

Western States Rural Transportation Consortium

Project Request Form

A. PROJECT INFORMATION

Title:

Automated Safety Warning Data Feeds and Virtual Changeable Message Signs

Problem Statement:

Automated Safety Warning Systems that alert drivers in real-time to unusual and possibly hazardous roadway conditions are becoming more popular throughout the west. These systems usually collect data from Roadway Weather Information Systems (RWIS) regarding environmental conditions of interest such as fog, ice and high winds. They then use algorithms to determine if the condition present warrants warning motorists of a possible hazard. This warning is usually communicated to drivers via Changeable Message Signs (CMS/VMS) or some type of flasher enhanced signage. For some fog warning systems this requires a high density of CMSs or Portable CMSs to provide adequate notification to approaching motorists of stopped or slowing traffic ahead. Existing CMS are placed in strategic locations for drivers to be advised of existing conditions or Public Service Announcements (PSA). There have been situations where automated safety warning systems require additional CMS where none exists. There are areas where it may be cost prohibitive to place CMS in the field due to power availability, limited right of way, environmental issues or other concerns. Is there another way to warn motorists that could reduce the need for extensive and expensive signage?

Objective:

To improve the ability of drivers to respond to adverse roadway conditions, such as fog, while reducing the amount of electronic signage required to effectively communicate the hazardous condition. An initial step could be to determine if a common data feed format and methodology for collecting and exporting that data from various types of automated safety warning systems currently exists. Not just a collection of data from various sources, but a feed that is specifically designed and optimized to integrate into in-vehicle warning systems, smartphone apps designed to warn drivers and other Infrastructure to Vehicle (V to I/I to V) systems. If nothing currently exists, then to develop the feed and implement a test-bed using the fog warning systems in Caltrans District 6 and 10 and export that feed to the Caltrans Wholesale Web Portal. The intent being that this feed(s), if well designed and stable, could be used by third party commercial vendors to provide in-vehicle warning. To help mitigate for missing CMS, Virtual Changeable Message Signs (VCMS) is also being proposed. VCMS can be placed at any spot location on a map (Latitude and Longitude), display a message and provide the information via One Stop Shop, Caltrans Quickmap, other traveler information websites and in-vehicle display systems. This virtual display would allow drivers to respond to roadway conditions, while reducing the amount of physical electronic signage on the Right of Way. This would take advantage of the proliferation of personal smartphones and the continued advancement of in-vehicle systems to aid drivers and reduce warning system capital costs.

B. SUBMITTAL INFORMATION

Submitted By:

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Chair, Rural Program Steering Committee, Caltrans
On Behalf of:
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Caltrans District 6 Maintenance and Operations

Submittal Date:

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In summary, incubator projects provide limited time, scope and monetary resources to investigate current rural ITS challenges and technology needs. Incubator projects are not intended to completely resolve the issue being researched, but rather to better understand the complexities of the issue, provide recommendations for next steps and potentially provide a “proof of concept” solution. Demonstrated in the rural context outside of both urban and metropolitan areas, the incubator projects are designed to provide answers to challenges pressing rural ITS practitioners. Current and previous incubator projects can be found here: <http://westernstates.org/Projects/Default.html>

We are not requesting a fully vetted project proposal, rather we need basic information to help the WSRTC Steering Committee understand your request. Try to answer these questions to the best of your ability. If you have more information you would like to share, please feel free to share this information as well.

- **Title** – A succinct title for the problem
- **Problem Statement** – Provide a brief description of the problem that needs to be investigated and why this issue is important.
- **Objective** - What needs to be accomplished with this project?
- **Submitted By** – The person who wrote the details in this form
- **Submittal Date** – The date this form was submitted