

WORK PROGRAM

APPLYING CONVEYAL TO TIP PROJECT SCORING

[APPROVAL DATE—SEPTEMBER 21, 2023]

Proposed Motion

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

Project Identification

Unified Planning Work Program (UPWP) Classification

Boston Region MPO Planning Studies and Technical Analyses

Project Number 14004

Client

Boston Region MPO

Project Supervisors

Principal: Betsy Harvey

Manager: Srilekha Murthy

Funding Source

MPO Planning Contract and MPO §5303 Contract #14004

Schedule and Budget

Schedule: 10 months from notice to proceed

Budget: \$59,652

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

Relationship to MPO Work

The Boston Region MPO elected to fund this study with its federally allocated metropolitan planning funds during federal fiscal year (FFY) 2024. The work completed through this study will address the following goal area(s) established in the MPO's Long-Range Transportation Plan: access and connectivity, transportation equity.

Background

In FFY 2022, staff conducted a study, Identifying Transportation Inequities in the Boston Region, to analyze destination access among several equity populations in the Boston region using Conveyal, a web-based analysis tool for understanding how multimodal transportation networks connect people with destinations. The study also provided staff with an opportunity to explore the capabilities of Conveyal more generally and its potential applicability to other MPO work. Staff identified project scoring for the Transportation Improvement Program (TIP) as one area in which Conveyal could prove useful. This study will determine the feasibility of representing changes in the transportation network resulting from the implementation of specific projects in Conveyal and how they might affect the ability for people to access destinations across the region, document a process for conducting such analyses, and provide recommendations on how Conveyal could be used in project scoring.

Objective(s)

1. Determine the feasibility of using Conveyal in TIP project scoring.
2. Recommend metrics to use when scoring projects on destination access.
3. Develop methodology and recommendations for using Conveyal in TIP project scoring.

Work Description

Staff will undertake a multistep process to assess the feasibility of using Conveyal in TIP project scoring. Throughout the study, staff will coordinate with staff at the Massachusetts Department of Transportation's (MassDOT) Office of Transportation Planning for guidance on the use of Conveyal in the context of this study and coordinate on each agency's Conveyal work efforts, and seek ideas from other MPOs in the state on Conveyal uses and destinations to study.

Task 1 Conveyal Set-Up and Analysis Parameters

The first task will establish analysis parameters for running Conveyal. Staff will set up a Conveyal deployment that reflects assumptions about the roadway and transit network for a specific timeframe (for example, a five-year TIP period). Staff will also select equity populations to include in the study and acquire relevant demographic data. Staff will also establish regular touchpoints with staff at MassDOT's Office of Transportation Planning.

Task 2 Destination and TIP Scenario Selection

In the second task, staff will select destinations to use in the analysis based on data availability, relevance to the MPO's goals and objectives, and study resources. Staff will select projects to analyze that are representative of those that the MPO

generally funds through the TIP (such as Complete Streets, intersection improvements, and Community Connections shuttle pilots). Staff will additionally gather destination data, if needed, through sources such as MassGIS. Destinations could include but are not limited to

- affordable housing,
- jobs,
- healthcare,
- education, and
- essential places.

Products of Task 2

A set of destinations and a sample of TIP projects to use in the analysis.

Task 3 Conduct Analysis

In the third task, staff will run Conveyal using the analysis parameters and the chosen TIP projects to determine whether and how destination access outcomes would change for different equity populations and for the region as a whole if a project were implemented.

Products of Task 3

Results of analysis in Conveyal.

Task 4 Document Process and Results

Staff will explore different ways of presenting the analysis results and develop recommendations for incorporating them into the MPO's TIP project evaluation criteria and scoring processes, including identifying how new criteria would interact with existing scoring. Staff will additionally document findings throughout the duration of the project.

Products of Task 4

A memorandum describing the analysis process, the results of the analysis, and recommendations for use in TIP project scoring.

Exhibit 1
ESTIMATED SCHEDULE
Applying Conveyal to TIP Project Scoring

Task	Month										
	1	2	3	4	5	6	7	8	9	10	
1. Conveyal Set-Up and Analysis Parameters	█										
2. Destination and TIP Scenario Selection		█									
3. Conduct Analysis		█									
4. Document Process and Results	█										

Products/Milestones

A: Technical memorandum

Exhibit 2
ESTIMATED COST
Applying Conveyal to TIP Project Scoring

Direct Salary and Overhead	\$59,652
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Task	Person-Weeks by Pay Grade						Direct Salary	Overhead (120.3%)	Total Cost
	G-9	G-8	G-7	G-6	G-5	Total			
1. Conveyal Set-Up and Analysis Parameters	0.0	0.0	0.9	1.4	0.4	2.7	\$4,513	\$5,429	\$9,942
2. Destination and TIP Scenario Selection	0.1	0.0	0.7	0.6	0.6	2.0	\$3,218	\$3,872	\$7,090
3. Conduct Analysis	0.0	0.1	0.5	7.8	0.0	8.4	\$14,246	\$17,138	\$31,384
4. Document Process and Results	0.1	0.0	1.6	0.1	1.4	3.2	\$5,100	\$6,136	\$11,236
Total	0.2	0.1	3.7	9.9	2.4	16.3	\$27,077	\$32,574	\$59,652

Other Direct Costs	\$0
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TOTAL COST	\$59,652
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Funding

MPO Planning Contract #XXXXX
MPO §5303 Planning Contract #14004

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Title VI Specialist
Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116
civilrights@ctps.org

By Telephone:

857.702.3700 (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>.