

CTPS - FFY 2013 UPWP Universe of Proposed New Projects

MOBILITY															
Project Name	Total Cost	FFY 2013 UPWP Budget	Project Description	FFY 2013 UPWP Staff Evaluation	Link Land Use and Transportation.	Working w Limited Financial Resources	Using a Mngmt & Operations Approach	Protecting Air Quality and Environment	Preserving and Maintaining the System	Increasing Transit and Healthy Transportation Mode Share	Encouraging Sustainable Communities	Considering Transportation Equity	Addresses Documented Need (from CMP, RTP, PMT, YOUMOVE, METROFUTURE)	Foundational Study / Data Collection / Analysis Benefits	Comments
Household Survey-based Travel Profiles and Trends	N/A	N/A	<p>In 2011, the Massachusetts Travel Survey obtained travel information from 15,017 Massachusetts households, 10,399 of which were in the CTPS model region. Every household member prepared a diary for a specified day, and reported all trips, mode of travel, and the type of activity at each visited location from the beginning of the day to the end. A similar survey using a smaller sample (3,743 households) was undertaken in 1991 for the CTPS model region only. The 1991 survey was used for model development and later topical investigations.</p> <p>The proposed study would have two primary purposes. First, it would analyze the 2011 survey in order to create a statistical household and travel profile of the CTPS model region. Second it would develop a set of comparisons between 1991 and 2011 with respect to trip making patterns and household characteristics such as household size, income, and auto ownership. Of particular interest is measuring any trends in the average length of trip by trip purpose, travel mode, and time of day travel distributions, auto occupancy, and travel speeds. Measuring these trends may have important implications for calibration and validation of the current CTPS model set.</p>									✓	✓		
CharlieCard Trip Paths Study, Phase II	N/A	N/A	<p>The MBTA Charlie Card Trip Paths Pilot Study conducted by CTPS in 2011 created a set of computer programs to generate station-to-station trip tables for the MBTA rail rapid transit system. These used as input daily station entry reports from the MBTA's automated fare collection (AFC) system. For planning purposes, it would be very useful to be able to calculate travel volumes over individual links in the system at hourly or even finer levels. The results of the Pilot Study indicated that it would be feasible to adapt the trip-table programs to generate such line-volume tables. The trip tables generated by the 2011 programs do not separate passengers by mode of access to or egress from the rapid transit system. However, with additional programming it would be feasible to produce tables for subgroups such as station-to-station travel by passengers transferring to or from MBTA buses, commuter rail trains, or commuter boats. This second phase of the study would create the additional programming needed to generate tables of line volumes and transfers.</p>		✓	✓	✓		✓			✓			
Freight Study	N/A	N/A	<p>Since freight considerations are so integral to the transportation planning process, this will be incorporated into an ongoing freight program activity.</p>												
Regional HOV Systems Planning Phase II	\$60,000	\$60,000	<p>Provision of HOV facilities can be helpful in making more efficient use of our existing express highways by providing a superior level of service for multiple occupancy vehicles and encouraging the use of public transportation. Potential types of facilities may include queue bypasses, contraflow lanes on existing pavement, and separate new HOV lanes.</p> <p>In Phase I of HOV systems planning, rules of thumb are being developed to illustrate where in our express highway system HOV facilities might be considered, and where they could yield the highest benefits relative to construction feasibility.</p> <p>Phase 2 of HOV systems planning will concentrate on the I-93 corridor north of Boston, which will be identified as having a high priority for potential HOV systems implementation, as well as having major relevance to on-going projects. In this corridor, a number of projects are in the planning and/or implementation stage where the designs would be impacted by the expectation of potential future HOV facilities. These include planned improvements to the I-93/I-95 interchange in Woburn/Reading/Stoneham, the expected construction of a new Tri-Town interchange in Andover/Tewksbury/Wilmington, rebuilding of the Route 110/Route 113 interchange in Methuen, and the widening of I-93 from six lanes to eight from Route 125 in Wilmington to the New Hampshire state line. This study would be the second part of a phased program considering the potential for new HOV facilities in the Boston region.</p>		✓	✓	✓		✓			✓			
					✓	Major Consideration		✓	Minor Consideration						

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MOBILITY (CONT.)

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Express Highway Vehicle Occupancy and Classification Counts	N/A	N/A	<p>Understanding the composition of traffic on regional roadways is important for modeling, planning, and policy purposes. Unfortunately, these are among the most difficult data to obtain. Occupancy measurement is impossible by technical methods, and requires direct observation. Vehicle type also requires direct observation for all but an extremely limited set of instances. Hazardous cargoes require direct observation, and are looming larger as a public policy and modeling issue.</p> <p>The proposed study will begin the process of building a broad, regional sample of occupancies and vehicle classifications at various express highway locations in the CTPS model region. Occupancy and classification data will correspond with CTPS trip table assignment categories, and data will be obtained in both peak and off-peak directions, as well as during the midday. Preliminary work indicates significant variations in traffic composition by location, direction, and time period. These counts may also help to validate other classification methods used in Massachusetts.</p>										✓	✓	
					✓	Major Consideration		✓		Minor Consideration					

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LIVABILITY

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					✓	✓		✓		✓	✓		✓		
Effects of Bicycle on MBTA Access	N/A	N/A	While some MBTA stations are well connected to a network of bicycle lanes, trails, and paths (bicycle facilities), others are relatively isolated to bicyclists. There is also significant variation in the number and quality of amenities at T stations. Other bicycle-related projects in the 2012 UPWP provide a solid foundation for this project by identifying access-starved and dangerous stations, but they stop short of determining what benefit filling these gaps might have on the usage of recommended facilities. Using existing data from the CMP's bicycle inventory, GIS, the MBTA systemwide survey, trail counts, and previous project products, this project would determine what impact improving bicycle access (and by extension, safety) and the amenities at T stations does to increase the number of people who ride their bicycles to T stations. Using a regression analysis, the impact of different types of bicycle facilities and amenities could be estimated. The theoretical number of additional people who would bicycle (or some other benchmark derived from the study) could be added into TIP project criteria.		✓	✓		✓		✓	✓		✓		
Bicyclist Safety Improvements at Selected Intersections	N/A	N/A	Bicyclist crash data has been collected since 1995, and contains detailed information about crash type, severity, location, weather condition, and date and time. This study would utilize these crash reports to identify key conflict points and intersections throughout the region that have a disproportionately high number of bicyclist fatalities and injuries. Common safety challenges would be identified for each community context, and be used to inform potential low-cost safety improvements. Common challenges could include inadequate bicycle facilities, high traffic speeds, and right of way constraints. Potential improvements might involve incorporating a buffer between automobile traffic and bicyclists, improving bicycle and pedestrian accommodations on the approach to the intersection, or continuing bicycle facilities through intersections.		✓	✓		✓		✓	✓		✓		
Economic Benefit Assessment of Transportation Investments	\$60,000	\$60,000	Transportation and economic development are closely linked. The transportation system provides access to supplies, goods, and services and allows for their circulation. Transportation investments improve access to jobs and commercial centers. Investments in transportation can produce short-term construction jobs, new long-term jobs, and expand the size of the labor market. This study would explore how the MPO can quantify the economic benefits of projects under consideration for programming in the Transportation Improvement Program (TIP) and Long-Range Transportation Plan (LRTP). As a broad scale scenario planning review of the collective projects in the LRTP, the study would consider the relative differences, in economic terms, between making the transportation investments in the LRTP, opposed to a base-case scenario. It may do so by studying the relative economic benefits of projects currently programmed in the TIP and LRTP and applying the lessons learned in future project evaluations. This study will explore the use of the software program TREDIS (Transportation Economic Development Impact System) in conducting these evaluations. Among the many measures that could be used to evaluate economic benefits are total employment growth, transportation-related job growth, dollars invested in a brownfield area as a result of a transportation project, dollars invested in transit-oriented development as a result of a transportation project, and monetary value of time savings or improved accessibility resulting from a transportation project.								✓		✓	✓	
Transportation Access Studies of Commercial Business Districts	N/A	N/A	these areas is often governed by perceptions that may or may not be correct. Understanding the transportation access mode and spending and visiting characteristics of CBD patrons would help planners in their work with businesses to improve transportation access to CBDs. Other planning agencies have conducted similar surveys of business patrons about their transportation access mode. Finally, CTPS would also conduct a CBD-user survey asking questions about demographics (age, income, vehicle availability, etc.) as well as users' stated preferences (i.e. what mode would users prefer for transportation access). The resulting summaries from this study could be used to inform planning processes that are debating transportation access. Subsequent studies by CTPS could use the model refined by the study to analyze transportation access in other areas.		✓	✓		✓		✓	✓		✓		
					✓	Major Consideration		✓	Minor Consideration						

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SAFETY AND OPERATIONS

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Low-Cost Safety Improvements at Interchanges with High Crash Rates	\$60,000	\$60,000	<p>In the recent LRTP, MPO staff reviewed safety problems on the highway network and identified the top 25 crash locations in the Boston Region, of which many are clover-leaf interchanges. This study will identify cost-effective, safety improvements for three interchange locations. The selection of the three locations will be done according interchange performance for safety and in consultation with the interchange data base of the CMP that includes traffic volumes and safety index statistics. In addition, for location selection, staff will review interchange project lists contained in the LRTP and consult with MassDOT highway division district staff. The improvements will include improved signage, realignment, restriping, and installation guardrails.</p> <p>Consistent with performance-based planning and follow-up on the needs assessment in the LRTP, this study relates to the LRTP's vision for improved safety and related policies. As the implementation of these eventual recommendations are envisioned to be within the maintenance responsibilities of MassDOT highway district staff, implementation efficacy will be largely warranted by the fact that MassDOT district staff will be consulted regarding location selection and will participate in designing the improvements. In addition, MassDOT participation would make this study relevant to the agency's safety goals and objectives. Furthermore, low-cost improvements through MassDOT maintenance will assure relatively quick implementation. And, this assures that the study has effective safety outcomes.</p>			✓	✓	✓	✓				✓		
Address Bottlenecks on MPO Region Arterials	\$120,000	\$120,000	<p>The quality of transportation service, crash incidence, and air quality along an arterial and its side streets largely depends on the presence, size and duration of bottlenecks along it. At bottlenecks, traffic flow for passenger cars, freight movements, bus riders, and non-motorized users can be affected, safety is compromised, and air quality can become worse for all.</p> <p>Consistent with federal requirements and guidance and with MPO policies, staff will identify priority arterial bottleneck locations (or series of locations) in the MPO region, with emphasis in EJ areas and will develop recommendations for low-cost improvements that will improve safety and mobility. Special attention will be paid to bus service along these arterial segments. Staff will consider numerous strategies to reduce bottlenecks including examining and evaluating: traffic signals (equipment, retiming, redesign, and coordination); bus stops locations; processing buses through traffic lights; location and management of pedestrian crossings and signals; travel lane utilization by motorized and bicycle traffic; speed limit assessment; and access management.</p>		✓	✓	✓	✓	✓	✓	✓	✓	✓		
					✓	Major Consideration			✓	Minor Consideration					

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REGIONAL EQUITY															
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EJ-Analysis Methodology Review	N/A	N/A	This study would analyze the way that CTPS conducts its environmental justice (EJ) analysis specifically for transit projects such as a fare increase or service change, but the study would also have implications for EJ analyses of other transportation projects. The study would consider four elements: methodology, service area, thresholds, and metrics. With regard to methodology, the travel demand model set currently assigns an EJ designation for each TAZ. An alternative methodology could use the Systemwide Passenger Survey results to assign an EJ designation for each transit mode. The study would consider which methodology is best for analyzing the EJ impacts on transit riders. With regard to service area, the travel demand model set currently uses two potential service areas for certain analyses: one for the entire travel demand model set area and one for a smaller, urban area. The study would consider the rationale for having these two service areas. With regard to thresholds, the travel demand model set currently assumes a 40-minute travel time as the accessibility threshold for transit trips. The study would consider whether this threshold could be refined. Finally, with regard to metrics, the study would consider which metrics from the travel demand model set provide the most useful information for an EJ analysis. These metrics include average fare, access distance, in-vehicle travel time, number of transfers, etc... The study will also include consideration of FTA's proposed new circular (FTA-C-4702.1B) on Title VI compliance.									✓		✓	
Household Survey-based Comparisons between Income and Racial Groups	N/A	N/A	The 2011 Massachusetts Travel Survey obtained travel information from households on a statewide basis. Every member in selected households prepared a diary for a specific day and reported all trips, method of travel, and the type of activity at each location visited from the beginning to the end of that day. The survey method was designed to have representative results by income and race. In keeping with the MPO's Transportation Equity vision of conducting analyses of the transportation needs of low-income and minority populations, this proposed study would analyze household survey data (including variables such as trip length, number of trips, types of trips, and modes used) for low-income and minority households and compare them with data from non-minority and higher income households to determine what the differences are. This data will be analyzed in comparison with the LRTP Needs Assessment issues to identify specific recommendations for needed improvements.									✓		✓	
					✓ Major Consideration				✓ Minor Consideration						