



## PRODUCT IMPLEMENTATION

### Data

MassDOT analyzed a range of data sources to determine their applicability to reliability measurement and the extent of their coverage of the State’s highway network. Table 1 summarizes the candidate data sets.

**Table 1. Candidate Data Set Feature Summaries.**

DATA SET	DESCRIPTION	ASSESSMENT
<b>TRAVEL TIME DATA</b>		
National Performance Management Research Data Set (NPMRDS)	GPS-based probes from INRIX®	Good for National Highway System (NHS) routes
GoTime	Bluetooth® sensors on MassDOT-controlled highways	Useful for certain non-NHS highways
511	GPS-based probes from HERE™ Technologies	Possible to fill in non-NHS highways; may be restricted use and not currently archived
Waze®	Crowd-sourced travel time	Questionable for rigorous analysis
Uber Movement®	Anonymized Uber® trip data	Emerging data source; questionable for rigorous analysis
<b>INCIDENT AND WORK ZONE DATA</b>		
MassDOT Highway Division Event Reporting System (ERS)	Incident and work zone data input by traffic operations personnel	True event duration not provided; Uncertain availability of archive data
Waze	Same as above	Same as above
<b>WEATHER DATA</b>		
MassDOT Road Weather Information Systems (RWIS)	Weather observations	Twenty stations; coverage inadequate

### L02

MassDOT used the L02 product to review the department’s reliability monitoring capabilities. The research team reviewed the sources and availability of candidate data sets, including those for continuously-collected travel time, incident and work zones, and weather. The team identified the data MassDOT had on hand and determined any gaps that existed in those data.

MassDOT held a workshop to discuss reliability data and brainstorm ideas for how the data might be used. Workshop participants included representatives from the Boston Region MPO and MassDOT’s units for safety, freight, performance management, planning, and intelligent transportation systems (ITS). The study team determined that the NPMRDS data was the best fit for further analysis toward the production of travel time performance measures and that other data sets were not detailed enough for comprehensive analysis.

### L05

MassDOT used the L05 product as a guide to establish how the agency could forecast reliability, use reliability measures in the planning and programming processes, and ensure that operations projects are considered on equal footing with other improvement types. To scope out MassDOT’s internal department requirements for incorporating reliability into its processes, the study team held a workshop with participants from MassDOT’s ITS, capital planning, and performance management teams to discuss their decision-making processes for project initiation, prioritization, and programming.

The research team produced a technical memorandum specifying how to include reliability measures in the following MassDOT processes and reports:

- MassDOT’s Annual Performance Management Report Card for external stakeholders, called *Tracker*, which summarizes the department’s performance using an array of measures in several categories, including Customer Experience.
- The Massachusetts Long-Range Transportation Plan (LRTP).



- Scoping an upcoming intelligent transportation systems (ITS) strategic plan
- Shaping MassDOT analysis of Federal traffic reliability performance measures

## CONCLUSION

As a result of completing this project, MassDOT has launched several agency initiatives to incorporate reliability into its processes, including the TIPs and STIP. MassDOT reported gaining a rich appreciation for the applicability of reliability analyses to the improvement of its internal processes and the delivery of excellent services to the public through the SHRP2 reliability tool project.

## FOR MORE INFORMATION

Boston Region MPO Congestion Management website:

<https://www.ctps.org/cmp>

FHWA SHRP2 Home Page:

<https://www.fhwa.dot.gov/goshrp2>

*Except for any statutes or regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide information regarding existing requirements under the law or agency policies.*

*The U.S. Government does not endorse products, manufacturers, or outside entities. Trademarks, names, or logos appear in this document only because they are considered essential to the objective of the document. They are included for informational purposes only and are not intended to reflect a preference, approval, or endorsement of any one product or entity.*

---

## CONTACTS

### **Bob Frey**

Massachusetts Department of Transportation

[bob.frey@dot.state.ma.us](mailto:bob.frey@dot.state.ma.us)

### **Derek Krevat**

Massachusetts Department of Transportation

[derek.krevat@dot.state.ma.us](mailto:derek.krevat@dot.state.ma.us)

### **Tracy Scriba**

Federal Highway Administration

[tracy.scriba@dot.gov](mailto:tracy.scriba@dot.gov)