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16. ABSTRACT

The focus of this project was to further develop the capabilities of WeatherShare to include those of ScanWeb, ScanSentry, and other desirable but currently unavailable functionality into WeatherShare through further development of WeatherShare–Phase 3. At the conclusion of this phase, the capabilities of ScanWeb have been developed into WeatherShare 3. The capabilities of ScanSentry remain to be implemented in Phase 4 in conjunction with user profiles and subsequent testing of system functionality during the bad weather season.

WeatherShare has been enhanced to include the external data specified for this phase and display that data via a Google Maps-based, web interface as well as tabular listings of sites and data, and graphical views of data over time. Standard map navigation and selection controls are included. Data layers are selected via menus at the top of the screen and are shown as markers and, for some layers, raster images on top of the map. Markers can be selected to show further detail for a particular item. Sites may be selected from tabular listings, and historical data can be viewed either by tabular display or graphs. Navigation between various display types is facilitated by hyperlinks.

The system includes RWIS data that is pushed via Caltrans Information Relays. At the present time, Information Relays have been implemented in Caltrans District 2 and District 3. Other districts will provide data to the system via Information Relays in the future. Weather alerts and surface information are provided by the National Weather Service. Current conditions are provided by MesoWest and MADIS. Caltrans Closed Circuit Television images are provided via the Caltrans CWWP2

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WeatherShare
Phase 3
Final Report

by

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1. INTRODUCTION

The WeatherShare prototype was developed as a component of the Redding Incident Management Enhancement (RIME) program, which consists of technology initiatives designed to improve public safety in the Redding area. RIME organizations include: Caltrans Division of Research and Innovation, Caltrans District 2, Caltrans Redding Transportation Management Center, California Department of Forestry & Fire Protection, California Highway Patrol, Shasta Area Safety Communications Agency, and NorCal Emergency Medical Services. WeatherShare covers 7 counties in District 2 and 13 counties in the adjacent Caltrans districts.

The goal of the WeatherShare project has been to streamline and integrate available road weather data in the Northern California area into a single source that is easily accessible by incident responders and potentially the traveling public.

Based upon Caltrans' specifications, the Western Transportation Institute (WTI) at Montana State University – Bozeman utilized technology to provide Caltrans District 2 with a proof-of-concept surface transportation weather system (Phase 1) that allowed users to view a compilation of available road weather data from various sources in the region. This proof-of-concept system showed promise to increase the efficiency of situation assessments for a variety of purposes including incident management, highway maintenance, emergency medical services and traveler information.

While the Phase 1 proof-of-concept system covered seven counties in District 2 and 13 counties in the adjacent Caltrans districts, the Phase 2 prototype system expanded on this to include the full state of California with all 12 districts and 58 counties. The Phase 2 prototype system showed promise to provide maintenance and operations personnel with a complete picture of the current and recent weather as well as detailed forecast weather. While making extensive use of Caltrans RWIS data, the prototype system's coverage went far beyond that provided by RWIS sites alone, incorporating sensor readings from more than one thousand weather stations in California. Through a user-friendly, intuitive, map-based interface, the prototype system provided users with detailed weather information state-wide and at milepost resolution.

Caltrans currently uses the ScanWeb application to aggregate and present weather information from RWIS sites to maintenance and operations personnel. Other applications such as SCAN Sentry are used by individual districts to provide additional capabilities such as weather-based alerting. There is a desire to combine these functionalities into a single, open system. The purpose of WeatherShare Phase 3 was to further develop the capabilities of WeatherShare to include those of ScanWeb, SCAN Sentry, and other desirable but currently unavailable functionality into WeatherShare through further development of WeatherShare – Phase 3. Phase 3 was not considered as a deployment phase within the Caltrans organization, but rather a mechanism to research further and refine the prototype completed earlier in Phases 1 and 2.

A fourth phase has been scoped and was scheduled to start on December 1st, 2015. Delays in funding transfers have caused the start date to slip to January 1st, 2016. Phase 4 is intended to complete several tasks that were not completed in Phase 3, including testing of all functionality during the bad weather season.

This document summarizes work conducted in Phase 3 of the research project, which ends December 31st, 2015. Following are descriptions of major project tasks and associated deliverables:

Task 1: Project Management

This task covered all activities related to project management.

Prior to the kick-off meeting, a Project Technical Advisory Panel (PTAP) was formed to oversee project work and progress. The PTAP consisted of the Caltrans project champion, project manager and a small number of representative project stakeholders from Caltrans' Districts. The PTAP determined the acceptance criteria and performance standards for each task.

Deliverables:

- A kickoff meeting was held via teleconference on Wednesday, February 13th.
- Other meetings were held as needed via teleconference and web conference.
- Quarterly Reports were sent via email approximately midway through the months of January, April, July and October throughout the duration of the project.
- Final Project Report (this document) will be delivered prior to the conclusion of the project: December 31st, 2015. No project presentations were made at the National Rural Intelligent Transportation Systems (NRITS) conference or other conferences. Project presentations at conferences may be conducted in Phase 4.
- The project web presence for background and updates is located at the following address: http://www.westernstates.org/Projects/Weathershare/Default.html.

Task 2: Prototype System Concept and Requirements

Prototype System Review

Scanweb was reviewed to document system functionality, as used by Caltrans and in general. The interface was also be reviewed to determine strengths and weaknesses to be addressed by the new prototype system. Scan Sentry, a tool used by District 3 for alert generation and notification, was reviewed to document system functionality, as used by Caltrans and in general. It was recognized that Scan Sentry has a number of deficiencies to be addressed by the new prototype system.

Results from WeatherShare Phase 2 were also reviewed in terms of architecture and performance. Recognizing that WeatherShare had not not been updated over two years pending this contract, subsequent efforts such as the Western States One-Stop-Shop for Rural Traveler Information and COATS Deployment Assistance were also reviewed in regard to architectural or performance issues, and particularly in regard to interface. The One-Stop-Shop was considered state of the art in terms of a multi-layered map display.

Stakeholder Input

Input was requested from stakeholders by way of the project technical committee to determine requirements for the new prototype system. Email and teleconferences were used to solicit input. No site visits were conducted.

Prototype System Concept

The System Concept from Phases 1 and 2 of WeatherShare were used as a baseline to further develop the system concept for the new system. It was recognized that there would be significant changes and enhancements determined through the System Review and Stakeholder Input

subtasks since the system will now be focused primarily on operations as opposed to traveler information.

Prototype System Requirements

The Prototype System Requirements from Phases 1 and 2 of WeatherShare were used as a baseline to further develop the prototype system concept for the new prototype system. Requirements from other systems such as the One-Stop-Shop were also incorporated. It was recognized that there would be significant changes and enhancements determined through the Prototype System Review and Stakeholder Input subtasks since the prototype system will now be focused primarily on operations as opposed to traveler information.

Deliverables:

- WeatherShare Phase 3 Prototype System Operational Concept (OpsCon), by Douglas Galarus and Daniell Richter, Western Transportation Institute, Montana State University. Finalized October 11, 2013.
- WeatherShare Phase 3 Prototype System Software Requirements Specification (SRS), by Douglas Galarus and Daniell Richter, Western Transportation Institute, Montana State University. Finalized March 12, 2014.

Task 3: Prototype System Design

A prototype system design was developed based on the Prototype System Concept and System Requirements. The prototype system was designed to use a multi-tiered architecture.

Data Retrieval

Data retrieval processes were designed in a flexible manner to accept information pushed from information relay devices, as developed by Caltrans District 2, to provide RWIS data to the system. The system does not directly interface with RWIS RPUs.Other third party data is retrieved by the system. The system integrates weather data from MesoWest and MADIS as well as the National Weather Service. However, unlike the Phase 2 prototype system, this external data is not be archived for an extended period of time. This external data augments Caltrans RWIS data by providing greater spatial coverage and can serve as a basis for quality control assessment.

Storage

Data is stored in flat files. Caltrans RWIS data is retained for an extended period of time – at least 5 years, although longer may be desired. Derived data (quality control flags, alert definitions and activations, etc.) will also be stored. Third-party data will not be stored for an extended period of time.

Processing

Processing includes not only the processing involved with the retrieval and storage of data, but also that for quality control assessment, alert processing and preparation of data for display. The processing design takes into account various interactions, in conjunction with the algorithms identified to perform each processing task.

User Management

The WeatherShare Phase I prototype system included a user management component which was subsequently dropped due to limited functionality and unnecessary overhead in terms of development. In WeatherShare Phase 2, users are able to save links to particular views, but are not required to authenticate to the prototype system for primary functionality. An exception is quality control reports, which are not linked to via the public interface. User management functionality is necessary for the new prototype system, principally because of desired alert functionality. User management can determine who can view what and particularly who can change what, which will be very important with alert capability. General personalization is desired in which users can save preferences and/or be assigned particular views of data.

Interface

The principal user interface to the prototype system is implemented using web-based HTML, with CSS and JavaScript. Map interfaces were developed on the Google Maps platform. The intent has been to develop a standards-compliant interface that would work in "modern browsers" – recent versions of Internet Explorer, Firefox, Safari or Chrome. No attempt has been made to facilitate use with non-PC devices such as smartphones and tablets. It was noted that ScanWeb currently makes extensive use of a tabular and graph-based displays for data, and this approach was adopted by the new prototype system.

Deliverables:

- WeatherShare Phase 3 Prototype System Design, by Douglas Galarus and Daniell Richter, Western Transportation Institute, Montana State University. Finalized December 23, 2015.

Task 4: Prototype System Development

The prototype system has been developed at WTI, although the long-term goal (beyond the scope of this project) will be a system that will reside at Caltrans and will operate within the Caltrans network. It is understood that the sponsoring program is responsible to develop an enterprise integration plan should the desire to deploy this system exists subsequent to the completion of this research project. At no time during this research phase has the prototype system been located within the Caltrans network.

Server Setup

The prototype system is Linux-based, with the intent of the prototype system being entirely open-source / free software.

Establish Repository for Code and Specs

It will be desirable to establish a repository for source code and specifications associated with the prototype system such that they can be accessed by Caltrans and other entities. An SVN archive has been implemented on the server. Access can be provided to Caltrans. Note that an SVN archive for the project is setup internal to WTI.

Prototype(s) / Rapid Prototyping

The prototype system has been developed using a rapid-prototyping approach. Functionality was developed and demonstrated throughout the development process rather than solely at completion of the prototype system.

Prototype System

The prototype system is the principal end product of this effort, and has been demonstrated as such. It should be noted, however, that there is no intent that the host hardware for the prototype system be migrated to Caltrans. As mentioned previously, it is assumed that Caltrans will eventually purchase hardware for a production system, and will implement the system based on prototype development from this project. WTI will subsequently provide a specification of the host system and its Linux configuration.

Software Specification and Source Code (deliverable)

System software is considered a deliverable, with delivery to consist of stand-alone copies of code on disk or other media and in the dedicated repository. Prototype system software source code and documentation can be provided to Caltrans, although it has not been requested at this point.

Prototype System Management and Maintenance Guide

A technical system management and maintenance guide for the prototype system will be created for both electronic (Microsoft Word and/or Adobe Acrobat) and print distribution in Phase 4, deferred from Phase 3. The purpose of this document will be to provide technical guidance in maintaining the prototype system. Electronic and print copies of this document will be submitted to the Caltrans project manager. Draft copies of the prototype system management and maintenance guide will be submitted for approval prior to finalization of the user guide. The format and extent of this document will be determined in cooperation with Caltrans as part of this task. This has been deferred until Phase 4.

Deliverables:

- Prototypes for Review (multiple iterations)
- Prototype System (the last prototype within this scope)
- Software Specification and Source Code (Deferred to Phase 4)
- Prototype System Management and Maintenance Guide (Deferred to Phase 4)

Task 5: Prototype System Testing and Evaluation

This task has been deferred to Phase 4 to allow for testing of all functionality during the bad weather season.

User Guide

A user guide will be updated for electronic (HTML and or PDF) distribution, and will be incorporated into the prototype system website. This guide will be comparable to the current ScanWeb user guide. The format and extent of this document will be determined in cooperation with Caltrans as part of this task. This has been deferred until Phase 4.

Prototype System Testing

The prototype system has been tested for performance under realistic but limited circumstances. Further testing is deferred until Phase 4.

Evaluation

The WTI project team will work with Caltrans to determine the appropriate criteria and evaluation instruments to provide an accurate and unbiased assessment of prototype system

performance and deployment. Criteria will likely include measures of prototype system ease of use, performance and utility, where available and applicable. All aspects of the prototype system will be covered including the interface and functionality. Evaluation will include a set of representative users. This task has been deferred to Phase 4.

Evaluation Summary

An evaluation summary report will be prepared and included in the final report. This report will summarize the results of the testing and evaluation. Included will be a summary of the evaluation procedure and results of surveys, interviews and other evaluation instruments. This task has been deferred to Phase 4.

Deliverables:

- User Guide (Deferred to Phase 4)
- Evaluation Summary (Deferred to Phase 4)

1.1. Definitions, acronyms, and abbreviations

The following abbreviations are used in this document:

Caltrans	California Department of Transportation
CCTV	Closed Circuit Television (Camera)
COATS	California Oregon Advanced Transportation Systems
CSS	Cascading Style Sheets
CWWP2	Caltrans Commercial Wholesale Web Portal, version 2
D2	(Caltrans) District 3 (similar for D1-D12)
DOT	Department of Transportation
EMS	Emergency Medical Services
ESS	Environmental Sensor Station
HTML	HyperText Markup Language
I-5	Interstate 5 (similar for other Interstate roadways)
IT	Information Technology
ITS	Intelligent Transportation Systems
JSON	JavaScript Object Notation
KML	Keyhole Markup Language
MADIS	Meteorological Assimilation Data Ingest System
MesoWest	MesoWest at the University of Utah
mi	miles
MSU	Montana State University
NDFD	National Digital Forecast Database
NOAA	National Oceanic and Atmospheric Administration
NRITS	National Rural Intelligent Transportation Systems Conference
NWS	National Weather Service
OpsCon	Operational Concept
OSS	One-Stop-Shop (for rural traveler information)
PDF	Portable Document Format
PTAP	Project Technical Advisory Panel
QC	Quality Control
RIME	Redding Incident Management Enhancement program
RPU	Remote Processing Unit
RWIS	Road Weather Information System
SVN	SubVersioN
SR	State Route
SRS	System Requirements Specification
TXT	Text
URL	Universal Resource Locator
US	United States
WTI	Western Transportation Institute

1.2. Organization of This Report

In Section 2 we present an overview of the prototype system including a summary of data retrieval and presentation mechanisms for the system. In Section 3 we present a summary.

For further information, refer to the documents listed in the following references section, the project website, and the project updates website.

1.3. References

The following project documents were also used to develop this document:

- A proposal for the project entitled: WeatherShare Phase 3, Douglas Galarus, March 12, 2012.

- WeatherShare Phase 4 Scope of Work, Douglas Galarus, November 5, 2015.

- WeatherShare Phase 3 Prototype System Operational Concept (OpsCon), by Douglas Galarus and Daniell Richter, Western Transportation Institute, Montana State University. Finalized October 11, 2013.

- WeatherShare Phase 3 Prototype System Software Requirements Specification (SRS), by Douglas Galarus and Daniell Richter, Western Transportation Institute, Montana State University. Finalized March 12, 2014.

- WeatherShare Phase 3 Prototype System Design, by Douglas Galarus and Daniell Richter, Western Transportation Institute, Montana State University. Finalized December 23, 2015.

2. THE PROTOTYPE SYSTEM

In this section we document the prototype system from a high level, primarily by way of screenshots. Certainly the best way to understand the system is to use it. However, there are times when certain displays will be more interesting and relevant than others. We have made an effort to present screenshots here of all of the displays during relevant times such as winter weather events. For the sake of reference and overview we also present a high-level listing for the data sources and the general processing and presentation mechanisms used to present application information to end users.

2.1. Data Retrieval and Processing

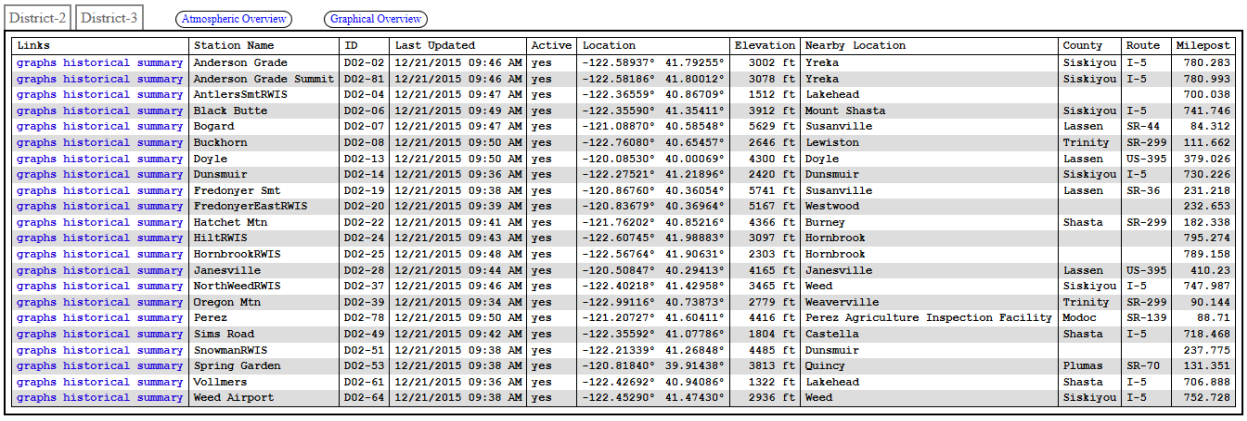
The System consists of server-side scripts that retrieve and process data from numerous sources, format the data as JSON, KML and image files, a web server that serves the data via a web server to web clients, and a browser-based client that presents the data on top of Google Maps.

The data retrieved and presented dynamically in the system is summarized by the following data sources and data layers:

- Caltrans CWWP2:
  - Caltrans Closed Circuit Television (CCTV)
- National Oceanic and Atmospheric Administration (NOAA)'s National Weather Service Public Alerts:
  - National Weather Service (NWS) Alerts
- National Weather Service National Digital Forecast Database:
  - Surface Forecasts
- Caltrans Information Relay:
  - Caltrans RWIS
- Meteorological Assimilation and Data Ingest System (MADIS):
  - Surface Conditions
- MesoWest:
  - Surface Conditions

2.2. Presentation

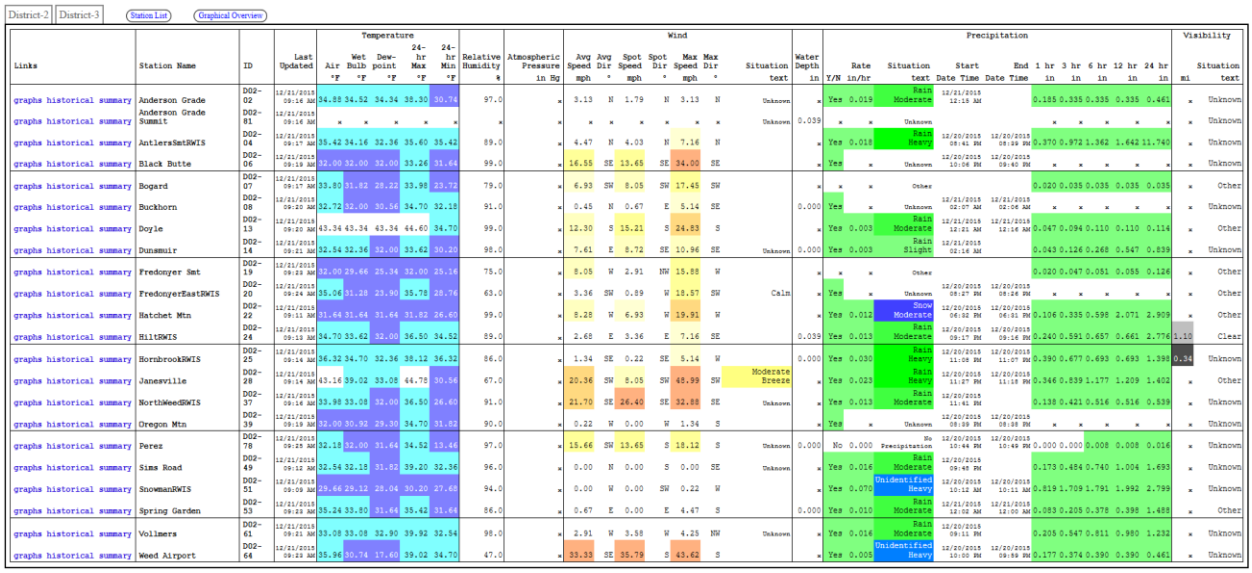
The application is presented to users via a Google Maps -based, web interface as well as tabular listings of sites and data, and graphical views of data over time. Standard map navigation and selection controls are included. Data layers are selected via menus at the top of the screen and are shown as markers and, for some layers, raster images on top of the map. Markers can be selected to show further detail for a particular item. Sites may be selected from tabular listings, and historical data can be viewed either by tabular display or graphs. Navigation between various display types is facilitated by hyperlinks. See the following figures captured from the prototype system for further detail.



District-2 District-3 Atmospheric Overview Graphical Overview

Links	Station Name	ID	Last Updated	Active	Location	Elevation	Nearby Location	County	Route	Milepost
graphs historical summary	Anderson Grade	D02-02	12/21/2015 09:46 AM	yes	-122.58937° 41.79255°	3002 ft	Yreka	Siskiyou	I-5	780.283
graphs historical summary	Anderson Grade Summit	D02-81	12/21/2015 09:46 AM	yes	-122.58186° 41.80012°	3078 ft	Yreka	Siskiyou	I-5	780.993
graphs historical summary	AntlersSmtRWIS	D02-04	12/21/2015 09:47 AM	yes	-122.36559° 40.86709°	1512 ft	Lakehead			700.038
graphs historical summary	Black Butte	D02-06	12/21/2015 09:49 AM	yes	-122.35590° 41.35411°	3912 ft	Mount Shasta	Siskiyou	I-5	741.746
graphs historical summary	Bogard	D02-07	12/21/2015 09:47 AM	yes	-121.08870° 40.58548°	5629 ft	Susanville	Lassen	SR-44	84.312
graphs historical summary	Buckhorn	D02-08	12/21/2015 09:50 AM	yes	-122.76080° 40.65457°	2646 ft	Lewiston	Trinity	SR-299	111.662
graphs historical summary	Doyle	D02-13	12/21/2015 09:50 AM	yes	-120.08530° 40.00069°	4300 ft	Doyle	Lassen	US-395	379.026
graphs historical summary	Dunsmuir	D02-14	12/21/2015 09:36 AM	yes	-122.27521° 41.21896°	2420 ft	Dunsmuir	Siskiyou	I-5	730.226
graphs historical summary	Fredonyer Smt	D02-19	12/21/2015 09:38 AM	yes	-120.86760° 40.36054°	5741 ft	Susanville	Lassen	SR-36	231.218
graphs historical summary	FredonyerEastRWIS	D02-20	12/21/2015 09:39 AM	yes	-120.83679° 40.36964°	5167 ft	Westwood			232.653
graphs historical summary	Hatchet Mtn	D02-22	12/21/2015 09:41 AM	yes	-121.76202° 40.85216°	4366 ft	Burney	Shasta	SR-299	182.338
graphs historical summary	HiltRWIS	D02-24	12/21/2015 09:43 AM	yes	-122.60745° 41.98883°	3097 ft	Hornbrook			795.274
graphs historical summary	HornbrookRWIS	D02-25	12/21/2015 09:48 AM	yes	-122.56764° 41.90631°	2303 ft	Hornbrook			789.158
graphs historical summary	Janesville	D02-28	12/21/2015 09:44 AM	yes	-120.50847° 40.29413°	4165 ft	Janesville	Lassen	US-395	410.23
graphs historical summary	NorthWeedRWIS	D02-37	12/21/2015 09:46 AM	yes	-122.40218° 41.42958°	3465 ft	Weed	Siskiyou	I-5	747.987
graphs historical summary	Oregon Mtn	D02-39	12/21/2015 09:34 AM	yes	-122.99116° 40.73873°	2779 ft	Weaverville	Trinity	SR-299	90.144
graphs historical summary	Perez	D02-78	12/21/2015 09:50 AM	yes	-121.20727° 41.60411°	4416 ft	Perez Agriculture Inspection Facility	Modoc	SR-139	88.71
graphs historical summary	Sims Road	D02-49	12/21/2015 09:42 AM	yes	-122.35592° 41.07786°	1804 ft	Castella	Shasta	I-5	718.468
graphs historical summary	SnowmanRWIS	D02-51	12/21/2015 09:38 AM	yes	-122.21339° 41.26848°	4485 ft	Dunsmuir			237.775
graphs historical summary	Spring Garden	D02-53	12/21/2015 09:38 AM	yes	-120.81840° 39.91438°	3813 ft	Quincy	Plumas	SR-70	131.351
graphs historical summary	Vollmers	D02-61	12/21/2015 09:36 AM	yes	-122.42692° 40.94086°	1322 ft	Lakehead	Shasta	I-5	706.888
graphs historical summary	Weed Airport	D02-64	12/21/2015 09:38 AM	yes	-122.45290° 41.47430°	2936 ft	Weed	Siskiyou	I-5	752.728

Figure 1: Index of District 2 RWIS Sites



District-2 District-3 Station List Graphical Overview

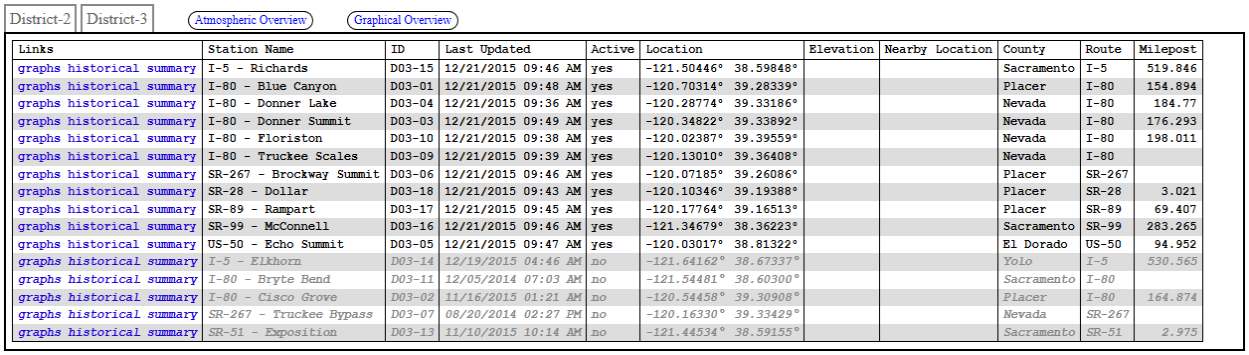
Links	Station Name	ID	Last Updated	Temperature: Air °F	Wet Bulb °F	Dew-point °F	24-hr Max °F	24-hr Min °F	Relative Humidity %	Atmospheric Pressure in Hg	Wind: Avg Speed mph	Avg Dir °	Spot Speed mph	Spot Dir °	Max Speed mph	Max Dir °	Situation text	Water Depth in	Precipitation: Rate Y/N	Rate in/hr	Situation text	Start Date Time	End Date Time	1 hr in	3 hr in	6 hr in	12 hr in	24 hr in	Visibility: mi	Situation text
graphs historical summary	Anderson Grade	D02-02	12/21/2015 09:16 AM	34.88	34.52	34.34	38.30	30.74	97.0		3.13	N	1.79	N	3.13	N	Unknown		Yes	0.019	Rain Moderate	12/21/2015 12:15 AM		0.185	0.335	0.335	0.335	0.461		Unknown
graphs historical summary	Anderson Grade Summit	D02-81	12/21/2015 09:16 AM														Unknown	0.039												
graphs historical summary	AntlersSmtRWIS	D02-04	12/21/2015 09:17 AM	35.42	34.16	32.36	35.60	35.42	89.0		4.47	N	4.03	N	7.16	N			Yes	0.018	Rain Heavy	12/20/2015 08:41 PM	12/20/2015 08:59 PM	0.370	0.972	1.362	1.642	11.740		Unknown
graphs historical summary	Black Butte	D02-06	12/21/2015 09:19 AM	32.00	32.00	32.00	33.26	31.64	99.0		16.55	SE	13.65	SE	34.00	SE			Yes		Unknown	12/20/2015 10:06 PM	12/20/2015 09:40 PM							Unknown
graphs historical summary	Bogard	D02-07	12/21/2015 09:17 AM	33.80	31.82	28.22	33.98	23.72	79.0		6.93	SW	8.05	SW	17.45	SW					Other			0.020	0.035	0.035	0.035	0.035		Other
graphs historical summary	Buckhorn	D02-08	12/21/2015 09:20 AM	32.72	32.00	30.56	34.70	32.18	91.0		0.45	N	0.67	E	5.14	SE		0.000	Yes		Unknown	12/21/2015 02:07 AM	12/21/2015 02:06 AM							Unknown
graphs historical summary	Doyle	D02-13	12/21/2015 09:20 AM	43.34	43.34	43.34	44.60	34.70	99.0		12.30	S	15.21	S	24.83	S			Yes	0.003	Rain Moderate	12/21/2015 12:21 AM	12/21/2015 12:16 AM	0.047	0.094	0.110	0.110	0.114		Other
graphs historical summary	Dunsmuir	D02-14	12/21/2015 09:21 AM	32.54	32.36	32.00	33.62	30.20	98.0		7.61	E	8.72	SE	10.96	SE	Unknown	0.000	Yes	0.003	Rain Slight	12/21/2015 02:16 AM		0.043	0.126	0.268	0.547	0.839		Unknown
graphs historical summary	Fredonyer Smt	D02-19	12/21/2015 09:23 AM	32.00	29.66	25.34	32.00	25.16	75.0		8.05	W	2.91	NW	15.88	W					Other			0.020	0.047	0.051	0.055	0.126		Other
graphs historical summary	FredonyerEastRWIS	D02-20	12/21/2015 09:24 AM	35.06	31.28	23.90	35.78	28.76	63.0		3.36	SW	0.89	W	18.57	SW	Calm		Yes		Unknown	12/20/2015 08:27 PM	12/20/2015 08:26 PM							Other
graphs historical summary	Hatchet Mtn	D02-22	12/21/2015 09:13 AM	31.64	31.64	31.64	31.82	26.60	99.0		8.28	W	6.93	W	19.91	W			Yes	0.012	Snow Moderate	12/20/2015 06:02 PM	12/20/2015 06:01 PM	0.106	0.335	0.598	2.071	2.909		Other
graphs historical summary	HiltRWIS	D02-24	12/21/2015 09:19 AM	34.70	33.62	32.00	36.50	34.52	89.0		2.68	E	3.36	E	7.16	SE		0.039	Yes	0.013	Rain Moderate	12/20/2015 09:17 PM	12/20/2015 09:16 PM	0.240	0.591	0.657	0.661	2.776	1.10	Clear
graphs historical summary	HornbrookRWIS	D02-25	12/21/2015 09:14 AM	36.32	34.70	32.36	38.12	36.32	86.0		1.34	SE	0.22	SE	5.14	W		0.000	Yes	0.030	Rain Heavy	12/20/2015 11:08 PM	12/20/2015 11:07 PM	0.390	0.677	0.693	0.693	1.390	0.34	Unknown
graphs historical summary	Janesville	D02-28	12/21/2015 09:14 AM	43.16	39.02	33.08	44.78	30.56	67.0		20.36	SW	8.05	SW	48.99	SW	Moderate Breeze		Yes	0.023	Rain Heavy	12/20/2015 11:27 PM	12/20/2015 11:18 PM	0.346	0.539	1.177	1.209	1.402		Other
graphs historical summary	NorthWeedRWIS	D02-37	12/21/2015 09:16 AM	33.98	33.08	32.00	36.50	26.60	91.0		21.70	SE	26.40	SE	32.88	SE	Unknown		Yes	0.013	Rain Moderate	12/20/2015 11:41 PM		0.138	0.421	0.516	0.516	0.539		Unknown
graphs historical summary	Oregon Mtn	D02-39	12/21/2015 09:19 AM	32.00	30.92	29.30	34.70	31.82	90.0		0.22	W	0.00	W	1.34	S			Yes		Unknown	12/20/2015 08:39 PM	12/20/2015 08:38 PM							Unknown
graphs historical summary	Perez	D02-78	12/21/2015 09:25 AM	32.18	32.00	31.64	34.52	19.46	97.0		15.66	SW	13.65	S	18.12	S	Unknown	0.000	No	0.000	No Precipitation	12/20/2015 10:44 PM	12/20/2015 10:49 PM	0.000	0.000	0.008	0.008	0.016		Unknown
graphs historical summary	Sims Road	D02-49	12/21/2015 09:12 AM	32.54	32.18	31.82	39.20	32.36	96.0		0.00	N	0.00	S	0.00	SE	Unknown		Yes	0.016	Rain Moderate	12/20/2015 09:48 PM		0.173	0.484	0.740	1.004	1.693		Unknown
graphs historical summary	SnowmanRWIS	D02-51	12/21/2015 09:09 AM	29.66	29.12	28.04	30.20	27.68	94.0		0.00	W	0.00	SW	0.22	W			Yes	0.070	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.819	1.709	1.791	1.992	2.799		Unknown
graphs historical summary	Spring Garden	D02-53	12/21/2015 09:23 AM	35.24	33.80	31.64	35.42	31.64	86.0		0.67	E	0.00	E	4.47	S		0.000	Yes	0.010	Rain Moderate	12/21/2015 12:02 AM	12/21/2015 12:00 AM	0.083	0.205	0.378	0.398	1.488		Other
graphs historical summary	Vollmers	D02-61	12/21/2015 09:21 AM	33.08	33.08	32.90	39.92	32.54	98.0		2.91	W	3.58	W	4.25	NW	Unknown		Yes	0.016	Rain Moderate	12/20/2015 09:11 PM		0.205	0.547	0.811	0.980	1.232		Unknown
graphs historical summary	Weed Airport	D02-64	12/21/2015 09:23 AM	35.96	30.74	17.60	39.02	34.70	47.0		33.33	SE	35.79	S	43.62	S			Yes	0.005	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.177	0.374	0.390	0.390	0.461		Unknown

Figure 2: Atmospheric Overview of District 2 RWIS Sites

District-2 District-3 Atmospheric Overview Station List

Links	Station Name	ID	Last Updated	Air Temperature	Dewpoint	Relative Humidity	Average Wind	Wind Gust	One-Hour Precipitation	Precipitation Situation
graphs historical summary	Anderson Grade	D02-02	12/21/2015 09:31 AM							
graphs historical summary	Anderson Grade Summit	D02-81	12/21/2015 09:31 AM							
graphs historical summary	AntlersSmtRWIS	D02-04	12/21/2015 09:32 AM							
graphs historical summary	Black Butte	D02-06	12/21/2015 09:34 AM							
graphs historical summary	Bogard	D02-07	12/21/2015 09:32 AM							
graphs historical summary	Buckhorn	D02-08	12/21/2015 09:35 AM							
graphs historical summary	Doyle	D02-13	12/21/2015 09:35 AM							
graphs historical summary	Dunsmuir	D02-14	12/21/2015 09:36 AM							
graphs historical summary	Fredonyer Smt	D02-19	12/21/2015 09:38 AM							
graphs historical summary	FredonyerEastRWIS	D02-20	12/21/2015 09:39 AM							
graphs historical summary	Hatchet Mtn	D02-22	12/21/2015 09:41 AM							
graphs historical summary	HiltRWIS	D02-24	12/21/2015 09:43 AM							
graphs historical summary	HornbrookRWIS	D02-25	12/21/2015 09:31 AM							
graphs historical summary	Janesville	D02-28	12/21/2015 09:44 AM							
graphs historical summary	NorthWeedRWIS	D02-37	12/21/2015 09:31 AM							
graphs historical summary	Oregon Mtn	D02-39	12/21/2015 09:34 AM							
graphs historical summary	Perez	D02-78	12/21/2015 09:45 AM							
graphs historical summary	Sims Road	D02-49	12/21/2015 09:42 AM							
graphs historical summary	SnowmanRWIS	D02-51	12/21/2015 09:38 AM							
graphs historical summary	Spring Garden	D02-53	12/21/2015 09:38 AM							
graphs historical summary	Vollmers	D02-61	12/21/2015 09:36 AM							
graphs historical summary	Weed Airport	D02-64	12/21/2015 09:38 AM							

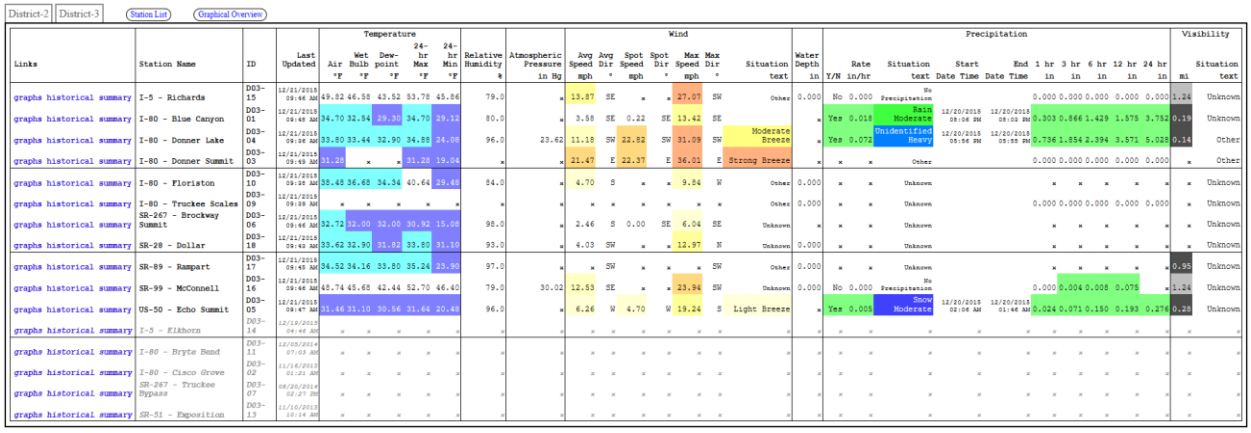
Figure 3: Graphical Overview of District 2 RWIS Sites



District-2 | District-3 | Atmospheric Overview | Graphical Overview

Links	Station Name	ID	Last Updated	Active	Location	Elevation	Nearby Location	County	Route	Milepost
graphs historical summary	I-5 - Richards	D03-15	12/21/2015 09:46 AM	yes	-121.50446° 38.59848°			Sacramento	I-5	519.846
graphs historical summary	I-80 - Blue Canyon	D03-01	12/21/2015 09:48 AM	yes	-120.70314° 39.28339°			Placer	I-80	154.894
graphs historical summary	I-80 - Donner Lake	D03-04	12/21/2015 09:36 AM	yes	-120.28774° 39.33186°			Nevada	I-80	184.77
graphs historical summary	I-80 - Donner Summit	D03-03	12/21/2015 09:49 AM	yes	-120.34822° 39.33892°			Nevada	I-80	176.293
graphs historical summary	I-80 - Floriston	D03-10	12/21/2015 09:38 AM	yes	-120.02387° 39.39559°			Nevada	I-80	198.011
graphs historical summary	I-80 - Truckee Scales	D03-09	12/21/2015 09:39 AM	yes	-120.13010° 39.36408°			Nevada	I-80	
graphs historical summary	SR-267 - Brockway Summit	D03-06	12/21/2015 09:46 AM	yes	-120.07185° 39.26086°			Placer	SR-267	
graphs historical summary	SR-28 - Dollar	D03-18	12/21/2015 09:43 AM	yes	-120.10346° 39.19388°			Placer	SR-28	3.021
graphs historical summary	SR-89 - Rampart	D03-17	12/21/2015 09:45 AM	yes	-120.17764° 39.16513°			Placer	SR-89	69.407
graphs historical summary	SR-99 - McConnell	D03-16	12/21/2015 09:46 AM	yes	-121.34679° 38.36223°			Sacramento	SR-99	283.265
graphs historical summary	US-50 - Echo Summit	D03-05	12/21/2015 09:47 AM	yes	-120.03017° 38.81322°			El Dorado	US-50	94.952
graphs historical summary	I-5 - Elkhorn	D03-14	12/19/2015 04:46 AM	no	-121.64162° 38.67337°			Yolo	I-5	530.565
graphs historical summary	I-80 - Bryte Bend	D03-11	12/05/2014 07:03 AM	no	-121.54481° 38.60300°			Sacramento	I-80	
graphs historical summary	I-80 - Cisco Grove	D03-02	11/16/2015 01:21 AM	no	-120.54458° 39.30908°			Placer	I-80	164.874
graphs historical summary	SR-267 - Truckee Bypass	D03-07	08/20/2014 02:27 PM	no	-120.16330° 39.33429°			Nevada	SR-267	
graphs historical summary	SR-51 - Exposition	D03-13	11/10/2015 10:14 AM	no	-121.44534° 38.59155°			Sacramento	SR-51	2.975

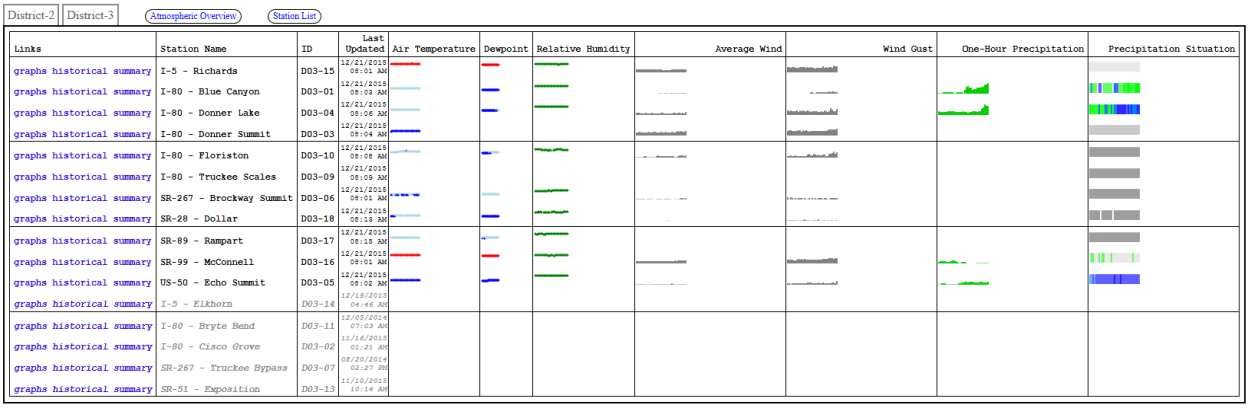
Figure 4: Index of District 3 RWIS Sites



District-2 | District-3 | Station List | Graphical Overview

Links	Station Name	ID	Last Updated	Temperature: Air °F	Wet Bulb °F	Dew-point °F	24-hr Max °F	24-hr Min °F	Relative Humidity %	Atmospheric Pressure in Hg	Wind: Avg Speed mph	Avg Dir °	Spot Speed mph	Spot Dir °	Max Speed mph	Max Dir °	Situation text	Water Depth in	Precipitation: Rate in/hr	Y/N	Situation text	Start Date Time	End Date Time	1 hr in	3 hr in	6 hr in	12 hr in	24 hr in	Visibility: mi	Situation text
graphs historical summary	I-5 - Richards	D03-15	12/21/2015 09:46 AM	49.82	46.58	43.52	53.78	45.86	79.0		13.87	SE			27.07	SW	Other	0.000	No 0.000	No	Precipitation			0.000	0.000	0.000	0.000	0.000	1.24	Unknown
graphs historical summary	I-80 - Blue Canyon	D03-01	12/21/2015 09:48 AM	34.70	32.54	29.30	34.70	29.30	80.0		3.58	SE	0.22	SE	13.42	SE			Yes 0.018		Rain Moderate	12/20/2015 08:06 PM	12/20/2015 08:06 PM	0.303	0.866	1.429	1.575	3.752	0.19	Unknown
graphs historical summary	I-80 - Donner Lake	D03-04	12/21/2015 09:36 AM	33.80	33.44	32.90	34.88	24.08	96.0	23.62	11.18	SW	22.82	SW	31.09	SW	Moderate Breeze		Yes 0.072		Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.736	1.554	2.394	3.571	5.028	0.14	Other
graphs historical summary	I-80 - Donner Summit	D03-03	12/21/2015 09:49 AM	31.28	x	x	31.28	19.06	x	x	21.47	E	22.37	E	36.01	E	Strong Breeze		x x		Other			0.000	0.000	0.000	0.000	0.000	x	Other
graphs historical summary	I-80 - Floriston	D03-10	12/21/2015 09:38 AM	38.48	36.68	34.34	40.64	29.48	84.0	x	4.70	S	x	x	9.84	W	Other	0.000	x x		Unknown			x	x	x	x	x	x	Unknown
graphs historical summary	I-80 - Truckee Scales	D03-09	12/21/2015 09:39 AM	x	x	x	x	x	x	x	x	x	x	x	x	x	Other	0.000	x x		Unknown			0.000	0.000	0.000	0.000	0.000	x	Unknown
graphs historical summary	SR-267 - Brockway Summit	D03-06	12/21/2015 09:46 AM	32.72	32.00	32.00	30.92	15.08	98.0	x	2.46	S	0.00	SE	6.04	SE	Unknown	x	x x		Unknown			x	x	x	x	x	x	Unknown
graphs historical summary	SR-28 - Dollar	D03-18	12/21/2015 09:43 AM	33.62	32.90	31.82	33.80	31.10	93.0	x	4.03	SW	x	x	12.97	N	Unknown	0.000	x x		Unknown			x	x	x	x	x	x	Unknown
graphs historical summary	SR-89 - Rampart	D03-17	12/21/2015 09:45 AM	34.52	34.16	33.80	35.24	23.90	97.0	x	x	SW	x	x	x	SW	Other	0.000	x x		Unknown			x	x	x	x	x	0.95	Unknown
graphs historical summary	SR-99 - McConnell	D03-16	12/21/2015 09:46 AM	43.74	45.68	42.44	52.70	46.40	79.0	30.02	12.53	SE	x	x	23.94	SW	Unknown	0.000	No 0.000	No	Precipitation			0.000	0.004	0.008	0.078	x	1.24	Unknown
graphs historical summary	US-50 - Echo Summit	D03-05	12/21/2015 09:47 AM	31.46	31.10	30.56	31.64	20.48	96.0	x	6.26	W	4.70	W	19.24	S	Light Breeze	x	Yes 0.005		Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.071	0.150	0.193	0.276	0.28	Unknown
graphs historical summary	I-5 - Elkhorn	D03-14	12/19/2015 04:46 AM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x x		x	x	x	x	x	x	x	x	x
graphs historical summary	I-80 - Bryte Bend	D03-11	12/05/2014 07:03 AM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x x		x	x	x	x	x	x	x	x	x
graphs historical summary	I-80 - Cisco Grove	D03-02	11/16/2015 01:21 AM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x x		x	x	x	x	x	x	x	x	x
graphs historical summary	SR-267 - Truckee Bypass	D03-07	08/20/2014 02:27 PM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x x		x	x	x	x	x	x	x	x	x
graphs historical summary	SR-51 - Exposition	D03-13	11/10/2015 10:14 AM	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x x		x	x	x	x	x	x	x	x	x

Figure 5: Atmospheric Overview of District 3 RWIS Sites



District-2 | District-3 | Atmospheric Overview | Station List

Links	Station Name	ID	Last Updated	Air Temperature	Dewpoint	Relative Humidity	Average Wind	Wind Gust	One-Hour Precipitation	Precipitation Situation
graphs historical summary	I-5 - Richards	D03-15	12/21/2015 09:01 AM							
graphs historical summary	I-80 - Blue Canyon	D03-01	12/21/2015 09:03 AM							
graphs historical summary	I-80 - Donner Lake	D03-04	12/21/2015 09:06 AM							
graphs historical summary	I-80 - Donner Summit	D03-03	12/21/2015 09:04 AM							
graphs historical summary	I-80 - Floriston	D03-10	12/21/2015 09:08 AM							
graphs historical summary	I-80 - Truckee Scales	D03-09	12/21/2015 09:09 AM							
graphs historical summary	SR-267 - Brockway Summit	D03-06	12/21/2015 09:01 AM							
graphs historical summary	SR-28 - Dollar	D03-18	12/21/2015 09:13 AM							
graphs historical summary	SR-89 - Rampart	D03-17	12/21/2015 09:15 AM							
graphs historical summary	SR-99 - McConnell	D03-16	12/21/2015 09:01 AM							
graphs historical summary	US-50 - Echo Summit	D03-05	12/21/2015 09:02 AM							
graphs historical summary	I-5 - Elkhorn	D03-14	12/19/2015 04:46 AM							
graphs historical summary	I-80 - Bryte Bend	D03-11	12/05/2014 07:03 AM							
graphs historical summary	I-80 - Cisco Grove	D03-02	11/16/2015 01:21 AM							
graphs historical summary	SR-267 - Truckee Bypass	D03-07	08/20/2014 02:27 PM							
graphs historical summary	SR-51 - Exposition	D03-13	11/10/2015 10:14 AM							

Figure 6: Graphical Overview of District 2 RWIS Sites

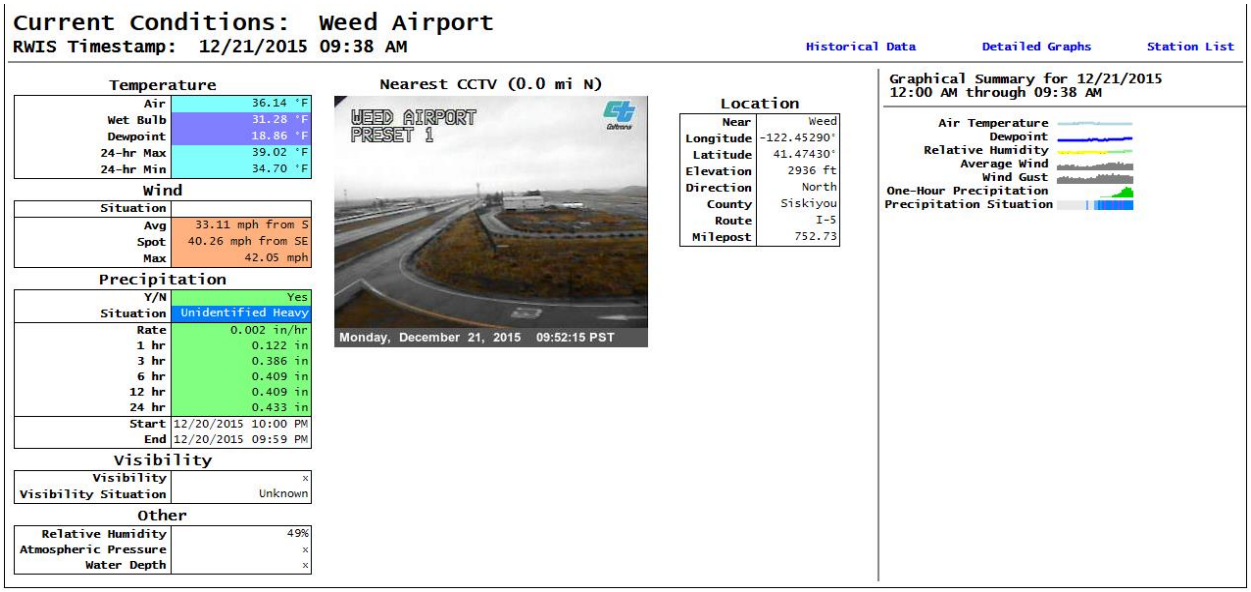
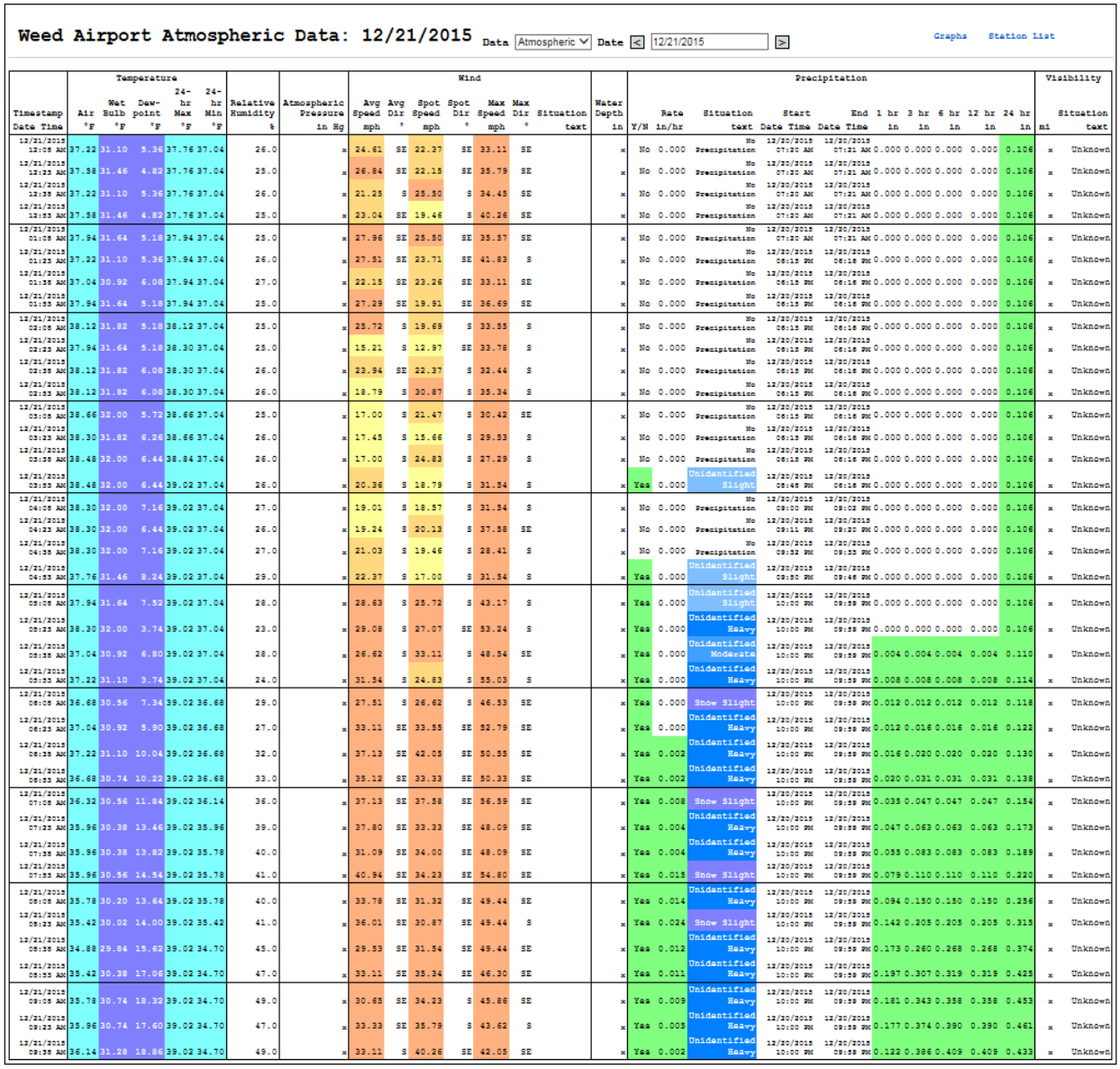


Figure 7: Current Conditions Display for District 2 Weed Airport



Weed Airport Atmospheric Data: 12/21/2015 Data: Atmospheric Date: 12/21/2015 Graphs Station List

Timestamp Date Time	Temperature Air °F	Wet Bulb °F	Dew-point °F	24-hr Max °F	24-hr Min °F	Relative Humidity %	Atmospheric Pressure in Hg	Wind Avg Speed mph	Avg Dir °	Spot Speed mph	Spot Dir °	Max Speed mph	Max Dir °	Situation text	Water Depth in	Precipitation Y/N	Rate in/hr	Situation text	Start Date Time	End Date Time	1 hr in	3 hr in	6 hr in	12 hr in	24 hr in	Visibility Situation mi	Situation text
12/21/2015 12:05 AM	37.22	31.10	5.36	37.76	37.04	26.0	x	24.61	SE	22.37	SE	33.11	SE		x	No	0.000	No Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 12:25 AM	37.58	31.46	4.82	37.76	37.04	25.0	x	26.84	SE	22.15	SE	35.79	SE		x	No	0.000	No Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 12:35 AM	37.22	31.10	5.36	37.76	37.04	26.0	x	21.25	S	25.50	S	34.45	SE		x	No	0.000	No Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 12:53 AM	37.58	31.46	4.82	37.76	37.04	25.0	x	23.04	SE	19.46	S	40.26	SE		x	No	0.000	No Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:05 AM	37.94	31.64	5.18	37.94	37.04	25.0	x	27.96	SE	25.50	SE	35.57	SE		x	No	0.000	No Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:25 AM	37.22	31.10	5.36	37.94	37.04	26.0	x	27.51	SE	23.71	SE	41.83	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:35 AM	37.04	30.92	6.08	37.94	37.04	27.0	x	22.15	SE	23.26	SE	33.11	SE		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:53 AM	37.94	31.64	5.18	37.94	37.04	25.0	x	27.29	SE	19.91	SE	36.69	SE		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 02:05 AM	38.12	31.82	5.18	38.12	37.04	25.0	x	25.72	S	19.69	S	33.55	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 02:23 AM	37.94	31.64	5.18	38.30	37.04	25.0	x	15.21	S	12.97	SE	33.78	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 02:35 AM	38.12	31.82	6.08	38.30	37.04	26.0	x	23.94	SE	22.37	S	32.44	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 02:53 AM	38.12	31.82	6.08	38.30	37.04	26.0	x	18.79	S	30.87	S	35.34	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:05 AM	38.66	32.00	5.72	38.66	37.04	25.0	x	17.00	S	21.47	S	30.42	SE		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:23 AM	38.30	31.82	6.26	38.66	37.04	26.0	x	17.45	S	15.66	S	29.53	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:35 AM	38.48	32.00	6.44	38.84	37.04	26.0	x	17.00	S	24.83	S	27.29	S		x	No	0.000	No Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:53 AM	38.48	32.00	6.44	39.02	37.04	26.0	x	20.36	S	18.79	S	31.54	S		x	Yes	0.000	Unidentified Slight	12/20/2015 08:48 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 04:05 AM	38.30	32.00	7.16	39.02	37.04	27.0	x	19.01	S	18.57	S	31.54	S		x	No	0.000	No Precipitation	12/20/2015 09:00 PM	12/20/2015 09:02 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 04:23 AM	38.30	32.00	6.44	39.02	37.04	26.0	x	19.24	S	20.13	S	37.58	SE		x	No	0.000	No Precipitation	12/20/2015 09:11 PM	12/20/2015 09:20 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 04:35 AM	38.30	32.00	7.16	39.02	37.04	27.0	x	21.03	S	19.46	S	28.41	S		x	No	0.000	No Precipitation	12/20/2015 09:32 PM	12/20/2015 09:33 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 04:53 AM	37.76	31.46	8.24	39.02	37.04	29.0	x	22.37	S	17.00	S	31.54	S		x	Yes	0.000	Unidentified Slight	12/20/2015 09:50 PM	12/20/2015 09:46 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 05:05 AM	37.94	31.64	7.52	39.02	37.04	28.0	x	28.63	S	25.72	S	43.17	S		x	Yes	0.000	Unidentified Slight	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 05:23 AM	38.30	32.00	3.74	39.02	37.04	23.0	x	29.08	S	27.07	SE	53.24	S		x	Yes	0.000	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 05:35 AM	37.04	30.92	6.80	39.02	37.04	28.0	x	26.62	S	33.11	S	48.54	SE		x	Yes	0.000	Unidentified Moderate	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.004	0.004	0.004	0.004	0.110	x	Unknown
12/21/2015 05:53 AM	37.22	31.10	3.74	39.02	37.04	24.0	x	31.54	S	24.83	S	55.03	S		x	Yes	0.000	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.008	0.008	0.008	0.008	0.114	x	Unknown
12/21/2015 06:05 AM	36.68	30.56	7.34	39.02	36.68	29.0	x	27.51	S	26.62	S	46.53	SE		x	Yes	0.000	Snow Slight	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.012	0.012	0.012	0.012	0.118	x	Unknown
12/21/2015 06:23 AM	37.04	30.92	5.90	39.02	36.68	27.0	x	33.11	SE	33.55	SE	52.79	SE		x	Yes	0.000	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.012	0.016	0.016	0.016	0.122	x	Unknown
12/21/2015 06:35 AM	37.22	31.10	10.04	39.02	36.68	32.0	x	37.13	SE	42.05	SE	50.55	SE		x	Yes	0.002	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.016	0.020	0.020	0.020	0.130	x	Unknown
12/21/2015 06:53 AM	36.68	30.74	10.22	39.02	36.68	33.0	x	35.12	SE	33.33	SE	50.33	SE		x	Yes	0.002	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.020	0.031	0.031	0.031	0.138	x	Unknown
12/21/2015 07:05 AM	36.32	30.56	11.84	39.02	36.14	36.0	x	37.13	SE	37.58	SE	56.59	SE		x	Yes	0.008	Snow Slight	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.035	0.047	0.047	0.047	0.154	x	Unknown
12/21/2015 07:23 AM	35.96	30.38	13.46	39.02	35.96	39.0	x	37.80	SE	33.33	SE	48.09	SE		x	Yes	0.004	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.047	0.063	0.063	0.063	0.173	x	Unknown
12/21/2015 07:35 AM	35.96	30.38	13.82	39.02	35.78	40.0	x	31.09	SE	34.00	SE	48.09	SE		x	Yes	0.004	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.055	0.083	0.083	0.083	0.189	x	Unknown
12/21/2015 07:53 AM	35.96	30.56	14.54	39.02	35.78	41.0	x	40.94	SE	34.23	SE	54.80	SE		x	Yes	0.015	Snow Slight	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.079	0.110	0.110	0.110	0.220	x	Unknown
12/21/2015 08:05 AM	35.78	30.20	13.64	39.02	35.78	40.0	x	33.78	SE	31.32	SE	49.44	SE		x	Yes	0.014	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.094	0.150	0.150	0.150	0.256	x	Unknown
12/21/2015 08:23 AM	35.42	30.02	14.00	39.02	35.42	41.0	x	36.01	SE	30.87	SE	49.44	S		x	Yes	0.024	Snow Slight	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.142	0.205	0.205	0.205	0.315	x	Unknown
12/21/2015 08:35 AM	34.88	29.84	15.62	39.02	34.70	45.0	x	29.53	SE	31.54	SE	49.44	SE		x	Yes	0.012	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.173	0.260	0.268	0.268	0.374	x	Unknown
12/21/2015 08:53 AM	35.42	30.38	17.06	39.02	34.70	47.0	x	33.11	SE	35.34	SE	46.30	SE		x	Yes	0.011	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.197	0.307	0.319	0.319	0.425	x	Unknown
12/21/2015 09:05 AM	35.78	30.74	18.32	39.02	34.70	49.0	x	30.65	SE	34.23	S	45.86	SE		x	Yes	0.009	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.181	0.343	0.358	0.358	0.453	x	Unknown
12/21/2015 09:23 AM	35.96	30.74	17.60	39.02	34.70	47.0	x	33.33	SE	35.79	S	43.62	S		x	Yes	0.005	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.177	0.374	0.390	0.390	0.461	x	Unknown
12/21/2015 09:35 AM	36.14	31.28	18.86	39.02	34.70	49.0	x	33.11	S	40.26	SE	42.05	SE		x	Yes	0.002	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 09:59 PM	0.122	0.386	0.409	0.409	0.433	x	Unknown

Figure 8: Historical Atmospheric Data for District 2 Weed Airport

Weed Airport Surface Data: 12/21/2015 Data: Surface Date: 12/21/2015 Graphs Station List

No Data Available

Figure 9: Historical Surface Data for District 2 Weed Airport (no surface sensors at this site)

Figure 10: Air Temperature, Air Temperature and Dewpoint Graphs for District 2 Weed Airport

Figure 11: Preciptation, Precipitation Situation, and Humidity Graphs for District 2 Weed Airport

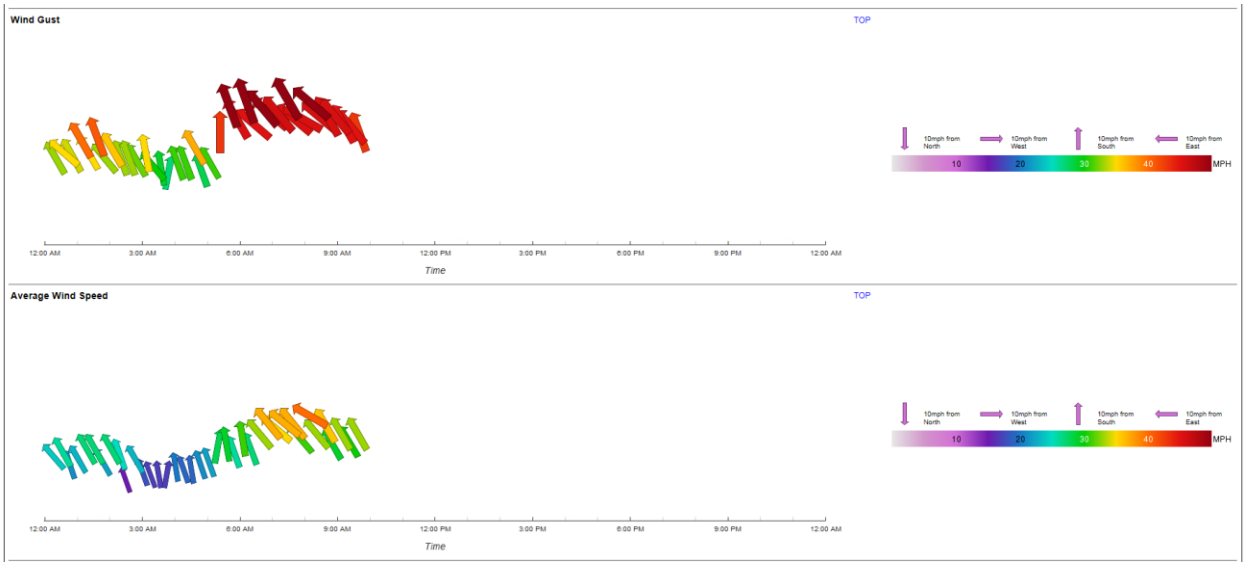


Figure 12: Wind Arrow Graph for District 2 Weed Airport

Figure 13: Wind Direction and Velocity Graph for District 2 Weed Airport

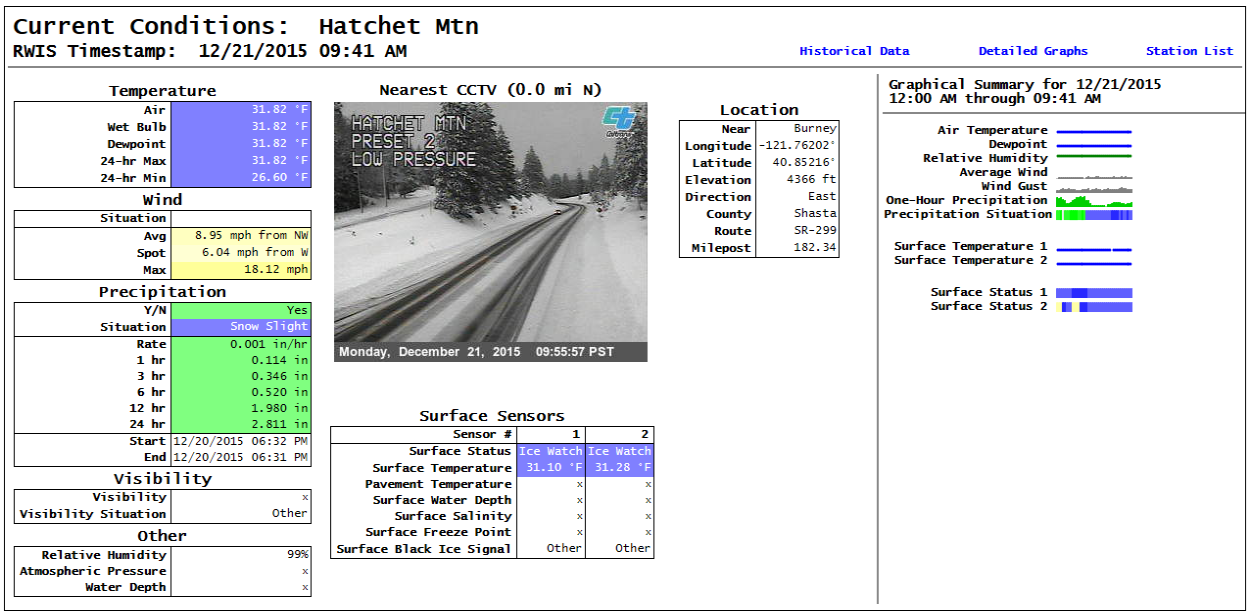
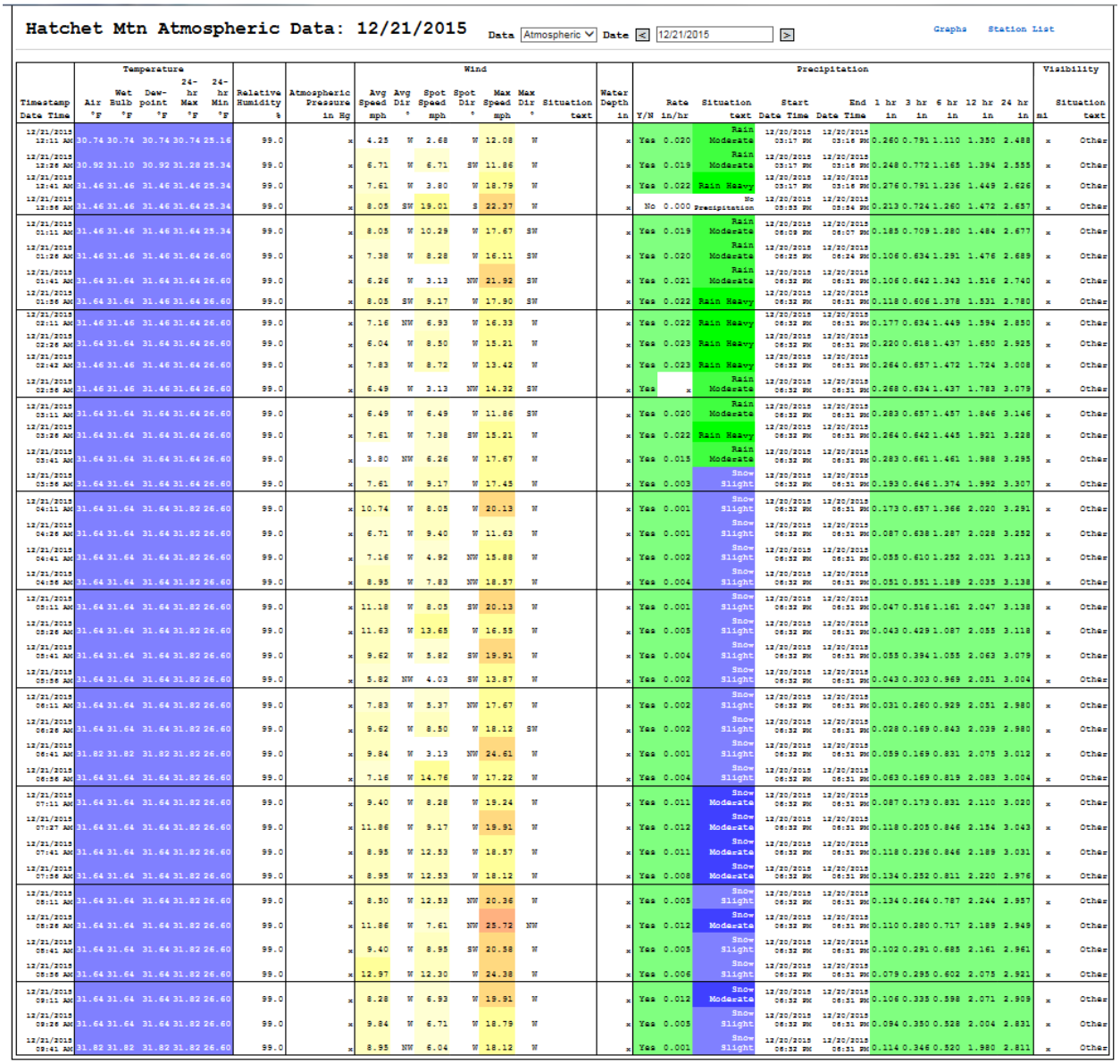


Figure 14: for District 2 Hatchet Mountain

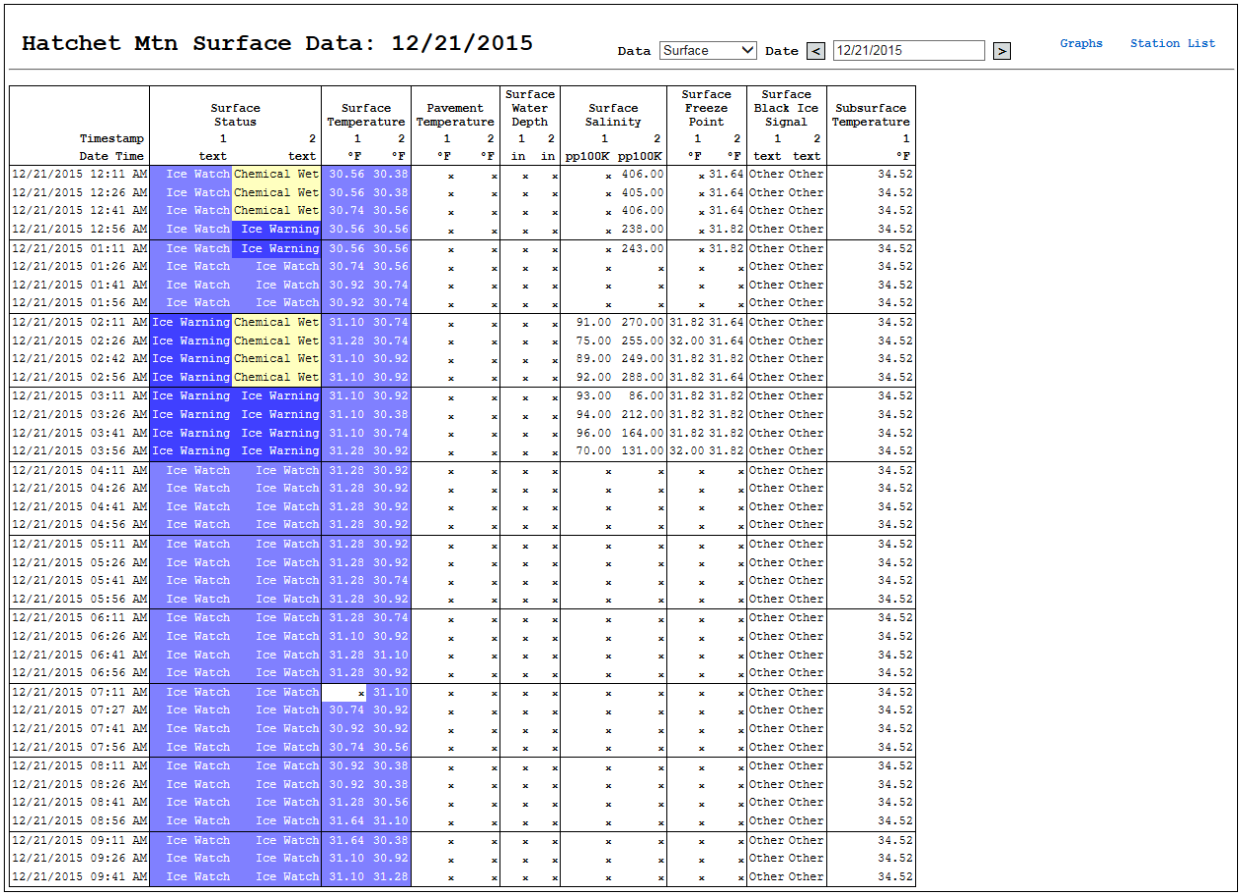


Hatchet Mtn Atmospheric Data: 12/21/2015

Data: Atmospheric | Date: 12/21/2015 | Graphs | Station List

Timestamp	Temperature				Relative Humidity	Atmospheric Pressure	Wind						Water Depth	Precipitation									Visibility	
	Air	Wet Bulb	Dew-point	24-hr Max	24-hr Min		Avg Speed	Avg Dir	Spot Speed	Spot Dir	Max Speed	Max Dir	Situation		Rate	Situation	Start	End	1 hr	3 hr	6 hr	12 hr	24 hr		
Date Time	°F	°F	°F	°F	°F	%	mph	°	mph	°	mph	°	text	in	Y/N in/hr	text	Date Time	Date Time	in	in	in	in	in	mi	text
12/21/2015 12:11 AM	30.74	30.74	30.74	30.74	25.16	99.0	4.25	W	2.68	W	12.08	W			Yes 0.020	Rain Moderate	12/20/2015 03:17 PM	12/20/2015 03:16 PM	0.260	0.791	1.110	1.350	2.488		Other
12/21/2015 12:26 AM	30.92	31.10	30.92	31.28	25.34	99.0	6.71	W	6.71	SW	11.86	W			Yes 0.019	Rain Moderate	12/20/2015 03:17 PM	12/20/2015 03:16 PM	0.248	0.772	1.165	1.394	2.555		Other
12/21/2015 12:41 AM	31.46	31.46	31.46	31.46	25.34	99.0	7.61	W	3.80	W	18.79	W			Yes 0.022	Rain Heavy	12/20/2015 03:17 PM	12/20/2015 03:16 PM	0.276	0.791	1.236	1.449	2.626		Other
12/21/2015 12:56 AM	31.46	31.46	31.46	31.64	25.34	99.0	8.05	SW	19.01	S	22.37	W			No 0.000	No Precipitation	12/20/2015 03:53 PM	12/20/2015 03:54 PM	0.213	0.724	1.260	1.472	2.657		Other
12/21/2015 01:11 AM	31.46	31.46	31.46	31.64	25.34	99.0	8.05	W	10.29	W	17.67	SW			Yes 0.019	Rain Moderate	12/20/2015 06:09 PM	12/20/2015 06:07 PM	0.185	0.709	1.280	1.484	2.677		Other
12/21/2015 01:26 AM	31.46	31.46	31.46	31.64	26.60	99.0	7.38	W	8.28	W	16.11	SW			Yes 0.020	Rain Moderate	12/20/2015 06:25 PM	12/20/2015 06:24 PM	0.106	0.634	1.291	1.476	2.689		Other
12/21/2015 01:41 AM	31.64	31.64	31.64	31.64	26.60	99.0	6.26	W	3.13	NW	21.92	SW			Yes 0.021	Rain Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.106	0.642	1.343	1.516	2.740		Other
12/21/2015 01:56 AM	31.64	31.64	31.46	31.64	26.60	99.0	8.05	SW	9.17	W	17.90	SW			Yes 0.022	Rain Heavy	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.118	0.606	1.378	1.531	2.780		Other
12/21/2015 02:11 AM	31.46	31.46	31.46	31.64	26.60	99.0	7.16	NW	6.93	W	16.33	W			Yes 0.022	Rain Heavy	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.177	0.634	1.449	1.594	2.850		Other
12/21/2015 02:26 AM	31.64	31.64	31.64	31.64	26.60	99.0	6.04	W	8.50	W	15.21	W			Yes 0.023	Rain Heavy	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.220	0.618	1.437	1.650	2.925		Other
12/21/2015 02:42 AM	31.46	31.46	31.46	31.64	26.60	99.0	7.83	W	8.72	W	13.42	W			Yes 0.023	Rain Heavy	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.264	0.657	1.472	1.724	3.008		Other
12/21/2015 02:56 AM	31.46	31.46	31.46	31.64	26.60	99.0	6.49	W	3.13	NW	14.32	SW			Yes x	Rain Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.268	0.634	1.437	1.783	3.079		Other
12/21/2015 03:11 AM	31.64	31.64	31.64	31.64	26.60	99.0	6.49	W	6.49	W	11.86	SW			Yes 0.020	Rain Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.283	0.657	1.457	1.846	3.146		Other
12/21/2015 03:26 AM	31.64	31.64	31.64	31.64	26.60	99.0	7.61	W	7.38	SW	15.21	W			Yes 0.022	Rain Heavy	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.264	0.642	1.445	1.921	3.228		Other
12/21/2015 03:41 AM	31.64	31.64	31.64	31.64	26.60	99.0	3.80	NW	6.26	W	17.67	W			Yes 0.015	Rain Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.283	0.661	1.461	1.988	3.295		Other
12/21/2015 03:56 AM	31.64	31.64	31.64	31.64	26.60	99.0	7.61	W	9.17	W	17.45	W			Yes 0.003	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.193	0.646	1.374	1.992	3.307		Other
12/21/2015 04:11 AM	31.64	31.64	31.64	31.82	26.60	99.0	10.74	W	8.05	W	20.13	W			Yes 0.001	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.173	0.657	1.366	2.020	3.291		Other
12/21/2015 04:26 AM	31.64	31.64	31.64	31.82	26.60	99.0	6.71	W	9.40	W	11.63	W			Yes 0.001	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.087	0.638	1.287	2.028	3.252		Other
12/21/2015 04:41 AM	31.64	31.64	31.64	31.82	26.60	99.0	7.16	W	4.92	NW	15.88	W			Yes 0.002	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.055	0.610	1.252	2.031	3.213		Other
12/21/2015 04:56 AM	31.64	31.64	31.64	31.82	26.60	99.0	8.95	W	7.83	NW	18.57	W			Yes 0.004	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.051	0.551	1.189	2.035	3.138		Other
12/21/2015 05:11 AM	31.64	31.64	31.64	31.82	26.60	99.0	11.18	W	8.05	SW	20.13	W			Yes 0.001	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.047	0.516	1.161	2.047	3.138		Other
12/21/2015 05:26 AM	31.64	31.64	31.64	31.82	26.60	99.0	11.63	W	13.65	W	16.55	W			Yes 0.005	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.043	0.429	1.087	2.055	3.118		Other
12/21/2015 05:41 AM	31.64	31.64	31.64	31.82	26.60	99.0	9.62	W	5.82	SW	19.91	W			Yes 0.004	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.055	0.394	1.055	2.063	3.079		Other
12/21/2015 05:56 AM	31.64	31.64	31.64	31.82	26.60	99.0	5.82	NW	4.03	SW	13.87	W			Yes 0.002	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.043	0.303	0.969	2.051	3.004		Other
12/21/2015 06:11 AM	31.64	31.64	31.64	31.82	26.60	99.0	7.83	W	5.37	NW	17.67	W			Yes 0.002	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.031	0.260	0.929	2.051	2.980		Other
12/21/2015 06:26 AM	31.64	31.64	31.64	31.82	26.60	99.0	9.62	W	8.50	W	18.12	SW			Yes 0.002	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.028	0.169	0.843	2.039	2.980		Other
12/21/2015 06:41 AM	31.82	31.82	31.82	31.82	26.60	99.0	9.84	W	3.13	NW	24.61	W			Yes 0.001	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.059	0.169	0.831	2.075	3.012		Other
12/21/2015 06:56 AM	31.64	31.64	31.64	31.82	26.60	99.0	7.16	W	14.76	W	17.22	W			Yes 0.004	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.063	0.169	0.819	2.083	3.004		Other
12/21/2015 07:11 AM	31.64	31.64	31.64	31.82	26.60	99.0	9.40	W	8.28	W	19.24	W			Yes 0.011	Snow Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.087	0.173	0.831	2.110	3.020		Other
12/21/2015 07:27 AM	31.64	31.64	31.64	31.82	26.60	99.0	11.86	W	9.17	W	19.91	W			Yes 0.012	Snow Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.118	0.205	0.846	2.154	3.043		Other
12/21/2015 07:41 AM	31.64	31.64	31.64	31.82	26.60	99.0	8.95	W	12.53	W	18.57	W			Yes 0.011	Snow Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.118	0.236	0.846	2.189	3.031		Other
12/21/2015 07:56 AM	31.64	31.64	31.64	31.82	26.60	99.0	8.95	W	12.53	W	18.12	W			Yes 0.008	Snow Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.134	0.252	0.811	2.220	2.976		Other
12/21/2015 08:11 AM	31.64	31.64	31.64	31.82	26.60	99.0	8.50	W	12.53	NW	20.36	W			Yes 0.005	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.134	0.264	0.787	2.244	2.957		Other
12/21/2015 08:26 AM	31.64	31.64	31.64	31.82	26.60	99.0	11.86	W	7.61	NW	25.72	NW			Yes 0.012	Snow Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.110	0.280	0.717	2.189	2.949		Other
12/21/2015 08:41 AM	31.64	31.64	31.64	31.82	26.60	99.0	9.40	W	8.95	SW	20.58	W			Yes 0.005	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.102	0.291	0.685	2.161	2.961		Other
12/21/2015 08:56 AM	31.64	31.64	31.64	31.82	26.60	99.0	12.97	W	12.30	W	24.38	W			Yes 0.006	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.079	0.295	0.602	2.075	2.921		Other
12/21/2015 09:11 AM	31.64	31.64	31.64	31.82	26.60	99.0	8.28	W	6.93	W	19.91	W			Yes 0.012	Snow Moderate	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.106	0.335	0.598	2.071	2.909		Other
12/21/2015 09:26 AM	31.64	31.64	31.64	31.64	26.60	99.0	9.84	W	6.71	W	18.79	W			Yes 0.005	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.094	0.350	0.528	2.004	2.831		Other
12/21/2015 09:41 AM	31.82	31.82	31.82	31.82	26.60	99.0	8.95	NW	6.04	W	18.12	W			Yes 0.001	Snow Slight	12/20/2015 06:32 PM	12/20/2015 06:31 PM	0.114	0.346	0.520	1.980	2.811		Other

Figure 15: Historical Atmospheric Data for District 2 Hatchet Mountain



Hatchet Mtn Surface Data: 12/21/2015

Data: Surface | Date: 12/21/2015 | Graphs | Station List

Timestamp	Surface Status 1	Surface Status 2	Surface Temperature 1	Surface Temperature 2	Pavement Temperature 1	Pavement Temperature 2	Surface Water Depth 1	Surface Water Depth 2	Surface Salinity 1	Surface Salinity 2	Surface Freeze Point 1	Surface Freeze Point 2	Surface Black Ice Signal 1	Surface Black Ice Signal 2	Subsurface Temperature 1
Date Time	text	text	°F	°F	°F	°F	in	in	pp100K	pp100K	°F	°F	text	text	°F
12/21/2015 12:11 AM	Ice Watch	Chemical Wet	30.56	30.38	x	x	x	x	x	406.00	x	31.64	Other	Other	34.52
12/21/2015 12:26 AM	Ice Watch	Chemical Wet	30.56	30.38	x	x	x	x	x	405.00	x	31.64	Other	Other	34.52
12/21/2015 12:41 AM	Ice Watch	Chemical Wet	30.74	30.56	x	x	x	x	x	406.00	x	31.64	Other	Other	34.52
12/21/2015 12:56 AM	Ice Watch	Ice Warning	30.56	30.56	x	x	x	x	x	238.00	x	31.82	Other	Other	34.52
12/21/2015 01:11 AM	Ice Watch	Ice Warning	30.56	30.56	x	x	x	x	x	243.00	x	31.82	Other	Other	34.52
12/21/2015 01:26 AM	Ice Watch	Ice Watch	30.74	30.56	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 01:41 AM	Ice Watch	Ice Watch	30.92	30.74	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 01:56 AM	Ice Watch	Ice Watch	30.92	30.74	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 02:11 AM	Ice Warning	Chemical Wet	31.10	30.74	x	x	x	x	91.00	270.00	31.82	31.64	Other	Other	34.52
12/21/2015 02:26 AM	Ice Warning	Chemical Wet	31.28	30.74	x	x	x	x	75.00	255.00	32.00	31.64	Other	Other	34.52
12/21/2015 02:42 AM	Ice Warning	Chemical Wet	31.10	30.92	x	x	x	x	89.00	249.00	31.82	31.82	Other	Other	34.52
12/21/2015 02:56 AM	Ice Warning	Chemical Wet	31.10	30.92	x	x	x	x	92.00	288.00	31.82	31.64	Other	Other	34.52
12/21/2015 03:11 AM	Ice Warning	Ice Warning	31.10	30.92	x	x	x	x	93.00	86.00	31.82	31.82	Other	Other	34.52
12/21/2015 03:26 AM	Ice Warning	Ice Warning	31.10	30.38	x	x	x	x	94.00	212.00	31.82	31.82	Other	Other	34.52
12/21/2015 03:41 AM	Ice Warning	Ice Warning	31.10	30.74	x	x	x	x	96.00	164.00	31.82	31.82	Other	Other	34.52
12/21/2015 03:56 AM	Ice Warning	Ice Warning	31.28	30.92	x	x	x	x	70.00	131.00	32.00	31.82	Other	Other	34.52
12/21/2015 04:11 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 04:26 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 04:41 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 04:56 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 05:11 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 05:26 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 05:41 AM	Ice Watch	Ice Watch	31.28	30.74	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 05:56 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 06:11 AM	Ice Watch	Ice Watch	31.28	30.74	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 06:26 AM	Ice Watch	Ice Watch	31.10	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 06:41 AM	Ice Watch	Ice Watch	31.28	31.10	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 06:56 AM	Ice Watch	Ice Watch	31.28	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 07:11 AM	Ice Watch	Ice Watch	x	31.10	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 07:27 AM	Ice Watch	Ice Watch	30.74	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 07:41 AM	Ice Watch	Ice Watch	30.92	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 07:56 AM	Ice Watch	Ice Watch	30.74	30.56	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 08:11 AM	Ice Watch	Ice Watch	30.92	30.38	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 08:26 AM	Ice Watch	Ice Watch	30.92	30.38	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 08:41 AM	Ice Watch	Ice Watch	31.28	30.56	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 08:56 AM	Ice Watch	Ice Watch	31.64	31.10	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 09:11 AM	Ice Watch	Ice Watch	31.64	30.38	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 09:26 AM	Ice Watch	Ice Watch	31.10	30.92	x	x	x	x	x	x	x	x	Other	Other	34.52
12/21/2015 09:41 AM	Ice Watch	Ice Watch	31.10	31.28	x	x	x	x	x	x	x	x	Other	Other	34.52

Figure 16: Historical Surface Data for District 2 Hatchet Mountain

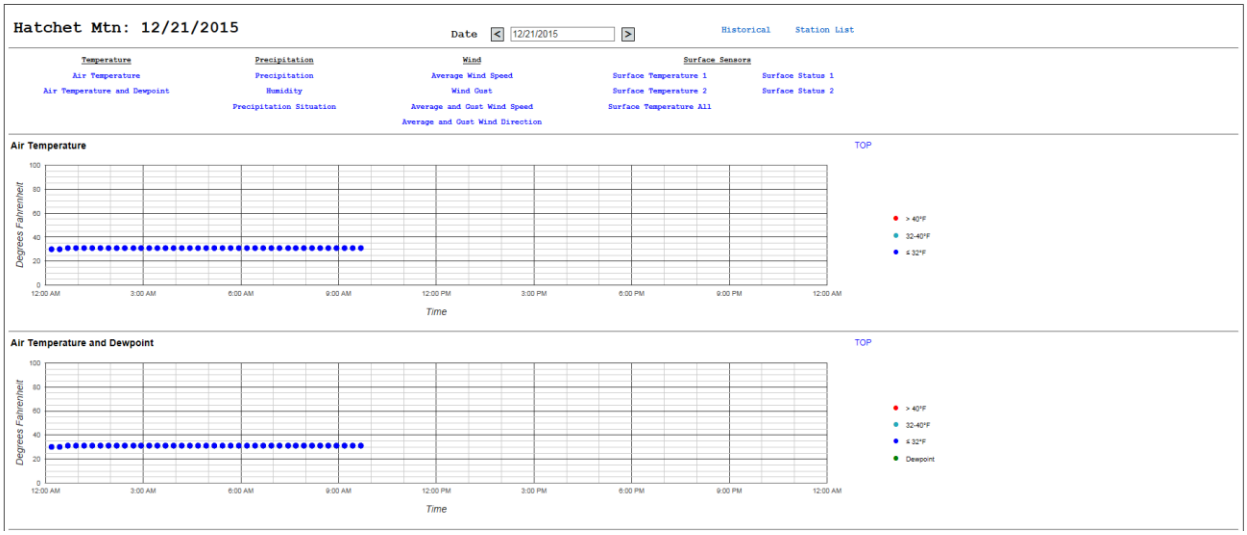


Figure 17: Air Temperature, Air Temperature and Dewpoint Graphs for District 2 Hatchet Mountain

Figure 18: Preciptation, Precipitation Situation, and Humidity Graphs for District 2 Hatchet Mountain

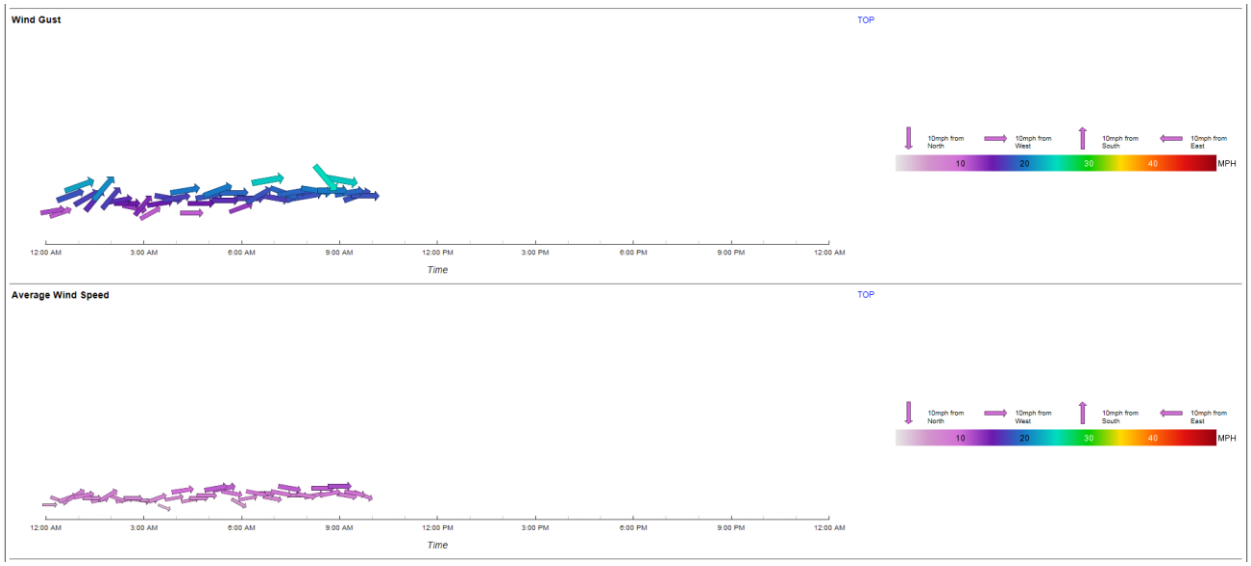


Figure 19: Wind Arrow Graph for District 2 Hatchet Mountain

Figure 20: Wind Direction and Velocity Graph for District 2 Hatchet Mountain

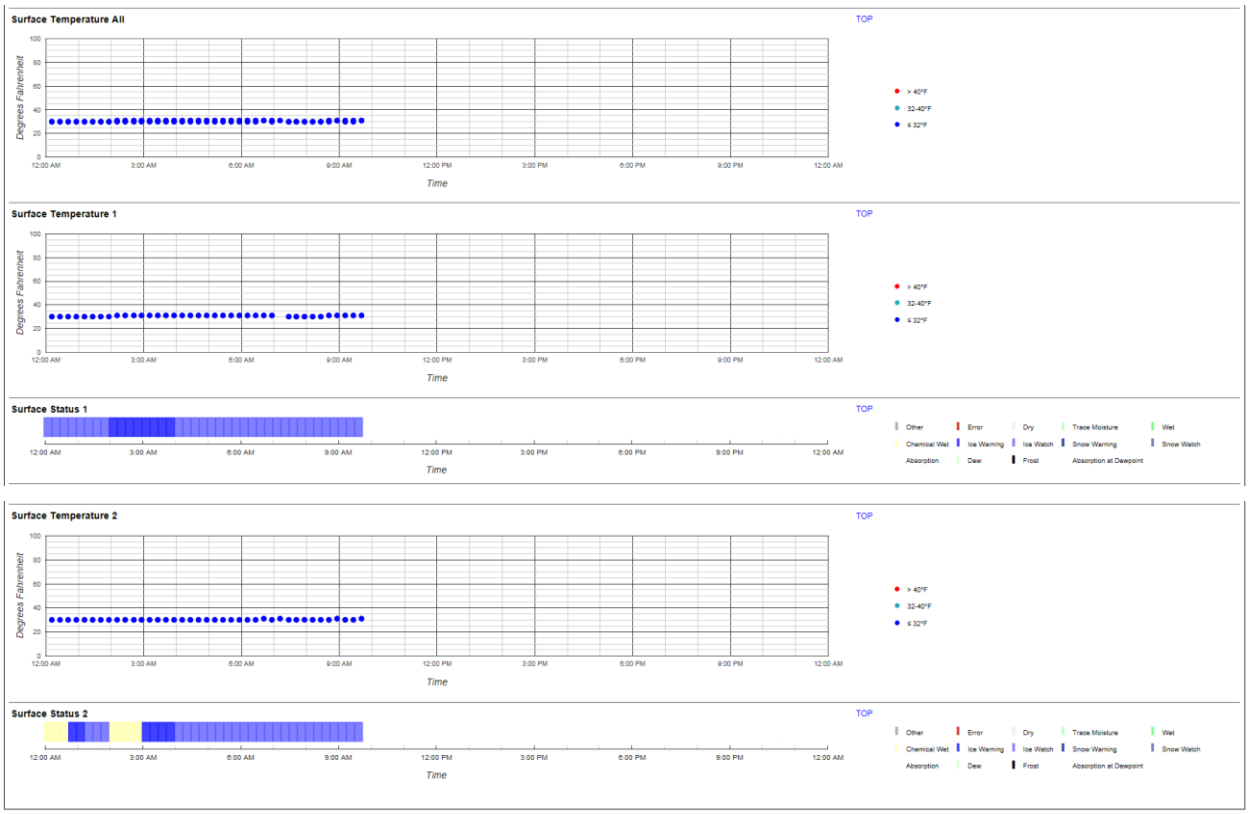


Figure 21: Surface Temperature and Surface Status Graphs for District 2 Hatchet Mountain

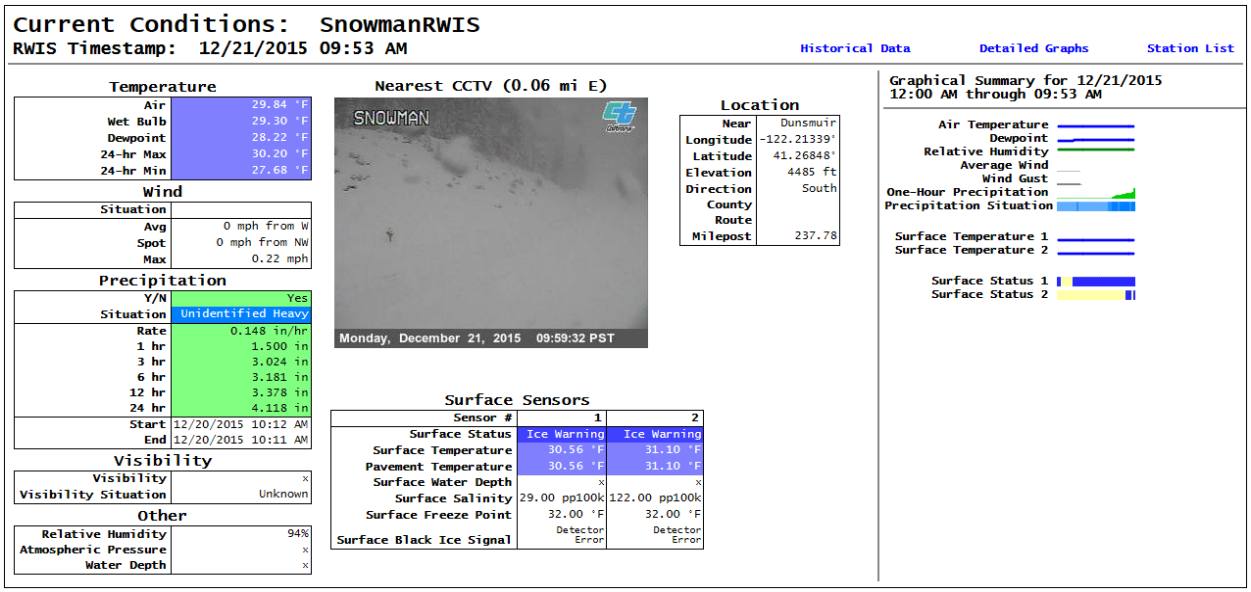


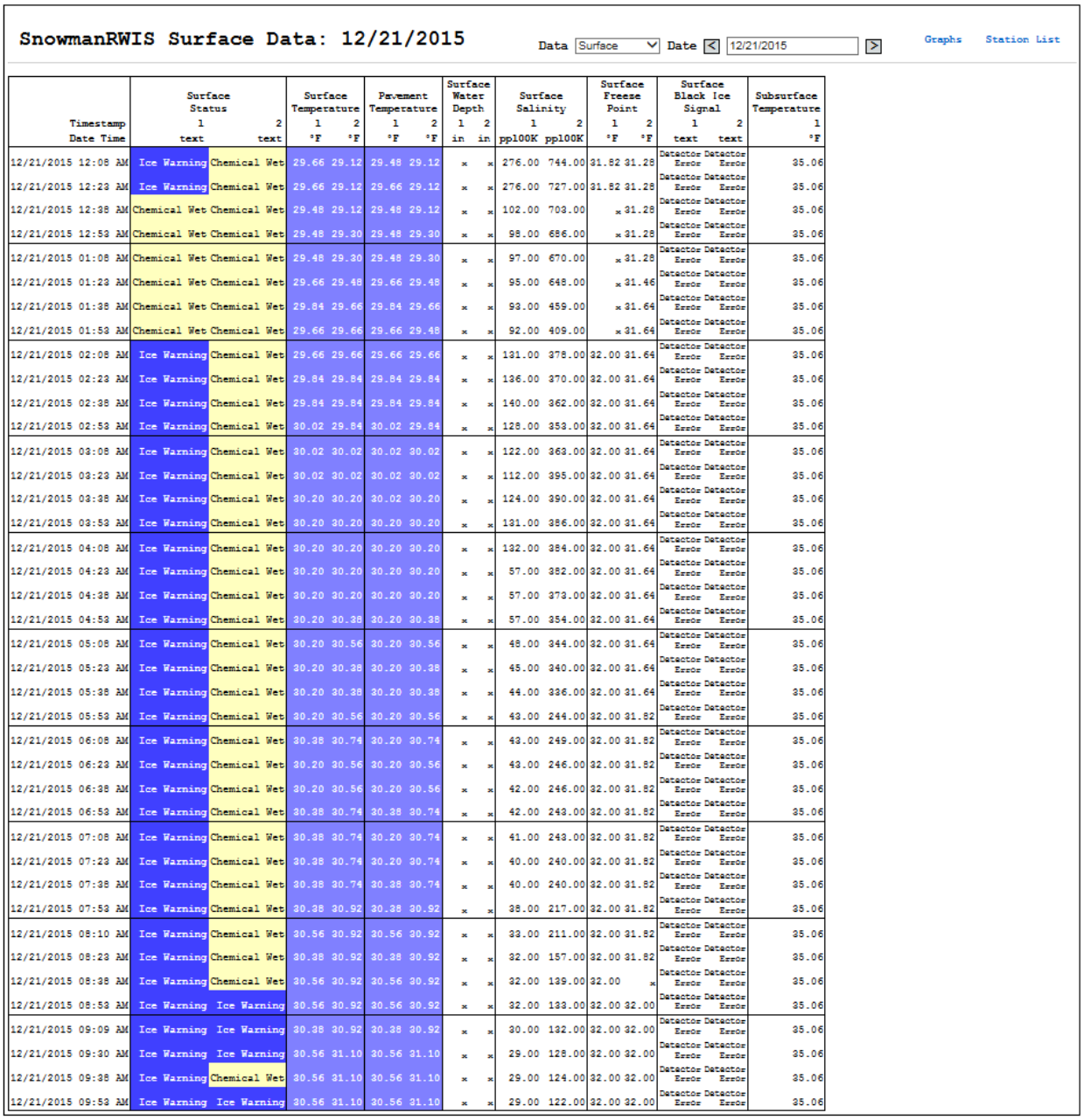
Figure 22: Current Conditions Display for District 2 Snowman Summit

SnowmanRWIS Atmospheric Data: 12/21/2015

Data: Atmospheric | Date: 12/21/2015 | Graphs | Station List

Timestamp Date Time	Temperature Air °F	Wet Bulb °F	Dew-point °F	24-hr Max °F	24-hr Min °F	Relative Humidity %	Atmospheric Pressure in Hg	Wind Avg Speed mph	Avg Dir °	Spot Speed mph	Spot Dir °	Max Speed mph	Max Dir °	Situation text	Water Depth in	Precipitation Y/N	Rate in/hr	Situation text	Start Date Time	End Date Time	1 hr in	3 hr in	6 hr in	12 hr in	24 hr in	Visibility mi	Situation text
12/21/2015 12:08 AM	29.12	28.58	27.50	29.84	27.68	94.0	x	4.25	W	2.46	SW	8.05	W		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.024	0.087	0.177	0.461	1.028	x	Unknown
12/21/2015 12:23 AM	29.12	28.58	27.50	29.84	27.68	94.0	x	3.80	W	8.72	W	8.72	W		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.016	0.079	0.173	0.433	1.035	x	Unknown
12/21/2015 12:38 AM	29.12	28.58	27.50	29.84	27.68	94.0	x	2.68	W	3.36	SW	7.16	NW		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.016	0.079	0.173	0.421	1.039	x	Unknown
12/21/2015 12:53 AM	29.12	28.58	27.68	29.84	27.68	94.0	x	3.58	NW	2.91	W	7.83	NW		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.020	0.075	0.173	0.382	1.047	x	Unknown
12/21/2015 01:08 AM	29.12	28.58	27.68	29.84	27.68	94.0	x	2.24	NW	2.91	W	7.61	NW		x	Yes	0.000	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.020	0.075	0.165	0.350	1.055	x	Unknown
12/21/2015 01:23 AM	29.30	28.76	27.68	29.84	27.68	94.0	x	4.03	W	2.91	W	8.28	W		x	Yes	0.003	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.024	0.075	0.165	0.323	1.059	x	Unknown
12/21/2015 01:38 AM	29.48	28.94	27.86	29.84	27.68	94.0	x	2.91	W	3.80	NW	9.40	SW		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.028	0.079	0.165	0.307	1.071	x	Unknown
12/21/2015 01:53 AM	29.30	28.76	27.86	29.84	27.68	94.0	x	3.58	W	2.46	NW	8.05	W		x	Yes	0.000	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.031	0.083	0.173	0.303	1.079	x	Unknown
12/21/2015 02:08 AM	29.48	28.94	28.04	29.84	27.68	94.0	x	3.13	W	1.12	NW	9.40	W		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.031	0.083	0.173	0.287	1.091	x	Unknown
12/21/2015 02:23 AM	29.48	28.94	28.04	29.84	27.68	94.0	x	1.57	W	2.24	NW	5.37	W		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.039	0.087	0.177	0.291	1.098	x	Unknown
12/21/2015 02:38 AM	29.84	29.12	28.22	29.84	27.68	94.0	x	4.03	NW	1.79	W	8.50	W		x	Yes	0.008	Unidentified Moderate	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.035	0.091	0.185	0.303	1.114	x	Unknown
12/21/2015 02:53 AM	29.66	29.12	28.04	29.84	27.68	94.0	x	1.12	W	2.68	W	6.49	W		x	Yes	0.005	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.043	0.098	0.193	0.315	1.126	x	Unknown
12/21/2015 03:08 AM	29.84	29.12	28.22	29.84	27.68	94.0	x	0.00	NW	0.00	NW	4.70	W		x	Yes	0.000	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.043	0.106	0.197	0.315	1.138	x	Unknown
12/21/2015 03:23 AM	29.84	29.12	28.22	29.84	27.68	94.0	x	0.00	SW	0.00	SW	0.22	W		x	Yes	0.003	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.043	0.110	0.197	0.323	1.146	x	Unknown
12/21/2015 03:38 AM	29.66	29.12	28.04	29.84	27.68	94.0	x	0.00	SW	0.00	SW	0.22	SW		x	Yes	0.000	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.035	0.110	0.197	0.327	1.146	x	Unknown
12/21/2015 03:53 AM	29.66	29.12	28.04	29.84	27.68	94.0	x	0.00	SW	0.00	SW	0.22	SW		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.020	0.106	0.185	0.331	1.150	x	Unknown
12/21/2015 04:08 AM	29.66	29.12	28.04	29.84	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.024	0.106	0.189	0.335	1.154	x	Unknown
12/21/2015 04:23 AM	29.66	29.12	28.04	29.84	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.016	0.106	0.181	0.335	1.157	x	Unknown
12/21/2015 04:38 AM	29.84	29.30	28.22	29.84	27.68	94.0	x	0.00	NE	0.00	NE	0.22	W		x	Yes	0.000	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.020	0.098	0.181	0.339	1.157	x	Unknown
12/21/2015 04:53 AM	30.02	29.48	28.40	30.20	27.68	94.0	x	0.00	W	0.00	SW	0.22	SW		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.016	0.094	0.181	0.343	1.154	x	Unknown
12/21/2015 05:08 AM	29.84	29.30	28.40	30.20	27.68	94.0	x	0.00	SW	0.00	W	0.22	W		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.020	0.094	0.185	0.346	1.157	x	Unknown
12/21/2015 05:23 AM	29.84	29.30	28.22	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.003	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.024	0.091	0.177	0.354	1.161	x	Unknown
12/21/2015 05:38 AM	29.84	29.30	28.22	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.003	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.028	0.087	0.181	0.358	1.165	x	Unknown
12/21/2015 05:53 AM	29.84	29.30	28.22	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.002	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.024	0.071	0.177	0.362	1.161	x	Unknown
12/21/2015 06:08 AM	29.84	29.12	28.22	30.20	27.68	94.0	x	0.00	SW	0.00	W	0.22	SW		x	Yes	0.001	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.031	0.075	0.189	0.370	1.169	x	Unknown
12/21/2015 06:23 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	0.00	SW	0.00	SW	0.22	W		x	Yes	0.006	Unidentified Slight	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.039	0.087	0.201	0.382	1.189	x	Unknown
12/21/2015 06:38 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.016	Unidentified Moderate	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.071	0.122	0.232	0.413	1.224	x	Unknown
12/21/2015 06:53 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	0.00	W	0.00	SW	0.22	W		x	Yes	0.019	Unidentified Moderate	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.106	0.157	0.272	0.449	1.264	x	Unknown
12/21/2015 07:08 AM	29.48	28.94	28.04	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	W		x	Yes	0.020	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.197	0.256	0.366	0.539	1.366	x	Unknown
12/21/2015 07:23 AM	29.48	28.94	28.04	30.20	27.68	94.0	x	0.00	W	0.00	NW	0.22	NW		x	Yes	0.049	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.335	0.406	0.520	0.689	1.520	x	Unknown
12/21/2015 07:38 AM	29.48	28.94	28.04	30.20	27.68	94.0	x	0.00	W	0.00	NW	0.22	W		x	Yes	0.079	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.453	0.567	0.665	0.839	1.669	x	Unknown
12/21/2015 07:53 AM	29.48	28.94	28.04	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	NW		x	Yes	0.040	Unidentified Moderate	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.583	0.720	0.823	0.996	1.827	x	Unknown
12/21/2015 08:10 AM	29.48	28.94	28.04	30.20	27.68	94.0	x	0.00	W	0.00	W	0.22	NW		x	Yes	0.019	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.512	0.823	0.917	1.098	1.929	x	Unknown
12/21/2015 08:23 AM	29.48	28.94	28.04	30.20	27.68	94.0	x	0.00	W	0.00	NW	0.22	NW		x	Yes	0.107	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.630	1.047	1.146	1.327	2.157	x	Unknown
12/21/2015 08:38 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	0.00	NW	0.00	NW	0.22	NW		x	Yes	0.241	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.744	1.382	1.469	1.657	2.488	x	Unknown
12/21/2015 08:53 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	0.00	NW	0.00	W	0.22	NW		x	Yes	0.053	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.866	1.583	1.665	1.858	2.685	x	Unknown
12/21/2015 09:09 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	0.00	W	0.00	SW	0.22	W		x	Yes	0.070	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.819	1.709	1.791	1.992	2.799	x	Unknown
12/21/2015 09:30 AM	29.66	29.12	28.04	30.20	27.68	94.0	x	x	W	x	SW	0.22	W		x	Yes	0.005	Unidentified Moderate	12/20/2015 10:12 AM	12/20/2015 10:11 AM	0.858	1.929	2.024	2.224	x	x	
12/21/2015 09:38 AM	29.84	29.30	28.40	30.20	27.68	94.0	x	0.00	W	0.00	NW	0.22	NW		x	Yes	0.125	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	1.035	2.295	2.406	2.610	3.374	x	Unknown
12/21/2015 09:53 AM	29.84	29.30	28.22	30.20	27.68	94.0	x	0.00	W	0.00	NW	0.22	NW		x	Yes	0.148	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	1.500	3.024	3.181	3.378	4.118	x	Unknown

Figure 23: Historical Atmospheric Data for District 2 Snowman Summit



SnowmanRWIS Surface Data: 12/21/2015

Data: Surface | Date: 12/21/2015 | Graphs | Station List

Timestamp Date Time	Surface Status 1 text	Surface Status 2 text	Surface Temperature 1 °F	Surface Temperature 2 °F	Pavement Temperature 1 °F	Pavement Temperature 2 °F	Surface Water Depth 1 in	Surface Water Depth 2 in	Surface Salinity 1 ppl00K	Surface Salinity 2 ppl00K	Surface Freeze Point 1 °F	Surface Freeze Point 2 °F	Surface Black Ice Signal 1 text	Surface Black Ice Signal 2 text	Subsurface Temperature 1 °F
12/21/2015 12:08 AM	Ice Warning	Chemical Wet	29.66	29.12	29.48	29.12	x	x	276.00	744.00	31.82	31.28	Detector Error	Detector Error	35.06
12/21/2015 12:23 AM	Ice Warning	Chemical Wet	29.66	29.12	29.66	29.12	x	x	276.00	727.00	31.82	31.28	Detector Error	Detector Error	35.06
12/21/2015 12:38 AM	Chemical Wet	Chemical Wet	29.48	29.12	29.48	29.12	x	x	102.00	703.00	x	31.28	Detector Error	Detector Error	35.06
12/21/2015 12:53 AM	Chemical Wet	Chemical Wet	29.48	29.30	29.48	29.30	x	x	98.00	686.00	x	31.28	Detector Error	Detector Error	35.06
12/21/2015 01:08 AM	Chemical Wet	Chemical Wet	29.48	29.30	29.48	29.30	x	x	97.00	670.00	x	31.28	Detector Error	Detector Error	35.06
12/21/2015 01:23 AM	Chemical Wet	Chemical Wet	29.66	29.48	29.66	29.48	x	x	95.00	648.00	x	31.46	Detector Error	Detector Error	35.06
12/21/2015 01:38 AM	Chemical Wet	Chemical Wet	29.84	29.66	29.84	29.66	x	x	93.00	459.00	x	31.64	Detector Error	Detector Error	35.06
12/21/2015 01:53 AM	Chemical Wet	Chemical Wet	29.66	29.66	29.66	29.48	x	x	92.00	409.00	x	31.64	Detector Error	Detector Error	35.06
12/21/2015 02:08 AM	Ice Warning	Chemical Wet	29.66	29.66	29.66	29.66	x	x	131.00	378.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 02:23 AM	Ice Warning	Chemical Wet	29.84	29.84	29.84	29.84	x	x	136.00	370.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 02:38 AM	Ice Warning	Chemical Wet	29.84	29.84	29.84	29.84	x	x	140.00	362.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 02:53 AM	Ice Warning	Chemical Wet	30.02	29.84	30.02	29.84	x	x	128.00	353.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 03:08 AM	Ice Warning	Chemical Wet	30.02	30.02	30.02	30.02	x	x	122.00	363.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 03:23 AM	Ice Warning	Chemical Wet	30.02	30.02	30.02	30.02	x	x	112.00	395.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 03:38 AM	Ice Warning	Chemical Wet	30.20	30.20	30.02	30.20	x	x	124.00	390.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 03:53 AM	Ice Warning	Chemical Wet	30.20	30.20	30.20	30.20	x	x	131.00	386.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 04:08 AM	Ice Warning	Chemical Wet	30.20	30.20	30.20	30.20	x	x	132.00	384.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 04:23 AM	Ice Warning	Chemical Wet	30.20	30.20	30.20	30.20	x	x	57.00	382.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 04:38 AM	Ice Warning	Chemical Wet	30.20	30.20	30.20	30.20	x	x	57.00	373.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 04:53 AM	Ice Warning	Chemical Wet	30.20	30.38	30.20	30.38	x	x	57.00	354.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 05:08 AM	Ice Warning	Chemical Wet	30.20	30.56	30.20	30.56	x	x	48.00	344.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 05:23 AM	Ice Warning	Chemical Wet	30.20	30.38	30.20	30.38	x	x	45.00	340.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 05:38 AM	Ice Warning	Chemical Wet	30.20	30.38	30.20	30.38	x	x	44.00	336.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 05:53 AM	Ice Warning	Chemical Wet	30.20	30.56	30.20	30.56	x	x	43.00	244.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 06:08 AM	Ice Warning	Chemical Wet	30.38	30.74	30.20	30.74	x	x	43.00	249.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 06:23 AM	Ice Warning	Chemical Wet	30.20	30.56	30.20	30.56	x	x	43.00	246.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 06:38 AM	Ice Warning	Chemical Wet	30.20	30.56	30.20	30.56	x	x	42.00	246.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 06:53 AM	Ice Warning	Chemical Wet	30.38	30.74	30.38	30.74	x	x	42.00	243.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 07:08 AM	Ice Warning	Chemical Wet	30.38	30.74	30.20	30.74	x	x	41.00	243.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 07:23 AM	Ice Warning	Chemical Wet	30.38	30.74	30.20	30.74	x	x	40.00	240.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 07:38 AM	Ice Warning	Chemical Wet	30.38	30.74	30.38	30.74	x	x	40.00	240.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 07:53 AM	Ice Warning	Chemical Wet	30.38	30.92	30.38	30.92	x	x	38.00	217.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 08:10 AM	Ice Warning	Chemical Wet	30.56	30.92	30.56	30.92	x	x	33.00	211.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 08:23 AM	Ice Warning	Chemical Wet	30.38	30.92	30.38	30.92	x	x	32.00	157.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 08:38 AM	Ice Warning	Chemical Wet	30.56	30.92	30.56	30.92	x	x	32.00	139.00	32.00	x	Detector Error	Detector Error	35.06
12/21/2015 08:53 AM	Ice Warning	Ice Warning	30.56	30.92	30.56	30.92	x	x	32.00	133.00	32.00	32.00	Detector Error	Detector Error	35.06
12/21/2015 09:09 AM	Ice Warning	Ice Warning	30.38	30.92	30.38	30.92	x	x	30.00	132.00	32.00	32.00	Detector Error	Detector Error	35.06
12/21/2015 09:30 AM	Ice Warning	Ice Warning	30.56	31.10	30.56	31.10	x	x	29.00	128.00	32.00	32.00	Detector Error	Detector Error	35.06
12/21/2015 09:38 AM	Ice Warning	Chemical Wet	30.56	31.10	30.56	31.10	x	x	29.00	124.00	32.00	32.00	Detector Error	Detector Error	35.06
12/21/2015 09:53 AM	Ice Warning	Ice Warning	30.56	31.10	30.56	31.10	x	x	29.00	122.00	32.00	32.00	Detector Error	Detector Error	35.06

Figure 24: Historical Surface Data for District 2 Snowman Summit

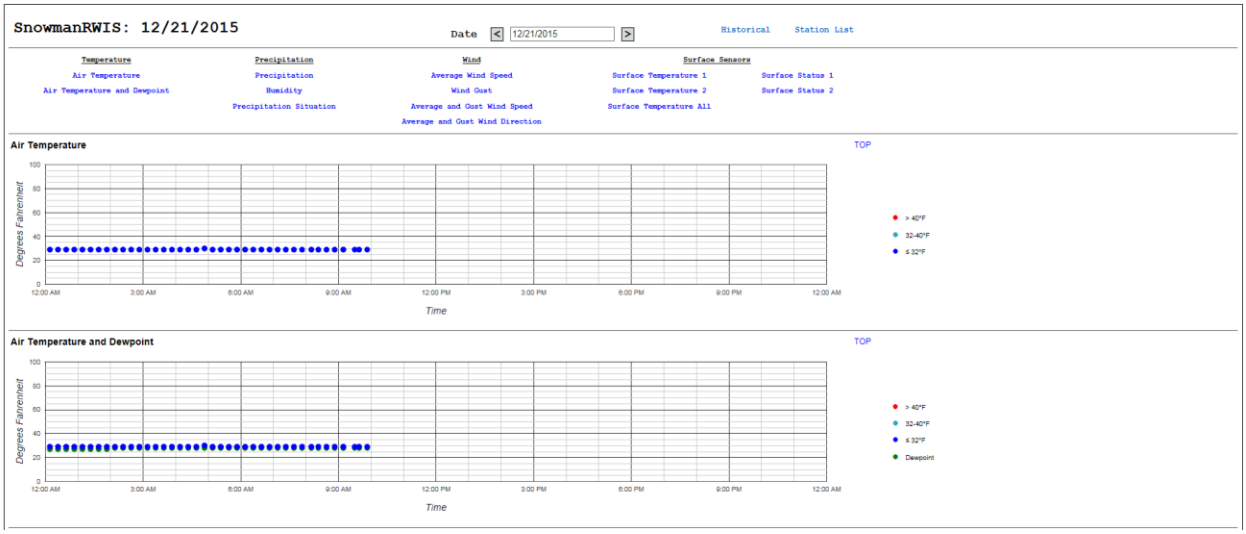


Figure 25: Air Temperature, Air Temperature and Dewpoint Graphs for District 2 Snowman Summit

Figure 26: Preciptation, Precipitation Situation, and Humidity Graphs for District 2 Snowman Summit

Figure 27: Wind Arrow Graph for District 2 Snowman Summit

Figure 28: Wind Direction and Velocity Graph for District 2 Snowman Summit

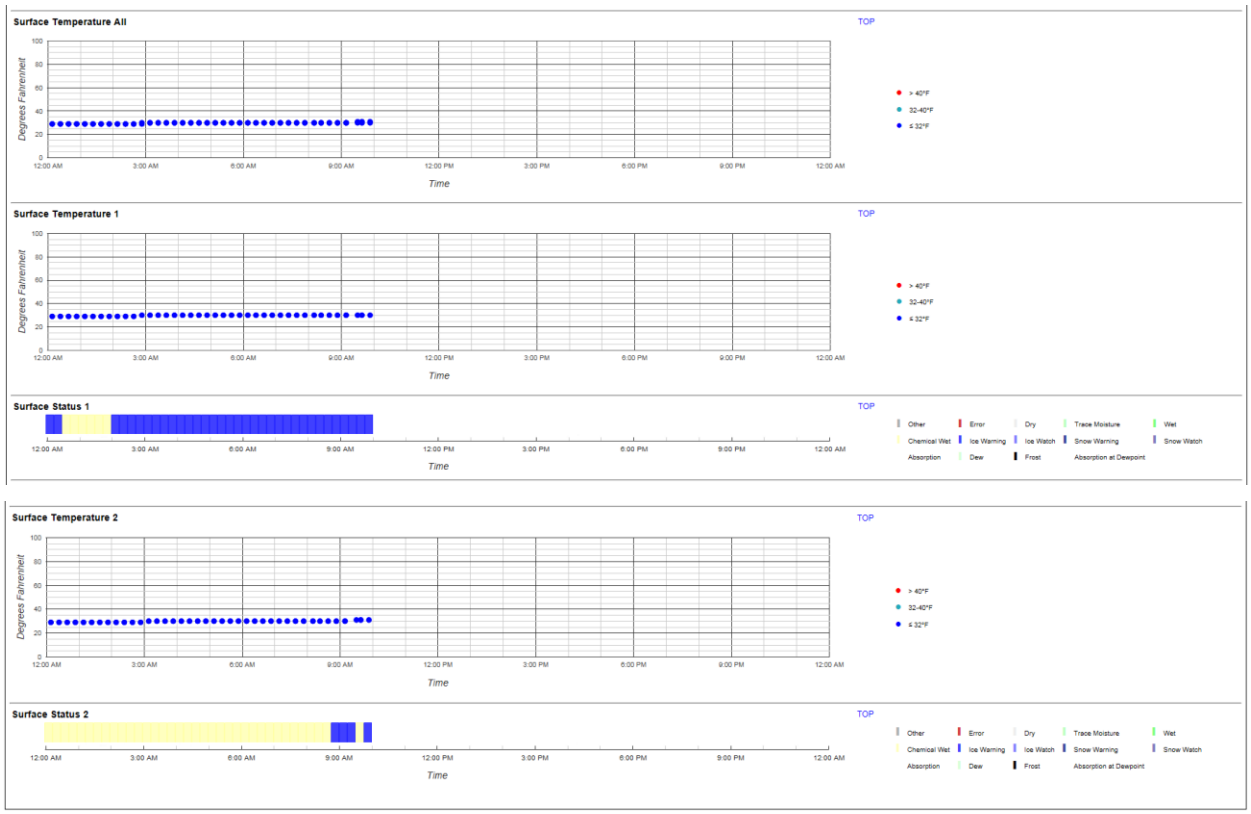


Figure 29: Surface Temperature and Surface Status Graphs for District 2 Snowman Summit

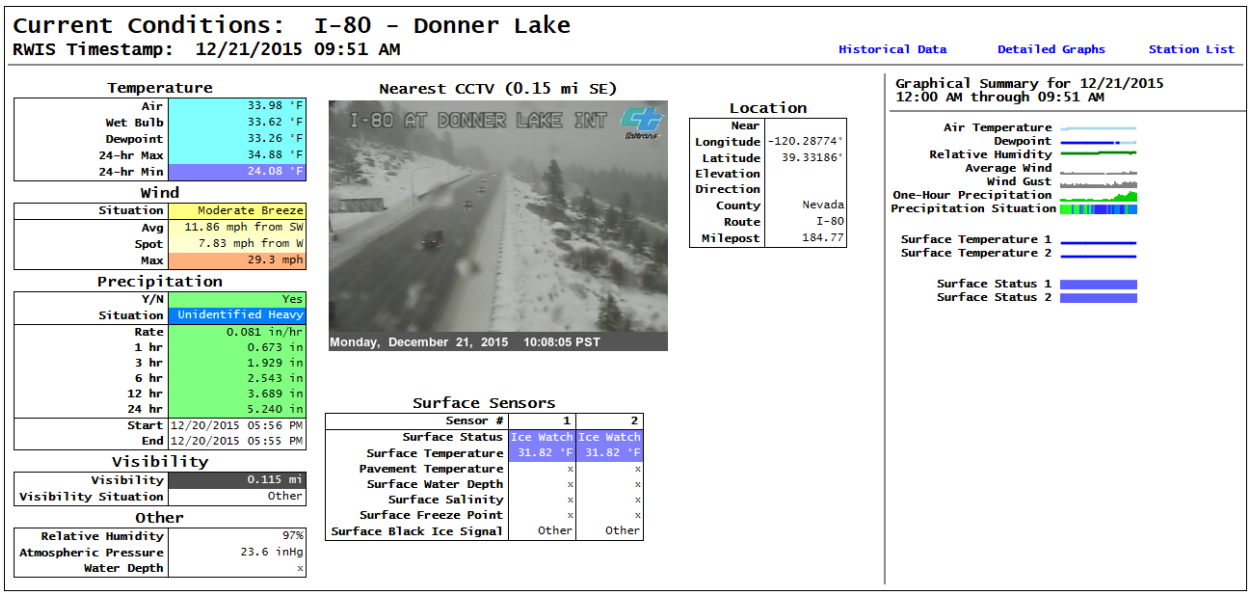


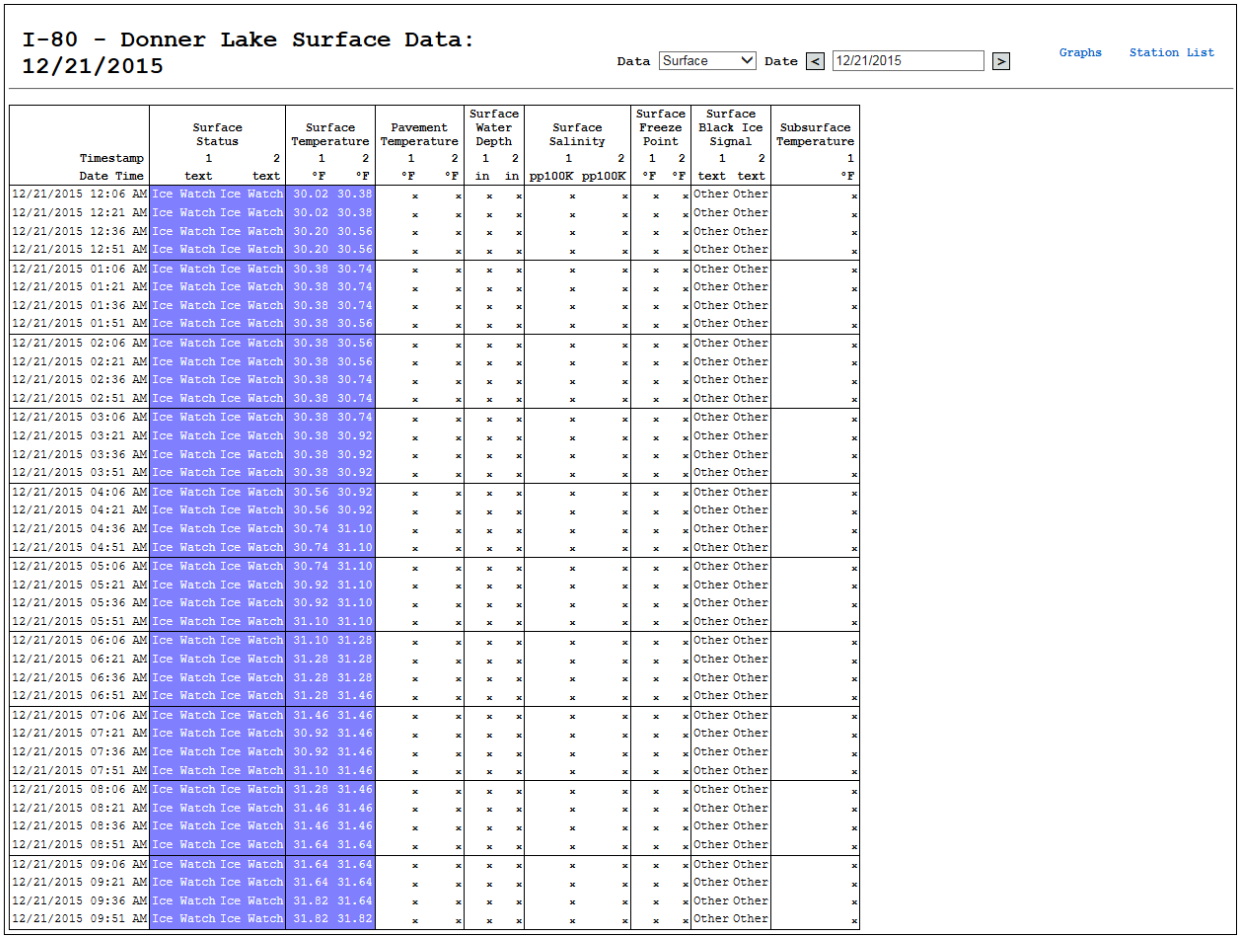
Figure 30: Current Conditions Display for District 3 Donner Lake

I-80 - Donner Lake Atmospheric Data: 12/21/2015

Data Atmospheric Date 12/21/2015 Graphs Station List

Timestamp Date Time	Temperature Air °F	Wet Bulb °F	Dew-point °F	24-hr Max °F	24-hr Min °F	Relative Humidity %	Atmospheric Pressure in Hg	Wind Avg Speed mph	Avg Dir °	Spot Speed mph	Spot Dir °	Max Speed mph	Max Dir °	Situation text	Water Depth in	Precipitation Y/N	Rate in/hr	Situation text	Start Date Time	End Date Time	1 hr in	3 hr in	6 hr in	12 hr in	24 hr in	Visibility mi	Situation text
12/21/2015 12:06 AM	32.72	31.82	30.38	32.72	20.12	91.0	23.70	10.51	W	14.99	W	22.15	NW	Moderate Breeze		Yes	0.017	Rain Heavy	12/20/2015 04:46 PM	12/20/2015 04:39 PM	0.185	0.685	1.492	1.811	2.000	1.16	Other
12/21/2015 12:21 AM	32.90	32.00	30.38	33.08	20.12	90.0	23.70	11.18	W	9.40	W	19.46	NW	Moderate Breeze		Yes	0.015	Rain Moderate	12/20/2015 05:19 PM	12/20/2015 05:17 PM	0.161	0.634	1.457	1.827	2.047	2.05	Other
12/21/2015 12:36 AM	32.90	32.00	30.56	33.08	20.12	90.0	23.70	8.95	W	10.74	NW	21.03	SW	Light Breeze		Yes	0.015	Rain Moderate	12/20/2015 05:34 PM	12/20/2015 05:33 PM	0.169	0.622	1.453	1.854	2.079	1.53	Other
12/21/2015 12:51 AM	33.08	32.18	30.74	33.08	20.12	91.0	23.69	6.93	SW	0.67	E	18.34	W	Light Breeze		Yes	0.015	Rain Moderate	12/20/2015 05:50 PM	12/20/2015 05:47 PM	0.150	0.555	1.394	1.874	2.114	1.86	Other
12/21/2015 01:06 AM	33.26	32.36	30.92	33.44	20.12	91.0	23.69	7.61	W	10.96	SW	17.90	SW	Light Breeze		Yes	0.015	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.150	0.555	1.390	1.894	2.154	1.81	Other
12/21/2015 01:21 AM	33.26	32.36	30.92	33.44	20.12	90.0	23.69	7.16	SW	8.95	S	18.34	W	Light Breeze		Yes	0.015	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.138	0.531	1.339	1.937	2.209	2.56	Other
12/21/2015 01:36 AM	33.26	32.18	30.56	33.44	20.12	90.0	23.69	10.07	W	8.05	S	21.92	S	Light Breeze		Yes	0.019	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.181	0.551	1.346	1.972	2.260	1.36	Other
12/21/2015 01:51 AM	33.08	32.18	30.74	33.44	20.12	91.0	23.69	5.59	SW	6.49	S	14.32	SW	Light Breeze		Yes	0.016	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.189	0.531	1.307	2.000	2.315	1.79	Other
12/21/2015 02:06 AM	33.44	32.36	30.92	33.44	20.12	90.0	23.69	6.71	W	11.86	W	21.70	SW	Light Breeze		Yes	0.014	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.209	0.547	1.307	2.051	2.366	2.29	Other
12/21/2015 02:21 AM	33.62	32.54	31.10	33.80	20.12	90.0	23.69	5.14	S	6.26	SE	18.34	SW	Light Breeze		Yes	0.013	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.185	0.528	1.276	2.075	2.413	2.64	Other
12/21/2015 02:36 AM	33.62	32.54	31.10	33.80	20.12	90.0	23.68	9.17	W	2.46	W	23.26	W	Light Breeze		Yes	0.017	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.197	0.555	1.287	2.126	2.465	1.28	Other
12/21/2015 02:51 AM	33.44	32.54	31.10	33.80	20.12	90.0	23.68	6.49	W	10.51	SE	17.00	W	Light Breeze		Yes	0.004	Snow Slight	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.169	0.539	1.236	2.165	2.504	0.49	Other
12/21/2015 03:06 AM	33.26	32.36	31.10	33.80	20.12	91.0	23.69	7.83	SW	9.84	SE	19.46	SW	Light Breeze		Yes	0.018	Rain Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.165	0.528	1.217	2.197	2.531	0.46	Other
12/21/2015 03:21 AM	33.62	32.54	31.10	33.80	20.12	90.0	23.68	6.49	SW	0.89	S	22.82	W	Light Breeze		Yes	0.014	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.150	0.516	1.173	2.248	2.587	1.22	Other
12/21/2015 03:36 AM	33.98	32.90	31.10	34.16	20.66	88.0	23.66	5.59	SW	8.05	SW	17.90	S	Light Breeze		Yes	0.014	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.165	0.555	1.177	2.295	2.634	0.86	Other
12/21/2015 03:51 AM	34.16	32.90	31.10	34.52	20.66	88.0	23.66	7.61	NW	14.99	SW	15.88	SW	Light Breeze		Yes	0.011	Rain Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.173	0.555	1.122	2.343	2.681	3.14	Other
12/21/2015 04:06 AM	33.80	32.72	31.10	34.52	20.66	89.0	23.65	8.50	W	14.99	NW	19.24	SW	Light Breeze		Yes	0.037	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.185	0.567	1.126	2.386	2.724	0.27	Other
12/21/2015 04:21 AM	33.44	32.54	30.92	34.52	20.66	90.0	23.65	8.28	W	5.37	W	18.12	SW	Light Breeze		Yes	0.007	Snow Slight	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.138	0.516	1.067	2.390	2.744	0.40	Other
12/21/2015 04:36 AM	33.26	32.36	30.92	34.52	22.10	90.0	23.65	7.38	S	16.33	SW	18.57	SW	Light Breeze		Yes	0.011	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.134	0.504	1.063	2.413	2.772	0.34	Other
12/21/2015 04:51 AM	33.26	32.36	31.10	34.52	22.10	91.0	23.65	6.04	S	6.71	SW	19.01	SW	Light Breeze		Yes	0.016	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.114	0.484	1.035	2.433	2.815	0.24	Other
12/21/2015 05:06 AM	33.44	32.72	31.46	34.52	22.10	92.0	23.65	5.59	SW	4.47	SW	15.66	SW	Light Breeze		Yes	0.012	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.142	0.496	1.047	2.484	2.866	0.26	Other
12/21/2015 05:21 AM	33.62	32.72	31.64	34.52	22.10	92.0	23.65	7.38	W	9.62	W	15.88	W	Light Breeze		Yes	0.020	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.157	0.476	1.024	2.496	2.909	0.24	Other
12/21/2015 05:36 AM	33.44	32.72	31.46	34.52	22.46	92.0	23.65	5.59	W	2.01	SW	16.78	SW	Light Breeze		Yes	0.009	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.181	0.484	1.043	2.528	2.953	0.28	Other
12/21/2015 05:51 AM	33.62	32.72	31.64	34.52	22.46	92.0	23.63	4.03	S	2.91	E	14.99	W	Light Breeze		Yes	0.008	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.185	0.508	1.055	2.520	3.016	0.32	Other
12/21/2015 06:06 AM	33.44	32.72	31.64	34.52	22.46	92.0	23.64	8.95	SE	5.59	S	22.15	SW	Light Breeze		Yes	0.005	Snow Slight	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.177	0.508	1.039	2.531	3.043	0.40	Other
12/21/2015 06:21 AM	33.62	32.72	31.64	34.52	22.46	92.0	23.63	9.17	SW	6.49	SW	18.34	SW	Light Breeze		Yes	0.007	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.154	0.472	1.012	2.488	3.079	0.36	Other
12/21/2015 06:36 AM	33.62	32.90	31.64	34.52	23.36	92.0	23.63	7.38	S	9.84	SW	14.54	S	Light Breeze		Yes	0.043	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.213	0.535	1.094	2.547	3.173	0.18	Other
12/21/2015 06:51 AM	33.62	32.90	31.82	34.52	23.36	93.0	23.62	9.17	SW	12.75	W	19.69	SW	Light Breeze		Yes	0.009	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.213	0.539	1.114	2.520	3.240	0.26	Other
12/21/2015 07:06 AM	33.98	33.26	32.18	34.52	23.36	92.0	23.61	8.72	SE	6.93	SW	34.67	SW	Light Breeze		Yes	0.036	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.323	0.642	1.209	2.602	3.366	0.20	Other
12/21/2015 07:21 AM	33.80	33.08	31.82	34.52	23.36	92.0	23.61	7.16	W	1.57	E	24.16	SW	Light Breeze		Yes	0.051	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.441	0.807	1.331	2.689	3.559	0.14	Other
12/21/2015 07:36 AM	33.80	33.08	31.82	34.52	24.08	92.0	23.61	8.95	S	12.30	SW	19.46	S	Light Breeze		Yes	0.050	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.575	0.976	1.480	2.835	3.748	0.13	Other
12/21/2015 07:51 AM	33.80	33.08	32.00	34.52	24.08	92.0	23.61	7.38	S	7.16	SW	19.01	SW	Light Breeze		Yes	0.011	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.496	0.980	1.480	2.803	3.811	0.24	Other
12/21/2015 08:06 AM	34.16	33.44	32.18	34.52	24.08	92.0	23.60	14.09	SE	18.12	S	29.53	SW	Moderate Breeze		Yes	0.013	Snow Moderate	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.488	1.000	1.496	2.807	3.866	0.24	Other
12/21/2015 08:21 AM	33.80	33.08	32.00	34.52	24.08	92.0	23.62	14.09	S	11.63	S	32.44	S	Moderate Breeze		Yes	0.067	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.441	1.130	1.622	2.917	4.055	0.15	Other
12/21/2015 08:36 AM	33.80	33.08	32.00	34.52	24.08	92.0	23.61	8.05	S	15.43	S	26.62	S	Light Breeze		Yes	0.079	Rain Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.512	1.319	1.807	3.098	4.276	0.26	Other
12/21/2015 08:51 AM	34.16	33.44	32.36	34.52	24.08	92.0	23.61	9.40	SW	10.51	W	26.40	SW	Light Breeze		Yes	0.072	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.673	1.476	1.992	3.236	4.504	0.13	Other
12/21/2015 09:06 AM	34.70	33.80	32.54	34.70	24.08	91.0	23.61	15.43	S	13.87	S	31.99	S	Moderate Breeze		Yes	0.063	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.795	1.622	2.130	3.350	4.669	0.12	Other
12/21/2015 09:21 AM	33.80	33.44	32.72	34.88	24.08	95.0	23.62	12.08	SW	8.72	W	29.97	SW	Moderate Breeze		Yes	0.077	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.724	1.760	2.272	3.465	4.878	0.10	Other
12/21/2015 09:36 AM	33.80	33.44	32.90	34.88	24.08	96.0	23.62	11.18	SW	22.82	SW	31.09	SW	Moderate Breeze		Yes	0.072	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.736	1.854	2.394	3.571	5.028	0.14	Other
12/21/2015 09:51 AM	33.98	33.62	33.26	34.88	24.08	97.0	23.62	11.86	SW	7.83	W	29.30	SW	Moderate Breeze		Yes	0.081	Unidentified Heavy	12/20/2015 05:56 PM	12/20/2015 05:55 PM	0.673	1.929	2.543	3.689	5.240	0.12	Other

Figure 31: Historical Atmospheric Data for District 3 Donner Lake



I-80 - Donner Lake Surface Data: 12/21/2015

Data Surface Date 12/21/2015 Graphs Station List

Timestamp Date Time	Surface Status 1 text	Surface Status 2 text	Surface Temperature 1 °F	Surface Temperature 2 °F	Pavement Temperature 1 °F	Pavement Temperature 2 °F	Surface Water Depth 1 in	Surface Water Depth 2 in	Surface Salinity 1 pp100K	Surface Salinity 2 pp100K	Surface Freeze Point 1 °F	Surface Freeze Point 2 °F	Surface Black Ice Signal 1 text	Surface Black Ice Signal 2 text	Subsurface Temperature 1 °F
12/21/2015 12:06 AM	Ice Watch	Ice Watch	30.02	30.38	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 12:21 AM	Ice Watch	Ice Watch	30.02	30.38	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 12:36 AM	Ice Watch	Ice Watch	30.20	30.56	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 12:51 AM	Ice Watch	Ice Watch	30.20	30.56	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 01:06 AM	Ice Watch	Ice Watch	30.38	30.74	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 01:21 AM	Ice Watch	Ice Watch	30.38	30.74	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 01:36 AM	Ice Watch	Ice Watch	30.38	30.74	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 01:51 AM	Ice Watch	Ice Watch	30.38	30.56	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 02:06 AM	Ice Watch	Ice Watch	30.38	30.56	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 02:21 AM	Ice Watch	Ice Watch	30.38	30.56	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 02:36 AM	Ice Watch	Ice Watch	30.38	30.74	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 02:51 AM	Ice Watch	Ice Watch	30.38	30.74	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 03:06 AM	Ice Watch	Ice Watch	30.38	30.74	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 03:21 AM	Ice Watch	Ice Watch	30.38	30.92	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 03:36 AM	Ice Watch	Ice Watch	30.38	30.92	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 03:51 AM	Ice Watch	Ice Watch	30.38	30.92	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 04:06 AM	Ice Watch	Ice Watch	30.56	30.92	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 04:21 AM	Ice Watch	Ice Watch	30.56	30.92	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 04:36 AM	Ice Watch	Ice Watch	30.74	31.10	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 04:51 AM	Ice Watch	Ice Watch	30.74	31.10	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 05:06 AM	Ice Watch	Ice Watch	30.74	31.10	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 05:21 AM	Ice Watch	Ice Watch	30.92	31.10	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 05:36 AM	Ice Watch	Ice Watch	30.92	31.10	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 05:51 AM	Ice Watch	Ice Watch	31.10	31.10	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 06:06 AM	Ice Watch	Ice Watch	31.10	31.28	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 06:21 AM	Ice Watch	Ice Watch	31.28	31.28	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 06:36 AM	Ice Watch	Ice Watch	31.28	31.28	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 06:51 AM	Ice Watch	Ice Watch	31.28	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 07:06 AM	Ice Watch	Ice Watch	31.46	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 07:21 AM	Ice Watch	Ice Watch	30.92	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 07:36 AM	Ice Watch	Ice Watch	30.92	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 07:51 AM	Ice Watch	Ice Watch	31.10	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 08:06 AM	Ice Watch	Ice Watch	31.28	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 08:21 AM	Ice Watch	Ice Watch	31.46	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 08:36 AM	Ice Watch	Ice Watch	31.46	31.46	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 08:51 AM	Ice Watch	Ice Watch	31.64	31.64	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 09:06 AM	Ice Watch	Ice Watch	31.64	31.64	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 09:21 AM	Ice Watch	Ice Watch	31.64	31.64	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 09:36 AM	Ice Watch	Ice Watch	31.82	31.64	x	x	x	x	x	x	x	x	Other	Other	x
12/21/2015 09:51 AM	Ice Watch	Ice Watch	31.82	31.82	x	x	x	x	x	x	x	x	Other	Other	x

Figure 32: Historical Surface Data for District 3 Donner Lake

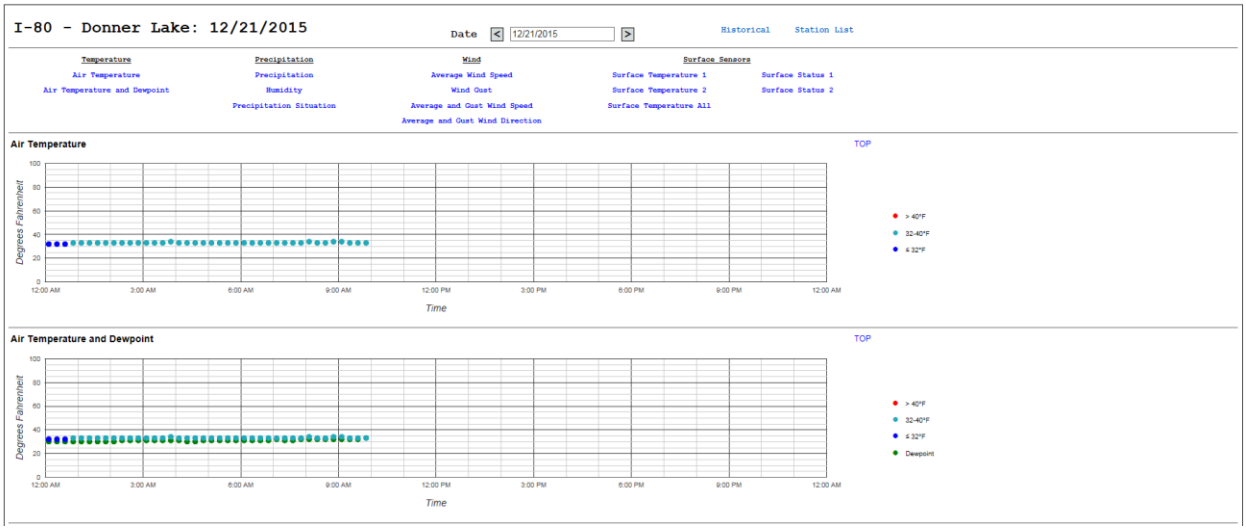


Figure 33: Air Temperature, Air Temperature and Dewpoint Graphs for District 3 Donner Lake

Figure 34: Preciptation, Precipitation Situation, and Humidity Graphs for District 3 Donner Lake

Figure 35: Wind Arrow Graph for District 3 Donner Lake

Figure 36: Wind Direction and Velocity Graph for District 3 Donner Lake

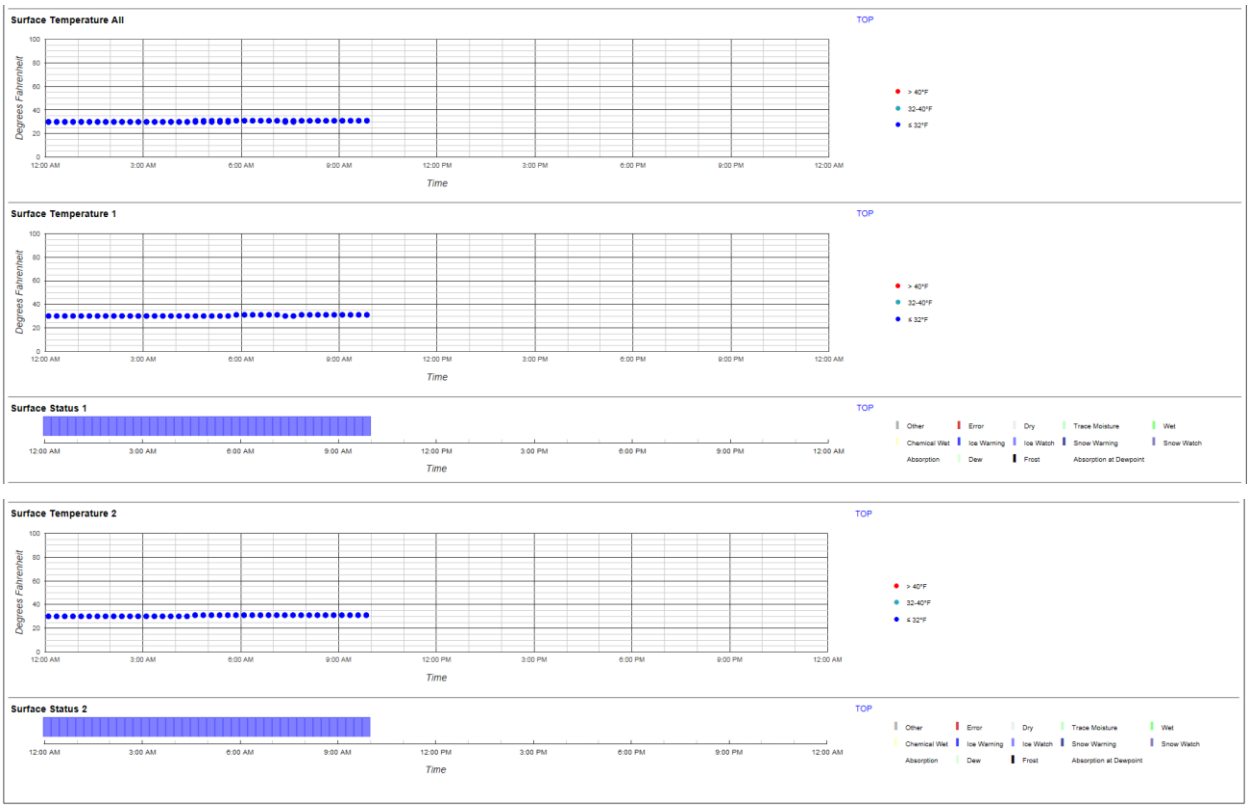


Figure 37: Surface Temperature and Surface Status Graphs for District 3 Donner Lake

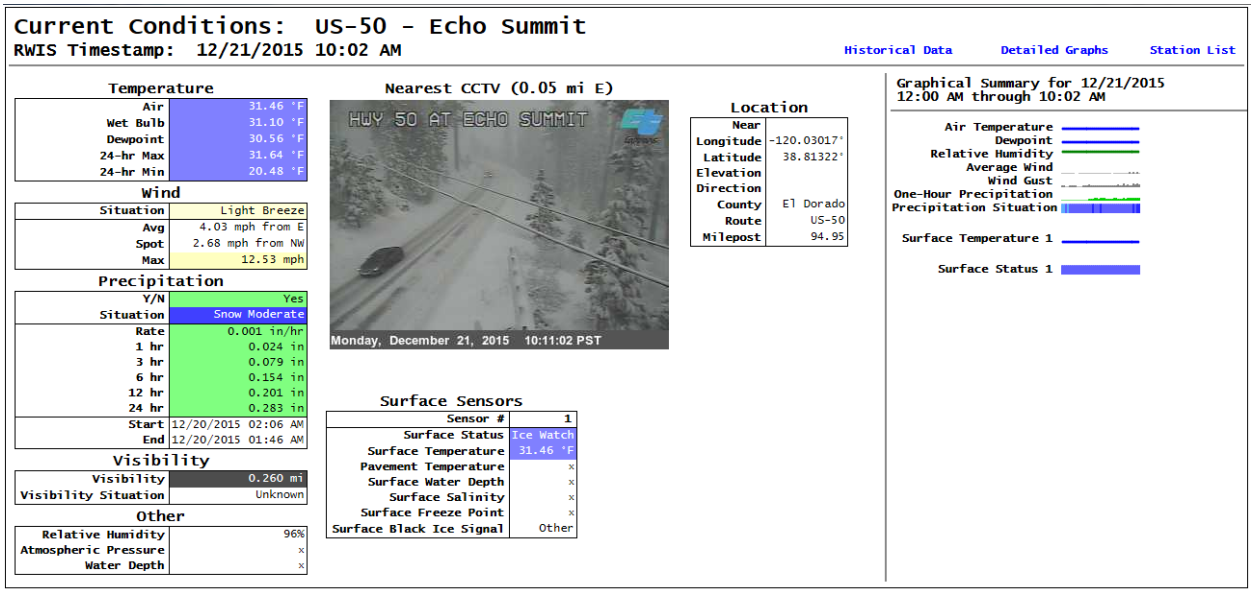
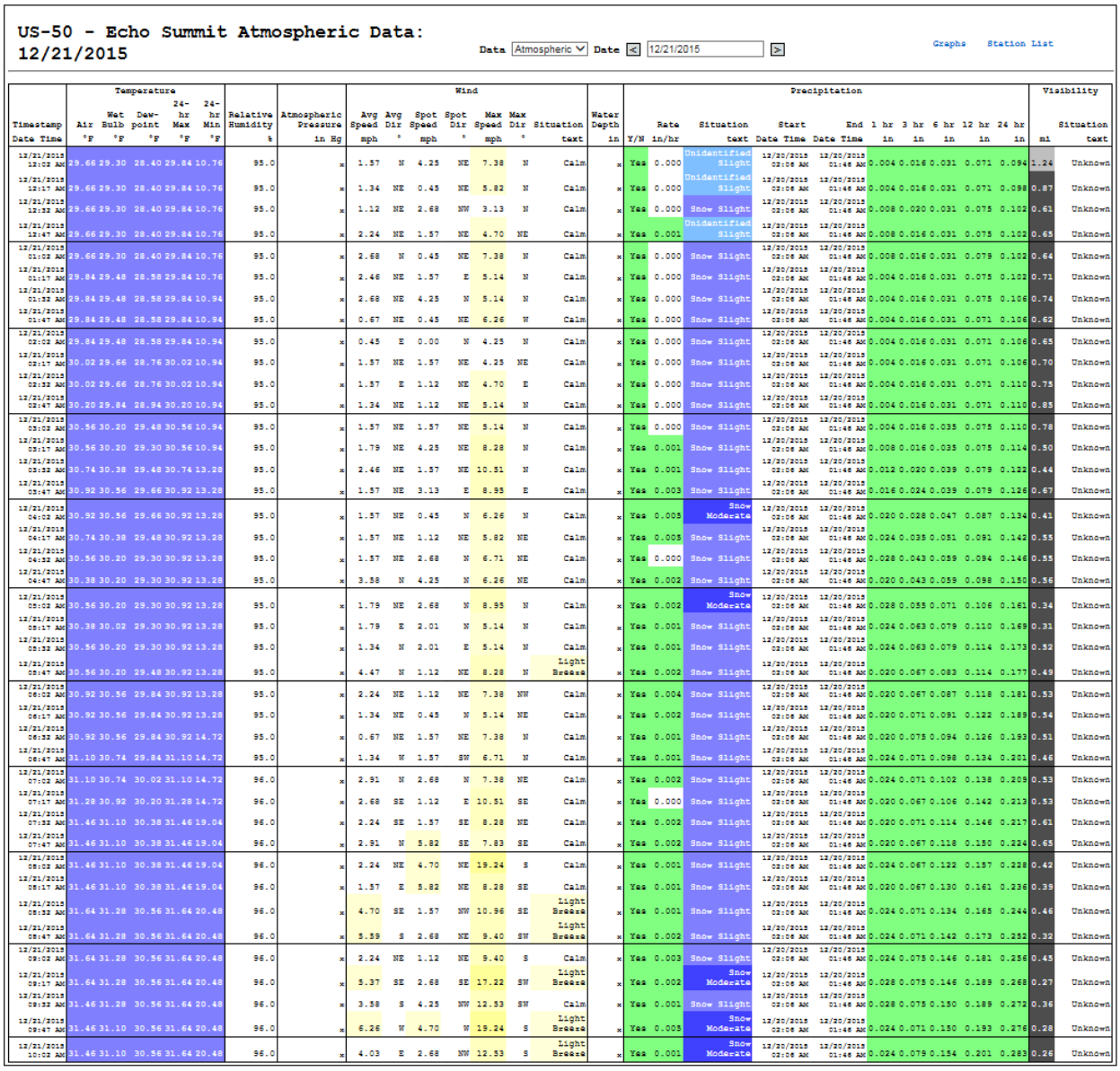


Figure 38: Current Conditions Display for District 3 Echo Summit

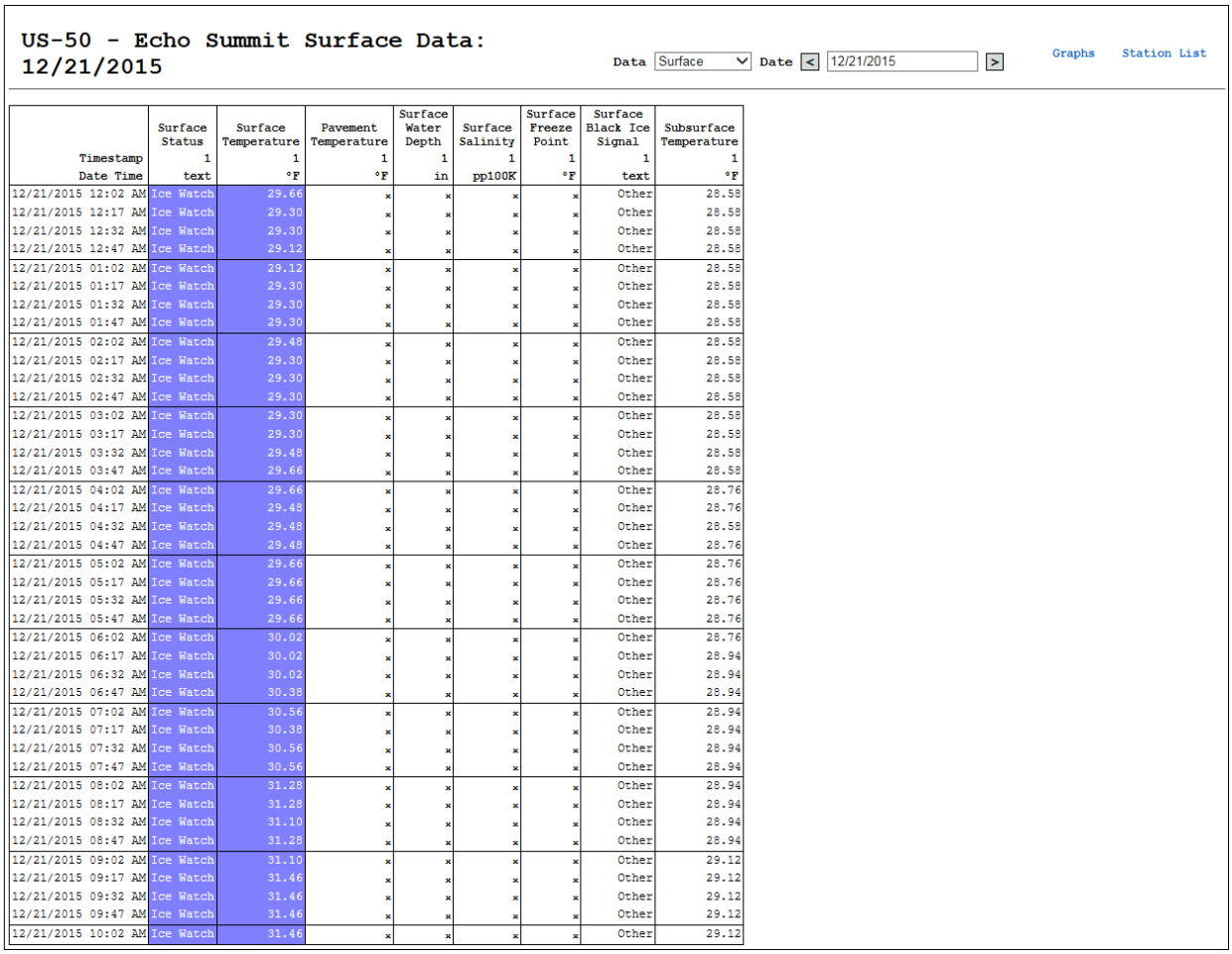


US-50 - Echo Summit Atmospheric Data: 12/21/2015

Data: Atmospheric | Date: < 12/21/2015 > | Graphs | Station List

Timestamp	Temperature					Relative Humidity	Atmospheric Pressure	Wind							Water Depth	Precipitation										Visibility	
	Air	Wet Bulb	Dew-point	24-hr Max	24-hr Min			Avg Speed	Avg Dir	Spot Speed	Spot Dir	Max Speed	Max Dir	Situation		Rate	Situation	Start	End	1 hr	3 hr	6 hr	12 hr	24 hr			Situation
Date Time	°F	°F	°F	°F	°F	%	in Hg	mph	°	mph	°	mph	°	text	in	Y/N	in/hr	text	Date Time	Date Time	in	in	in	in	in		mi	text
12/21/2015 12:02 AM	29.66	29.30	28.40	29.84	10.76	95.0	x	1.57	N	4.25	NE	7.38	N	Calm	x	Yes	0.000	Unidentified Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.094		1.24	Unknown
12/21/2015 12:17 AM	29.66	29.30	28.40	29.84	10.76	95.0	x	1.34	NE	0.45	NE	5.82	N	Calm	x	Yes	0.000	Unidentified Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.098		0.87	Unknown
12/21/2015 12:32 AM	29.66	29.30	28.40	29.84	10.76	95.0	x	1.12	NE	2.68	NW	3.13	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.020	0.031	0.075	0.102		0.61	Unknown
12/21/2015 12:47 AM	29.66	29.30	28.40	29.84	10.76	95.0	x	2.24	NE	1.57	NE	4.70	NE	Calm	x	Yes	0.001	Unidentified Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.016	0.031	0.075	0.102		0.65	Unknown
12/21/2015 01:02 AM	29.66	29.30	28.40	29.84	10.76	95.0	x	2.68	N	0.45	NE	7.38	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.016	0.031	0.079	0.102		0.64	Unknown
12/21/2015 01:17 AM	29.84	29.48	28.58	29.84	10.76	95.0	x	2.46	NE	1.57	E	5.14	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.075	0.102		0.71	Unknown
12/21/2015 01:32 AM	29.84	29.48	28.58	29.84	10.94	95.0	x	2.68	NE	4.25	N	5.14	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.075	0.106		0.74	Unknown
12/21/2015 01:47 AM	29.84	29.48	28.58	29.84	10.94	95.0	x	0.67	NE	0.45	NE	6.26	W	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.106		0.62	Unknown
12/21/2015 02:02 AM	29.84	29.48	28.58	29.84	10.94	95.0	x	0.45	E	0.00	N	4.25	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.106		0.65	Unknown
12/21/2015 02:17 AM	30.02	29.66	28.76	30.02	10.94	95.0	x	1.57	NE	1.57	NE	4.25	NE	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.106		0.70	Unknown
12/21/2015 02:32 AM	30.02	29.66	28.76	30.02	10.94	95.0	x	1.57	E	1.12	NE	4.70	E	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.110		0.75	Unknown
12/21/2015 02:47 AM	30.20	29.84	28.94	30.20	10.94	95.0	x	1.34	NE	1.12	NE	5.14	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.071	0.110		0.85	Unknown
12/21/2015 03:02 AM	30.56	30.20	29.48	30.56	10.94	95.0	x	1.57	NE	1.57	NE	5.14	N	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.035	0.075	0.110		0.78	Unknown
12/21/2015 03:17 AM	30.56	30.20	29.30	30.56	10.94	95.0	x	1.79	NE	4.25	NE	8.28	N	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.016	0.035	0.075	0.114		0.50	Unknown
12/21/2015 03:32 AM	30.74	30.38	29.48	30.74	13.28	95.0	x	2.46	NE	1.57	NE	10.51	N	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.012	0.020	0.039	0.079	0.122		0.44	Unknown
12/21/2015 03:47 AM	30.92	30.56	29.66	30.92	13.28	95.0	x	1.57	NE	3.13	E	8.95	E	Calm	x	Yes	0.003	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.016	0.024	0.039	0.079	0.126		0.67	Unknown
12/21/2015 04:02 AM	30.92	30.56	29.66	30.92	13.28	95.0	x	1.57	NE	0.45	N	6.26	N	Calm	x	Yes	0.005	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.028	0.047	0.087	0.134		0.41	Unknown
12/21/2015 04:17 AM	30.74	30.38	29.48	30.92	13.28	95.0	x	1.57	NE	1.12	NE	5.82	NE	Calm	x	Yes	0.005	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.035	0.051	0.091	0.142		0.55	Unknown
12/21/2015 04:32 AM	30.56	30.20	29.30	30.92	13.28	95.0	x	1.57	NE	2.68	N	6.71	NE	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.028	0.043	0.059	0.094	0.146		0.55	Unknown
12/21/2015 04:47 AM	30.38	30.20	29.30	30.92	13.28	95.0	x	3.58	N	4.25	N	6.26	NE	Calm	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.043	0.059	0.098	0.150		0.56	Unknown
12/21/2015 05:02 AM	30.56	30.20	29.30	30.92	13.28	95.0	x	1.79	NE	2.68	N	8.95	N	Calm	x	Yes	0.002	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.028	0.055	0.071	0.106	0.161		0.34	Unknown
12/21/2015 05:17 AM	30.38	30.02	29.30	30.92	13.28	95.0	x	1.79	E	2.01	N	5.14	N	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.063	0.079	0.110	0.169		0.31	Unknown
12/21/2015 05:32 AM	30.56	30.20	29.30	30.92	13.28	95.0	x	1.34	N	2.01	E	5.14	N	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.063	0.079	0.114	0.173		0.52	Unknown
12/21/2015 05:47 AM	30.56	30.20	29.48	30.92	13.28	95.0	x	4.47	N	1.12	NE	8.28	N	Light Breeze	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.067	0.083	0.114	0.177		0.49	Unknown
12/21/2015 06:02 AM	30.92	30.56	29.84	30.92	13.28	95.0	x	2.24	NE	1.12	NE	7.38	NW	Calm	x	Yes	0.004	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.067	0.087	0.118	0.181		0.53	Unknown
12/21/2015 06:17 AM	30.92	30.56	29.84	30.92	13.28	95.0	x	1.34	NE	0.45	N	5.14	NE	Calm	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.071	0.091	0.122	0.189		0.54	Unknown
12/21/2015 06:32 AM	30.92	30.56	29.84	30.92	14.72	95.0	x	0.67	NE	1.57	NE	7.38	N	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.075	0.094	0.126	0.193		0.51	Unknown
12/21/2015 06:47 AM	31.10	30.74	29.84	31.10	14.72	95.0	x	1.34	W	1.57	SW	6.71	N	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.071	0.098	0.134	0.201		0.46	Unknown
12/21/2015 07:02 AM	31.10	30.74	30.02	31.10	14.72	96.0	x	2.91	N	2.68	N	7.38	NE	Calm	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.071	0.102	0.138	0.209		0.53	Unknown
12/21/2015 07:17 AM	31.28	30.92	30.20	31.28	14.72	96.0	x	2.68	SE	1.12	E	10.51	SE	Calm	x	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.067	0.106	0.142	0.213		0.53	Unknown
12/21/2015 07:32 AM	31.46	31.10	30.38	31.46	19.04	96.0	x	2.24	SE	1.57	SE	8.28	NE	Calm	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.071	0.114	0.146	0.217		0.61	Unknown
12/21/2015 07:47 AM	31.46	31.10	30.38	31.46	19.04	96.0	x	2.91	N	5.82	SE	7.83	SE	Calm	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.067	0.118	0.150	0.224		0.65	Unknown
12/21/2015 08:02 AM	31.46	31.10	30.38	31.46	19.04	96.0	x	2.24	NE	4.70	NE	19.24	S	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.067	0.122	0.157	0.228		0.42	Unknown
12/21/2015 08:17 AM	31.46	31.10	30.38	31.46	19.04	96.0	x	1.57	E	5.82	NE	8.28	SE	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.067	0.130	0.161	0.236		0.39	Unknown
12/21/2015 08:32 AM	31.64	31.28	30.56	31.64	20.48	96.0	x	4.70	SE	1.57	NW	10.96	SE	Light Breeze	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.071	0.134	0.165	0.244		0.46	Unknown
12/21/2015 08:47 AM	31.64	31.28	30.56	31.64	20.48	96.0	x	5.59	S	2.68	NE	9.40	SW	Light Breeze	x	Yes	0.002	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.071	0.142	0.173	0.252		0.32	Unknown
12/21/2015 09:02 AM	31.64	31.28	30.56	31.64	20.48	96.0	x	2.24	NE	1.12	NE	9.40	S	Calm	x	Yes	0.003	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.075	0.146	0.181	0.256		0.45	Unknown
12/21/2015 09:17 AM	31.64	31.28	30.56	31.64	20.48	96.0	x	5.37	SE	2.68	SE	17.22	SW	Light Breeze	x	Yes	0.002	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.028	0.075	0.146	0.189	0.268		0.27	Unknown
12/21/2015 09:32 AM	31.46	31.28	30.56	31.64	20.48	96.0	x	3.58	S	4.25	NW	12.53	SW	Calm	x	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.028	0.075	0.150	0.189	0.272		0.36	Unknown
12/21/2015 09:47 AM	31.46	31.10	30.56	31.64	20.48	96.0	x	6.26	W	4.70	W	19.24	S	Light Breeze	x	Yes	0.005	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.071	0.150	0.193	0.276		0.28	Unknown
12/21/2015 10:02 AM	31.46	31.10	30.56	31.64	20.48	96.0	x	4.03	E	2.68	NW	12.53	S	Light Breeze	x	Yes	0.001	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.079	0.154	0.201	0.283		0.26	Unknown

Figure 39: Historical Atmospheric Data for District 3 Echo Summit



US-50 - Echo Summit Surface Data: 12/21/2015

Data: Surface | Date: 12/21/2015 | Graphs | Station List

Timestamp Date Time	Surface Status 1 text	Surface Temperature 1 °F	Pavement Temperature 1 °F	Surface Water Depth 1 in	Surface Salinity 1 pp100K	Surface Freeze Point 1 °F	Surface Black Ice Signal 1 text	Subsurface Temperature 1 °F
12/21/2015 12:02 AM	Ice Watch	29.66	x	x	x	x	Other	28.58
12/21/2015 12:17 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 12:32 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 12:47 AM	Ice Watch	29.12	x	x	x	x	Other	28.58
12/21/2015 01:02 AM	Ice Watch	29.12	x	x	x	x	Other	28.58
12/21/2015 01:17 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 01:32 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 01:47 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 02:02 AM	Ice Watch	29.48	x	x	x	x	Other	28.58
12/21/2015 02:17 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 02:32 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 02:47 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 03:02 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 03:17 AM	Ice Watch	29.30	x	x	x	x	Other	28.58
12/21/2015 03:32 AM	Ice Watch	29.48	x	x	x	x	Other	28.58
12/21/2015 03:47 AM	Ice Watch	29.66	x	x	x	x	Other	28.58
12/21/2015 04:02 AM	Ice Watch	29.66	x	x	x	x	Other	28.76
12/21/2015 04:17 AM	Ice Watch	29.48	x	x	x	x	Other	28.76
12/21/2015 04:32 AM	Ice Watch	29.48	x	x	x	x	Other	28.58
12/21/2015 04:47 AM	Ice Watch	29.48	x	x	x	x	Other	28.76
12/21/2015 05:02 AM	Ice Watch	29.66	x	x	x	x	Other	28.76
12/21/2015 05:17 AM	Ice Watch	29.66	x	x	x	x	Other	28.76
12/21/2015 05:32 AM	Ice Watch	29.66	x	x	x	x	Other	28.76
12/21/2015 05:47 AM	Ice Watch	29.66	x	x	x	x	Other	28.76
12/21/2015 06:02 AM	Ice Watch	30.02	x	x	x	x	Other	28.76
12/21/2015 06:17 AM	Ice Watch	30.02	x	x	x	x	Other	28.94
12/21/2015 06:32 AM	Ice Watch	30.02	x	x	x	x	Other	28.94
12/21/2015 06:47 AM	Ice Watch	30.38	x	x	x	x	Other	28.94
12/21/2015 07:02 AM	Ice Watch	30.56	x	x	x	x	Other	28.94
12/21/2015 07:17 AM	Ice Watch	30.38	x	x	x	x	Other	28.94
12/21/2015 07:32 AM	Ice Watch	30.56	x	x	x	x	Other	28.94
12/21/2015 07:47 AM	Ice Watch	30.56	x	x	x	x	Other	28.94
12/21/2015 08:02 AM	Ice Watch	31.28	x	x	x	x	Other	28.94
12/21/2015 08:17 AM	Ice Watch	31.28	x	x	x	x	Other	28.94
12/21/2015 08:32 AM	Ice Watch	31.10	x	x	x	x	Other	28.94
12/21/2015 08:47 AM	Ice Watch	31.28	x	x	x	x	Other	28.94
12/21/2015 09:02 AM	Ice Watch	31.10	x	x	x	x	Other	29.12
12/21/2015 09:17 AM	Ice Watch	31.46	x	x	x	x	Other	29.12
12/21/2015 09:32 AM	Ice Watch	31.46	x	x	x	x	Other	29.12
12/21/2015 09:47 AM	Ice Watch	31.46	x	x	x	x	Other	29.12
12/21/2015 10:02 AM	Ice Watch	31.46	x	x	x	x	Other	29.12

Figure 40: Historical Surface Data for District 3 Echo Summit

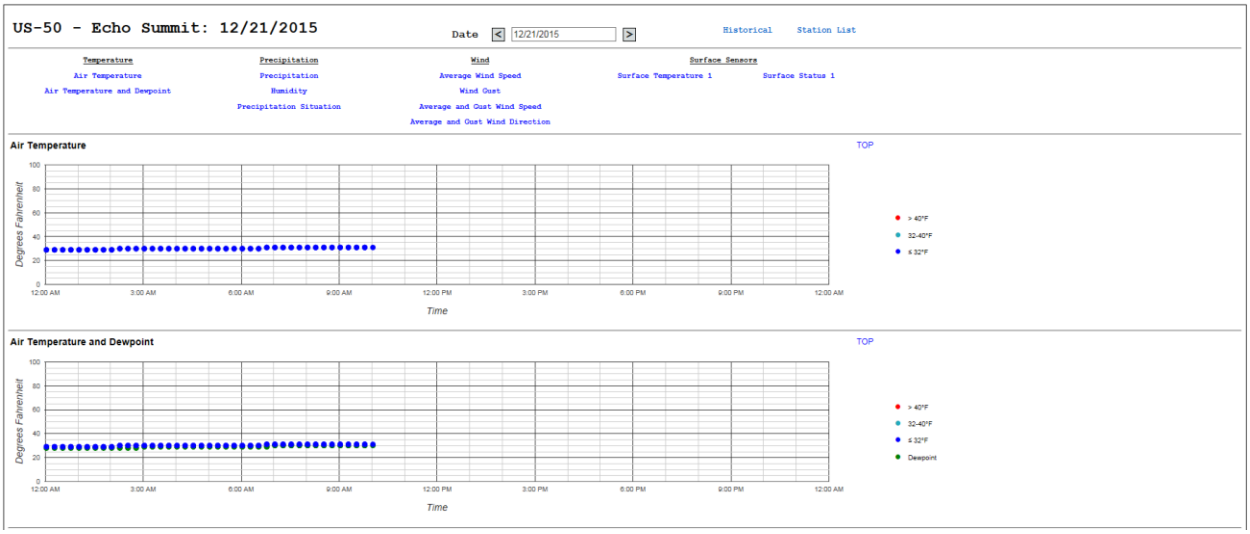


Figure 41: Air Temperature, Air Temperature and Dewpoint Graphs for District 3 Echo Summit

Figure 42: Preciptation, Precipitation Situation, and Humidity Graphs for District 3 Echo Summit

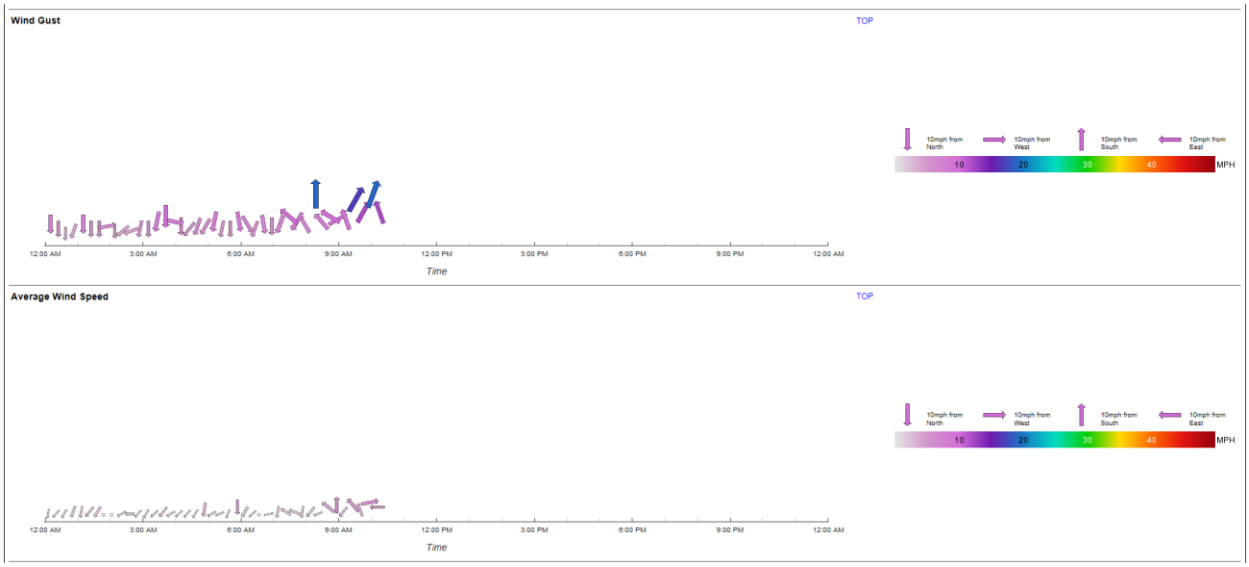


Figure 43: Wind Arrow Graph for District 3 Echo Summit

Figure 44: Wind Direction and Velocity Graph for District 3 Echo Summit

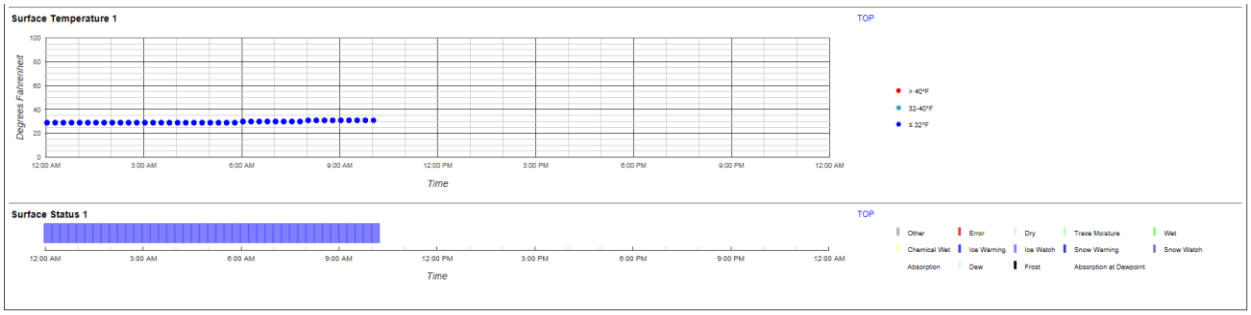


Figure 45: Surface Temperature and Surface Status Graphs for District 3 Echo Summit

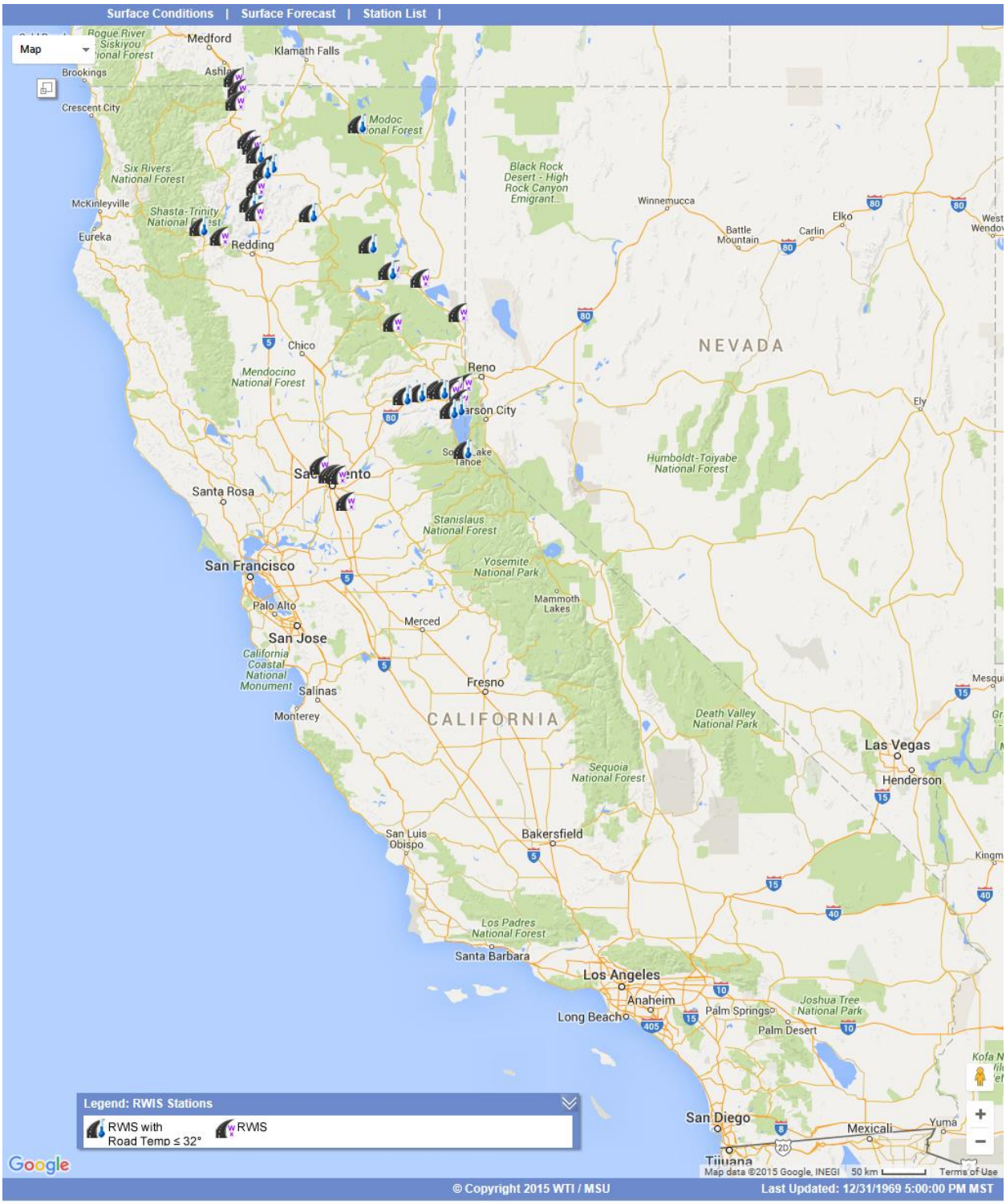


Figure 46: Map Display of RWIS Sites

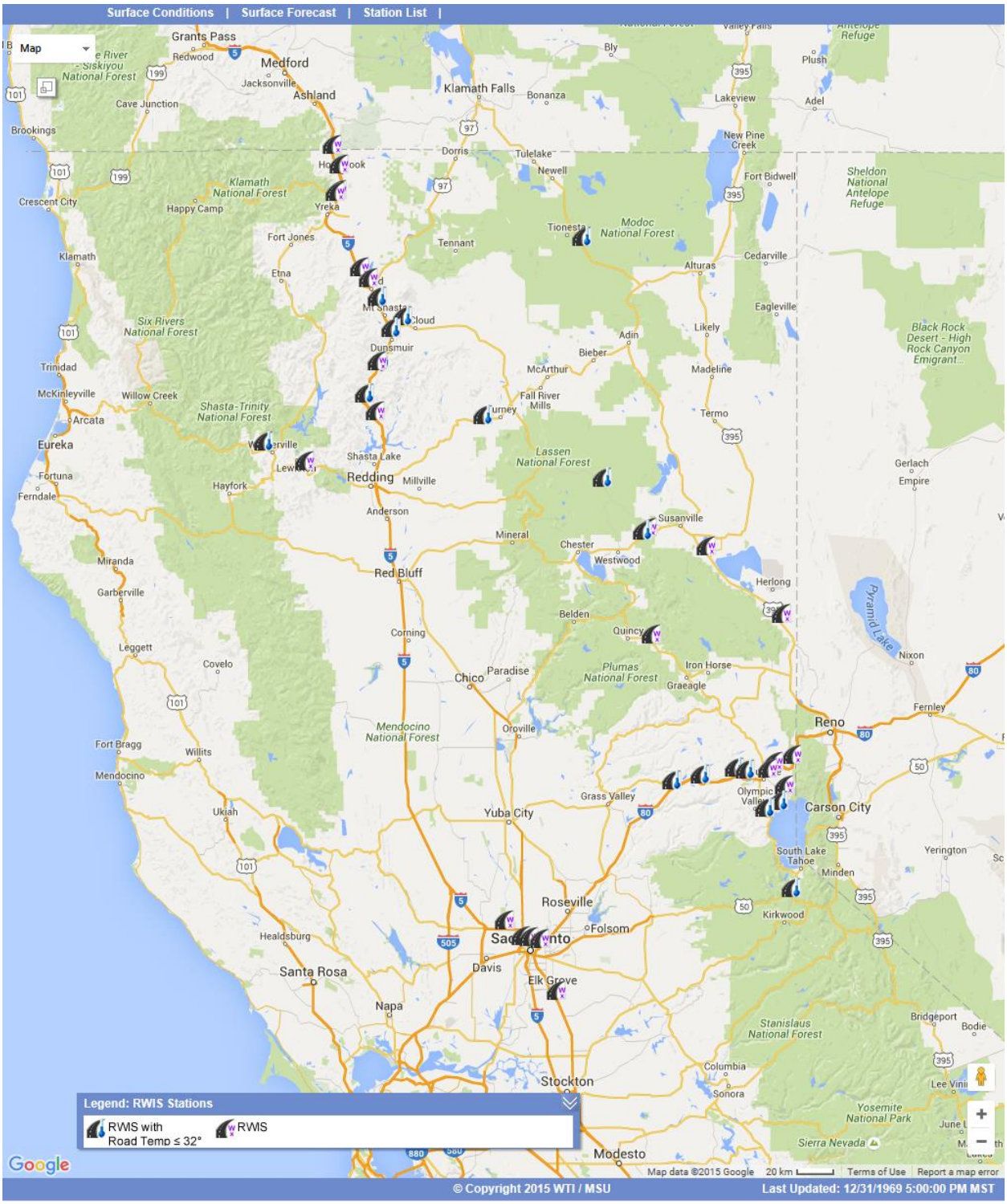


Figure 47: Map Display of RWIS Sites – Part 2

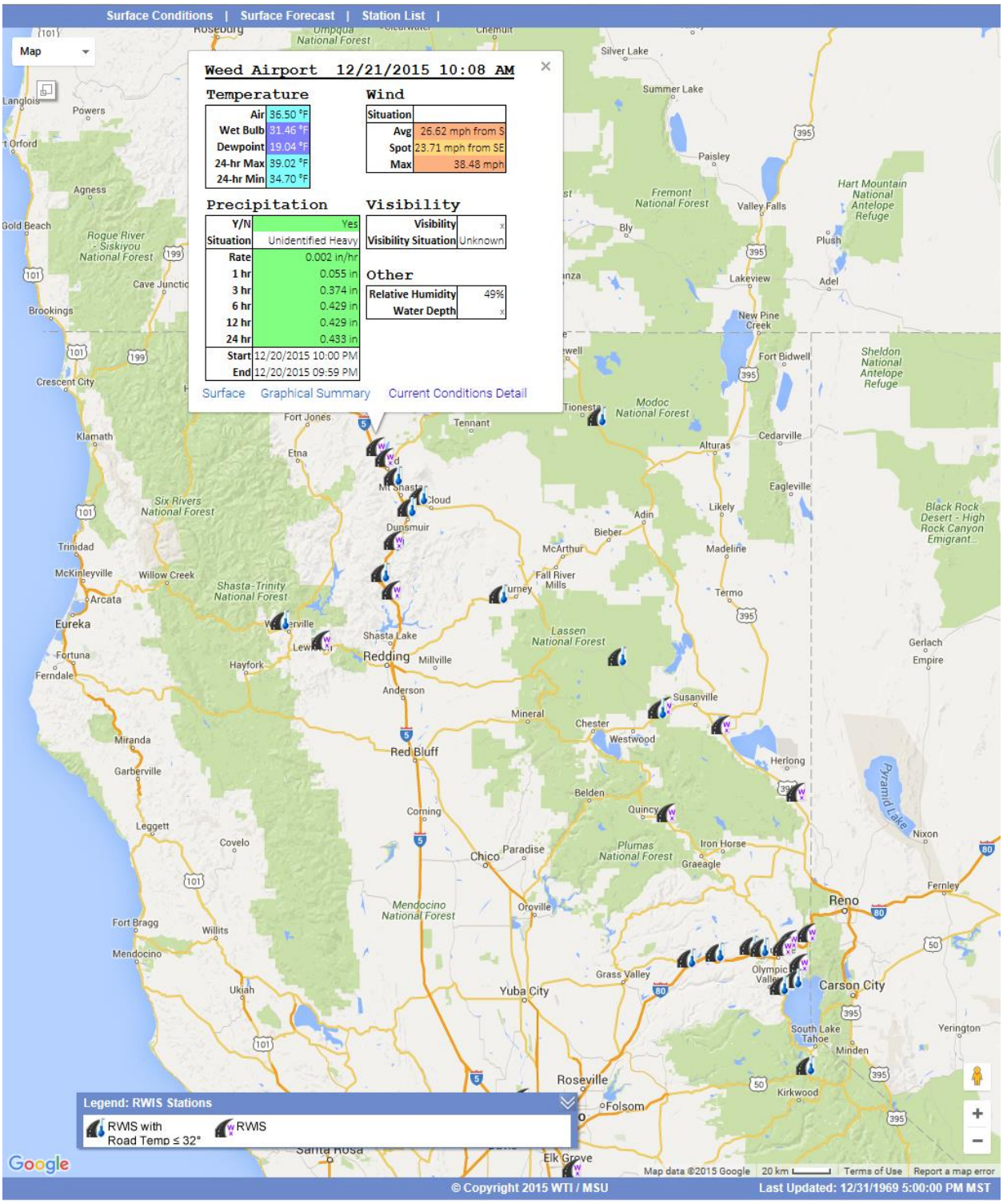


Figure 48: District 2 Weed Airport Atmospheric Summary from Map Display

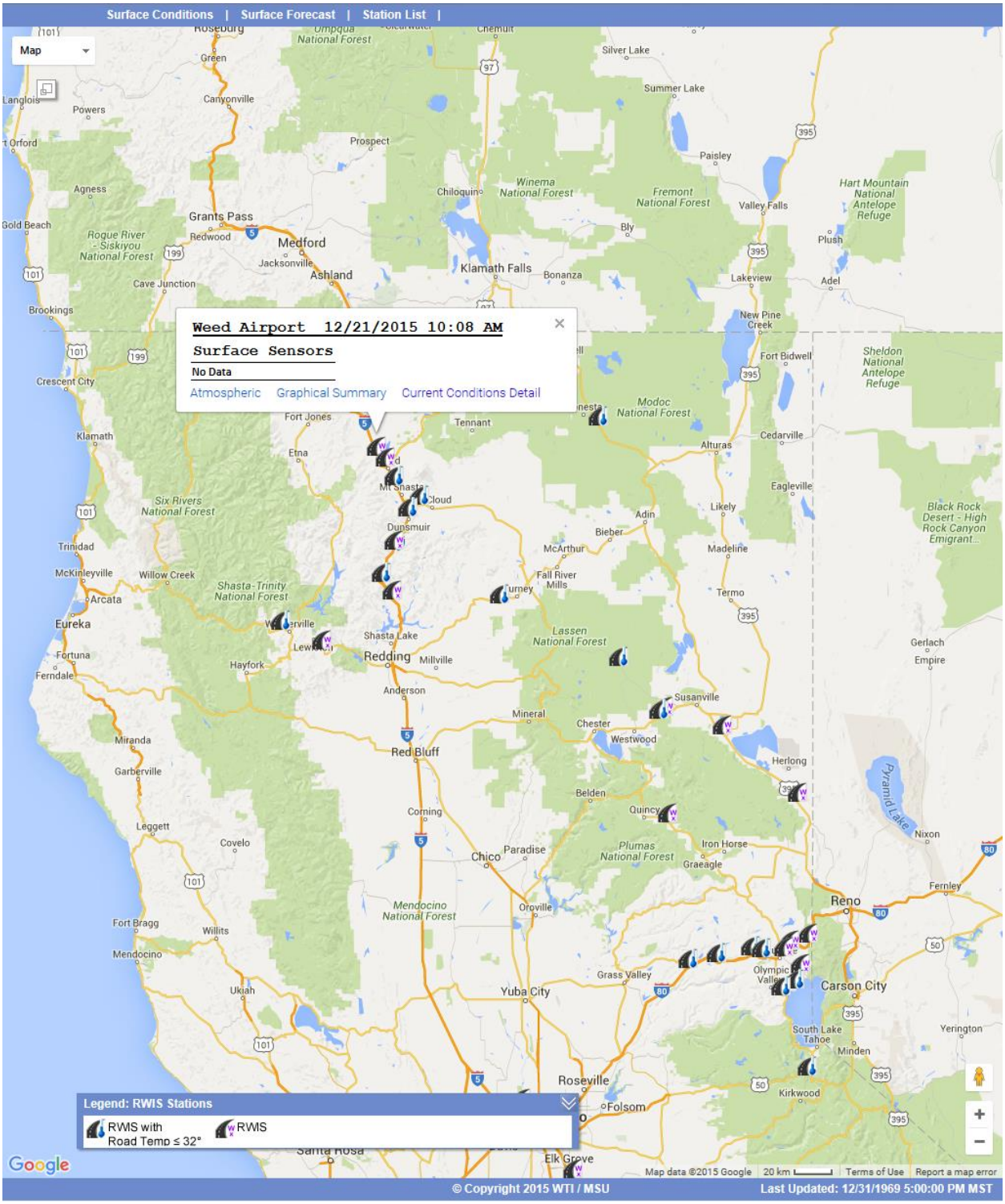


Figure 49: District 2 Weed Airport RWIS Surface Summary from Map Display (no surface sensors at this site)

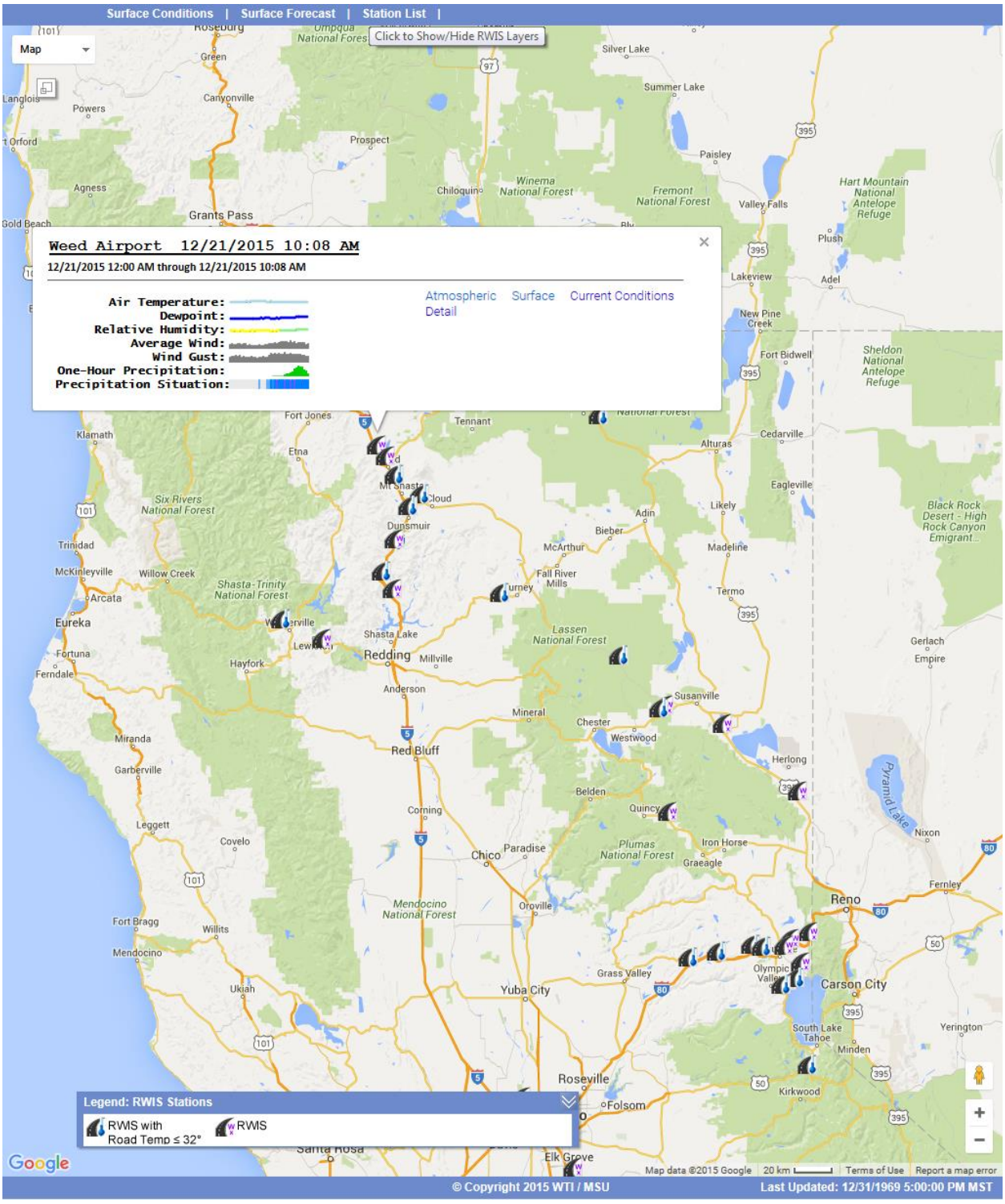


Figure 50: District 2 Weed Airport RWIS Graphical Summary from Map Display

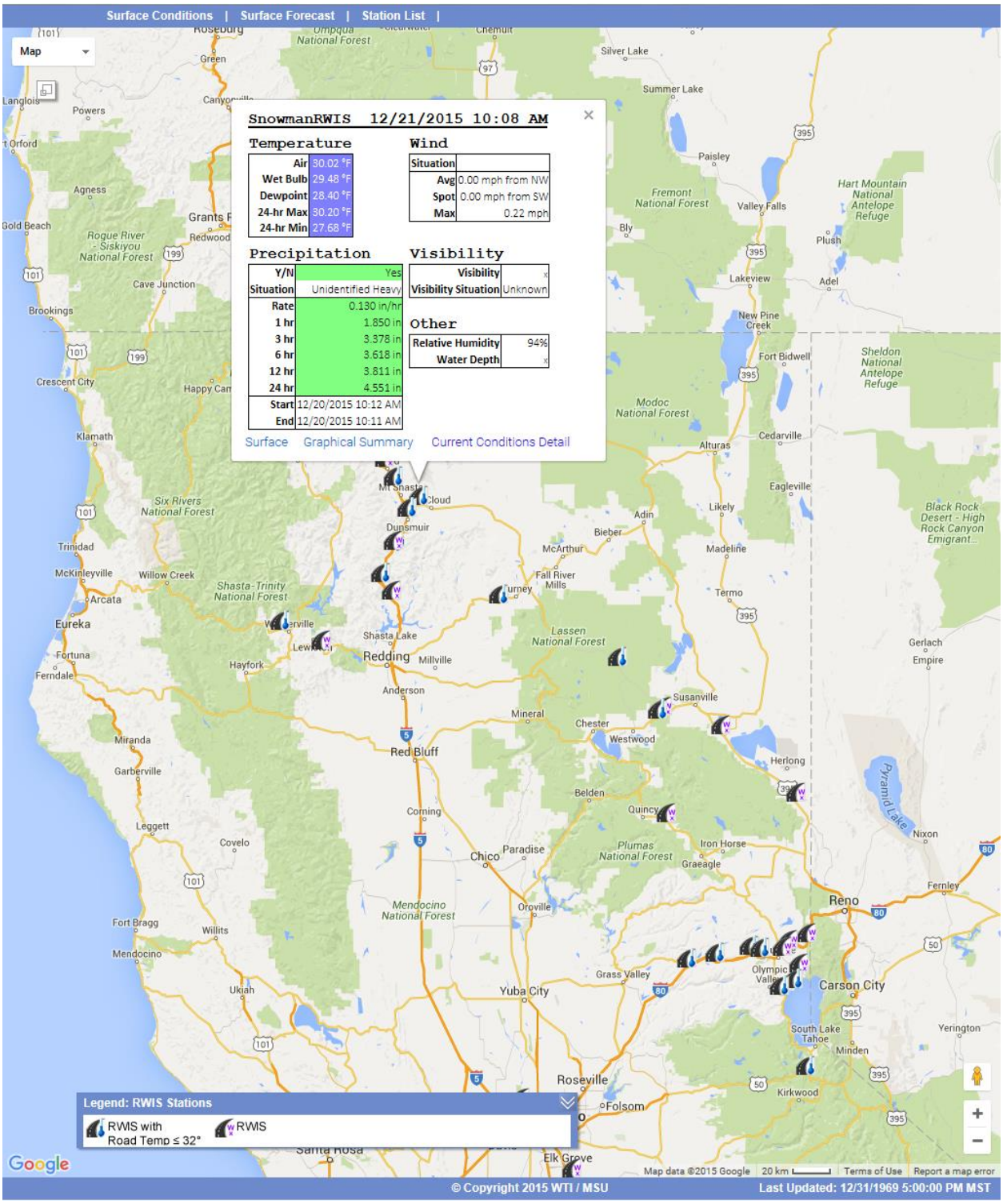


Figure 51: District 2 Snowman Summit RWIS Atmospheric Summary from Map Display

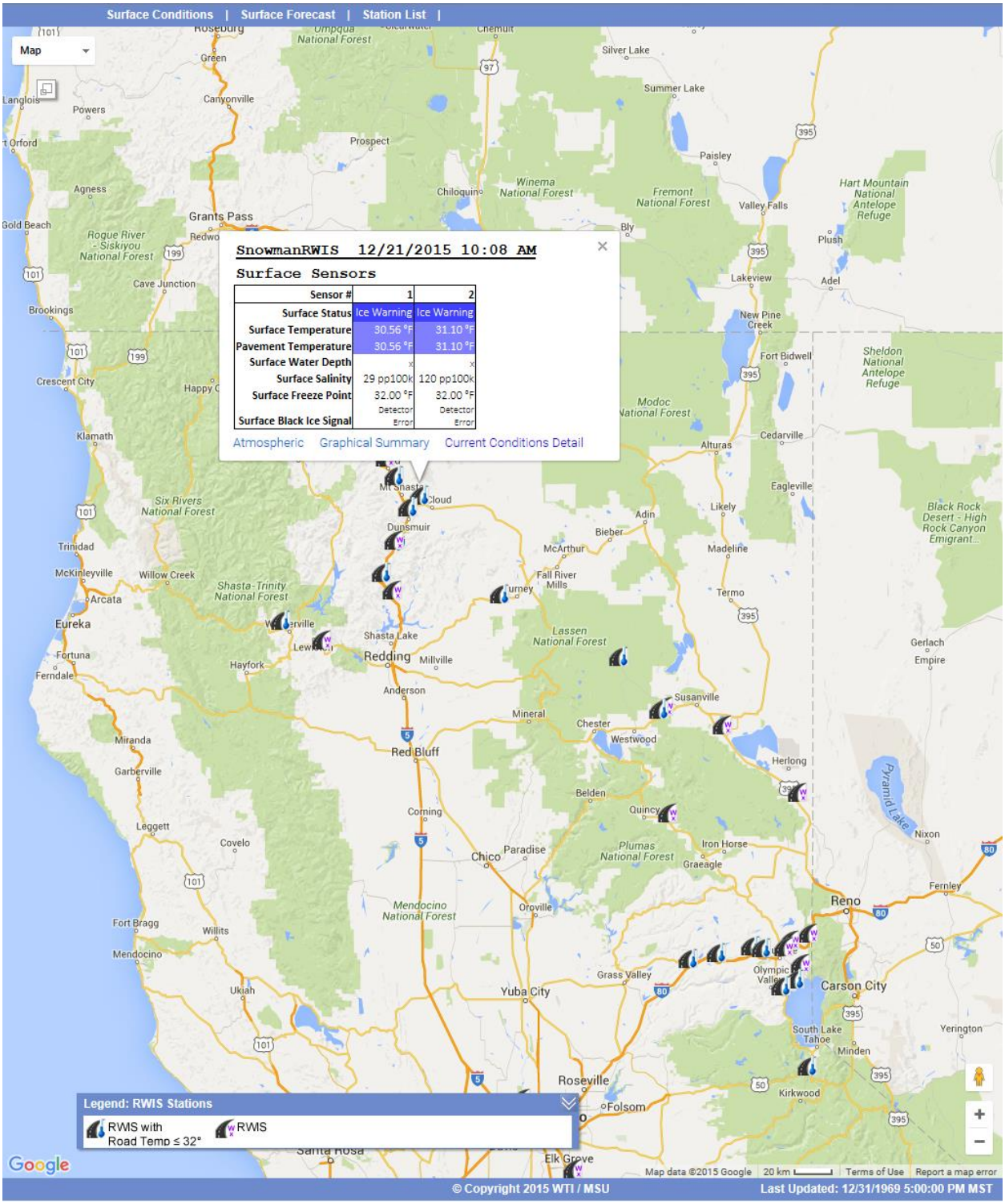


Figure 52: District 2 Snowman Summit RWIS Surface Summary from Map Display

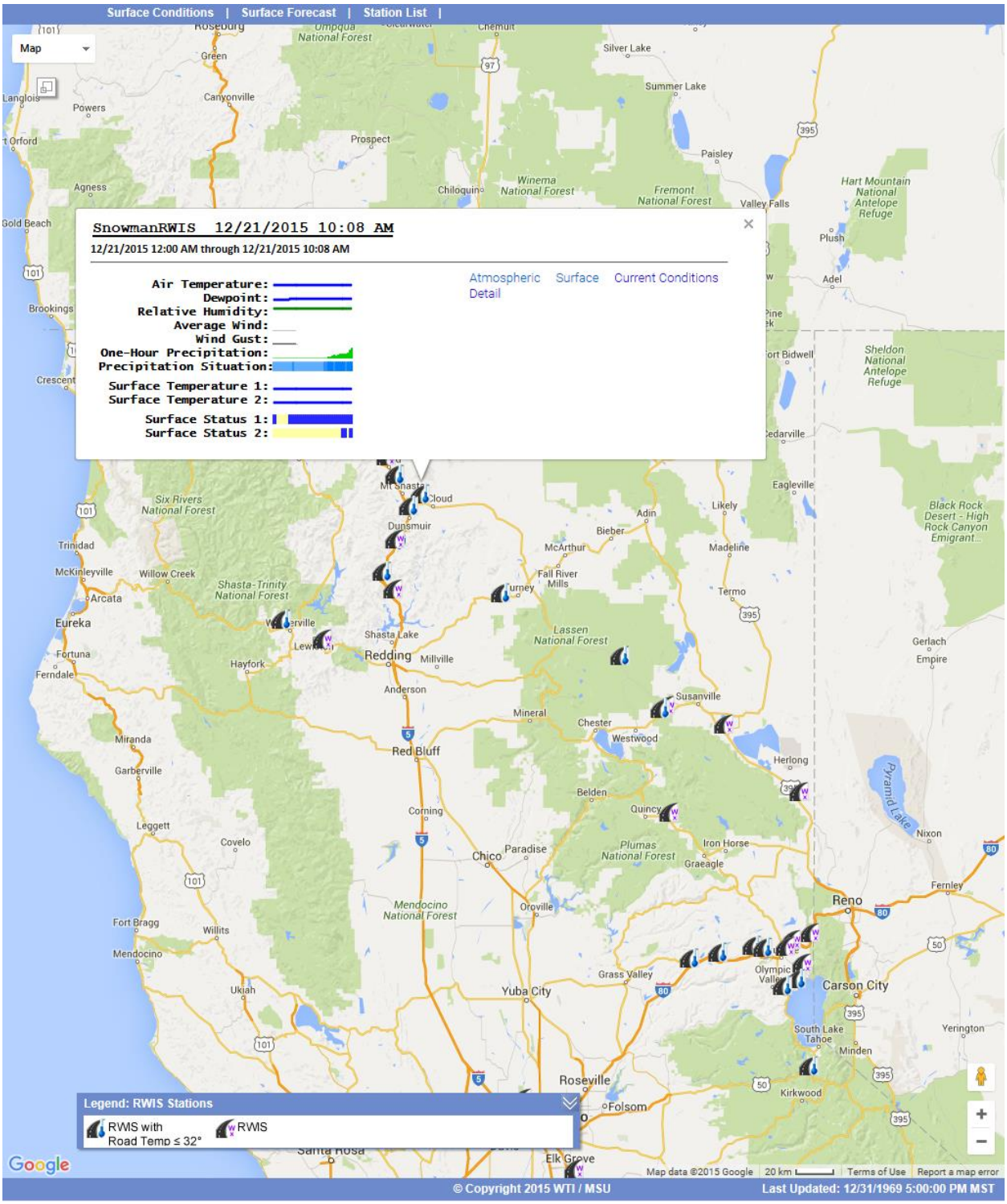


Figure 53: District 2 Snowman Summit RWIS Graphical Summary from Map Display

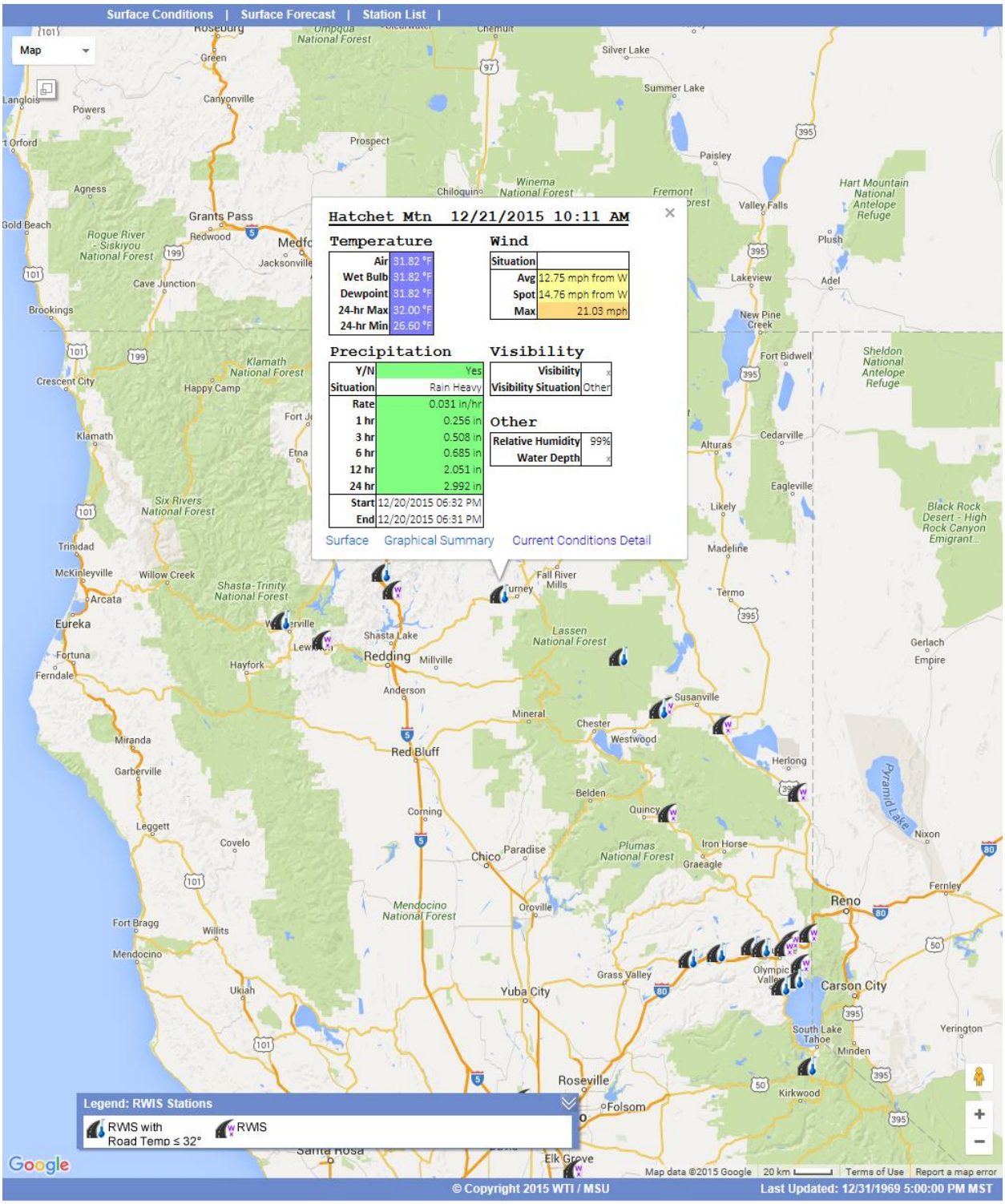


Figure 54: District 2 Hatchet Mountain RWIS Atmospheric Summary from Map Display

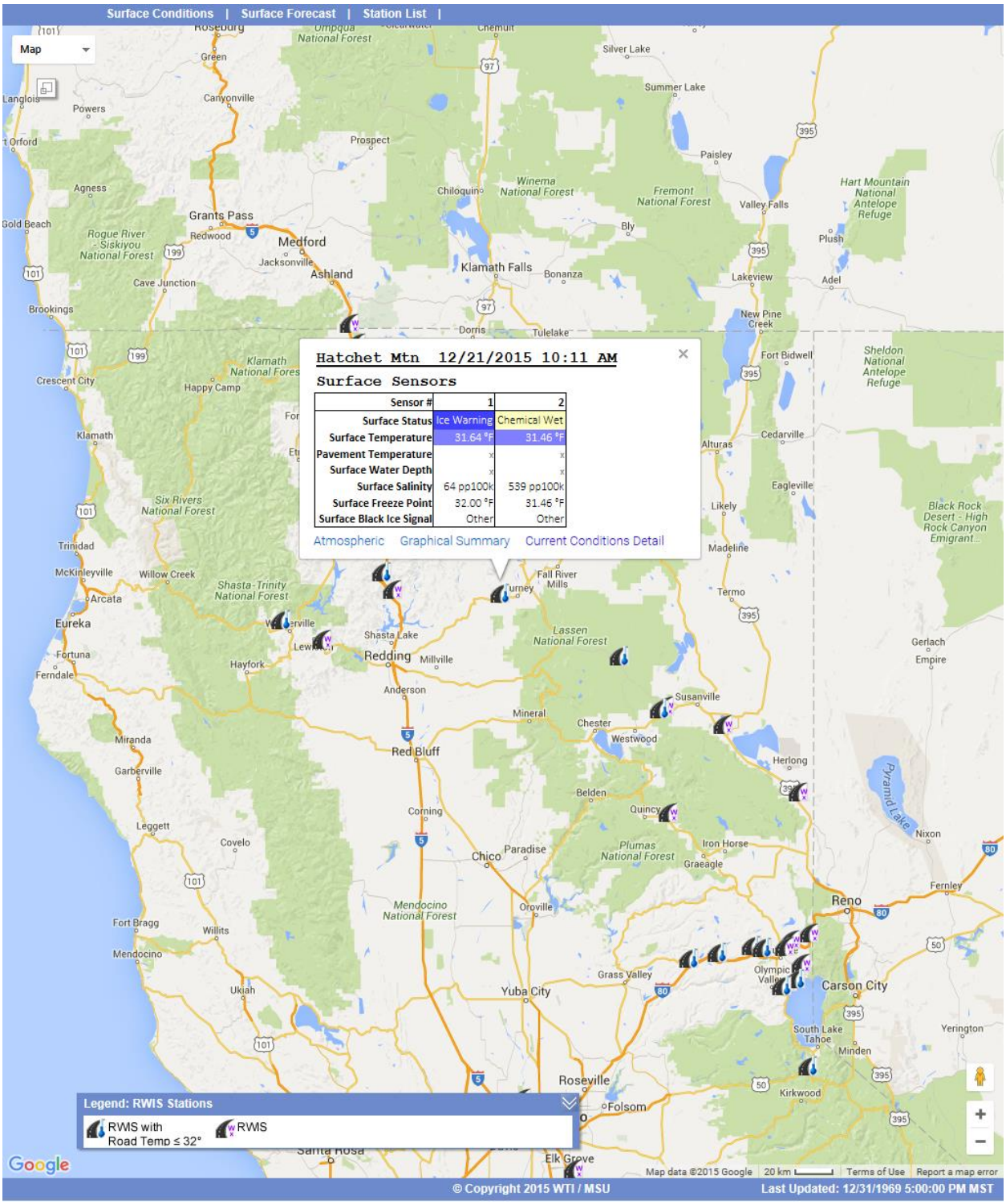


Figure 55: District 2 Hatchet Mountain RWIS Surface Summary from Map Display

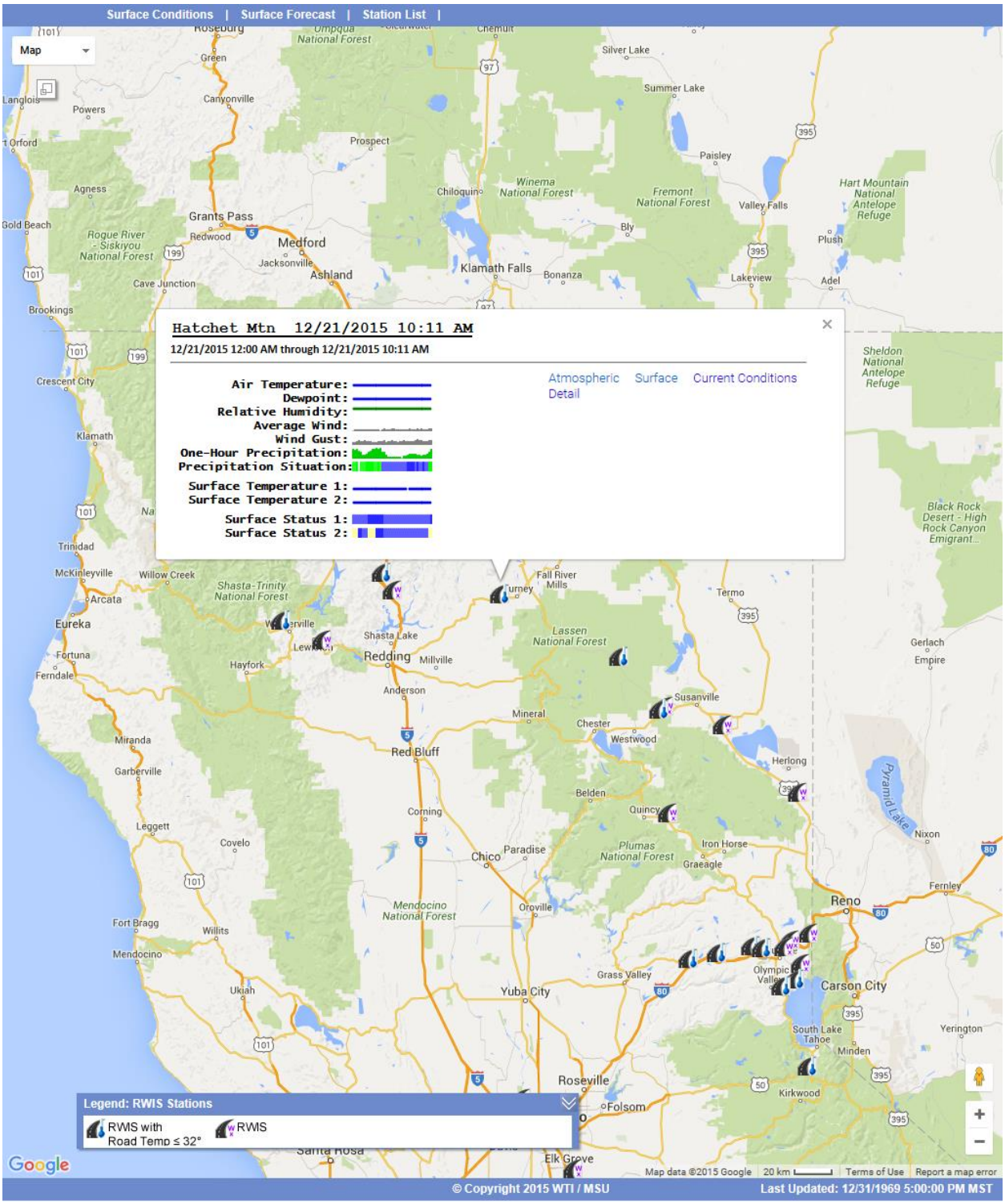


Figure 56: District 2 Hatchet Mountain RWIS Graphical Summary from Map Display

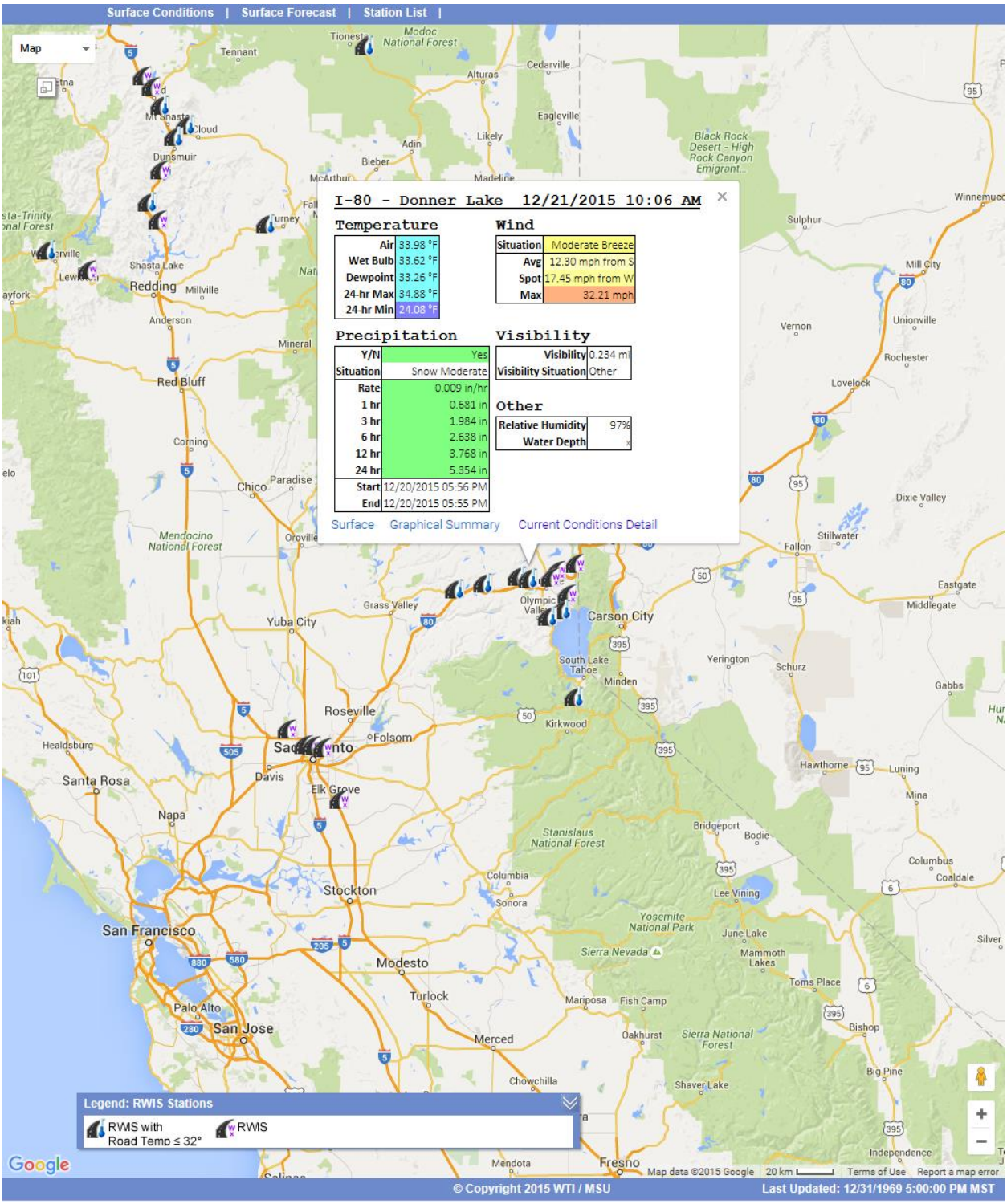


Figure 57: District 3 Donner Lake RWIS Atmospheric Summary from Map Display

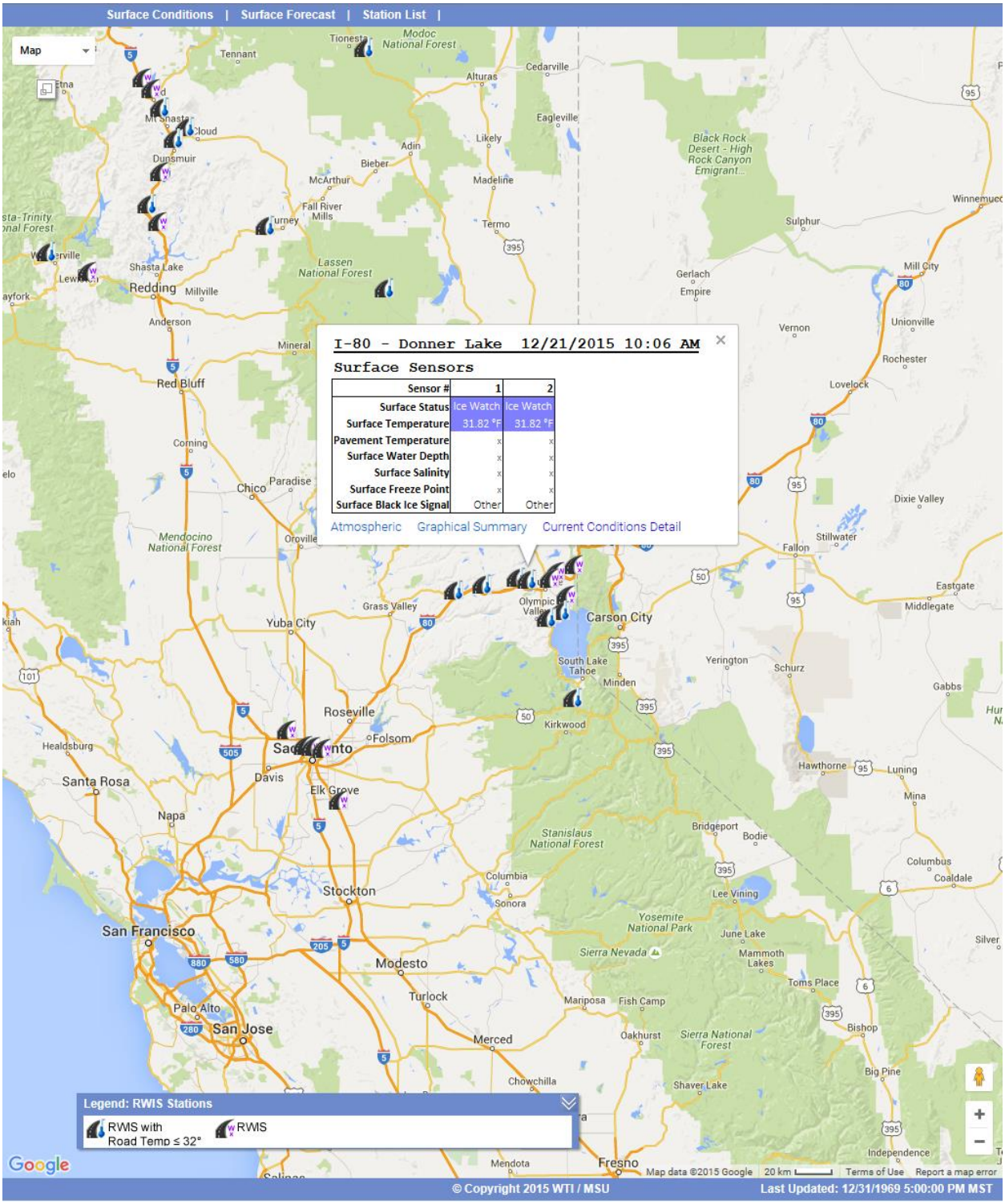


Figure 58: District 3 Donner Lake RWIS Surface Summary from Map Display

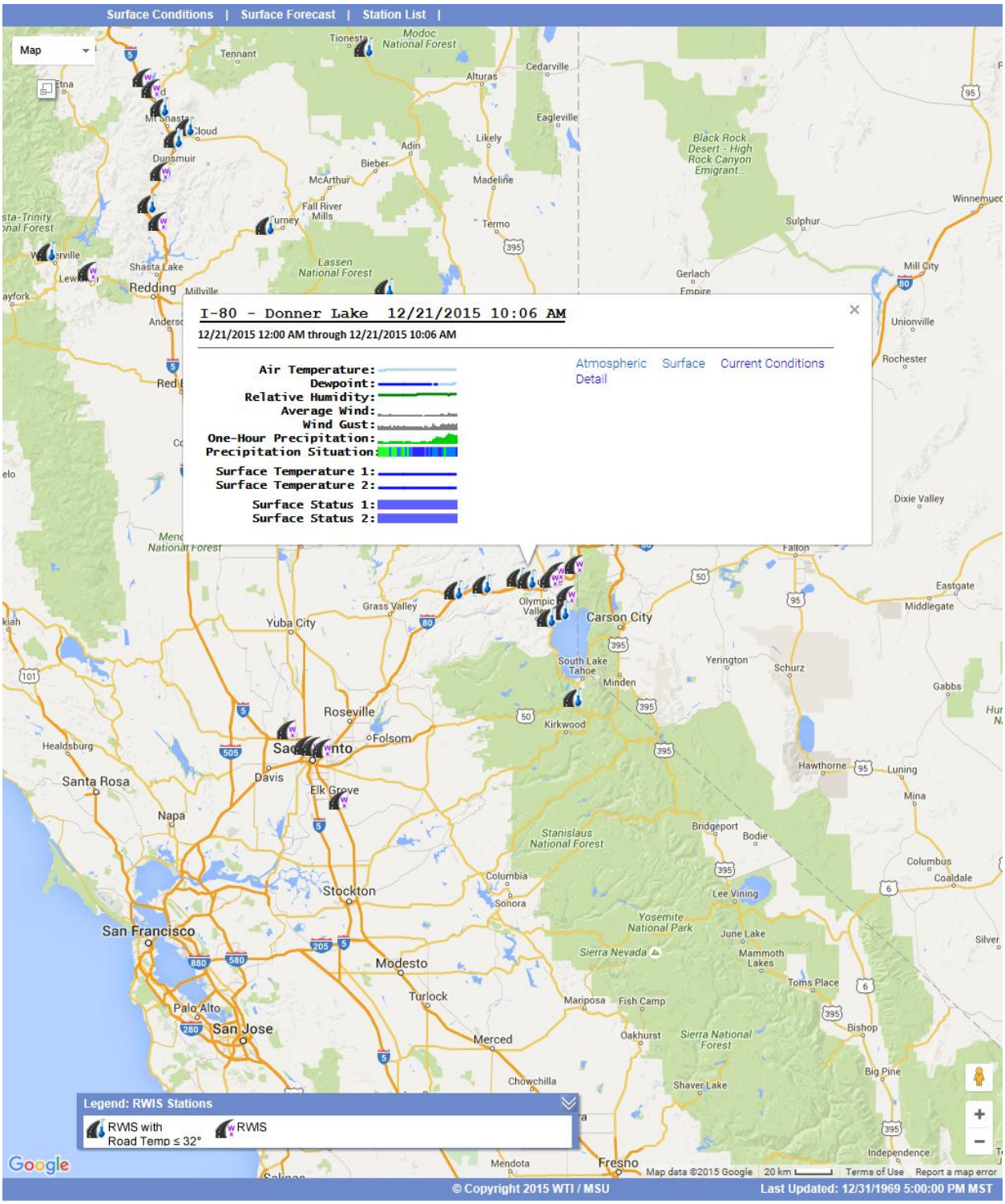


Figure 59: District 3 Donner Lake RWIS Graphical Summary from Map Display

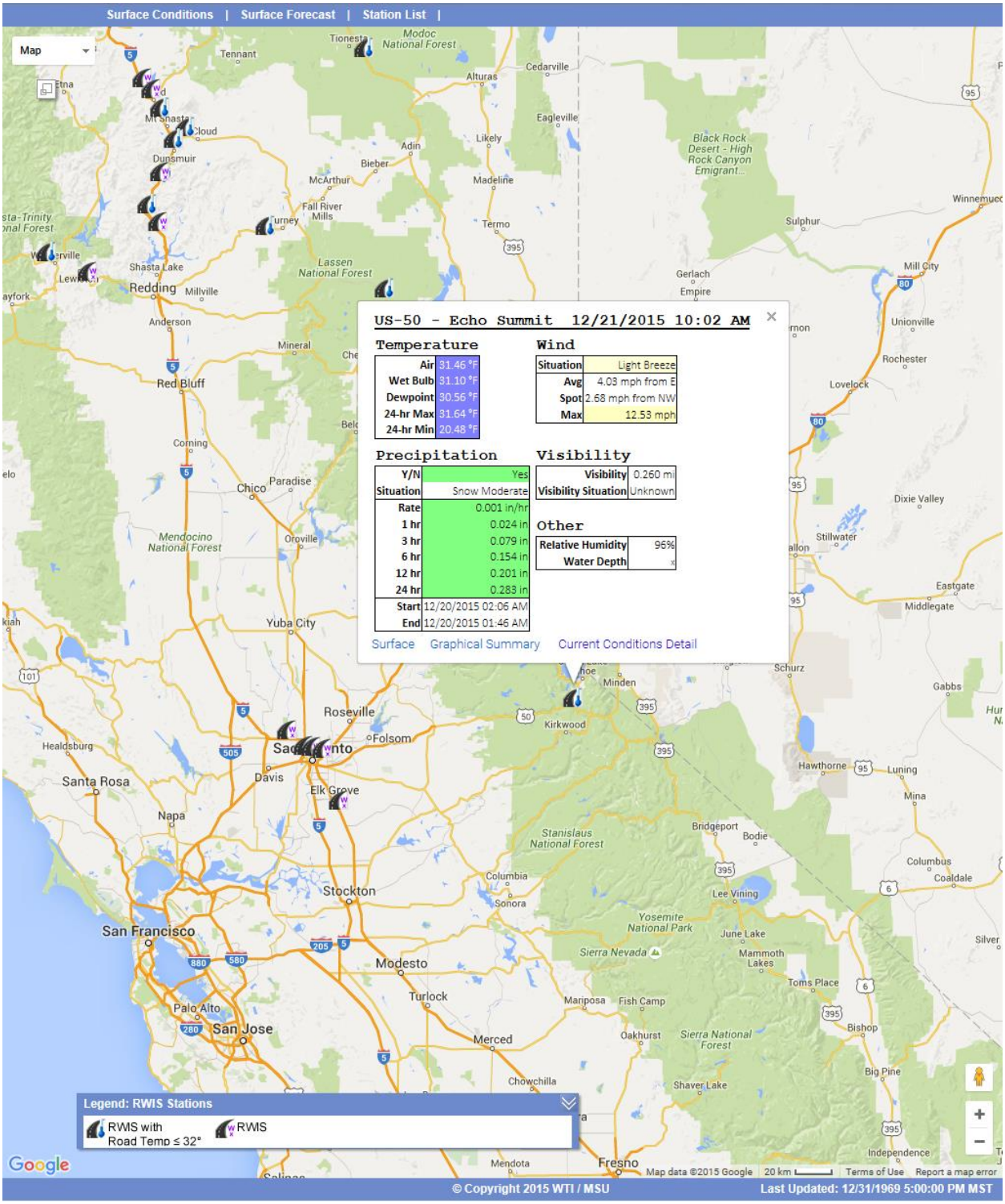


Figure 60: District 3 Echo Summit RWIS Atmospheric Summary from Map Display

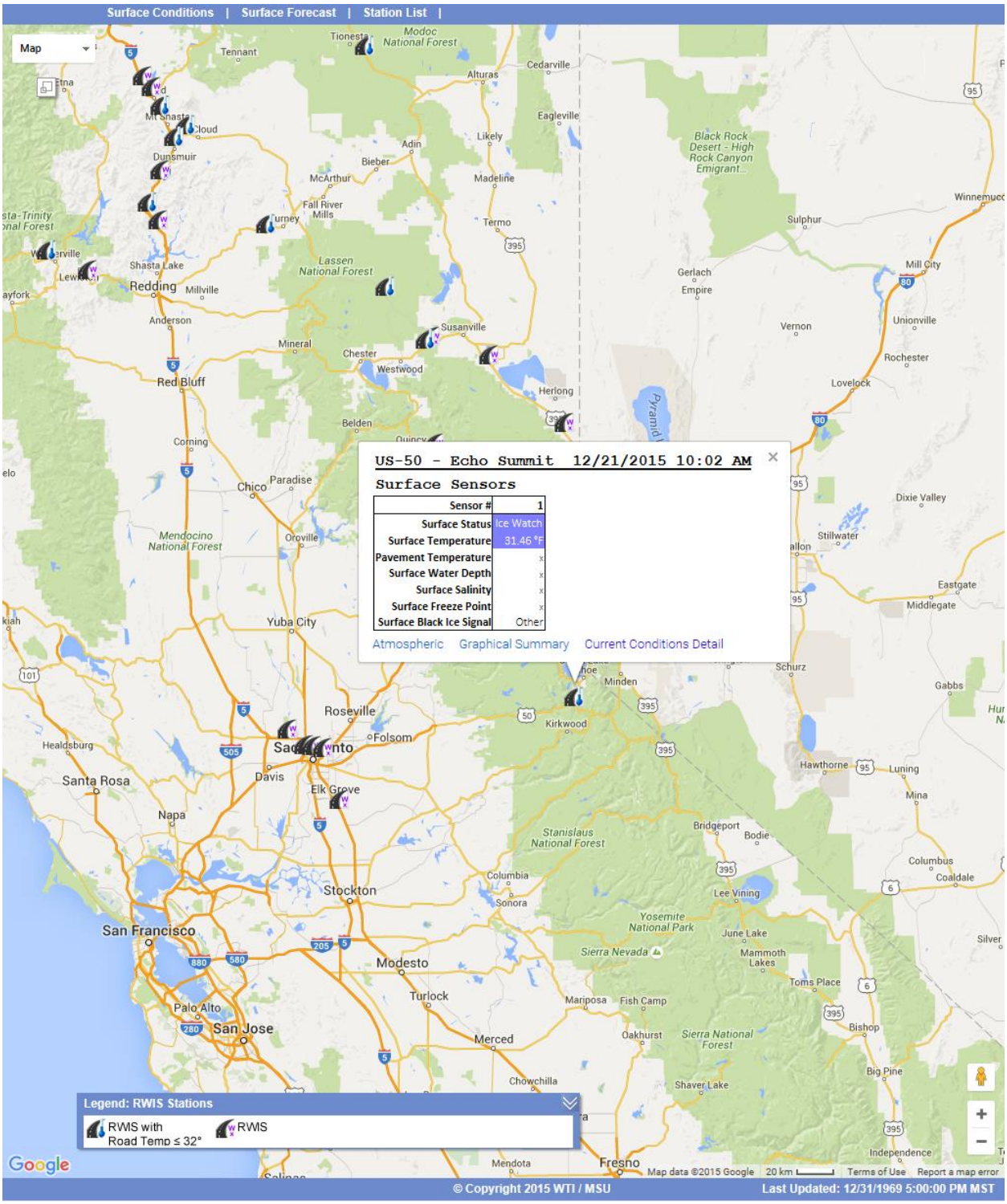


Figure 61: District 3 Echo Summit RWIS Surface Summary from Map Display

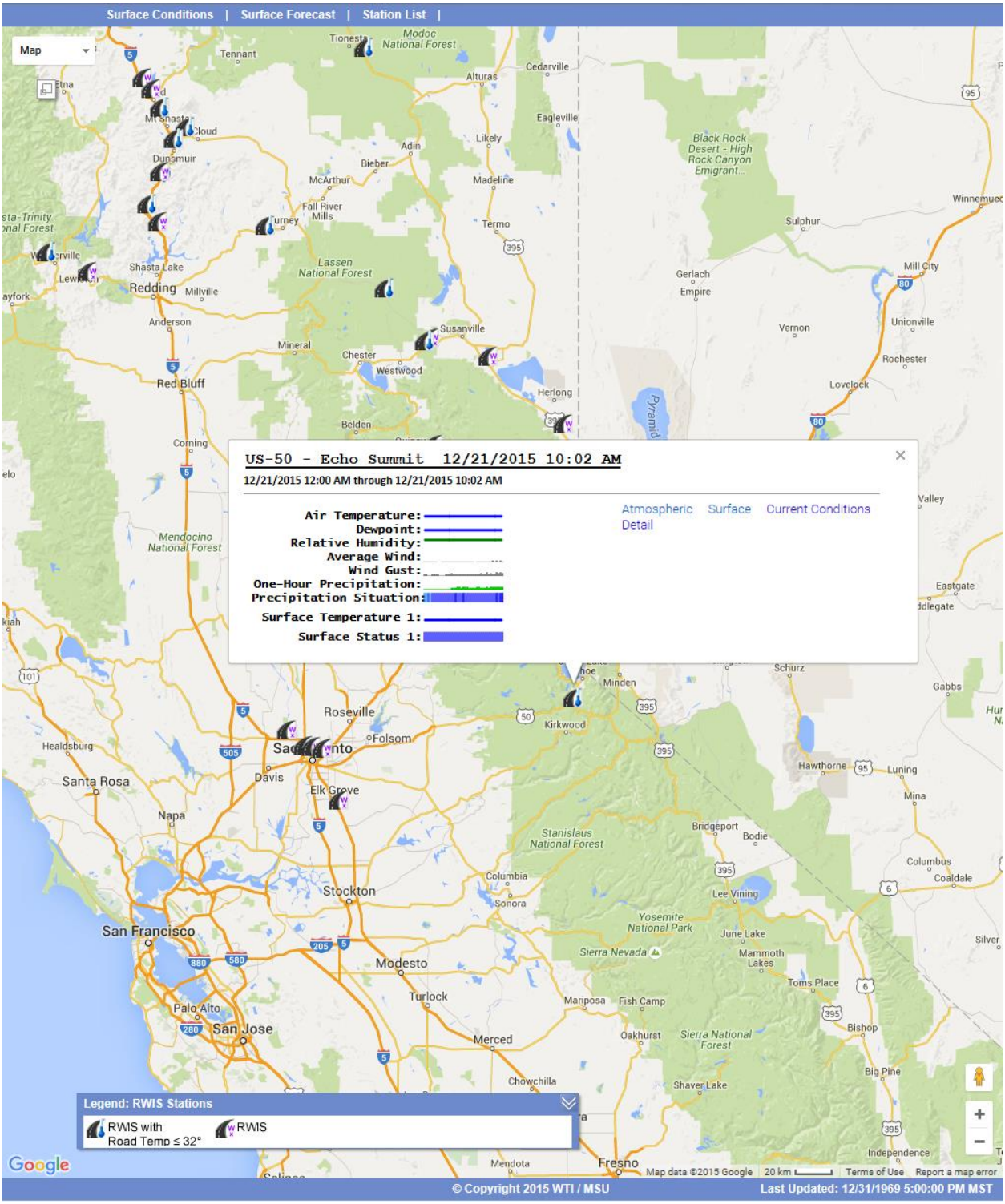


Figure 62: District 3 Echo Summit RWIS Graphical Summary from Map Display

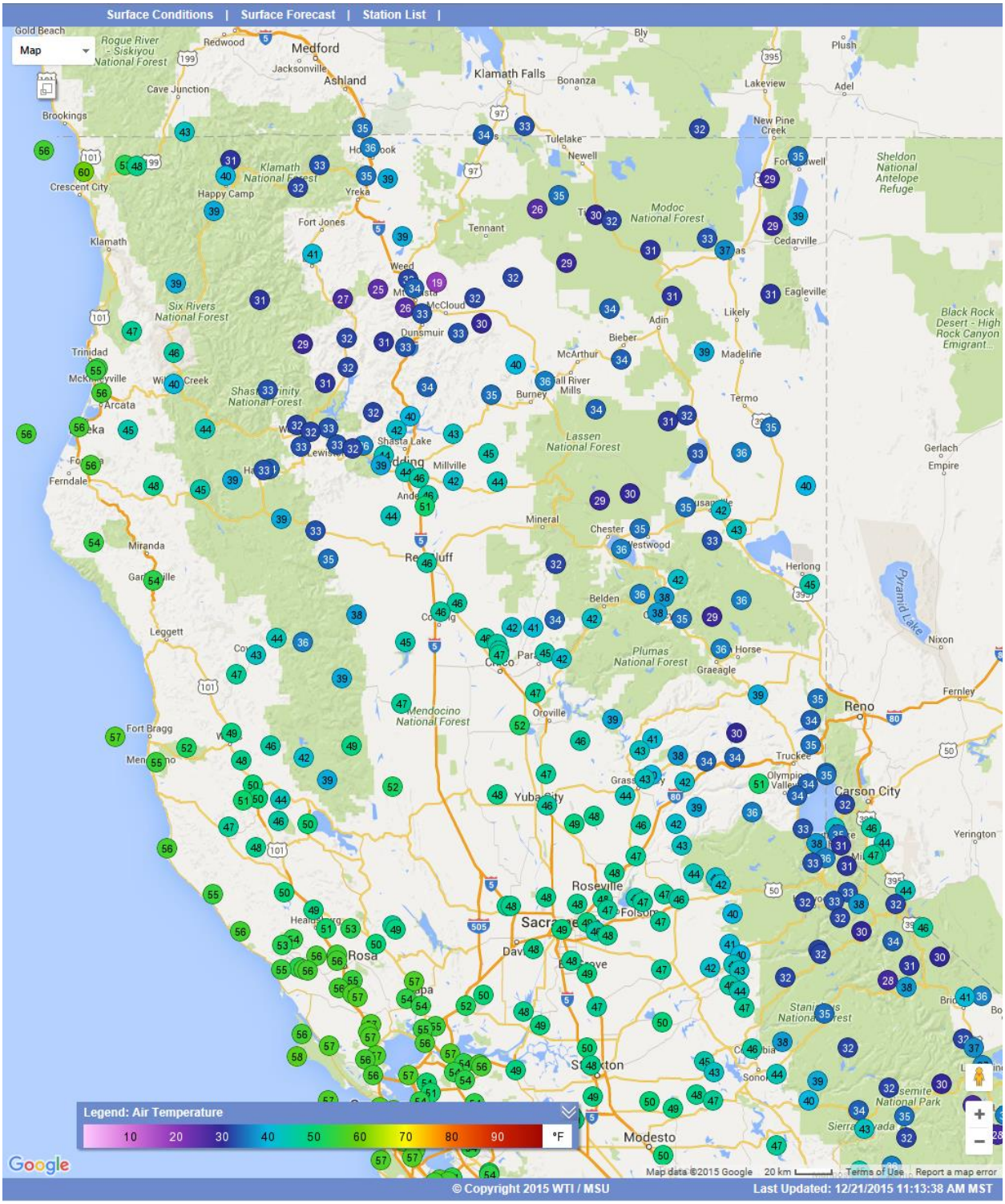


Figure 63: Current Conditions Temperature Map Display (includes non-RWIS sites)

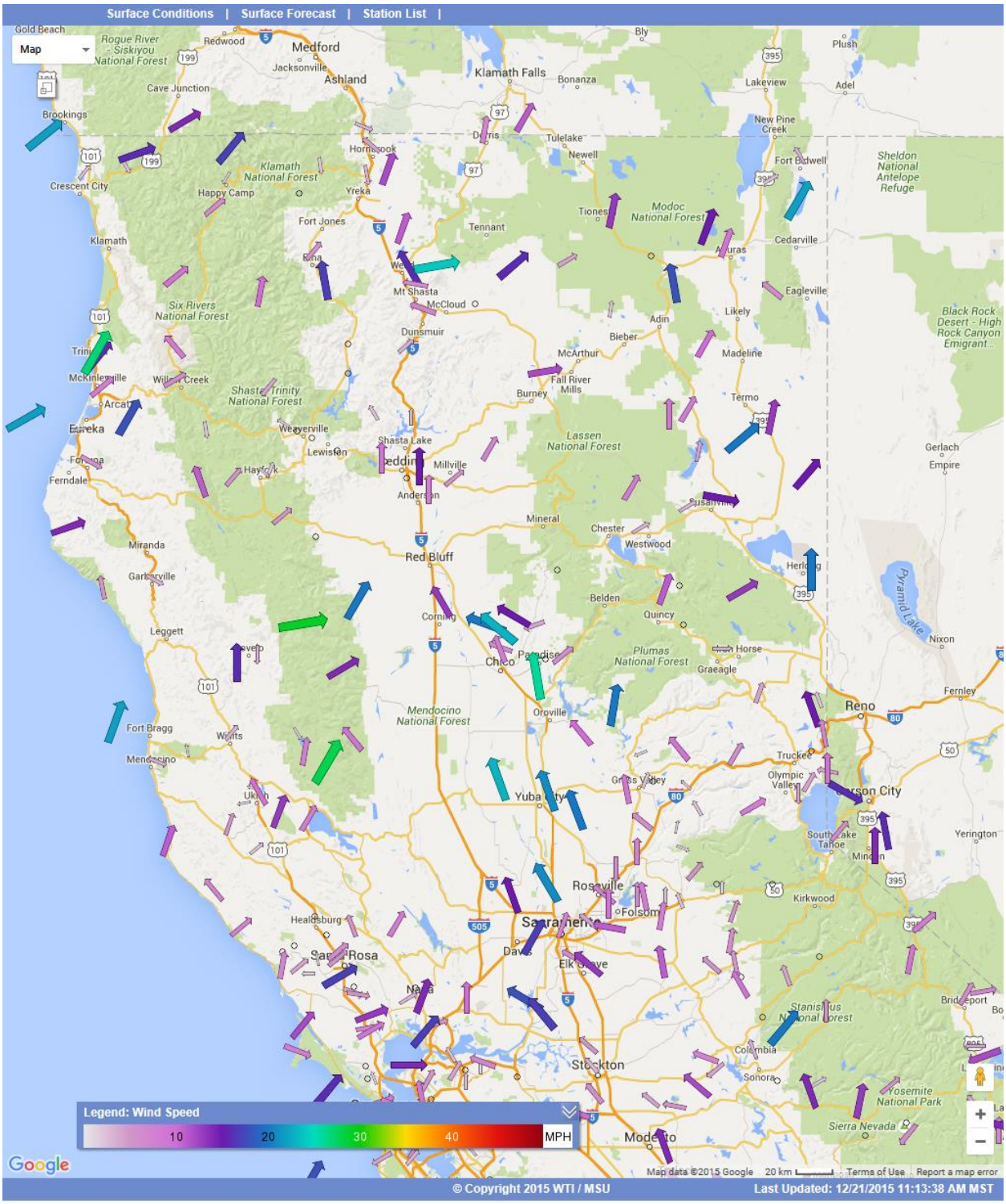


Figure 64: Current Conditions Temperature Map Display (includes non-RWIS sites)

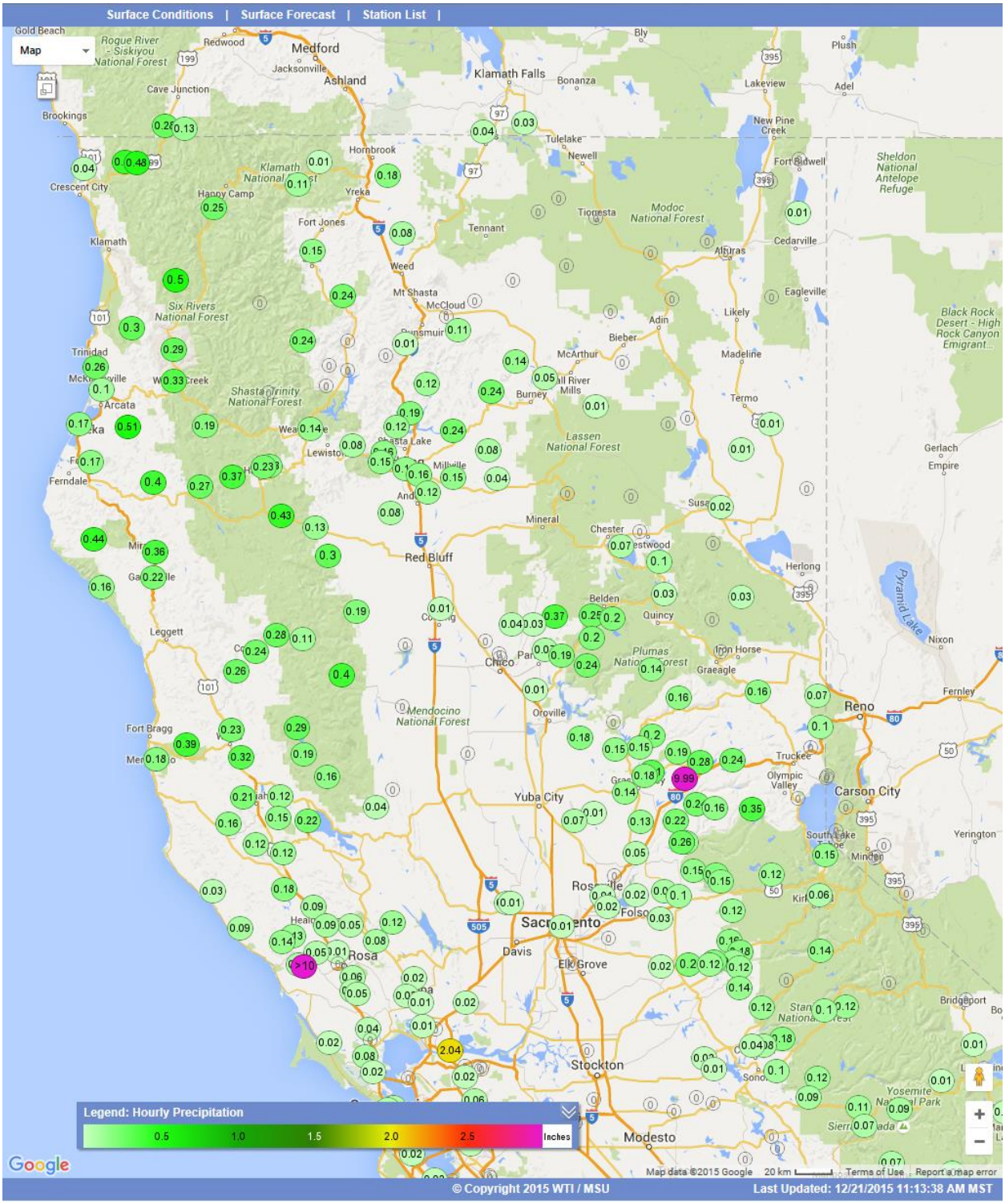


Figure 65: Current Conditions Temperature Map Display (includes non-RWIS sites)

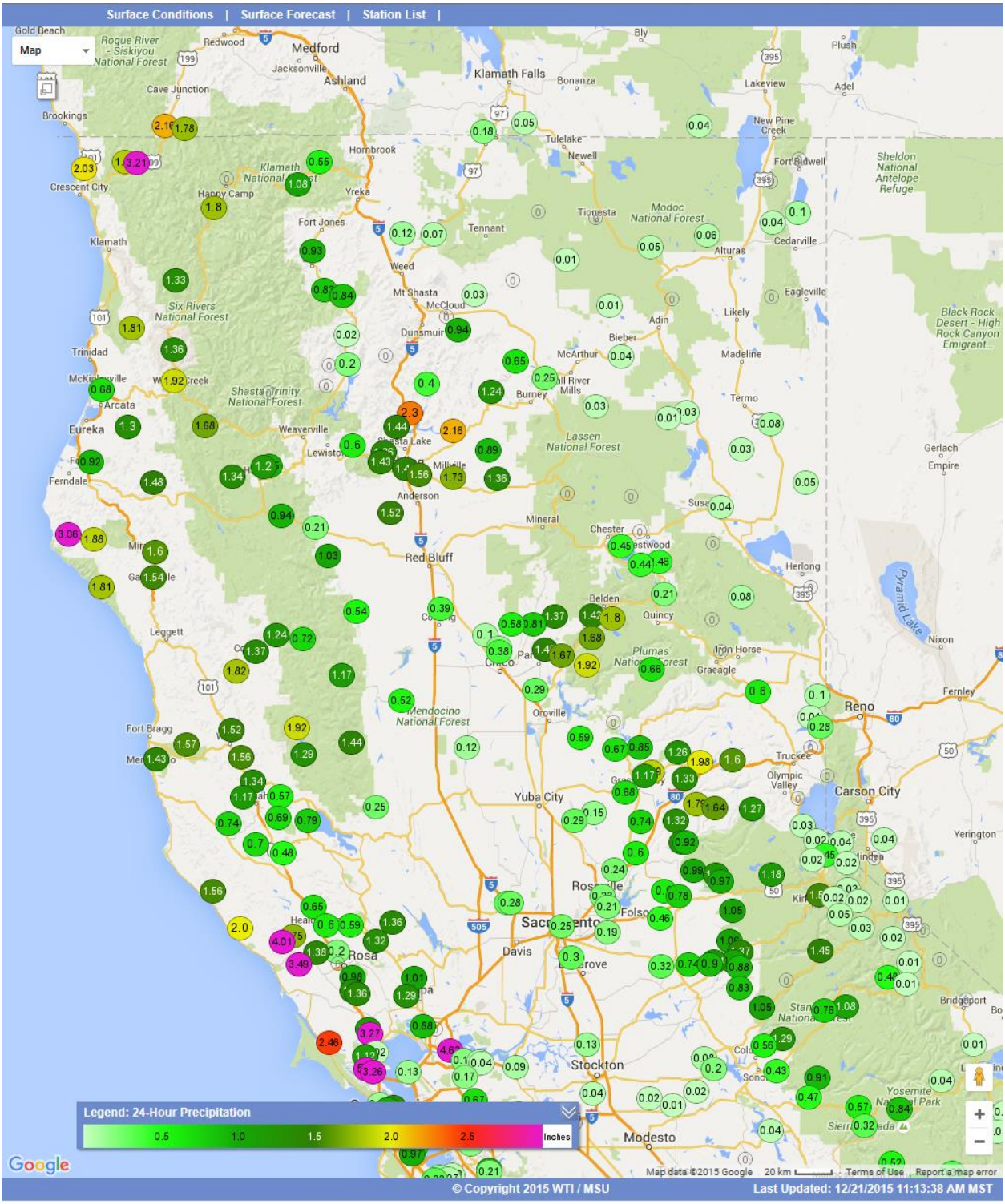


Figure 66: Current Conditions Temperature Map Display (includes non-RWIS sites)

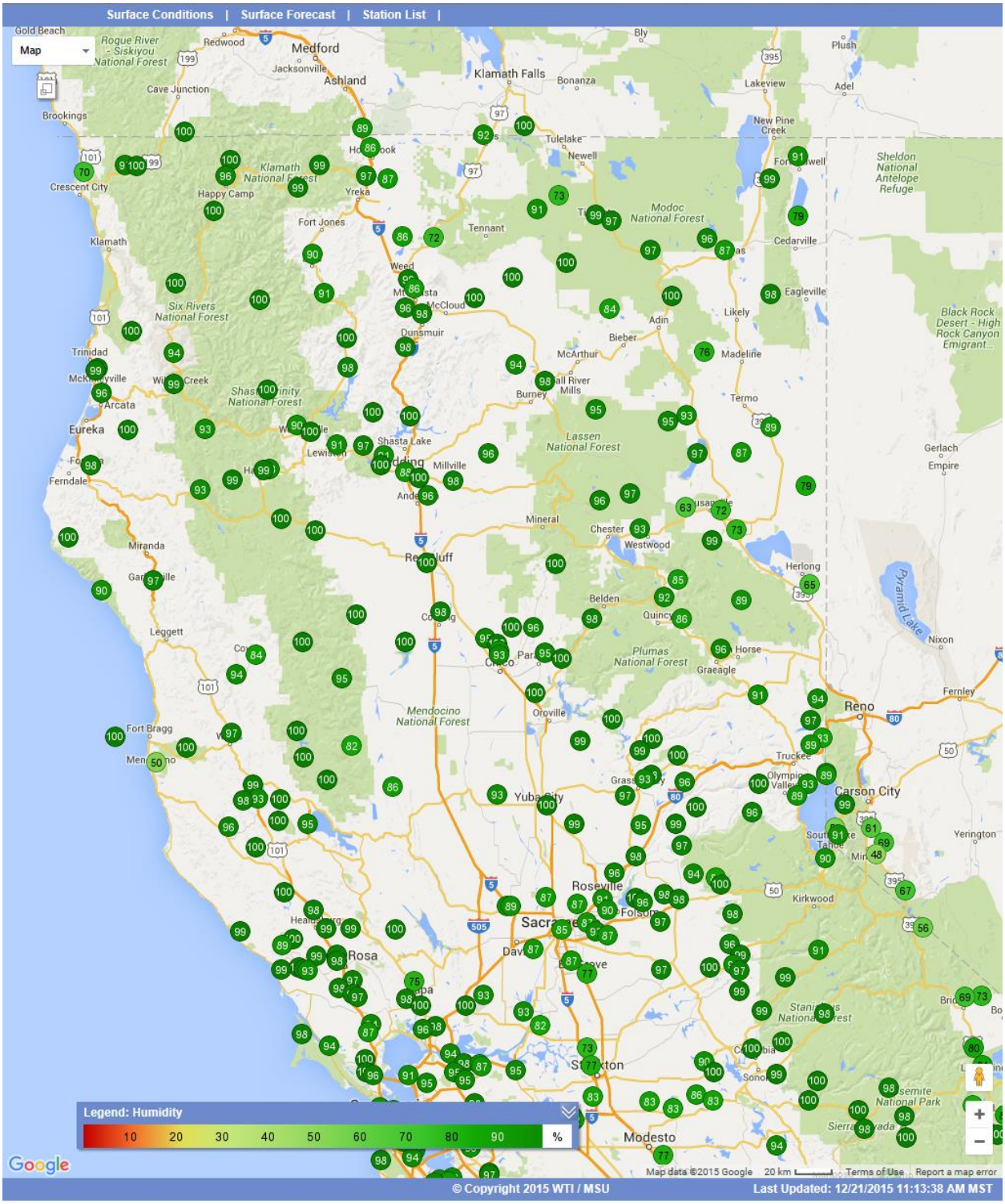


Figure 67: Current Conditions Humidity Map Display (includes non-RWIS sites)

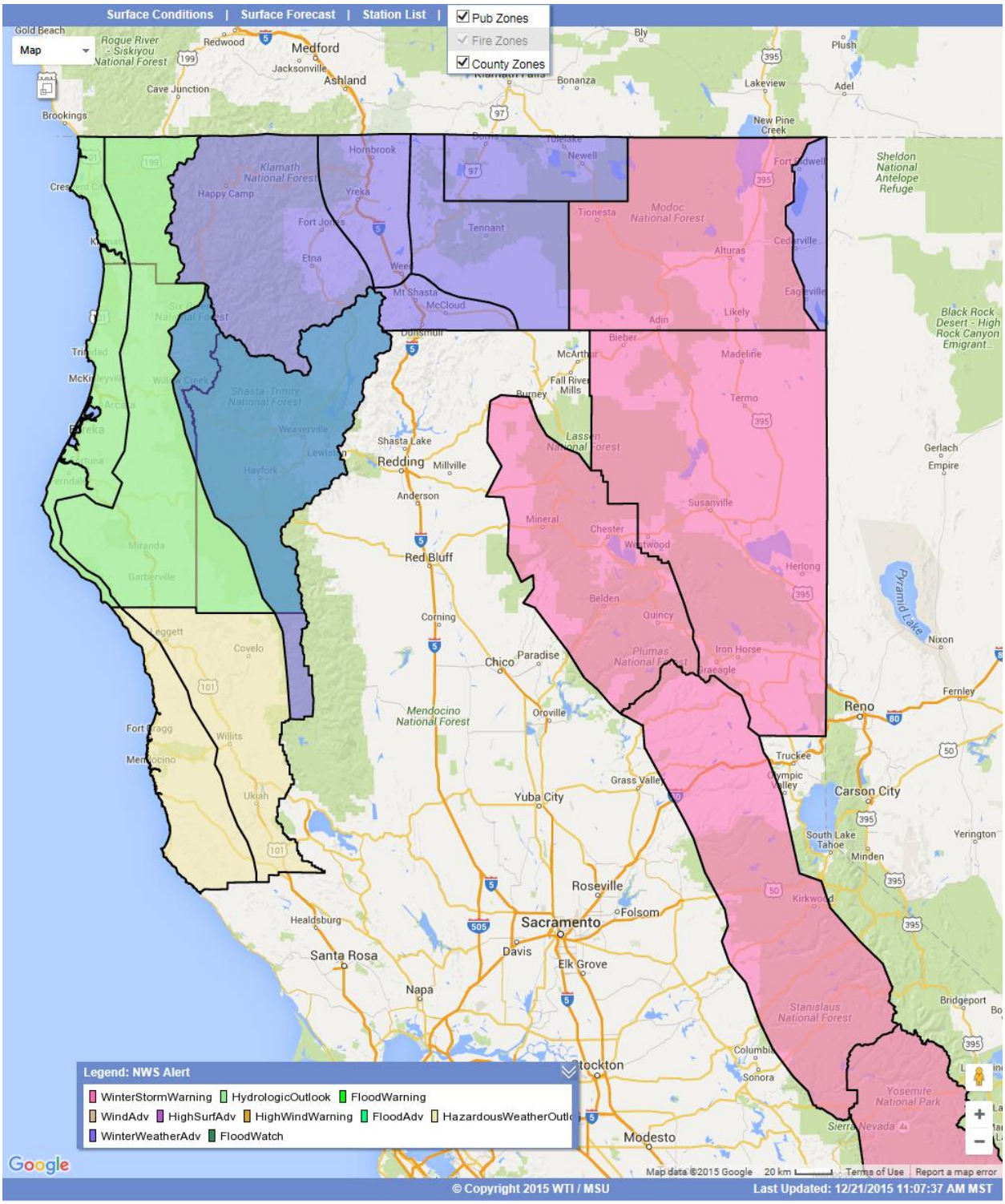


Figure 68: NWS Alerts Map Display

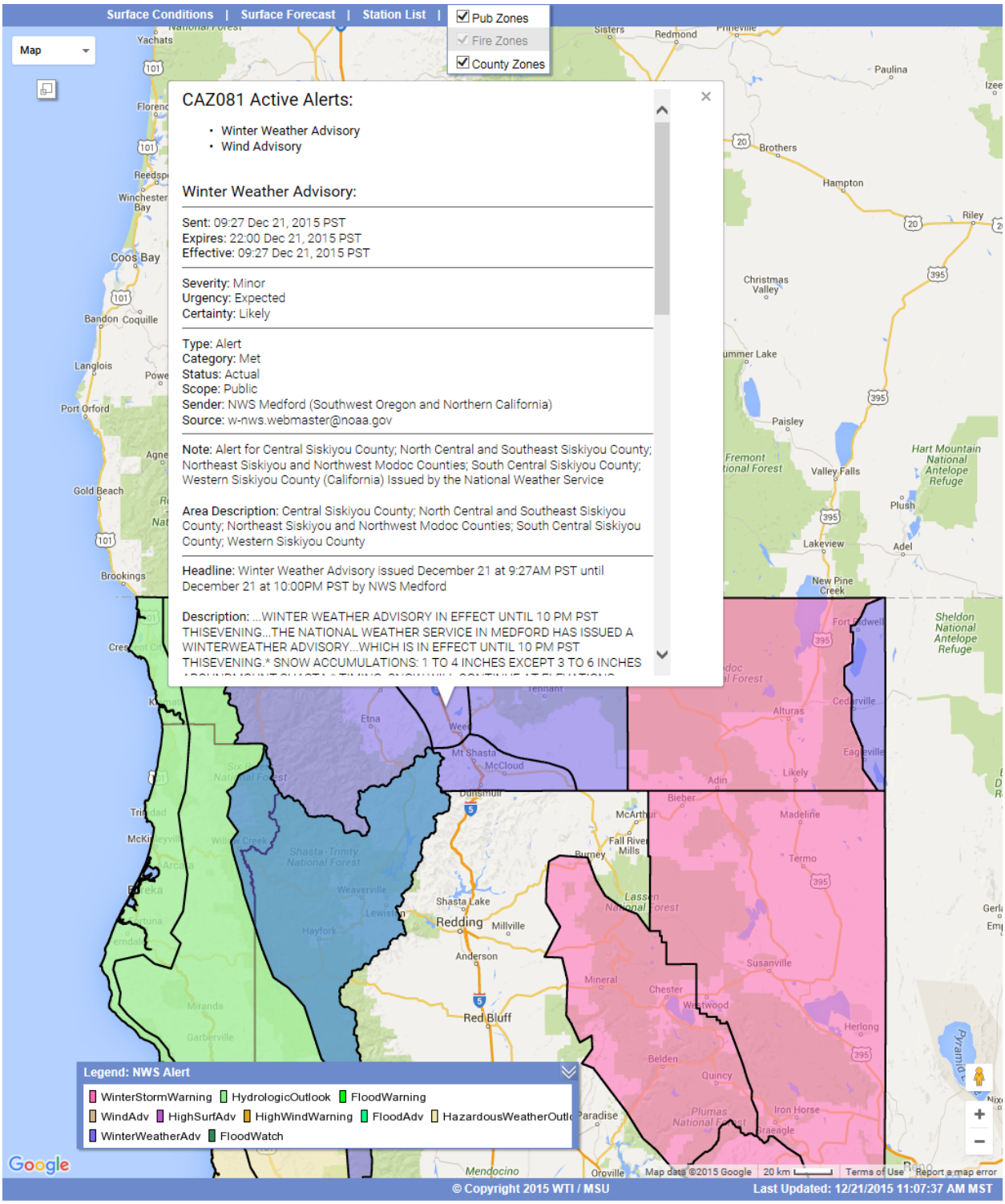


Figure 69: Winter Weather Advisory Detail from Map Display

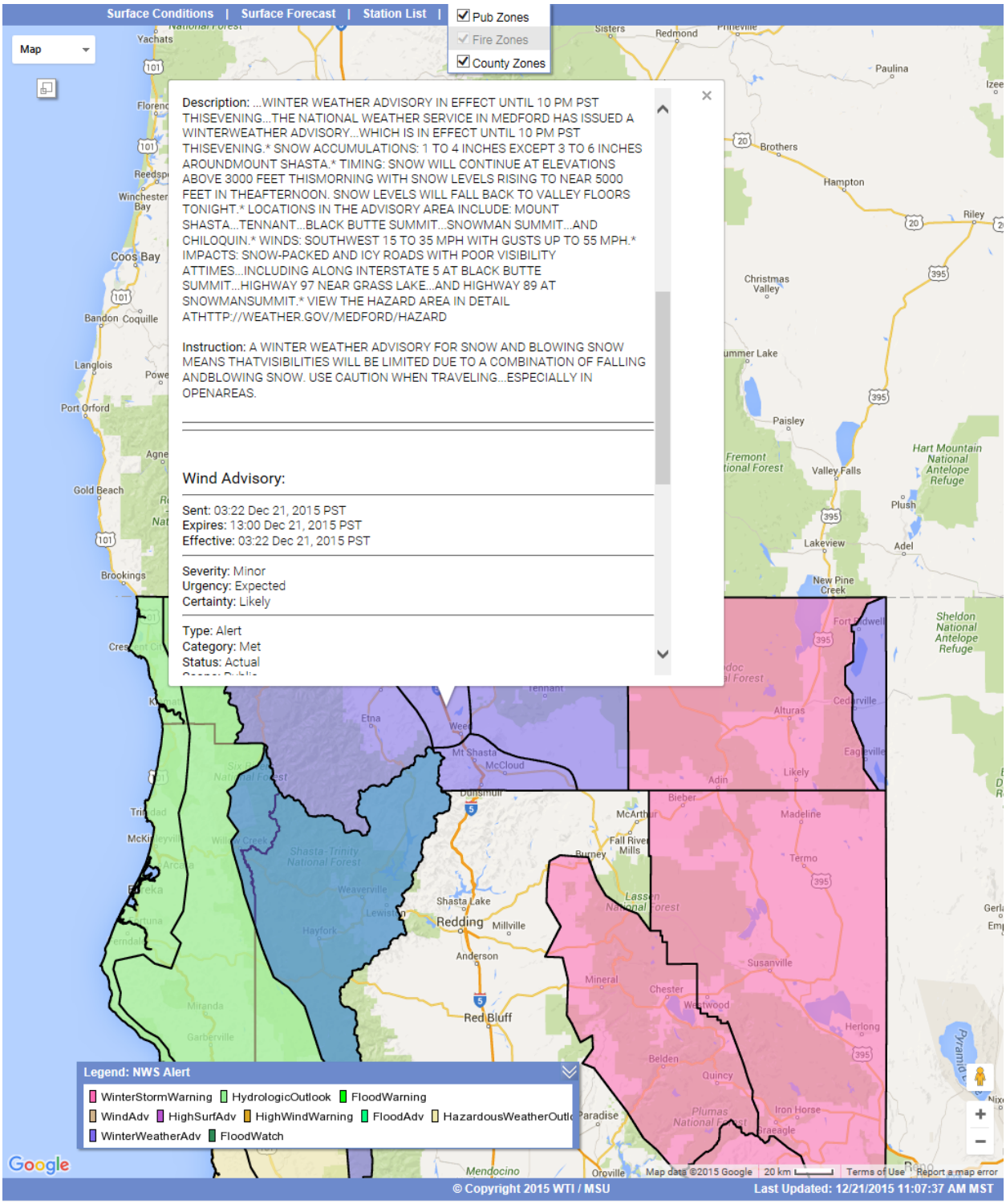


Figure 70: Winter Weather Advisory and Wind Advisory Detail from Map Display

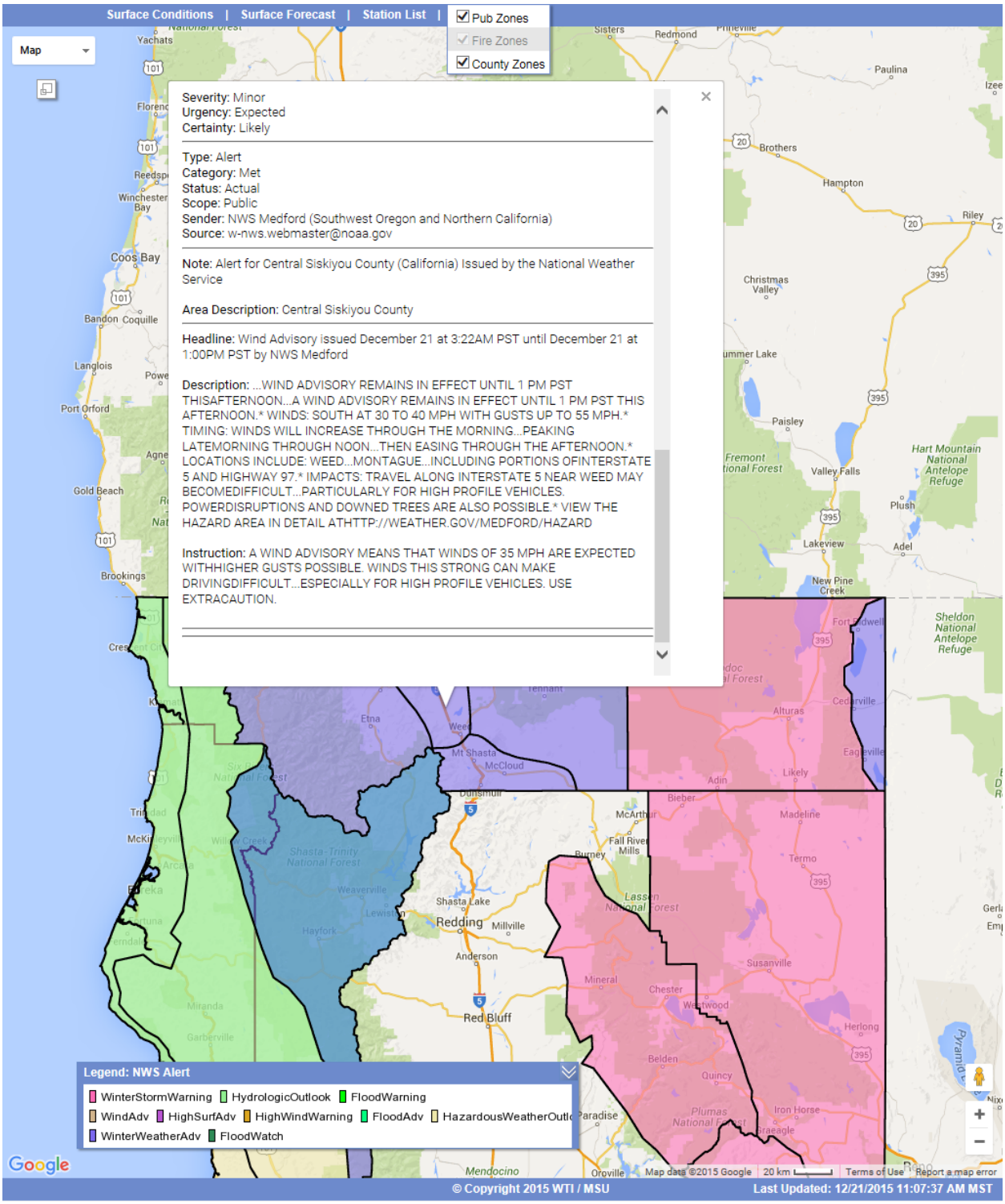


Figure 71: Wind Advisory Detail from Map Display

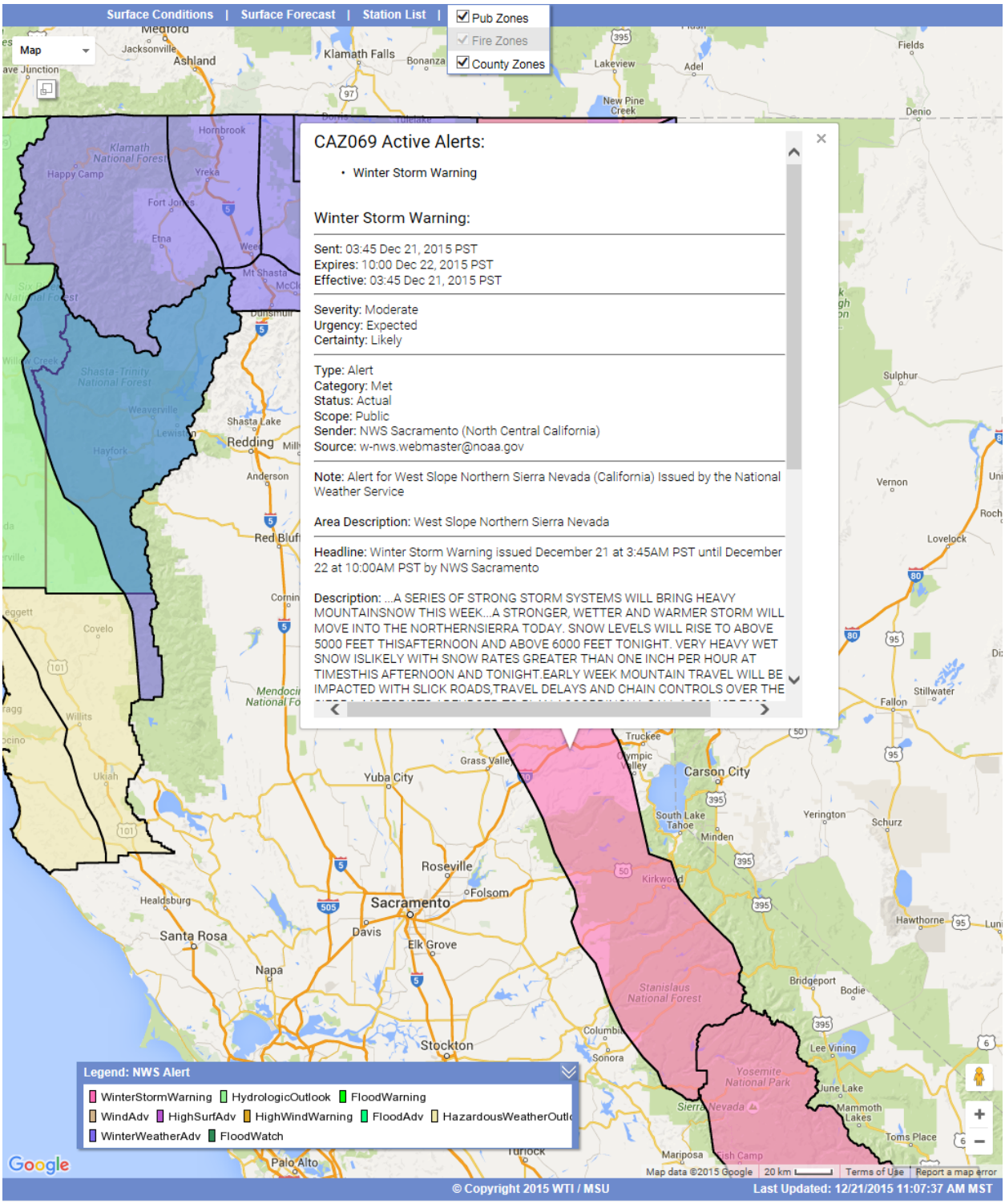


Figure 72: Winter Storm Warning Detail from Map Display

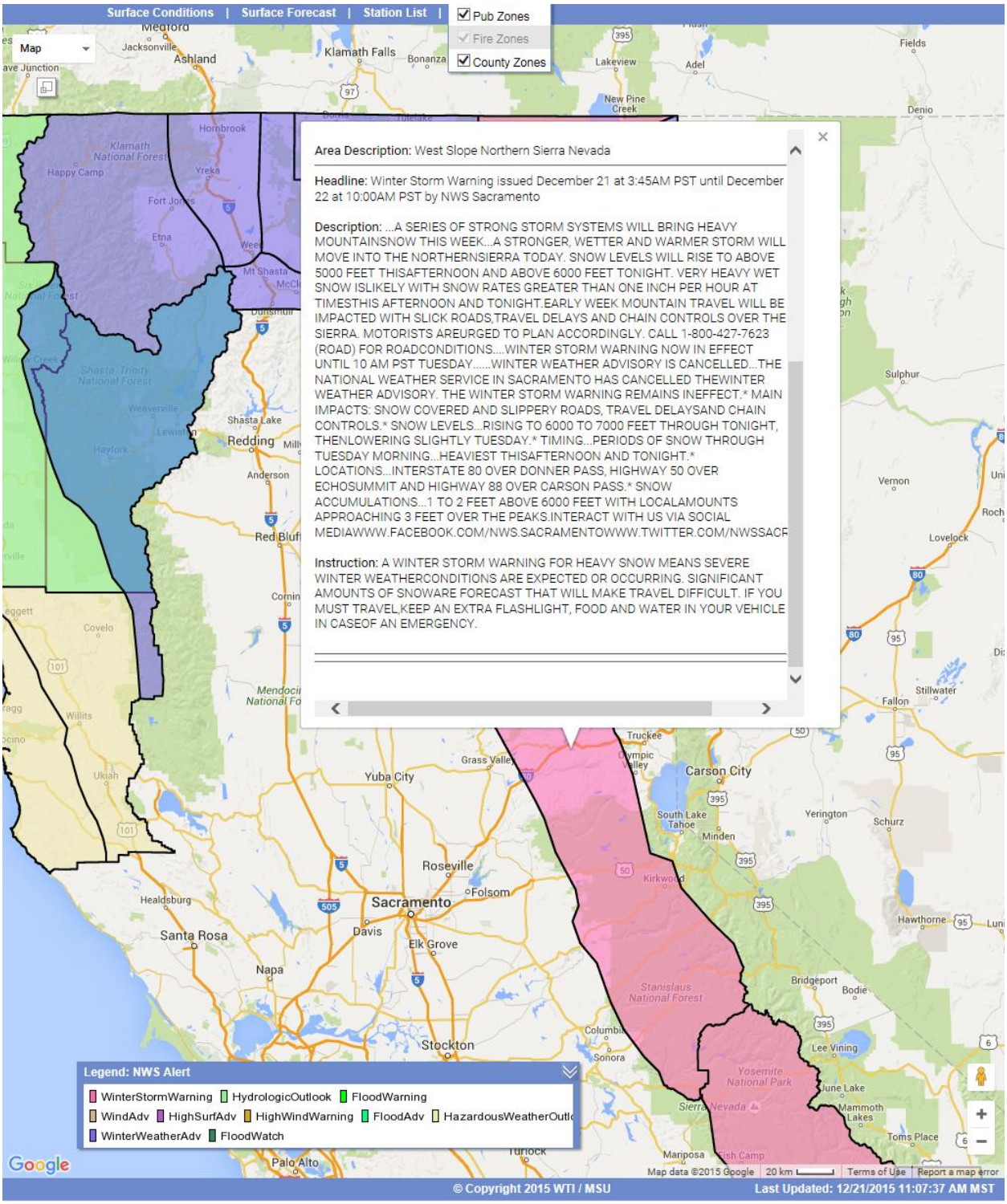


Figure 73: Winter Storm Warning Detail from Map Display

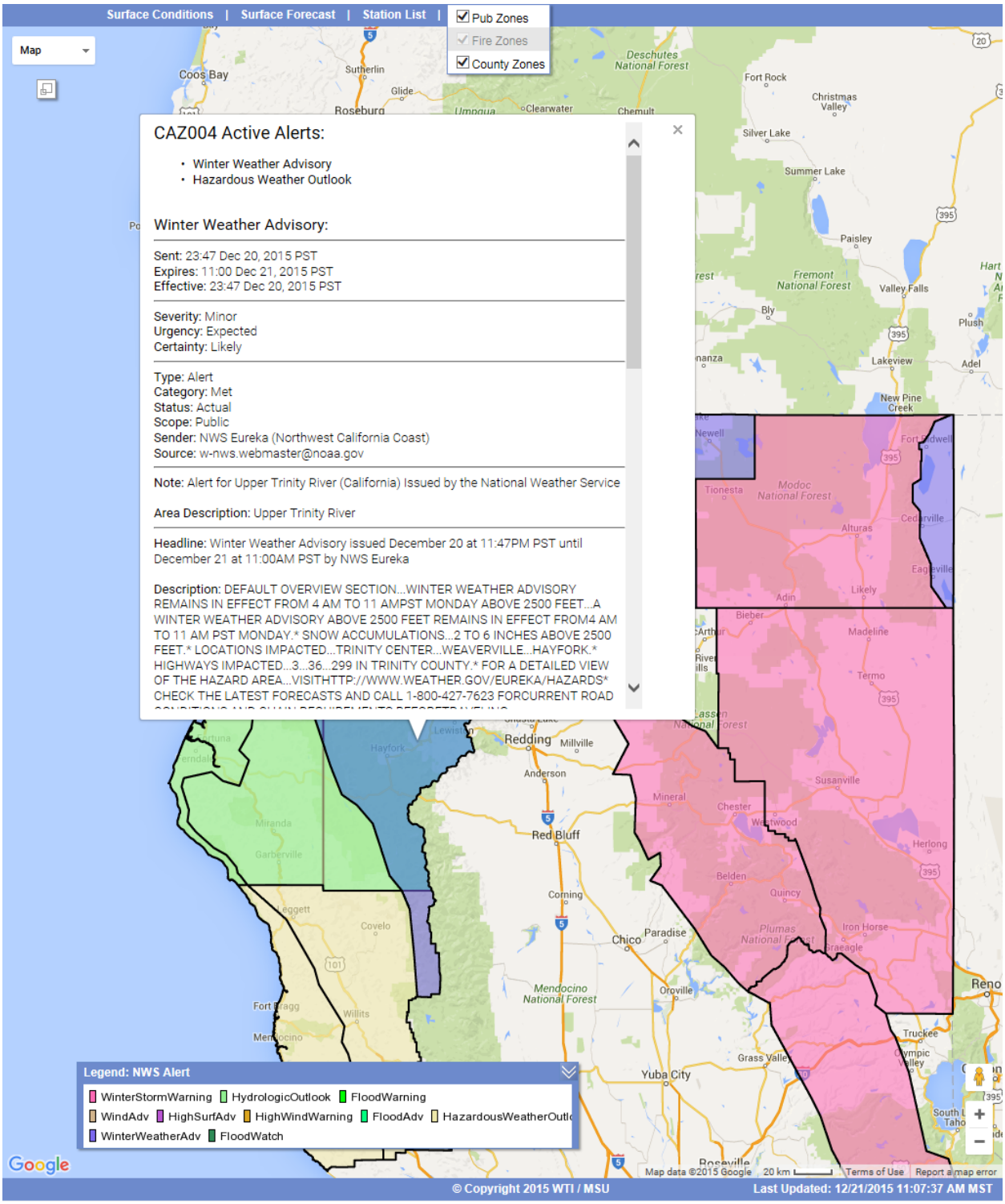


Figure 74: Winter Weather Advisory Detail from Map Display

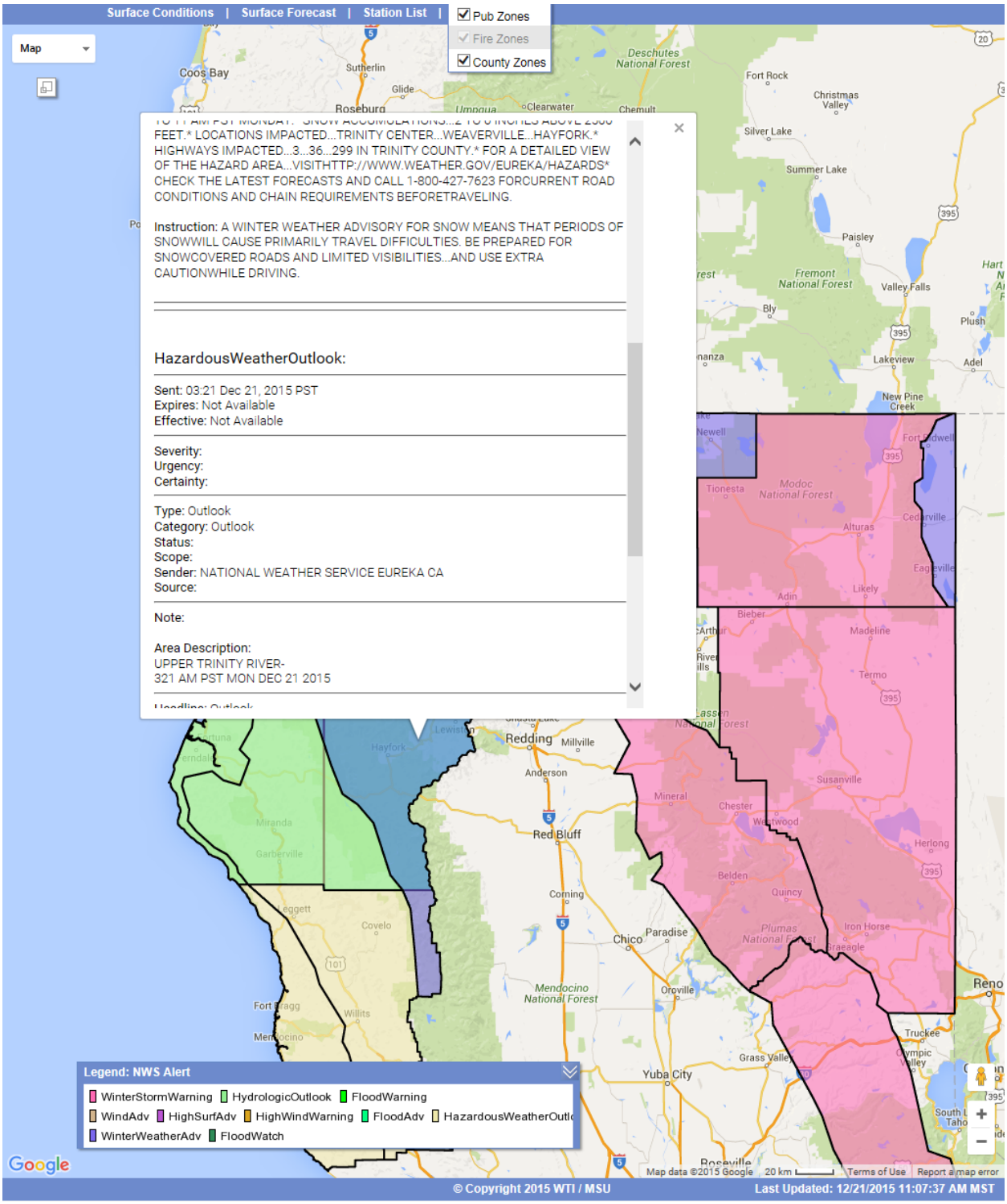


Figure 75: Winter Weather Advisory and Hazardous Weather Outlook Detail from Map Display

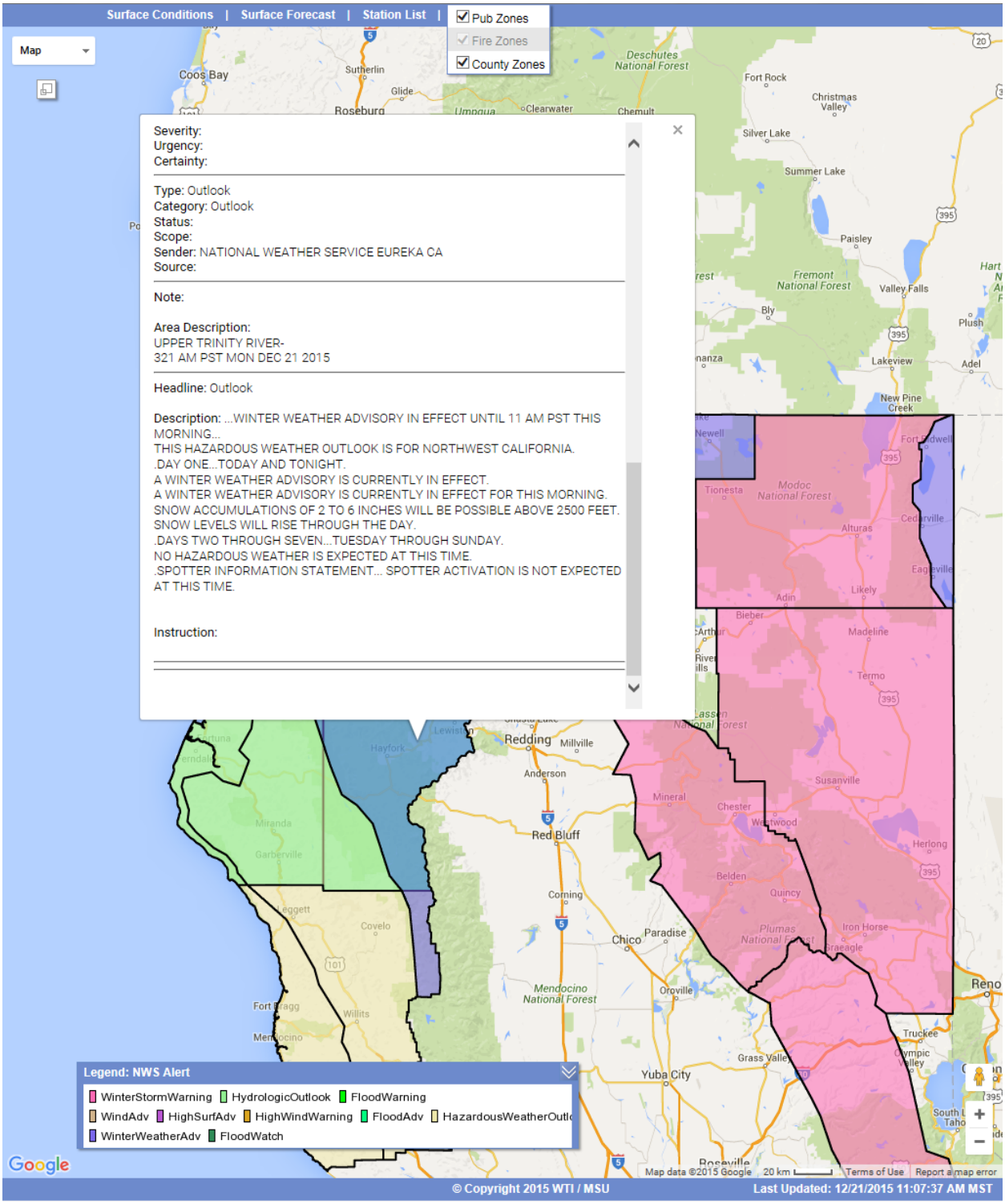


Figure 76: Hazardous Weather Outlook Detail from Map Display

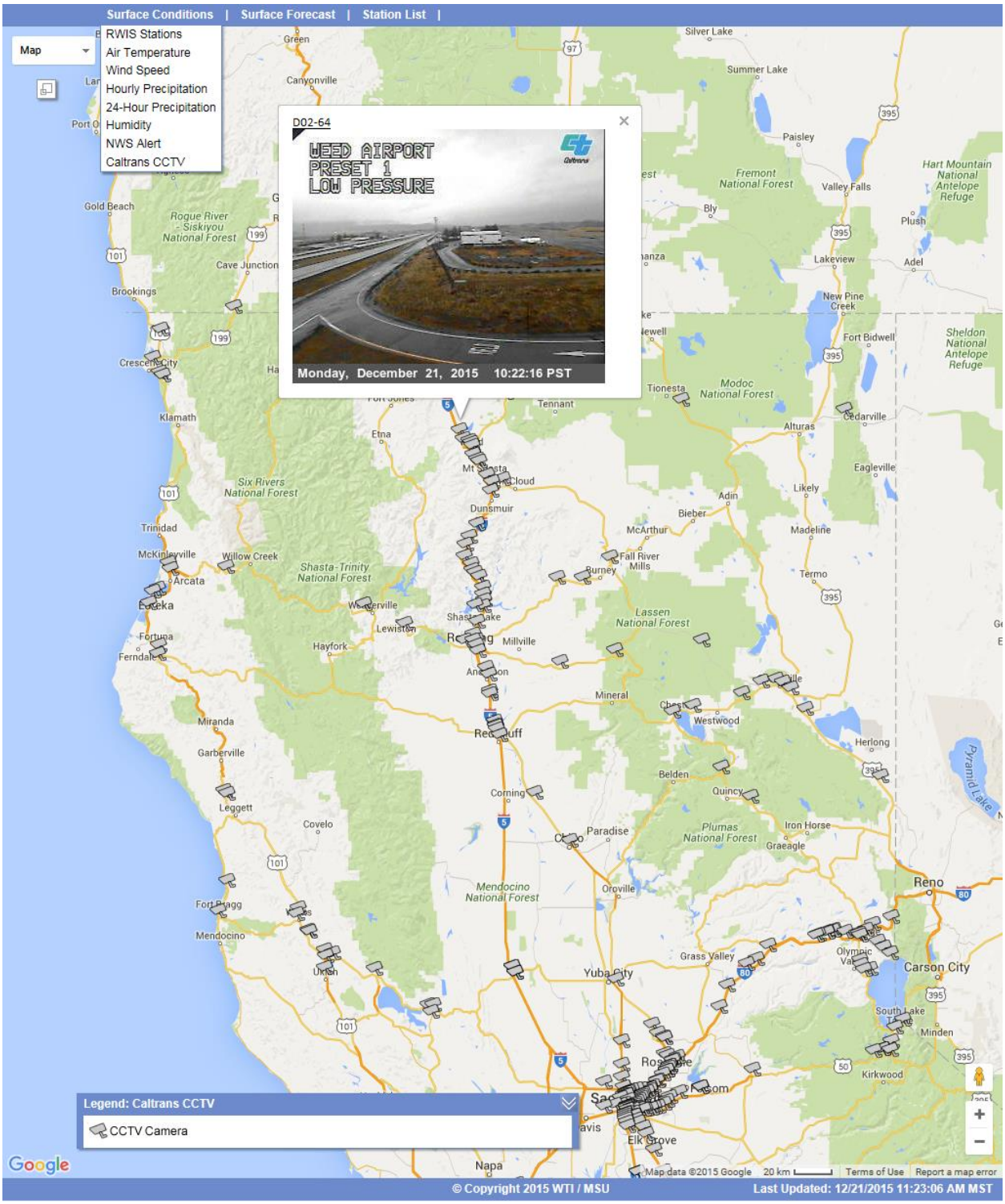


Figure 77: District 2 Weed Airport CCTV Image from Map Display

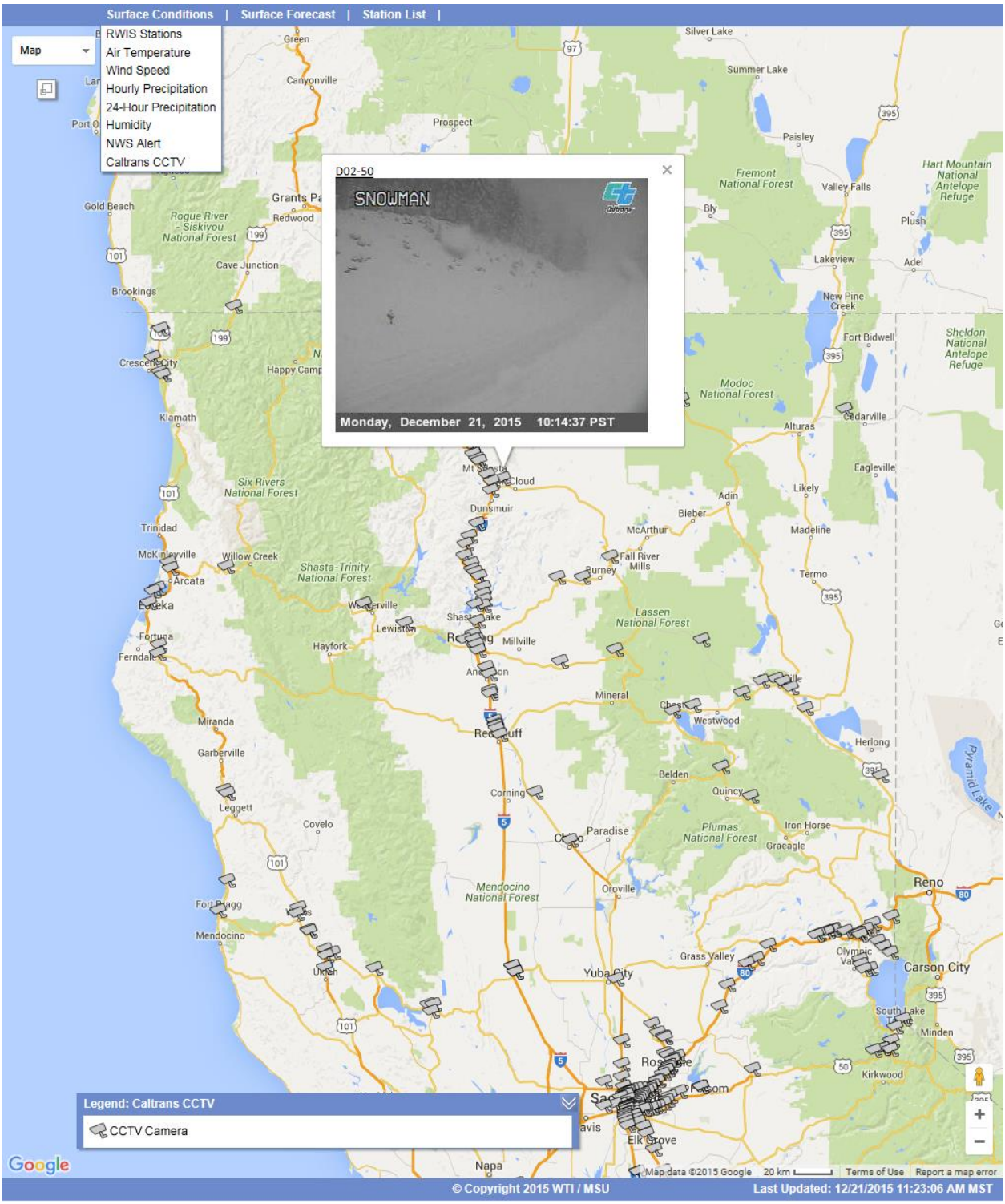


Figure 78: District 2 Snowman Summit CCTV Image from Map Display

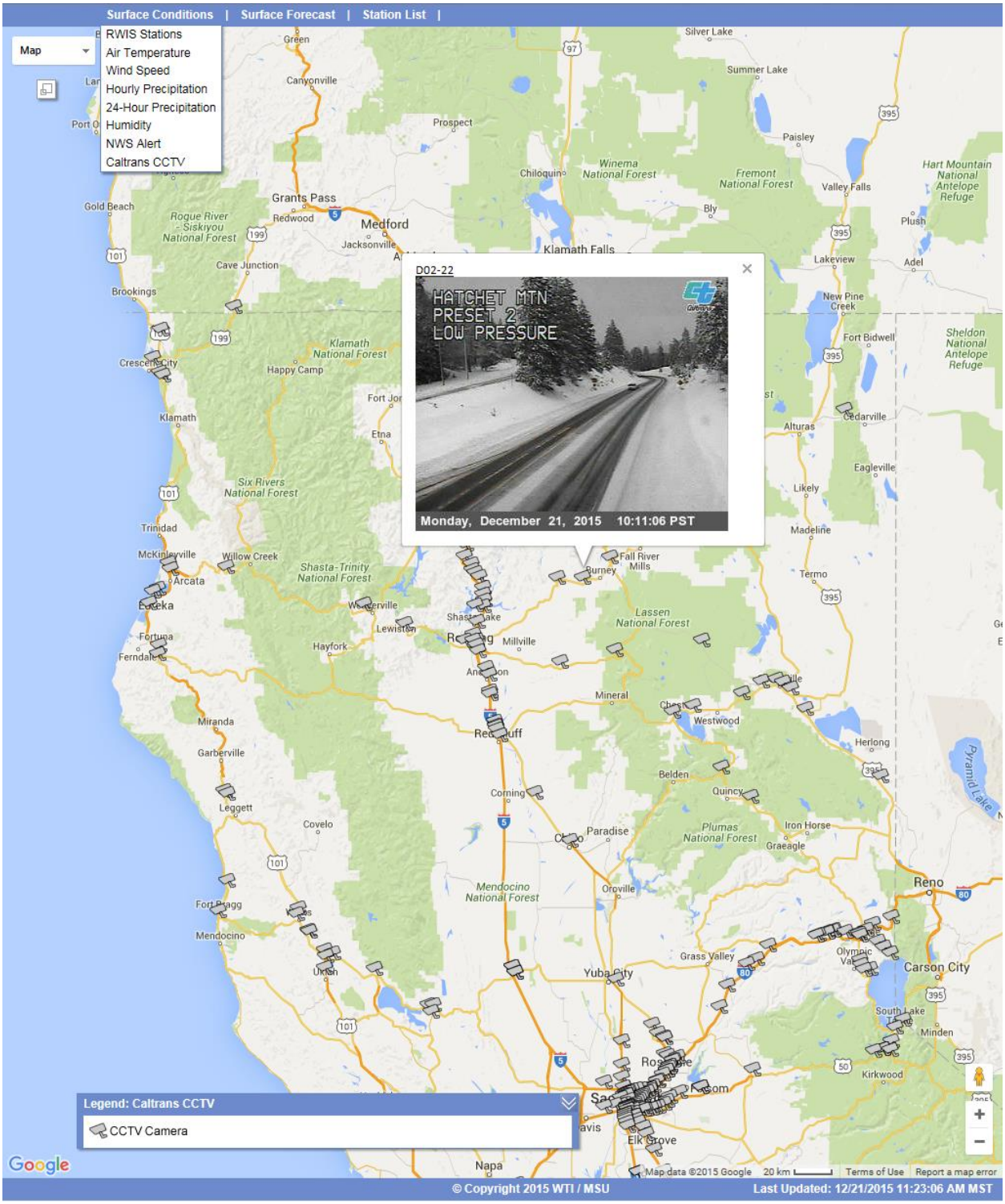


Figure 79: District 2 Hatchet Mountain CCTV Image from Map Display

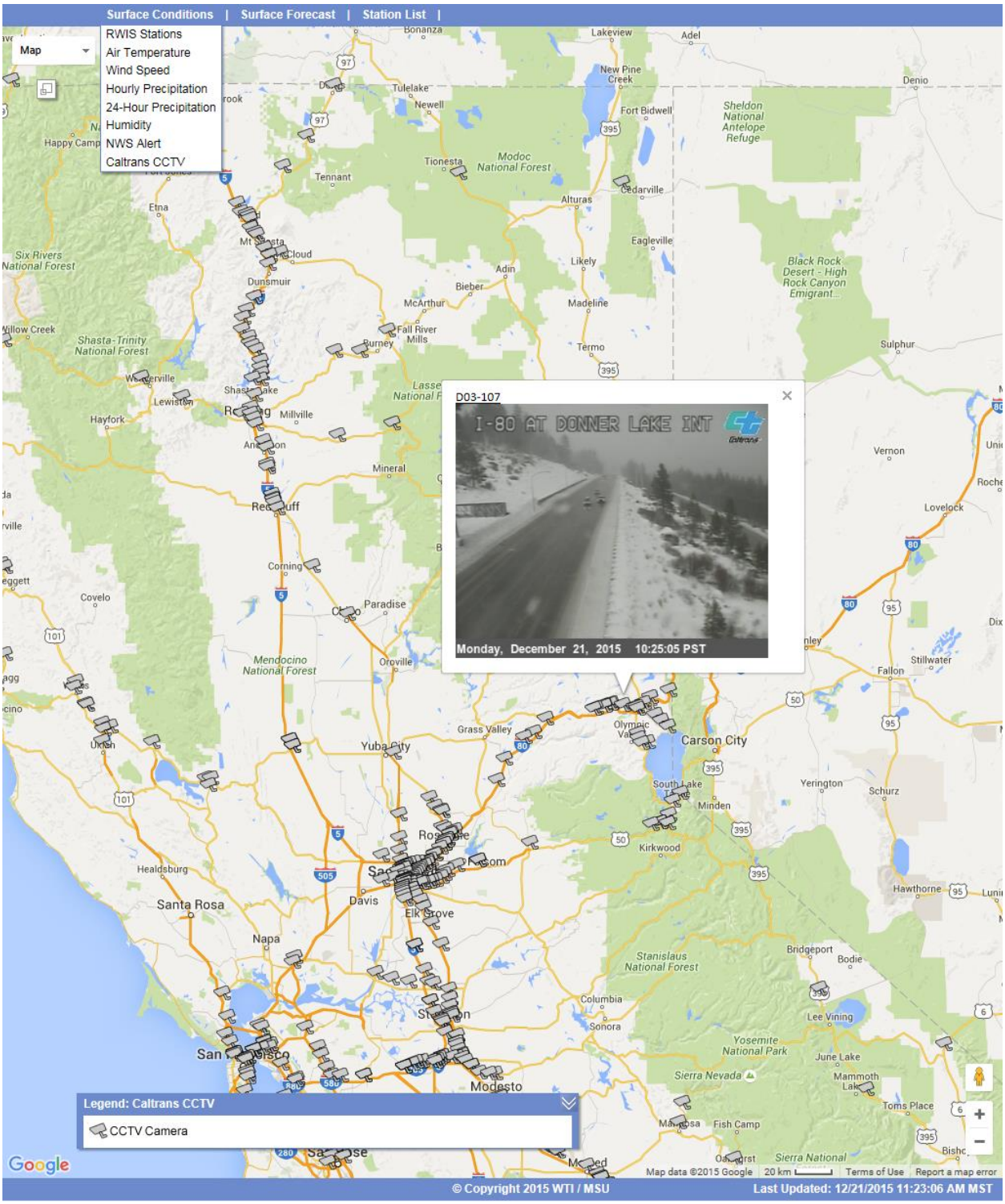


Figure 80: District 3 Donner Lake CCTV Image from Map Display

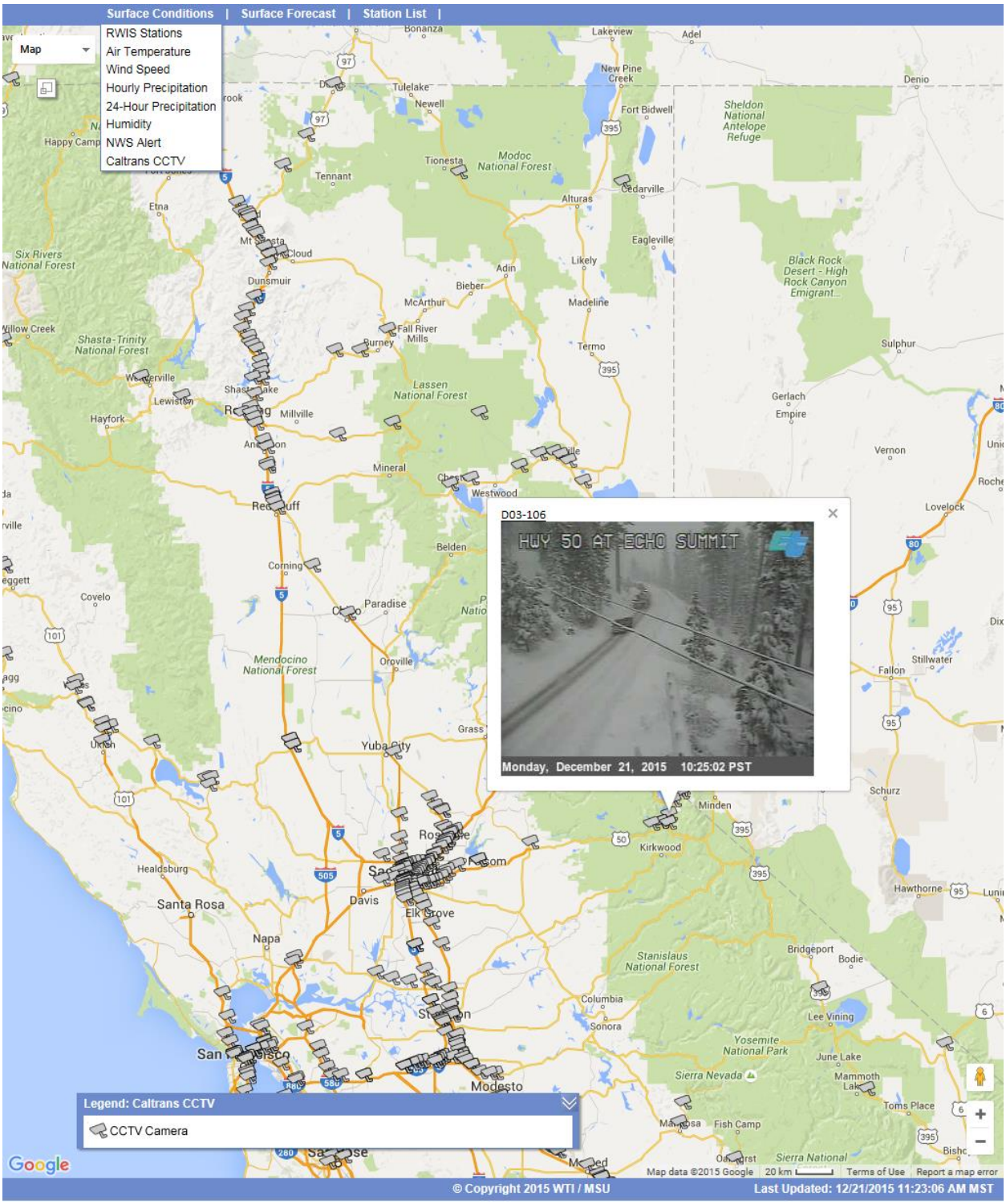


Figure 81: District 3 Echo Summit CCTV Image from Map Display

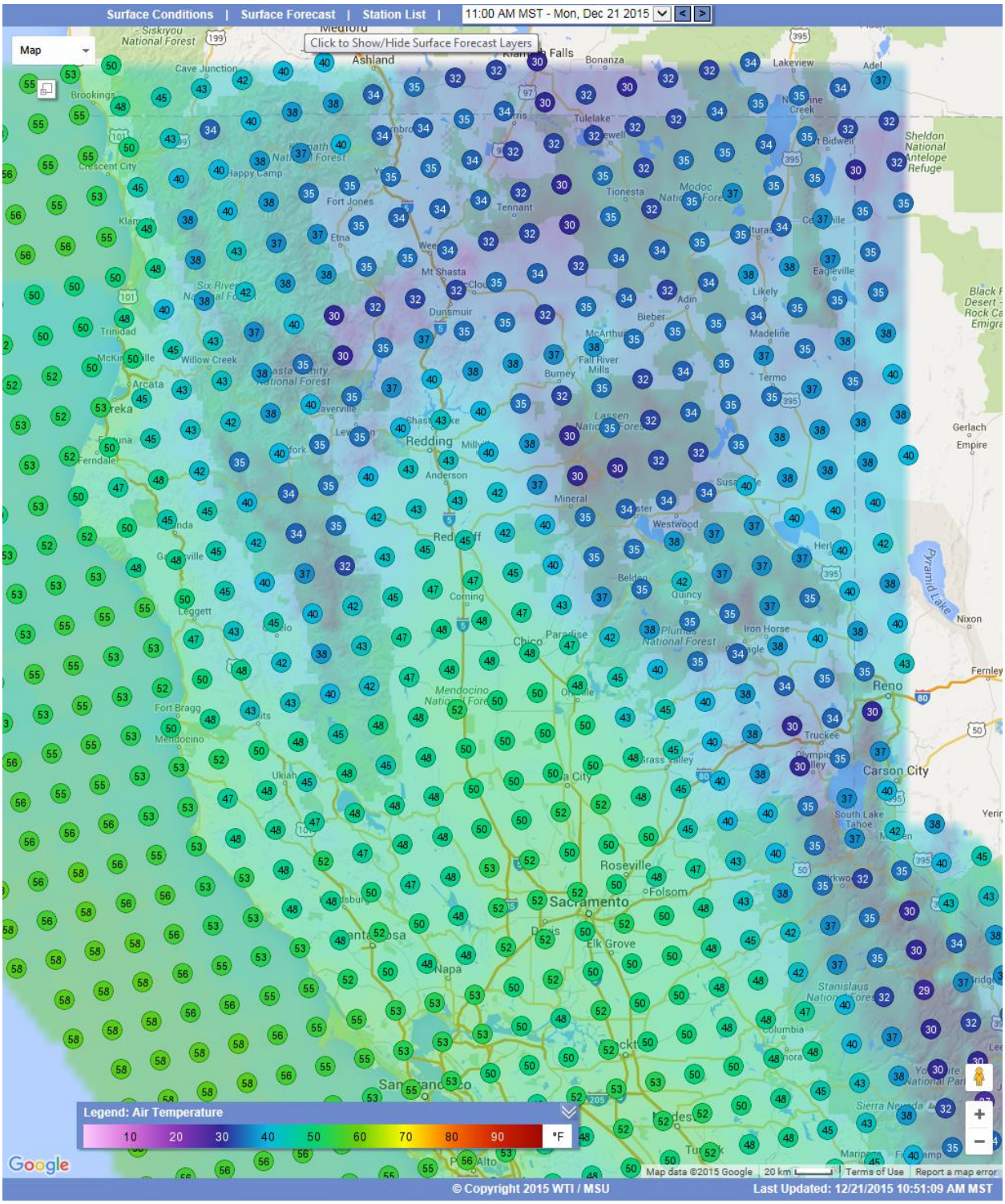


Figure 82: Air Temperature Forecast Map Display

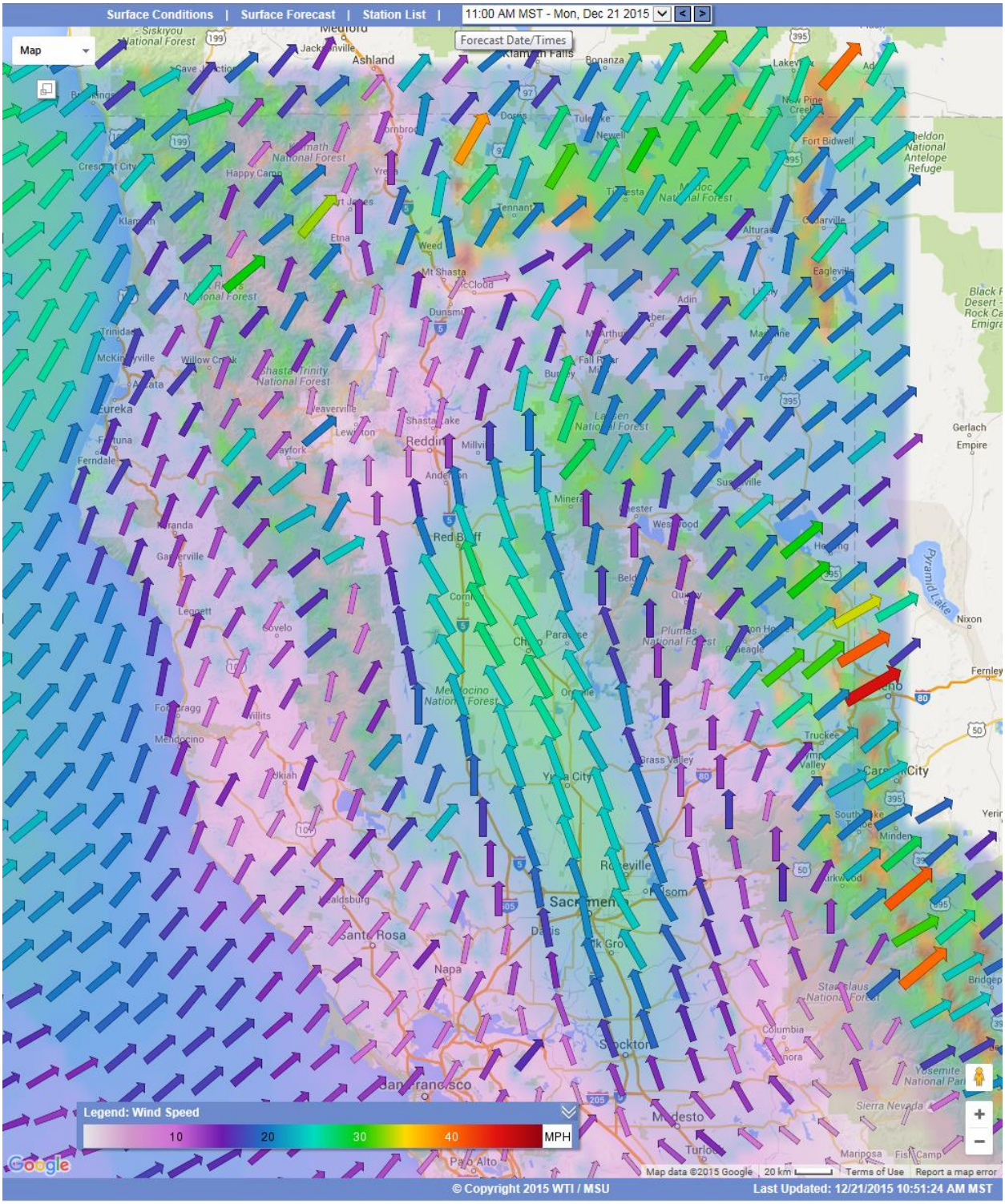


Figure 83: Wind Forecast Map Display

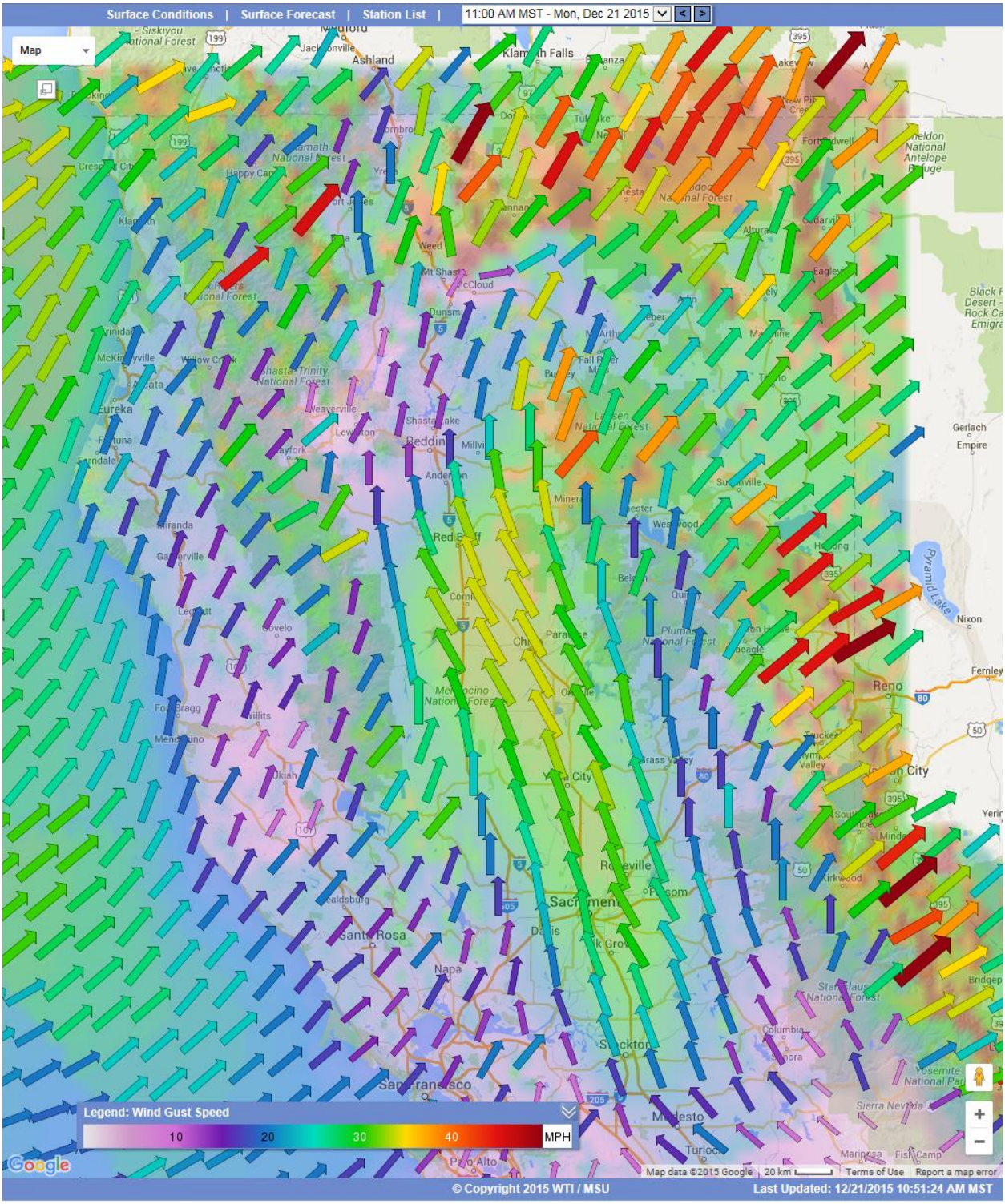


Figure 84: Wind Gust Forecast Map Display

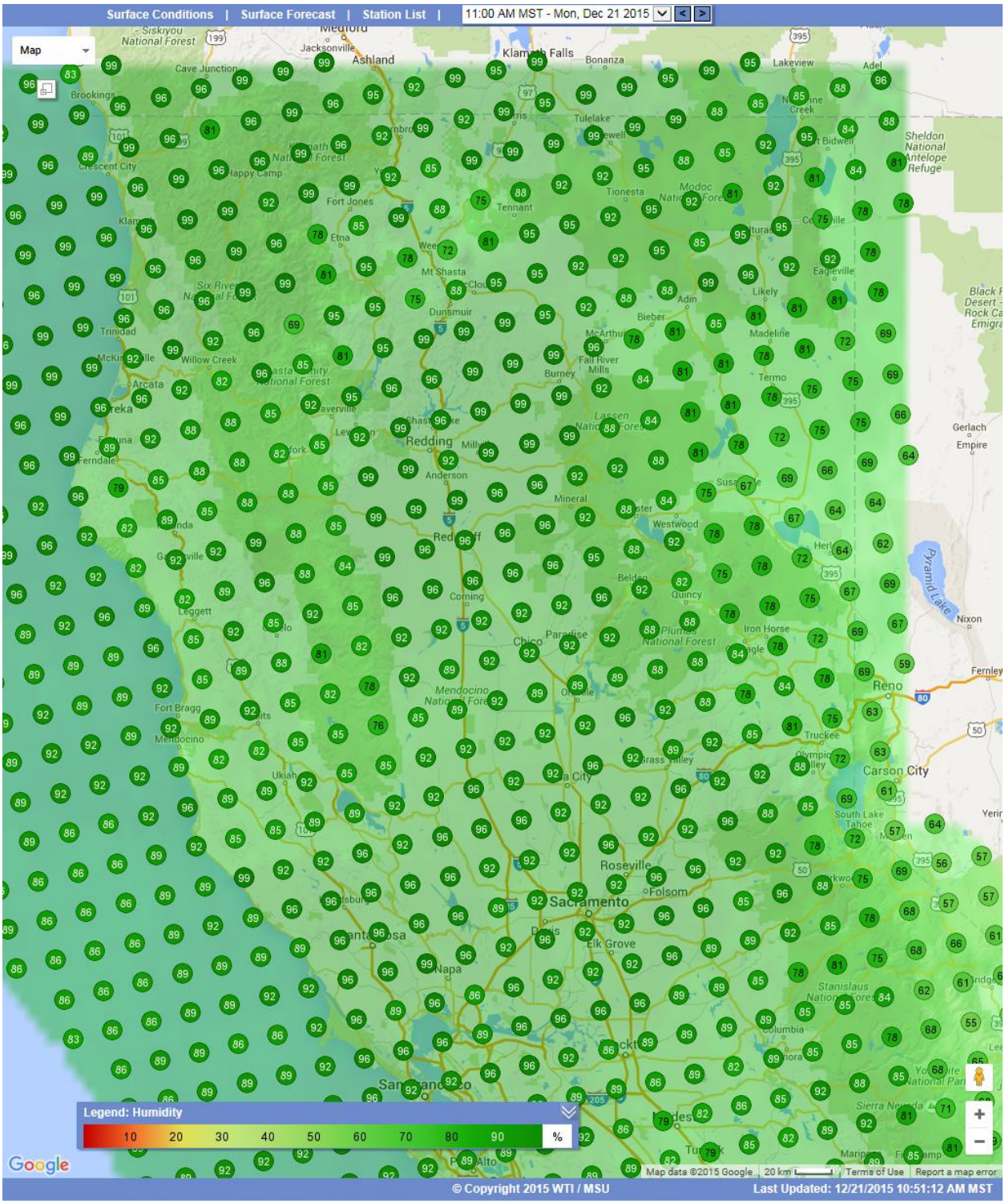


Figure 85: Humidity Forecast Map Display

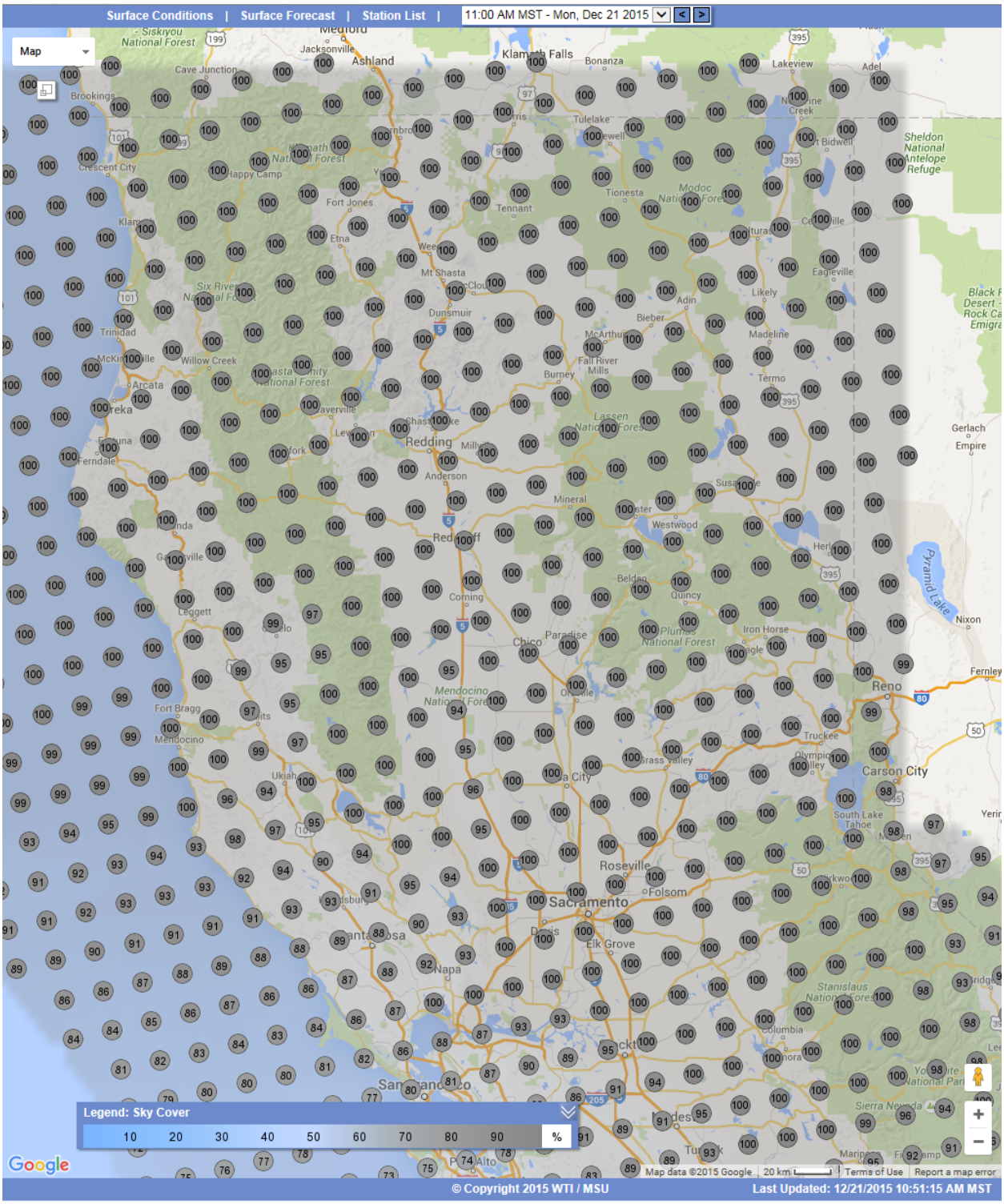


Figure 86: Sky Cover Forecast Map Display

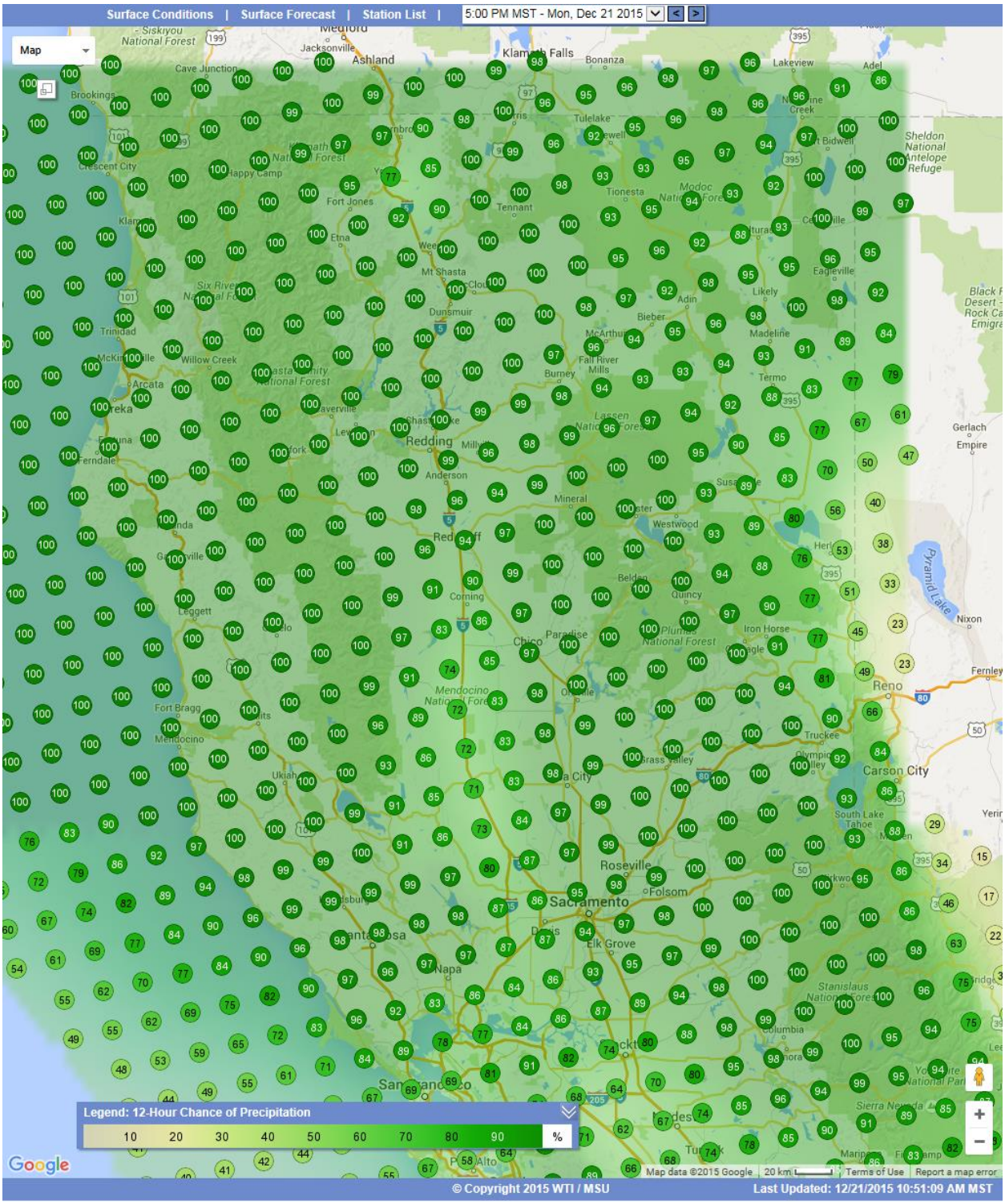


Figure 87: 12-Hour Chance of Precipitation Forecast Map Display

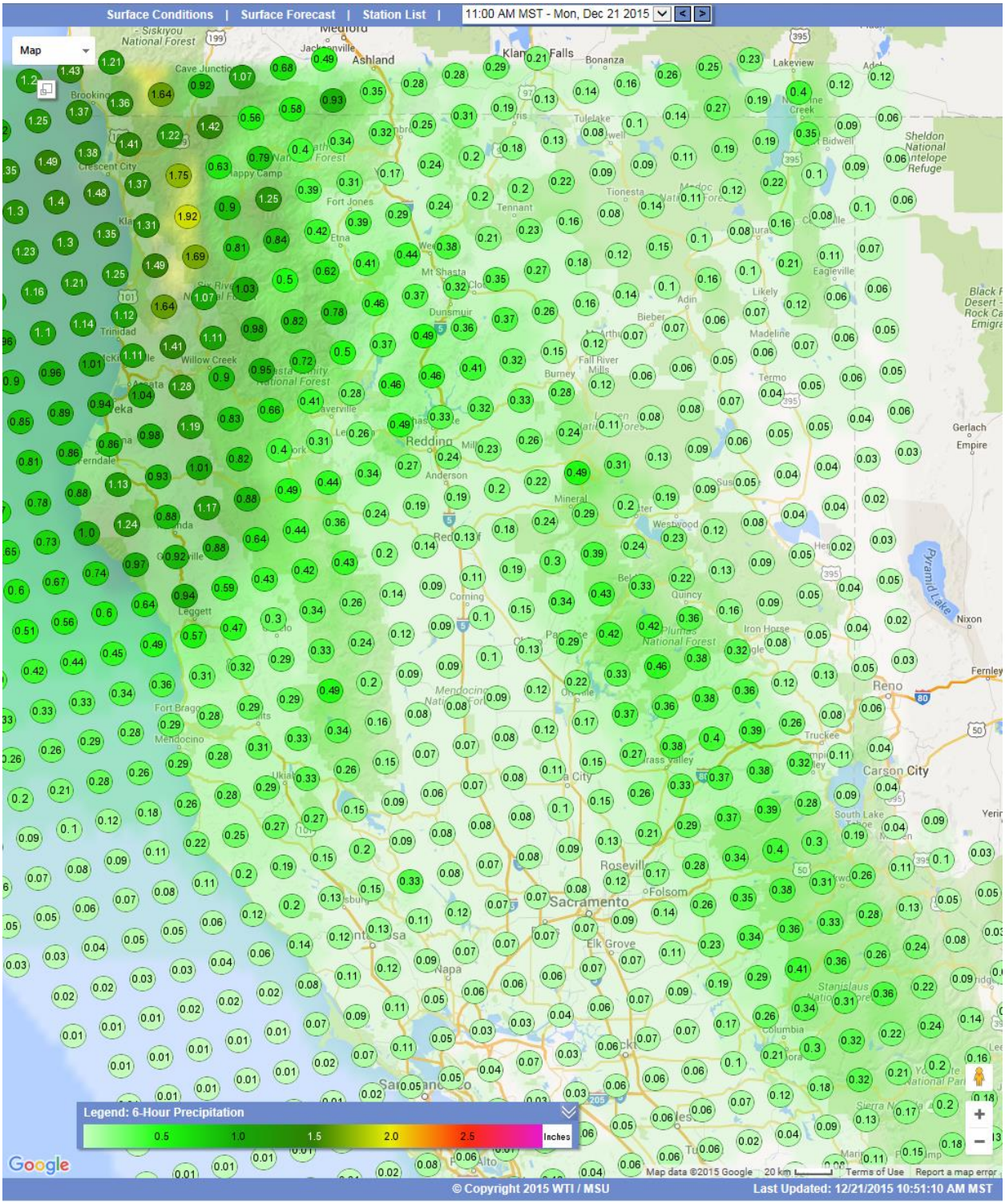


Figure 88: 6-Hour Precipitation Forecast Map Display

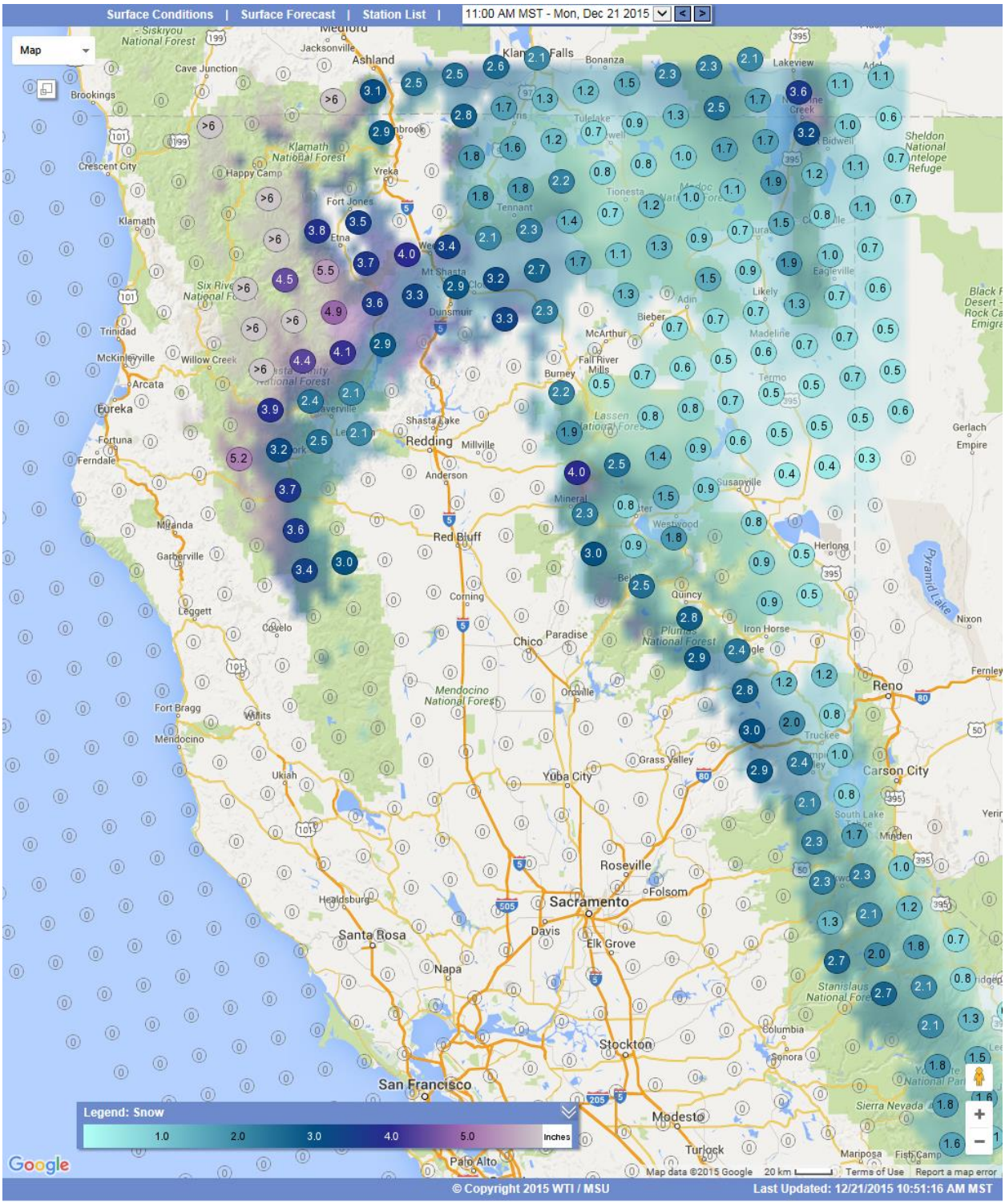


Figure 89: Snow Forecast Map Display

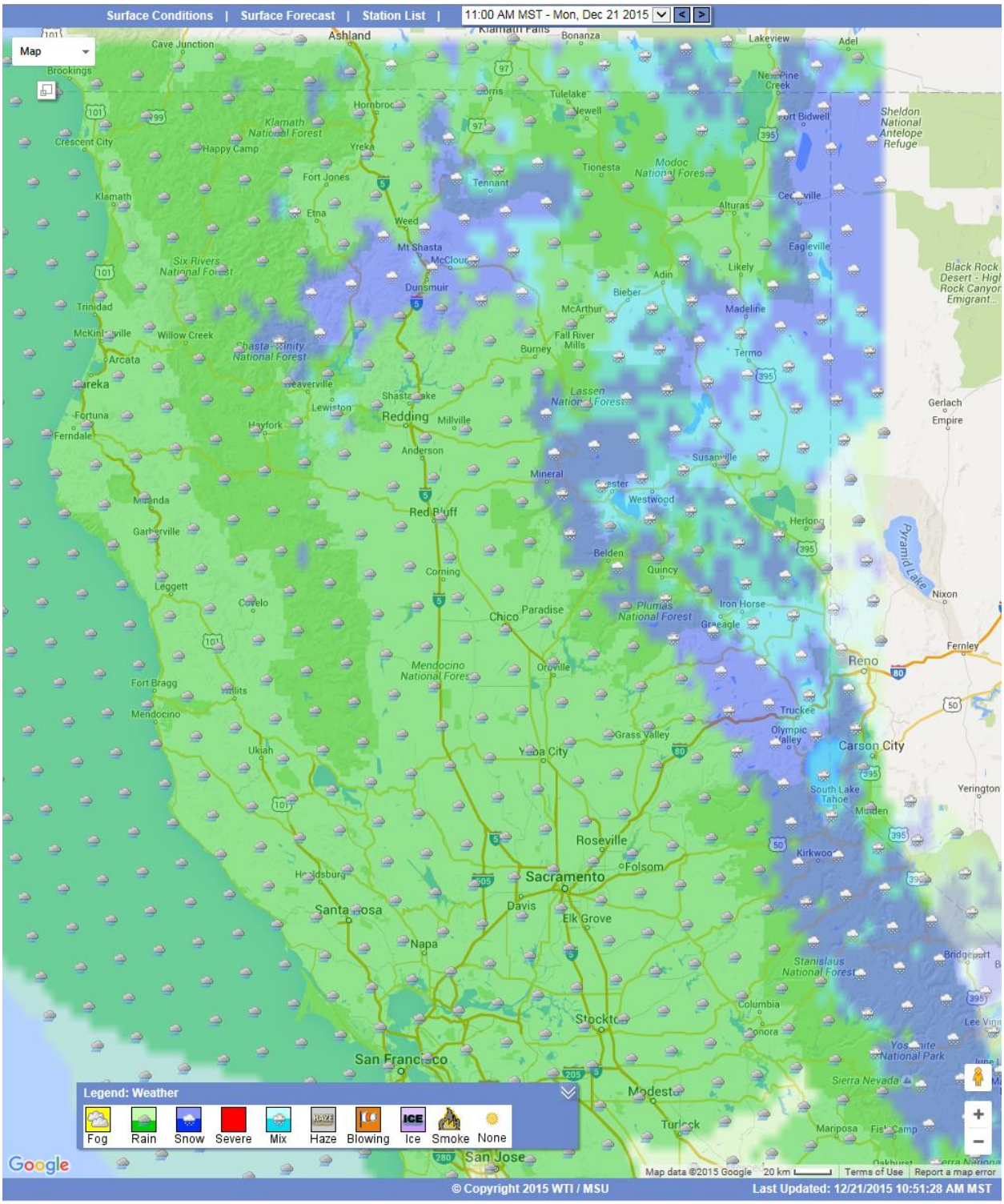


Figure 90: Weather Forecast Map Display

3. SUMMARY

The focus of this project was to further develop the capabilities of WeatherShare to include those of ScanWeb, SCAN Sentry, and other desirable but currently unavailable functionality into WeatherShare through further development of WeatherShare – Phase 3. At the conclusion of this phase, the capabilities of ScanWeb have been developed into WeatherShare 3. The capabilities of SCAN Sentry remain to be implemented in Phase 4 in conjunction with user profiles and subsequent testing of system functionality during the bad weather season.

WeatherShare has been enhanced to include the external data specified for this phase and display that data via a Google Maps -based, web interface as well as tabular listings of sites and data, and graphical views of data over time. Standard map navigation and selection controls are included. Data layers are selected via menus at the top of the screen and are shown as markers and, for some layers, raster images on top of the map. Markers can be selected to show further detail for a particular item. Sites may be selected from tabular listings, and historical data can be viewed either by tabular display or graphs. Navigation between various display types is facilitated by hyperlinks.

Emphasis was given to facilitating information at a glance in all of the displays with the ability to drill down for detail. Color-coding was used not only on map displays and in graphs, but in tabular displays as well to indicate condition types and changing conditions. For instance, freezing and near-freezing temperatures are distinguished in graphs and tabular displays using easy to recognize colors. As such, users can spot important data without having to first read and interpret the specific values. Once important data is identified, users can drill down to specific values.

The system includes RWIS data that is pushed via Caltrans Information Relays. At the present time, Information Relays have been implemented in Caltrans District 2 and District 3. Other districts will provide data to the system via Information Relays in the future. Weather alerts and surface information are provided by the National Weather Service. Current conditions are provided by MesoWest and MADIS. Caltrans Closed Circuit Television images are provided via the Caltrans CWWP2.

The prototype system has been operational since the summer of 2015 and is accessible for use by Caltrans. The project team has monitored operation of the site to ensure its availability for use and evaluation by Caltrans. With the exception of SCAN Sentry function, user profiles and subsequent testing of system functionality during the bad weather season, the prototype system is operating as planned.

A fourth phase of the project has been scoped and was scheduled to start on December 1st, 2015. Delays in funding transfers have caused the start date to slip to January 1st, 2016. Phase 4 is intended to complete several tasks that were not completed in Phase 3, including testing of all functionality during the bad weather season.