



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Richard A. Davey, MassDOT Secretary and CEO and MPO Chairman
Karl H. Quackenbush, Executive Director, MPO Staff

MEMORANDUM

DATE: April 3, 2014
TO: Boston Region Metropolitan Planning Organization
FROM: Sean Pfalzer, Transportation Improvement Program Manager,
MPO Staff
RE: FFYs 2015–18 Transportation Improvement Program Highway Target
Funding

The purpose of this memorandum is to present issues and concerns in developing a staff recommendation for the Highway Target funds for federal fiscal years (FFYs) 2015–18 Transportation Improvement Program (TIP). The staff recommendation typically proposes transportation projects and programs to fund with the MPO's Regional Highway Target Funding over the upcoming TIP's four federal fiscal years. In developing a staff recommendation, MPO staff works with the target funding levels to:

- Address cost increases and schedule changes of existing projects
- Allocate funding to current and ongoing TIP commitments
- Propose new projects to receive funding that advance the MPO's priorities

This memo does not propose a staff recommendation, but instead discusses the issues that have emerged in the development process for the upcoming TIP: 1) the Regional Highway Target Funding amounts by year and funding program; and 2) project cost increases and schedule changes of existing projects that need to be addressed in the staff recommendation and their impact on fulfilling ongoing commitments. Also included is this year's First-Tier List of Projects, which, as in any year, would serve as the primary source of new projects for the TIP.

REGIONAL HIGHWAY TARGET FUNDING

MassDOT released the draft Regional Highway Targets on February 28, 2014. The Regional Targets indicate that the MPO has approximately \$293.3 million to spend on projects and programs in the FFYs 2015–18 TIP. Table 1 compares the funding levels of the current TIP and the FFYs 2015–18 TIP. As shown in the table, there are minor increases in target funding in FFYs 2015–17. In FFY 2018, the Regional Target remains constant with FFYs 2016 and 2017 levels, at approximately \$75 million.

TABLE 1.
Comparison of Regional Target Funding, Current vs. FFYs 2015–18 TIP

Total Regional Target	FFY 2015	FFY 2016	FFY 2017	FFY 2018	Total
Current TIP Regional Target Funds	\$67,921,442	\$74,950,144	\$74,950,144		
FFYs 2015–18 TIP Regional Target Funds	\$68,221,673	\$75,009,821	\$75,009,821	\$75,009,821	\$293,251,136
Difference	\$300,231	\$59,677	\$59,677		

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 2015–18 TIP, the funding targets decrease the minimum amount of CMAQ spending on CMAQ-eligible projects to about \$56.4 million; reduce the amount available to be programmed with HSIP funds to roughly \$17.7 million; and increase TAP program funds to roughly \$12.5 million. 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. FFYs 2015–18 TIP

Regional Target by Funding Program	FFY 2015	FFY 2016	FFY 2017	FFY 2018	Total
Current TIP CMAQ Target	\$16,112,664	\$16,112,664	\$16,112,664		
FFYs 2015–18 TIP CMAQ Target	\$16,112,664	\$13,427,220	\$13,427,220	\$13,427,220	\$56,394,324
Difference	\$0	(\$2,685,444)	(\$2,685,444)		
Current TIP HSIP Target	\$4,774,123	\$4,774,123	\$4,774,123		
FFYs 2015-18 TIP HSIP Target	\$4,774,123	\$4,296,710	\$4,296,710	\$4,296,710	\$17,664,253
Difference	\$0	(\$477,413)	(\$477,413)		
Current TIP TAP Target	\$2,548,719	\$2,548,719	\$2,548,719		

FFYs 2015-18 TIP TAP Target	\$2,548,719	\$4,346,838	\$2,824,382	\$2,824,382	\$12,544,321
Difference	\$0	\$1,798,119	\$275,663		
Current TIP Non-CMAQ/HSIP/TAP Funds	\$44,485,936	\$51,514,638	\$51,514,638		
FFYs 2015-18 TIP Non-CMAQ/HSIP/TAP Funds	\$44,786,168	\$52,939,052	\$54,461,509	\$54,461,509	\$206,648,238
Difference	\$300,231	\$1,424,414	\$2,946,871		

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 \$206.6 million over FFYs 2015-18.

PROJECT COST INCREASES AND SCHEDULE CHANGES

In working on a staff recommendation, MPO staff first addressed project cost increases and schedule changes for projects currently programmed in the FFYs 2014–17 TIP. There were six projects programmed to be advertised in FFYs 2014–17 that have had cost increases. Table 3 lists the projects with cost increases and the difference between the TIP amount needed and the TIP amount programmed. These project cost increases total approximately \$36 million.

TABLE 3.
Summary of Project Cost Increases

Projects	TIP Amount Needed	TIP Amount Programmed	TIP	
			Funding Shortfall	Percent Increase
Reconstruction and Signal				
Improvements on Rantoul St./Route 1A (Beverly)	\$19,932,199	\$15,748,818	\$4,183,381	27%
Reconstruction of Washington				
St./Route 53 (Hanover)	\$1,854,193	\$1,170,881	\$683,312	58%
Reconstruction on Canal St. (Salem)	\$7,852,431	\$6,574,201	\$1,278,230	19%
Reconstruction of Route 18				
(Weymouth and Abington)**	\$57,752,525	\$40,630,000	\$17,122,525	42%
Route 128 Add-a-Lane				
(Needham and Wellesley)**	\$164,919,141	\$152,904,963	\$12,014,178	8%

Reconstruction of Main St./Route 109

(Medway)	\$12,062,567	\$11,275,569	\$786,998	7%
Total	\$264,373,056	\$228,304,432	\$36,068,624	

** Indicates a project that has experienced multiple cost increases.

In addition to needing to address project cost increases, the recommendation also needs to account for updates to project design schedules. There are four projects programmed in the current TIP that likely would not be made ready for advertisement in their current fiscal year of programming.

- Reconstruction on Canal Street in Salem is programmed in FFY 2014, but because of right-of-way (ROW) issues it likely would not be made ready for advertisement by September 30, 2014.
- Intersection and Signal Improvements at Route 9 and Village Square in Brookline is programmed in FFY 2015; however, the current design schedule likely would not be made ready for advertisement by September 30, 2015.
- Reconstruction of Route 85 in Marlborough is programmed in FFY 2015; however, the current design schedule likely would not be made ready for advertisement by September 30, 2015.
- Middlesex Turnpike Improvements (Phase III) in Bedford, Billerica, and Burlington is programmed in FFY 2016; but because of significant bridge design that still needs to be completed, it likely would not be made ready for advertisement by September 30, 2016.

CURRENT AND ONGOING COMMITMENTS TO THE GREEN LINE EXTENSION, PHASE 2

Staff next identified current and ongoing programming commitments to the Green Line Extension, Phase 2, from College Avenue to Route 16. The MPO has supported this project in the LRTP, programmed it in the FFYs 2014–17 TIP, and expects to continue programming it in the FFYs 2015–18 TIP. Table 4 lists the currently anticipated programming amounts for the project in FFYs 2016–18 and future TIP years beyond FFY 2018. Table 4 indicates that the Green Line Extension, Phase 2, from College Avenue to Route 16 in Somerville and Medford, accounting for 11% of MPO target funding in FFY 2016, becomes an even larger share of the MPO's investments in FFY 2017 (40%) and FFY 2018 (59%). The remaining balance shown in the table represents funding that would need to be programmed in subsequent TIP years. Based on the current cost and schedule, the project would require programming through FFY 2021.

TABLE 4.
Summary of Current and Ongoing Commitments

Projects	FFY 2016	FFY 2017	FFY 2018	Remaining Balance
Green Line Extension, Phase 2 (Somerville and Medford)	\$8,100,000	\$29,900,000	\$44,200,000	\$107,900,000
Percent of Target Program	11%	40%	59%	

OVERVIEW OF FFYS 2014–18 TIP

Based on the project cost increases, schedule changes, and ongoing commitments, MPO staff attempted to prepare a staff recommendation that would satisfy the needs of all projects. However, project funding needs exceed the amount of funding available to the MPO. MPO staff encountered funding challenges in FFYs 2017 and 2018, in which there was not enough funding available to fully program existing projects and also meet currently projected cash flows for the Green Line Extension, Phase 2. As it is, the overall MPO target program falls \$7.1 million short of funding its commitment by almost \$2.4 million in FFY 2017 and \$4.7 million in FFY 2018. An overview of the existing funding commitments and funding shortfalls is detailed in Table 7, at the end of this memorandum.

ISSUES AND CONCERNS

The funding constraint displayed in Table 7 generates concerns about FFYs 2015-18 and beyond. The MPO has several LRTP commitments, including four roadway expansion projects and one transit expansion project that utilize a majority of the MPO's target funding in FFYs 2016 and 2017, and even exceed the MPO's target funding in FFY 2018. Table 5 below lists the Long-Range Transportation Plan commitments currently programmed and those commitments scheduled to be implemented through the TIP in the future. Table 5 indicates that the MPO is currently overcommitted to LRTP projects in FFY 2018 and likely would remain overcommitted in FFYs 2019-20.

**TABLE 5.
Implementation of Long-Range Transportation Plan Commitments**

Projects	FFY 2016	FFY 2017	FFY 2018	FFYs 2019–20 Commitments
Middlesex Turnpike Improvements (Bedford, Billerica and Burlington)			\$23,543,064	
Reconstruction and Widening on Route 18 (Weymouth)	\$21,520,974	\$21,445,401		
Route 128 Add-a-lane (Needham and Wellesley)	\$30,000,000	\$15,754,005	\$12,014,178	
Green Line Extension, Phase 2 (Somerville and Medford)	\$8,100,000	\$29,900,000	\$44,200,000	\$107,900,000
Reconstruction of Montvale Avenue (Woburn)		\$4,752,838		
Assabet River Rail Trail (Hudson to Acton)				\$18,758,112
Reconstruction of Rutherford Avenue (Boston)				\$103,562,290
New Boston Street Bridge (Woburn)				\$9,992,000
Reconstruction of Bridge Street (Salem)				\$14,769,000
Total	\$59,620,974	\$71,852,245	\$79,757,242	\$254,981,402
Percent of Target Program	79%	96%	106%	

MPO staff is also concerned about the schedule and cost for the Green Line Extension, Phase 2 project. The project is still at the early planning, pre-conceptual design stage. Based on past TIP-funding experience, the project cost very likely would increase when the project begins design and advances through the design process. Cost increases associated with major infrastructure projects typically have a greater impact on the MPO's total target funding, and future cost increases would place additional pressure on the target funds in the years beyond.

FIRST-TIER LIST OF HIGHWAY PROJECTS

Following the MPO TIP development program, 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 which could be made ready for advertisement within FFYs 2015–18. The First-Tier List and staff recommendation work within the framework set by the LRTP. LRTP projects with high scores in the 2016–20 time band are included in the First-Tier List of Projects; however, projects with high scores in later LRTP time bands (not within the scope of this TIP) are not included. Table 6 presents the First-Tier List of Highway Projects. This year's First-Tier List contains ten projects, totaling almost \$100 million worth of transportation infrastructure investments.

TABLE 6.
First-Tier List of Highway Projects

Proponent(s)	Project Name	Current Cost Estimate	Project Evaluation Rank	Design Status
Boston	Reconstruction of Causeway Street (Pedestrian and Bicycle Improvements)	\$10,590,044	92	25% Submitted
Lexington	Reconstruction on Massachusetts Avenue, from Marrett Road to Pleasant Street	\$5,500,000	87	25% Submitted
Natick	Reconstruction of Route 27 (North Main Street), from North Avenue to the Wayland Town Line	\$13,090,726	86	25% Submitted
Hopkinton	Signal and Intersection Improvements on Route 135	\$5,628,318	85	25% Submitted
Natick (MassDOT)	Bridge Replacement, Route 27 (North Main St.) over Route 9 (Worcester St.) and Interchange Improvements	\$22,611,530	84	25% Submitted
Everett	Reconstruction of Ferry Street	\$6,720,000	83	Pre-PRC
Boston	Improvements on Boylston Street, from Intersection of Brookline Avenue and Park Drive to Ipswich Street	\$6,555,000	83	PRC Approved
Walpole (MassDOT)	Reconstruction on Route 1A (Main Street), from the Norwood Town Line to Route 27	\$15,886,000	76	25% Submitted
Hingham	Reconstruction and Related Work on Derby Street from Pond Park Road to Cushing Street	\$4,500,000	71	25% Submitted

Newton	Reconstruction and Signal Improvements on Walnut Street, from Homer Street to Route 9	\$7,285,800	70	25% Submitted
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TABLE 7. Overview of Issues in Developing a Staff Recommendation for the Draft FFYs 2015-18 TIP

Proponent(s)	TIP ID	Project Name	Current FFY 2014	Proposed FFY 2014	Current FFY 2015	Proposed FFY 2015	Current FFY 2016	Proposed FFY 2016	Current FFY 2017	Proposed FFY 2017	Proposed FFY 2018	Total Target Funds Proposed in FFYs 2015-18 TIP	Other Funds (Non-Target Funds)	Total TIP Funding	Additional Information
Arlington	606885	Bikeway Connection at Intersection Route 3 & Route 60	\$1,618,984	\$1,618,984											change of funding program from CMAQ to HSIP; 3rd quarter ad date
Concord & Lincoln	602984	Limited Access Highway Improvements at Route 2 & 2A, Between Crosby's Corner & Bedford Road	\$5,399,747	\$5,399,747											
Needham & Wellesley	603711	Rehabilitation/Replacement of 6 Bridges on I-95/Route 128 (Add-a-Lane - Contract V)	\$27,830,281	\$29,537,797	\$30,000,000	\$30,000,000	\$25,625,150	\$30,000,000	\$21,836,371	\$15,754,005	\$12,014,178	\$87,768,183		\$87,768,183	project cost increase of \$12,014,178; adjustment to cash flows and addition of \$12 million in FFY 2018
Regionwide		Intersection Improvement Program	\$350,000	\$350,000	\$400,000	\$400,000						\$400,000		\$400,000	no funding carved out for program in FFYs 2016-18
Melrose	601553	Intersection & Signal Improvement to Lebanon Street, From Lynde Street to Main Street	\$4,405,030	\$4,405,030											advertised
Quincy	605729	Intersection & Signal Improvements at Hancock Street & East/West Squantum Streets	\$3,575,278	\$3,575,278											advertised
Boston	604761	Multi-use Trail Construction (South Bay Harbor) From Ruggles Station to Fort Point Channel	\$4,197,981	\$4,197,981											4th quarter ad date
Salem	605146	Reconstruction on Canal Street, From Washington Street & Mill Street to Loring Avenue & Jefferson Avenue	\$6,574,201	\$0		\$7,867,762						\$7,867,762		\$7,867,762	project moves out from FFY 2014 to FFY 2015; 4th quarter ad date; ROW concerns
Beverly	600220	Reconstruction & Signal Improvements on Rantoul Street (Route 1A) From Cabot Street (South) to Cabot Street (North)	\$15,748,818	\$19,932,199											project cost increase of \$4,183,381; 4th quarter ad date
Hanover	602602	Reconstruction of Washington Street (Route 53) and Related Work From the Route 3 Northbound Ramp to Webster Street (Route 123)	\$1,170,881	\$1,854,185											project cost increase of \$683,312; 4th quarter ad date
Reading	601705	Reconstruction of West Street, from Woburn City Line to Summer Ave/Willow Street	\$8,090,698	\$8,090,698											3rd quarter ad date
Boston	606284	Improvements to Commonwealth Avenue, From Amory Street to Alcorn Street			\$12,446,852	\$12,446,852						\$12,446,852	\$4,419,398	\$16,866,250	DPH held on 3/28/2012
Winchester, Stoneham, Woburn	604652	Tri-Community Bikeway			\$5,429,110	\$5,429,110						\$5,429,110		\$5,429,110	75% design plans submitted
Brookline	605110	Intersection & Signal Improvements at Route 9 & Village Square (Gateway East)			\$4,375,971	\$0		\$4,591,009				\$4,591,009	\$1,000,000	\$5,591,009	project moves out from FFY 2015 to FFY 2016; earliest ad date of FFY 2016
Marlborough	604810	Reconstruction of Route 85 (Maple Street)			\$5,190,122	\$0		\$5,397,727				\$5,397,727		\$5,397,727	project moves out from FFY 2015 to FFY 2016; earliest ad date of FFY 2016
Weymouth, Abington	601630	Reconstruction & Widening on Route 18 (Main Street) From Highland Place to Route 139*			\$10,079,388	\$15,383	\$7,883,133	\$21,520,974	\$7,895,719	\$21,445,401		\$42,981,758	\$14,771,760	\$57,753,518	project cost increase of \$17,122,525; adjustment to cash flows in FFY 2015-17; September 2015 ad date
Boston Region	456661	Clean Air and Mobility Program					\$374,850	\$374,850				\$374,850		\$374,850	
Bedford, Billerica, Burlington	29492	Middlesex Turnpike Improvements, From Crosby Drive North to Manning Road, Phase III					\$21,691,442	\$0		\$0	\$23,543,064	\$23,543,064	\$1,000,000	\$24,543,064	project moves out from FFY 2016 to FFY 2018; earliest ad date FFY 2017
Medway	605657	Reconstruction on Route 109, From Holliston Street to 100 Feet West of Highland Street				\$12,062,567	\$11,275,569	\$0				\$12,062,567		\$12,062,567	project cost increase of \$786,998; project moved up from FFY 2016 to FFY 2015; earliest ad date of 2015
Somerville, Medford		Green Line Extension Project (Phase 2), College Avenue to Mystic Valley Parkway/Route 16					\$8,100,000	\$8,100,000	\$29,900,000	\$29,900,000	\$44,200,000	\$82,200,000		\$82,200,000	Addition of \$44,200,000 in FFY 2018
Southborough	604989	Reconstruction of Main Street (Route 30), from Sears Road to Park Street						\$5,025,260	\$5,025,260	\$0		\$5,025,260		\$5,025,260	project moves up from FFY 2017 to FFY 2016; 25% DPH scheduled; earliest ad date of 2016
Woburn	604935	Reconstruction of Montvale Avenue, from I-93 Interchange to Central Street							\$4,752,838	\$4,752,838		\$4,752,838		\$4,752,838	earliest ad date of 2017
Boston	606460	Improvements at Audubon Circle							\$5,539,955	\$5,539,955		\$5,539,955		\$5,539,955	earliest ad date of 2017

DRAFT Total Available Regional Highway Target Funds:	\$78,961,899	\$78,961,899	\$67,921,442	\$68,221,673	\$74,950,144	\$75,009,821	\$74,950,144	\$75,009,821	\$75,009,821	\$75,009,821	\$293,251,136
Total Staff Recommendation Programmed Regional Highway Target Funds:	\$78,961,899	\$78,961,899	\$67,921,442	\$68,221,673	\$74,950,144	\$75,009,821	\$74,950,144	\$77,392,200	\$79,757,242	\$79,757,242	\$300,380,936
Regional Highway Target Funds Available:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$2,382,379)	(\$4,747,421)	(\$4,747,421)	(\$7,129,800)
CMAQ Target:	\$20,409,374	\$20,409,374	\$16,112,664	\$16,112,664	\$13,427,220	\$13,427,220	\$13,427,220	\$13,427,220	\$13,427,220	\$13,427,220	\$56,394,324
Estimated CMAQ Proposed:	\$25,598,554	\$21,979,570	\$14,656,361	\$17,829,110	\$13,474,850	\$15,744,281	\$23,563,945	\$23,427,220	\$13,427,220	\$13,427,220	\$70,427,831
HSIP Target:	\$5,907,977	\$5,907,977	\$4,774,123	\$4,774,123	\$4,296,710	\$4,296,710	\$4,296,710	\$4,296,710	\$4,296,710	\$4,296,710	\$17,664,253
Estimated HSIP Proposed:	\$7,399,747	\$7,018,731	\$4,190,122	\$5,000,000	\$3,000,000	\$4,190,122	\$4,752,838	\$4,752,838	\$0	\$0	\$13,942,960
TAP Target:	\$2,548,719	\$2,548,719	\$2,548,719	\$2,548,719	\$2,548,719	\$4,346,838	\$2,548,719	\$2,824,382	\$2,824,382	\$2,824,382	\$12,544,321
Estimated TAP Proposed:	\$2,548,719	\$2,548,719	\$2,548,719	\$2,548,719	\$2,548,719	\$4,346,838	\$2,548,719	\$5,539,955	\$0	\$0	\$12,435,512

*Assumes project cash flows, including earmark amounts are \$14,787,143 in FFY 2015, \$21,520,974 in FFY 2016, and \$21,445,401 in FFY 2017.
 Note: Projects in bold type are listed in the current Long-Range Transportation Plan, *Paths to a Sustainable Region*

- Indicates a change in project cost
- Indicates a project moved in to an earlier TIP element
- Indicates a project moved out to a later TIP element
- Indicates a new addition to the TIP
- Indicates removed from the TIP
- Indicates a new funding category

