation, MPO staff consulted with the MassDOT Highway Division to identify schedule issues for projects currently programmed in the FFYs 2015–18 TIP. There are six projects programmed in the current TIP that have a high risk of not being made ready for advertisement in their current fiscal year of programming.

FFY 2015

- Improvements to Commonwealth Avenue in Boston
- Tri-Community Bikeway in Winchester, Stoneham and Woburn

FFY 2016

- Reconstruction of Route 85 in Marlborough
- Intersection and Signal Improvements at Route 9 and Village Square (Gateway East) in Brookline
- Middlesex Turnpike Improvements (Phase III) in Bedford, Billerica, and Burlington
- Reconstruction and Widening on Route 18 in Weymouth and Abington

CURRENT AND ONGOING COMMITMENTS

Staff next identified current and ongoing programming commitments to the Green Line Extension, Phase 2, from College Avenue to Route 16 and Reconstruction and Widening on Route 18 in Weymouth. The MPO has supported these projects in the LRTP, programmed them in the FFYs 2015–18 TIP, and expects to continue programming them in the FFYs 2016–19 TIP. Table 3 lists the currently anticipated programming amounts for the projects in FFYs 2016–19 and future TIP programming beyond FFY 2019 for the Green Line Extension, Phase 2. Table 3 indicates that these projects, accounting for 17% of MPO target funding in FFY 2016, becomes an even larger share of the MPO's investments in FFY 2017 (48%), FFY 2018 (66%), and FFY 2019 (50%). The remaining balance shown in the table represents funding that would need to be programmed in subsequent TIP years. Based on the current cost estimate and schedule, the project would require programming through FFY 2021.

**TABLE 3.
Summary of Current and Ongoing Commitments**

Projects	FFY 2016	FFY 2017	FFY 2018	FFY 2019	Remaining Balance
Green Line Extension, Phase 2 (Somerville and Medford)	\$8,100,000	\$29,900,000	\$40,000,000	\$40,000,000	\$72,000,000
Reconstruction and Widening on Route 18 (Weymouth)	\$4,800,000	\$12,850,000	\$21,031,758	\$6,600,000	\$0
Percent of Target Program	17%	48%	66%	50%	

Table 4 below lists the Long-Range Transportation Plan commitments currently programmed and those commitments scheduled to be implemented through the TIP. Table 4 indicates that the MPO has committed nearly 73 percent of the Target Program to LRTP projects or major infrastructure projects between FFYs 2016-19, ranging from 50 percent in FFY 2019 to 86 percent in FFY 2016.

**TABLE 4.
Overview of Long-Range Transportation Plan Commitments**

Projects	FFY 2016	FFY 2017	FFY 2018	FFY 2019	Remaining Commitments
Middlesex Turnpike Improvements (Bedford, Billerica and Burlington)	\$21,691,442	\$6,604,904			
Reconstruction and Widening on Route 18 (Weymouth)	\$4,800,000	\$12,850,000	\$21,031,758	\$6,600,000	
Route 128 Add-a-lane (Needham and Wellesley)	\$30,000,000	\$14,000,000	\$13,768,183		
Green Line Extension, Phase 2 (Somerville and Medford)	\$8,100,000	\$29,900,000	\$40,000,000	\$40,000,000	\$72,000,000
Reconstruction of Montvale Avenue (Woburn)		\$4,752,838			
Total	\$64,591,442	\$68,107,744	\$74,799,941	\$46,600,000	\$72,000,000
Percent of Target Program	86%	77%	81%	50%	

DEVELOPMENT OF THE STAFF RECOMMENDATION

Based on the project schedule changes and ongoing commitments, MPO staff worked to prepare a staff recommendation that would satisfy the needs of currently-programmed projects and balance the following factors:

- **Readiness:** Given the number of currently-programmed TIP projects that have a high risk of not being ready for advertisement in FFY 2016, MPO staff prioritized projects in the first two years that had the greatest likelihood of being ready for advertisement. Staff first sought currently-programmed projects in later years of the TIP to move forward into FFY 2016, however there were none that were ready. Then, staff identified unfunded projects that had a high likelihood of being ready for advertisement in FFY 2016 or 2017 based on MassDOT Highway Division guidance.
- **First-Tier List of Projects:** When readiness was not the primary issue, MPO staff relied on the First-Tier List of Projects for newly proposed projects for programming. These projects ranked highest according to the evaluation criteria and are more likely to help the region attain the visions established by the MPO and meet its performance goals in the future. Given the high allocation percentage for major infrastructure in the current TIP, and the MPO's desire for a larger percentage of lower-cost investment strategies, MPO staff prioritized the addition of non-major infrastructure over major infrastructure from the First-Tier List of Projects. Also, MPO staff used readiness as the deciding factor when two First-Tier List projects were under consideration for the same fiscal year.
- **Geographic equity:** In prioritizing projects from the First-Tier List of Projects, MPO staff also considered geographic equity to help ensure that investments address needs throughout the region.
- **Cost:** In prioritizing projects from the First-Tier List of Projects, MPO staff also accounted for cost to comply with fiscal constraint.
- **Long-Range Transportation Plan Implementation:** MPO staff did not propose any new LRTP commitments. Given the high percentage of LRTP commitments (i.e. major infrastructure projects) in the TIP, and the MPO's desire for a larger percentage of lower-cost investment strategies, MPO staff prioritized the addition of non-major infrastructure over major infrastructure from the First-Tier List of Projects.

FIRST-TIER LIST OF HIGHWAY PROJECTS

MPO staff created the First-Tier List of Highway Projects using project-evaluation results and information on readiness. The First-Tier List comprises projects that have received high scores through the TIP evaluation process, and that could be made ready for advertisement within FFYs 2016–19. Table 5 presents the First-Tier List of Highway

Projects. This year's First-Tier List contains fourteen projects, totaling almost \$130 million worth of transportation infrastructure investments.

**TABLE 5.
First-Tier List of Highway Projects**

Proponent(s)	Project Name	Current Cost Estimate	Project Evaluation Rank	Design Status
Newton and Needham (MassDOT)	Reconstruction of Highland Ave, Needham St and Charles River Bridge, from Webster St to Route 9	\$14,297,606	104	25% Approved
Everett	Reconstruction of Ferry St, South Ferry Stand a portion of Elm St	\$6,440,000	90	PRC Approved
Natick	Reconstruction of Route 27 (North Main St), from North Ave to the Wayland town line	\$13,090,726	88	25% Submitted
Lexington	Reconstruction on Massachusetts Ave, from Marrett Rd to Pleasant St	\$5,200,000	87	25% Submitted
Hopkinton	Signal and intersection improvements on Route 135	\$7,235,377	85	25% Submitted
Natick (MassDOT)	Bridge replacement, Route 27 (North Main St) over Route 9 (Worcester St) and interchange improvements	\$25,793,370	84	25% Submitted
Boston	Improvements on Boylston St, from the intersection of Brookline Ave and Park Drive to Ipswich St	\$6,555,000	83	PRC Approved
Ashland	Reconstruction on Route 126 (Pond St), from the Framingham town line to the Holliston town line	\$13,277,165	77	25% Submitted
Walpole (MassDOT)	Reconstruction on Route 1A (Main St), from the Norwood town line to Route 27	\$15,886,000	76	25% Approved
Lynn	Reconstruction on Route 129 (Lynnfield St), from Great Woods Road to Wyoma Square	\$3,457,578	73	25% Approved
Milford	Resurfacing and intersection improvements on Route 16 (Main St), from Water St to the Hopedale town line	\$2,800,000	73	25% Submitted
Hingham	Reconstruction and related work on Derby St from Pond Park Rd to Cushing St	\$3,840,661	71	25% Submitted
Boston	Traffic signal improvements at 9 locations	\$3,036,200	71	25% Submitted

Newton	Reconstruction and signal improvements on Walnut St, from Homer St to Route 9	\$4,648,360	70	25% Submitted
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OVERVIEW OF THE STAFF RECOMMENDATION

The staff recommendation proposes programming 11 new projects, including 9 of the 14 projects from the First-Tier List of Projects. These nine complete street projects and two intersection improvement projects will help attain the MPO's goals by advancing safety, system preservation, mobility, and economic vitality. These investments will implement past planning work through the United Planning Work Program (UPWP) by programming recommendations from three past MPO studies. These investments also promote geographic equity by addressing needs across MAPC subregions and community types. There are newly proposed projects in 6 out of the 8 MAPC subregions, including three projects in ICC, three projects in SSC, two projects in SWAP, and one project each in MAGIC, TRIC, and MWRC. These investments are also distributed across each of the four MAPC community types, including two projects in Inner Core communities, five projects in Maturing Suburbs, two projects in Developing Suburbs, and two projects in Regional Urban Centers.

NEWLY PROPOSED PROJECTS FOR PROGRAMMING

The staff recommendation proposes the following 11 new projects for the TIP, totaling approximately \$75 million.

FFY 2016

- **Lexington – Reconstruction of Massachusetts Avenue:** The proposed project will address safety and capacity deficiencies at three intersections along Massachusetts Avenue; Marrett Road (Route 2A), Maple Street (Route 2A) and Pleasant Street (Routes 4/225). The improvements will be designed to be consistent with the principles of “complete streets” and will improve safety for pedestrians, bicyclists, and drivers. The project will also consolidate some uncontrolled mid-block crosswalks, improve transit (bus) operations and bus stops and provide bicycle accommodation along the roadway.
 - Investment Program: Complete Streets
 - Cost: \$5,200,000
 - Funding Eligibility: HSIP, CMAQ
 - Evaluation Rating: 87 points
 - CO2 Impact: 80 annual tons reduced
 - Project Length: 0.7 miles

- MPO/CTPS Study: Safety and Operational Improvements at Selected Intersections (2008)
- MAPC Subregion: MAGIC
- MAPC Community Type: Maturing Suburb

- **Weymouth – Intersection Improvements at Middle Street, Libbey Industrial Parkway and Tara Drive:** The project will install traffic signals at the intersection of Middle Street, Libbey Industrial Parkway and Tara Drive. The project will include pavement rehabilitation, lane reconfiguration, sidewalk and wheelchair ramp installation/repair/reconstruction, installation and/or resetting of granite curbing and installation of signs and pavement markings. Since the side streets of this 4-way intersection are off-set, each side street will operate on a separate phase.
 - Investment Program: Intersection Improvements
 - Cost: \$937,326
 - Funding Eligibility: CMAQ
 - Evaluation Rating: 68 points
 - CO2 Impact: 6 annual tons reduced
 - Project Length: 0.1 miles
 - MAPC Subregion: SSC
 - MAPC Community Type: Maturing Suburb

FFY 2017

- **Hingham – Reconstruction and related work on Derby Street:** This project is proposed to address ongoing safety and capacity issues at the Derby Street/Route 3 ramps. Ramp modifications including signalization of ramps are proposed. In addition, there is a need to provide improved multi-modal accommodation on this targeted segment of Derby Street.
 - Investment Program: Complete Streets
 - Cost: \$3,840,661
 - Funding Eligibility: HSIP, CMAQ
 - Evaluation Rating: 71 points
 - CO2 Impact: 166 annual tons reduced
 - Project Length: 0.8 miles
 - MAPC Subregion: SSC

- MAPC Community Type: Maturing Suburb
- **Hingham – Intersection Improvements at Derby Street, Whiting Street (Route 53) and Gardner Street:** Work on this project will consist of intersection improvements at Derby Street, Whiting Street (Route 53) and Gardner Street. Work includes the installation of a new traffic signal system and geometric modifications at the intersection. The project will also include improved accommodation for bicycles and pedestrians.
 - Investment Program: Intersection Improvements
 - Cost: \$2,827,048
 - Funding Eligibility: HSIP
 - Evaluation Rating: 59 points
 - CO2 Impact: increase of 60 annual tons
 - Project Length: 0.3 miles
 - MPO/CTPS Study: Route 53 Corridor Transportation Plan (2003)
 - MAPC Subregion: SSC
 - MAPC Community Type: Maturing Suburb

FFY 2018

- **Walpole – Reconstruction of Route 1A (Main Street):** The proposed project consists of reconstructing 8,000 feet of Route 1A including intersection and approach improvements at Fisher, Gould, North, and Bullard/Willet Streets, and at the Stop and Shop Plaza. The Route 1A bridge over the Neponset River, near the intersection with North Street, will be analyzed to determine if it can be rehabilitated or must be replaced. The limits of work are from approximately 2,000 feet north of Route 27 northerly to the Norwood town line.
 - Investment Program: Complete Streets
 - Cost: \$15,866,000
 - Funding Eligibility: CMAQ
 - Evaluation Rating: 76 points
 - CO2 Impact: 94 annual tons reduced
 - Project Length: 2.3 miles
 - MAPC Subregion: TRIC
 - MAPC Community Type: Developing Suburb

FFY 2019

- **Everett – Reconstruction of Ferry Street:** The project will reconstruct Ferry Street from the Malden city line (Belmont Street) to Route 16 and Elm Street between Ferry Street and Woodlawn Street. The work will include resurfacing, new sidewalks, wheelchair ramps and curb extensions. The traffic signals at five locations and the fire station will be upgraded. Signals at Chelsea Street will be replaced by a roundabout.
 - Investment Program: Complete Streets
 - Cost: \$6,440,000
 - Funding Eligibility: CMAQ, HSIP
 - Evaluation Rating: 90 points
 - CO2 Impact: 159 annual tons reduced
 - Project Length: 1.6 miles
 - MPO/CTPS Study: Community Transportation Technical Assistance Program (2013)
 - MAPC Subregion: ICC
 - MAPC Community Type: Inner Core

- **Natick – Reconstruction of Route 27 (North Main Street):** The project begins on Route 27 (North Main Street) at North Avenue and extends northerly 2.2 miles to the Wayland town line, excluding the Route 9 interchange. The proposed improvements include minor widening of the section of roadway south of Route 9 to a more consistent cross-section. The pavement will be reconstructed and cement concrete sidewalks will also be constructed on both sides of the roadway throughout the length of the project. The existing signals will be upgraded and, if warrants are met, new signals will be installed at Lake Street, Rutledge Road and Pine Street.
 - Investment Program: Complete Streets
 - Cost: \$13,090,726
 - Funding Eligibility: CMAQ
 - Evaluation Rating: 88 points
 - CO2 Impact: 74 annual tons reduced
 - Project Length: 2.2 miles
 - MAPC Subregion: MWRC
 - MAPC Community Type: Maturing Suburb

- **Hopkinton – Signal and intersection improvements on Route 135:** The project involves intersection improvements at Route 85, Pleasant Street and Wood Street. The improvements include signal equipment upgrade, geometric modifications, and additional lanes at Route 85; possible signalization at Pleasant Street; and minor widening, geometric modifications and equipment upgrades at Wood Street. The project includes pavement rehabilitation from Ash Street to Wood Street, drainage improvements as needed, reconstructed sidewalks and wheelchair ramps, and streetscape enhancements in the town center.
 - Investment Program: Complete Streets
 - Cost: \$7,235,377
 - Funding Eligibility: HSIP, CMAQ
 - Evaluation Rating: 85 points
 - CO2 Impact: 566 annual tons reduced
 - Project Length: 0.8 miles
 - MAPC Subregion: SWAP
 - MAPC Community Type: Developing Suburb

- **Boston – Improvements on Boylston Street, from the intersection of Brookline Avenue and Park Drive to Ipswich Street:** This roadway improvement project which will improve pedestrian mobility, encourage local and regional bicycle travel, and improve vehicular congestion.
 - Investment Program: Complete Streets
 - Cost: \$6,555,000
 - Funding Eligibility: CMAQ, TAP
 - Evaluation Rating: 83 points
 - CO2 Impact: 806 annual tons reduced
 - Project Length: 0.6 miles
 - MAPC Subregion: ICC
 - MAPC Community Type: Inner Core

- **Milford – Resurfacing and intersection improvements on Route 16 (Main Street), from Water Street to the Hopedale town line:** The project involves

resurfacing along Route 16, from Water Street to the Hopedale Town line, a distance of 0.6 miles. Additional work includes sidewalk reconstruction, culvert repairs and related work. The project also includes improvements to the intersection of Route 16 and Route 140, including upgraded signal equipment and widening where feasible.

- Investment Program: Complete Streets
 - Cost: \$2,800,000
 - Funding Eligibility: CMAQ, HSIP
 - Evaluation Rating: 73 points
 - CO2 Impact: 84 annual tons reduced
 - Project Length: 0.6 miles
 - MAPC Subregion: SWAP
 - MAPC Community Type: Regional Urban Center
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- **Lynn – Reconstruction on Route 129 (Lynnfield Street), from Great Woods Road to Wyoma Square:** This roadway and safety improvement project includes drainage improvements, curbing, new sidewalks, wheelchair ramps, intersection improvements, pavement markings, signing, landscaping, and other incidental work.
 - Investment Program: Complete Streets
 - Cost: \$3,457,578
 - Funding Eligibility: CMAQ
 - Evaluation Rating: 73 points
 - CO2 Impact: 3 annual tons reduced
 - Project Length: 1.0 miles
 - MAPC Subregion: ICC
 - MAPC Community Type: Regional Urban Center