



## BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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

### *TECHNICAL MEMORANDUM*

**DATE:** April 2, 2015  
**TO:** Boston Region MPO Congestion Management Process Committee  
**FROM:** Ryan Hicks  
MPO Staff  
**RE:** FFY 2015 Congestion Management Process (CMP) Work Plan: Staff Recommendations

#### **PROPOSED ADDITIONAL TASK: ANALYZE MASSDOT AND HERE<sup>1</sup> ROADWAY-MONITORING DATASETS**

In 2013, the Boston Region MPO purchased a roadway-monitoring dataset from INRIX that contains travel time data for roadways in the Boston Region MPO area. Since the approval of the FFY 2015 CMP work plan by the MPO in October 2014, the MPO staff has acquired two additional datasets (MassDOT and HERE), which provide travel time information for a subset of the region's roadways. These datasets are provided at no cost to the Boston Region MPO, and the HERE dataset could provide information for truck travel by using vehicle-probe data on travel times and roadway speeds that are collected by a fleet of vehicles using Global Positioning System (GPS) monitoring devices.

#### **Purpose of Task**

The purpose of this task is to determine the accuracy and usefulness of each of the two new datasets. Each dataset will be examined to determine its suitability, or lack thereof, for future CMP and freight planning work.

#### **Scope of Analysis**

MPO staff will analyze the MassDOT and HERE datasets for the segment of I-93 between Route 60 and Route 129. Additionally, MPO staff will analyze HERE dataset for the segment of Route 9 between Brookline Avenue and I-95. These corridors were selected to maintain consistency with the network that was used to analyze the INRIX data. The hours of analysis for both corridors will be 6:30 AM to 9:30 AM.

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<sup>1</sup> HERE is a private company that specializes in collecting speed and travel-time data for roadways using vehicles that are probed with GPS devices.

## Dataset Analysis Steps

1. Upload travel time data to Google BigQuery, a Web service provided by Google that enables interactive analysis of massively large datasets working in conjunction with Google Storage.
2. Combine an ARC GIS shapefile (dataset) with HERE data to produce a dataset and a GIS map of all of the roadways monitored by HERE.
3. Create an ARC GIS shapefile for MassDOT data (a dataset and a GIS map of all of the roadways monitored by MassDOT Bluetooth readings).
4. Process the INRIX, MassDOT, and HERE data.
5. Analyze the data and write a memorandum to the CMP Committee summarizing the findings.
6. Review, edit, and finalize the memorandum (will be reviewed and edited by MPO staff).

## Final Product

The final product will be a memorandum of no more than 15 pages, which will be presented to the CMP Committee.

## COST ESTIMATE

The estimated cost of this task is \$9,500. The funding for this task could be apportioned through either of the following two options.

### Option 1

The first option would be to reduce the scope of Task 2 (Create Roadway Congestion Scans) in the federal fiscal year 2015 CMP work plan. If the number of proposed arterial congestion scans were decreased from 22 to 15, the cost of Task 2 would be reduced by \$9,500, which would be allocated to the additional dataset analysis task.

### Option 2

The second option would be to suspend a portion of the work of Task 3 (Analyze the Regional Economic Costs of Congestion Using INRIX and Other Data) from the FFY 2015 CMP work plan until FFY 2016. This option would allow \$9,500 from the work plan budget to be allocated to the additional dataset analysis.

The decision to pursue either option will be determined by a vote of the Boston Region MPO Congestion Management Process Committee.

## **SCHEDULE**

If approved, this task will begin in March 2015 and will conclude at the end of the current federal fiscal year (September 30, 2015).

RRH/rrh