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Caltrans Division of Research,
Innovation and System Information

Research Results

Aviation Weather Information - Web Portal Implementation

Integration of Aviation AWOS with RWIS - Phase 3

Modal

MARCH 2020

Project Title:
Aviation Weather Information - Web Portal Implementation (Integration of Aviation AWOS with RWIS - Phase 3)

Task Number: 2998

Start Date: November 19, 2015

Completion Date: June 30, 2019

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WHAT IS THE NEED?

California Department of Transportation (Caltrans) Division of Aeronautics contracted out to Western Transportation Institute (WTI) at Montana State University (MSU) to integrate various aviation weather information data with the Roadside Weather Information System (RWIS) data.

The project development team initially launched a web site referred to as Aviation WeatherShare (http://aviation.weathershare.org) with a prototype system that displays important aviation weather information and forecasts for the entire State, integrating a range of data from numerous sources. The project was completed, updated from its beta version to Aviation Weather Information, and needed to be migrated from MSU to a Caltrans server to be maintained and supported by Caltrans Information Technology staff.

WHAT WAS OUR GOAL?

The goal was to capitalize on new technology that enables the importing of data from public weather providers to be viewed from one website. This approach offers multiple weather reporting types from existing, credible, weather agencies on a single website giving a broader picture of weather that could affect aviation in areas that otherwise would not have this capability.

Before the development of the prototype system, users needed to access disparate, independently operated systems to obtain wind and temperature conditions, forecasts, warnings, and advisories, which was time consuming and demanded different means of access. Centralizing the information enables users to obtain multiple data feeds in one place, providing a comprehensive picture of the conditions affecting air travel to make a more informed and efficient assessment.

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The success of Aviation Weather Information was unexpectedly demonstrated in its beta form during the Napa Earthquake of 2014. The California Governor's Office of Emergency Services (Cal OES) Air Coordination Group was using the website for its purposes when others saw its value and started using it as well. The measurable standard established for the program was how well others would use it for broad weather awareness rather than just flight planning.

Emergency aviation programs around the State have indicated they will use the site now that they know it is available. To reinforce this, emergency exercises are conducted throughout the year with emergency and aviation partners beginning to add this tool to their suite of resources. This performance goal will only be better realized as more users become aware of its existence, as was the case during the following incidents:

1. Wildfires and Floods – Since 2014
2. Napa Earthquake – August 2014
3. California Aviation Day at the State Capitol – April 2015
4. Super Bowl 50 – February 2016
5. Oroville Dam Evacuation – February 2017

WHAT DID WE DO?

The entire web site was migrated from MSU to a Caltrans server, implemented/deployed into the Department, and used by the general public. This website, with active linkage, consolidates aviation-related weather information providing more comprehensive and accurate meteorological data to system managers and users (airport managers, traffic controllers, pilots).

WHAT WAS THE OUTCOME?

This phase the system was updated and is being migrated from WTI to a server to be maintained and supported by Caltrans. The new system is called Aviation Weather Information (AWI) and the transfer was completed in December 2017. The system was modified to meet Caltrans requirements and went live to the public on March 19, 2018 at http://awi.dot.ca.gov. Caltrans released a press statement on June 13, 2018.

The system improves safety and increase efficiency in Caltrans as well as other aviation agencies. It helps aviators to make more informed decisions; enable more system/airport managers to access meteorological conditions data to enhance operational safety, reliability, and efficiency; and it will enable residents and travelers to access weather information in larger areas. The unified data source will provide for better aviation-related trip planning.

WHAT IS THE BENEFIT?

Anticipated general benefits include improved safety and increase data efficiency in Caltrans as well as other aviation agencies. Linkage of these systems will help aviators to make better informed decisions; enable more system/ airport managers to access meteorological conditions data to enhance operational safety, improved reliability and efficiency; and allow residents and travelers to access weather information in greater areas. More information in one location will also provide for better aviation related trip planning. In addition to the Division of Aeronautics benefits, Caltrans Office of Emergency Management, Cal OES, District Traffic Management Centers, can also benefit from this system.

LEARN MORE

http://awi.dot.ca.gov/

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IMAGES

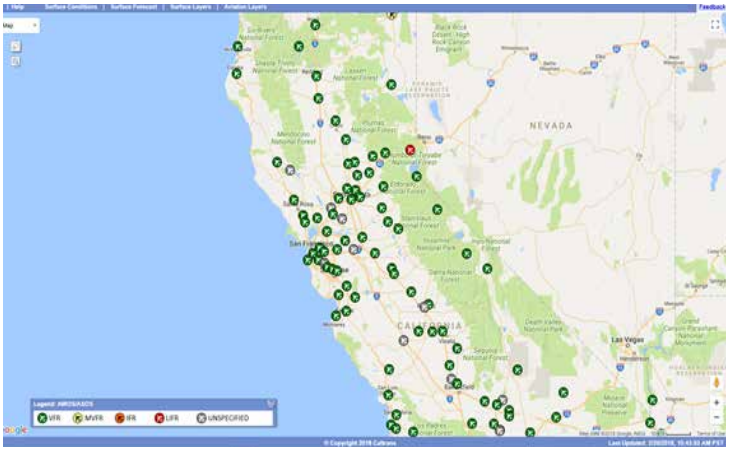

Image 1: Prototype System Google Maps-based Web Interface

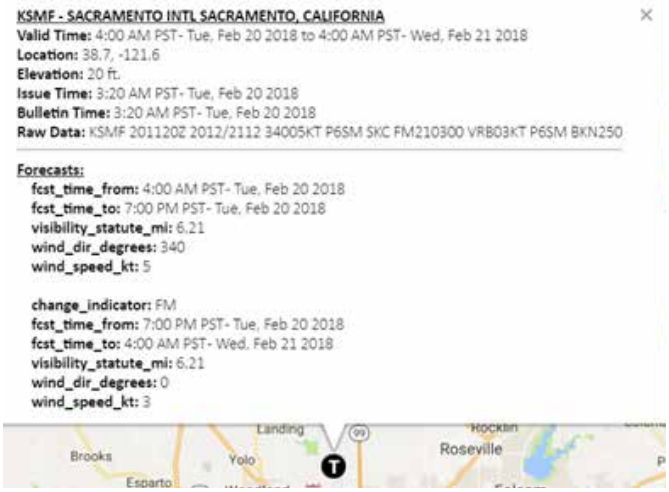

Image 2: Terminal Aerodrome Forecasts Layer and Detail

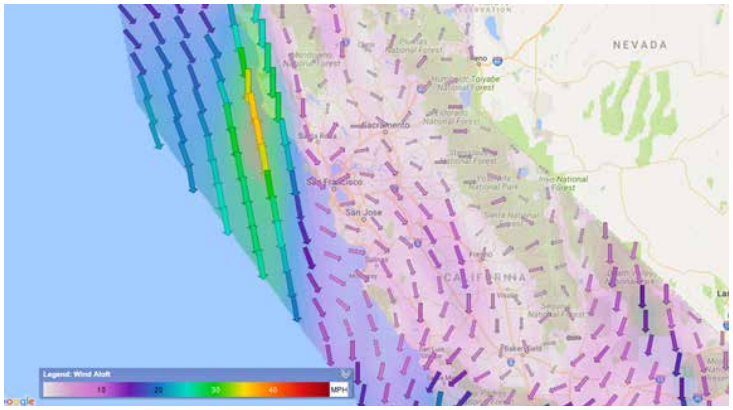

Image 3: Wind Aloft Layer

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