

Updated Project Descriptions for UPWP Committee-  
Recommended New Projects for the Federal Fiscal  
Year 2014 Unified Planning Work Program



**STAFF:** Central Transportation Planning Staff

**CLIENT:** Boston Region MPO

**ID #:** New Project

**BUDGET:**

**STATUS:**

During MPO outreach, MAPC subregional groups identify transportation problems and issues that concern them. Often these issues are related to bottlenecks or lack of safe access to transportation facilities in their area. These issues can affect livability, quality of life, crash incidence, and air quality along an arterial and its side streets. If problems are not addressed, mobility, access, safety, economic development, and air quality are compromised.

To address comments from the MAPC subregional groups, staff will identify priority arterial bottleneck locations (or series of locations) in the MPO region, with an emphasis on the issues identified by the relevant subregional groups, and will develop recommendations for low-cost improvements. Special attention will be paid to the need for and feasibility of bus service along these arterial segments. Staff will consider numerous strategies to improve arterials, including examining and evaluating any or all of the following factors: traffic signals (equipment, retiming, redesign, and coordination); bus stop locations; processing buses through traffic lights; location and management of pedestrian crossings and signals, including ADA requirements; travel lane utilization by motorized and bicycle traffic; speed limit assessment; and access management. These corridor improvements could be recommended to implementing agencies and funded through various federal, state, and local sources, separately or in combination.

This project constitutes an additional phase of Addressing Safety, Mobility, and Access on Subregional Priority Arterial Roadways, which was included in the FFY 2013 UPWP.



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**BUDGET:**

**STATUS:**

FFY 2014 Activities and Expected Work Products: The specific tasks and work products associated with this project will be presented to the MPO in a work scope for approval to proceed.

**FHWA/FTA Grant Application Task and Element:  
 FFY 2014 Budget**

FFY14 Total Budget	FUNDING RECIPIENT(S)			FUNDING SOURCE(S)						
	CTPS	MAPC	MassDOT	PL	MPO \$5303	SPR	MassDOT	MassDOT \$5303	MBTA	Other



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**STATUS:**

As a recipient of FTA and FHWA funds, the MPO is required to comply with both Title VI of the Civil Rights Act of 1964 and the U. S. Department of Transportation's environmental justice policy. While there is significant overlap between the two, Title VI and EJ analyses are not interchangeable. Title VI is a Federal statute that prohibits discrimination on the basis of race, color, or national origin and applies to all activities, while EJ is an executive order that requires the identification of disproportionately high and adverse human health or environmental effects of programs, policies, or activities on minority populations and low-income populations; Title VI is one tool for achieving the principals of environmental justice.

Prior to 2012, Title VI and EJ requirements were paired. In 2012, the FTA developed separate policy guidance in the form of two circulars, one for Title VI and one for EJ. The FHWA continues to include EJ in its Title VI Nondiscrimination Handbook.

The MPO carries out various activities to support the inclusion of Title VI and environmental justice principles in the transportation planning process and to identify the needs of Title VI and environmental justice communities within the Boston Region. This study would take an overall look at the way that Boston Region MPO staff conduct environmental justice and Title VI analyses and identify opportunities for improvement and standardization. These recommendations would support the MPO in meeting the Title VI and EJ requirements of both FTA and FHWA; they may also enhance the MPO implementation of performance-based planning.

The study would consider four elements:

- Methodology
- Appropriate geographic levels for analysis and factors to consider in defining a project impact area or population affected
- Metrics for evaluating benefits and burdens
- Methods and thresholds for determining disparate impacts and disproportionate burdens



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**STATUS:**

Data to support this study could include the Massachusetts Household Travel Survey data, MBTA Systemwide Passenger Survey data, regional travel model data, and other data.

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*For more information on MPO environmental justice efforts, see “Transportation Equity/Environmental Justice Support” on page 5-25. For more information on Title VI Efforts carried out by MPO staff, see “Boston Region MPO Title VI Reporting” on Page 5-10, “MassDOT Title VI Program” on Page 7-X, and “MBTA Title VI Program Monitoring” on Page 7-X.*

**FHWA/FTA Grant Application Task and Element:  
FFY 2014 Budget**

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# IDENTIFYING AREAS WITH MODE SHIFT OPPORTUNITIES



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**BUDGET:**

**STATUS:**

This project would identify the areas in the region where there is the most potential for shifting travelers away from single-occupant-vehicle trips to other modes, such as transit, walking, and bicycling. This effort would support the Commonwealth’s mode shift goals, as documented in the GreenDOT Implementation Plan.

This project would be undertaken in partnership with the Metropolitan Area Planning Council (MAPC). To carry out this project, MPO staff would use existing and historical data on population and employment density, zero-vehicle households, and transit and roadway networks, along with other spatial datasets, to accomplish this goal. In the MPO’s part of the project, a statistical analysis would be conducted to determine what factors have been the most important determinants of successful transit service. Using this analysis, coupled with land use forecasts from MAPC, staff, could determine which areas would be most likely to support transit in the future. Using the same datasets, MAPC could conduct analysis for other modes, such as walking and biking, using datasets applied to other parts of the analysis. This information will be used in identifying areas in which to possibly focus mode-shift attention.

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**FHWA/FTA Grant Application Task and Element:  
FFY 2014 Budget**

FFY14 Total Budget	FUNDING RECIPIENT(S)			FUNDING SOURCE(S)						
	CTPS	MAPC	MassDOT	PL	MPO \$5303	SPR	MassDOT	MassDOT \$5303	MBTA	Other



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**BUDGET:**

**STATUS:**

The MBTA regularly receives requests from elected officials and the public for limited-stop service in many of the Key Route bus corridors. However, dividing existing vehicles on a route between limited-stop and local service would fail to provide an adequate level of service on either. This project would evaluate criteria and costs for establishing additional limited-stop bus services based on existing and future ridership demand, operating strategies, and equipment needs. This methodology could ultimately be used in RTAs beyond the MBTA. This project then would analyze which Key Route corridors would be most likely to support both local and limited-stop service, as well as estimate the resources needed to provide both types of service. The results of the analysis could be used to justify additional operating funds at some point in the future. If additional MBTA operating resources become available, the results of this study would be used to prioritize the implementation of limited-stop service on Key Routes.

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# PEDESTRIAN SIGNAL PHASING STUDY



**STAFF:** Central Transportation Planning Staff

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**ID #:** New Project

**BUDGET:**

**STATUS:**

The selection of pedestrian signal phasing involves many complicated factors and is challenging to traffic engineers. Exclusive pedestrian phasing is favored for its safety considerations for pedestrians, though at heavy pedestrian crossing locations, concurrent phasing can sometimes be more effective for both traffic and pedestrian flow while providing a similar level of safety for pedestrians.

Municipalities in the Boston Region MPO area have become increasingly interested in converting some of their intersection signals from an exclusive pedestrian phasing to a concurrent pedestrian phasing, but they have not been able to find useful references or guidelines. This study will review the existing practices and available guidelines for the two types of pedestrian signal operation, perform case studies in the MPO region (including analysis of crash data), compare both operations, and summarize the findings for the MPO's reference. This information will be disseminated to Boston-region municipalities through a variety of methods, which may include: 1) documents made available on the Boston Region MPO website; 2) information in the MPO's newsletter, TRANSREPORT; and 3) presentations at MPO information sessions and workshops, MAPC subregional meetings, and other regional gatherings. Municipalities could then apply this information in making transportation improvements.

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**BUDGET:**

**STATUS:**

Corridor analysis is a logical way to approach transportation studies in the region. Possible corridors of critical and strategic concern might best be viewed in a programmatic way. An arterial management roadway improvement effort would recommend conceptual improvements for corridors that the Congestion Management Process (CMP) and the Long-Range Transportation Plan (LRTP) identified as part of the needs assessment process. These corridor improvements could be recommended to implementing agencies and funded through various federal, state, and local sources, separately or in combination.

This project would constitute an additional phase of the Priority Corridors for Long-Range Transportation Plan (LRTP) Needs Assessment project, which was included in the FFY 2013 UPWP.

A particular corridor or several small sections of multiple corridors could be selected. This list, based on the LRTP needs assessment, includes candidate locations, some of which may already be under study.

- Route 9 in Framingham, Natick, and Southborough (West Corridor)
- Route 30 in Framingham (West Corridor)
- Mystic Valley Parkway in Medford (North Corridor/Central Area)
- Route 203 in Boston (Southwest Corridor/Central Area)
- Route 145 in Boston and Winthrop (Northeast Corridor/Central Area)
- Route 37 in Braintree (Southwest Corridor)
- Route 16 in Newton and Wellesley (West Corridor)
- Route 3A in Quincy and Weymouth (Southeast Corridor)
- Route 16 in Chelsea and Revere (Northeast Corridor/ Central Area)
- Route 140 in Wrentham (Southwest Corridor)
- Route 138 in Stoughton (Southwest Corridor)
- Route 1 in Norwood (Southwest Corridor)
- Route 3/3A in Burlington and Woburn (North Corridor)
- Route 60 in Arlington (Northwest Corridor)
- Route 140 in Franklin (Southwest Corridor)

*Note: Corridors are listed roughly in priority order according to traffic flow.*



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**FHWA/FTA Grant Application Task and Element:**

**FFY 2014 Budget**

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**TIP PROJECTS BEFORE-AFTER EVALUATION - FFY 2014**



**STAFF:** Central Transportation Planning Staff

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**ID #:** New Project

**BUDGET:**

**STATUS:**

This will be a study to identify the effectiveness of TIP projects, applying the same methods as the study completed in the FFY 2012 UPWP. Measuring project effectiveness is important in order to know whether the employed strategies work well and are therefore suitable for application in similar situations.

To this end, staff will select projects that were constructed in federal fiscal years 2010 and 2011. This will allow users at the project location to become familiar with the operations and for user demand to normalize in the area. The “before” data and relative measures of effectiveness will be gathered from existing functional design reports (FDRs) or traffic studies. The “after” data will be collected by MPO staff during FFY 2014. The measures of effectiveness will be calculated from these data.

The types of “before” and “after” data that will be collected and the associated performance measures that will be calculated depend on the types of project improvements that will be assessed and also on the primary objective of the TIP project. For example, for intersection improvement projects, intersection operations and safety will be evaluated using turning movement counts, operational performance measures, and crash data. Staff will compare the two sets of data and draw conclusions on changes in performance. This information would 1) aid Boston-region municipalities in developing transportation improvement projects, 2) support the Boston Region MPO in making decisions for future capital programming, and 3) enhance the MPO’s federally required performance-based planning activities.

**FFY 2014 Activities and Expected Work Products:** Activities associated with this project will be conducted as described above, and a report documenting the study results will be prepared.

**FHWA/FTA Grant Application Task and Element:  
FFY 2014 Budget**

FFY14 Total Budget	FUNDING RECIPIENT(S)			FUNDING SOURCE(S)						
	CTPS	MAPC	MassDOT	PL	MPO \$5303	SPR	MassDOT	MassDOT \$5303	MBTA	Other

# TRAFFIC SIGNAL RETIMING PROGRAM



**STAFF:** Central Transportation Planning Staff

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**ID #:** New Project

**BUDGET:**

**STATUS:**

This program will conduct detailed analyses and assessments in support of traffic signal retiming for intersections throughout the region. Traffic signal retiming is one of the most cost-effective ways to improve traffic movement through an intersection. The Institute of Transportation Engineers reports that comprehensive signal retiming programs have documented benefits of 7 to 13 percent reduction in overall travel time and 15 to 37 percent reduction in delay; traffic signal retiming also supports reduced fuel consumption. Signal timing should be reviewed throughout the region to evaluate its effectiveness and to make necessary changes. Phases can be implemented in order to achieve the most efficiency over time.

Candidate intersections for traffic signal retiming analysis may be based on information from the Congestion Management Process (CMP) intersection performance monitoring activities, as well as from the MPO's crash data.

Signal timing recommendations from these analyses could be implemented through the Intersections Improvement Program of the Transportation Improvement Program (TIP) or using funding from other federal, state, or local sources.

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## FHWA/FTA Grant Application Task and Element:

### FFY 2014 Budget

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# TRANSPORTATION INVESTMENTS FOR ECONOMIC DEVELOPMENT



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**ID #:** New Project

**BUDGET:**

**STATUS:**

This proposed study would examine which transportation investments may yield the greatest economic development benefits. Economic impacts can be assessed in terms of business output, value added (or gross regional product), property value, personal income, or jobs. By using economic analysis tools and other economic data, MPO staff would be able to describe potential economic development benefits in quantitative terms. The outputs of this study would inform the MPO’s efforts to prioritize transportation investments and would also support updates to the MPO’s Long-Range Transportation Plan. Analyses would focus on major infrastructure projects of regional significance.

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FFY 2014 Budget**

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	CTPS	MAPC	MassDOT	PL	MPO \$5303	SPR	MassDOT	MassDOT \$5303	MBTA	Other