
Office of the Under Secretary of Transportation for Policy
Office of the Secretary of Transportation
U.S. Department of Transportation
Webinar Agenda

• Safety Data Initiative and Analytic Agenda
• Anticipated Solicitation
• Questions & Answers

If a formal solicitation is released requesting a formal proposal, it shall be done so by a USDOT Contracting Officer who has authority to bind the Government on behalf of the Department.
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Systemic Safety Approach: Strategies

- Improve the collection, management, and integration of **data**
- **Identify risks** that contribute to fatalities and serious injuries
- **Collaborate with stakeholders** to foster changes to the transportation ecosystem
The Problem

Fatalities and Fatality Rate per 100 Million VMT, by Year, 1976-2017

Source: FARS, 1976-2017
Safety Data Initiative (SDI)

- Launched in 2018
- Surface transportation focused
- Intended to build upon and enhance current safety efforts related to data, analysis, and policymaking

- Cross-cutting, collaborative effort:
  - Office of the Secretary of Transportation (OST)
    - Policy Office
    - Office of the Chief Information Officer
    - Bureau of Transportation Statistics
  - Federal Highway Administration (FHWA)
  - National Highway Traffic Safety Administration (NHTSA)
  - Other surface operating administrations (OAs)
Focus Areas

**Integrate** existing DOT data and new “big data” sources

Use advanced data analytics to provide **predictive insights** into safety risks

Create **data visualizations** to help policymakers arrive at solutions
Pilot Projects

Since launch, the SDI has conducted pilot projects to:

- Identify **safety challenges**
- Experiment with solutions that can **save lives**
- Improve the way information is conveyed for use by **safety practitioners**
- Leverage the latest **advancements in data science**, as well as **new and emerging data** coming from the private sector
SDI Beta Safety Tools Developed

- Pedestrian Fatality Risk Map
- Solving for Safety Visualization Challenge Tools
- Safety Applications of Waze Data
  - Highway patrol context
  - Local Vision Zero planning context
- Fatality Analysis Reporting System (FARS) Visualizations
  - Pedestrians
  - Speeding-related crashes

Visit [www.transportation.gov/SafetyDataInitiative](http://www.transportation.gov/SafetyDataInitiative) for more details
Safety Applications of Waze Data

- First phase developed a rapid indicator of police-reportable traffic crashes

- Second phase consists of two case studies to develop Waze safety applications using Waze data:
  - Tennessee State Highway Patrol
  - City of Bellevue, Washington
Solving for Safety
Visualization Challenge

Multistage, $350,000 **competition** to develop visualization-powered analytical tools to reduce serious crashes to address specific focus areas
Lessons Learned

• There is a **wealth of data outside of the federal government** that are not fully leveraged

• Private sector data could **help the Department understand** what is happening on the nation’s roadways

• Persistent safety issues can be further illuminated through **new data to contextualize** safety risk
Analytic Agenda
Analytic Agenda Overview

• The Department deliberated internally over four topic areas that presented opportunities to enhance our understanding of ongoing safety issues with data:
  • Pedestrian and Bicyclist Safety
  • Non-Fatal Injury Crashes
  • Intersections
  • Precursors to Crashes

• The Department convened stakeholders to help identify the most pressing and persistent safety research questions across these topics

• The input informed the SDI’s analytic agenda
Pedestrian and Bicyclist Safety

- Fatality and serious injury locations
- Crash causes
- Modeling pedestrian and bicyclist exposure
- Risk identification
Non-Fatal Injury Crashes

• Data linkages to identify risk factors and patterns of risk

• Non-fatal injuries locations as a potential predictive indicator of fatal crashes
Intersections

• Intersection design features
• Safety conflict reduction
• Data linkages to inform countermeasures and safety insights
Precursors to Crashes

• Crash precursor risk signals
• Crash scenario characteristics and related patterns
• Understand baseline, normal-state-of-driving
• New data sources
Anticipated Solicitation

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Anticipated Approach

The Department is interested in soliciting demonstration projects that explicitly use and incorporate **new data sources** to answer the SDI analytic agenda problem statements.

Intend to assess the **utility, fitness for purpose, and limitations** of new data to address the problem statements.

**Flexibility** in addressing the problem statements.
Goals

• Gain novel, useable, and actionable insights into transportation safety

• Replicate or scale data sources across the country and to gain insights that will improve safety outcomes

• Support discovery and application of data sets that are not currently available to the Department

• Help the Department and the transportation safety industry bridge knowledge gaps to address at least one of the problem statements
Anticipated Awards

• OST anticipates making multiple awards from a pool of **up to $1 million**

• Award amounts are expected to be in the hundreds of thousands

• Number of awards and value may vary depending on merit of proposals received and their potential to achieve the research objectives

• OST intends the period of performance duration to be around a year long
Data Expectations

• Open-data or data available for purchase

• Suitable for **national-scale** problems
  • National-level insights, or generally transferable to other locations throughout the country

• **Transparent** on methodology and data
  • Be able to assess and defend fitness for purpose, and delineate limitations
Case Study Example: Waze

- Assessed the potential of crowd-sourced Waze data for safety applications

- Findings:
  - Since it is crowd-sourced data the signal varied:
    - Stronger in urban than rural areas
    - Stronger during day vs. night
    - Stronger on higher functional classification roads (interstates) vs. local roads
  - The Waze data complemented other data sets such as weather to understand crashes over space and time

- Report from the first phase: [rosap.ntl.bts.gov/view/dot/37256](http://rosap.ntl.bts.gov/view/dot/37256)
Announcement Timeline

• OST anticipates issuing the anticipated solicitation later this summer
Questions & Answers
Feedback and Further Questions

www.transportation.gov/SafetyDataInitiative

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