



APPENDIX A

Other Boston Region Transportation Planning Studies

This appendix consists of brief descriptions of planning studies that will be conducted in the Boston Region Metropolitan Planning Organization (MPO) area by individual agencies, such as the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA), during federal fiscal year (FFY) 2019. MPO discretionary funding will not be used for these studies, although in certain instances an agency or one of its consultants may contract with MPO staff—the Central Transportation Planning Staff (CTPS)—to prepare an environmental impact report or large-scale study. For these projects, support work that will be conducted by CTPS is described in Chapters 3 through 6. Likewise, the project listings in this appendix indicate whether components of the projects will be conducted by CTPS. The projects in this appendix are not subject to the MPO’s public participation process. Rather, they follow their own public processes, parts of which may be required by the Massachusetts Environmental Policy Act. They are included here to provide a more complete picture of the surface-transportation-planning projects occurring in the region. The listings contained in this appendix were provided to CTPS prior to June 8, 2018.

REGIONAL CORRIDOR OR TRANSIT STUDIES

Bus Rapid Transit Planning ***Agency: MAPC, City of Boston, Barr Foundation***

Boston Bus Rapid Transit (BRT) Planning was formed in an effort to popularize the concept of bus rapid transit in the Boston region. This effort involves the Barr Foundation, the City of Boston, the Metropolitan Area Planning Council (MAPC), and other entities. In 2016, Boston BRT issued a report about Gold Standard BRT in the Boston area, and since then has conducted various outreach, advocacy, research, and pilot activities. A pilot program in May and June 2017 tested the possibility of all-door boarding on the Silver Line between Downtown Crossing and Dudley Station. Future plans involve further research, advocacy, and potential demonstration projects.

SUBREGIONAL PLANS AND STUDIES

MetroWest LandLine: Phase 1 ***Agency: MetroWest Regional Collaborative (MAPC subregion)***

MetroWest cities and towns boast a large number of lovely paths and trails, but many of them do not connect. With the MetroWest LandLine Phase I project, MAPC’s MetroWest Regional Collaborative (MWRC) is taking the first step to connect the trails and transform them into an active, cohesive, regional transportation and recreational network called the MetroWest Landline.

This project will launch in fall 2018. MAPC's transportation team, working with MWRC members, will develop and promote an action plan to close one priority gap in each participating city and town. This joint effort will build community support for those action plans and for further strengthening the MetroWest LandLine.

Tri-Town Efficiency and Regionalization Transit Study

Agencies: Towns of Lexington, Burlington, and Bedford

The Tri-Town Efficiency and Regionalization Transit Study will provide an assessment of the three municipalities' existing transportation services and programs, as well as other local and regional public transportation systems.

The first phase of this study will assess existing and future transportation needs of the three communities, and identify opportunities and the potential for sharing and (or) reallocating resources. This effort would identify

- Current and future demand that is not being met
- Existing and future funding challenges
- Opportunities to coordinate, and reorganize resources

The same consultant who conducts the first phase of this study also could provide the second phase, depending upon his or her qualifications. The second phase will involve outlining in detail how the opportunities identified in the first phase of the study could be implemented. This will involve developing a specific implementation plan, which would include, but is not limited to the following:

- Creating an inter-municipal agreement
- Developing overlapping and coordinated service schedules
- Reallocating resources and developing budget
- Identifying potential cost savings and customer-service improvements

The objectives of the Tri-Town Efficiency and Regionalization Transit Study are to identify the following:

- Unmet transportation needs of Lexington, Bedford, and Burlington
- Opportunities for enhanced services, efficiencies, and cost reduction through shared resources
- Demands related to changing demographics and age distribution
- Gaps in current transportation programs and services

- New transportation programs and services
- An engagement and marketing plan for any new programs and services

The study is funded by the Commonwealth of Massachusetts' Division of Local Services Efficiency and Regionalization Grant.

CORRIDOR OR LOCATION STUDIES

Allston Regional Transportation Study ***Agency: MAPC***

The Allston Regional Transportation Study will examine opportunities to maximize existing and future non-automobile travel within and through the Harvard Enterprise Research Campus, Beacon Park Yards, and nearby areas. The study will attempt to determine which implementation strategies and capital improvements will achieve the highest level of non-automobile mode share among trips generated by future growth in Allston and nearby parts of Boston, Cambridge, and Brookline. Based on different development scenarios for Beacon Park Yards and projected growth estimates for nearby population and employment centers, the study will evaluate the accessibility benefits, usability, and transit ridership potential of varied sustainable transportation alternatives.

Interstate 90 Allston Interchange Placemaking Study ***Agency: City of Boston***

Major infrastructure changes that are currently being planned around the I-90 Allston Interchange will unlock the potential for a large, new mixed-use district in North Allston. The sprawling railyards and existing I-90 Massachusetts Turnpike interchange in this area of Boston will be replaced by a more compact interchange and multi-modal network of streets, paths, rail, and transit facilities. The Placemaking Report provides guidance and recommendations for redesign of the transportation infrastructure in and around the I-90 Allston Interchange. The goal is to enable outstanding urban places and spaces to emerge as specific master plans and redevelopment proposals are brought forward in the future.

For more information, visit www.bostonplans.org/planning/planning-initiatives/i-90-allston-interchange.

Dudley Square Complete Streets Design Project ***Agency: City of Boston***

The Dudley Square Complete Streets Design Project is a community planning process, led by the Boston Transportation Department, which will develop roadway, intersection, and streetscape designs for construction in Dudley Square. The initiative aims to modernize existing conditions and bolster the ongoing municipal and private investment projects in Dudley Square, including the Ferdinand Building and the

former Area B-2 police station site. The project will consider a range of improvements for traffic, parking, buses, pedestrians, bicycles, accessibility, and overall safety and aesthetics of the streets and sidewalks. Special emphasis will be given to developing plans that improve the multimodal environment of Dudley Square and build upon previous planning initiatives. The study area is bounded by Dudley Street between Shawmut Avenue and Harrison Avenue, Washington Street between Shawmut Extension and Melnea Cass Boulevard, and Warren Street between Kearsarge Avenue and Washington Street.

Fairmount Planning Initiatives

Agency: Various

State transportation agencies are partnering with federal agencies, the City of Boston, and neighborhood-based organizations on a number of planning initiatives designed to improve access to transit and promote sustainable development in the Fairmount Corridor. These initiatives, which are underway as the MBTA completes major infrastructure improvements and three of the four planned new stations on the Fairmount Line, include the following:

- **Fairmount Corridor Business Development and Transit Ridership Growth Strategy:** The Fairmount Indigo CDC Collaborative, along with the MBTA, has received a Transportation, Community, and System Preservation grant to improve the transit service connection to job development sites in the Fairmount Corridor.
- **Fairmount Indigo Corridor Planning Initiative:** The Boston Planning and Development Agency is spearheading this planning process, which involves participation of community and agency stakeholders. The agency is developing a vision for corridor land use and neighborhood change that is focused on enhanced transit, and an action plan for targeted redevelopment and public infrastructure upgrades at station areas.

Rutherford Avenue—Sullivan Square Design Project, Charlestown

Agency: City of Boston

The City of Boston is proceeding with the redesign of the Rutherford Avenue corridor in Charlestown, which extends about 1.5 miles from the North Washington Street Bridge to Sullivan Square and provides a critical connection between Everett, Somerville, suburbs north and east of Boston, and Boston's downtown business area. The corridor's highway-like design is inconsistent with present-day design preferences and local circumstances, and the function and design of the Sullivan Square rotary is problematic. Pedestrian mobility is limited and bicycle travel is not compatible with the high-speed road. The corridor is eight-to-10 lanes wide (120 to 140 feet), presenting a significant barrier between areas on either side of the roadway, such as the Bunker Hill Community College, Paul Revere Park, the Hood Business Park employment area, and MBTA rapid transit stations.

There are significant transit-oriented development opportunities along the corridor, and public investment in new infrastructure will support development of commercial and residential uses, whose tenants otherwise probably would not, or could not, locate to the area. A number of major structural elements in the corridor were constructed more than 60 years ago; they are approaching the end of their life cycle and will need to be replaced. With the Central Artery/Tunnel project now complete, more traffic remains on facilities such as I-93 and US Route 1; therefore, reduced traffic volumes along Rutherford Avenue presents a unique opportunity to transform the corridor's character from a 1950s-era automobile-oriented facility to a 21st-century multimodal urban boulevard corridor that will accommodate private development.

Edgell Road Corridor Study

Agency: City of Framingham

The Department of Public Works in Framingham developed a draft Complete Streets assessment of the Edgell Road corridor from Vernon Road north to the Edmands Road and Water Street intersection. The evaluation recommends enhancements and improvements at six key intersections. Tasks undertaken for this study will include evaluating existing and projected traffic conditions; reviewing current bicycle and pedestrian accommodations in accordance with the town's Complete Streets policy (adopted January 2015) and current standards set by the Americans with Disabilities Act (ADA) and Massachusetts Architectural Access Board (AAB); taking inventory of needed improvements and ADA ramp concept designs; researching usability; analyzing crash data; and developing improvement alternatives.

Pedestrian/Bicycle Crossing of the Mystic River ***Agency: City of Everett***

This study will select a location for a bicycle and pedestrian crossing over the Mystic River from the Wynn Resort and Mystic View Park to Draw 7 Park in Somerville; and develop 25 percent design plans for the bridge. This connection—a further extension of the Northern Strand Trail from Everett—would link to the developing path network on the east side of the Mystic River; completing a 10-mile continuous off-road path from the North Shore to the City of Boston.

Extension of the Northern Strand Bike Trail

Agency: City of Everett

This study will determine an appropriate path and develop a conceptual design to extend the Northern Strand Community Trail (NSCT) to the Mystic River. The NSCT currently runs from Lynn to Everett, ending just north of Revere Beach Parkway in Everett. The future extension would make connections to the Mystic River, Wynn Resort, Gateway Shopping Center, and Mystic View Park.

Lower Broadway Dedicated Bus Lane Study and Design Agency: City of Everett

Seeking to build upon the success of the upper Broadway bus lane, the City of Everett plans to extend a bus-only lane south to the city limits on Route 99 and Broadway. In addition to developing a traffic analysis and conceptual design, this study would determine how such a lane would be constructed and the extent of right-of-way acquisitions required.

Second Street Reconstruction Agency: City of Everett

The Everett Transit Action Plan (2016) identified a future transit route that would extend the Silver Line Gateway from Chelsea to Everett Square utilizing the existing MBTA right-of-way and Second Street in the City of Everett. This study will develop a conceptual design for reconstructing Second Street to accommodate existing vehicular traffic and incorporate dedicated bicycle and bus lanes from the Chelsea line to Everett Square.

Sweetser Circle Visioning Process Agency: City of Everett

Sweetser Circle is the interchange between Revere Beach Parkway (Route 16), Broadway (Route 99), and Main Street in Everett. It is a very congested and dangerous intersection that does not have adequate accommodations for transit, bicycles, or pedestrians. The existing roadway layout also prevents access to more than 10 acres of un-used parkland. This study would begin to develop a new vision for the roadway and parklands in this area that would inform future maintenance and reconstruction of the interchange.

North Station Area Mobility Action Plan Agency: City of Boston

The goal of the North Station Area Mobility Action Plan is to develop a set of near-term, multimodal transportation improvements in the areas immediately adjacent to Boston's North Station. The project area—bounded by North Washington Street, Cross Street, Sudbury Street, Cambridge Street, and the Charles River—continues to experience significant development, and increasing density levels present new mobility challenges. Overall goals of the project include providing easier vehicle access; specifying pedestrian priority on certain streets; organizing shuttle operations; and improving access to local businesses and residences.

For more information, visit www.bostonplans.org/planning/planning-initiatives/nsamap2016.

PLAN: Glover's Corner, Dorchester Agency: City of Boston

The study area at Glover's Corner in Dorchester (between the Fields Corner and Savin Hill Stations) is increasing in density and this growth is expected to affect the transportation system. This initiative will prepare for future economic development

and transportation demands by creating a future vision and physical plan, focusing on locations where the multi-modal transportation network is currently limited and constrained. The future network will need to include enhancements to existing Red Line station access and comprehensive bus services. Just as important, a safe and effective network for cyclists and pedestrians will be required. Transportation network capacity constraints will influence and inform land uses and build-out scenarios.

For more information, visit www.bostonplans.org/planning/planning-initiatives/plan-dorchester-glovers-corner.

PLAN: JP/ROX

Agency: City of Boston

The PLAN: JP/ROX provided recommendations and strategies for affordable housing, jobs and businesses; guidelines for urban design; and improvements to transportation connections, open space, sustainability, and the public realm. The study examined the compatibility of different land uses, including housing, commercial, and light industrial, while studying the impacts of traffic and other forms of mobility in the study area. Of particular focus was the recent wave of mixed-use residential projects in the area, and determining the implications of redevelopment and areas of opportunity. The two-and-a-half year planning process engaged the communities between Forest Hills, Egleston Square and Jackson Square, generally bounded by Washington Street, Columbus Avenue, and Amory Street. Some aspects of PLAN: JP/ROX, including the transportation planning aspect, are ongoing.

For more information, visit www.bostonplans.org/planning/planning-initiatives/plan-jp-rox.

PLAN: South Boston Dorchester Avenue ***Agency: City of Boston***

The Dorchester Avenue corridor in South Boston presents a unique opportunity to craft a vision for an area that is evolving. This initiative establishes goals and strategies that will help drive short- and long-term investments in a new network of streets, public parks and green space; a range of housing types; and commercial and retail activity in South Boston. This plan will also be the foundation for updating zoning in the area so that it aligns with the community's vision and creates predictable conditions for future development.

For more information, visit www.bostonplans.org/planning/planning-initiatives/plan-south-boston-dorchester-ave.

Logan Airport Automated People Mover Study Agency: Massport

As part of Massport’s robust strategic planning for the future of Logan Airport, the Authority is releasing a Request for Qualifications (RFQ) to help evaluate the possible development and implementation of an Automated People Mover (APM) at Logan Airport to alleviate traffic congestion on airport roadways because of increased and projected passenger volumes.

CITYWIDE PROGRAMS OR STUDIES

Transportation Master Plan

Agency: City of Framingham

The Department of Public Works in Framingham is undertaking a three-part transportation plan in conjunction with an economic development plan to identify the effects of anticipated growth on transportation systems. This plan will identify mitigation strategies and improvements on the town’s roadways and bicycle and pedestrian pathways, such as traffic-calming updates; neighborhood outreach efforts; and other transportation-related work. Part 1 of the Transportation Master Plan is currently underway. Part 2 is expected to commence in the near future along with the economic development plan. This comprehensive plan for the town’s transportation systems will provide a long-term road map for implementing improvements and maintenance. The plan will address transportation systems owned and operated by the Town of Framingham, as well as connections to railroads and state highways.

Foxborough Local Bus Service

Agency: Town of Foxborough

The Town of Foxborough is working with the Greater Attleboro Taunton Regional Transit Authority and the Neponset Valley Transportation Management Association (TMA) to establish local bus service between downtown Foxborough and Patriot Place and Gillette Stadium. This bus service will attend three out four of Foxborough’s Growth Nodes, identified in the town’s 2015 Master Plan, as priority areas for development.

Neighborhood Slow Streets

Agency: City of Boston

Each year, Boston residents, neighborhood associations, and other community-based organizations can apply to have traffic-calming measures implemented in a specific neighborhood. Selected neighborhoods will work with the Boston Transportation Department and Public Works Department to plan and implement their Neighborhood Slow Streets project. Rather than planning and implementing changes one street at a time, the city will address an entire zone within a neighborhood. A typical zone will consist of 10-to-15 blocks. The Slow Streets program will emphasize quick-install, low-cost fixes, such as signage, pavement markings, speed humps, and daylighting (that is, repositioning obstacles at street corners so that drivers’ sight lines are clearer).

Performance Parking Pilot

Agency: City of Boston

The Performance Parking Pilot initiative aims to set more parking spots aside for motorists to access Boston’s busiest neighborhoods. The initiative is studying how the city can use flexible meter rates to reduce the amount of time it takes to find a parking space. The meter prices may go up or down depending on the number of parking spaces occupied on certain blocks. The price will stabilize when the number of occupied spots reaches an occupancy target, which is about one open space per block. In other cities, flexible meter rates have been shown to increase availability of parking spots. By raising meter rates in Boston’s most congested areas, the city could direct motorists to less busy streets where they could find spots quickly, boost the use of public transportation, and encourage motorists who intend to park for a long time to use off-street parking.

DriveBoston

Agency: City of Boston

DriveBoston is the City of Boston’s program for providing parking spaces for car-share vehicles. In the pilot phase of the program—which started in fall 2015 and lasted 18 months—80 spaces were made available for car-share vehicles throughout the city; 49 spaces in municipal lots and 31 spaces curbside on city streets. Working with Zipcar and Enterprise CarShare, Boston Transportation Department planners visited a number of locations and selected places that would have the most benefit for residents, with the least impact on regular street operations and parking.

Go Boston 2030—Mobility Plan

Agency: City of Boston

Go Boston 2030 is the City of Boston’s long-term mobility plan that envisions a bold transportation future. At the outset of the planning, a Vision Framework was developed based on 5,000 questions and comments collected from the public. Then, in spring 2016, more than 4,000 people gave feedback about the type of future and the projects and policies that they wanted to prioritize. Their ideas were used to develop a Vision and Action Plan, which was released in March 2017. The Vision and Action Plan include goals and aspirational targets as well as details about the planned projects and policies.

For more information, visit www.boston.gov/transportation/go-boston-2030.

Green Links

Agency: City of Boston

The goal for Boston Green Links is to create a connected network of paths and low-stress corridors that people of all ages and abilities can use, whether on foot, bicycle, or assisted-mobility device. The citywide plan will connect people in every Boston neighborhood to the city’s greenway network by installing new paths and bike facilities, and creating safer road crossings. The plan includes projects in progress

by the city, the Department of Conservation and Recreation, community groups, and others, as well as new projects developed with local input. The plan will be implemented over time, through grants, partnerships, and city-funded projects.

For more information, visit www.boston.gov/transportation/boston-green-links.

Neighborhood Bike Projects

Agency: City of Boston

A City of Boston goal is to build a complete bicycle network that will connect residents to jobs, open space, educational opportunities, and shops. In accordance with citywide planning efforts, Imagine Boston and Go Boston 2030, the city's departments continue to work together to plan, design, and fund transportation projects that improve streets for all users, including by identifying neighborhood connections that help complete the bike network. Typically the city adds or improves several miles of its bike routes on Boston streets each year.

For more information, visit www.boston.gov/departments/boston-bikes/neighborhood-bike-projects.

Autonomous Vehicles

Agency: City of Boston

Autonomous vehicles offer the promise of helping to achieve the goal of zero deaths and injuries from traffic crashes. On the other hand, these vehicles could displace an important workforce (that is, professional drivers of various service vehicles) and encourage both sprawl and traffic congestion. In cooperation with MassDOT, the City of Boston launched an autonomous-vehicle testing program to try to shape the development of this technology, and create policies to deliver on autonomous vehicles' potential promise while minimizing their drawbacks.

For more information, visit www.boston.gov/innovation-and-technology/autonomous-vehicles-bostons-approach.

Woburn Center Traffic Study

Agency: City of Woburn

The purpose of the study is to determine a safer and more effective traffic configuration for the roadway surrounding Woburn Common. (Currently, traffic from other communities comes through Woburn's town center, especially when the highways are backed up. The City of Woburn has been told by traffic engineers that this project is a prime candidate for the Highway Safety Improvement Program.) The city is currently funding the study and design, and expects to seek TIP funding for the eventual redesign when it is finalized.

Woburn Truck Route Study

Agency: City of Woburn

The City of Woburn is planning to start a six-to-seven month study of truck traffic throughout the city with an eye toward designating truck routes (or as appropriate, truck exclusion routes).

REGIONWIDE OR LONGER-RANGE PLANNING EFFORTS

NEC FUTURE

Agency: Federal Railroad Administration

NEC FUTURE is a comprehensive federal planning effort, launched by the Federal Railroad Administration (FRA) in February 2012, to define, evaluate, and prioritize future investments in the Northeast Corridor (NEC), from Washington, D.C. to Boston. The FRA has initiated a comprehensive planning process for future investment in the corridor through 2040. Through the NEC FUTURE program, the FRA will determine a long-term vision and investment program for the NEC, including the preparation of a Tier 1 Environmental Impact Statement and Service Development Plan (in support of that vision. Technical work will include analyzing market conditions in the corridor; developing program alternatives; and evaluating the environmental impacts of those alternatives. The FRA will recommend an approach that balances the needs of various users of the corridor—commuters, intercity passengers, and freight operators—in a manner that ensures safe, efficient travel throughout the Northeast. The NEC Future process has proceeded to Phase 2, which is ongoing.

For more information, visit the NEC Future website at www.necfuture.com/.

New England University Transportation Center (Region One)

Agency: Colleges and Universities

The New England University Transportation Center (Region One) is a research consortium which includes the Massachusetts Institute of Technology (lead university), Harvard University, and the state universities of Massachusetts, Connecticut, and Maine. It is funded by the U.S. Department of Transportation's University Transportation Centers (UTC) Program. The New England UTC conducts multiyear research programs that seek to assess and make improvements for transportation safety as well as develop a systems-level understanding of livable communities.

For further information, visit the New England University Transportation Center's website, utc.mit.edu/.



APPENDIX B

Public Participation

MPO staff followed the procedures set forth in the MPO's adopted *Public Participation Plan for the Boston Region Metropolitan Planning Organization* when developing the FFY 2019 UPWP. These procedures are designed to ensure early and continued public involvement in the transportation-planning process.

The FFY 2019 UPWP development process began in November 2018. Staff solicited topics for study through outreach at Metropolitan Area Planning Council (MAPC) subregional municipal group meetings. Staff also sought suggestions and public input from other sources:

- Regional Transportation Advisory Council (Advisory Council) meetings
- Outreach to transportation advocacy and community groups
- Monthly "Office Hours"—during which MPO staff made themselves available, either in person or on the phone, to interested stakeholders
- Comments received during the FFY 2018 public review period
- Topics generated from recently completed planning studies and documents

Interest in planning studies covered numerous potential areas of regional transportation planning, including: reverse commuting; modern methods for accounting for roadway usage; demographic changes; the effects of land-use development; the impacts of automated and electric vehicles; transit service improvements and coordination; and best practices for bicycle and pedestrian planning.

The document development process, described in Chapter 1, culminated in the MPO UPWP Committee's recommendation for the FFY 2019 UPWP, including a set of new discrete studies. On May 3, the MPO approved a draft document for public circulation.

After receiving the MPO's approval to circulate the public-review draft FFY 2019 UPWP, staff posted the document on the MPO's website (<http://bostonmpo.org/upwp>). MPO staff also presented the UPWP and this set of new studies to the Advisory Council. Staff also emailed the MPO's contact list (MPOinfo) to notify recipients of the document's availability, and the 30-day period for public review and comment.

During the review period, the MPO held two Office Hours, as well as an open-house style public meeting. At all events, staff made themselves available, either in person or on the phone, to interested parties who wanted to discuss the draft FFY 2019 UPWP. In addition, the open house featured printed copies of the draft UPWP document, a short presentation introducing the UPWP, a timeline of UPWP development, summary documents, and refreshments. All events and meetings where the draft FFY 2019 UPWP was discussed—including Office Hours, the open house, and all MPO and UPWP Committee meetings—were accessible via transit and to people with disabilities.

The following pages show scans of the written comments received by MPO staff during the UPWP's public review period.

REGIONAL TRANSPORTATION ADVISORY COUNCIL



May 10, 2018

Re: Federal Fiscal Year 2019 Unified Planning Work Program

Dear Mr. Mohler,

The Regional Transportation Advisory Council is an independent group of citizen and regional advocacy groups, municipal officials, and agencies charged by the Boston Region Metropolitan Planning Organization (MPO) with providing public input on transportation planning and programming.

The Advisory Council has reviewed and discussed the draft Federal Fiscal Year (FFY) 2019 Unified Planning Work Program (UPWP). We appreciate the effort that MPO staff have taken to discuss the proposed UPWP projects and selection process with the Advisory Council.

The RTAC offers the following two comments on the 2019 UPWP:

1. We appreciate the MPO staff's consideration of the feedback provided by the RTAC on the initial UPWP project list.
2. We encourage the MPO to continue working to better track the outcomes and any follow-up actions taken as a result of UPWP studies so that the MPO can continue to identify projects with the greatest impacts.

We appreciate the opportunity to express our thoughts to the MPO.

Sincerely,

Tegin Teich, Chair
Regional Transportation Advisory Council

MBTA Rider Oversight Committee

June 11, 2019

RE: FY 2019 Draft Unified Planning Work Program (UPWP)

Dear Members of the Boston MPO,

Below are comments from the Capital Investment & Finance Subcommittee of the MBTA Rider Oversight Committee:

1. Of course we support the services that will be provided to the MBTA in Section 6.3, and we find them helpful in providing the MBTA with the research that it needs to explore various means of improving service. We are pleased to see the studies that are focused primarily on transit as well as those that factor transit into their research. Specifically, we support the following studies:

- Pedestrian Report Card Assessment Dashboard
- Transportation Access Studies of Commercial Business Districts Community Transportation Program Development
- New and Emerging Metrics for Roadway Usage
- The Future of the Curb
- MPO Staff-Generated Research Topics

2. Though we appreciate the status updates regarding on-going and completed projects, we continue to look forward to an assessment of the completed studies. Essentially, we want to know to what extent conclusions from completed studies were accurate and utilized by the various entities that could have benefitted from the studies. We understand that this requires more resources and would become an integral part of the UPWP/CTPS, but the ability to track the value and the usefulness of the studies will provide valuable insight into which studies should be chosen in future selection processes.

3. We also appreciate the info provided in Appendix C (Universe of Proposed New Studies for FFY 2019) and Appendix D (Geographic Distribution of UPWP Funded Studies).

Thanks for your attention,
The Capital Investment & Finance Subcommittee of the MBTA Rider Oversight Committee



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June 8, 2018

Mr. David Mohler
Chair, Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116

Re: Boston Region Unified Planning Work Program (UPWP) FFY2019

Dear Mr. Mohler:

On behalf of the 495/MetroWest Partnership, please accept the following as our official comments regarding the draft *Unified Planning Work Program (UPWP)* for FFY 2019 for the Boston Region Metropolitan Planning Organization (MPO).

The 495/MetroWest Partnership is a non-profit advocacy organization serving thirty-five communities, over half a million residents, and an employment base of over \$24 billion per year. The Partnership seeks to address regional needs through public-private collaboration by working to enhance economic vitality, improve quality of life and sustain natural resources. The Partnership focuses on helping to alleviate regional constraints and limitations, and conducts numerous initiatives on transportation, workforce housing, brownfields, and water resources.

The Partnership appreciates the importance of proper planning and understands that the long-term benefits achieved by transportation and transit projects always start with a planning project. With our latest economic analysis, we know that the 495/MetroWest region has continued to grow thanks to a diverse economic base and a high quality of life. While this growth has resulted in opportunities and benefits, challenges remain. If ignored, these challenges threaten the quality of life and economic wellbeing of a region that has become an economic engine for the Commonwealth. Our regional transportation challenges affect the state's ability to remain economically competitive. These challenges include: increasing traffic congestion, an increase in vehicle miles traveled, highway capacity issues, gaps in public transit coverage, and aging transportation infrastructure.

The Boston Region MPO includes twenty-six of the Partnership's thirty-five communities, we greatly appreciate the number of planning projects that have been completed in our region in recent years, and found Appendix D a helpful resource in determining the distribution of UPWP planning tasks since 2010. It is worth noting that out of the four subregions in 495/MetroWest, SWAP has the lowest number of tasks in the entire Boston MPO region, with 39 tasks since 2010 and only 4 tasks performed since 2014 (SSC had 41, with 10 projects since 2014, according to table D-1). Similarly we would note that in the TRIC Subregion, the 495/MetroWest Communities of Medfield and Foxborough have not had any projects since 2015 and further, Medfield has only had 1 project since 2010. We understand that resources are limited but

regional equity is essential to ensure the entire Boston region is benefiting from the planning process. We hope that you will give regional equity some consideration when advancing some of the studies we are supporting in FFY 2019.

In the current Draft UPWP, the Partnership is extremely pleased by continued funding for I-90/I-495 Interchange Traffic Analysis Technical Support. The Partnership has an extensive track record of support for this project, advocating for various improvements to the I-90/I-495 Interchange since our formation in 2003. We are extremely pleased to see a long-term, comprehensive solution advancing and we welcome the technical support from CTPS, specifically for continued traffic analysis in the FY 2019 UPWP. Analysis conducted by the Public Policy Center at UMass Dartmouth for the 495/MetroWest Suburban Edge Community Commission, confirms that the 495/MetroWest region is a net importer of labor in addition to showing large volumes of workers commuting into, out of and through our region.¹ Considering the data on commuting patterns and numbers and the transition to All Electronic Tolling, we feel confident that the timing of, and investment in improving the I-90/I-495 Interchange will provide significant returns for commuters, employers and residents of the Commonwealth.

Additionally, the Partnership welcomes the level of support for MassDOT's Commuter Rail Vision Study, which is of great interest given that the 495/MetroWest Region is home to 3 Lines, namely, Framingham/Worcester, Franklin, and Fitchburg, the last of which is currently experiencing the worst on time performance in the system.

Beyond these two projects the Partnership strongly supports the following new and continuing studies in FFY 2019:

- Reverse Commute Areas Analysis - the 495/MetroWest region is a net importer of labor and therefore, this analysis is of great interest to the Partnership and to our stakeholders;
- Addressing Priority Corridors from the LRTP Needs Assessment - as in previous years, the Partnership urges inclusion of our communities in these studies and its recommended conceptual improvements;
- Low-Cost Improvements to Express Highway Bottleneck Locations - as in previous years, the Partnership urges inclusion of our communities in this report and its proposed solutions;
- Addressing Safety, Mobility and Access on Subregional Priority Roadways - as in previous years, the Partnership urges inclusion of our communities in this report and its recommendations;
- Transportation Access Studies of Commercial Business Districts - we encourage inclusion of at least one community in each of MAPC's subregions to appropriately reflect the CBD needs in a range of community sizes as well as ensuring regional representation;
- New and Emerging Metrics for Roadway Usage - we feel it is important to revisit methodologies to ensure an accurate picture of roadway functionality;
- Updates to Express Highway Volumes Charts - continued updates on data are essential to determine future demand and thereby project need; and
- Regional Transit Service Planning Technical Support - given the Partnership's collaboration in creating in the MetroWest RTA, our longstanding work with the Worcester, Montachusett, Greater Attleboro, and Lowell RTA's and regional TMAs like CrossTown Connect, MetroWest/495, and Neponset Valley, and our regular attendance at MetroWest Regional Collaborative, MAGIC, and SWAP subregional meetings, we greatly appreciate this level on ongoing technical support and remain hopeful to see benefits of this support in our region.

We would like to re-emphasize our support for the proposed Reverse Commute Areas Analysis and again encourage inclusion of our region in this analysis. Specifically, we feel case studies on last-mile transit options should look to CrossTown Connect in the MAGIC subregion. Under Cross-Town Connect, we have seen success with Acton shuttles, a Maynard shuttle and now a Littleton/Westford shuttle. The Maynard shuttle has proven a huge success, with growing ridership and minimal cost to determine its feasibility. Sustainability for all of these services remains a challenge despite the demand and limited overhead costs. We feel this could serve as an excellent case study for potential partnership models for first-and last-mile transit shuttles with potential funding recommendations by the Boston MPO to help determine sustainability that could also allow for expansion of services into other CrossTown Connect communities. We hope you will give serious consideration to studying the CrossTown Connect Model as part of this program.

In addition to the specific planning projects mentioned above, the Partnership also supports ongoing tasks and products such as LRTP and TIP development, congestion management, safety and operations analysis, freight planning support, and air quality conformity and support. The Partnership recognizes the addition of several new studies and hopes that our region, which includes portions of MAGIC, MetroWest, SWAP and TRIC, will benefit from such projects as:

- Safety & Operations Analyses at Selected Intersections, with particular thanks for the conceptual design and evaluation for Improving Route 126 truck access to/from Maple Street in Bellingham;
- Community Transportation Technical Assistance Program;
- Bicycle/Pedestrian Support Activities - the Partnership is supportive of a variety of modes of transportation and we feel this work complements the growing number of communities participating in the Complete Streets Program;
- Transit & Traffic Data Support - the work by CTPS is critical to understanding the region's future needs;
- MAPC Planning Studies and Technical Analysis;
- MetroFuture Update and Implementation;
- Alternative-Mode Planning and Coordination; and
- MBTA Commuter Rail Passenger Counts.

The Partnership greatly appreciates the work of CTPS and values the planning projects proposed in this year's Unified Planning Work Program. We hope you will strongly consider our comments on regional and subregional equity in deciding areas to study within individual projects and analyses.

We thank you for your consideration of our comments. If there are any questions regarding our commentary on the UPWP, please contact Jessica Strunkin at 774.760.0495 x.101, or by email at Jessica@495partnership.org. Thank you for your time and consideration.

Sincerely,



Paul F. Matthews
Executive Director



Jessica Strunkin
Deputy Director

¹ <https://www.mass.gov/files/documents/2018/02/12/495MW%20Profile%20by%20UMass%20D%20PPC.pdf>



APPENDIX C

Universe of Proposed New Studies for Federal Fiscal Year 2019 UPWP

This appendix includes the Universe of Proposed New Studies, which documents the proposed new discrete studies that the Boston Region Metropolitan Planning Organization (MPO) staff and the Metropolitan Area Planning Council (MAPC) staff collected or developed for the development of the federal fiscal year (FFY) 2019 Unified Planning Work Program (UPWP). Each entry includes a summary of the purpose of the proposed study and the anticipated outcomes.

Studies in the universe are organized into the following categories:

- Active Transportation
- Land Use, Environment, and Economy
- Multi-Modal Mobility
- Transit
- Other Technical Support

Each proposed study in the universe is evaluated based on the following evaluation areas:

- **Primary and secondary Long-Range Transportation Plan (LRTP) goal areas:** whether a study addresses, either as a primary focus or secondary focus, one of the six LRTP goal areas
 - Safety
 - System Preservation
 - Clean Air/Clean Communities
 - Transportation Equity
 - Capacity Management/Mobility
 - Economic Vitality
- **Mode:** whether a study primarily addresses roadway, bicycle, pedestrian, or transit modes of travel
- **Study scale:** whether a study primarily impacts one or two specific communities in the region, or the region as a whole
- **Time frame and type of impact:** whether a study results in research and findings that enhance the state of the transportation planning practice in the Boston Region, low-cost/short-term implementation of improvements, or, long-term implementation (for transportation studies leading to implementation by an agency or construction projects that must follow the Massachusetts Department of Transportation design process)

- **Connection to existing work:** whether a study furthers previously conducted analysis, or builds off or enhances existing MPO work
- **Continuing or new study:** whether a study has been conducted previously at a specific location/roadway and is being conducted again at a new location, or whether a study is a completely new idea that has never been undertaken by the MPO

Evaluating the studies in this way will allow MPO staff to analyze how federal planning funds are being spent in the region over time and to compare the amount of spending across the various evaluation areas. Furthermore, tracking spending by LRTP goal area, mode, study scale, and the like, will allow MPO staff, in coordination with the MPO and the public, to set goals for how federal transportation planning funds are spent by the MPO for the benefit of the region.

In addition to evaluating the proposed new studies in the Universe, MPO staff defines general scopes and estimated costs for the proposed studies and considers potential feasibility issues. These various factors, along with the availability of funds for new studies, were considered as staff identified a recommended set of new proposed planning studies for review by the UPWP Committee. For more information about the process of developing and evaluating the Universe, please see Chapter 1.



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**Table C-1
Universe of Proposed Studies, Grouped by Subject Area, FFY 2019**

ID	Project Name	Project Purpose and Outcome	LRTP Goal Areas					Mode			Study Scale		Impact			Other			
			Safety	System Preservation	Clean Air/Clean Communities	Transportation Equity	Capacity Management/Mobility	Economic Vitality	Roadway	Bicycle Pedestrian	Transit	Specific Community or Location	Broader Region	Enhance State of Practice	Low-Cost/Near-Term Implementation	Long-Term Implementation	Connection to Existing or Past Work	Continuing Study	Study Carried Over from 2018 Universe
ACTIVE TRANSPORTATION																			
A-1	Pedestrian Report Card Assessment Dashboard	<p>Purpose: This project is a follow up study to the pedestrian level of service, which was completed in January 2017. The previous study created the Pedestrian Report Card Assessment (PRCA) tool, which allows planners and engineers to rate the suitability of roadway segments and intersections for pedestrians. This proposed project will focus on the implementation of PRCA, including creating an interactive dashboard that will monitor pedestrian suitability on intersections and roadway segments throughout the Boston Region.</p> <p>Anticipated Outcome: An interactive dashboard will be created that will display the PRCA on the MPO website.</p>	P		S		S			P			P		P			P	
A-2	Locations with High Bicycle and Pedestrian Crash Rates in the Boston Region MPO Area	<p>Purpose: To report intersections that have a high presence of pedestrian crashes and recommend improvements to these intersections. This task relates to the CMP, because it includes collecting performance data, and outlines strategies to alleviate congestion and improve safety. This is a follow up to a study that was done through the CMP in 2010 and again in 2012.</p> <p>Anticipated Outcome: A memorandum to document findings, including a description of each intersection, and recommended improvements.</p>	P			S			P			P		P	S	P			
LAND USE, ENVIRONMENT, AND ECONOMY																			
L-1	Reverse Commute Areas Analysis	<p>Purpose: This study would, using data analysis and stakeholder input, identify areas that have significant job concentrations AND face challenges filling jobs with local residents, and therefore need to draw from labor markets in urban cores or other remote areas. The study would then analyze transportation barriers to worker access to these areas, including but not limited to:</p> <ol style="list-style-type: none"> 1. Last-mile transit options (including shuttles) 2. Bike and ped LOS evaluation of area, especially relating to safe routes to transit 3. Guaranteed Ride Home programs <p>Anticipated Outcome: A report identifying several of these areas and using one or more as a case study, and drawing on previous CTPS reports to evaluate their transportation-related needs and challenges.</p> <p>Note: Possible collaboration with MAPC--CTPS does transportation analysis and MAPC examines jobs/demographics/housing</p>				S	S	P		S	P		P		S	P	P		

Table C-1 (cont.)

ID	Project Name	Project Purpose and Outcome	LRTP Goal Areas					Mode			Study Scale		Impact			Other				
			Safety	System Preservation	Clean Air/Clean Communities	Transportation Equity	Capacity Management/Mobility	Economic Vitality	Roadway	Bicycle Pedestrian	Transit	Specific Community or Location	Broader Region	Enhance State of Practice	Low-Cost/Near-Term Implementation	Long-Term Implementation	Connection to Existing or Past Work	Continuing Study	Study Carried Over from 2018 Universe	New Study Concept for FFY 2019
L-2	Transportation Access Studies of Commercial Business Districts	<p>Purpose: Cities and towns have relatively little information on the characteristics of CBD patrons and, as a result, the transportation planning process for 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. This information might help planners make the case for improving transit and non-motorized vehicle access by improving bus stop locations, giving buses priority treatment, and improving pedestrian and non-motorized vehicle infrastructure. A transportation access study of a selection of Boston metropolitan area CBDs would evaluate how patrons access CBDs.</p> <p>Anticipated Outcome: The study would consist of several tasks. CTPS would conduct a literature review and summary of other studies of transportation access to CBDs. CTPS would also characterize the CBDs in the Boston metropolitan area by demographics, commercial development type and density, and existing transportation facilities and services. For a selection of CBDs, CTPS would work with the municipalities and any business associations to solicit business participation in the study. Businesses would first be asked to provide their perceptions on their customers' actual and preferred transportation access modes. Participating businesses would then be asked to encourage their customers to fill out a short survey while they wait in line at the register. The survey would ask the transportation access mode for this visit and their typical transportation access mode to that business. For each mode selected, the survey would ask how frequently the patron uses that mode to access the business and how much the patron typically spends at the business (when using that mode).</p>						P	S	S	P	S		P	S					
ROADWAY and MULTIMODAL MOBILITY																				
M-1	Safety Improvements at Express-Highway Interchanges	<p>Purpose: Continue to address the 2013 MassDOT Top 200 High-Crash Locations and Highway Safety Improvement Program (HSIP) crash clusters in the Boston Region MPO. Many of these are express-highway interchanges, and some of them do not need costly complete rebuilds but rather low-cost improvements that address safety and operations.</p> <p>Anticipated Outcome: The study would review the Top 200 Intersection Clusters and HSIP crash clusters to identify candidate locations. MPO staff would develop low-cost safety and operational improvements.</p>	P	S				S				S	P		P		P			
M-2	Low-Cost Improvements to Express Highway Bottleneck Locations	<p>Purpose: Recurring bottlenecks, the subject of this study, are influenced by the design or operation present at the point where the bottleneck begins (e.g., merges, diverges, lane drops, traffic weaving, and abrupt changes in highway alignment). Low-cost infrastructure solutions, as opposed to major construction projects, could involve changes in the design or operation of merges, traffic operations, or highway alignment.</p> <p>The previous two studies of express-highway bottlenecks were very well received by MassDOT and the FHWA. Some of the recommendations from those studies already have been executed. The MPO has been conducting these studies to identify low-cost methods to reduce congestion, increase safety, and improve traffic operations in the Boston region.</p> <p>Anticipated Outcome: This study would select additional express-highway bottleneck locations and produce reports documenting low-cost solutions to existing traffic congestion issues at the selected locations. A before-and-after analysis of previous work may be included, depending on the final scope of the study.</p>	P	S				P				P			P			Recurring		

Table C-1 (cont.)

ID	Project Name	Project Purpose and Outcome	LRTP Goal Areas					Mode			Study Scale		Impact			Other				
			Safety	System Preservation	Clean Air/Clean Communities	Transportation Equity	Capacity Management/Mobility	Economic Vitality	Roadway	Bicycle Pedestrian	Transit	Specific Community or Location	Broader Region	Enhance State of Practice	Low-Cost/Near-Term Implementation	Long-Term Implementation	Connection to Existing or Past Work	Continuing Study	Study Carried Over from 2018 Universe	New Study Concept for FFY 2019
M-3	Addressing Safety, Mobility, and Access on Subregional Priority Roadways	<p>Purpose: During MPO outreach, Metropolitan Area Planning Council (MAPC) subregional groups identify transportation problems and issues that concern them, often those relating to bottlenecks or lack of safe access to transportation facilities in their areas. These issues can affect livability, quality of life, crash incidence, and air quality along an arterial roadway and its side streets. If problems are not addressed, mobility, access, safety, economic development, and air quality are compromised.</p> <p>Anticipated Outcome: Anticipated outcomes include data collection, technical analysis, development of recommendations, and documentation for selected corridors.</p>	P				S			P				P				Recurring		
M-4	Addressing Priority Corridors from the Long-Range Transportation Plan Needs Assessment	<p>Purpose: The purpose of these studies are to develop conceptual design plans that address regional multimodal transportation needs along priority corridors identified in the Long-Range Transportation Plan (LRTP), <i>Charting Progress to 2040</i>. These studies include recommendations that address multimodal transportation needs that are expected to arise from potential future developments in the study area.</p> <p>Anticipated Outcome: Through these studies, MPO staff would recommend conceptual improvements for one or more corridors, or several small sections within a corridor, that are identified by the Congestion Management Process and the LRTP as being part of the needs assessment process. These studies provide cities and towns with the opportunity to review the requirements of a specific arterial segment, starting at the conceptual level, before committing design and engineering funds to a project. If the project qualifies for federal funds for construction of the recommended upgrades, the study's documentation also might be useful to the Massachusetts Department of Transportation (MassDOT) and the municipalities.</p>					P			P					P			Recurring		
M-5	New and Emerging Metrics for Roadway Usage	<p>Purpose: Planners and researchers have recently developed a number of interesting ways to better communicate the balance of needs among roadway users of a corridor, including measuring person throughput relative to the amount of space used by vehicles. These methods may help planners and engineers steer away or complement from reliance on traffic/vehicle-oriented LOS and may help sharpen MPO staff's analysis of roadways and corridors through a better understanding of non-SOV modes. One example is how FHWA recently changed federal guidance to encourage MPOs to use person-hours of delay, rather than vehicle-hours of delay, in measuring Peak Hour Excessive Delay (PHED) on segments of the National Highway System.</p> <p>Anticipated Outcome: Use case studies to develop the MPO's exploration of and approach to new and emerging metrics and/or popularly accessible terms to express the needs (travel demands) of all corridor travelers and to fully measure roadway efficiency under use by different modes.</p>	P	S	S	S	S			S	P	S		P	P	S				

Table C-1 (cont.)

ID	Project Name	Project Purpose and Outcome	LRTP Goal Areas						Mode			Study Scale		Impact			Other			
			Safety	System Preservation	Clean Air/Clean Communities	Transportation Equity	Capacity Management/Mobility	Economic Vitality	Roadway	Bicycle Pedestrian	Transit	Specific Community or Location	Broader Region	Enhance State of Practice	Low-Cost/Near-Term Implementation	Long-Term Implementation	Connection to Existing or Past Work	Continuing Study	Study Carried Over from 2018 Universe	New Study Concept for FFY 2019
M-6	Framingham Truck Traffic and Complete Streets Study	<p>Purpose: Downtown Framingham has a Complete Streets policy and encourages TOD, but there is also significant truck traffic from the Adesa auto auction south of downtown. Several downtown streets are designated truck corridors. The city is looking for ways to mitigate the impact of truck traffic and implement safe infrastructure for pedestrians and bikes given presence of trucks. The future downtown should balance industrial/commercial and residential development needs.</p> <p>Anticipated Outcome: A study attempting to balance the needs of freight and Complete Streets in downtown Framingham.</p>	S				S	P	P	S		P			P					
M-7	The Future of the Curb	<p>Purpose: There is an increasing amount of competition for curb space in urban areas, as well as the potential for transformation of their purpose in coming years. AVs/CVs may require less curb space for parking, while deliveries (Amazon etc) are increasingly common. Curbside bus and bike lanes are also in demand.</p> <p>Anticipated Outcome: An MPO study examining what the curb of the future will look like and how to balance demand between all of these modes/dynamics. Article on this concept: https://www.wired.com/story/city-planning-curbs/</p>	S	S	S		P		P	S	S		P	P	S					
M-8	Updates to Express Highway Volumes Charts	<p>Purpose: There is demand for sophisticated visualizations of highway volumes. This study would update the last published data and charts.</p> <p>Anticipated Outcome: Updated charts based on the most recent data. [Effort is scalable.]</p>					P		P				P	P			P			
M-9	Sweetser Circle Reconstruction and Bus Priority	<p>Purpose: Sweetser Circle (intersection of Rte 16 and Rte 99) is a major bottleneck not only for vehicles, but also for buses. Intersection is state owned and affects regionally-significant roadways. The city of Everett seeks to extend the Broadway bus lane south through this intersection, and needs state assistance to get bus priority at this location.</p> <p>Anticipated Outcome: Would be a good project for a "low cost improvements" study to see if lane markings, quick curb or other easy solutions exist to prioritize bus movement through this intersection.</p>	S				P		P		S	P			P					
TRANSIT																				
T-1	Allston Transit Study	<p>Purpose: The Allston I-90 Interchange Project, which will alter the alignment of I-90 and create new land use development opportunity, includes a proposal to create a West Station along the Framingham/Worcester Commuter Rail Line. This infrastructure project also affords the possibility of a bus transit connection through the old Beacon Rail Yard, potentially providing a more direct routing of buses from the Harvard Square area to the Longwood Medical Area via a connection over I-90 and the adjacent rail lines.</p> <p>This proposed transportation study would assess the demand for bus transit service that could connect with the rail service. NEW IN 2019 UNIVERSE: Emphasize studying north-south transit connectivity and connections to Kendall and Harvard.</p> <p>Anticipated Outcome: A study examining possibilities for improving transit in the Allston-Beacon Yard area of Boston, especially those afforded by the rebuilding of I-90 and the redevelopment of Beacon Yard.</p>				S	P	S	S	S	P	P			P					

Table C-1 (cont.)

ID	Project Name	Project Purpose and Outcome	LRTP Goal Areas						Mode			Study Scale		Impact			Other			
			Safety	System Preservation	Clean Air/Clean Communities	Transportation Equity	Capacity Management/Mobility	Economic Vitality	Roadway	Bicycle Pedestrian	Transit	Specific Community or Location	Broader Region	Enhance State of Practice	Low-Cost/Near-Term Implementation	Long-Term Implementation	Connection to Existing or Past Work	Continuing Study	Study Carried Over from 2018 Universe	New Study Concept for FFY 2019
TECHNICAL SUPPORT and OTHER																				
O-1	MPO Staff-Generated Research Topics	<p>Purpose: This program would support work by MPO staff members on topics that relate to the Boston Region MPO's metropolitan transportation-planning process, that staff members have expressed interest in, and that are not covered by an ongoing Unified Planning Work Program (UPWP) or discrete project. This program was funded for the first time in FFY 2017.</p> <p>Anticipated Outcome: This program could bring forth valuable information for the MPO's consideration and would support staff's professional development. The opportunities afforded to staff through this program could yield highly creative solutions to transportation-planning problems.</p>										P	P			P	P			

Notes: *ITALICS* --> may need more info 15 Total projects

AV/CV = autonomous vehicles/connected vehicles. CTPS = Central Transportation Planning Staff. FFY = federal fiscal year. FHWA = Federal Highway Administration. GHG = greenhouse gas(es). GTFS = general transit feed specification. LOS = level of service. LRTP = Long-Range Transportation Plan. MassDOT = Massachusetts Department of Transportation. MBTA = Massachusetts Bay Transportation Authority. MPO = Metropolitan Planning Organization. P = primary. S = secondary. ROW = right-of-way. SIP = State Implementation Plan. SRTS = Safe Routes to School. TNCs = transportation network companies. UPWP = Unified Planning Work Program



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APPENDIX D

Geographic Distribution of UPWP Studies and Technical Analyses

D.1 INTRODUCTION

This appendix summarizes the Metropolitan Planning Organization (MPO)-funded work products produced by MPO staff (the Central Transportation Planning Staff (CTPS)) and the staff of the Metropolitan Area Planning Council (MAPC) during federal fiscal years (FFY) 2010 through 2017, as well as those expected to be completed by the end of FFY 2018. The narrative below describes the methodology used to compile this information, as well as some of the additional factors that could be used to further analyze and use this data to inform and guide public involvement and regional equity purposes.

D.2 PURPOSE AND METHODOLOGY

Purpose

The purpose of this data collection is to understand better the geographic spread of Unified Planning Work Program (UPWP) work products (that is, reports and technical memoranda) throughout the region. In other words, this exercise serves to illuminate which communities and areas of our metropolitan region have been the subject of transportation studies and analyses (or recipients of technical support) conducted by the MPO staff with 3C (continuing, comprehensive, and cooperative) planning funds. The data presented in Table D-1 below covers UPWP tasks completed from FFY 2010 through FFY 2018 and includes work that resulted in benefits to specific municipalities. Studies that had a regional focus are presented in Table D-2.

Tracking the geographic distribution of UPWP studies (those benefiting specific communities as well as those benefiting a wider portion of the region) can serve as one important input into the UPWP funding decisions made each FFY. When considered in combination with other information this data on geographic distribution of MPO-funded UPWP studies can help guide the MPO's public outreach to help ensure that, over time, we are meeting the needs of the region with the funds allocated through the UPWP.

Methodology

As noted above, this analysis examined FFYs 2010 through 2018. In order to generate information on the number of UPWP studies produced during these FFYs that benefited specific cities and towns in the Boston region, MPO staff performed the following main steps:

- Reviewed all work products listed as complete in UPWPs from FFYs 2010 through 2018

- Excluded all agency and other client-funded studies and technical analyses in order to focus the analysis on MPO-funded work only
- Excluded all work products that had a focus that was regional or not limited to a specific geography
- Excluded all work related to certification requirements (Chapter 4), resource management, and support activities (Chapter 7), which consist of programs and activities that support the MPO, its staff operations, and its planning and programming activities
- Compiled a count of all reports and technical memoranda completed specifically for one municipality, or reports and technical memoranda directly benefiting multiple municipalities. In the case where multiple municipalities directly benefit from a report or technical memoranda, the work product was counted once for each municipality that benefited
- Reviewed and discussed the status and focus of studies, technical memoranda, and reports with project managers and technical staff
- Refreshed demographic data using ACS 2014 five-year estimates.

D.3 PLANNING STUDIES AND TECHNICAL ANALYSES BY COMMUNITY

Table D-1 shows the number of completed MPO-funded UPWP work products from FFY 2010 through FFY 2018 that are determined to provide benefits to specific municipalities. Studies and technical analyses are grouped by the year in which they were completed, rather than the year in which they were first programmed in the UPWP. Examples of the types of studies and work in the table include

- Evaluating parking in several municipalities
- Technical assistance on Massachusetts Environmental Policy Act (MEPA) Environmental Impact Reports
- Complete Streets analyses for specific municipalities
- Operations analyses and alternative conceptual design recommendations for specific intersections



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Table D-1
Number of UPWP Tasks by Federal Fiscal Year and Community, Grouped by Subregion

Community	2010-2014 Total	2015	2016	2017	2018	2010-2018 Total	Population	Minority %	Low-Income %
Arlington	3		1	3	3	10	42,845	16.4%	24.7%
Belmont	3		2	1	2	8	24,729	18.6%	21.3%
Boston	18	4	3	2	5	32	617,599	53.0%	44.1%
Brookline	4	1	1	2		8	58,732	26.7%	27.8%
Cambridge	8	1	4	5	2	20	105,163	37.9%	33.1%
Chelsea	9	1		2	1	13	35,178	74.7%	47.3%
Everett	10	3	2	1	3	19	41,667	46.4%	45.1%
Lynn	7		1		1	9	90,330	52.4%	48.4%
Malden	9	1		2	2	14	59,451	47.5%	41.8%
Medford	6		1		3	10	56,173	23.8%	29.9%
Melrose	5	1		1	1	8	26,983	10.5%	25.1%
Nahant	0					0	3,410	4.5%	33.2%
Newton	10	2			1	13	85,145	20.4%	20.8%
Quincy	11					11	92,272	34.5%	36.3%
Revere	7				2	9	51,755	37.6%	44.3%
Saugus	3				1	4	42,845	16.4%	24.7%
Somerville	12	1	1	1	1	16	75,754	30.9%	33.3%
Waltham	10	2	3	1	2	18	60,632	31.3%	32.2%
Watertown	1				1	2	31,915	18.3%	23.5%
Winthrop	2				1	3	17,497	11.5%	35.7%
Inner Core Subtotals	138	17	19	21	32	227	1,620,075	40.6%	37.7%

Table D-1 (cont.)

Community	2010-2014 Total	2015	2016	2017	2018	2010-2018 Total	Population	Minority %	Low-Income %
Acton	2	4	1		1	8	21,924	24.5%	19.1%
Bedford	5	2			2	9	13,320	16.0%	16.8%
Bolton	3	1		1	2	7	4,897	6.5%	18.7%
Boxborough	1	3			1	5	4,996	21.1%	23.1%
Carlisle	1	1			1	3	4,852	12.3%	15.6%
Concord	3	3	1	3	1	11	17,668	12.8%	18.2%
Hudson	5	2			1	8	19,063	11.1%	30.7%
Lexington	8	2			1	11	31,393	26.3%	18.1%
Lincoln	8	1			1	10	6,362	17.2%	16.4%
Littleton	2	3			1	6	8,925	7.7%	23.2%
Maynard	3	4		1	2	10	10,106	9.9%	30.8%
Stow	3	1			1	5	6,590	7.8%	19.5%
Sudbury	6	1			1	8	17,659	10.6%	10.8%
MAGIC Subtotals	50	28	2	5	16	101	167,755	16.3%	19.9%
Ashland	3			1		4	16,593	18.5%	22.0%
Framingham	13	1	1	2	1	18	68,321	34.7%	36.3%
Holliston	4			1		5	13,547	6.7%	25.8%
Marlborough	6			2		8	38,498	24.8%	31.5%
Natick	9		1	1		11	33,005	14.6%	24.5%
Southborough	7	1		1		9	9,766	13.9%	13.2%
Wayland	3			1		4	12,994	14.7%	20.2%
Wellesley	9	2	1	1		13	27,984	17.6%	13.8%
Weston	12	2	2	2	1	19	11,261	16.6%	14.8%
MetroWest Subtotals	66	6	5	12	2	91	231,969	22.5%	26.5%

Table D-1 (cont.)

Community	2010-2014 Total	2015	2016	2017	2018	2010-2018 Total	Population	Minority %	Low-Income %
Burlington	10	1	1	1		13	24,498	20.8%	22.4%
Lynnfield	2	2	1	1		6	11,595	6.5%	18.7%
North Reading	1	1	1	1		4	14,892	6.1%	17.7%
Reading	8	2	1	1		12	24,746	7.6%	20.7%
Stoneham	3	1	1	1		6	21,437	9.5%	31.5%
Wakefield	3		1	1		5	24,931	7.0%	24.4%
Wilmington	5		1	1		7	22,324	7.7%	16.4%
Winchester	4		2	1	1	8	21,374	14.3%	14.9%
Woburn	6	1	1	2	1	11	38,120	18.3%	28.8%
NSPC Subtotals	42	8	10	10	2	72	203,917	11.9%	22.6%
Beverly	4	1		1	1	7	39,502	8.6%	32.8%
Danvers	6			1		7	26,493	6.2%	27.5%
Essex	0			1		1	3,504	3.9%	25.5%
Gloucester	2			1		3	28,789	5.9%	40.1%
Hamilton	1			1		2	7,764	8.7%	25.5%
Ipswich	1			1		2	13,175	5.3%	30.6%
Manchester	0			2	1	3	5,136	3.6%	25.9%
Marblehead	2			2		4	19,809	5.0%	22.3%
Middleton	0		1	2		3	8,988	12.7%	21.1%
Peabody	4			2	2	8	51,252	12.3%	36.6%
Rockport	3			1	2	6	6,952	4.1%	31.4%
Salem	5	2	1	3	2	13	41,340	24.1%	40.6%
Swampscott	3			2	1	6	13,787	7.0%	22.3%
Topsfield	0			2		2	6,085	4.7%	15.8%

Table D-1 (cont.)

Community	2010-2014 Total	2015	2016	2017	2018	2010-2018 Total	Population	Minority %	Low-Income %
Wenham	1			1	1	3	4,875	5.5%	22.5%
NSTF Subtotals	32	3	2	23	10	70	277,451	10.3%	32.1%
Braintree	8	1	1			10	35,745	14.7%	26.2%
Cohasset	2	1				3	7,542	3.8%	17.9%
Duxbury*	1					1	15,059	3.7%	18.7%
Hanover*	1					1	13,879	4.2%	20.1%
Hingham	2				1	3	21,962	4.6%	24.0%
Holbrook	3					3	10,792	19.2%	32.3%
Hull	1					1	10,293	5.7%	32.4%
Marshfield	2					2	25,132	4.0%	26.2%
Norwell	2				1	3	10,506	4.7%	18.0%
Pembroke*	1					1	17,837	3.9%	22.1%
Rockland	1				1	2	17,489	9.2%	35.8%
Scituate	2	1			1	4	18,133	4.7%	22.3%
Weymouth	5	1			1	7	53,744	11.9%	32.7%
SSC Subtotals	31	4	1	0	5	41	258,113	8.3%	26.6%
Bellingham	3				1	4	16,333	8.2%	22.8%
Franklin	3					3	31,635	8.6%	19.9%
Hopkinton	6	1				7	14,925	8.3%	14.1%
Medway	4					4	12,752	6.5%	20.5%
Milford	7	1			1	9	28,000	17.5%	31.4%
Millis	3					3	7,891	7.3%	20.8%
Norfolk	2					2	11,227	15.4%	13.7%
Sherborn	4					4	4,119	6.7%	13.1%

Table D-1 (cont.)

Community	2010-2014 Total	2015	2016	2017	2018	2010-2018 Total	Population	Minority %	Low-Income %
Wrentham	3					3	10,955	3.8%	20.9%
SWAP Subtotals	35	2	0	0	2	39	137,837	10.2%	21.4%
Canton	2			2	2	6	21,561	16.7%	24.3%
Dedham	4	1	1			6	24,729	14.9%	25.1%
Dover	4					4	5,589	8.8%	10.7%
Foxborough	3	1				4	16,865	8.3%	25.2%
Medfield	0	1				1	12,024	6.1%	12.7%
Milton	5				2	7	27,002	24.1%	22.3%
Needham	6	1	1		1	9	28,886	10.9%	15.2%
Norwood	2					2	28,603	17.3%	30.1%
Randolph	4					4	32,111	60.9%	36.6%
Sharon	0					0	17,612	19.0%	16.2%
Stoughton*	3			1	1	5	26,963	21.6%	31.9%
Walpole	3	1				4	24,071	9.2%	21.6%
Westwood	5	1			1	7	14,618	8.5%	19.2%
TRIC Subtotals	41	6	2	3	7	59	280,634	20.2%	24.3%
Grand Total	435	74	41	74	76	700	3,177,751	27.8%	31.7%

MAGIC = Minuteman Advisory Group on Interlocal Coordination. NSPC = North Suburban Planning Council. NSTF = North Shore Task Force. SSC = South Shore Coalition. SWAP = South West Advisory Planning Committee. TRIC = Three Rivers Interlocal Council.



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D.4 REGIONWIDE PLANNING STUDIES AND TECHNICAL ANALYSES

In addition to work that benefits specific municipalities, many of the projects funded by the MPO through the UPWP have a regional focus. Table D-2 lists MPO-funded UPWP studies completed from 2010 through 2018 that were regional in focus. Some regionally focused studies may have work products that overlap with those analyzed in table D-1 above.

More information about these studies and other work can be found on the MPO’s website (bosmpo.ctps.org/recent_studies) or by contacting Sandy Johnston, UPWP Manager, at sjohnston@ctps.org.

Table D-2
Regionally Focused MPO Funded UPWP Studies

FFY 2018	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Community Transportation Program Development	Participation in Water Transportation Advisory Council
Review of and Guide to Regional Transit Signal Priority	Regional Plan Update process
Crash Rates in Environmental Justice Communities (Staff-Generated Research)	Evaluation of Transit-Oriented Development Planning Studies
Long-Distance Commuting in the Boston MPO Region (Staff-Generated Research)	Ride hailing research, literature review, and survey of 900 Uber and Lyft riders in Boston region to indicate how TNCs are affecting travel behavior
Exploring New Software for Transit Planning (Staff-Generated Research)	Participation in suburban mobility working group with MassDOT, MBTA, and CTPS staff to discuss opportunities to pilot dynamic ride dispatching
Safety Effectiveness of Safe Routes to School Programs	
Planning for Connected and Autonomous Vehicles	
Study of Promising GHG Reduction Strategies	

Table D-2 (cont.)

FFY 2017	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Using GTFS Data to Find Shared Bus Route Segments with Excessively Irregular Headways	North Suburban Mobility Study
Pedestrian Level-of-Service Metric Development	North Shore Mobility Study
Exploring the 2011 Massachusetts Travel Survey: MPO Travel Profiles	Perfect Fit Parking Report and Website
Exploring the 2011 Massachusetts Travel Survey: Barriers and Opportunities Influencing Mode Shift	Hubway Bikeshare Coordination
Core Capacity Constraints	MetroWest LandLine Gaps Analyses
Barriers and Opportunities Influencing Mode Shift	
Bicycle Network Gaps: Feasibility Evaluations	
2016-17 Bicycle and Pedestrian Counts	
Bicycle and Pedestrian Count Memo (summarizing counts 2014-2017)	
Memorandum documenting plans for future Boston Region MPO bicycle and pedestrian counting methodologies	
FFY 2016	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Modeling Capacity Constraints	Right-Size Parking Report
Identifying Opportunities to Alleviate Bus Delay	Transportation Demand Management— Case Studies and Regulations
Research Topics Generated by MPO Staff (FFY 2016): Transit dependence scoring system using driver license data	Hybrid Electric Vehicle Retrofit Procurement
Title VI Service Equity Analyses: Methodology Development	Autonomous Vehicles and Connected Cars research
EJ and Title VI Analysis Methodology Review	MetroFuture Implementation technical memorandums
Transportation Investments for Economic Development	

Table D-2 (cont.)

FFY 2015	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Greenhouse Gas Reduction Strategy Alternatives: Cost-Effectiveness Analysis	Population and Housing Projections for Metro Boston
Roadway Network for Emergency Needs	Regional Employment Projections for Metro Boston
2012 Inventory of Bicycle Parking Spaces and Number of Parked Bicycles at MBTA stations	Right-size parking calculator
2012-13 Inventory of Park-and-Ride Lots at MBTA Facilities	
Title VI Service Equity Analyses: Methodology Development	
FFY 2014	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Bicycle Network Evaluation	Transportation Demand Management Best Practices and Model Municipal Bylaw
Household Survey-Based Travel Profiles and Trends	Land Use Baseline for Bus Rapid Transit
Exploring the 2011 Massachusetts Travel Survey: Focus on Journeys to Work	MetroFuture community engagement
Methodology for Evaluating the Potential for Limited-Stop Service on Transit Routes	
FFY 2013	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Regional HOV-Lane Systems Planning Study, Phase II	Regional Trail Network Map and Greenway Planning
Roadway Network Inventory for Emergency Needs: A Pilot Study	MetroFuture engagement at the local level, updates to the Regional Indicators Reports, and Smart Growth Profiles
Carbon Dioxide, Climate Change, and the Boston Region MPO: 2012 Update	
Massachusetts Regional Bus Study	
Boston Region MPO Freight Program	

Table D-2 (cont.)

FFY 2012	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Analysis of JARC and New Freedom Projects	Snow Removal Policy Toolkit
Safety and Security Planning	MetroFuture implementation strategies—updated implementation strategies including focus on equity indicators
Emergency Mitigation and Hazard Mapping, Phase II	
Impacts of Walking Radius, Transit Frequency, and Reliability	
MBTA Systemwide Passenger Survey: Comparison of Results	
Pavement Management System Development	
Roundabout Installation Screening Tool	
TIP Project Impacts Before/After Evaluation	
Regional HOV System Planning Study	
Freight Survey	
FFY 2011	
Central Transportation Planning Staff	Metropolitan Area Planning Council
Charlie Card Trip Paths Pilot Study	MPO Pedestrian Plan
Early Morning Transit Service	MPO Regional Bike Parking Program
Maintenance Cost of Municipally Controlled Roadways	Toolkit for Sustainable Mobility— focusing on local parking issues
Analysis of Responses to the MBTA Systemwide Onboard Passenger Survey by Respondents in Environmental-Justice Areas	
MBTA Core Services Evaluation	
MPO Freight Study, Phase I and Phase II	
MPO Freight/Rail Study	

Table D-2 (cont.)

FFY 2010	
Central Transportation Planning Staff	Metropolitan Area Planning Council
An Assessment of Regional Equity Outreach 2008–2009	Creation of a GIS coverage and related database of MAPC-reviewed projects and their mitigation commitments
Coordinated Human Services Transportation Plan Update	Implementation of the regional and statewide bicycle and pedestrian plans, and work on bicycle/pedestrian-related issues, including coordination with relevant national, state, and regional organizations
Greenbush Commuter Rail Before and After Study	
Mobility Assistance Program and Section 5310 Review	
Safety Evaluation of TIP Projects	
Red Line-Blue Line Connector Study Support	

EJ = environmental justice. FFY = federal fiscal year. GIS = geographic information systems. HOV = high-occupancy vehicle. JARC = job access reverse commute program. MAPC = Metropolitan Area Planning Council. MBTA = Massachusetts Bay Transportation Authority. MPO = Metropolitan Planning Organization. TIP = Transportation Improvement Program.

D.5 NEXT STEPS

MPO staff intends to continue to collect this data on an annual basis and develop a process for using it as one input that can inform UPWP funding decisions. The data summarized in this appendix and future UPWP funding data that is added to it could potentially be used in a number of different ways to help guide the spending decisions made in future UPWPs. Depending on the direction the development of this process takes, some analyses that the MPO could complete in the future include

- Compare the number of tasks per community to the presence and size of a municipal planning department in each city and town.
- Examine the use of different measures to understand the geographic distribution of benefits derived from funding programmed through the UPWP. For example, in addition to analyzing the number of tasks per community, the MPO could consider the number of dollars spent per community or the magnitude of benefits that could be derived from UPWP studies (for example congestion reduction, air quality improvement, and the like).

- Examine in more detail the geographic distribution of UPWP studies and technical analyses per subregion or per MAPC community type to understand the type of tasks being completed and how these compare to municipally identified needs.
- Examine the number of tasks per community and compare the data to the number of road miles, the median household income, or the minority population in each community.
- Develop graphics illustrating the geographic distribution of UPWP studies and spending and mapping that distribution relative to Environmental Justice and Transportation Equity concern areas.
- Compare the number of tasks directly benefiting each municipality with the geographic distribution of transportation needs identified in the current Long-Range Transportation Plan (LRTP), *Charting Progress to 2040*, and the one currently in development, *Destination 2040*. The transportation needs of the region for the next 25 years are identified and organized in the LRTP according to the MPO's goal areas, which include safety, system preservation, capacity management and mobility, clean air and clean communities, transportation equity, and economic vitality.

Making these comparisons with the data will provide the MPO with a clearer understanding of the impacts of the work that is programmed through the UPWP. Additionally, the MPO will be able to make more informed decisions about how we choose to distribute funding for transportation studies and technical analyses throughout the region.



APPENDIX E

Glossary of Acronyms

Acronym	Definition
3C	continuous, comprehensive, cooperative [metropolitan transportation planning process]
A&F	Administration and Finance Committee [Boston Region MPO]
AASHTO	American Association of State Highway and Transportation Officials
ABM	Activity based model [transportation planning tool]
ADA	Americans with Disabilities Act of 1990
Advisory Council	Regional Transportation Advisory Council
AFC	automated fare collection [system]
AMPO	Association of Metropolitan Planning Organizations
APBP	Association of Pedestrian and Bicycle Professionals
APC	automatic passenger counter
ASL	American sign language
AV/CV	autonomous vehicle/connected vehicle
CAA	Clean Air Act of 1970
CAAA	Clean Air Act Amendments of 1990
CBD	central business district
CFR	Code of Federal Regulation
CMP	Congestion Management Process
CMR	Code of Massachusetts Regulations
CO	carbon monoxide
CO2	carbon dioxide
CPT-HST	Coordinated Public Transit-Human Services Transportation Plan
CTPS	Central Transportation Planning Staff
DCR	Department of Conservation and Recreation
DEP	Massachusetts Department of Environmental Protection

Acronym	Definition
EJ	environmental justice
EO	executive order [federal]
EOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
EPA	US Environmental Protection Agency
eTOD	equitable transit-oriented development
FAST Act	Fixing America's Surface Transportation Act
FDE	fundamental data element
FFY	federal fiscal year
FHWA	Federal Highway Administration
FMCB	MBTA Fiscal and Management Control Board
FTA	Federal Transit Administration
GHG	greenhouse gas
GWSA	Global Warming Solutions Act of 2008 [Massachusetts]
HOV	high-occupancy vehicle
HTC	Healthy Transportation Compact
ITE	Institute of Transportation Engineers
LAP	language access plan
LEP	limited English proficiency
LOS	level of service
LRTP	Long-Range Transportation Plan [MPO certification document]
MAP-21	Moving Ahead for Progress in the 21st Century Act
MAPC	Metropolitan Area Planning Council
MARPA	Massachusetts Association of Regional Planning Agencies
MassDOT	Massachusetts Department of Transportation

Acronym	Definition
MassGIS	Massachusetts Bureau of Geographic Information
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MEPA	Massachusetts Environmental Policy Act
MGL	Massachusetts general laws
MIRE	Model Inventory of Roadway Elements
MOVES	Motor Vehicle Emissions Simulator [EPA air quality model]
MPO	metropolitan planning organization
NOx	nitrogen oxides
NTD	National Transit Database
OTP	MassDOT Office of Transportation Planning
PBPP	performance-based planning and programming
PfP	Planning for Performance [scenario-planning tool]
PHED	peak hour excessive delay
PL	metropolitan planning funds or public law funds [FHWA]
PMT	Program for Mass Transportation [MBTA]
PPP	Planning for Performance [scenario-planning tool]
PPP	Public Participation Program
PRCA	Pedestrian Report Card Assessment [transportation planning tool]
RMV	Registry of Motor Vehicles [MassDOT division]
ROC	Rider Oversight Committee [MBTA]
RSA	Roadway Safety Audit [FHWA]
RTA	regional transit authority
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users

Acronym	Definition
SFY	state fiscal year
SIP	State Implementation Plan
SOV	single-occupancy vehicle
SPR	Statewide Planning and Research [FHWA]
STIP	State Transportation Improvement Program
TCM	transportation control measure
TE	transportation equity
TIP	Transportation Improvement Program [MPO certification document]
TMA	Transportation Management Association
TMA	Transportation Management Area
TNC	transportation network company
TOD	transit-oriented development
TRB	Transportation Research Board
UPWP	Unified Planning Work Program [MPO certification document]
USDOT	United States Department of Transportation [oversees FHWA and FTA]
VOCs	volatile organic compounds [pollutants]
WMM	weMove Massachusetts [MassDOT planning initiative]



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