



## BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

---

Jamey Tesler, Acting MassDOT Secretary and CEO and MPO Chair  
Tegin L. Teich, Executive Director, MPO Staff

### WORK PLAN

## CEDAR STREET RAMP TO INTERSTATE 93 STUDY

JULY 15, 2021

### Project Identification

**Project Number** (to be determined)

**Client**

To be determined

**Project Supervisors**

*Principal:* Ed Bromage

*Manager:* Ben Dowling

**Funding Source**

Contract (to be determined)

### Schedule and Budget

**Schedule:** Eight weeks after work commences

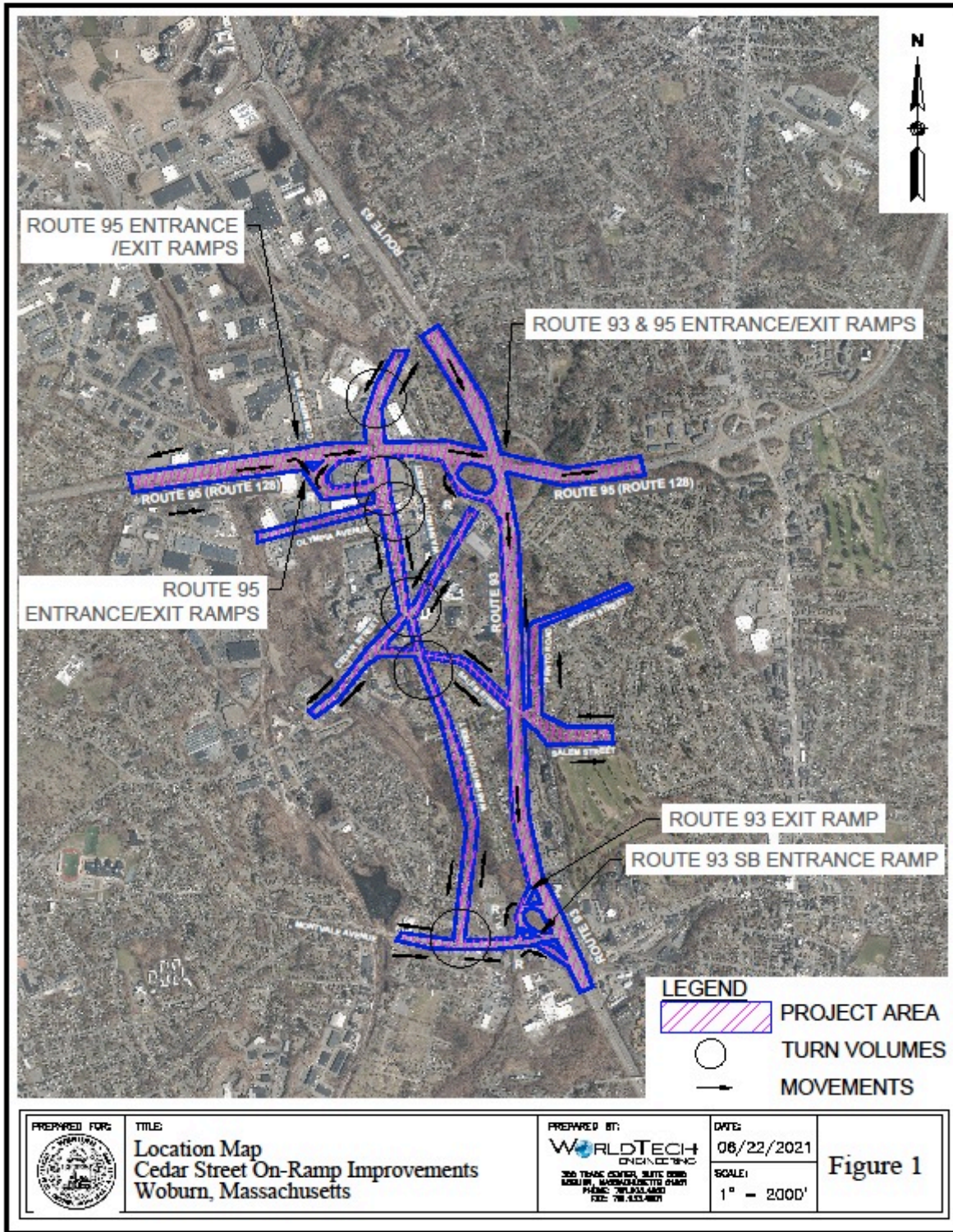
**Budget:** \$39,996

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

### Background

The City of Woburn is examining the possibility of adding a new ramp onto Interstate 93 from Cedar Street in Woburn. To support this analysis Woburn has asked CTPS to use its statewide travel demand forecasting model to analyze the interchange of Interstate 93 and Interstate 95 in Woburn under existing, future no-build, and future build conditions. Additionally, the client will also be examining a parallel corridor along Washington Street in Woburn between Mishawum Road and Montvale Avenue. A map of the study area is presented in Figure 1 below.

**Figure 1**  
**Study Area for the Cedar Street Ramp to Interstate 93**



Source: World Tech Engineering, LLC.

## Objectives

The objectives for this work plan are to provide the client with demand forecasts to support a traffic analysis for the project.

## Work Description

Central Transportation Planning Staff (CTPS) will support the client and its project team for the Cedar Street Ramp to Interstate 93 Project by providing data and analysis. The primary products CTPS will provide to the project team are highway assignment forecasts for a 2040 forecast year no-build and 2040 forecast year build scenario.

### Task 1 Coordinate with the Project Team

CTPS will work with the project team to help develop travel demand forecasts and respond to questions related to the tasks described below.

#### *Products of Task 1*

- Respond to questions from the project team

### Task 2 Update Traffic Counts and Calibrate Model

The travel demand model has been calibrated at the regional level and must be reviewed, calibrated, and refined to best reflect the specific area being studied and to ensure reasonable sensitivity in the model to the proposed build scenario. CTPS will calibrate its model to a network area between Interstates 93 and 95 in Woburn using counts provided by the client's consultant, World Tech Engineering, LLC. The client's consultant will provide CTPS with counts for the AM and PM peak periods for all of the locations for which it seeks data from CTPS. The client anticipates needing data for approximately thirty locations. If data for significantly more than thirty locations are requested, a modification to this work plan may be required.

When the model has been updated with current traffic counts, CTPS will run the model iteratively to develop the best calibrated base year possible. CTPS will utilize a calibration technique known as Origin Destination Matrix Estimation to perform the calibration.

#### *Products of Task 2*

- A set of approximately 30 counts tagged to model network locations
- Calibrated model for the study area as depicted in Figure 1
- CTPS will track and provide approach volumes for approximately 30 count locations for the project team

**Task 3 2018 Base Year Highway Assignment**

The calibrated model will be applied to develop baseline estimates of travel in the study corridor. CTPS will provide the client and its consultant with total vehicle volumes (not disaggregated by vehicle class) for the AM and PM peak periods.

***Products of Task 3***

- Tabular summary of modeled highway assignment (approach volumes) for the AM and PM peak periods for approximately 30 locations

**Task 4 2040 No-Build Highway Assignment**

After a calibrated base year has been developed, CTPS will carry the project specific calibration measures into future year 2040 model runs starting with a 2040 no-build model run which will be based upon the Boston Region Metropolitan Planning Organization's current Long-Range Transportation Plan (LRTP) Build Scenario.

***Products of Task 4***

- Traffic projections (approach volumes) for the AM and PM peak periods at approximately 30 locations

**Task 5 2040 Build Highway Assignment**

CTPS will model the implementation of the proposed Cedar Street ramp for a 2040 build scenario. At the request of the client, CTPS will also include in this build scenario one of the alternatives CTPS studied in the Low-Cost Improvements to Express-Highway Bottleneck Locations study from December 3, 2015.<sup>1</sup> Note that the auxiliary lane described in that alternative is not a project in the current LRTP.

For the 2040 build scenario assignments, CTPS will use the same trip tables that were produced in the 2040 no-build scenario from Task 4. Using the same trip tables in the build scenario as were used in the no-build scenario will allow CTPS and the project team to isolate the effects of the differences between the no-build and build scenarios.

***Products of Task 5***

- Traffic projections (approach volumes) for the AM and PM peak periods at approximately 30 locations

---

<sup>1</sup> In the 2040 build scenario CTPS will include Alternative 2 for Location 1 as described on page 12 of the December 3, 2015, memorandum.

### **Task 6 Project Documentation**

When the work for the project has been completed, CTPS will document its work in a technical memorandum.

#### ***Products of Task 6***

- Technical memorandum



The Boston Region Metropolitan Planning Organization (MPO) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination under any program or activity that receives federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, Federal Transit Administration, or both, prohibit discrimination on the basis of age, sex, and disability. The Boston Region MPO considers these protected populations in its Title VI Programs, consistent with federal interpretation and administration. In addition, the Boston Region MPO provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with U.S. Department of Transportation policy and guidance on federal Executive Order 13166.

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

Title VI Specialist  
Boston Region MPO  
10 Park Plaza, Suite 2150  
Boston, MA 02116  
[civilrights@ctps.org](mailto:civilrights@ctps.org)

**By Telephone:**

857.702.3702 (voice)

For people with hearing or speaking difficulties, connect through the state MassRelay service:

- **Relay Using TTY or Hearing Carry-over:** 800.439.2370
- **Relay Using Voice Carry-over:** 866.887.6619
- **Relay Using Text to Speech:** 866.645.9870

For more information, including numbers for Spanish speakers, visit <https://www.mass.gov/massrelay>

**Exhibit 1**  
**ESTIMATED SCHEDULE**  
**Cedar Street Ramp to Interstate 93 Study**

Task	Week							
	1	2	3	4	5	6	7	8
1. Coordinate With the Project Team	[Bar spanning all 8 weeks]							
2. Update Traffic Counts and Calibrate Model	[Bar spanning weeks 1-2]							
3. 2018 Base Year Highway Assignment			[Bar spanning weeks 3-4]					
4. 2040 No-Build Highway Assignment					[Bar spanning weeks 5-6]			
5. 2040 Build Highway Assignment							[Bar spanning weeks 7-8]	
6. Project Documentation								[Bar for week 8, labeled 'A']

Products/Milestones

A: Technical memorandum no. 1

**Exhibit 2**  
**ESTIMATED COST**  
**Cedar Street Ramp to Interstate 93 Study**

<b>Direct Salary and Overhead</b>	<b>\$39,996</b>
-----------------------------------	-----------------

Task	Person-Weeks			Direct Salary	Overhead (109.09%)	Total Cost
	M-1	P-4	Total			
1. Coordinate With the Project Team	0.8	0.2	1.0	\$2,768	\$3,020	\$5,788
2. Update Traffic Counts and Calibrate Model	0.5	1.5	2.0	\$3,377	\$3,684	\$7,062
3. 2018 Base Year Highway Assignment	1.0	2.5	3.5	\$6,002	\$6,548	\$12,550
4. 2040 No-Build Highway Assignment	0.5	1.0	1.5	\$2,625	\$2,864	\$5,489
5. 2040 Build Highway Assignment	0.5	1.0	1.5	\$2,625	\$2,864	\$5,489
6. Project Documentation	0.3	0.8	1.1	\$1,730	\$1,888	\$3,618
Total	3.6	7.0	10.6	\$19,128	\$20,867	\$39,996

<b>Other Direct Costs</b>	<b>\$0</b>
---------------------------	------------

<b>TOTAL COST</b>	<b>\$39,996</b>
-------------------	-----------------

**Funding**

Contract (to be determined)