DRISI

Caltrans Division of Research, Innovation and System Information

Research Notes

Rural

JUNE 2015

Project Title:
Aurora Program - Aurora Road Weather Information (ARWI) Systems - Pooled Fund TPF-5(290)

Task Number: 2649

Start Date: October 23, 2013

Completion Date: December 31, 2017

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Aurora Program

Aurora Road Weather Information System (RWIS) Pooled Fund Study (PFS)

WHAT IS THE NEED?

Caltrans has over 100 RWIS installation statewide that are deployed for many purposes, such as automated fog ice, wind, warning; for traveler info online (on QuickMap); and for planning winter maintenance and other roadwork. This Aurora Program is a technical focused PFS working on RWIS issues.

WHAT ARE WE DOING?

The Aurora Program is a consortium of public agencies focused on collaborative research, evaluation, and deployment of advanced road weather information systems (RWIS) for weather monitoring and forecasting. Aurora's research projects are designed to improve the efficiency of highway maintenance operations and distribute effective real-time information to travelers. Its initiatives are expected to result in technological advancement and improvement of existing RWIS, significantly reducing the adverse impacts of inclement weather on mobility.

WHAT IS OUR GOAL?

The program's mission is to support cooperative research, evaluation, and deployment of innovative technologies that advance road weather monitoring and forecasting in highway design, construction, maintenance and operations and to serve as an international advocate for expanded uses of these technologies.

Six primary goals are:

1. To improve dissemination of road weather information to transportation providers and end users, ultimately increasing safety by reducing potential weather-related incidents and improving transportation safety, reliability, and mobility in both urban and rural areas.

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DRISI provides solutions and knowledge that improves California's transportation system

2. To improve the efficiency of maintenance operations.
3. To aid in the development of technologies that seamlessly integrate to facilitate the formation of partnerships between maintenance and operations and facilitate the dissemination of road weather information.
4. To develop initiatives that assist public agencies in deploying RWIS technologies and methodologies.
5. To encourage greater cooperation and information exchange between transportation agencies and the other agencies and groups.
6. To support development of expanded uses of RWIS technologies.

WHAT IS THE BENEFIT?

1. Caltrans involvement allows us to have input on national standards, development and implementation (device and communication)
2. Caltrans will learn best-practices from other states
3. Caltrans will be able to influence which studies are conducted, making California's priorities known.

WHAT IS THE PROGRESS TO DATE?

See list of completed projects and on-going projects.

PROJECT WEBSITES

- http://www.pooledfund.org/Details/Study/532
- http://www.aurora-program.org/

ONGOING PROJECTS

- 2014-03 - Validate the Accuracy of Pavement Condition Predictions, Phase 2
- 2014-02 - Quantifying Salt Concentration on Pavement, Phase 2
- 2014-01 - Seasonal Weight Restrictions Demonstration, Phase 2
- 2013-06 - Make the Aurora Winter Severity Index Available to All
- 2013-05 - Knowledge Base Content Management and Marketing
- 2013-04 - Quantifying Salt Concentration on Pavement, Phase 1
- 2013-03 - Improving Traffic Speed Estimations for Winter Maintenance Performance
- 2013-02 - Transition of Clarus to MADIS
- 2012-05 - Seasonal Weight Restrictions Demonstration, Phase 1
- 2012-04 - Communicating and Publicizing Road Weather and Operations Information
- 2012-01 - Validate the Accuracy of Pavement Condition Predictions, Phase 1
- 2011-02 - RWIS Training Tool
- 2010-04 - RWIS Sensor Density and Location
- 2010-03 - Results-Based Winter Maintenance Standards
- 2009-01 - Summary and Comparison of Agency Experience with Sensors

COMPLETED PROJECTS

- 2013-01 - 2013 National Winter Maintenance Peer Exchange
- 2012-03 - Cameras and Operational Impact of Remote Road Condition Monitoring
- 2012-02 - Winter Weather Severity Index Enhancements, Phase 2
- 2011-05 - Funding Sources Identification
- 2011-04 - Study of MDSS Costs
- 2011-01 - 2011 National Winter Maintenance Peer Exchange