



MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MassDOT)
OFFICE OF TRANSPORTATION PLANNING
10 PARK PLAZA
BOSTON, MA 02116

REQUEST FOR INFORMATION (RFI)

**DOCUMENT TITLE: COMPREHENSIVE TRAVEL DATA COLLECTION
AND ANALYSIS**

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1 INTRODUCTION

1.1 Notice to Bidders

Respondents to this Request for Information (RFI) are invited to respond to any or all of the questions in this document. Responses to this RFI will assist MassDOT in understanding the current state of the marketplace with regards to the solicited information and inform the development of a potential solicitation for a Request for Responses (RFR) or Request for Quotes (RFQ) in the future. This RFI does not obligate MassDOT to issue or amend a solicitation or to include any of the RFI provisions or responses in any solicitation. Responding to this RFI is entirely voluntary, and will not affect MassDOT's consideration of any proposal submitted in response to any subsequent solicitation, nor will it serve as an advantage or disadvantage to the respondent in the course of any RFR or RFQ that may be subsequently issued or amended.

Vendors may contact the COMMBUYS Helpdesk at COMMBUYS@state.ma.us or the COMMBUYS Helpline at 1-888-MA-STATE. The Helpline is staffed from 8:00 AM to 5:00 PM Monday through Friday, Eastern Standard or Daylight time, as applicable, except on federal, state and Suffolk County holidays.

1.2 Purpose

The Massachusetts Department of Transportation ("MassDOT"), is issuing this "Request for Information" ("RFI") to solicit submittals from interested parties on how different MassDOT functional business units can secure access to a broad set of real time and historical travel data and associated tools for the purposes of conducting comprehensive analysis relative to informing a number of policy and planning decisions, including but not limited to travel time management, congestion management, incident and planned event management, demand management, performance management, corridor management, future infrastructure and intelligent transportation system investments and deployments.

MassDOT seeks to acquire an understanding of what the current travel data collection and integration market can provide to demonstrate how the public utilizes the state transportation system and network of services. Relevant data should encompass a broadly defined concept of mobility to include origin and destination characteristics associated with a vast array of commuting experiences, across multiple modes and forms of travel, including the diverse ways that commerce is transported and delivered, as well as insight into the incidental, occasional and recreational traveling experience.

Access and analysis of comprehensive data should provide a platform for understanding new developments and trends in transportation mobility, identifying specific public needs that may enhance mobility, assessing the impacts associated with current and future transportation projects, and prioritizing investments in maintaining, enhancing or expanding current transportation service availability. MassDOT is interested in a potential acquisition of a data platform that can support the following activities and projects, but not to the exclusion of other considerations.

- Augment and update the 2011 Household Travel Survey by providing information on residents' travel patterns (including mode), origin/destination, trip types, and behavior to craft an accurate picture of transportation needs on a regular basis.
- Identify travel patterns and trends on a corridor or system-level basis including quantified levels of modal utility in the form of volume, travel time, speed, and congestion.
- Understand project level, planned events, construction, and work zone impacts on route choice, mode choice, time of day travel, and other decision points.
- Assess the impacts of crashes or incidents of minimal and long term duration on the flow of traffic, detour selection, travel time, and congestion.

- Understand historical traffic patterns and travel demand.
- Supplement, complement or replace current data collected and owned by MassDOT.
- Detect traffic anomalies including abnormal and/or sudden changes in speed, volume, and congestion or other factors.

Release of this RFI presents an invitation for interested parties to provide MassDOT with information regarding current and emerging technologies, existing data resources, approaches to travel behavior data collection, and supporting data analysis and reporting. This RFI is being issued to conduct research to identify vendors and systems capable of providing comprehensive and integrated data sources to MassDOT for a number of objectives. The primary goal of this RFI is to gather information from qualified parties to support and inform a potential acquisition strategy. This RFI does not constitute a solicitation for bids or proposals and will not result in contract award for these services based on information provided in response to this request.

This document contains MassDOT business and technical considerations for respondents to review and respond to with information regarding data sources, integration of data sources, and the requisite systems and software platforms used to collect, assess, and prepare reports regarding comprehensive data sets. Respondents are by no means constrained in providing information to this request and are encouraged to provide additional information in support of the stated purpose that may be responsive, relevant, and considered noteworthy. MassDOT reserves the right to use information obtained through this process to develop a procurement document in the future that requests responses in a more formal and binding nature than this request.

1.3 Data Needs and Use Cases

The ever changing technology landscape requires a review of available data sources and processes to collect information on travel patterns, preferences, trends, and behavior. This will support future initiatives in the fields of transportation planning and research, traffic engineering and safety, operations management, intelligent transportation system programming and engineering, performance management, and multi-modal mobility service delivery.

MassDOT is seeking access to data that will harness its ability to monitor trends and changes in behavior, assess possible mode shift opportunities, and provide insight into multi-modal utility and demands or needs not yet realized. This RFI will inform MassDOT policy decision-making in the areas of what data it should collect, how that data should be collected, the manner in which the data should be analyzed, and how the findings from that analysis can be conveyed to inform policy decisions in various arenas of transportation service delivery.

MassDOT seeks to secure a daily situational awareness report of how people are using transportation every day in the Commonwealth from the single mode user to the multiple mode user, for different types of trips, using traditional and new market shares, from specific origins to expected destinations, traveling measured distances by mode or type. To the extent feasible, the data analysis should also be able to provide insight into why certain mode choices are made at the first mile, once in route, and the last mile of any given trip. MassDOT has provided the following use cases to better prepare interested parties in preparing responses to this request for information.

- **Use Case 1.** MassDOT seeks to quantify the impacts of crashes or incidents on traffic flow, routing and speed. A fire on a roadway that necessitates a road closure is likely to cause changes in speed and congestion in and around the area; capturing actual real time changes in routing, speed and congestion because of an incident would be sought through this project.

- **Use Case 2.** MassDOT seeks to quantify the impacts of construction/work zones. Drivers are changing their patterns through work zones and/or rerouting or changing their travel behavior; capturing real time and historical data to assess the extent to which drivers are rerouting onto other roadways and measuring the impact this may have in terms of speeds, volumes, congestion at the work zone and along these secondary roadways would be sought by this project.
- **Use Case 3.** MassDOT seeks to quantify the impacts of planned events of a long term duration. Planned events that require protracted construction activity and lane disruptions may impact congestion, speed, volumes and mode shift; capturing long term changes before, during and after long term events would be sought by this project and would also support crash prediction methodologies.
- **Use Case 4.** MassDOT seeks to quantify the impacts of project countermeasures of a long term duration. An intersection upgrade or complete street implementation may have an impact on safety, congestion, speed, volumes, route changes and mode choice; capturing safety benefits within the context of other impacts before, during, and after long term countermeasures would be sought by this project and would inform likely inquiry at the public hearing stage of a project.
- **Use Case 5.** MassDOT seeks to quantify historical traffic patterns and travel demand. The public at large expects MassDOT to provide an explanation for certain traffic conditions on a particular date and time. The inquiry is usually related to an extreme case of congestion and unexpected travel delays; it entails identifying the root cause and explaining the magnitude of the impact. These inquiries are generally seasonal in nature and may occur as schools report back to session or before and after major travel holidays. A statewide resource that provides for traffic patterns on any given day and time on any given roadway with congestion mapping tools and traffic analytics in an efficient manner would be sought by this project.
- **Use Case 6.** MassDOT seeks to quantify travel time on all major roadways in real time and in a historical platform by time of day. This data need requires point to point real-time travel time to supplement, complement, or replace current Real Time Traffic Management data. Requirements associated with this data need include the following; point to point travel time routes shall be readily defined/customizable, point to point travel time routes shall provide additional data such as route length, travel time at the speed limit, travel times shall be updated and real to the minute and shall be based on live traffic data if traffic is ample to make such a determination or historical estimates in the absence of sufficient traffic. When estimated travel times are used, the degree of certainty of the travel times provided shall be validated.
- **Use Case 7.** MassDOT seeks to quantify detection of traffic anomalies on all major roadways in real time and in a historical platform by time of day. This data need requires the ability to capture or generate alarm conditions when unusual anomalies are encountered and warrant further review by operations management and traffic management personnel. These include abnormally slow speeds, atypical changes in speed, abnormally high congestion, or any other type of information that could reasonably indicate abnormal road conditions such as those caused by crashes, unusually high traffic volumes, or other unplanned events that impede the flow of traffic.
- **Use Case 8.** MassDOT seeks to quantify on a statewide and regional basis how individuals get from their origin to their destination, and seeks to provide analysis of travel mode share and travel behavior, including but not limited to the many ways people achieve mobility through walking,

biking, transit, private vehicle travel, ride sharing, ride hailing, multimodal travel, or other means. This data need requires information regarding the percentage of residents/miles/hours commuting by each mode, the change in mode share over time, the mode share by region/specific demographic, the percentage of mode share by trip distance/trip purpose, and travel time by mode, origin/destination pairs, last mile/first mile patterns, and time of day characteristics.

- **Use Case 9.** MassDOT seeks to quantify on a statewide and regional basis how congestion, reliability, mode share and other transportation trends are changing. MassDOT would also like to understand how specific networks or corridors in the transportation system are impacted over time due to policy changes or new technologies, new infrastructure, including matters related to toll and fare increases, schedule changes, traveler information programs, incentive programs, and service disruptions due to any number of activities, and/or new services provided or previous service terminated. This data need requires historical travel time information before, during, and after these changes, by mode, origin/destination pairs, last mile/first mile patterns, and time of day characteristics.

1.4 Respondent Submissions

Interested parties should detail a proposed methodology and source for each of the use cases referenced above, with an explanation of how the attributes of the data feed will be achieved in a readily usable format. MassDOT is requesting information from interested parties that provide brief and concise expository responses to the following questions as they relate to each use case referenced above.

- a. What are the data sources owned, accessed, or that can be brought to this project?
- b. What is the degree of certainty related to the data sources and their relative accuracy and reliability?
- c. Over what period of time is the data collected on a regular and ongoing basis?
- d. How is the data collected from different means?
- e. How is the data analyzed, integrated, or processed with other data sources within a separate or central system?
- f. What reports and findings of fact can or will be generated from this data collection process?
- g. How do the proposed data sources apply to multimodal DOT needs?
- h. What is the proprietary status and licensing structure of the data at different levels?
- i. What diagram demonstrates the relevant system architecture?
- j. What units of pricing are utilized to support payment for data collection and analysis (e.g., license fees, hosting costs, etc.)?
- k. What real time demonstration of the data sources and capabilities can be provided?
- l. What are your post-implementation support services (help desk, problem resolution procedures, etc.)? What are the inclusions/exclusions?
- m. What IT and business user training might be needed for MassDOT staff, including the type and the extent of initial and ongoing training?
- n. What are the policies and procedures in place to ensure the physical and logical security of the data?

1.5 Posting

Please note that this RFI is issued solely for the purpose of obtaining information. Nothing in this RFI shall be interpreted as a commitment on the part of MassDOT to procure or enter into a contract with any Respondent.

Respondents are responsible for entering content suitable for public viewing, as all of the responses and questions are accessible to the public. Respondents must not include any information that could be

considered personal, security sensitive, inflammatory, incorrect, collusive, or otherwise objectionable, including information about the Respondent's company or other companies.

1.6 Form of Respondent Submission

Respondents should submit one (1) electronic PDF response by the date and time set forth in the below schedule. Late responses may be disregarded.

All responses must include a cover page on formal letterhead with the official name, address and contact information of the firm or entity submitting the response with contact information and signature provided. Subsequent information provided should be limited to the 10 use cases and questions solicited in Section III. A final conclusion page may be provided summarizing the overall response to the RFI. Please consecutively number all pages of the response.

2 ESTIMATED CALENDAR

EVENT	DATE
RFI Release Date	05/18/18
Email Response to Radhameris.Gomez@dot.state.ma.us	06/01/18 3:00pm

Times are Eastern Standard/Daylight Savings (US), as displayed on the COMMBUYS system clock displayed to Bidders after logging in. If there is a conflict between the dates in this Procurement Calendar and dates in the Bid's Header, the dates in the Bid's Header on COMMBUYS shall prevail. Bidders are responsible for checking the Bid record, including Bid Q&A, on COMMBUYS for Procurement Calendar updates.

3 OPTIONAL INFORMATIONAL SESSIONS

In addition to written RFI responses, MassDOT may invite any or none of the Respondents to make optional, focused, in person demonstrations of data sources, experience, offerings, methodologies and expertise applicable to this RFI. Any such demonstrations must relate directly to the MassDOT needs outlined in this RFI and Respondents must not use this time for standard marketing sales presentations. MassDOT retains the right to conduct informational session(s) associated with this RFI and retains the right to request additional information from Respondents, including further explanation or clarification from any and all Respondents during the review process. MassDOT may request onsite vendor visits.

4 REVIEW RIGHT, PUBLIC RECORDS AND COST

Responses to this RFI may be reviewed and evaluated by any person(s) at the discretion of MassDOT, including independent consultants retained by MassDOT now or in the future.

All responses to this RFI will be a public record under the Commonwealth's Public Records Law, Massachusetts General Laws Chapter 66 Section 10, regardless of confidentiality notices set forth on such writings to the contrary.

All responses and other documents submitted in response to the RFI become the property of MassDOT. MassDOT is under no obligation to return any documents submitted by a vendor.

By submitting a response, Respondents agree that any cost incurred in responding to this RFI, or in support of activities associated with this RFI, shall be the sole responsibility of the Respondent. MassDOT shall not be held responsible for any costs incurred by Respondents in preparing their respective responses to this RFI.