

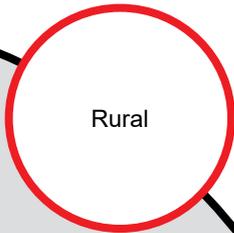


Caltrans Division of Research,  
Innovation and System Information

# Research



# Results



Rural

**MAY 2019**

**Project Title:**

Designing a User Interface and Data Repository for Roadside Weather Information Systems (RWIS)

**Task Number:** 2283

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## Designing a User Interface and Data Repository for Roadside Weather Information Systems (RWIS)

A one-stop-shop for weather that allows Caltrans personnel to make a more informed and efficient assessment of current road weather conditions

### WHAT IS THE NEED?

Caltrans currently uses proprietary commercial-off-the-shelf applications to aggregate, present weather information from RWIS sites and to provide capabilities such as weather-based alerting to maintenance and operations personnel. Unfortunately, these applications have been designated end-of-life by their creators and will no longer be supported.

The WeatherShare system is developed as an open-source project which can be utilized by other state transportation departments. WeatherShare will streamline and integrate essential road weather information from Caltrans Road Weather Information System (RWIS) sites. This data is combined with weather data from other sources, such as MADIS and MesoWest, as well as with National Weather Service forecasts, into one unified source. This information is displayed on an interactive map as well as detailed tabular and graph displays, allowing maintenance personnel and incident responders to quickly and easily visualize road conditions for an entire region or a specific location. The system will allow Caltrans personnel to make a more informed and efficient assessment of current road weather conditions in the region for a variety of purposes, including incident management and highway maintenance.

### WHAT WAS OUR GOAL?

WeatherShare is to become the central repository for Caltrans RWIS data and weather information. Caltrans maintenance and operations personnel will have access to real-time and historical weather information that will help them better manage roadways,



Caltrans provides a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

apply treatments and handle weather-related incidents.

This platform of weather observations and forecasts with near real-time road sensor data will allow Caltrans crews to make the best-possible decisions both for maintenance operations and incident response.

## WHAT DID WE DO?

A prototype WeatherShare system was designed, built and tested. A code repository was set up as well.

The following documents were also delivered:

- Concept of Operations
- Software Requirements Specification
- System Design

## WHAT WAS THE OUTCOME?

The WeatherShare application has the following functionality:

- Repository for current and historical RWIS data.
- Leveraged resources (more than 2,000 weather stations in addition to 150 Caltrans RWIS stations)
- Scalable, interactive elements for map, tabular and graph display.
- An easy-to-maintain, cost-effective product powered by an open-source platform.

## WHAT IS THE BENEFIT?

This platform of weather observations and forecasts with near real-time road sensor data will allow Caltrans crews to make the best-possible decisions both for maintenance operations and incident response.

## LEARN MORE

<http://westernstates.org/Projects/Weathershare/Default.html>