



## BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair  
Karl H. Quackenbush, Executive Director, MPO Staff

### *MEMORANDUM*

**DATE** February 18, 2016  
**TO** Boston Region Metropolitan Planning Organization  
**FROM** Karl H. Quackenbush  
CTPS Executive Director  
**RE** Work Program for: Support to the Lower Mystic Regional Working Group

#### Action Required

Review and approval

#### Proposed Motion

That the Boston Region Metropolitan Planning Organization, upon the recommendation of the Massachusetts Department of Transportation, vote to approve the work program for Support to the Lower Mystic Regional Working Group presented in this memorandum

#### Project Identification

##### Unified Planning Work Program Classification

Planning Studies

##### CTPS Project Number

22209

##### Clients

Massachusetts Department of Transportation, Office of Transportation Planning  
*Project Supervisor:* Ethan Britland, OTP, Manager of Corridor Planning

##### CTPS Project Supervisors

*Principal:* Scott A. Peterson  
*Manager:* Mark Abbott

##### Funding

MassDOT Contract TBD

## Impact on MPO Work

The MPO staff has sufficient resources to complete this work in a capable and timely manner. By undertaking this work, the MPO staff will neither delay the completion of nor reduce the quality of any work in the UPWP.

## Background

In August 2015, the Executive Office of Energy and Environmental Affairs (EOEEA) issued a Certificate for the Second Supplemental Final Environmental Impact Report on the Wynn Casino in Everett, EEA #15060. The Certificate stated that although the project adequately and properly complied with the Massachusetts Environmental Policy Act (G.L.c.30, ss.61-62I), there could be broader regional transportation impacts associated with other large-scale development proposals in the area near the Wynn Casino north of Boston. While the Wynn Casino is a significant trip generator, it is not the only planned development that will add trips to the transportation network in this area.

In order to understand the extent of these impacts, the EOEEA Certificate required “the establishment of a Regional Working Group,” hereinafter referred to as the Working Group, which “will be led by the Massachusetts Department of Transportation (MassDOT) and its purpose will be to assess and develop long-term transportation improvements that can support sustainable redevelopment and economic growth in and around Sullivan Square” (SSFEIR Certificate, EEA #15060, August 28, 2015, p. 2). As further noted in the Certificate, “Wynn Everett has committed to participate in Regional Working Group and provide a proportionate share of funding to support this effort” (same source).

The Certificate also states, on page 4, that the Working Group “will include significant opportunities for consultation, public review and comment. . . . To be productive, the effort will require the active and constructive participation of stakeholders, including EOHEd, MAPC, DCR and municipalities including, but not limited to, the cities of Boston, Everett, and Somerville. In addition, large employers and developers have an important role to play.”<sup>1</sup>

## Study Area

The study area is proposed to include parts of Boston, Everett, and Somerville. The approximate area is shaped like an inverted triangle with the northern boundary delineated by Route 16, the western boundary by Medford Street and McGrath Highway in Somerville, and the eastern boundary by Route 1. The boundaries of the

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<sup>1</sup> EOHEd is the Executive Office of Housing and Economic Development; MAPC is the Metropolitan Areas Planning Council; and DCR is the state’s Department of Conservation and Recreation.

study area will be flexible in order to examine areas on the edge that the Working Group wants to include.

## Objectives

Describing the role of the Working Group, the MEPA Certificate notes that “MassDOT will outline a process and schedule and work with stakeholders to identify goals and objectives of the Working Group. At a minimum, the Working Group will:

- Assess existing conditions, planned improvements, and reviewed and permitted development
- Identify planned development and potential build-out
- Identify critical existing and proposed infrastructure and study alternatives
- Consider funding resources and equitable allocation of project costs”

In order to achieve these four objectives, it will be necessary to undertake a modeling exercise that can support the Working Group in its assessment of existing conditions and planned development in a defined study area. This modeling exercise will also help to determine likely transportation impacts, potential measures that could be taken to address those impacts, new critical infrastructure that may be needed, and how to pay for those improvements in an equitable manner. The Working Group will make decisions based on consensus, and its recommendations will largely be advisory, not constituting final decisions on local or state policy or funding decisions.

## Work Description

The Boston Region MPO staff, also known as the Central Transportation Planning Staff (CTPS), and the Metropolitan Area Planning Council (MAPC) staff will work in partnership on all of the tasks described in this scope of work. The level of work performed by each organization is identified in Exhibits 1 and 2. MAPC will take the lead in developing the land use alternatives and working with a land use allocation model. CTPS will take the lead in the transportation modeling and analysis aspects of this scope, and both organizations will support the Working Group, public meetings, development of the final report, and recommendations to the Working Group members.

The approach outlined below will require a great deal of technical work involving the application of various transportation models, each one having a specific use, and a model of the spatial distribution of households and employment across the region. All of this very involved work is required in order to generate the information necessary for the Working Group’s deliberations. The technical information will be packaged in easily understood graphics and other formats. The models produce

great volumes of highly detailed information, but all model forecasts contain some degree of error, so all of the information will be aggregated and otherwise generalized to a level consistent with its accuracy.

### **Task 1 Assist with Stakeholder Engagement and Provide Administrative Support to the Working Group**

A professional independent third-party facilitator will manage the stakeholder engagement process for the Working Group, which will include approximately 12 Working Group meetings, 3 public meetings, and additional engagement opportunities determined by the Working Group, such as focus groups, interviews, surveys, social media, or other in-person or online activities to engage stakeholders and solicit public input over the entire Working Group time line. Stakeholders are considered to be formal Working Group members; other interested parties, such as other municipalities and state agencies, property owners, small business owners, developers, neighborhood associations, and nonprofit organizations; and the public at large.

#### *Products of Task 1*

Staff support to the Working Group consisting of planning three public meetings, supporting the facilitator, attending Working Group meetings, assisting MassDOT in answering questions, and presenting information

### **Task 2 Verify Existing Land Uses and Identify Future Developments**

Staff will review the set of current and proposed developments in the study area. This review will include verifying existing data and collecting new data on developments based on feedback from the stakeholders. The data of interest will include, but not be limited to, permitting status, zoning codes, square footage, real estate values, and any mitigation strategies that developers propose. Staff will evaluate the gathered data for accuracy and completeness, and add the data to MAPC's Development Database. The objective is to use these data in Tasks 6 and 7 to develop multiple land use scenarios, which can then be modeled, along with transportation infrastructure, operations, mitigation steps, and traveler behavior for two model years, 2030 and 2040, which are the forecast years for this project.

#### *Product of Task 2*

A database of existing and proposed demographics in the study area

### **Task 3 Examine Existing and Proposed Transportation Infrastructure**

Staff will coordinate with MassDOT, the affected municipalities, and other key stakeholders to verify the existing and proposed transportation infrastructure by forecast year. This will include roadway layout, number of lanes, capacity, direction, signal timings, turning lanes, nonmotorized amenities, bicycle and

pedestrian infrastructure, and transit service and operational information. These data, as available, will be used as input into the modeling work to support the analysis by forecast year and by land use scenario.

*Product of Task 3*

A database of existing and proposed transportation infrastructure in the study area

**Task 4 Review Current and Recent Transportation Studies**

Several transportation studies have been conducted in the study area during the past 15 years (for example, the Wynn Casino Traffic Impact Analysis conducted by Wynn; the McGrath Traffic Study conducted by MassDOT; and the Rutherford Avenue Project being undertaken by the City of Boston) from which the Working Group can learn. Staff will talk with stakeholders to identify all of the relevant studies, review them, and isolate key references from them that may help inform the Working Group. Staff will consider and apply to the current analysis all of the relevant information gleaned from reviewing past studies.

*Product of Task 4*

Review of data and assumptions used in previous and recent traffic studies of the study area

**Task 5 Develop and Examine a Model of Existing Transportation Conditions**

Staff will use a model that reflects the existing land use and transportation infrastructure for eastern Massachusetts. All of the major transportation modes will be examined, and a detailed analysis of roadway and transit congestion, other transportation operations, and the resulting air quality will be conducted for the study area. In order to develop a model that represents existing conditions, staff will use a variety of data sets. Traffic count data will be collected from previous project work if possible, and if gaps exist, staff will request that MassDOT and the municipalities collect relevant traffic count and turning-movement data. Staff will purchase GPS and cell phone data sets to help verify entry and exit points of traffic in the study area. Staff will work with the MBTA to collect relevant transit data. Staff will then utilize three tools to examine transportation operations: the Boston Region MPO travel demand model, an intersection-level traffic model, and a microsimulation model of Interstate 93. Key highway, intersection, and transit operations will be examined, and staff will report to the Working Group any notable existing issues.

*Product of Task 5*

A model and analysis of existing transportation conditions

**Task 6 Develop and Examine Baseline Scenarios for Both Forecast Years**

Staff will develop a “business as usual” scenario, which will include baseline assumptions about demographic changes, land use, transportation infrastructure, transportation operations, and traveler behavior in each of the forecast years, 2030 and 2040. The demographic and land use forecasts will be developed using a land use modeling tool, with the data collected in Task 2 as inputs, and will represent current land use policies. The transportation network used for this scenario will be defined in consultation with the Working Group, but is proposed to be a “no-build” scenario that would include all of the projects (by time band) in the Boston Region MPO’s currently adopted Long-Range Transportation Plan (LRTP) that are expected to be in place by 2030, and by 2040.

*Product of Task 6*

A model and analysis of baseline transportation conditions for 2030 and 2040

**Task 7 Identify Mitigation Strategies and Land Use Alternatives for Both Forecast Years**

Using the results of the previous tasks, staff will identify potential issues associated with transportation operations within the study area. Staff and the Working Group will work together to recommend a series of mitigation strategies which, if applied consistently by state and local authorities over the next several decades, could help to address the negative transportation impacts identified in this study. The mitigation strategies could include transportation infrastructure improvements, intelligent transportation systems, demand-management strategies such as alternative work scheduling or “telework” opportunities, as well as changes to municipal land use policies or to relevant state regulations. The land use alternatives identified in this task may also include varying levels of growth and development based on current or amended zoning capacity, infrastructure limitations, or regional economic conditions.

*Product of Task 7*

A list of proposed mitigation measures and packages of the measures

**Task 8 Develop and Examine Alternative Scenarios for Both Forecast Years**

Staff will model and test as many as 12 total scenarios covering the two forecast years (2030 and 2040), based on different assumptions about land use, transportation networks and operations, traveler behavior, and other inputs. These alternative scenarios will be informed by the mitigation options and land use alternatives identified in Task 7. At least one of these scenarios will be used as a sensitivity test of the mode shift assumptions used in the Wynn Everett Casino TIA. The alternatives scenarios will be examined at the same level of detail as the no-build scenarios and compared with them in order to identify

future issues with transportation operations and to assess the efficacy of various mitigation strategies and land use strategies for the study area.

*Product of Task 8*

Analysis of multiple alternatives that test mitigation strategies

**Task 9 Examine Funding Options**

Staff will work with the Working Group, MassDOT, and other key stakeholders to estimate the cost of mitigation and infrastructure improvements identified in Tasks 7 and 8, and to suggest possible funding strategies. These strategies will include federal and state funding sources, Massachusetts Gaming Commission infrastructure mitigation funds, municipal funds, value capture techniques, and private developer mitigation. The costs for transportation improvements that are small in scale—such as intersection improvements or bus purchases—will be estimated by staff. The costs for major infrastructure investments will be estimated by MassDOT.

*Product of Task 9*

A list of funding strategies

**Task 10 Develop Recommendations and Create a Blueprint and Schedule for Implementing Them**

Based on the transportation modeling results and analyses of costs and potential funding mechanisms, staff will develop a recommended set of policies, programs, and infrastructure investments that would support sustainable redevelopment and economic growth in the study area. These recommendations, which will include a description of funding mechanisms and implementation schedules for the proposed mitigation alternatives, will be presented to the Working Group for its consideration. Based on feedback from the Working Group, staff will develop a final set of recommendations.

*Product of Task 10*

A set of recommended policies, programs, and infrastructure investments, which will include a blueprint and schedule for implementation

**Task 11 Produce a Final Report Documenting the Study**

Staff will produce a draft report that documents the methods used in this study, engagement techniques used with stakeholders, modeling results, mitigation recommendations, and all of the other relevant findings from this study. The draft report will be presented to the Working Group with the goal of attaining consensus on the final recommendations. Staff will then produce a final report that will be posted on the MassDOT, MAPC, and MPO websites.

*Product of Task 11*

Final report

**Estimated Schedule**

It is estimated that this project will be completed 18 months after work commences. The proposed schedule, by task, is shown in Exhibit 1.

**Estimated Cost**

The total cost of this project is estimated to be \$489,300. This includes the cost of 175.5 person-weeks of staff time, overhead at the rate of 98.88 percent, and direct charges of \$500 for travel and \$45,000 for travel data. A detailed breakdown of estimated costs is presented in Exhibit 2.

KQ/SAP/ma



**Exhibit 1**  
**ESTIMATED SCHEDULE**  
**Support to the Lower Mystic Regional Working Group**

| Task   | Month |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
|--|-------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|--|--|
|  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |  |
| 1. Assist with Stakeholder Engagement and Administrative Support     | A     |   |   |   | B |   |   |   |   |    | C  |    |    |    |    |    |    |    |  |  |
| 2. Verify Existing Land Uses and Identify Future Developments        | D     |   | E |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| 3. Examine Existing and Proposed Transportation Infrastructure       | F     |   | G |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| 4. Review Current and Recent Transportation Studies                  | H     |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| 5. Develop and Examine a Model of Existing Transportation Conditions | I     |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| 6. Develop and Examine Baseline Scenarios                            |       |   |   |   | J |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| 7. Identify Mitigation Strategies and Land Use Alternatives          |       |   |   |   |   |   |   |   | K |    |    |    |    |    |    |    |    |    |  |  |
| 8. Develop and Examine Alternative Scenarios                         |       |   |   |   |   |   |   |   |   |    |    |    | L  |    |    |    |    |    |  |  |
| 9. Examine Funding Options   | M     |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |  |
| 10. Develop Recommendations Based on the Modeling Results            |       |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | N  |    |  |  |
| 11. Produce a Final Report Documenting the Study                     |       |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | O  |    |  |  |

**Products/Milestones**

- A: Public Meeting 1
- B: Public Meeting 2
- C: Public Meeting 3
- D: Database of 2014 demographics
- E: Database of 2030 and 2040 demographics
- F: Database of 2014 infrastructure
- G: Database of 2030 and 2040 infrastructure
- H: Review of past studies
- I: Model and analysis of existing transportation conditions
- J: Model and analysis of baseline transportation conditions for 2030 and 2040
- K: List of mitigation measures
- L: Analysis of multiple alternatives
- M: List of funding strategies
- N: Recommendations, blueprint, and schedule
- O: Final report

**Exhibit 2**  
**ESTIMATED COST**  
**Support to the Lower Mystic Regional Working Group**

|                                   |                  |
|-----------------------------------|------------------|
| <b>Direct Salary and Overhead</b> | <b>\$443,800</b> |
|-----------------------------------|------------------|

| Task   | Person-Weeks |             |             |             |             |             |              | Direct Salary    | Overhead (98.88%) | Total Cost       |
|--|--------------|-------------|-------------|-------------|-------------|-------------|--------------|------------------|-------------------|------------------|
|  | M-1          | P-5         | P-4         | P-3         | P-2         | Temp        | Total        |                  |                   |                  |
| 1. Assist with Stakeholder Engagement and Administrative Support     | 3.5          | 3.1         | 3.2         | 3.1         | 0.0         | 0.0         | 12.9         | \$19,399         | \$19,181          | \$38,580         |
| 2. Verify Existing Land Uses and Identify Future Developments        | 0.5          | 2.5         | 2.1         | 0.3         | 0.0         | 0.0         | 5.4          | \$8,513          | \$8,417           | \$16,930         |
| 3. Examine Existing and Proposed Transportation Infrastructure       | 0.5          | 3.0         | 1.7         | 1.5         | 2.4         | 0.0         | 9.1          | \$12,570         | \$12,430          | \$25,000         |
| 4. Review Current and Recent Transportation Studies                  | 0.5          | 0.5         | 0.0         | 1.3         | 0.0         | 0.0         | 2.3          | \$3,263          | \$3,227           | \$6,490          |
| 5. Develop and Examine a Model of Existing Transportation Conditions | 1.9          | 7.5         | 4.5         | 6.5         | 1.7         | 10.0        | 32.1         | \$36,997         | \$36,583          | \$73,580         |
| 6. Develop and Examine Baseline Scenarios                            | 3.0          | 8.8         | 6.6         | 3.1         | 4.8         | 10.0        | 36.3         | \$43,222         | \$42,738          | \$85,960         |
| 7. Identify Mitigation Strategies and Land Use Alternatives          | 1.0          | 2.0         | 0.0         | 2.5         | 0.0         | 0.0         | 5.5          | \$8,186          | \$8,094           | \$16,280         |
| 8. Develop and Examine Alternative Scenarios                         | 4.0          | 10.5        | 10.2        | 3.3         | 8.5         | 12.0        | 48.5         | \$57,683         | \$57,037          | \$114,720        |
| 9. Examine Funding Options   | 1.0          | 1.2         | 0.0         | 2.1         | 1.6         | 0.0         | 5.9          | \$7,824          | \$7,736           | \$15,560         |
| 10. Develop Recommendations Based on the Modeling Results            | 1.3          | 2.0         | 1.6         | 1.9         | 1.9         | 0.0         | 8.7          | \$11,992         | \$11,858          | \$23,850         |
| 11. Produce a Final Report Documenting the Study                     | 2.1          | 3.0         | 1.2         | 2.3         | 0.2         | 0.0         | 8.8          | \$13,501         | \$13,349          | \$26,850         |
| <b>Total</b>   | <b>19.3</b>  | <b>44.1</b> | <b>31.1</b> | <b>27.9</b> | <b>21.1</b> | <b>32.0</b> | <b>175.5</b> | <b>\$223,150</b> | <b>\$220,650</b>  | <b>\$443,800</b> |

|                           |                 |
|---------------------------|-----------------|
| <b>Other Direct Costs</b> | <b>\$45,500</b> |
|---------------------------|-----------------|

|  |          |
|--|----------|
| Travel                                 | \$500    |
| Other (GPS data for model calibration) | \$45,000 |

|                   |                  |
|-------------------|------------------|
| <b>TOTAL COST</b> | <b>\$489,300</b> |
|-------------------|------------------|

**Funding**  
 MassDOT Contract TBD