



## BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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Stephanie Pollack, MassDOT Secretary and CEO and MPO Chair  
Tegin L. Teich, Executive Director, MPO Staff

### *WORK PROGRAM*

## WELLINGTON CIRCLE STUDY

SEPTEMBER 17, 2020

### Proposed Motion

The Boston Region Metropolitan Planning Organization (MPO) votes to approve this work program.

### Project Identification

Project Number 22216

Client

*Massachusetts Department of Transportation (MassDOT)*

Client Supervisor: Makaela Niles, MassDOT

Project Supervisors

*Principal: Marty Milkovits*

*Manager: Sanjay Kaul*

Funding Source

MassDOT Casino Mitigation Funds

### Schedule and Budget

Schedule: 18 months after work commences

Budget: \$108,664

Schedule and budget details are shown in Exhibits 1 and 2, respectively.

### Relationship to MPO Work

This study is supported in full with non-MPO funding. Committing MPO staff to this project will not impinge on the quality or timeliness of MPO-funded work.

## Background

The Wellington Circle Study work program will support MassDOT's conceptual planning study that will evaluate the existing and future multimodal transportation conditions at Wellington Circle in the City of Medford, and develop and analyze alternatives intended to improve transportation conditions. This complex multimodal transportation area—at the crossroads of several state highways, close to several walking and bike trails, and near the MBTA's Wellington transit station, which is a junction for several bus routes—deserves a thoughtful reassessment of its transportation operations.

This study evolved from local and regional planning processes, stemming from the Massachusetts Environmental Policy Act (MEPA) permitting process for the Encore Casino, the Lower Mystic Regional Planning Study, and the Boston Region MPO's Long-Range Transportation Plan (LRTP) Needs Assessment.

The study will focus on the redesign of Wellington Circle in order to provide better connectivity and improve multimodal mobility throughout the area for the City of Medford and other surrounding communities in the region. The study will examine and evaluate proposed alternatives to the extent possible in the context of vehicular traffic, transit operations, bicycle and pedestrian use, and cost, as well as resulting economic, social, and cultural impacts.

The transportation alternatives will be evaluated relative to criteria that relate to the study goals and objectives derived from a public process that involves multiple stakeholders and a working group. MassDOT's study will incorporate the results of the work the Central Transportation Planning Staff (CTPS) conducts as part of this work program in a final report that includes the analytical findings and technical documents; preliminary cost estimates; recommendations; and other relevant details.

## Study Area

The local study area for the traffic analysis is assumed to include Route 16 from the Interstate 93 interchange on the west to the interchange of Revere Beach Parkway and Rivers Edge Drive (which provides access to Wellington Station) on the east, and Route 28 (the Fellsway) from the I-93 interchange on the south to Riverside Avenue on the north.

The local study area for transit, based on the bus routes, is assumed to include the area bounded by Central Avenue (Medford) and Medford Street (Malden) to the north, the Malden River and the rotary with Route 99 (Everett) on the east, the Mystic River on the south, and Park Street on the west. The study includes Wellington Station.

The regional study area encompasses an area approximately bound by the Mystic Avenue corridor on the west, the intersection of the Fellsway and Pleasant Street (Malden) on the north, the Northern Strand Community Trail and the Broadway corridor

on the east, and Sullivan Square (Route 99/I-93) on the south. The boundaries of the regional study area shall coincide with transportation analysis zone (TAZ) boundaries in the CTPS transportation model. The municipalities included in the regional study area are Medford, Malden, Everett, and Somerville.

## Objectives

The objectives of this work program will be to provide analytical and project coordination support to MassDOT's project team within the limits of this work program and the consultants' scope of work. The analytical support will include utilizing the travel demand model to produce forecasts of multimodal travel flows in the regional study area for existing conditions, a future 2040 no-build scenario, and as many as three build alternatives.

## Work Description

CTPS will work in partnership with MassDOT and its consultants on all the tasks described in this scope of work. CTPS will take the lead on the transportation modeling and analysis aspects of this scope and support MassDOT and its project team by providing data and analysis.

### Task 1 Coordinate with Project Team and Oversee Project

CTPS will work with MassDOT and its consultants to help develop travel demand forecasts and respond to questions related to the tasks described below.

#### *Products of Task 1*

- Administrative activities and internal coordination
- Coordination with MassDOT, consultants, and stakeholders
  - As many as eight working group meetings
  - As many as four public meetings
  - As many as four pop-up events, which may include exhibiting at community events, businesses, or other locations within the study area
  - As many as 30 internal meetings
- Review of documents and presentation materials
- Response to questions

### Task 2 Enhance, Calibrate, and Validate 2018 Base Year

The travel demand model has been calibrated at the statewide level and must be reviewed, recalibrated, and potentially refined to best reflect the specific conditions

within the corridor being studied to ensure reasonable sensitivity in the model to the proposed alternatives. This effort would include the following activities:

- Network checks within the study area to identify any coding errors or to include missing local streets
- Review of trip generation particularly at key generators in the study area
- Inspection of modeled origin-destination patterns in the study area compared to data made available by the consultant team to demonstrate that the data correspond to observed travel within and through the study area
- Review to ensure mode share targets are met
- Careful comparison of point-to-point travel times or speeds on individual road segments (if the data are available) to demonstrate that the model responds appropriately to changing traffic volumes
- Comparison of modeled traffic volumes with traffic counts (if the data are available)

CTPS will conduct this work and validate the corridor to the total daily demand (transit and vehicular), vehicle speeds, and travel times. CTPS will utilize the most current highway count data sets made available by MassDOT and its consultant team to develop matching approach volumes that will be processed and balanced. CTPS will not be calibrating the model to turning movements at the intersections or to local nonmotorized activity. The calibrated model will then be applied to develop baseline estimates of travel in the study corridor.

#### *Products of Task 2*

- Calibrated model for the study area
- Summaries of model inputs, such as socio-economic data
- Tabular summary of vehicle throughput for roadways in the study corridor specified by the consultant team, approach volumes to intersections by peak periods, and select link volumes
- Tabular summary of transit throughput for selected transit services in the study corridor specified by the consultant team

#### **Task 3 Develop and Analyze 2040 No-Build Scenario and Provide Guidance on Development of Alternative Land Use Scenarios**

Using the calibrated 2018 base-year model developed in Task 2 and applying it to the horizon year 2040, CTPS will model a future year no-build scenario for 2040. The land use scenario for this alternative will be based on the land use assumptions developed for the Boston Region MPO's recently adopted LRTP, *Destination 2040*, with the addition of the latest land use assumptions identified by MassDOT and its consultants. The 2040 scenario will be based on the same infrastructure

assumptions as the LRTP. Henceforth, this scenario is referred to as the 2040 No-Build.

MassDOT's consultant team plans to identify additional assumptions for future year infrastructure and development, and examine possible increases to residences and jobs. The intention is to develop a more intensive development scenario to be used for a sensitivity analysis for the three build alternatives. For this effort, the two possible scenarios MassDOT's consultants plan to examine are as follows:

- A zoning scenario that projects the maximum development currently allowed by-right in the study area
- A densified scenario that goes beyond what is currently allowed by-right and places housing and employment at less developed sites throughout the study area

Each land use scenario would produce variations on travel demand and the key metrics of the infrastructure alternatives. CTPS will provide its expertise to guide the development of the variations on travel demand for each land use scenario.

### *Products of Task 3*

The following summaries will be prepared for the 2040 No-Build scenario:

- Summaries of model inputs, such as socio-economic data, for the future year and its comparison to base-year data to understand implications of growth on the transportation network
- Tabular summary of vehicle throughput on the study corridor
- Tabular summary of transit throughput on the study corridor
- Coordination with MassDOT and its consultants in their effort to develop an intensive land use development scenario

### **Task 4 Develop and Analyze Three 2040 Build Alternatives with Feedback on Impacts of the Intensive Development Scenario**

Pivoting off of the 2040 No-Build scenario as discussed in Task 3, CTPS will model as many as three build alternatives and summarize the effects on travel patterns and modal choices. The project team will supply CTPS with the network specifications and transit service plans for the three scenarios.

As in Task 3, CTPS will provide its expertise to study the impacts of the intensive development scenario on travel demand estimation and coordinate with the consultants on the sensitivity analysis of the three build alternatives. This effort will involve post-model processing.

### *Products of Task 4*

The following summaries will be prepared for each of the three alternatives:

- Summaries of model inputs, such as socio-economic data
- Tabular summary of person and vehicle throughput on the study corridor, focusing on approach volumes to intersections by peak periods
- Tabular summary of transit throughput on the study corridor
- Summary of generated trips by trip purpose for the intensive development scenario in comparison to the 2040 No-Build scenario
- Coordination on the sensitivity analysis of the three build alternatives

#### Task 5 Air Quality Analyses

CTPS will perform air quality analyses consistent with the work completed for the Boston Region MPO's LRTP, *Destination 2040*. The air quality analysis on highway assignment outputs will compare the build alternatives with the 2040 No-Build scenario and report emissions by region for several key pollutants using the latest version of the US Environmental Protection Agency's MOVES emissions modeling software.

##### *Products of Task 5*

Tabular summaries of the results of air quality analyses by community

#### Task 6 Environmental Justice Analyses

CTPS will perform environmental justice analyses consistent with work completed for the Boston Region MPO's LRTP, *Destination 2040*. The environmental justice analyses will compare the build alternatives with the 2040 No-Build scenario and report the differences between the 2040 No-Build scenario and the build alternatives by population group (minority and non-minority) in addition to income groups (low income and non-low-income).

##### *Products of Task 6*

Tabular summaries of the results of environmental justice analyses by population and income groups

#### Task 7 Documentation

CTPS staff will document the methodology developed to support MassDOT's study and the results of the analysis.

##### *Products of Task 7*

Documentation describing the methodology and results

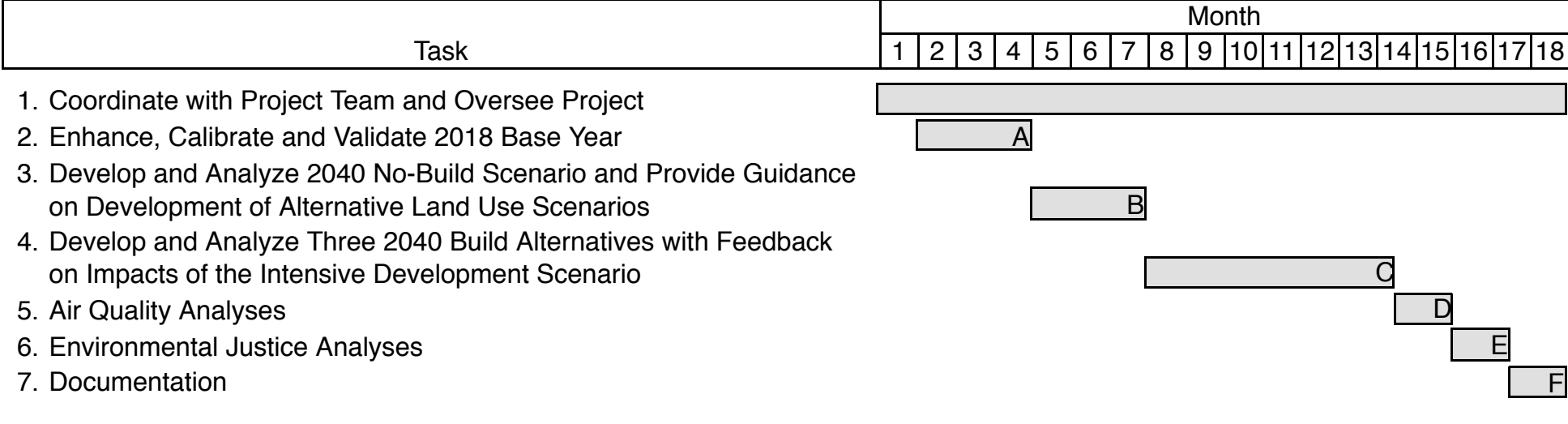
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The Boston Region MPO also complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 sections 92a, 98, 98a, which prohibits making any distinction, discrimination, or restriction in admission to, or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry. Likewise, the Boston Region MPO complies with the Governor's Executive Order 526, section 4, which requires that all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.

A complaint form and additional information can be obtained by contacting the MPO or at [http://www.bostonmpo.org/mpo\\_non\\_discrimination](http://www.bostonmpo.org/mpo_non_discrimination). To request this information in a different language or in an accessible format, please contact

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Boston Region MPO  
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[civilrights@ctps.org](mailto:civilrights@ctps.org)  
857.702.3700 (voice)  
617.570.9193 (TTY)

**Exhibit 1**  
**ESTIMATED SCHEDULE**  
**Wellington Circle Study**



**Products/Milestones**

- A: Calibrated Base Year Model
- B: Summaries from 2040 No-build run
- C: Summary comparison of 3 Alternatives



**Exhibit 2**  
**ESTIMATED COST**  
**Wellington Circle Study**

<b>Direct Salary and Overhead</b>	<b>\$108,564</b>
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Task	Person-Weeks					Direct Salary	Overhead (106%)	Total Cost
	M-1	P-5	P-4	P-3	Total			
1. Coordinate with Project Team and Oversee Project	2.0	3.0	2.0	1.0	8.0	\$13,931	\$14,767	\$28,697
2. Enhance, Calibrate and Validate 2018 Base Year	0.6	2.0	2.0	0.0	4.6	\$8,021	\$8,502	\$16,524
3. Develop and Analyze 2040 No-Build Scenario and Provide Guidance on Development of Alternative Land Use Scenarios	0.4	3.0	1.0	0.0	4.4	\$8,177	\$8,668	\$16,844
4. Develop and Analyze Three 2040 Build Alternatives with Feedback on Impacts of the Intensive Development Scenario	0.5	4.0	1.0	2.0	7.5	\$12,791	\$13,559	\$26,350
5. Air Quality Analyses	0.2	1.0	0.0	0.0	1.2	\$2,373	\$2,515	\$4,889
6. Environmental Justice Analyses	0.2	1.0	0.0	0.0	1.2	\$2,373	\$2,515	\$4,889
7. Documentation	0.2	1.0	1.0	1.0	3.2	\$5,035	\$5,337	\$10,371
Total	4.1	15.0	7.0	4.0	30.1	\$52,701	\$55,863	\$108,564

<b>Other Direct Costs</b>	<b>\$100</b>
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Travel	\$100
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<b>TOTAL COST</b>	<b>\$108,664</b>
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**Funding**  
 MassDOT Casino Mitigation Funds