

BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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

MEMORANDUM

DATE October 17, 2013

- TO Boston Region Metropolitan Planning
- FROM Karl H. Quackenbush CTPS Executive Director
- RE Work Program for: Long-Range Transportation Plan, Federal Fiscal Year 2014

Action Required

Review and approval

Proposed Motion

That the Boston Region Metropolitan Planning Organization vote to approve the work program for the Long-Range Transportation Plan presented in this memorandum.

Project Identification

Unified Planning Work Program Classification

Certification Requirements

CTPS Project Number

10101

Client

Boston Region Metropolitan Planning Organization

CTPS Project Supervisors

Principal: Pam Wolfe *Manager:* Anne McGahan

Funding

MPO Planning Contract #78890 MPO §5303 Contract #78922

Impact on MPO Work

This is MPO work and will be carried out in conformance with the priorities established by the MPO.

Background

The federal government requires that metropolitan planning organizations conduct planning processes and prepare certain planning documents in accordance with federal regulations and guidelines. The purpose of this process is to guide and support MPO information gathering and decision making regarding policies and the programming of federal transportation funds. MPOs must conduct this process, known as the 3C process (defined below), in order to remain certified to receive these funds. The 3C activities conducted by the MPO staff to comply with these requirements and guidance are called certification activities.

While the Certification Activities Group of the Central Transportation Planning Staff (CTPS), which is the staff of the MPO, has the primarily responsibility for conducting this work and preparing the necessary documents, staff from all of the groups at CTPS contribute to these activities.

The 3C process is so named because it must be a continuing, comprehensive, and cooperative transportation-planning process. To be "continuing" it must be underway all year long, not sporadically. To be "comprehensive" it must be aware of the activities of the many agencies and interested entities involved in transportation planning in the MPO region and it must consider these and the transportation needs identified by all interested parties in MPO decisions. Finally, MPOs must invite the public to participate and must conduct their planning and decision making with an open and cooperative approach.

This work scope focuses on the MPO's activities related to its Long-Range Transportation Plan (LRTP), which is one of the three major certification documents required as part of the 3C process. Under the current federal funding legislation Moving Ahead for Progress in the 21st Century Act (MAP-21), a new LRTP must be produced every four years. Although the MPO adopted two amendments to its last LRTP (*Paths to a Sustainable Region*), in June 2012 and July 2013, the last full LRTP was approved in September 2011. The next LRTP must be adopted by the MPO by September 2015 to coincide with the regional transportation plan schedules of the state's other MPOs.

Objectives

The new LRTP will serve as the guiding document for the Boston Region MPO through the year 2040. The LRTP establishes the visions and policies for the region and is used by the MPO in making decisions for the future. It is developed in robust

consultation with the public (funded through another work program). The objectives of this LRTP work program are to conduct a process and develop a document that:

- 1. Provides a portrait of the region, considering its many aspects: demographics, land use, economics, and the transportation system.
- 2. Creates a broad-based regional forum for discussing regional values, formulating visions for the future, and establishing the policies and priorities (including specific multimodal, intermodal, and management and operations strategies) for accomplishing them.
- 3. Develops performance measures and implements performance-based planning and other planning practice innovations of the MPO to inform MPO investments.
- 4. Gathers information, conducts analyses, and communicates the results to support decision making.
- 5. Guides the development of the Transportation Improvement Program (TIP), the implementing document for the LRTP.
- 6. Maintains compliance with federal regulations and requirements.

Work Description

The development of the new LRTP was begun in federal fiscal year (FFY) 2013. Work will continue over the next two federal fiscal years, and will be completed by September 2015. This work program outlines the tasks necessary to complete and adopt an LRTP in 2015: however, the budget associated with this work program covers only FFY 2014 activities. (The 2015 budget will be developed in April of 2014 during the development of the FFY 2015 Unified Planning Work Program (UPWP), after the MPO has become involved in the scenario-planning process.)

This work program will consist of eight tasks, which both interrelate and provide the building blocks for later tasks. Documenting and understanding existing conditions and needs, and gathering information from pertinent work conducted by others, builds a foundation for the LRTP. This work will be done through an update of the LRTP Needs Assessment, which was originally prepared as part of the current LRTP, *Paths to a Sustainable Region*. Performance measures will be developed and will be used to provide information to decision-makers when choosing projects and programs.

Other work includes: developing and analyzing future scenarios; modeling transportation networks; exploring possible investment strategies; articulating visions, policies, and goals; consulting with the public; and applying MPO project selection criteria. These activities will provide the MPO with the information needed

to move toward the LRTP's 2040 vision for the region and to choose a set of projects and programs to accomplish it. The LRTP will be informed by a public outreach process that will elicit input from municipal, state, and federal officials, interest groups, regional organizations, and the public, with special efforts made to reach those who may not usually take part in the metropolitan transportation-planning process.

There are several tasks and many subtasks required for successful completion of this work.

Task 1 Update the Needs Assessment

This task involves updating the Needs Assessment that was prepared as part of the current LRTP. It includes collecting current data, incorporating it into the tables and databases, and analyzing it to identify changes that have occurred since the earlier assessment and to understand trends in the region. A new Webbased edition of the Needs Assessment (partially developed in FFY 2013) will house the updated information.

The original Needs Assessment was a static, printed document outlining the needs of the region as a whole and by corridors. The Web-based edition will be interactive. There are important benefits to this approach. The MPO will continue to extract information from the Needs Assessment for use in choosing projects and programs for the LRTP; however, data management to support this process will be streamlined through the use of databases that are updated as new information becomes available, and will be displayed for use by the public.

The Web-based approach to reporting on regional needs will also allow the MPO to keep the document current. In addition, this work will provide the information needed to launch the tracking of performance measures and the MPO's performance-based planning practices. Finally, the Web-based edition will allow any website visitor to select certain data from the foundation database for their own planning purposes.

Subtask 1.1 Gather Data

Staff will identify newly available data from state- and CTPS-managed databases. This includes information from the Congestion Management Process (CMP) work (information provided in a separate work program) and other studies conducted for the MPO and other transportation agencies.

The data collected will be in several categories of use: information that will be used for tracking performance measures and targets; information identified as measures for understanding trends; and other information included in the original edition of the Needs Assessment for which updates will provide an improved understanding of needs in the region. Travel-demand modeling work will be required as part of this task. A new base year (2012) will be established, using the MPO's regional travel demand model set, which is currently being developed to incorporate information gathered from a statewide household survey (this work is being performed under a separate work program). Model runs will be required to establish no-build conditions for the 2040 forecast year of the LRTP. The previous Needs Assessment used a 2009 base year and a 2030 No-Build scenario.

These data will be used to establish the baseline for the MPO's performance measurement process. Other information will be used to understand changes and trends.

Subtask 1.2 Analyze Data

The newly collected data will be reviewed by staff and the subsequent analyses will explore the extent of changes and their implications for the region's transportation network and land use. Staff will use this information to discuss changes and trends with the MPO and the public. Using performance measures that will be established by the MPO (see Task 2), staff will be able to assess the progress toward reaching the MPO's visions for the region.

Subtask 1.3 Incorporate New Data into Web-Based Needs Assessment New data will be incorporated into a Web-based edition of the Needs Assessment. This will involve developing introductory and summary text, tables, maps, and charts. It will also require the preparation of informational materials for the MPO and the public.

Products of Task 1

- Introductory text and a summary of results with updated maps, tables, and charts presenting the analyses and the data collected
- Web-based Needs Assessment
- 2012 Base Year to be used in establishing a baseline for performancebased planning, other future assessments, and air quality analysis
- Results of the regional model set for the 2040 No-Build scenario

Task 2 Develop Performance Measures

Under MAP-21, the MPO is required to develop and use performance measures in its planning process and decision making. Staff has this work well underway. This task will allow staff to continue this work and will produce an initial set of performance measures. Staff will also construct a framework for using the measures in evaluations of its investment program performance and in its planning for future investments, to attain a performance-based planning practice. This work will be informed by federal guidance when issued, and will be coordinated with MassDOT's and the MBTA's work on the development of performance measures.

Subtask 2.1 Review and Simplify MPO Visions and Policies

The MPO adopted visions and policies that have guided the evaluation of projects and programs in past LRTPs, TIPs, and UPWPs, as well as other MPO work. They will again be used in the development of performance measures. Staff will be recommending performance measures that are focused on clear goals. To support this, staff are recommending simplifying the visions and policies to correspond with the streamlined nature of the performance measures.

Subtask 2.2 Select MPO Performance Measures

Staff will continue its research and development of performance measures to correspond with the MPO's LRTP vision and policy categories. It will reach consensus on its recommendations for which performance measures should be adopted and will prepare a memorandum explaining the process and reasoning behind the recommendations. The memorandum will also explain how the MPO will use the performance measures.

As part of this research, information will be gathered on the development of the state's performance measures, and staff will incorporate it into its recommendations. The development of performance measures will be an ongoing process, with new information incorporated as it becomes available.

Throughout this process, staff will lead a series of discussions with the MPO on performance measures, the staff recommendations, and the process to be implemented in the MPO's performance-based planning. Staff will ask for guidance and concurrence from the MPO as part of all discussions.

Subtask 2.3 Gather Data on Performance Measures

Staff will develop the vehicles and formats that will house, organize, manage, and present the performance measurement data. The formats used will be determined by the informational materials to be produced and the analysis needs of the performance-based planning work. Staff will then assemble the data.

Products of Task 2

- Memorandum reporting on the process for developing the performance measures and the recommendations for the measures
- Presentations and materials supporting discussions with the MPO and MassDOT
- Formats and vehicles for housing and managing performance measurement data
- Performance Measurement data
- Updated visions, goals, and policies

Task 3 Incorporate Performance-Based Planning into MPO Decision Making

Performance-based planning is an ongoing, systematic method that uses data to set targets for improvement and to measure performance against those targets. The planning process evaluates and tracks outcomes, and reports on the effectiveness of the MPO's investments in reaching the national, state, and regional goals.

All tasks outlined below, as is the case for many of the tasks in this entire work program, will involve ongoing and often detailed consultation with the MPO with the goal of creating agreement and policy on the MPO performance-based planning practices.

Subtask 3.1 Integrate Performance Measures into LRTP, TIP and UPWP Criteria

Staff will review the current criteria used for project selection in the 3C (certification) documents and make recommendations for revisions to the criteria that are consistent with the performance measures identified in Tasks 1 and 2, as needed.

Subtask 3.2 Set Baselines:

Staff will use the available data collected in Tasks 1 and 2 for each of the performance measure areas to document the existing conditions in the region's transportation system. These will become the MPO's baselines in each of the performance measurement areas.

Subtask 3.3 Develop Targets and Strategies

Working from the baselines and applying the national and state goals and the MPO's visions, staff will develop recommended targets in each of the performance measurement areas. Staff will consider the availability of data and will also account for the possibility that some information may be qualitative. Time frames for the targets will be established for each performance measure.

Staff will develop recommendations for strategies to reach these targets. Once adopted by the MPO, these will be used to guide MPO investments.

Subtask 3.4 Begin Tracking

This will include using the tools and formats for assembling and managing data that were discussed in Subtask 2.2. Staff will begin gathering data and developing tools and formats for the assembly, analysis, and reporting of the data.

Subtask 3.5 Prepare Memoranda

Staff will prepare memoranda explaining how the performance-based planning process will be implemented to guide MPO decision making on

programming funding. These memoranda will build on a previously prepared memorandum that documented the development of the performance measures. The new memoranda will provide the national, state, and MPO goals and policy frameworks. They will discuss plans and schedules for monitoring the performance of the projects and/or system, the methods for evaluating progress, and the reporting of the data.

Products of Task 3

- Updated LRTP, TIP, and UPWP project selection criteria
- Baselines for the performance measure areas
- Performance targets and strategies
- Tables, databases, and other formats populated with performance measurement data
- Memoranda on the MPO's performance-based planning program

Task 4 Develop and Analyze Alternative Future Scenarios

Based on work completed in Task 1, including documentation of the current transportation system, future projection of the system using a 2040 No-Build scenario, and identification of needs, the MPO will develop additional transportation networks for analysis. These networks will be informed and shaped by public input, the visions, policies, and goals of the MPO, information from data collected and summarized in Task 1, and projections of future transportation revenues.

Subtask 4.1 Develop a Projection of Future Transportation Revenues Available from Current Sources

Federal regulations require that the LRTP demonstrate that proposed transportation projects and programs have currently available sources of revenue. The starting point for projections will be the extrapolation of current revenue sources. In addition to these traditional revenue sources, staff will research and document possible nontraditional revenue streams. This information will be used to ensure that the LRTP is financially constrained to available resources.

Subtask 4.2 Review and the Update Universe of Projects and Programs List The MPO will review the needs identified as part of the Needs Assessment in Task 1 and the Universe of Projects and Programs List compiled as part of the Paths to a Sustainable Region LRTP and its amendments. Staff will then add projects and programs that have been identified through the development of the Transportation Improvement Program, the MBTA's Capital Investment Program, CMP analysis, the You Move Massachusetts and We Move Massachusetts processes, and special studies. This information will be reviewed with members of the public through the MPO's public outreach program. It is from this list that the recommended list of projects and programs for the new LRTP will be chosen.

Subtask 4.3 Develop and Model a Series of Land-Use and Transportation Networks

The MPO will define two transportation networks, each of which will be modeled and analyzed with two 2040 alternative land-use projections developed by the Metropolitan Area Planning Council (MAPC) using the new land-use model. The selection of projects, programs, and strategies for inclusion in the transportation networks will be drawn from the Needs Assessment and the Universe of Projects and Programs List. They will be evaluated on how likely they are to meet performance targets to advance the MPO's policies and visions using applicable criteria, including:

- Preservation and modernization
- Safety
- Mobility
- Community (including environmental justice and community character)
- Land use and economics
- Environment

Transit projects will also be judged using the above criteria, plus:

- Utilization
- Service quality

Additional priorities will be reviewed, including:

- Operations and management
- Climate change
- Livability (including health)

Cost will also be considered.

Each network could advance a separate theme, seeking to maximize particular benefits. Examples of themes might be Addressing Climate Change, or Increasing Mobility, or System Preservation.

The networks will be financially constrained to projections of available revenue, as developed in Subtask 4.1. This work scope assumes that there will be two separate land use assumptions and two separate transportation networks. Modeling and analysis will be performed for each of the two networks for 2040 Build conditions with each of the two land use assumptions.

Subtask 4.4 Select the Preferred Land Use Projections

After reviewing the results of Subtask 4.3, the MPO will choose the preferred land use projections. These projections will be used in the selection of the recommended LRTP projects and programs, the environmental justice analysis, and air quality analysis performed in Subtasks 4.5, 4.6, 5.1, and 5.2.

Subtask 4.5 Complete an Environmental Justice (Transportation Equity) Analysis of the No-Build Scenario and Build Scenarios

An environmental justice analysis will be conducted on the 2040 No-Build and Build networks using the preferred land-use projections. Results using mobility, congestion, and accessibility performance measures for trips from target environmental justice areas to selected destinations will be estimated. The target communities will have been established in the MPO's ongoing environmental justice (transportation equity) work (included in a separate work program).

Subtask 4.6 Complete a Greenhouse Gas Analysis of the No-Build Scenario and Build Scenarios

A greenhouse gas analysis will be conducted on the 2040 No-Build and Build networks using the preferred land-use projections. Carbon dioxide emissions will be estimated and used in making project, program, and land use decisions.

Subtask 4.7 Circulate the 2040 Build Scenario Results

The staff will review the results of the model runs with the MPO. Once approved, this information will be released for public review to solicit input before the recommended set of projects is selected. Public review will include meetings with the Regional Transportation Advisory Council, environmental justice advocates, MPO subregions, and the general public. Outreach will also be conducted through the MPO's newsletter (*TRANSREPORT*), listserv, and website.

Subtask 4.8 Present the Results of Public Input to the MPO and Choose a Recommended List of Projects and Programs

Comments from the public will be summarized for the MPO to help members select the recommended list of projects and programs using the criteria presented in Subtask 4.3, in addition to results from the regional travel model (including greenhouse gas analysis and environmental justice results) and comments from the public.

Products of Task 4

- A financial plan for transportation projects, programs, and strategies in the MPO region developed in accordance with federal regulations
- An updated Universe of Projects and Programs List
- Travel model results for the 2040 Build networks
- Environmental justice results of the 2040 No-Build and Build scenarios
- Greenhouse gas results of the 2040 No-Build and Build scenarios
- Public comments from outreach on 2040 Build scenarios
- · Recommended list of projects and programs for the draft LRTP
- Memorandum on the LRTP process to date, including 2040 travel model results

Task 5 Develop and Circulate a Draft Transportation Plan

The Circulation Draft LRTP will incorporate previous work products and will include visions and policies for the region and a recommended list of projects and programs constrained to revenues outlined in the LRTP. The recommended list of projects, with their preferred land uses, will be analyzed using the MPO's environmental justice and climate change criteria. The projects and programs will also be tested for air quality conformity. All documentation necessary for showing compliance with federal regulations will be provided to the appropriate agencies.

Subtask 5.1 Perform Environmental Justice Analysis on the Draft Recommended LRTP

The recommended list of projects and programs chosen in Subtask 4.8 will be analyzed using the MPO's environmental justice criteria. The draft recommended 2040 Build network will be compared to the 2040 No-Build network to ensure that the recommended projects provide comparable benefits to the target environmental justice areas and non-target areas in the MPO region.

Subtask 5.2 Perform Air Quality Conformity Analysis and Green House Gas Analysis of the Draft Recommended LRTP

An air quality conformity determination will be performed to ensure that the draft recommended list of projects and programs complies with all applicable air quality standards. The years 2020, 2030, and 2040 will be used for modeling various scenarios for the LRTP, with 2020 and 2030 as interim analysis years, and 2040 as the forecast year of the LRTP. Although not part of the conformity determination, an analysis of greenhouse gas emissions (for example carbon dioxide and methane.) will also be done to provide information for MassDOT's GreenDOT Implementation Plan.

Subtask 5.3 Prepare the Circulation Draft LRTP

At the direction of the MPO, staff will prepare the Circulation Draft LRTP. This LRTP will contain the results of all previous work products, including changes made as a result of public input. This LRTP will include:

- The documentation of existing conditions (demographic, land-use, and transportation system)
- The documentation of future conditions (demographic, land-use, and transportation system)
- Information from the Needs Assessment for the region
- Updated visions, goals, and policies
- The projection of future revenue from currently available sources
- A discussion of performance measures, performance-based planning, and the evaluation criteria used in project and program selection
- A discussion of the alternative transportation networks studied as part of this work program
- The results of qualitative and quantitative analysis of the networks including how they address the MPO's performance targets
- The selection of major transportation projects and programs to be included in the recommended LRTP (including estimated project costs and timelines)
- An environmental justice analysis of the recommended LRTP
- An air quality conformity determination of the recommended LRTP
- A greenhouse gas analysis of the recommended LRTP

Subtask 5.4 Approve and Distribute the Circulation Draft LRTP

Staff will present the Circulation Draft LRTP to the MPO for review, modification, and approval for circulation to the general public. The public outreach for the Circulation Draft LRTP will be funded under another work program (3C Planning and MPO Support).

The Circulation Draft LRTP will be presented to the public via placement on the MPO website and distribution of materials in other formats upon request. An executive summary will be prepared and used for discussions with the Regional Transportation Advisory Council, environmental justice advocates, the MAPC subregions, and members of the general public. Notices will be sent to members of these entities. A notice will appear in the MPO's newsletter, *TRANSREPORT*, and notices of the LRTP's availability will be sent to newspapers and to recipients of the MPO's email listserve.

Shortly after distribution of the circulation draft, public workshops will be held to solicit input from members of the public. These meetings will be attended by members of the MPO as well as by MPO staff. All comments received, including those made at the public meetings, will be summarized for the MPO to help members in their deliberations prior to adopting an LRTP.

Products of Task 5

- Memoranda summarizing the results of the modeling and analyses
- Draft chapters of the Circulation Draft LRTP
- The Circulation Draft LRTP
- The Environmental Justice Analysis
- The Air Quality Conformity Determination
- The Climate Change Analysis
- A summary of public comments from the outreach activities

Task 6 Adopt the Final LRTP

After the public review process for the Circulation Draft LRTP, the Boston Region MPO will endorse an LRTP for the years 2016 through 2040. This LRTP will serve as the source document for projects and work programs in future Transportation Improvement Programs and Unified Planning Work Programs.

Products of Task 6

An LRTP for the Boston Region MPO area with an Air Quality Conformity Determination and Environmental Justice Analysis

Task 7 Respond to Requests for Information

Throughout the course of the year, requests for information associated with the LRTP or for information that was developed during the LRTP process are received from MPO members, a variety of transportation and planning agencies' staffs, and the public.

Product of Task 7

Responses to information requests.

Task 8 Maintain Best Practices

The MPO staff is aware that there are constant innovations in planning practices and changes in federal guidance. The staff keeps current on best practices in LRTP planning and explores, discusses, and proposes options to bring into the MPO's planning practice.

Estimated Schedule

This project is ongoing from year to year. It is estimated that the tasks presented in this work program will be completed throughout the 24 months of FFY 2014 and 2015. The proposed schedule, by task, is shown in Exhibit 1.

Estimated Cost

The total cost of this project for FFY 2014 is estimated to be \$300,192. The budget for FFY 2015 will be developed in April of 2014 during the development of the FFY 2015 Unified Planning Work Program, after the MPO has become involved in the scenario-planning process for the LRTP. It is expected that during FFY 2014, work will be completed on Task 1 through Task 3 and work will be underway on Tasks 4 and 5. All work on Task 6 will occur during FFY 2015, and work on Tasks 7 and 8 will be ongoing throughout both years of the project. The FFY 2014 cost includes the cost of 108.6 person-weeks of staff time and overhead at the rate of 97.42 percent. A detailed breakdown of estimated FFY 2014 costs is presented in Exhibit 2.

KQ/AM/am

Exhibit 1 ESTIMATED SCHEDULE Long-Range Transportation Plan

	Month									
Task	1 2 3 4	4 5 6	5 7	8	9 10 11	12 13	14 15 1	6 17 18	19 20 2 ⁻	1 22 23 24
1. Update Needs Assessment										
2. Develop Performance Measures										
3. Incorporate Performance-Based										
Planning							-			
4. Develop Alternative Future Scenarios										
5. Develop and Circulate a Draft LRTP										
6. Adopt a Final LRTP										
7. Respond to Requests for Information										
8. Maintain Best Practices										

Exhibit 2 ESTIMATED COST Long-Range Transportation Plan

Direct Salary and Overhead

\$300,192

	Person-Weeks							Direct	Total	
Task	M-1	P-5	P-4	P-3	P-2	Temp	Total	Salary	(97.42%)	Cost
1. Update Needs Assessment	0.0	24.0	7.0	4.0	1.0	3.0	39.0	\$56,125	\$54,677	\$110,803
2. Develop Performance Measures	2.0	13.5	1.0	8.0	1.0	3.0	28.5	\$38,415	\$37,423	\$75,838
3. Incorporate Performance-Based										
Planning	3.0	7.0	1.0	4.0	1.0	2.0	18.0	\$24,369	\$23,741	\$48,110
4. Develop Alternative Future										
Scenarios	2.0	9.0	4.5	4.5	0.0	0.0	20.0	\$29,100	\$28,349	\$57,449
5. Develop and Circulate a Draft										
LRTP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$00	\$00	\$00
6. Adopt a Final LRTP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$00	\$00	\$00
7. Respond to Requests for										
Information	0.0	0.5	0.0	0.5	0.0	0.0	1.0	\$1,377	\$1,341	\$2,718
8. Maintain Best Practices	0.2	0.5	0.0	1.4	0.0	0.0	2.1	\$2,672	\$2,603	\$5,274
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	\$00	\$00	\$00
Total	7.2	54.5	13.5	22.4	3.0	8.0	108.6	\$152,057	\$148,134	\$300,192
Other Direct Costs										\$0

\$300,192

TOTAL COST

Funding

MPO Planning Contract #78890 MPO §5303 Contract #78922