

1. REPORT NUMBER  CA17-2916	2. GOVERNMENT ASSOCIATION NUMBER	3. RECIPIENT'S CATALOG NUMBER
4. TITLE AND SUBTITLE WeatherShare Phase 4 Final Report	5. REPORT DATE  12/29/2017	
7. AUTHOR(S)  Douglas Galarus		6. PERFORMING ORGANIZATION CODE
9. PERFORMING ORGANIZATION NAME AND ADDRESS Western Transportation Institute Montana State University PO Box 174250 Bozeman, MT 59717-4250		8. PERFORMING ORGANIZATION REPORT NO.
12. SPONSORING AGENCY AND ADDRESS California Department of Transportation Division of Research, Innovation and System Information PO Box 942873 Sacramento, CA 94273-0001		10. WORK UNIT NUMBER
15. SUPPLEMENTARY NOTES		11. CONTRACT OR GRANT NUMBER  TPF-5(241)
		13. TYPE OF REPORT AND PERIOD COVERED Final 3/1/2016-12/31/2017
		14. SPONSORING AGENCY CODE

16. ABSTRACT

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 has been 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 functionality. Phase 3 was not considered a deployment phase within the Caltrans organization, but rather a mechanism to research and further refine the prototype completed earlier in Phases 1 and 2. This project, Phase 4, was intended to complete several tasks that were not completed in Phase 3, including testing of all functionality during the bad weather season and development of user profiles and alerting capability. This document summarizes work conducted in Phase 4 of the research project.

17. KEY WORDS Roadside Weather Information System, Intelligent Transportation System, Traveler Information, Real-Time, Western States Rural Transportation Consortium, WSRTC, ScanWeb, ScanSentry	18. DISTRIBUTION STATEMENT	
19. SECURITY CLASSIFICATION (of this report)	20. NUMBER OF PAGES  98	21. COST OF REPORT CHARGED

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**WeatherShare**  
**Phase 4**  
**Final Report**

by

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A report prepared for the

State of California, Department of Transportation  
Division of Research, Innovation and System Information

December 29, 2017

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## **ACKNOWLEDGEMENTS**

The author is thankful to Caltrans, members of the Caltrans Project Technical Advisory Panel, the Western States Rural Transportation Consortium (WSRTC), and the Washington State Department of Transportation (WSDOT) for their support of this project.

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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 original WeatherShare project was 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 to include the full state of California. 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.

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 has been 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 functionality. Phase 3 was not considered a deployment phase within the Caltrans organization, but rather a mechanism to research and further refine the prototype completed earlier in Phases 1 and 2.

A fourth phase, started on March 1<sup>st</sup>, 2016, was intended to complete several tasks that were not completed in Phase 3, including testing of all functionality during the bad weather season and development of user profiles and alerting capability. This document summarizes work conducted in Phase 4 of the research project, which ends December 31<sup>st</sup>, 2017. Following are descriptions of major project tasks and associated deliverables:

**Task 1: Project Management**

This task covered all activities related to project management.

The Project Technical Advisory Panel (PTAP) was formed in Phase 3 to oversee project work and progress and continued to serve in Phase 4. 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 Tuesday, April 12<sup>th</sup>, 2016.
- 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 in conjunction with the conclusion of the project: December 31<sup>st</sup>, 2017.
- A project presentation was made at the 2017 Western States Forum in June 2017.
- The project web presence for background and updates is located at the following address: <http://www.westernstates.org/Projects/Weathershare/Default.html>.

**Task 2: On-Going System Development**

Prototype system development continued at WTI including implementation of alerts and user profiles. The eventual goal (beyond the scope of this phase) was a system that would reside at Caltrans and would operate within the Caltrans network. It was understood that the sponsoring program is responsible to develop an enterprise integration plan to deploy the system internally. Mechanisms were coded to retrieve data from Caltrans information relays.

Deliverables:

- Alert functionality
- User profiles
- Continued work on retrieval, storage and presentation of the system

**Task 3: System Testing and Evaluation**

The WTI project team worked with Caltrans to assess prototype system performance and deployment. Evaluation included a set of representative users from Caltrans District 2.

Deliverables:

- Evaluation Summary / Final Report (this document)

## 1.1. Definitions, acronyms, and abbreviations

The following abbreviations are used in this document:

<b>Caltrans</b>	California Department of Transportation
<b>CCTV</b>	Closed Circuit Television (Camera)
<b>CWWP2</b>	Caltrans Commercial Wholesale Web Portal, version 2
<b>D2</b>	(Caltrans) District 3 (similar for D1-D12)
<b>HTML</b>	HyperText Markup Language
<b>ITS</b>	Intelligent Transportation Systems
<b>JSON</b>	JavaScript Object Notation
<b>KML</b>	Keyhole Markup Language
<b>MADIS</b>	Meteorological Assimilation Data Ingest System
<b>MesoWest</b>	MesoWest at the University of Utah
<b>mi</b>	miles
<b>MSU</b>	Montana State University
<b>NDFD</b>	National Digital Forecast Database
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NWS</b>	National Weather Service
<b>OpsCon</b>	Operational Concept
<b>PTAP</b>	Project Technical Advisory Panel
<b>RIME</b>	Redding Incident Management Enhancement program
<b>RWIS</b>	Road Weather Information System
<b>SVN</b>	SubVersioN
<b>SRS</b>	System Requirements Specification
<b>WSDOT</b>	Washington State Department of Transportation
<b>WSRTC</b>	Western States Rural Transportation Consortium
<b>WTI</b>	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 of system evaluation and the project in general.

For further information, refer to the documents listed in the following references section, the project website, and the project update 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.
- WeatherShare Phase 3 Final Report, 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 tried 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
<a href="#">graphs historical summary</a>	I-5 - Richards	D03-15	12/21/2015 09:46 AM	yes	-121.50446° 38.59848°			Sacramento	I-5	519.846
<a href="#">graphs historical summary</a>	I-80 - Blue Canyon	D03-01	12/21/2015 09:48 AM	yes	-120.70314° 39.28339°			Placer	I-80	154.894
<a href="#">graphs historical summary</a>	I-80 - Donner Lake	D03-04	12/21/2015 09:36 AM	yes	-120.28774° 39.33186°			Nevada	I-80	184.77
<a href="#">graphs historical summary</a>	I-80 - Donner Summit	D03-03	12/21/2015 09:49 AM	yes	-120.34822° 39.33892°			Nevada	I-80	176.293
<a href="#">graphs historical summary</a>	I-80 - Floriston	D03-10	12/21/2015 09:38 AM	yes	-120.02387° 39.39559°			Nevada	I-80	198.011
<a href="#">graphs historical summary</a>	I-80 - Truckee Scales	D03-09	12/21/2015 09:39 AM	yes	-120.13010° 39.36408°			Nevada	I-80	
<a href="#">graphs historical summary</a>	SR-267 - Brockway Summit	D03-06	12/21/2015 09:46 AM	yes	-120.07185° 39.26086°			Placer	SR-267	
<a href="#">graphs historical summary</a>	SR-28 - Dollar	D03-18	12/21/2015 09:43 AM	yes	-120.10346° 39.19388°			Placer	SR-28	3.021
<a href="#">graphs historical summary</a>	SR-89 - Rampart	D03-17	12/21/2015 09:45 AM	yes	-120.17764° 39.16513°			Placer	SR-89	69.407
<a href="#">graphs historical summary</a>	SR-99 - McConnell	D03-16	12/21/2015 09:46 AM	yes	-121.34679° 38.36223°			Sacramento	SR-99	283.265
<a href="#">graphs historical summary</a>	US-50 - Echo Summit	D03-05	12/21/2015 09:47 AM	yes	-120.03017° 38.81322°			El Dorado	US-50	94.952
<a href="#">graphs historical summary</a>	I-5 - Elkhorn	D03-14	12/19/2015 04:46 AM	no	-121.64162° 38.67337°			Yolo	I-5	530.565
<a href="#">graphs historical summary</a>	I-80 - Bryce Bend	D03-11	12/05/2014 07:03 AM	no	-121.54481° 38.60300°			Sacramento	I-80	
<a href="#">graphs historical summary</a>	I-80 - Cisco Grove	D03-02	11/16/2015 01:21 AM	no	-120.54458° 39.30908°			Placer	I-80	164.874
<a href="#">graphs historical summary</a>	SR-267 - Truckee Bypass	D03-07	08/20/2014 02:27 PM	no	-120.16330° 39.33429°			Nevada	SR-267	
<a href="#">graphs historical summary</a>	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		Status List		Graphical Overview																								
Links	Station Name	ID	Last Updated	Temperature				Wind				Precipitation				Visibility														
				Air	Wet Bulb	Dew-	24-hr	24-hr	Relative	Atmospheric	Avg	Spot	Spot	Max	Max		Situation	Water	Rate	Situation	Start	End	1 hr	3 hr	6 hr	12 hr	24 hr	Situation		
<a href="#">graphs historical summary</a>	I-5 - Richards	D03-15	12/21/2015 09:46 AM	49.32	46.58	43.52	53.78	45.84	79.0	13.87	SE	*	17.07	SW	Obsc	0.000	No	0.000	Precipitation	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	1.24	Unknown		
<a href="#">graphs historical summary</a>	I-80 - Blue Canyon	D03-01	12/21/2015 09:48 AM	24.70	32.54	29.30	34.70	29.11	80.0	3.55	SE	0.22	SE	13.42	SE	Obsc	0.016	Yes	0.016	Minor	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.003	0.046	1.429	1.576	3.752	0.19	Unknown	
<a href="#">graphs historical summary</a>	I-80 - Donner Lake	D03-04	12/21/2015 09:36 AM	33.80	33.44	32.90	34.50	34.00	96.0	21.62	11.18	SH	22.82	SH	31.09	SH	Obscure	0.272	Yes	0.272	Minor	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.736	1.336	2.394	3.571	5.023	0.14	Other
<a href="#">graphs historical summary</a>	I-80 - Donner Summit	D03-03	12/21/2015 09:49 AM	31.30	*	*	31.00	19.04	93.0	21.47	E	22.37	E	36.01	E	Strong Breeze	*	*	*	Other	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	*	Other	
<a href="#">graphs historical summary</a>	I-80 - Floriston	D03-10	12/21/2015 09:38 AM	35.48	34.65	34.34	40.44	29.48	84.0	4.70	S	*	9.24	SW	Obsc	0.000	*	*	*	Obscure	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown	
<a href="#">graphs historical summary</a>	I-80 - Truckee Scales	D03-09	12/21/2015 09:39 AM	*	*	*	*	*	84.0	*	*	*	*	*	*	Obsc	0.000	*	*	*	Obscure	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown
<a href="#">graphs historical summary</a>	SR-267 - Brockway Summit	D03-06	12/21/2015 09:46 AM	32.75	32.00	30.00	30.82	15.00	98.0	2.46	S	0.00	SE	6.04	SE	Obscure	0.000	*	*	*	Obscure	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown
<a href="#">graphs historical summary</a>	SR-28 - Dollar	D03-18	12/21/2015 09:43 AM	33.42	32.90	31.07	33.80	31.11	93.0	4.03	SW	*	12.97	SE	Obscure	0.000	*	*	*	Obscure	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown	
<a href="#">graphs historical summary</a>	SR-89 - Rampart	D03-17	12/21/2015 09:45 AM	34.52	34.16	33.80	35.24	29.30	97.0	4.70	S	*	9.24	SW	Obsc	0.000	*	*	*	Obscure	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.000	0.000	0.000	0.000	0.95	Unknown	
<a href="#">graphs historical summary</a>	SR-99 - McConnell	D03-16	12/21/2015 09:46 AM	49.74	45.65	42.44	52.70	46.40	79.0	30.02	12.53	SE	*	23.94	SW	Obscure	0.000	No	0.000	Precipitation	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.000	0.004	0.006	0.074	1.24	Unknown		
<a href="#">graphs historical summary</a>	US-50 - Echo Summit	D03-05	12/21/2015 09:47 AM	31.46	31.10	30.16	31.64	20.41	96.0	6.26	W	4.70	W	19.24	S	Light Breeze	Yes	0.001	Minor	12/21/2015 08:04 AM	12/21/2015 08:04 AM	0.024	0.074	0.150	0.193	0.276	0.23	Unknown		
<a href="#">graphs historical summary</a>	I-5 - Elkhorn	D03-14	12/19/2015 04:46 AM	*	*	*	*	*	96.0	*	*	*	*	*	*	Obsc	0.000	*	*	*	Obscure	12/19/2015 04:46 AM	12/19/2015 04:46 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown
<a href="#">graphs historical summary</a>	I-80 - Bryce Bend	D03-11	12/05/2014 07:03 AM	*	*	*	*	*	84.0	*	*	*	*	*	*	Obsc	0.000	*	*	*	Obscure	12/05/2014 07:03 AM	12/05/2014 07:03 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown
<a href="#">graphs historical summary</a>	I-80 - Cisco Grove	D03-02	11/16/2015 01:21 AM	*	*	*	*	*	84.0	*	*	*	*	*	*	Obsc	0.000	*	*	*	Obscure	11/16/2015 01:21 AM	11/16/2015 01:21 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown
<a href="#">graphs historical summary</a>	SR-267 - Truckee Bypass	D03-07	08/20/2014 02:27 PM	*	*	*	*	*	98.0	*	*	*	*	*	*	Obsc	0.000	*	*	*	Obscure	08/20/2014 02:27 PM	08/20/2014 02:27 PM	0.000	0.000	0.000	0.000	0.000	*	Unknown
<a href="#">graphs historical summary</a>	SR-51 - Exposition	D03-13	11/10/2015 10:14 AM	*	*	*	*	*	93.0	*	*	*	*	*	*	Obsc	0.000	*	*	*	Obscure	11/10/2015 10:14 AM	11/10/2015 10:14 AM	0.000	0.000	0.000	0.000	0.000	*	Unknown

Figure 5: Atmospheric Overview of District 3 RWIS Sites

District-2		District-3		Atmospheric Overview		Status List				
Links	Station Name	ID	Last Updated	Air Temperature	Dewpoint	Relative Humidity	Average Wind	Wind Gust	One-Hour Precipitation	Precipitation Situation
<a href="#">graphs historical summary</a>	I-5 - Richards	D03-15	12/21/2015 09:46 AM	49.32	46.58	79.0%	13.87 SE	17.07 SW	0.000	Obscure
<a href="#">graphs historical summary</a>	I-80 - Blue Canyon	D03-01	12/21/2015 09:48 AM	24.70	32.54	80.0%	3.55 SE	22.82 SE	0.016	Minor
<a href="#">graphs historical summary</a>	I-80 - Donner Lake	D03-04	12/21/2015 09:36 AM	33.80	33.44	96.0%	21.62 SE	31.09 SE	0.272	Minor
<a href="#">graphs historical summary</a>	I-80 - Donner Summit	D03-03	12/21/2015 09:49 AM	31.30	*	93.0%	21.47 E	36.01 E	0.000	Other
<a href="#">graphs historical summary</a>	I-80 - Floriston	D03-10	12/21/2015 09:38 AM	35.48	34.65	84.0%	4.70 S	9.24 SW	0.000	Obscure
<a href="#">graphs historical summary</a>	I-80 - Truckee Scales	D03-09	12/21/2015 09:39 AM	*	*	84.0%	*	*	0.000	Obscure
<a href="#">graphs historical summary</a>	SR-267 - Brockway Summit	D03-06	12/21/2015 09:46 AM	32.75	32.00	98.0%	2.46 S	6.04 SE	0.000	Obscure
<a href="#">graphs historical summary</a>	SR-28 - Dollar	D03-18	12/21/2015 09:43 AM	33.42	32.90	93.0%	4.03 SW	12.97 SE	0.000	Obscure
<a href="#">graphs historical summary</a>	SR-89 - Rampart	D03-17	12/21/2015 09:45 AM	34.52	34.16	97.0%	4.70 S	9.24 SW	0.000	Obscure
<a href="#">graphs historical summary</a>	SR-99 - McConnell	D03-16	12/21/2015 09:46 AM	49.74	45.65	79.0%	30.02 SE	23.94 SW	0.000	Precipitation
<a href="#">graphs historical summary</a>	US-50 - Echo Summit	D03-05	12/21/2015 09:47 AM	31.46	31.10	96.0%	6.26 W	4.70 W	0.001	Minor
<a href="#">graphs historical summary</a>	I-5 - Elkhorn	D03-14	12/19/2015 04:46 AM	*	*	96.0%	*	*	0.000	Obscure
<a href="#">graphs historical summary</a>	I-80 - Bryce Bend	D03-11	12/05/2014 07:03 AM	*	*	84.0%	*	*	0.000	Obscure
<a href="#">graphs historical summary</a>	I-80 - Cisco Grove	D03-02	11/16/2015 01:21 AM	*	*	84.0%	*	*	0.000	Obscure
<a href="#">graphs historical summary</a>	SR-267 - Truckee Bypass	D03-07	08/20/2014 02:27 PM	*	*	98.0%	*	*	0.000	Obscure
<a href="#">graphs historical summary</a>	SR-51 - Exposition	D03-13	11/10/2015 10:14 AM	*	*	93.0%	*	*	0.000	Obscure

Figure 6: Graphical Overview of District 2 RWIS Sites

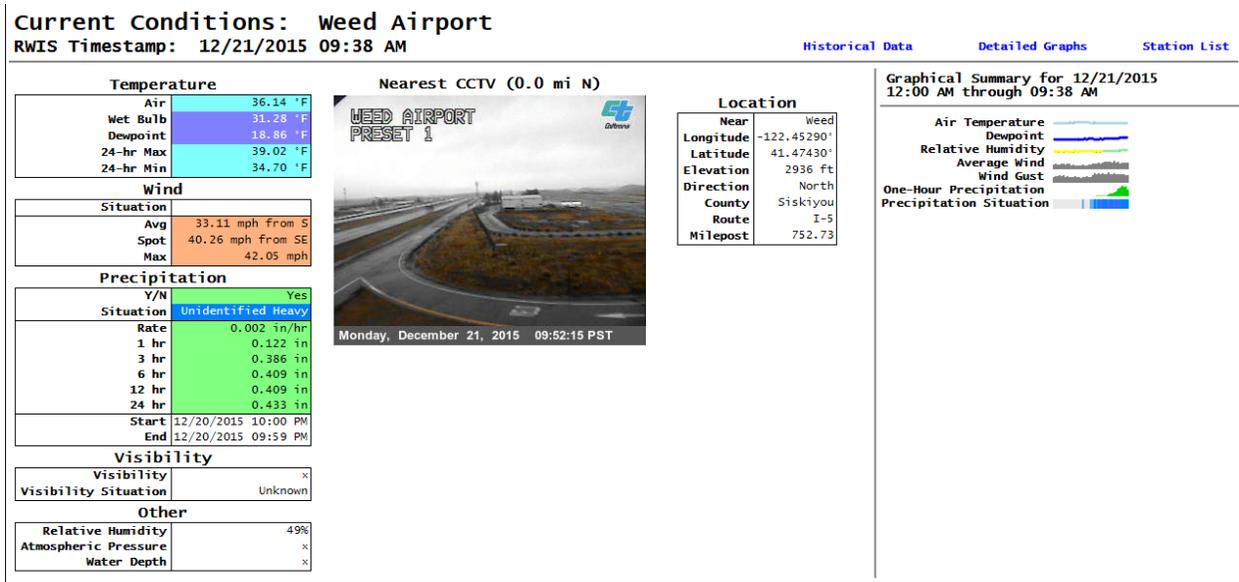


Figure 7: Current Conditions Display for District 2 Weed Airport

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

Timestamp Date Time	Temperature					Relative Humidity %	Atmospheric Pressure in Hg	Wind					Water Depth in	Precipitation						Visibility mi	Situation text				
	Met Air 'F	Dew- point 'F	24- hr Max 'F	24- hr Min 'F	24- hr Avg 'F			Avg Speed mph	Avg Dir °	Spot Speed mph	Spot Dir °	Max Speed mph		Max Dir °	Situation text	Rate Y/N in/hr	Situation text	Start Date Time	End Date Time			1 hr in	3 hr in	6 hr in	12 hr in
12/21/2015 12:05 AM	37.22	31.10	5.36	37.76	37.04	26.0	24.61	SE	22.37	SE	33.11	SE	No	0.000	Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 12:15 AM	37.58	31.46	4.82	37.76	37.04	25.0	26.84	SE	22.13	SE	35.78	SE	No	0.000	Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 12:25 AM	37.22	31.10	5.36	37.76	37.04	26.0	21.25	SE	25.50	S	34.45	SE	No	0.000	Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 12:35 AM	37.58	31.46	4.82	37.76	37.04	25.0	23.04	SE	19.46	S	40.26	SE	No	0.000	Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	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	27.96	SE	25.50	SE	35.57	SE	No	0.000	Precipitation	12/20/2015 07:20 AM	12/20/2015 07:21 AM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:15 AM	37.22	31.10	5.36	37.94	37.04	26.0	27.51	SE	23.71	SE	41.83	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:25 AM	37.04	30.92	6.08	37.94	37.04	27.0	22.15	SE	23.26	SE	33.11	SE	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 01:35 AM	37.94	31.64	5.18	37.94	37.04	25.0	27.29	SE	19.91	SE	36.69	SE	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	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	28.72	S	19.69	S	33.55	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 02:15 AM	37.94	31.64	5.18	38.30	37.04	25.0	15.21	S	12.97	SE	33.78	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 02:25 AM	38.12	31.82	6.08	38.30	37.04	26.0	23.94	SE	22.37	S	32.44	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	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	18.79	S	30.87	S	35.24	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	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	17.00	S	21.47	SE	30.42	SE	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:15 AM	38.30	31.82	6.26	38.66	37.04	26.0	17.45	S	15.66	S	29.53	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:25 AM	38.48	32.00	6.44	38.84	37.04	26.0	17.00	S	24.83	S	27.29	S	No	0.000	Precipitation	12/20/2015 08:15 PM	12/20/2015 08:16 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 03:35 AM	38.48	32.00	6.44	39.02	37.04	26.0	20.36	S	18.79	S	31.54	S	Yes	0.000	Unidentified Slight	12/20/2015 08:45 PM	12/20/2015 08:46 PM	0.000	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	19.01	S	18.57	S	31.54	S	No	0.000	Precipitation	12/20/2015 09:00 PM	12/20/2015 09:02 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 04:15 AM	38.30	32.00	6.44	39.02	37.04	26.0	19.24	S	20.13	SE	37.58	SE	No	0.000	Precipitation	12/20/2015 09:11 PM	12/20/2015 09:12 PM	0.000	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	21.03	S	19.46	S	28.41	S	No	0.000	Precipitation	12/20/2015 09:32 PM	12/20/2015 09:33 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 04:55 AM	37.76	31.46	8.24	39.02	37.04	29.0	22.37	S	17.00	S	31.54	S	Yes	0.000	Unidentified Slight	12/20/2015 09:50 PM	12/20/2015 09:51 PM	0.000	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	26.63	S	25.72	S	43.17	S	Yes	0.000	Unidentified Slight	12/20/2015 09:55 PM	12/20/2015 09:56 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 05:15 AM	38.30	32.00	3.74	39.02	37.04	23.0	29.08	S	27.07	SE	53.24	S	Yes	0.000	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.000	0.000	0.000	0.000	0.000	0.106	x	Unknown
12/21/2015 05:25 AM	37.04	30.92	6.80	39.02	37.04	28.0	26.62	S	33.11	SE	48.94	SE	Yes	0.000	Unidentified Moderate	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.004	0.004	0.004	0.004	0.004	0.110	x	Unknown
12/21/2015 05:35 AM	37.22	31.10	3.74	39.02	37.04	24.0	31.54	S	24.83	S	55.03	S	Yes	0.000	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.008	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	27.51	SE	26.62	SE	46.53	SE	Yes	0.000	Snow Slight	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.012	0.012	0.012	0.012	0.012	0.118	x	Unknown
12/21/2015 06:15 AM	37.04	30.92	5.90	39.02	36.68	27.0	33.11	SE	33.55	SE	52.79	SE	Yes	0.000	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.012	0.016	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	37.13	SE	42.05	SE	50.55	SE	Yes	0.002	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.016	0.020	0.020	0.020	0.020	0.130	x	Unknown
12/21/2015 06:55 AM	36.68	30.74	10.22	39.02	36.68	33.0	35.12	SE	33.23	SE	50.23	SE	Yes	0.002	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.020	0.021	0.021	0.021	0.021	0.138	x	Unknown
12/21/2015 07:05 AM	36.32	30.56	11.84	39.02	36.14	36.0	37.13	SE	37.58	SE	56.59	SE	Yes	0.008	Snow Slight	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.035	0.047	0.047	0.047	0.047	0.154	x	Unknown
12/21/2015 07:15 AM	35.96	30.38	13.46	39.02	35.96	39.0	37.80	SE	33.33	SE	48.09	SE	Yes	0.004	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.047	0.063	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	31.09	SE	34.00	SE	48.09	SE	Yes	0.004	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.083	0.083	0.083	0.083	0.083	0.189	x	Unknown
12/21/2015 07:55 AM	35.96	30.56	14.54	39.02	35.78	41.0	40.94	SE	34.23	SE	54.80	SE	Yes	0.015	Snow Slight	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.079	0.110	0.110	0.110	0.110	0.200	x	Unknown
12/21/2015 08:05 AM	35.78	30.20	13.64	39.02	35.78	41.0	33.78	SE	31.32	SE	49.44	SE	Yes	0.014	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.094	0.180	0.180	0.180	0.180	0.256	x	Unknown
12/21/2015 08:15 AM	35.42	30.02	14.00	39.02	35.42	40.0	36.01	SE	30.87	SE	49.44	SE	Yes	0.012	Snow Slight	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.142	0.205	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	29.53	SE	31.54	SE	49.44	SE	Yes	0.012	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.173	0.260	0.268	0.268	0.268	0.374	x	Unknown
12/21/2015 08:55 AM	35.42	30.38	17.06	39.02	34.70	47.0	33.11	SE	35.34	SE	46.30	SE	Yes	0.011	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.197	0.307	0.319	0.319	0.319	0.423	x	Unknown
12/21/2015 09:05 AM	35.78	30.74	18.32	39.02	34.70	49.0	30.65	SE	34.23	S	45.86	SE	Yes	0.009	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.181	0.343	0.358	0.358	0.358	0.453	x	Unknown
12/21/2015 09:15 AM	35.96	30.74	17.60	39.02	34.70	47.0	33.33	SE	35.79	S	43.62	S	Yes	0.008	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.177	0.374	0.390	0.390	0.390	0.461	x	Unknown
12/21/2015 09:35 AM	26.14	31.28	18.86	39.02	34.70	49.0	33.11	SE	40.26	SE	42.05	SE	Yes	0.002	Unidentified Heavy	12/20/2015 10:00 PM	12/20/2015 10:01 PM	0.122	0.386	0.409	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



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

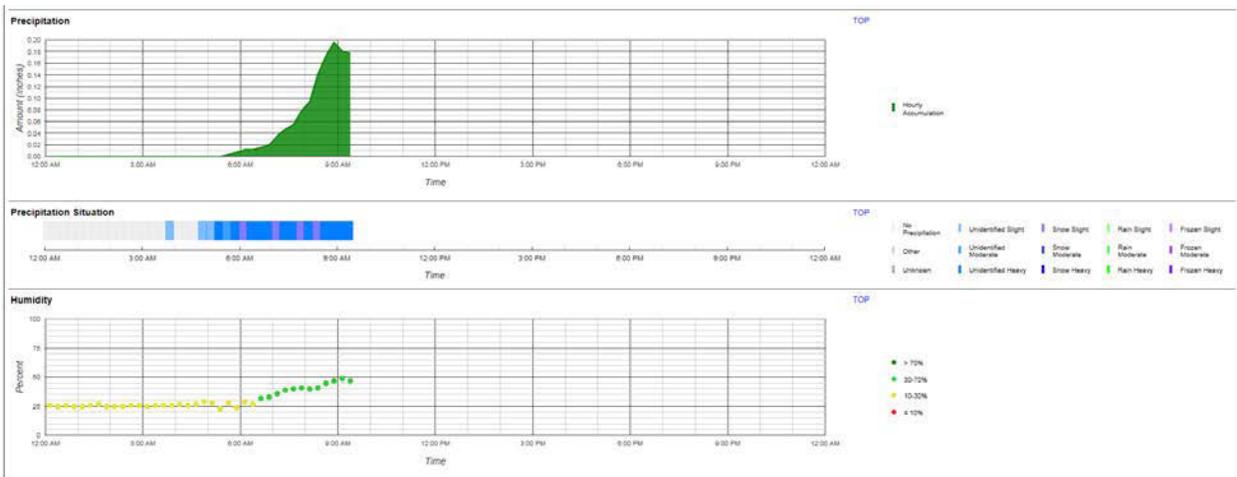


Figure 11: Precipitation, Precipitation Situation, and Humidity Graphs for District 2 Weed Airport

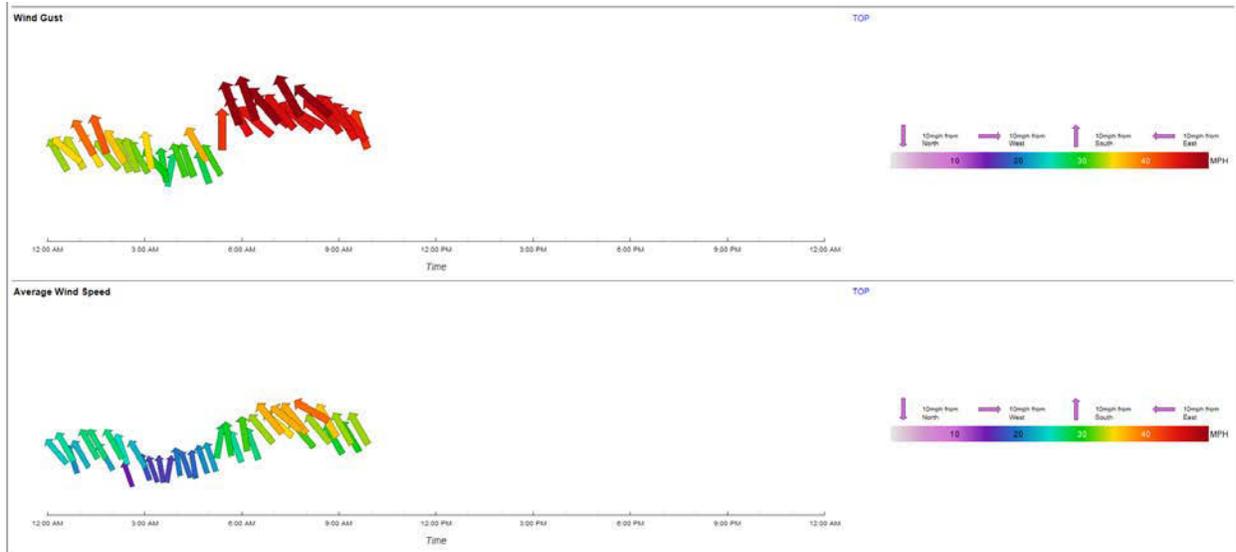


Figure 12: Wind Arrow Graph for District 2 Weed Airport

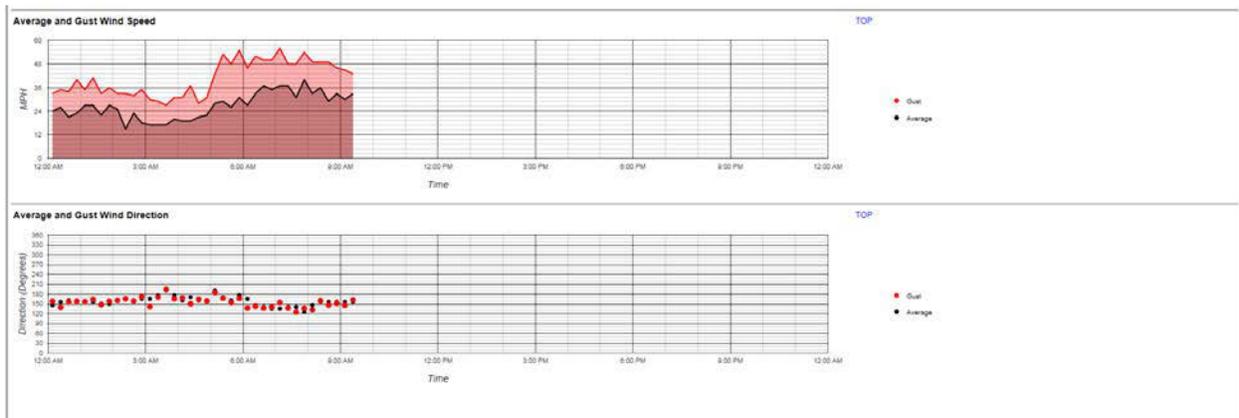


Figure 13: Wind Direction and Velocity Graph for District 2 Weed Airport

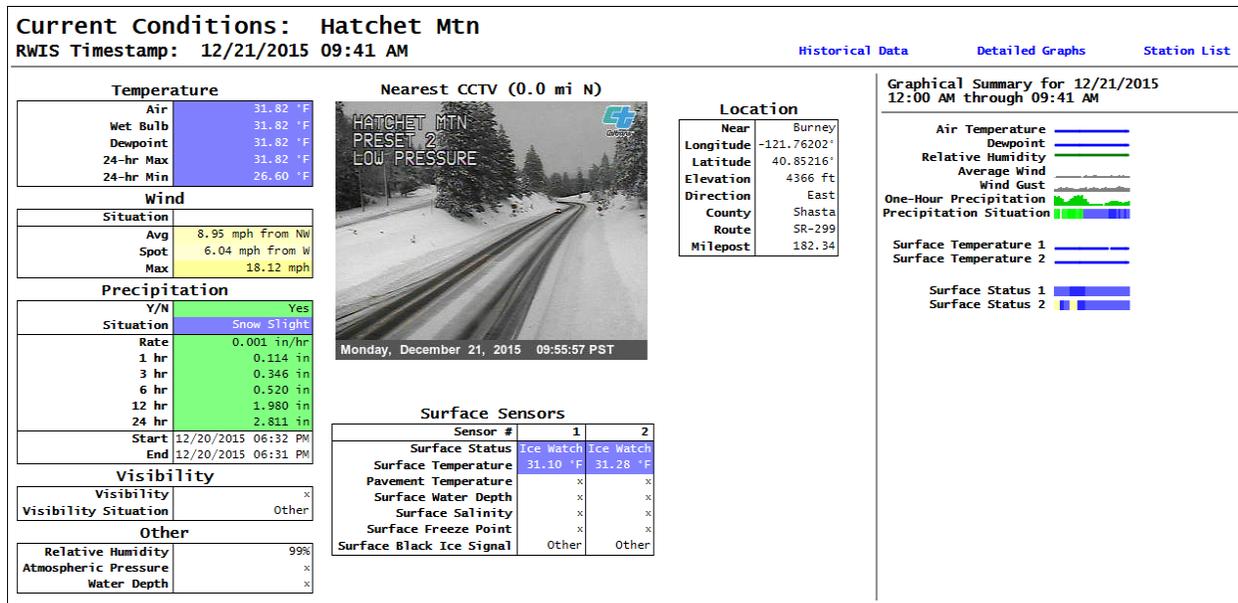


Figure 14: for District 2 Hatchet Mountain

Hatchet Mtn Atmospheric Data: 12/21/2015																									
Data Atmospheric Date 12/21/2015																									
Temperature		24-hr		24-hr		Relative Humidity %	Atmospheric Pressure in Hg	Wind					Water Depth in	Precipitation						Visibility Situation					
Time	Air	Wet Bulb	Dew-point	Max	Min			Avg Speed	Avg Dir	Spot Speed	Spot Dir	Max Speed		Max Dir	Rate	Situation	Start	End	1 hr		3 hr	6 hr	12 hr	24 hr	
Date Time	'F	'F	'F	'F	'F		in Hg	mph	'	mph	'	in/hr	text	Data Time	Data Time	in	in	in	in	in					
12/21/2015 01:11 AM	30.74	30.74	30.74	30.74	25.16	99.0		4.23	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	x	Other
12/21/2015 01:26 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	x	Other
12/21/2015 01:41 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	x	Other
12/21/2015 01:56 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	Precipitation	12/20/2015 03:32 PM	12/20/2015 03:34 PM	0.213	0.724	1.260	1.472	2.657	x	Other
12/21/2015 02:11 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 03:32 PM	12/20/2015 03:31 PM	0.183	0.709	1.280	1.484	2.677	x	Other
12/21/2015 02:26 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 03:32 PM	12/20/2015 03:34 PM	0.108	0.634	1.291	1.476	2.689	x	Other
12/21/2015 02:41 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 03:32 PM	12/20/2015 03:31 PM	0.108	0.642	1.343	1.516	2.740	x	Other
12/21/2015 02:56 AM	31.64	31.64	31.64	31.64	26.60	99.0		8.05	SW	9.17	W	17.90	SW	Yes	0.022	Rain Heavy	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.118	0.605	1.378	1.531	2.780	x	Other
12/21/2015 03:11 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 03:32 PM	12/20/2015 03:31 PM	0.177	0.634	1.449	1.594	2.850	x	Other
12/21/2015 03:26 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 03:32 PM	12/20/2015 03:31 PM	0.220	0.618	1.437	1.650	2.925	x	Other
12/21/2015 03:41 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 03:32 PM	12/20/2015 03:31 PM	0.264	0.657	1.472	1.724	3.008	x	Other
12/21/2015 03:56 AM	31.46	31.46	31.46	31.64	26.60	99.0		6.49	W	3.13	NW	14.32	SW	Yes		Rain Moderate	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.268	0.634	1.437	1.783	3.079	x	Other
12/21/2015 04:11 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 03:32 PM	12/20/2015 03:31 PM	0.283	0.657	1.457	1.846	3.146	x	Other
12/21/2015 04:26 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 03:32 PM	12/20/2015 03:31 PM	0.264	0.642	1.445	1.921	3.228	x	Other
12/21/2015 04:41 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 03:32 PM	12/20/2015 03:31 PM	0.283	0.661	1.461	1.968	3.295	x	Other
12/21/2015 04:56 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 03:32 PM	12/20/2015 03:31 PM	0.193	0.648	1.374	1.992	3.307	x	Other
12/21/2015 05:11 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 03:32 PM	12/20/2015 03:31 PM	0.173	0.657	1.366	2.020	3.291	x	Other
12/21/2015 05:26 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 03:32 PM	12/20/2015 03:31 PM	0.087	0.638	1.287	2.028	3.252	x	Other
12/21/2015 05:41 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 03:32 PM	12/20/2015 03:31 PM	0.055	0.610	1.252	2.031	3.213	x	Other
12/21/2015 05:56 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 03:32 PM	12/20/2015 03:31 PM	0.051	0.551	1.189	2.035	3.138	x	Other
12/21/2015 06:11 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 03:32 PM	12/20/2015 03:31 PM	0.047	0.516	1.161	2.047	3.138	x	Other
12/21/2015 06:26 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 03:32 PM	12/20/2015 03:31 PM	0.043	0.619	1.437	2.050	3.118	x	Other
12/21/2015 06:41 AM	31.64	31.64	31.64	31.82	26.60	99.0		9.62	W	3.82	SW	19.91	W	Yes	0.004	Snow Slight	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.055	0.394	1.055	2.063	3.079	x	Other
12/21/2015 06:56 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 03:32 PM	12/20/2015 03:31 PM	0.043	0.303	0.969	2.051	3.004	x	Other
12/21/2015 07:11 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 03:32 PM	12/20/2015 03:31 PM	0.031	0.260	0.928	2.051	2.980	x	Other
12/21/2015 07:26 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 03:32 PM	12/20/2015 03:31 PM	0.028	0.169	0.843	2.039	2.980	x	Other
12/21/2015 07:41 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 03:32 PM	12/20/2015 03:31 PM	0.059	0.169	0.831	2.075	3.012	x	Other
12/21/2015 07:56 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 03:32 PM	12/20/2015 03:31 PM	0.063	0.169	0.819	2.083	3.004	x	Other
12/21/2015 08:11 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 03:32 PM	12/20/2015 03:31 PM	0.087	0.173	0.831	2.110	3.020	x	Other
12/21/2015 08:26 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 03:32 PM	12/20/2015 03:31 PM	0.118	0.205	0.846	2.154	3.043	x	Other
12/21/2015 08:41 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 03:32 PM	12/20/2015 03:31 PM	0.118	0.236	0.846	2.189	3.031	x	Other
12/21/2015 08:56 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 03:32 PM	12/20/2015 03:31 PM	0.134	0.232	0.811	2.220	2.976	x	Other
12/21/2015 09:11 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 03:32 PM	12/20/2015 03:31 PM	0.134	0.264	0.787	2.244	2.957	x	Other
12/21/2015 09:26 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 03:32 PM	12/20/2015 03:31 PM	0.110	0.280	0.717	2.189	2.949	x	Other
12/21/2015 09:41 AM	31.64	31.64	31.64	31.82	26.60	99.0		9.40	W	8.95	SW	20.59	W	Yes	0.005	Snow Slight	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.102	0.291	0.685	2.161	2.961	x	Other
12/21/2015 09:56 AM	31.64	31.64	31.64	31.82	26.60	99.0		12.97	W	12.30	W	24.38	W	Yes	0.008	Snow Slight	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.079	0.293	0.602	2.075	2.921	x	Other
12/21/2015 10:11 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 03:32 PM	12/20/2015 03:31 PM	0.108	0.335	0.598	2.071	2.909	x	Other
12/21/2015 10:26 AM	31.64	31.64	31.64	31.82	26.60	99.0		9.84	W	6.71	W	18.79	W	Yes	0.005	Snow Slight	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.084	0.350	0.528	2.004	2.831	x	Other
12/21/2015 10:41 AM	31.82	31.82	31.82	31.82	26.60	99.0		8.95	NW	6.04	W	18.12	W	Yes	0.002	Snow Slight	12/20/2015 03:32 PM	12/20/2015 03:31 PM	0.114	0.346	0.520	1.980	2.811	x	Other

Figure 15: Historical Atmospheric Data for District 2 Hatchet Mountain

Hatchet Mtn Surface Data: 12/21/2015																
Data <input type="text" value="Surface"/> Date <input type="text" value="12/21/2015"/> <a href="#">Graphs</a> <a href="#">Station List</a>																
Timestamp Date Time	Surface Status		Surface Temperature		Pavement Temperature		Surface Water Depth		Surface Salinity		Surface Freeze Point		Surface Black Ice Signal		Subsurface Temperature	
	1 text	2 text	1 °F	2 °F	1 °F	2 °F	1 in	2 in	1 pp100K	2 pp100K	1 °F	2 °F	1 text	2 text	1 °F	2 °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

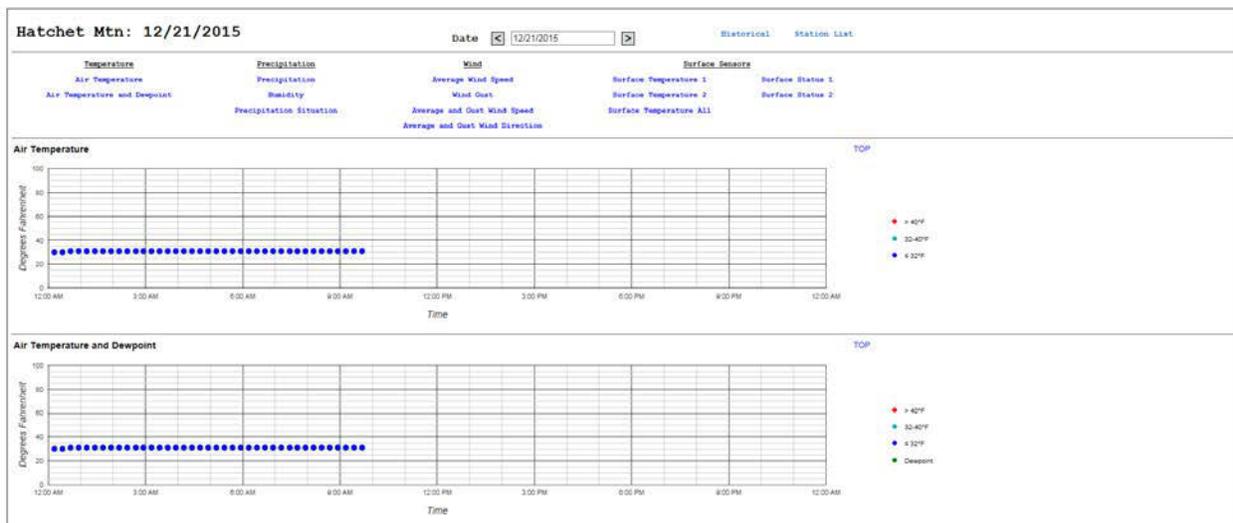


Figure 17: Air Temperature, Air Temperature and Dewpoint Graphs for District 2 Hatchet Mountain

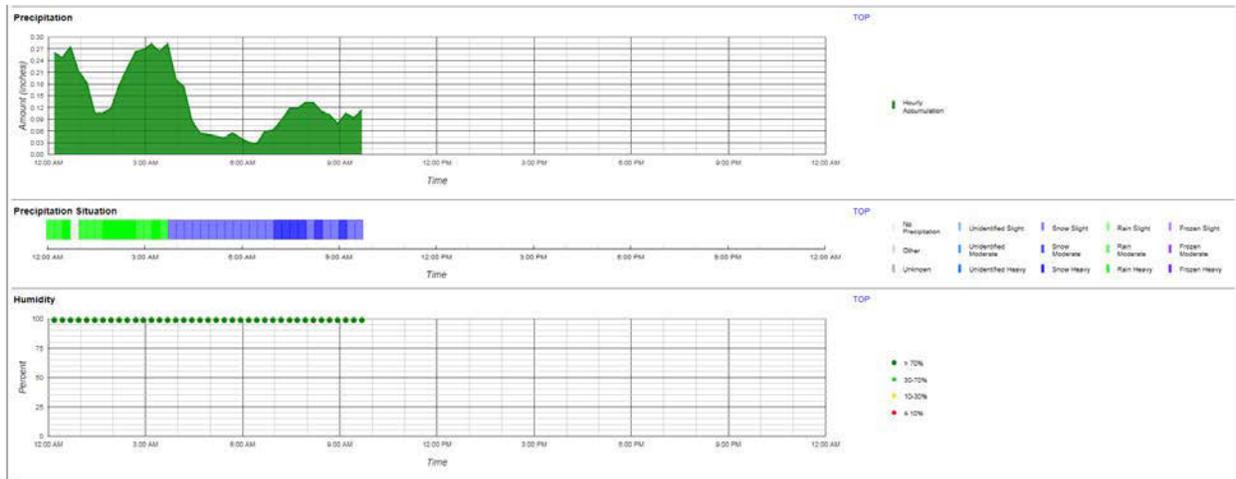


Figure 18: Precipitation, Precipitation Situation, and Humidity Graphs for District 2 Hatchet Mountain

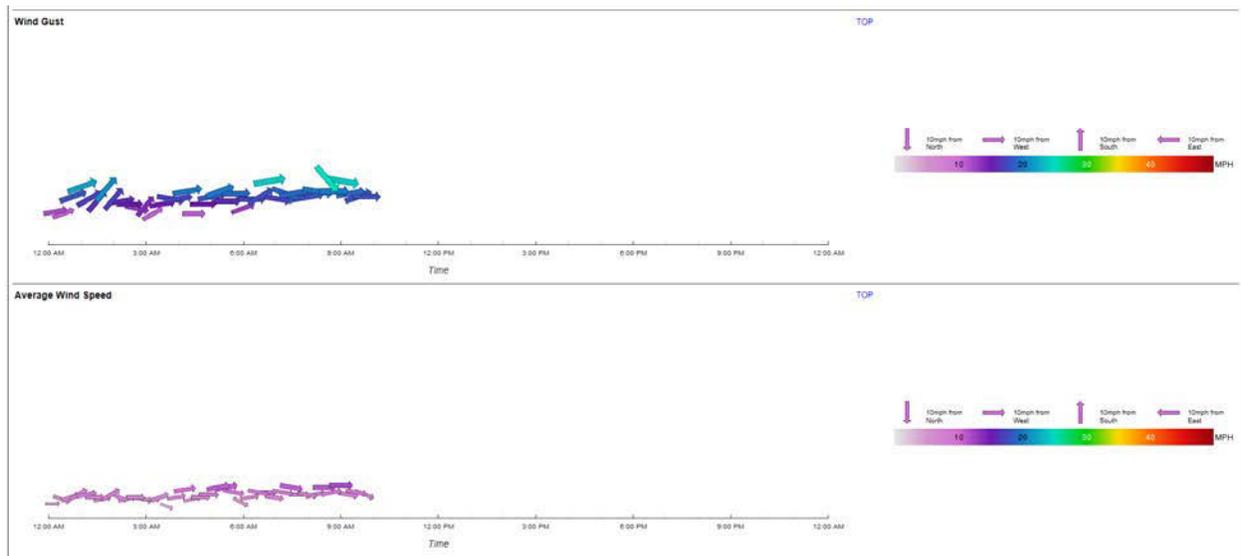


Figure 19: Wind Arrow Graph for District 2 Hatchet Mountain

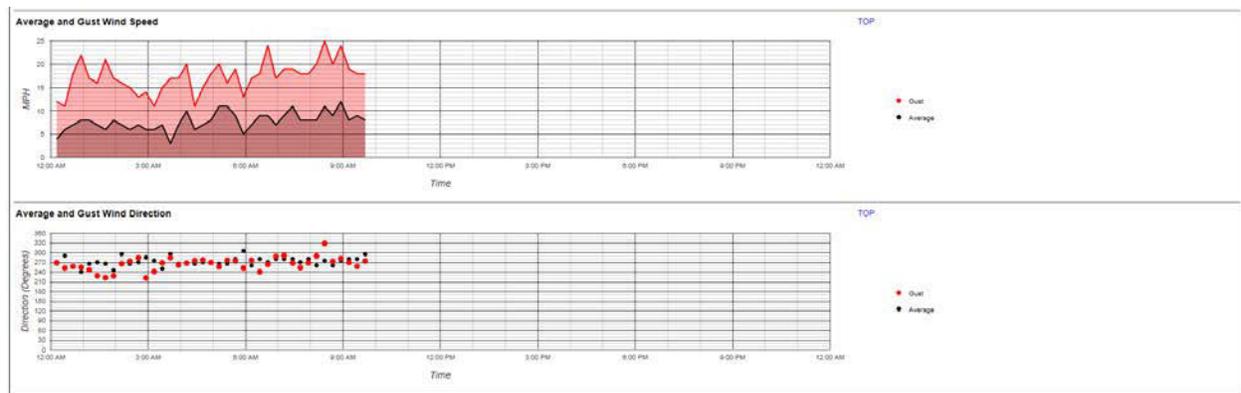


Figure 20: Wind Direction and Velocity Graph for District 2 Hatchet Mountain

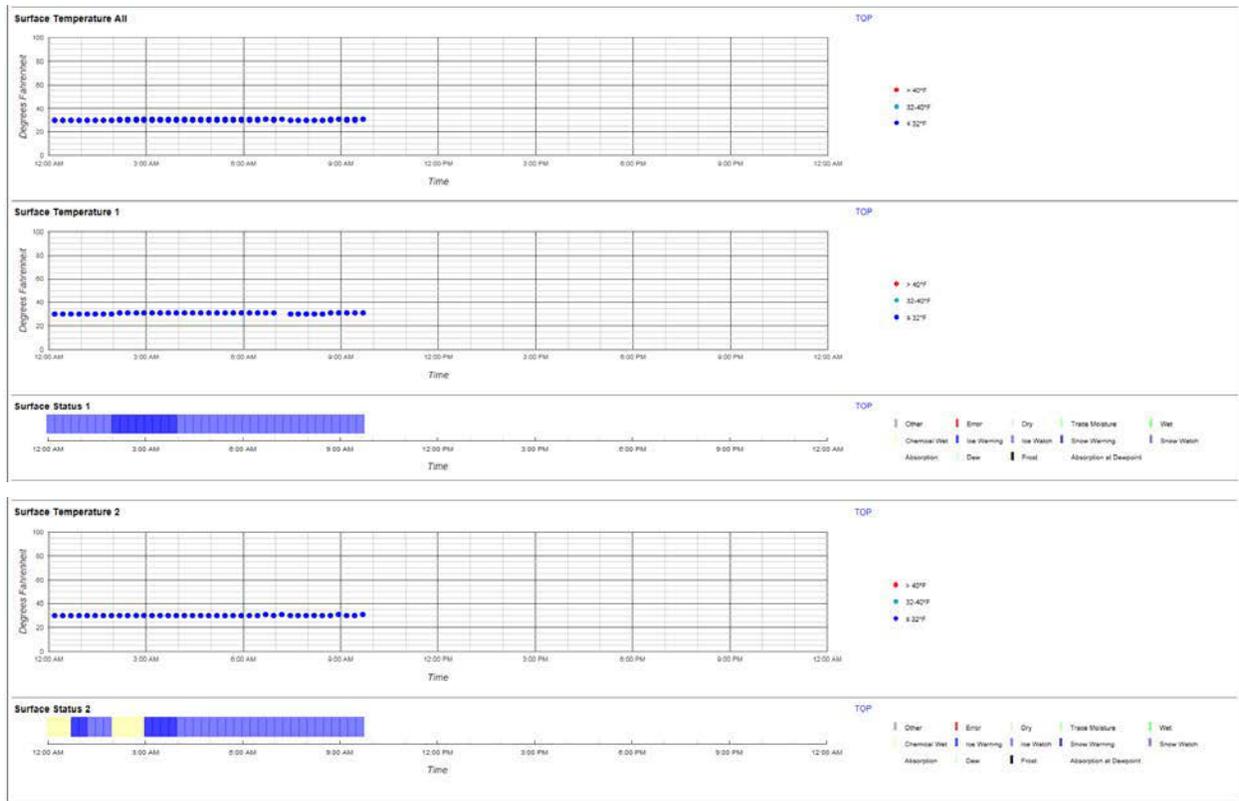


Figure 21: Surface Temperature and Surface Status Graphs for District 2 Hatchet Mountain

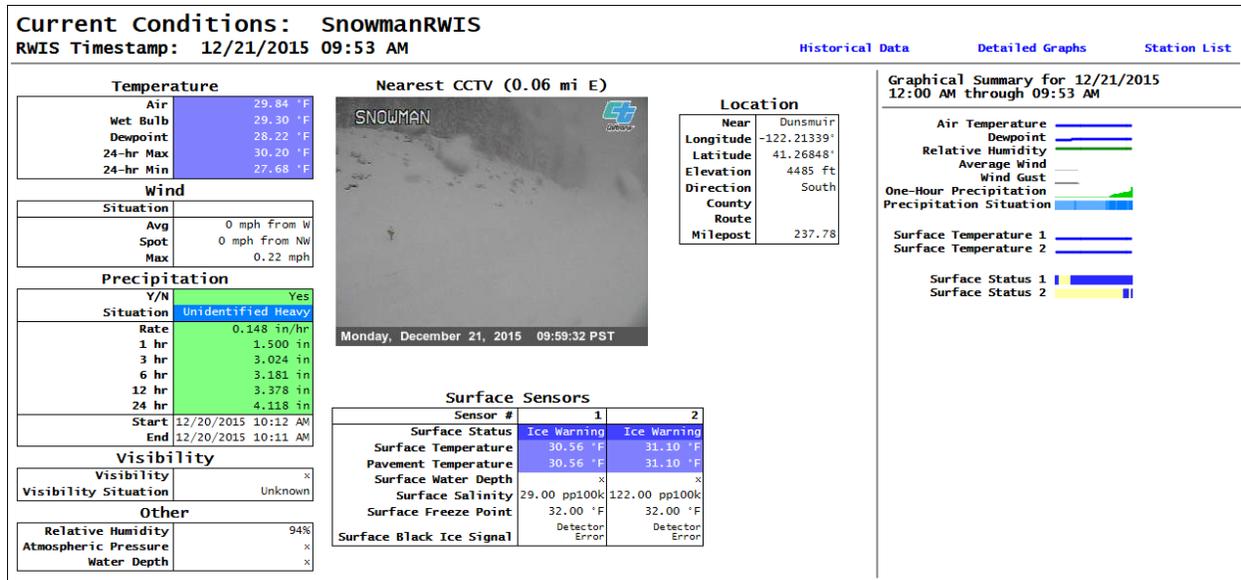


Figure 22: Current Conditions Display for District 2 Snowman Summit

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

Timestamp Date Time	Temperature					Relative Humidity %	Atmospheric Pressure in Hg	Wind					Water Depth in	Precipitation							Visibility mi	Situation text				
	Met Air 'F	Dew- point 'F	24- hr Max 'F	24- hr Min 'F	24- hr Avg 'F			Avg Speed mph	Dir	Spot Speed mph	Spot Dir	Max Speed mph		Max Dir	Situation text	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
12/21/2015 12:00 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 12:03 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	1.038	x	Unknown
12/21/2015 12:06 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	1.038	x	Unknown
12/21/2015 12:09 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 12:12 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 12:15 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 12:18 AM	29.48	28.94	27.68	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 12:21 AM	29.30	28.76	27.68	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	0.021	0.083	0.173	0.303	1.079	x	Unknown
12/21/2015 12:24 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 12:27 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 12:30 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 12:33 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 12:36 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 12:39 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 12:42 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 12:45 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 12:48 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	0.185	0.335	1.154	x	Unknown
12/21/2015 12:51 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 12:54 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 12:57 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 12:58 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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 12:59 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	2.498	x	Unknown
12/21/2015 12:59 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	2.683	x	Unknown
12/21/2015 12:59 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	2.759	x	Unknown
12/21/2015 12:59 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 12:59 AM	29.84	29.30	28.40	30.20	27.68	94.0	x	0.00	W	0.00	NW	0.22	W	x	Yes	0.125	Unidentified Heavy	12/20/2015 10:12 AM	12/20/2015 10:11 AM	1.035	2.2					

SnowmanRWIS Surface Data: 12/21/2015															
Data <input type="text" value="Surface"/> Date <input type="text" value="12/21/2015"/> <a href="#">Graphs</a> <a href="#">Station List</a>															
Timestamp Date Time	Surface Status		Surface Temperature		Pavement Temperature		Surface Water Depth		Surface Salinity		Surface Freeze Point		Surface Black Ice Signal		Subsurface Temperature
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
	text	text	'F	'F	'F	'F	in	in	pp100K	pp100K	'F	'F	text	text	'F
12/21/2015 12:08 AM	Ice Warning	Chemical Wet	29.66	29.12	29.48	29.12	*	*	276.00	744.00	31.82	31.28	Detector Error	Detector Error	35.06
12/21/2015 12:28 AM	Ice Warning	Chemical Wet	29.66	29.12	29.66	29.12	*	*	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	*	*	102.00	703.00	*	31.28	Detector Error	Detector Error	35.06
12/21/2015 12:59 AM	Chemical Wet	Chemical Wet	29.48	29.30	29.48	29.30	*	*	98.00	686.00	*	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	*	*	97.00	670.00	*	31.28	Detector Error	Detector Error	35.06
12/21/2015 01:28 AM	Chemical Wet	Chemical Wet	29.66	29.48	29.66	29.48	*	*	95.00	648.00	*	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	*	*	93.00	459.00	*	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	*	*	92.00	409.00	*	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	*	*	181.00	378.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 02:28 AM	Ice Warning	Chemical Wet	29.84	29.84	29.84	29.84	*	*	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	*	*	140.00	362.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 02:58 AM	Ice Warning	Chemical Wet	30.02	29.84	30.02	29.84	*	*	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	*	*	122.00	363.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 03:28 AM	Ice Warning	Chemical Wet	30.02	30.02	30.02	30.02	*	*	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	*	*	124.00	390.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 03:58 AM	Ice Warning	Chemical Wet	30.20	30.20	30.20	30.20	*	*	181.00	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	*	*	132.00	384.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 04:28 AM	Ice Warning	Chemical Wet	30.20	30.20	30.20	30.20	*	*	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	*	*	57.00	373.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 04:58 AM	Ice Warning	Chemical Wet	30.20	30.38	30.20	30.38	*	*	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	*	*	48.00	344.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 05:28 AM	Ice Warning	Chemical Wet	30.20	30.38	30.20	30.38	*	*	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	*	*	44.00	336.00	32.00	31.64	Detector Error	Detector Error	35.06
12/21/2015 05:58 AM	Ice Warning	Chemical Wet	30.20	30.56	30.20	30.56	*	*	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	*	*	43.00	249.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 06:28 AM	Ice Warning	Chemical Wet	30.20	30.56	30.20	30.56	*	*	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	*	*	42.00	246.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 06:58 AM	Ice Warning	Chemical Wet	30.38	30.74	30.38	30.74	*	*	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	*	*	41.00	243.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 07:28 AM	Ice Warning	Chemical Wet	30.38	30.74	30.20	30.74	*	*	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	*	*	40.00	240.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 07:58 AM	Ice Warning	Chemical Wet	30.38	30.92	30.38	30.92	*	*	39.00	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	*	*	39.00	211.00	32.00	31.82	Detector Error	Detector Error	35.06
12/21/2015 08:28 AM	Ice Warning	Chemical Wet	30.38	30.92	30.38	30.92	*	*	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	*	*	32.00	139.00	32.00	*	Detector Error	Detector Error	35.06
12/21/2015 08:58 AM	Ice Warning	Ice Warning	30.56	30.92	30.56	30.92	*	*	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	*	*	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	*	*	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	*	*	29.00	124.00	32.00	32.00	Detector Error	Detector Error	35.06
12/21/2015 09:59 AM	Ice Warning	Ice Warning	30.56	31.10	30.56	31.10	*	*	29.00	122.00	32.00	32.00	Detector Error	Detector Error	35.06

Figure 24: Historical Surface Data for District 2 Snowman Summit

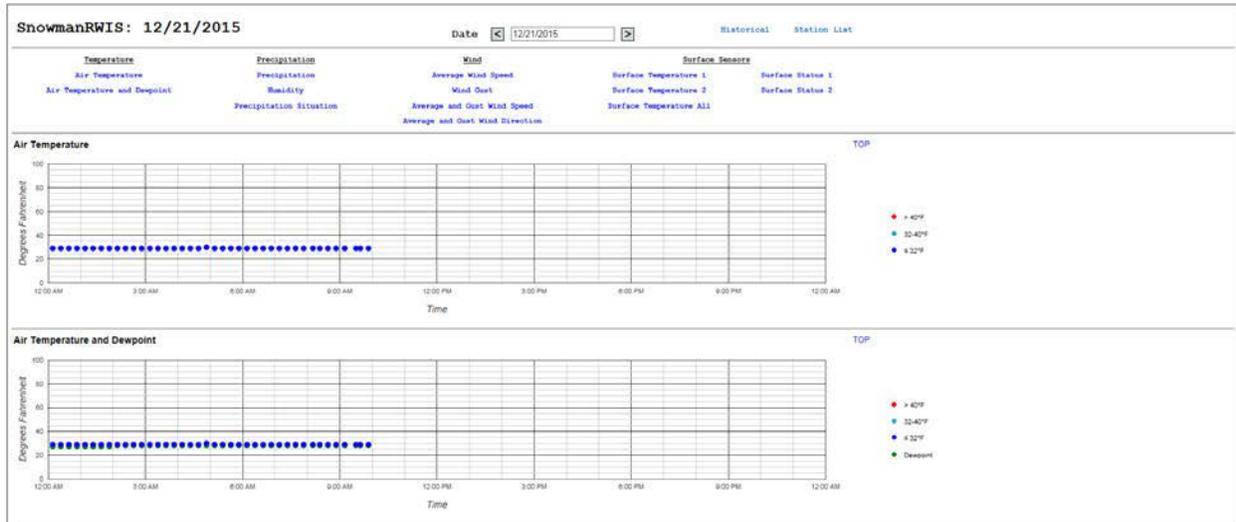


Figure 25: Air Temperature, Air Temperature and Dewpoint Graphs for District 2 Snowman Summit

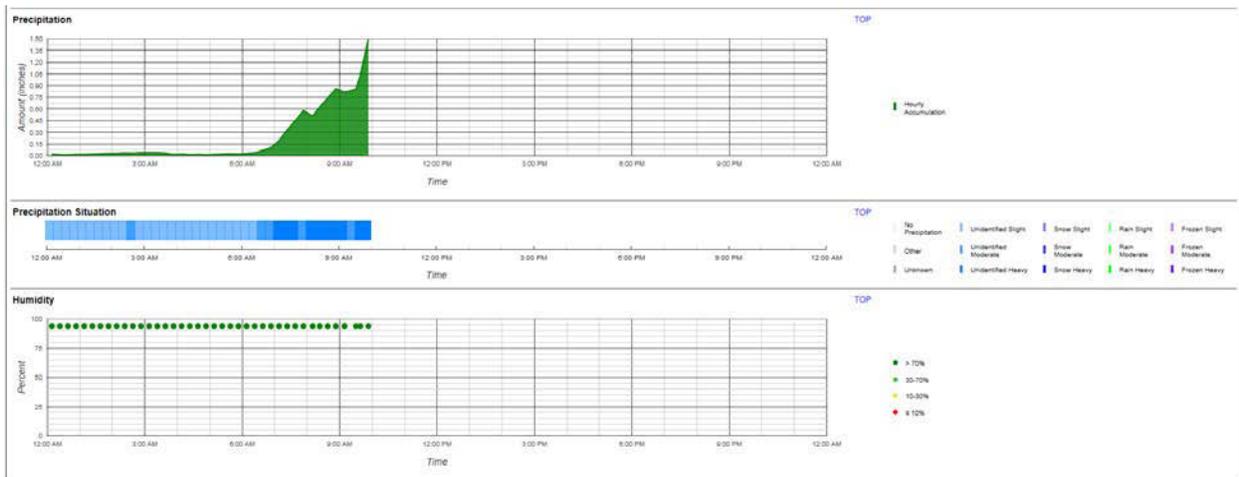


Figure 26: Precipitation, Precipitation Situation, and Humidity Graphs for District 2 Snowman Summit

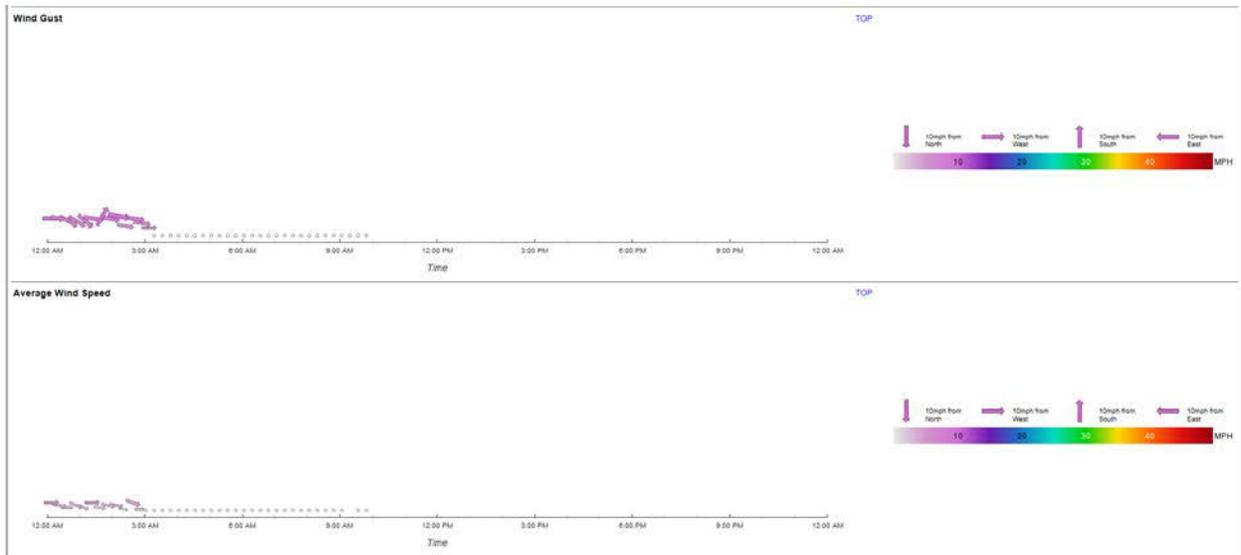


Figure 27: Wind Arrow Graph for District 2 Snowman Summit



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

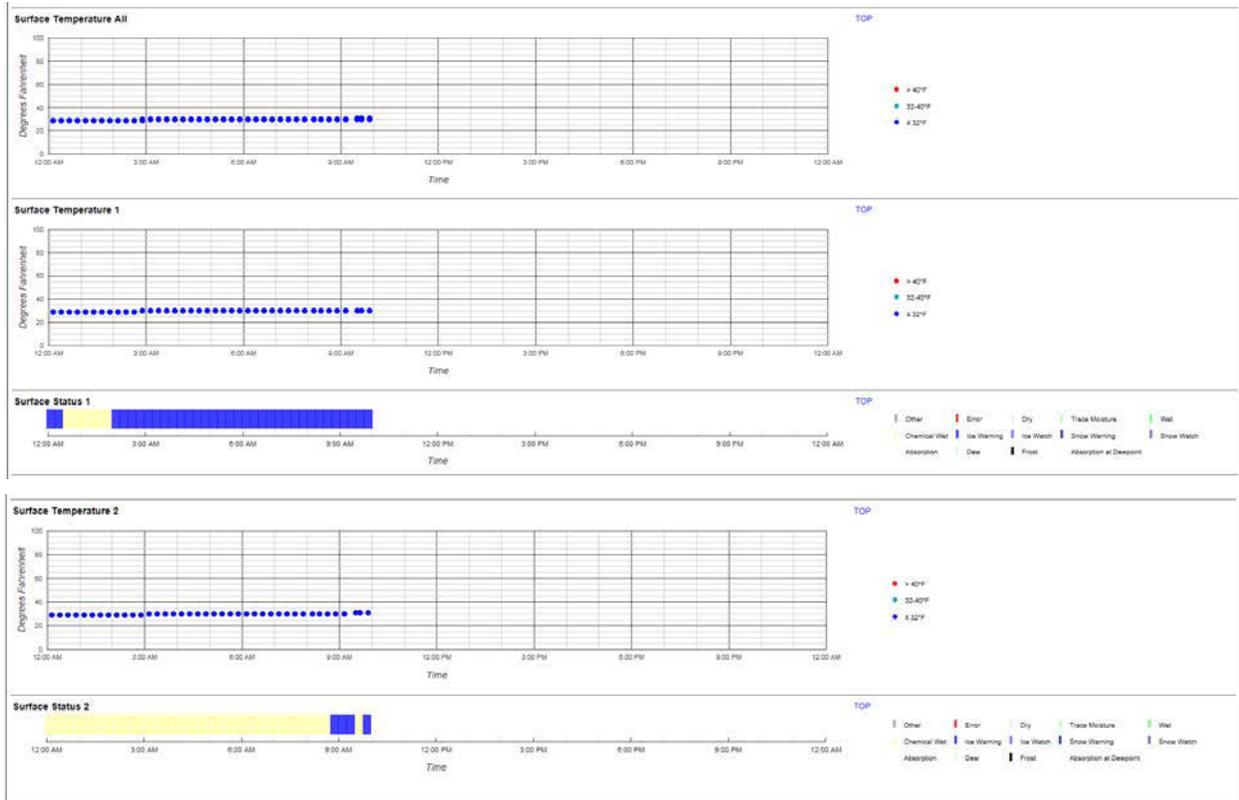


Figure 29: Surface Temperature and Surface Status Graphs for District 2 Snowman Summit

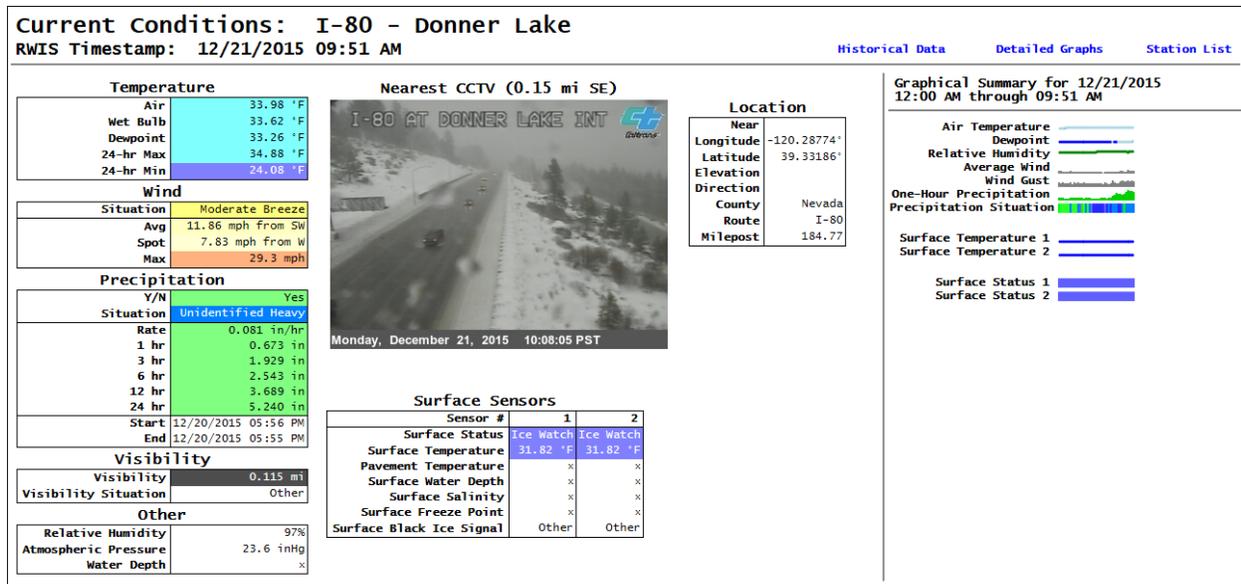


Figure 30: Current Conditions Display for District 3 Donner Lake

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

Data Atmospheric Date 12/21/2015

Graphs Station List

Timestamp Date Time	Temperature				Relative Humidity %	Atmospheric Pressure in Hg	Wind				Water Depth in	Precipitation						Visibility mi	Situation text							
	Air °F	Wet Bulb °F	Dew- point °F	24- hr Max °F			24- hr Min °F	Avg Speed mph	Avg Dir °	Spot Speed mph		Spot Dir °	Max Speed mph	Max Dir °	Situation text	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
12/21/2015 12:00 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 AM	12/20/2015 04:59 AM	0.183	0.685	1.492	1.811	2.000	1.16	Other
12/21/2015 12:01 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	Moderate	12/20/2015 05:18 AM	12/20/2015 05:17 AM	0.161	0.634	1.457	1.827	2.047	2.03	Other
12/21/2015 12:02 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 AM	12/20/2015 05:33 AM	0.169	0.622	1.453	1.854	2.079	1.33	Other
12/21/2015 12:03 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	Moderate	12/20/2015 05:50 AM	12/20/2015 05:47 AM	0.150	0.555	1.394	1.874	2.114	1.86	Other
12/21/2015 12:04 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	Moderate	12/20/2015 05:58 AM	12/20/2015 05:59 AM	0.150	0.555	1.390	1.894	2.154	1.81	Other
12/21/2015 12:05 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	Moderate	12/20/2015 06:06 AM	12/20/2015 06:05 AM	0.138	0.531	1.339	1.937	2.209	2.56	Other
12/21/2015 12:06 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 06:36 AM	12/20/2015 06:35 AM	0.181	0.551	1.346	1.972	2.260	1.36	Other
12/21/2015 12:07 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	Moderate	12/20/2015 06:56 AM	12/20/2015 06:55 AM	0.169	0.531	1.307	2.000	2.335	1.79	Other
12/21/2015 12:08 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	Moderate	12/20/2015 07:06 AM	12/20/2015 07:05 AM	0.209	0.547	1.307	2.051	2.366	2.28	Other
12/21/2015 12:09 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	Moderate	12/20/2015 07:16 AM	12/20/2015 07:15 AM	0.185	0.528	1.276	2.075	2.413	2.44	Other
12/21/2015 12:10 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	0.014	Unidentified Heavy	12/20/2015 07:36 AM	12/20/2015 07:35 AM	0.197	0.555	1.287	2.126	2.465	1.28	Other
12/21/2015 12:11 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 07:56 AM	12/20/2015 07:55 AM	0.169	0.539	1.236	2.165	2.504	0.49	Other
12/21/2015 12:12 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 Moderate	12/20/2015 08:06 AM	12/20/2015 08:05 AM	0.185	0.528	1.217	2.197	2.531	0.46	Other
12/21/2015 12:13 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	Moderate	12/20/2015 08:16 AM	12/20/2015 08:15 AM	0.150	0.516	1.173	2.248	2.587	1.22	Other
12/21/2015 12:14 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 08:36 AM	12/20/2015 08:35 AM	0.163	0.555	1.177	2.295	2.634	0.86	Other
12/21/2015 12:15 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	Moderate	12/20/2015 08:46 AM	12/20/2015 08:45 AM	0.173	0.555	1.122	2.343	2.681	0.14	Other
12/21/2015 12:16 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 08:56 AM	12/20/2015 08:55 AM	0.185	0.567	1.126	2.386	2.724	0.27	Other
12/21/2015 12:17 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 09:06 AM	12/20/2015 09:05 AM	0.138	0.516	1.067	2.390	2.744	0.40	Other
12/21/2015 12:18 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 09:16 AM	12/20/2015 09:15 AM	0.134	0.504	1.063	2.413	2.772	0.34	Other
12/21/2015 12:19 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 09:26 AM	12/20/2015 09:25 AM	0.114	0.484	1.035	2.433	2.815	0.24	Other
12/21/2015 12:20 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 09:36 AM	12/20/2015 09:35 AM	0.142	0.496	1.047	2.484	2.866	0.26	Other
12/21/2015 12:21 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 09:46 AM	12/20/2015 09:45 AM	0.157	0.476	1.024	2.496	2.909	0.24	Other
12/21/2015 12:22 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 09:56 AM	12/20/2015 09:55 AM	0.181	0.484	1.043	2.528	2.933	0.28	Other
12/21/2015 12:23 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 10:06 AM	12/20/2015 10:05 AM	0.185	0.508	1.035	2.520	3.016	0.32	Other
12/21/2015 12:24 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 10:16 AM	12/20/2015 10:15 AM	0.177	0.508	1.039	2.531	3.043	0.40	Other
12/21/2015 12:25 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	Moderate	12/20/2015 10:26 AM	12/20/2015 10:25 AM	0.154	0.472	1.012	2.488	3.079	0.36	Other
12/21/2015 12:26 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 10:36 AM	12/20/2015 10:35 AM	0.213	0.535	1.094	2.547	3.173	0.18	Other
12/21/2015 12:27 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 10:46 AM	12/20/2015 10:45 AM	0.213	0.539	1.114	2.520	3.240	0.26	Other
12/21/2015 12:28 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 10:56 AM	12/20/2015 10:55 AM	0.323	0.642	1.209	2.602	3.366	0.20	Other
12/21/2015 12:29 AM	33.80	33.08	31.62	34.52	23.36	92.0	23.61	7.16	W	1.97	E	24.16	SW	Light Breeze	Yes	0.031	Unidentified Heavy	12/20/2015 11:06 AM	12/20/2015 11:05 AM	0.441	0.807	1.331	2.689	3.539	0.14	Other
12/21/2015 12:30 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	0.030	Unidentified Heavy	12/20/2015 11:16 AM	12/20/2015 11:15 AM	0.575	0.976	1.480	2.835	3.748	0.13	Other
12/21/2015 12:31 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	Moderate	12/20/2015 11:26 AM	12/20/2015 11:25 AM	0.496	0.980	1.480	2.803	3.811	0.24	Other
12/21/2015 12:32 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 11:36 AM	12/20/2015 11:35 AM	0.488	1.000	1.496	2.807	3.866	0.24	Other
12/21/2015 12:33 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	0.047	Unidentified Heavy	12/20/2015 11:46 AM	12/20/2015 11:45 AM	0.441	1.130	1.622	2.917	4.033	0.15	Other
12/21/2015 12:34 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 11:56 AM	12/20/2015 11:55 AM	0.512	1.319	1.807	3.096	4.276	0.26	Other
12/21/2015 12:35 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 12:06 AM	12/20/2015 12:05 AM	0.673	1.476	1.992	3.236	4.504	0.13	Other
12/21/2015 12:36 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 12:16 AM	12/20/2015 12:15 AM	0.795	1.622	2.130	3.330	4.669	0.12	Other
12/21/2015 																										

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

Data: Surface Date: 12/21/2015 [Graphs](#) [Station List](#)

Timestamp Date Time	Surface Status		Surface Temperature		Pavement Temperature		Surface Water Depth		Surface Salinity		Surface Freeze Point		Surface Black Ice Signal		Subsurface Temperature
	1 text	2 text	1 °F	2 °F	1 °F	2 °F	1 in	2 in	1 pp100K	2 pp100K	1 °F	2 °F	1 text	2 text	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	30.86	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

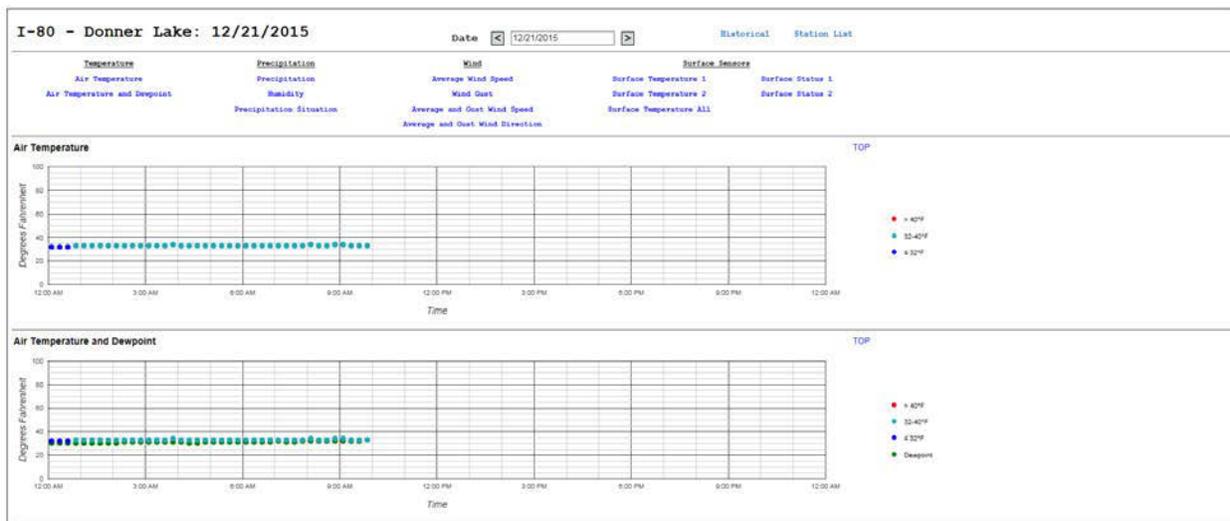


Figure 33: Air Temperature, Air Temperature and Dewpoint Graphs for District 3 Donner Lake

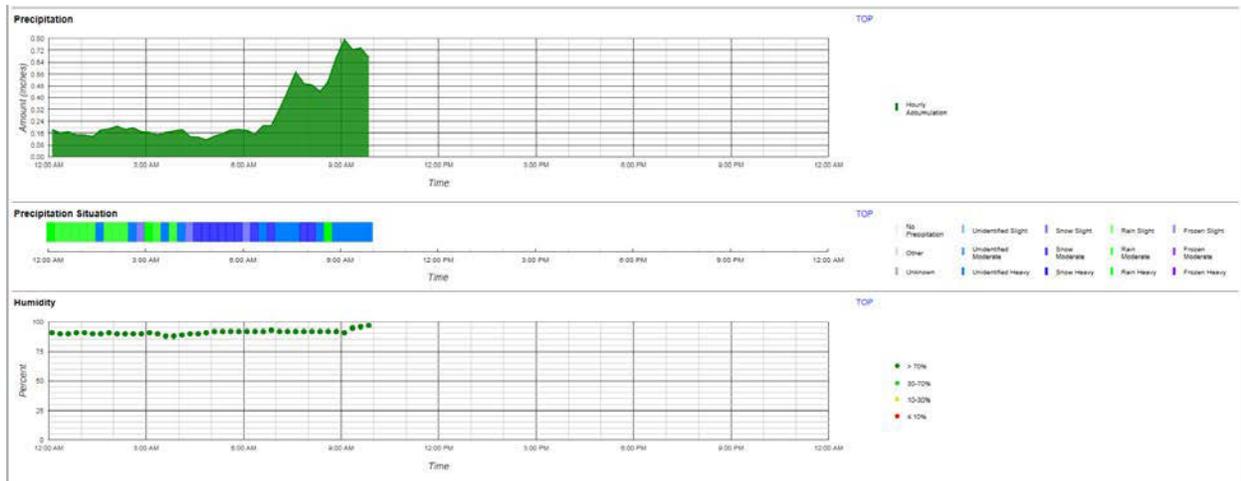


Figure 34: Precipitation, Precipitation Situation, and Humidity Graphs for District 3 Donner Lake

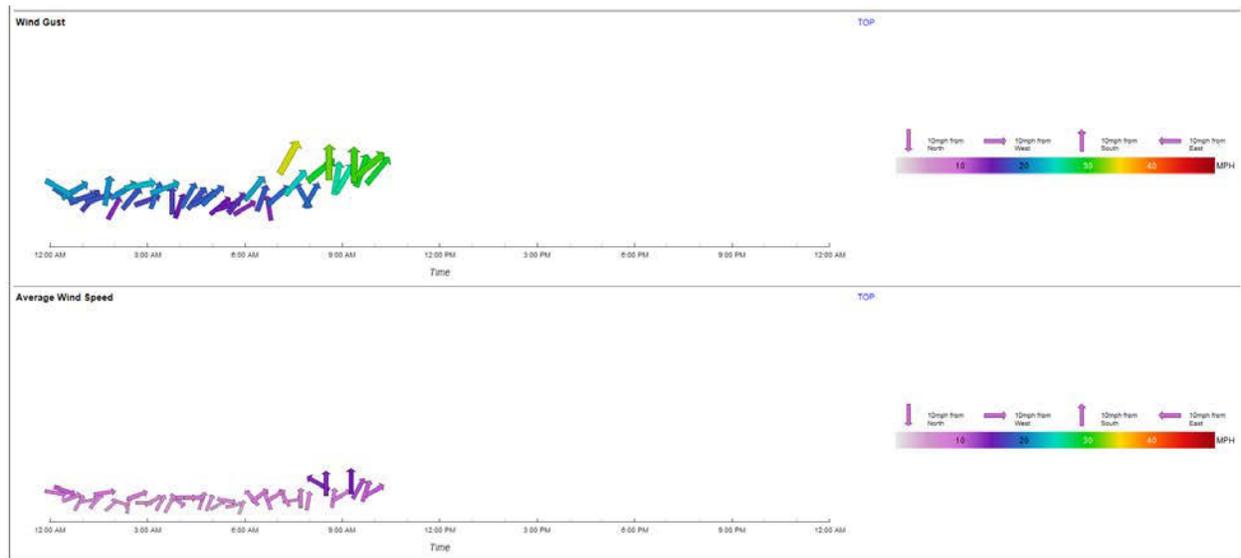


Figure 35: Wind Arrow Graph for District 3 Donner Lake

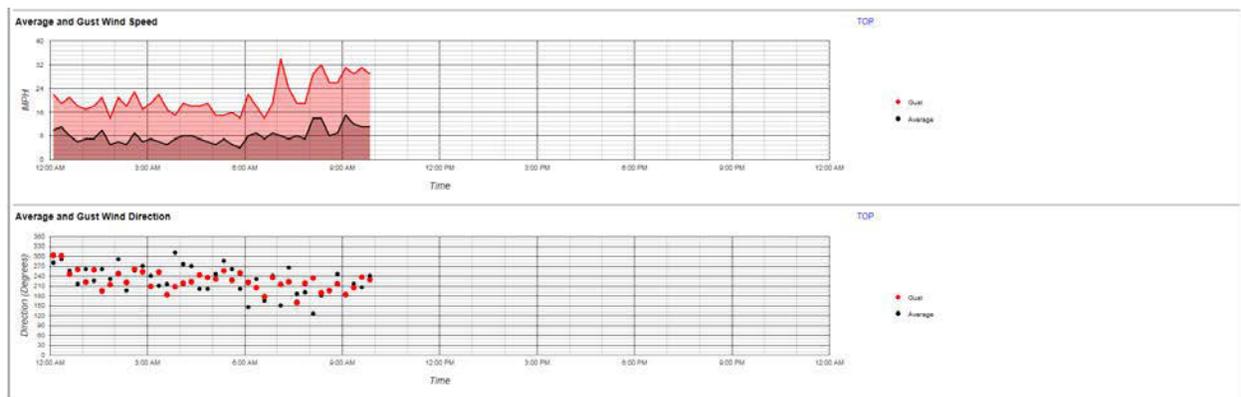


Figure 36: Wind Direction and Velocity Graph for District 3 Donner Lake

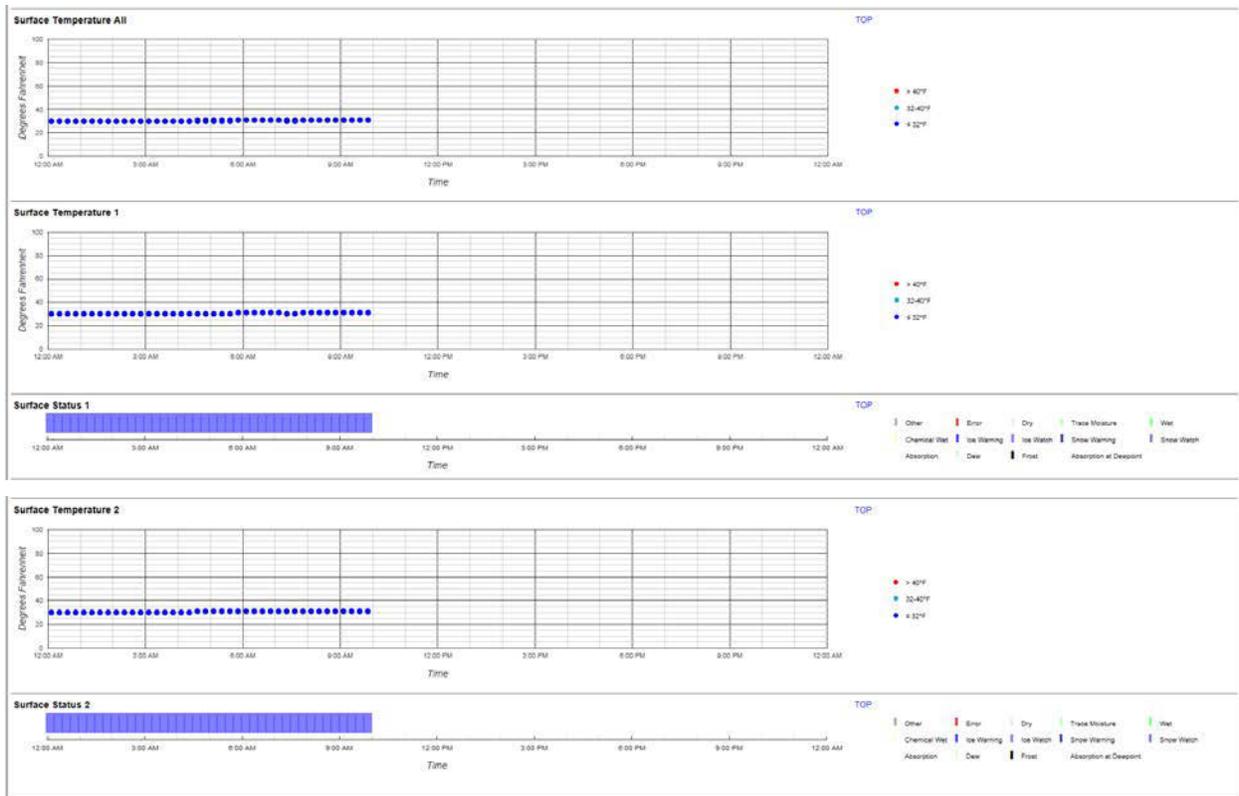


Figure 37: Surface Temperature and Surface Status Graphs for District 3 Donner Lake

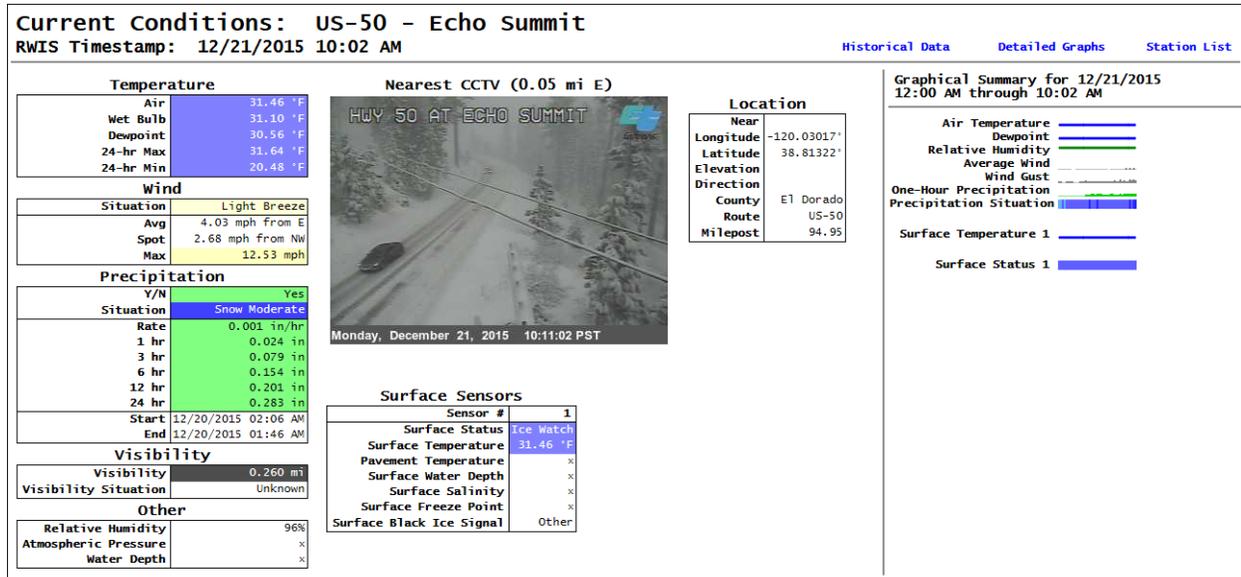


Figure 38: Current Conditions Display for District 3 Echo Summit

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

Date Atmospheric Date 12/21/2015

Graphs Station List

Timestamp Date Time	Temperature				Relative Humidity %	Atmospheric Pressure in Hg	Wind					Water Depth in	Precipitation							Visibility mi	Situation text				
	Wet Air °F	Dew- Bulb °F	24- pt °F	24- Max °F			Avg Speed mph	Arg Dir	Spot Speed mph	Spot Dir	Max Speed mph		Max Dir	Situation text	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
12/21/2015 12:02 AM	29.66	29.30	28.40	29.84	10.76	95.0	1.57	N	4.25	NE	7.38	N	Calm	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	1.34	NE	0.45	NE	5.82	N	Calm	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	1.12	NE	2.68	NW	3.13	N	Calm	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.020	0.031	0.078	0.102	0.61	Unknown
12/21/2015 12:47 AM	29.66	29.30	28.40	29.84	10.76	95.0	2.24	NE	1.57	NE	4.70	NE	Calm	Yes	0.001	Unidentified Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.016	0.031	0.078	0.102	0.65	Unknown
12/21/2015 01:02 AM	29.66	29.30	28.40	29.84	10.76	95.0	2.68	N	0.45	NE	7.38	N	Calm	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	0.102	0.64	Unknown
12/21/2015 01:17 AM	29.64	29.48	28.58	29.84	10.76	95.0	2.46	NE	1.57	E	5.14	N	Calm	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.078	0.102	0.71	Unknown
12/21/2015 01:32 AM	29.64	29.48	28.58	29.84	10.94	95.0	2.68	NE	4.25	N	5.14	N	Calm	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.031	0.078	0.106	0.74	Unknown
12/21/2015 01:47 AM	29.64	29.48	28.58	29.84	10.94	95.0	0.67	NE	0.45	NE	6.26	W	Calm	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	0.45	E	0.00	N	4.25	N	Calm	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	1.57	NE	1.57	NE	4.25	NE	Calm	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	1.57	E	1.12	NE	4.70	E	Calm	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	1.34	NE	1.12	NE	5.14	N	Calm	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	1.57	NE	1.57	NE	5.14	N	Calm	Yes	0.000	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.004	0.016	0.038	0.078	0.114	0.78	Unknown
12/21/2015 03:17 AM	30.56	30.20	29.30	30.56	10.94	95.0	1.79	NE	4.25	NE	8.28	N	Calm	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.008	0.016	0.038	0.078	0.114	0.50	Unknown
12/21/2015 03:32 AM	30.74	30.38	29.48	30.74	13.28	95.0	2.46	NE	1.57	NE	10.51	N	Calm	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.012	0.020	0.038	0.078	0.132	0.44	Unknown
12/21/2015 03:47 AM	30.92	30.56	29.66	30.92	13.28	95.0	1.57	NE	3.13	E	8.95	E	Calm	Yes	0.003	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.016	0.024	0.038	0.078	0.126	0.67	Unknown
12/21/2015 04:02 AM	30.92	30.56	29.66	30.92	13.28	95.0	1.57	NE	0.45	N	6.26	N	Calm	Yes	0.000	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.028	0.047	0.087	0.134	0.61	Unknown
12/21/2015 04:17 AM	30.74	30.38	29.48	30.92	13.28	95.0	1.57	NE	1.12	NE	5.82	NE	Calm	Yes	0.003	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.024	0.038	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	1.57	NE	2.68	N	6.71	NE	Calm	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	3.38	N	4.25	N	6.26	NE	Calm	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	1.79	NE	2.68	N	8.95	N	Calm	Yes	0.002	Snow Moderate	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.028	0.038	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	1.79	E	2.01	N	5.14	N	Calm	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	1.34	W	2.01	E	5.14	N	Calm	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	4.47	N	1.12	NE	8.28	N	Breeze	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	2.24	NE	1.12	NE	7.38	NW	Calm	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	1.34	NE	0.45	N	5.14	NE	Calm	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	0.67	NE	1.57	NE	7.38	N	Calm	Yes	0.001	Snow Slight	12/20/2015 02:06 AM	12/20/2015 01:46 AM	0.020	0.075	0.084	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	1.34	W	1.57	SW	6.71	N	Calm	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	2.91	N	2.68	N	7.38	NE	Calm	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	2.68	SE	1.12	E	10.51	SE	Calm	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	2.24	SE	1.57	SE	8.28	NE	Calm	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	2.91	N	5.82	SE	7.83	SE	Calm	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	2.24	NE	4.70	NE	19.24	S	Calm	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	1.57	E	5.82	NE	8.28	SE	Calm	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	4.70	SE	1.57	NW	10.96	SE	Light Breeze	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	5.59	S	2.68	NE	9.40	SW	Light Breeze	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	2.24	NE	1.12	NE	9.40	S	Calm	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	5.37	SE	2.68	SE	17.22	SW	Light Breeze	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	3.38	S	4.25	NW	12.53	SW	Calm	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	6.26																		

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

Data:  Date:

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

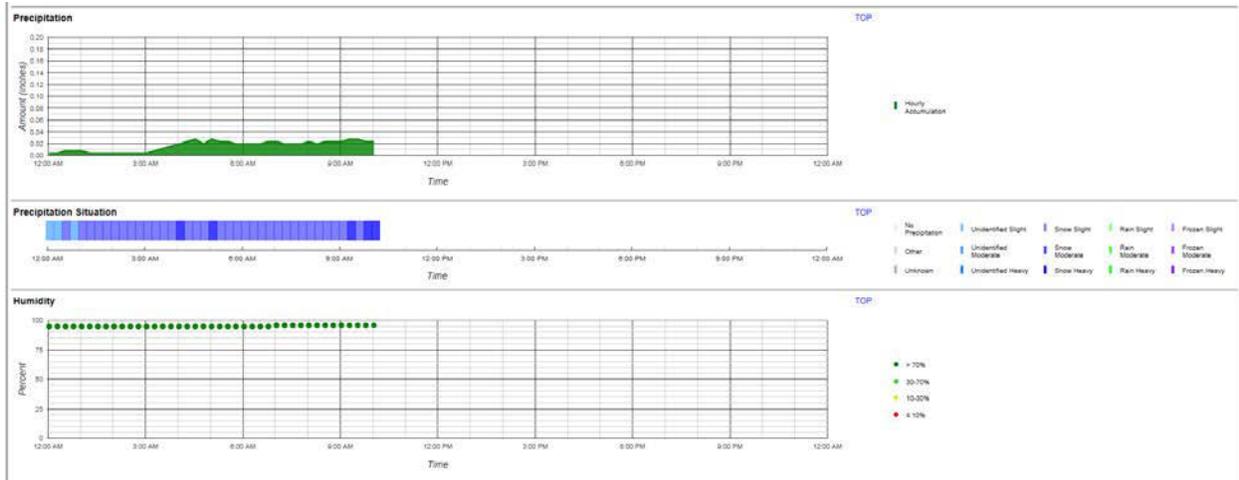


Figure 42: Precipitation, Precipitation Situation, and Humidity Graphs for District 3 Echo Summit

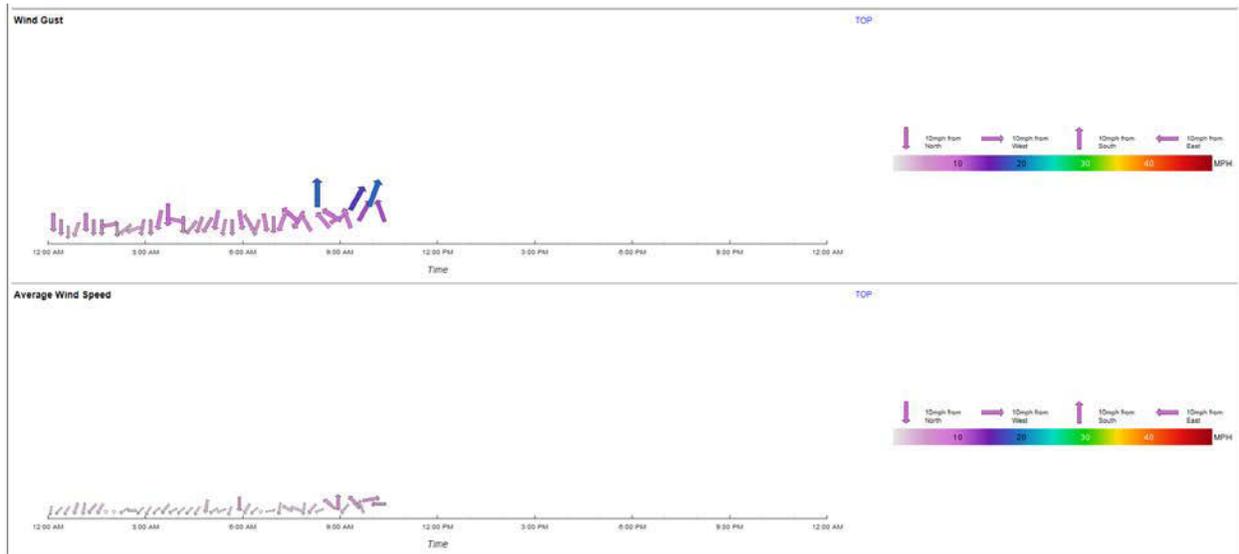


Figure 43: Wind Arrow Graph for District 3 Echo Summit

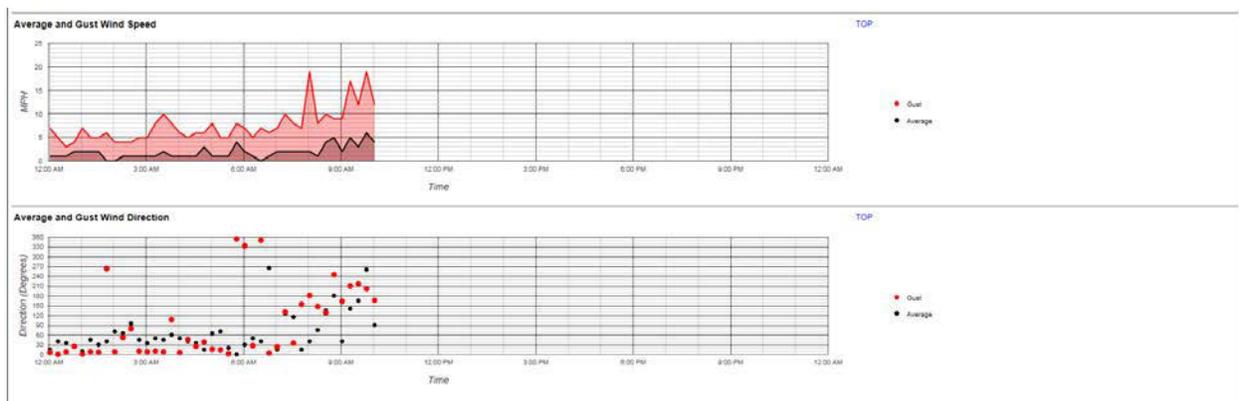


Figure 44: Wind Direction and Velocity Graph for District 3 Echo Summit

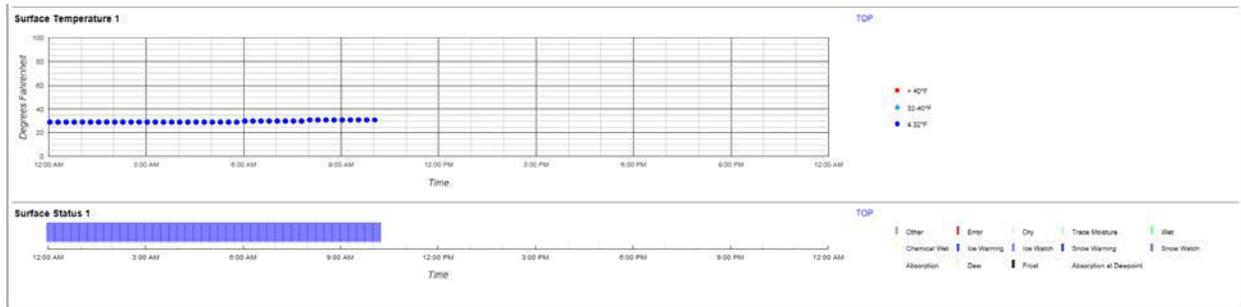


Figure 45: Surface Temperature and Surface Status Graphs for District 3 Echo Summit

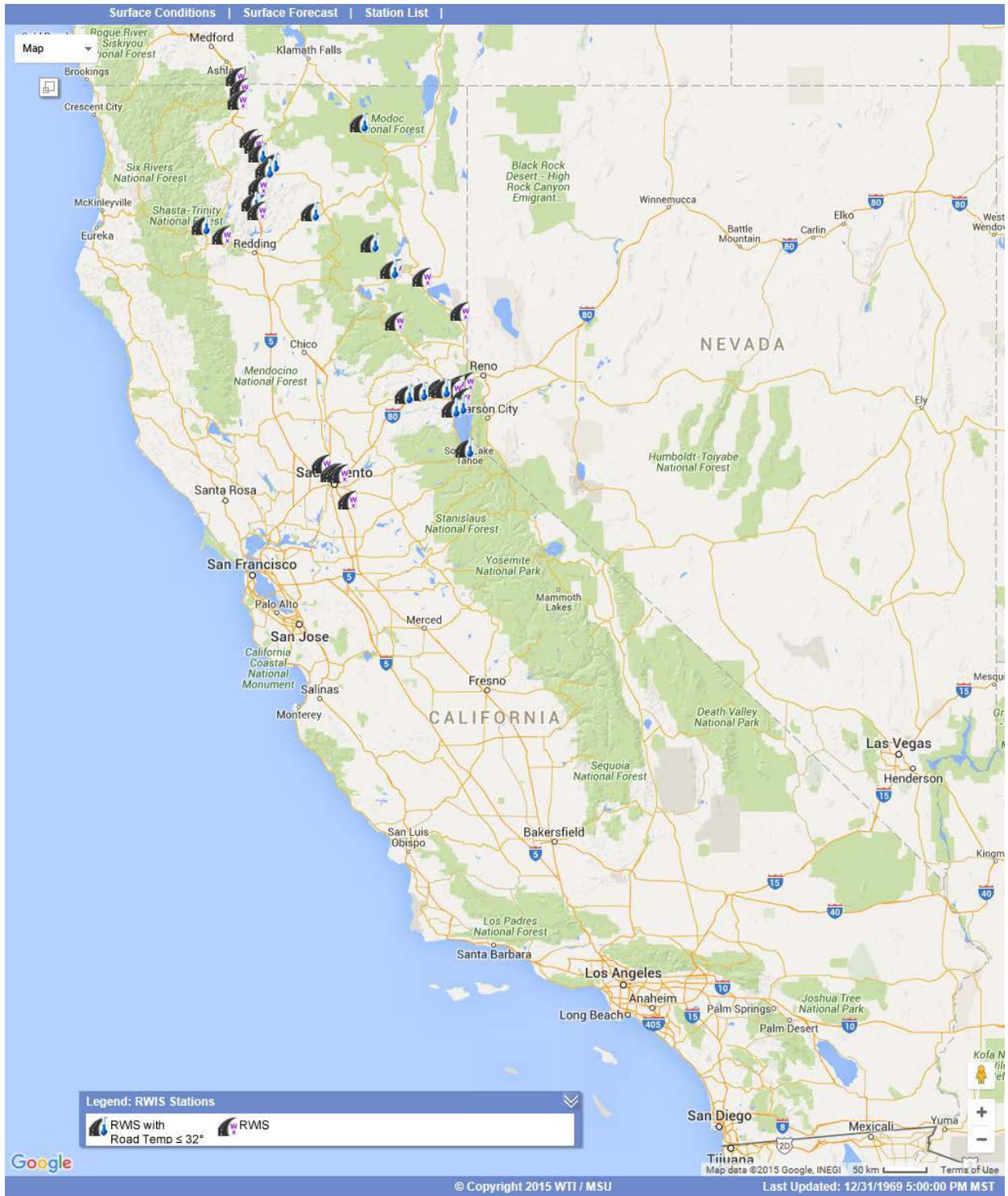


Figure 46: Map Display of RWIS Sites

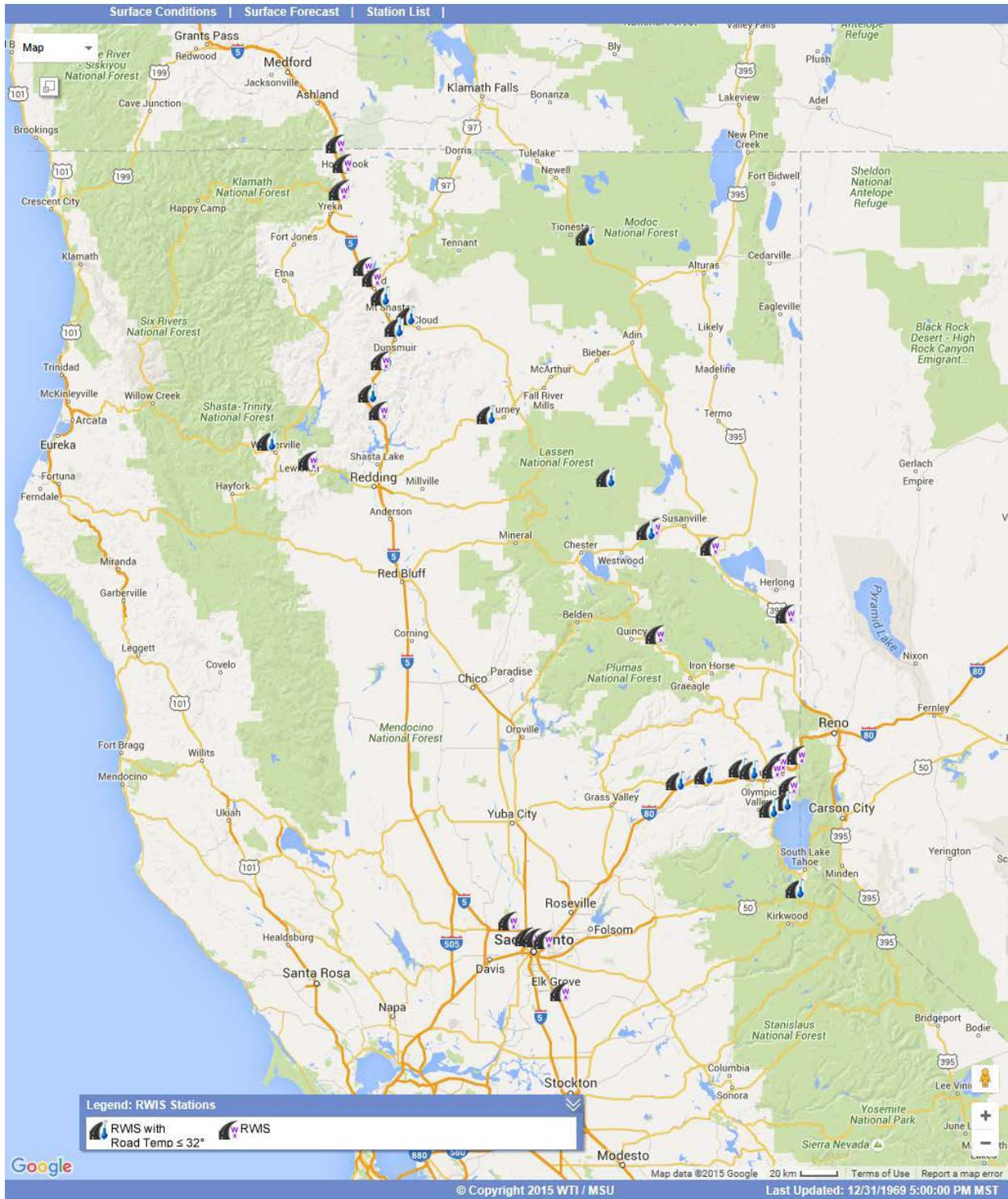


Figure 47: Map Display of RWIS Sites – Part 2

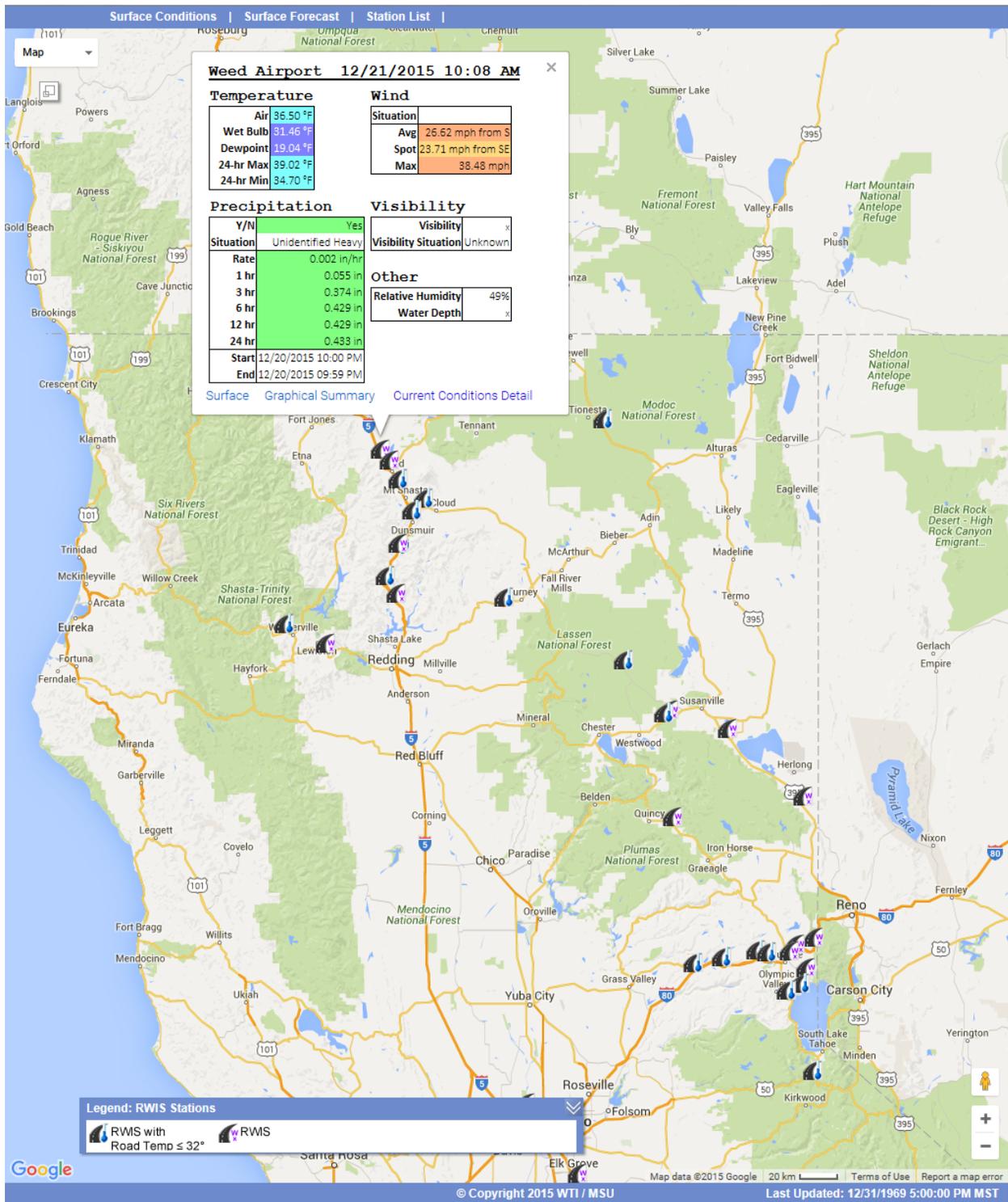


Figure 48: District 2 Weed Airport Atmospheric Summary from Map Display

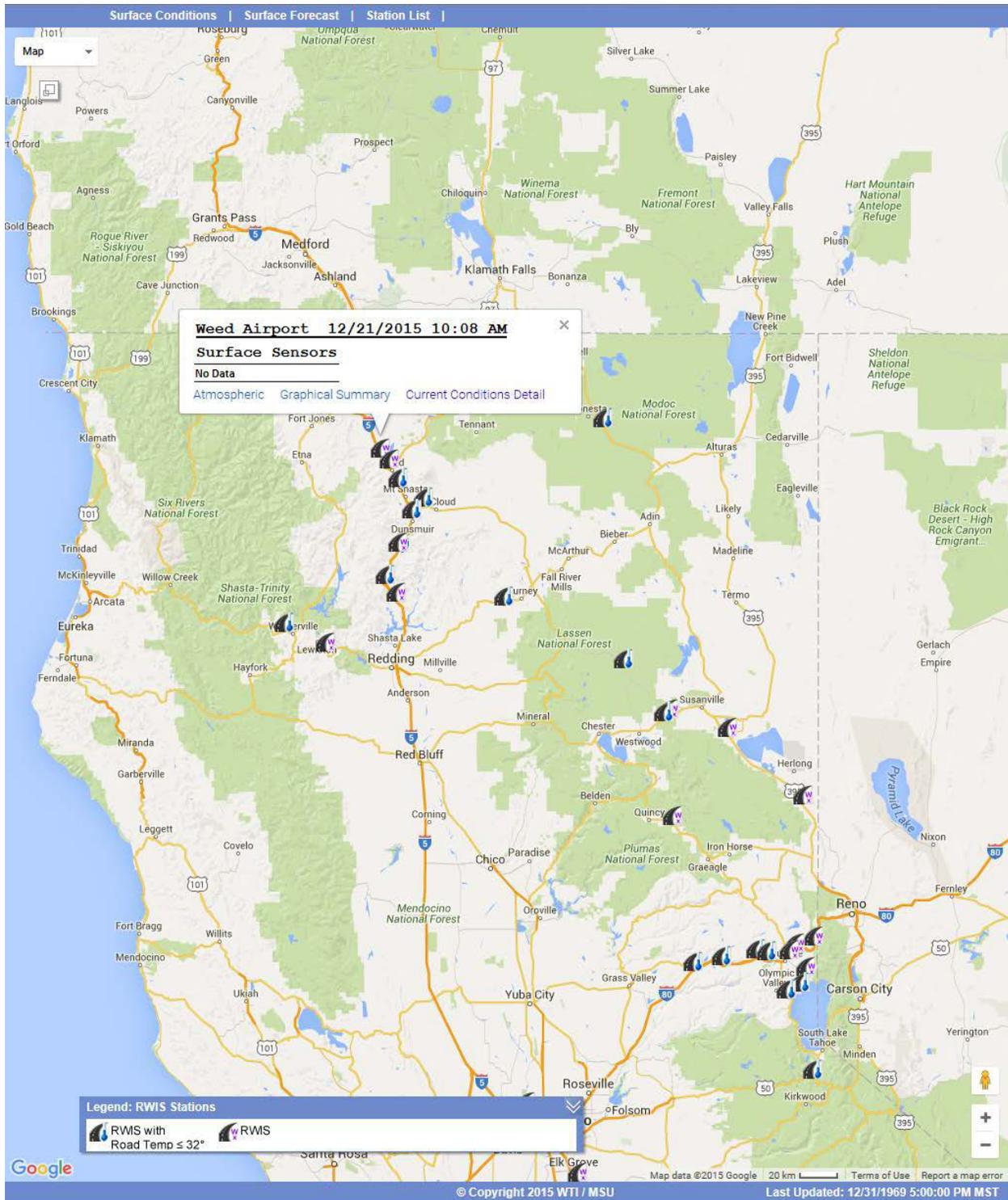


Figure 49: District 2 Weed Airport RWIS Surface Summary from Map Display (there are no surface sensors at this site)

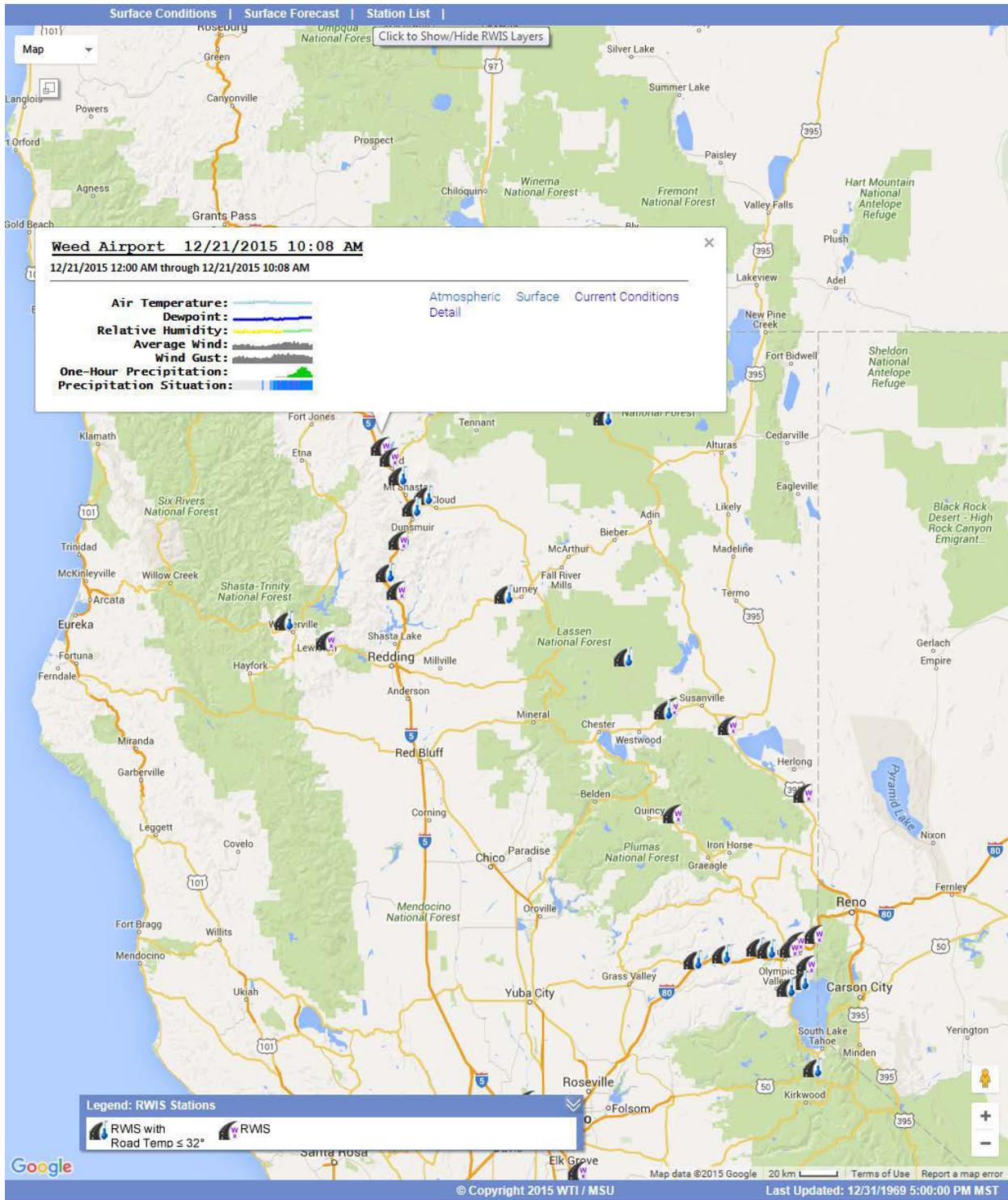


Figure 50: District 2 Weed Airport RWIS Graphical Summary from Map Display

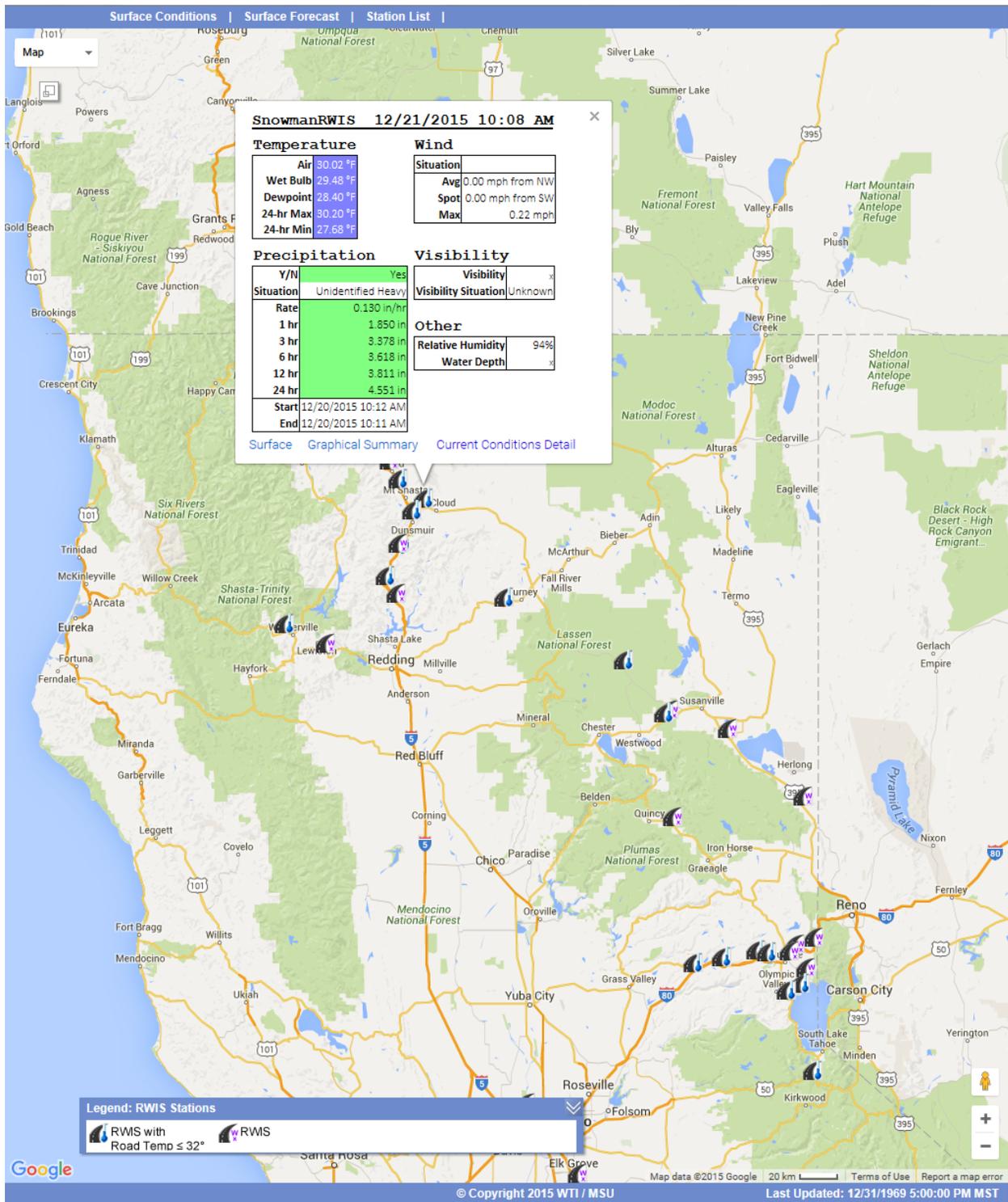


Figure 51: District 2 Snowman Summit RWIS Atmospheric Summary from Map Display

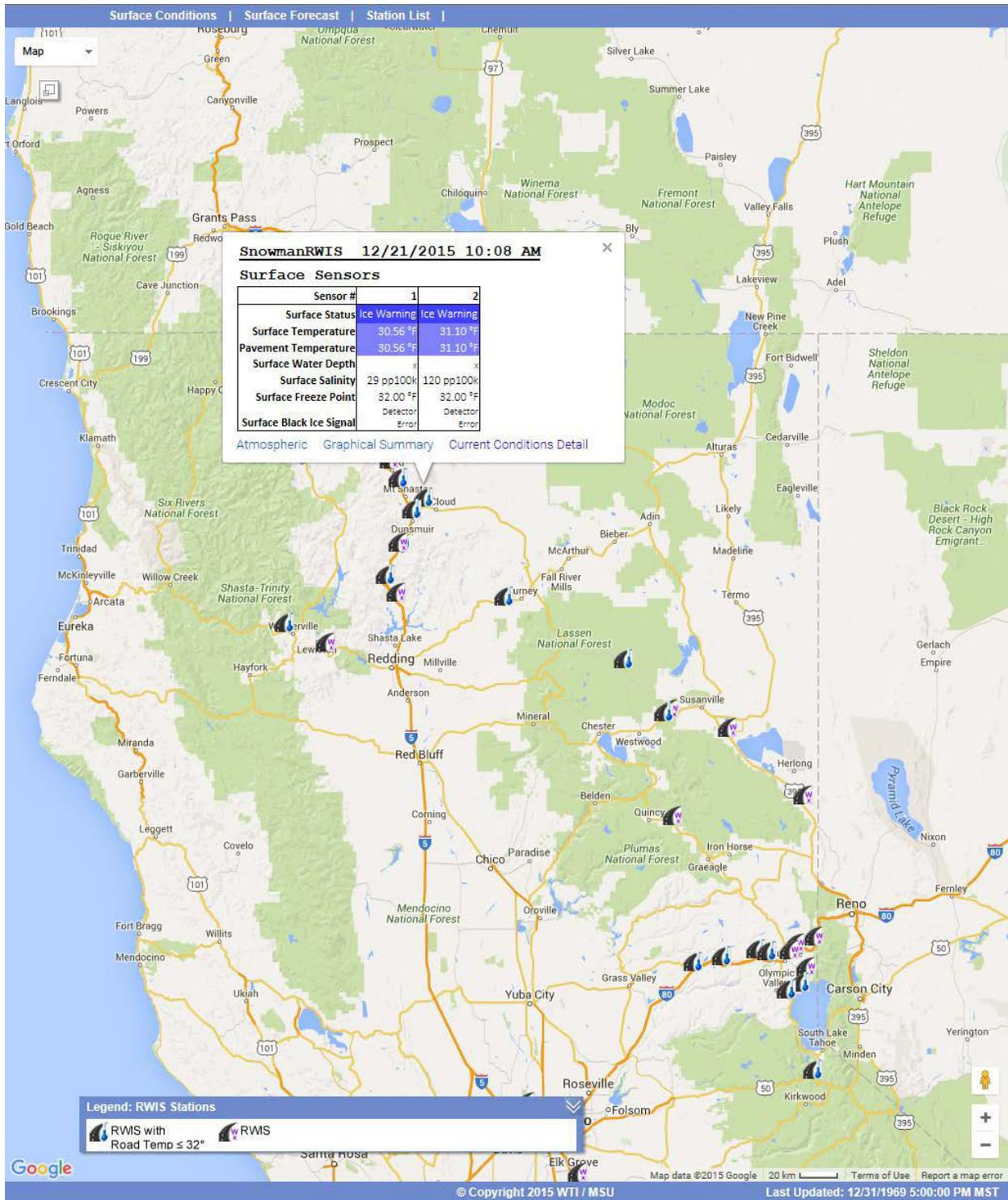


Figure 52: District 2 Snowman Summit RWIS Surface Summary from Map Display

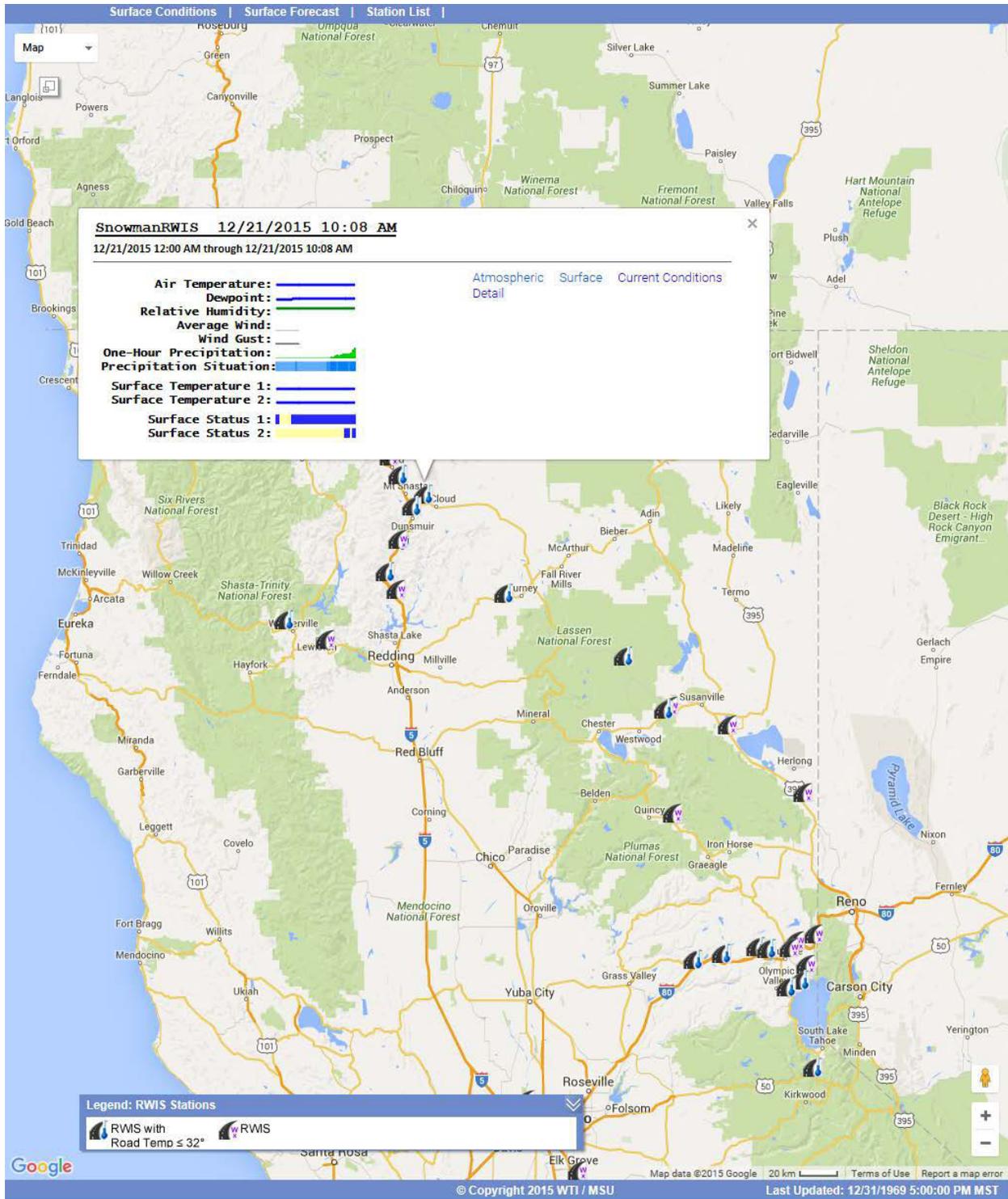


Figure 53: District 2 Snowman Summit RWIS Graphical Summary from Map Display

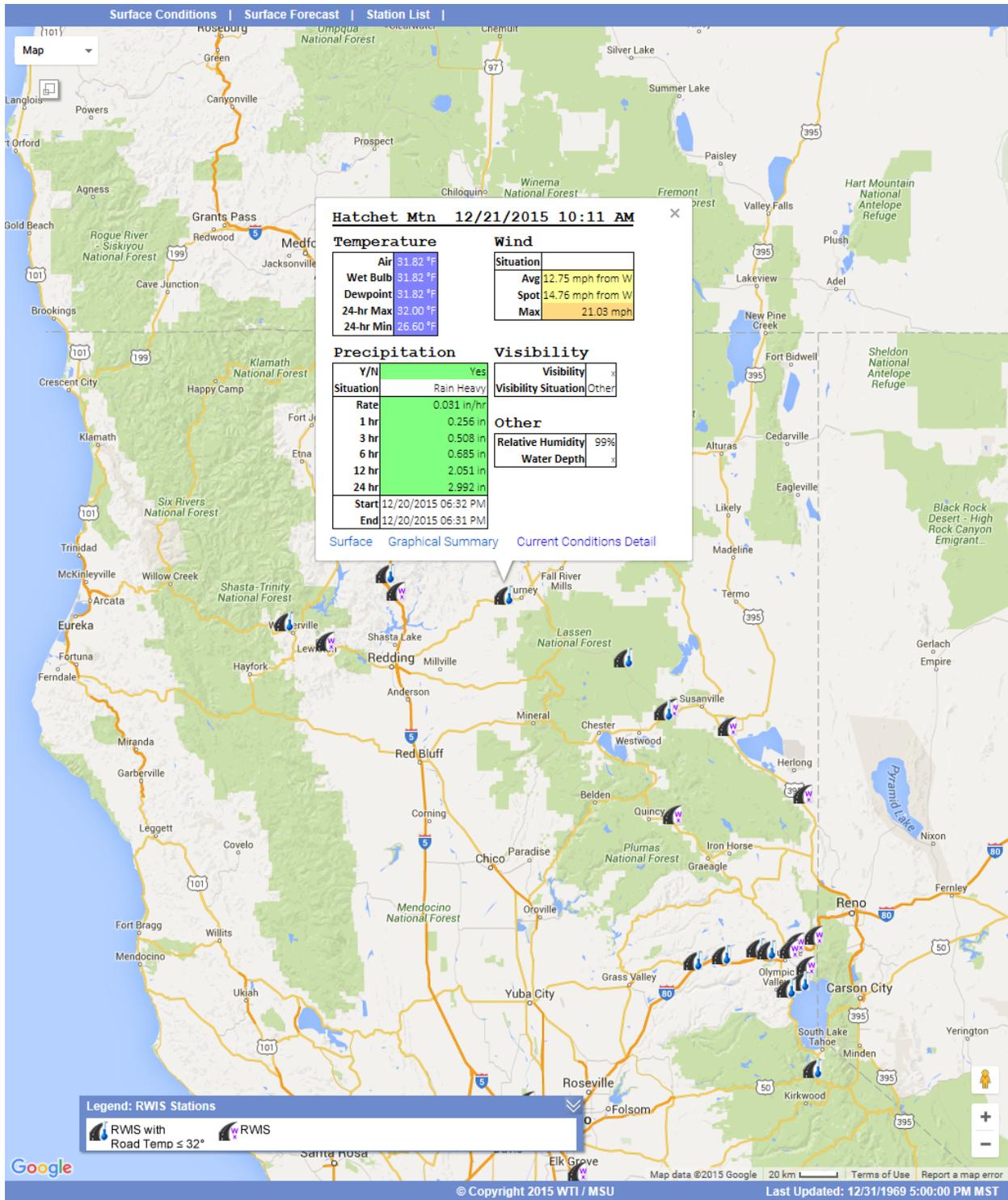


Figure 54: District 2 Hatchet Mountain RWIS Atmospheric Summary from Map Display

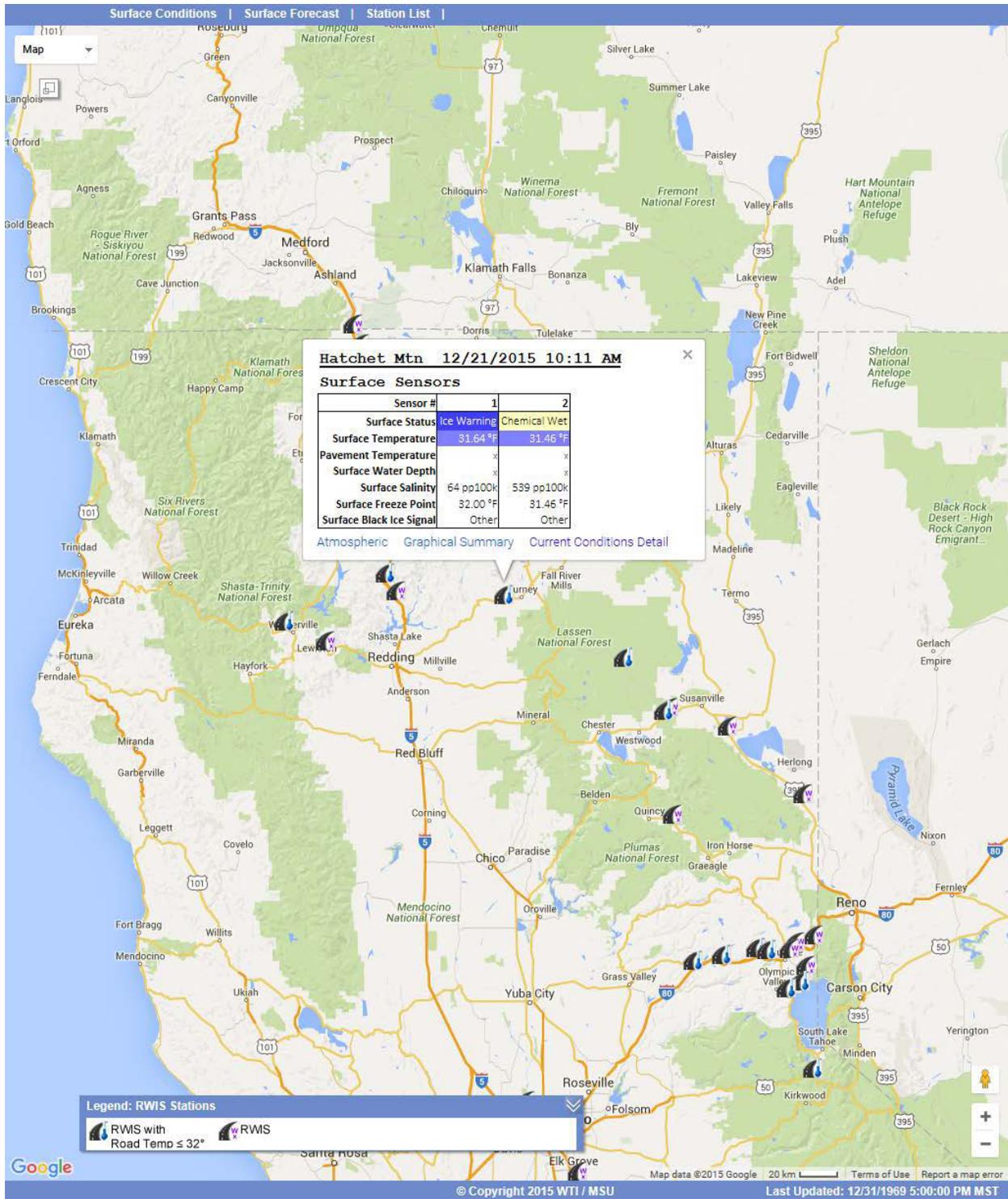


Figure 55: District 2 Hatchet Mountain RWIS Surface Summary from Map Display

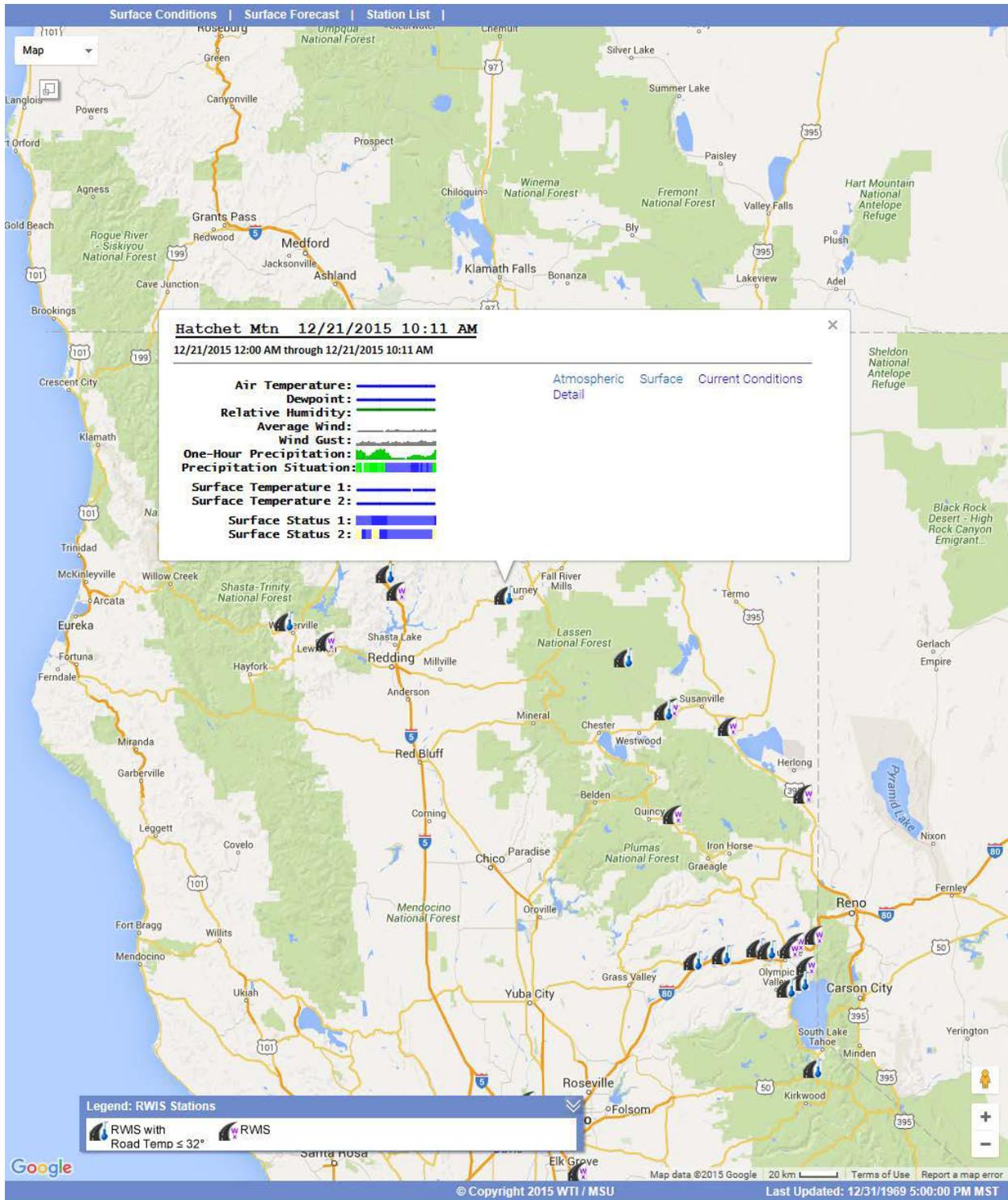


Figure 56: District 2 Hatchet Mountain RWIS Graphical Summary from Map Display

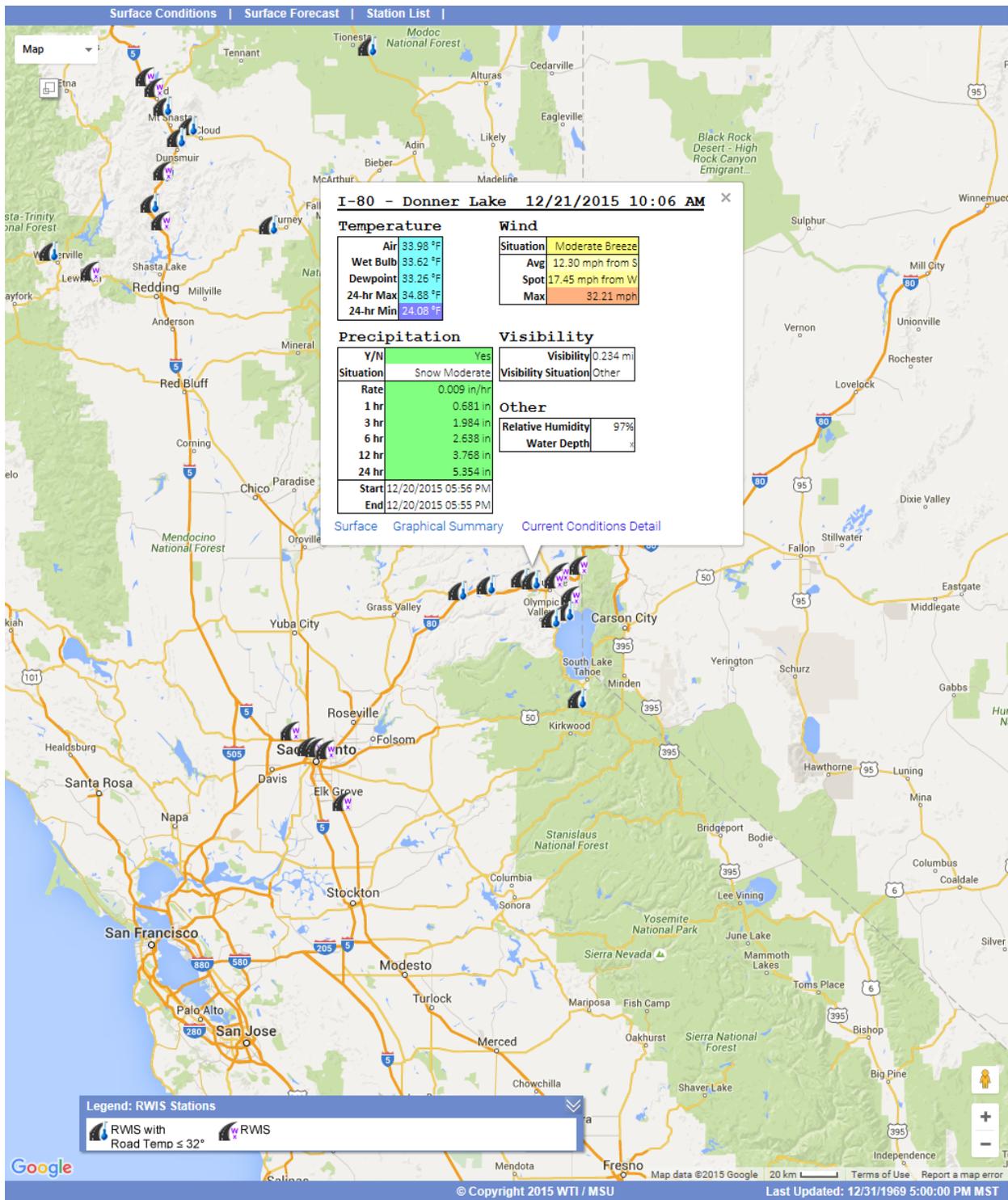


Figure 57: District 3 Donner Lake RWIS Atmospheric Summary from Map Display

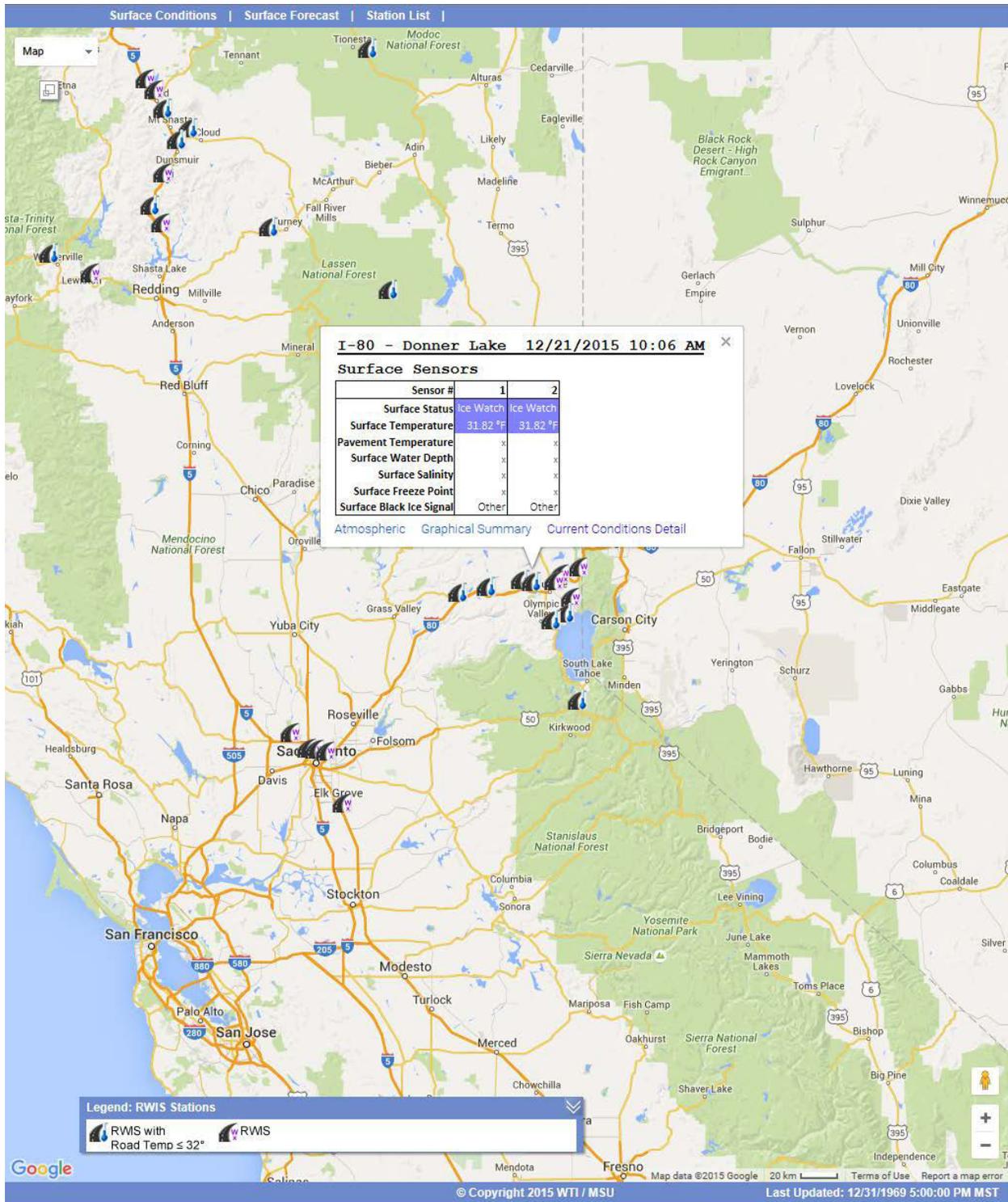


Figure 58: District 3 Donner Lake RWIS Surface Summary from Map Display

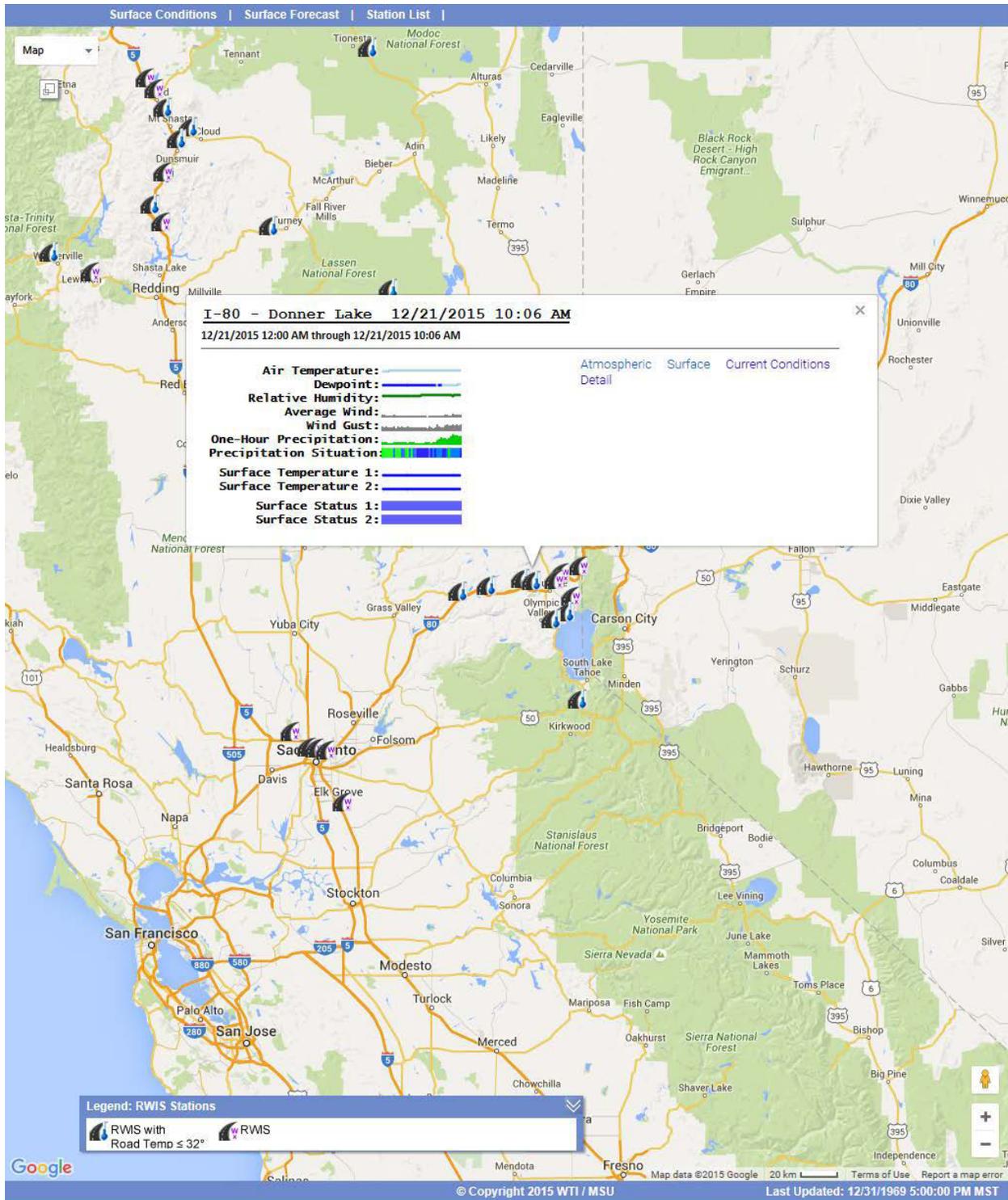


Figure 59: District 3 Donner Lake RWIS Graphical Summary from Map Display

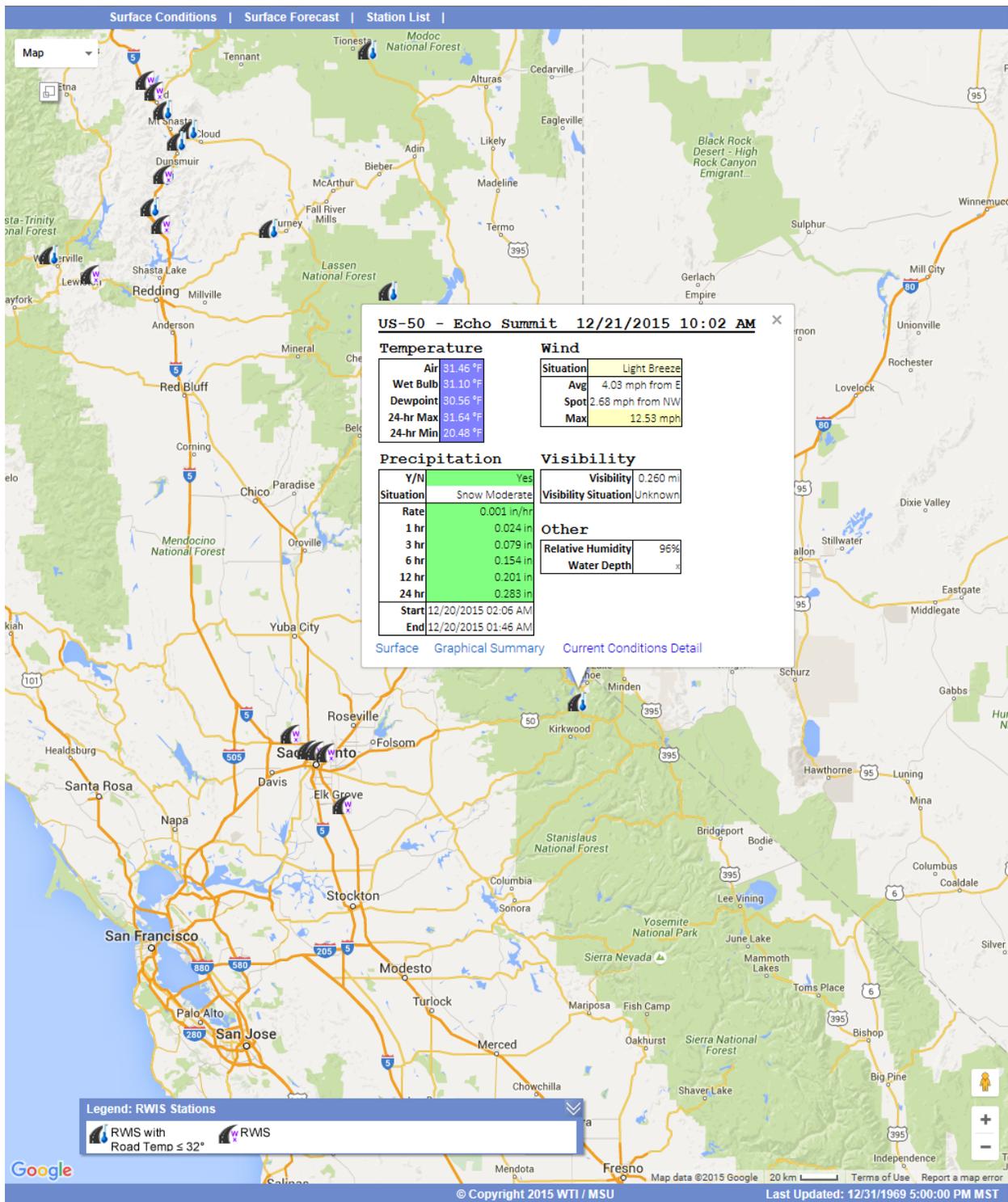


Figure 60: District 3 Echo Summit RWIS Atmospheric Summary from Map Display

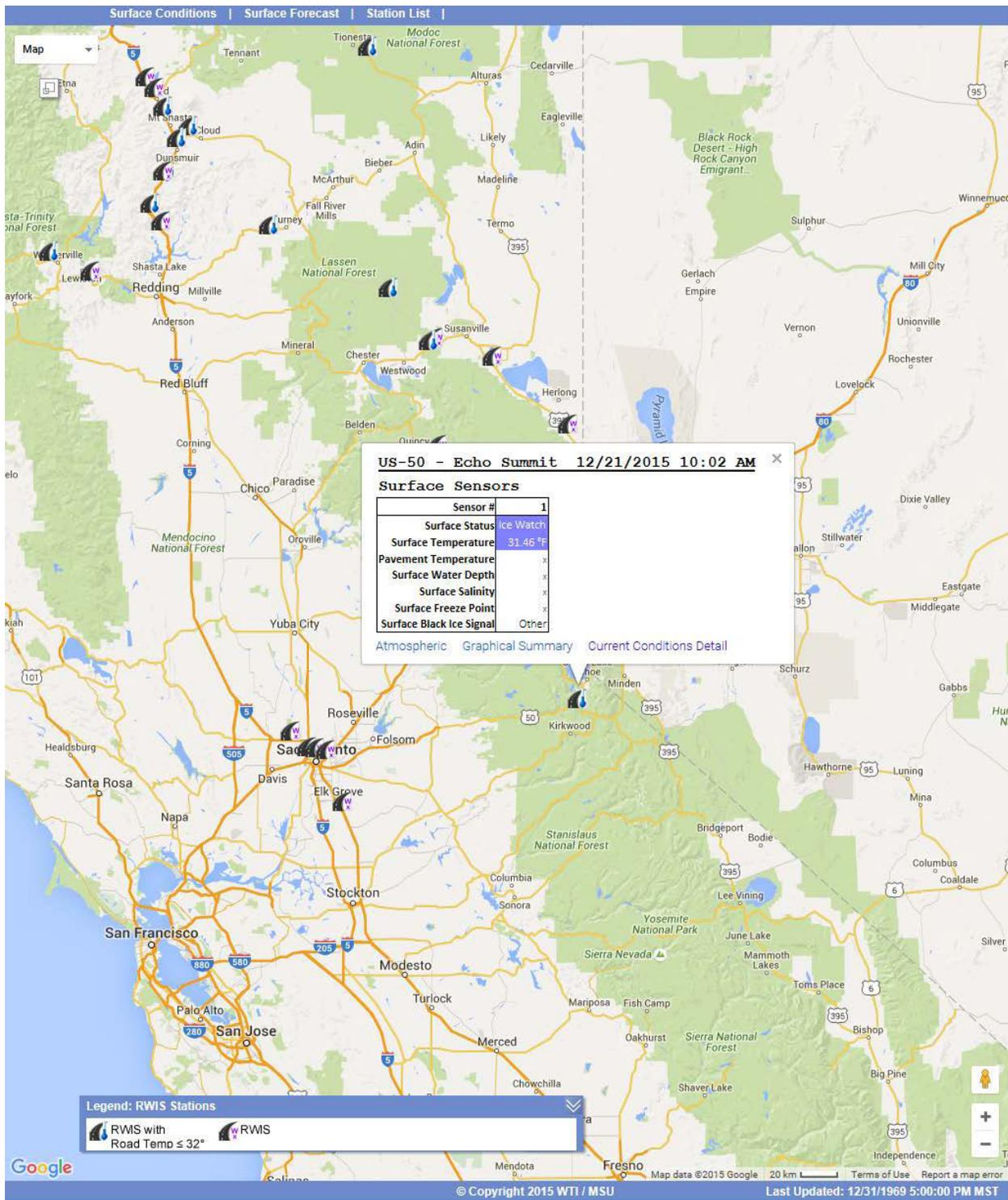


Figure 61: District 3 Echo Summit RWIS Surface Summary from Map Display

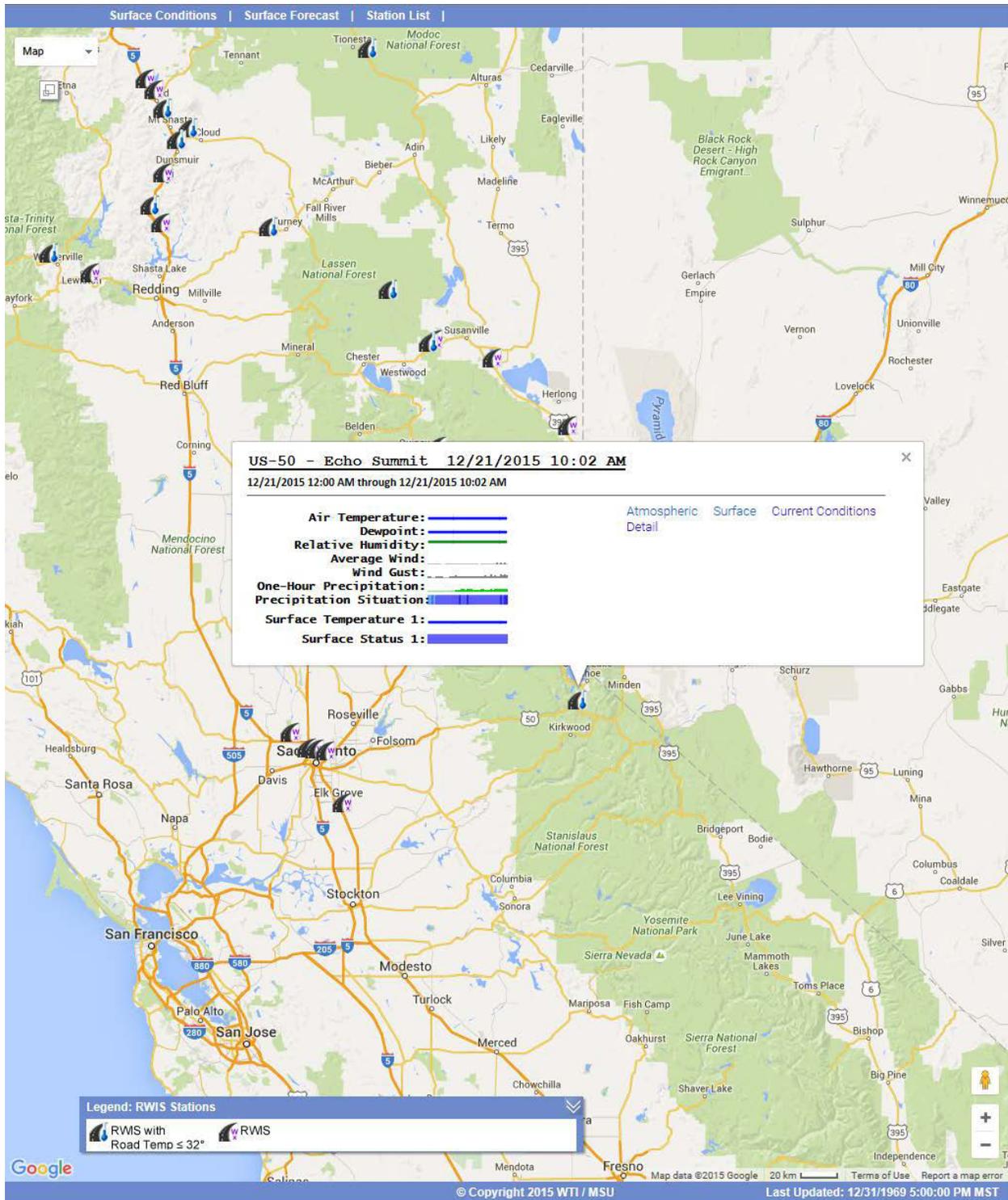


Figure 62: District 3 Echo Summit RWIS Graphical Summary from Map Display

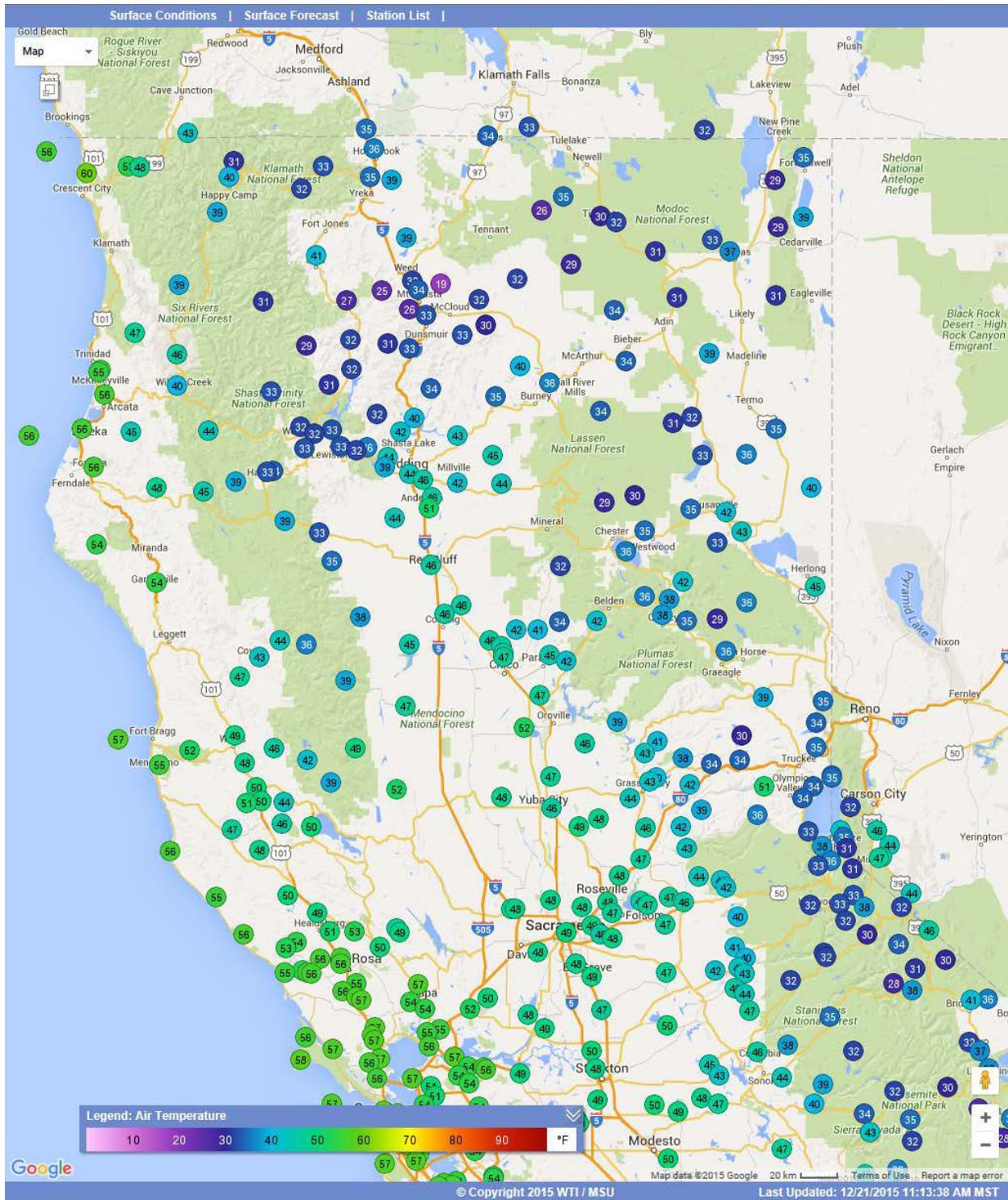


Figure 63: Current Conditions Temperature Map Display (includes non-RWIS sites)

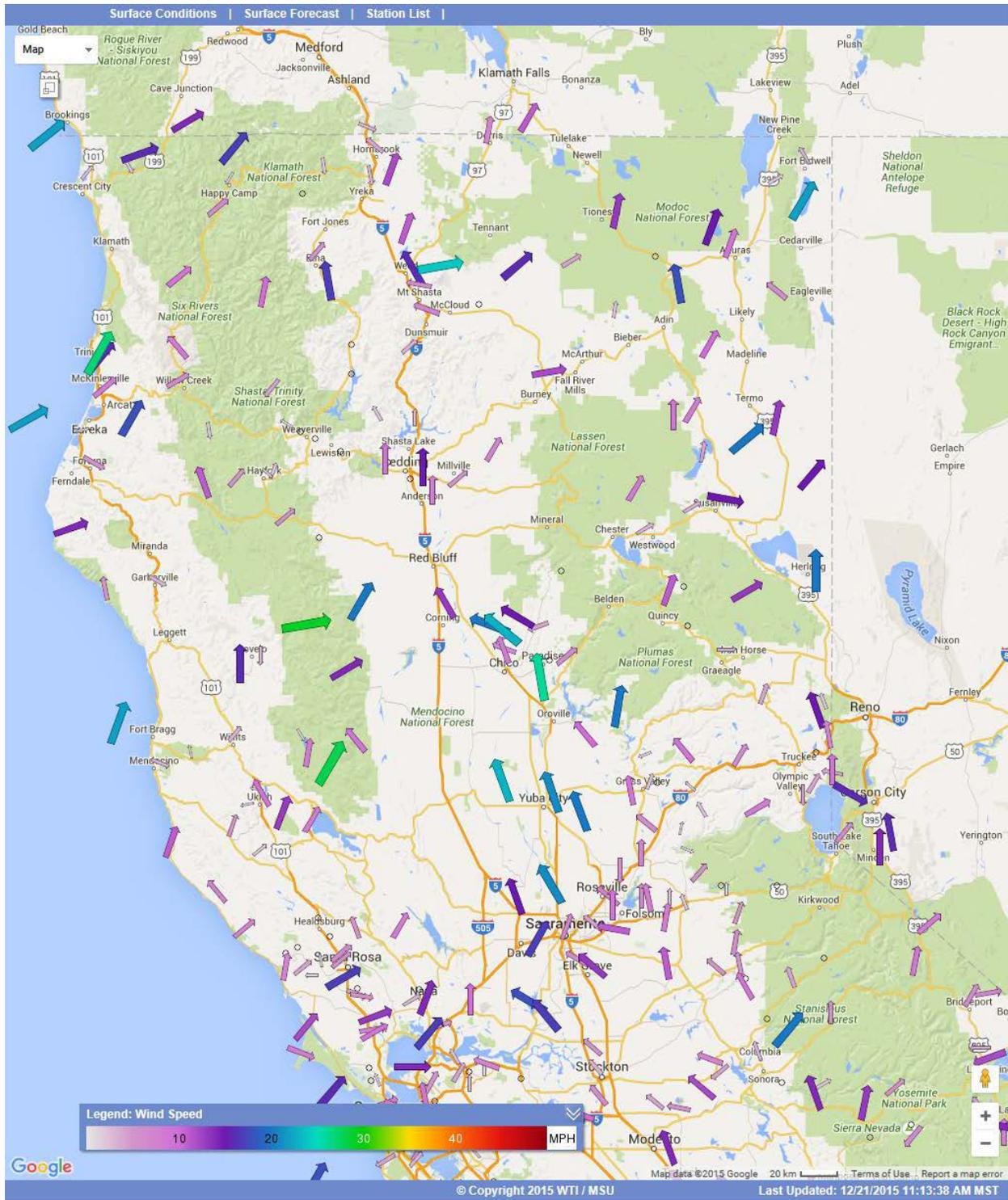


Figure 64: Current Conditions Temperature Map Display (includes non-RWIS sites)



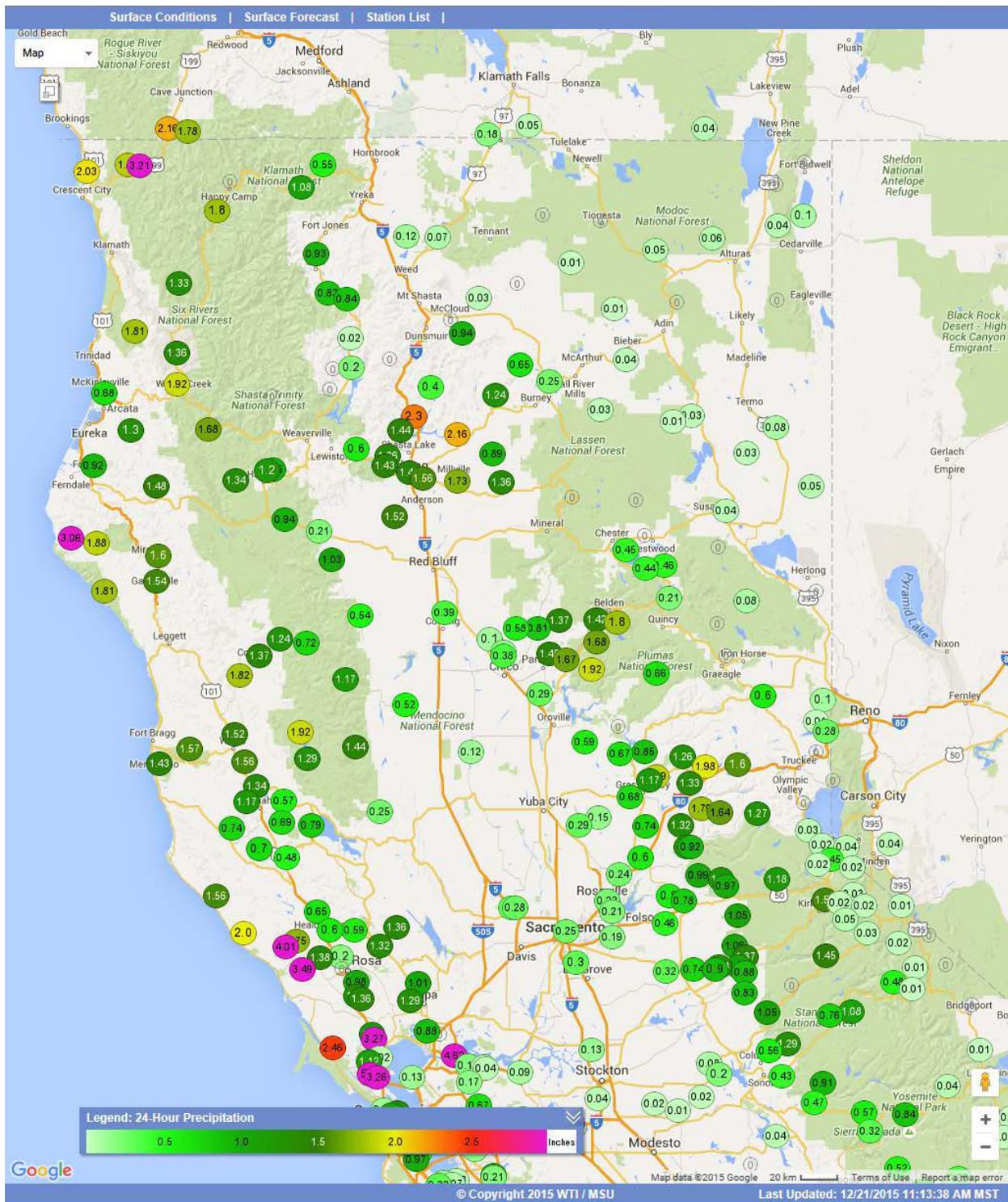


Figure 66: Current Conditions Temperature Map Display (includes non-RWIS sites)

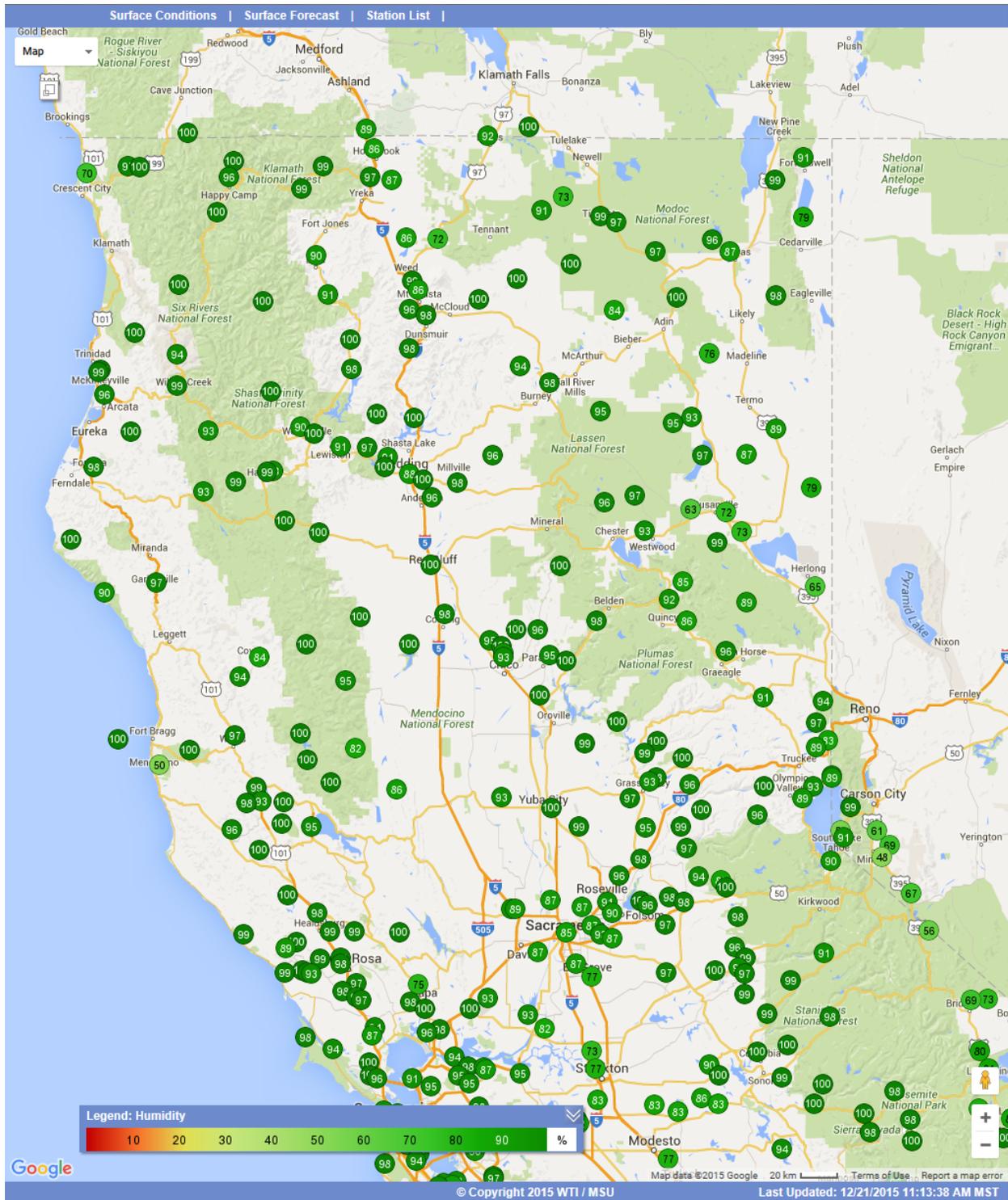


Figure 67: Current Conditions Humidity Map Display (includes non-RWIS sites)

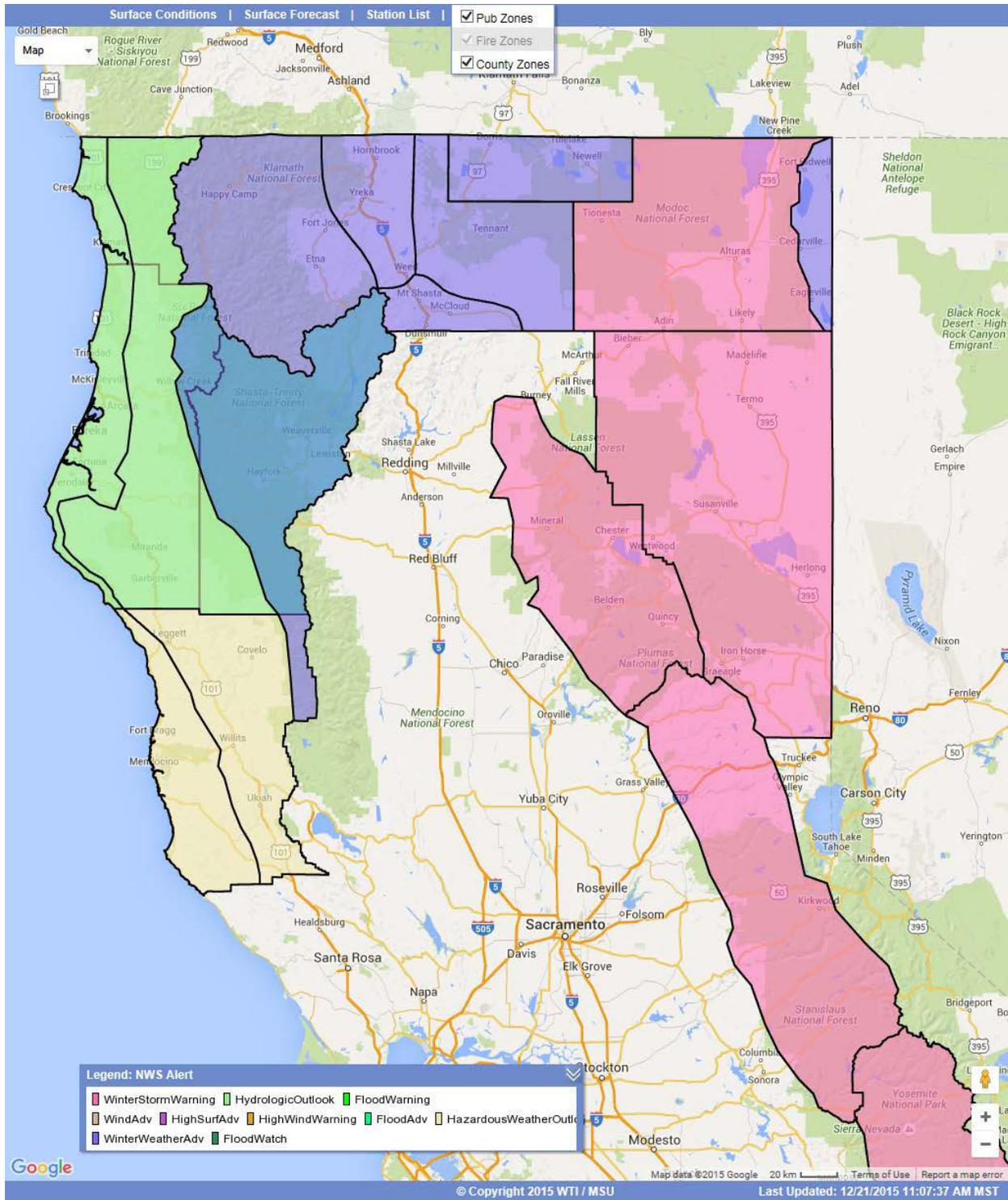


Figure 68: NWS Alerts Map Display

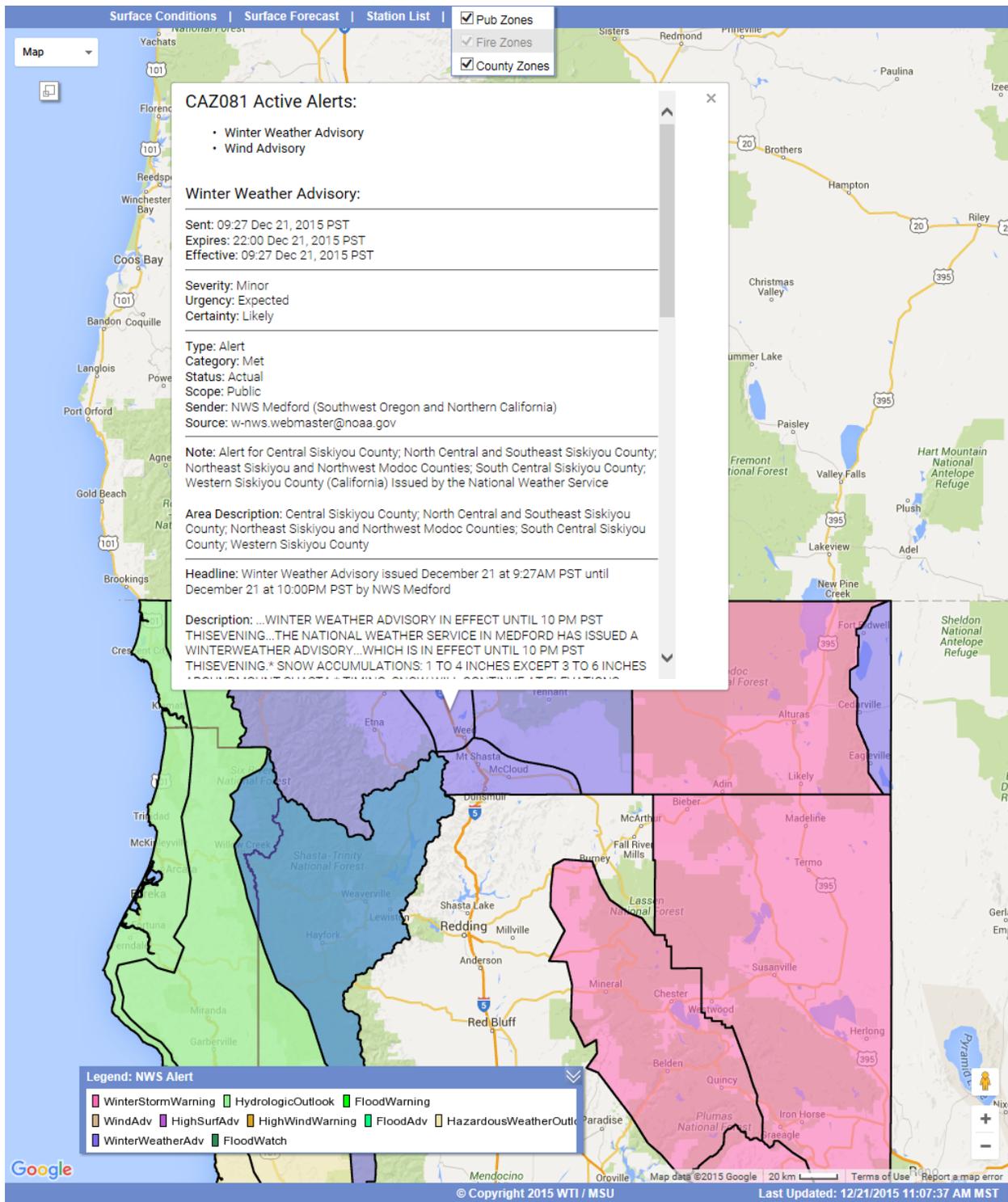


Figure 69: Winter Weather Advisory Detail from Map Display

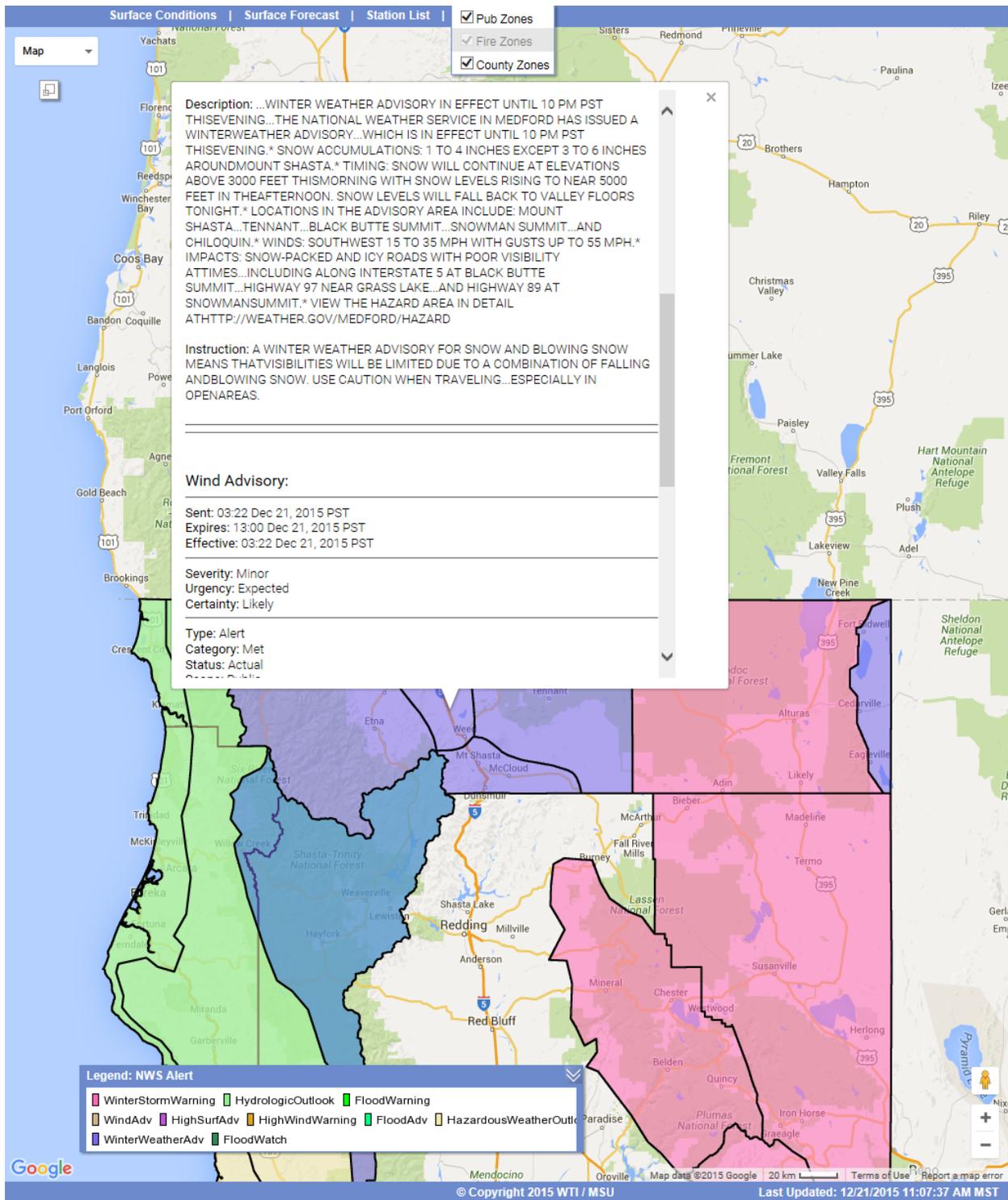


Figure 70: Winter Weather Advisory and Wind Advisory Detail from Map Display

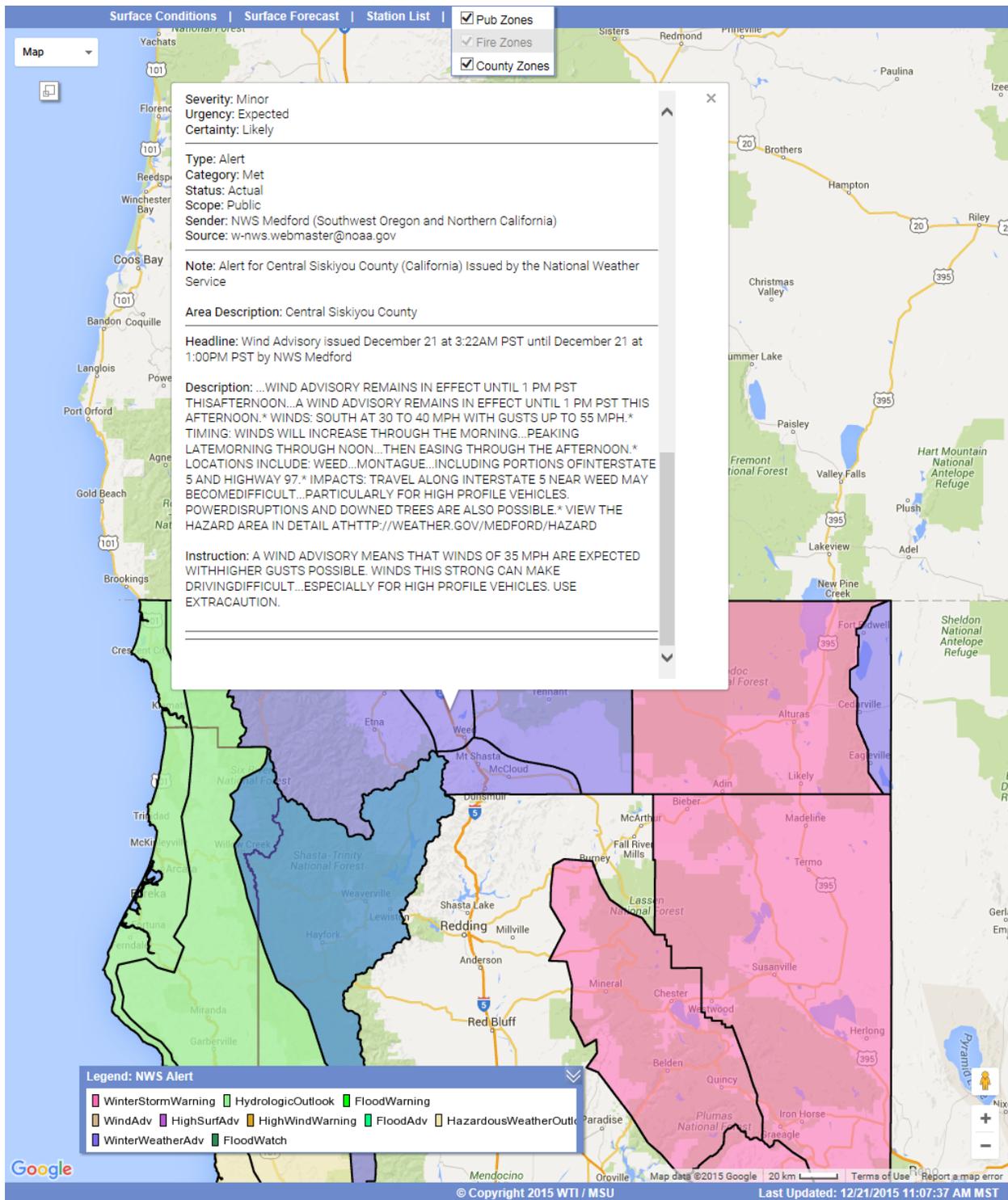


Figure 71: Wind Advisory Detail from Map Display

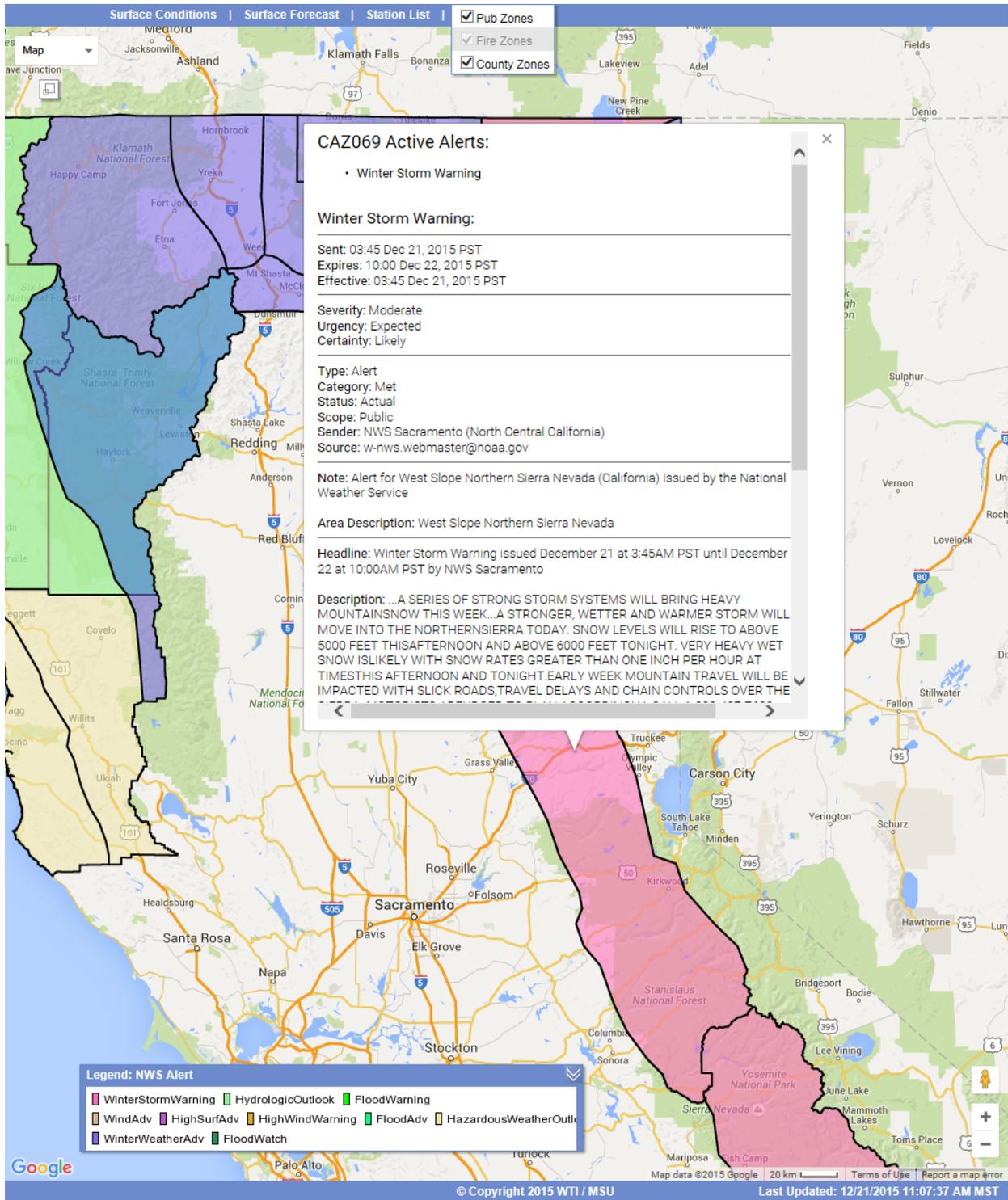


Figure 72: Winter Storm Warning Detail from Map Display

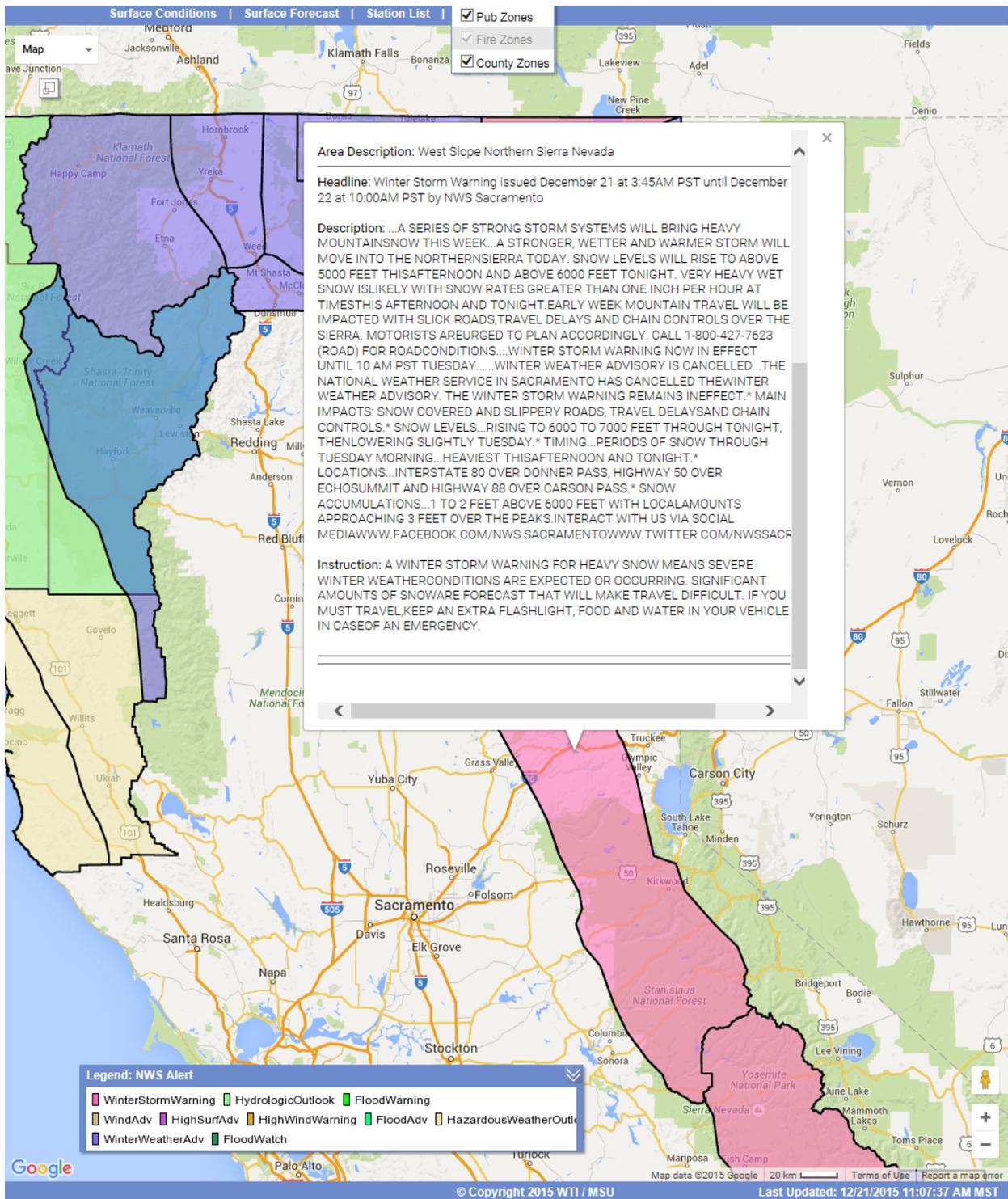


Figure 73: Winter Storm Warning Detail from Map Display

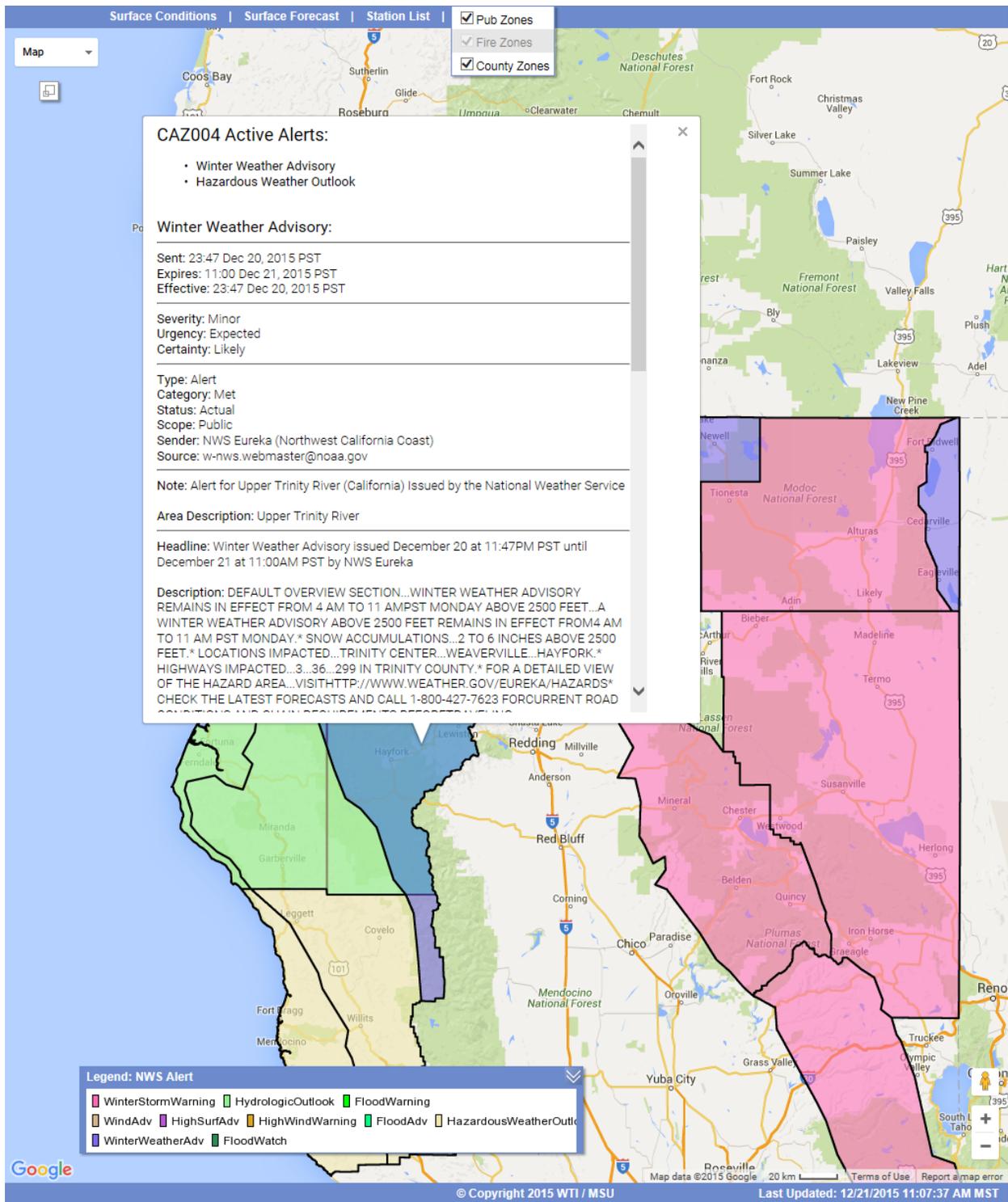


Figure 74: Winter Weather Advisory Detail from Map Display

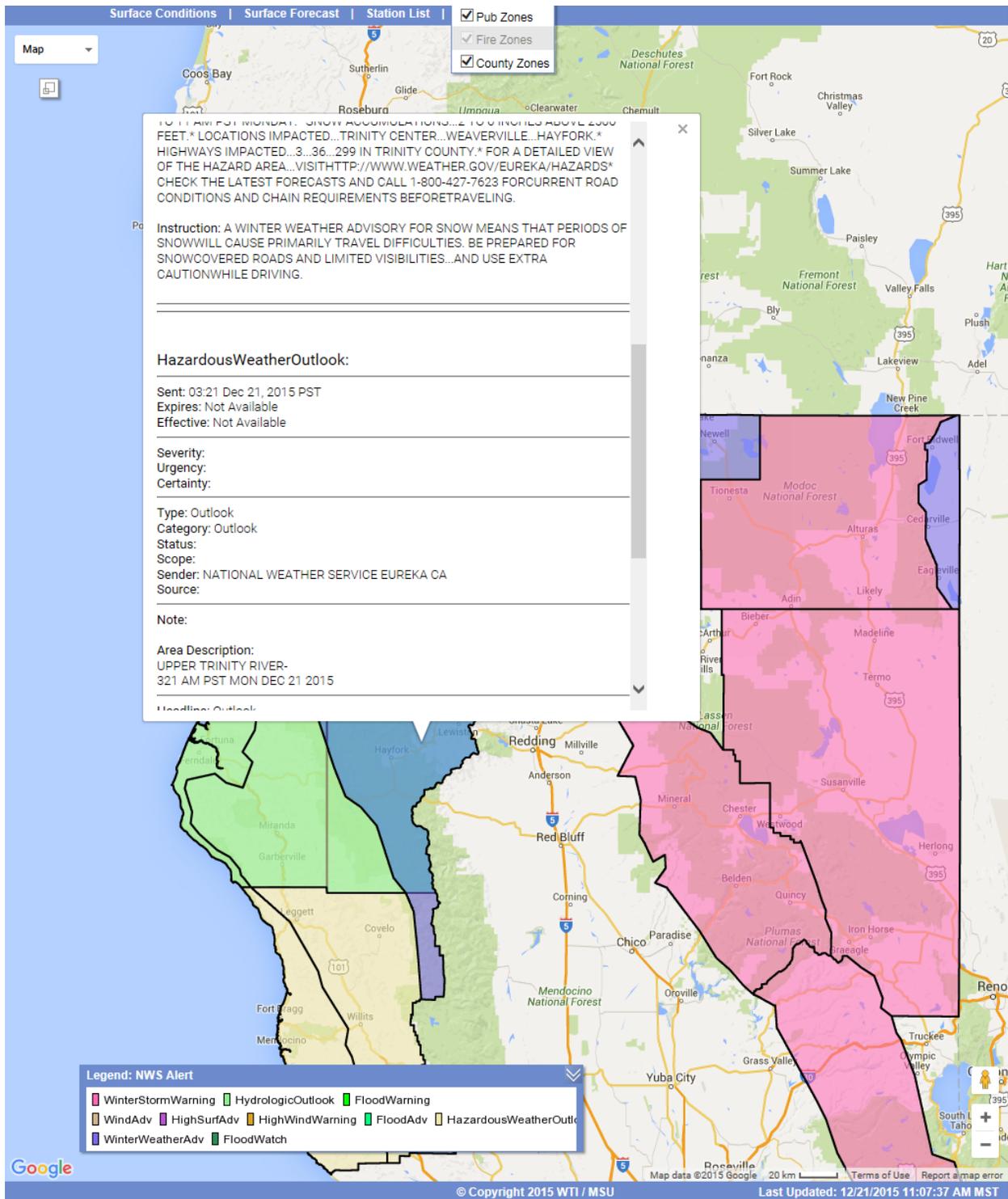


Figure 75: Winter Weather Advisory and Hazardous Weather Outlook Detail from Map Display

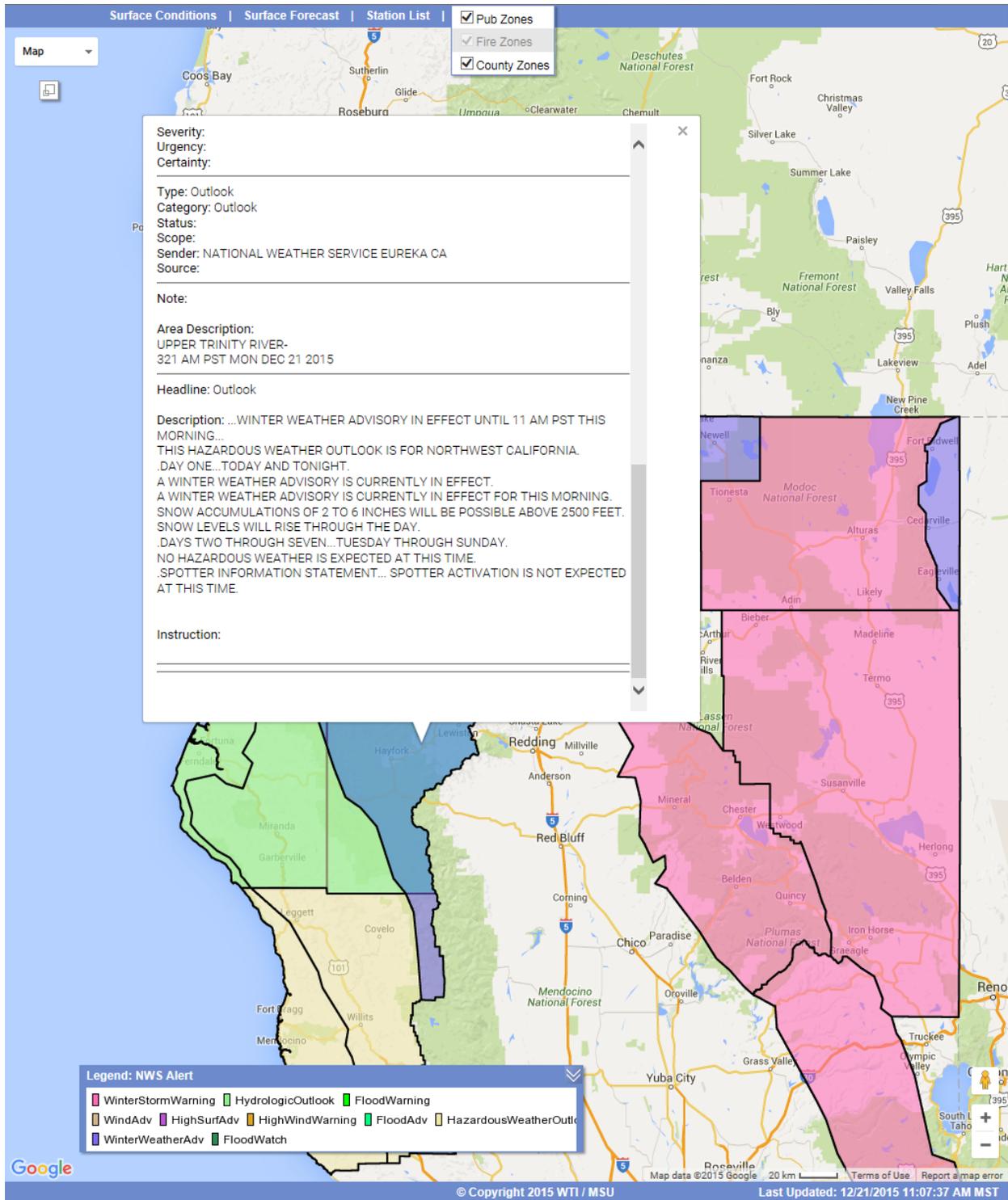


Figure 76: Hazardous Weather Outlook Detail from Map Display

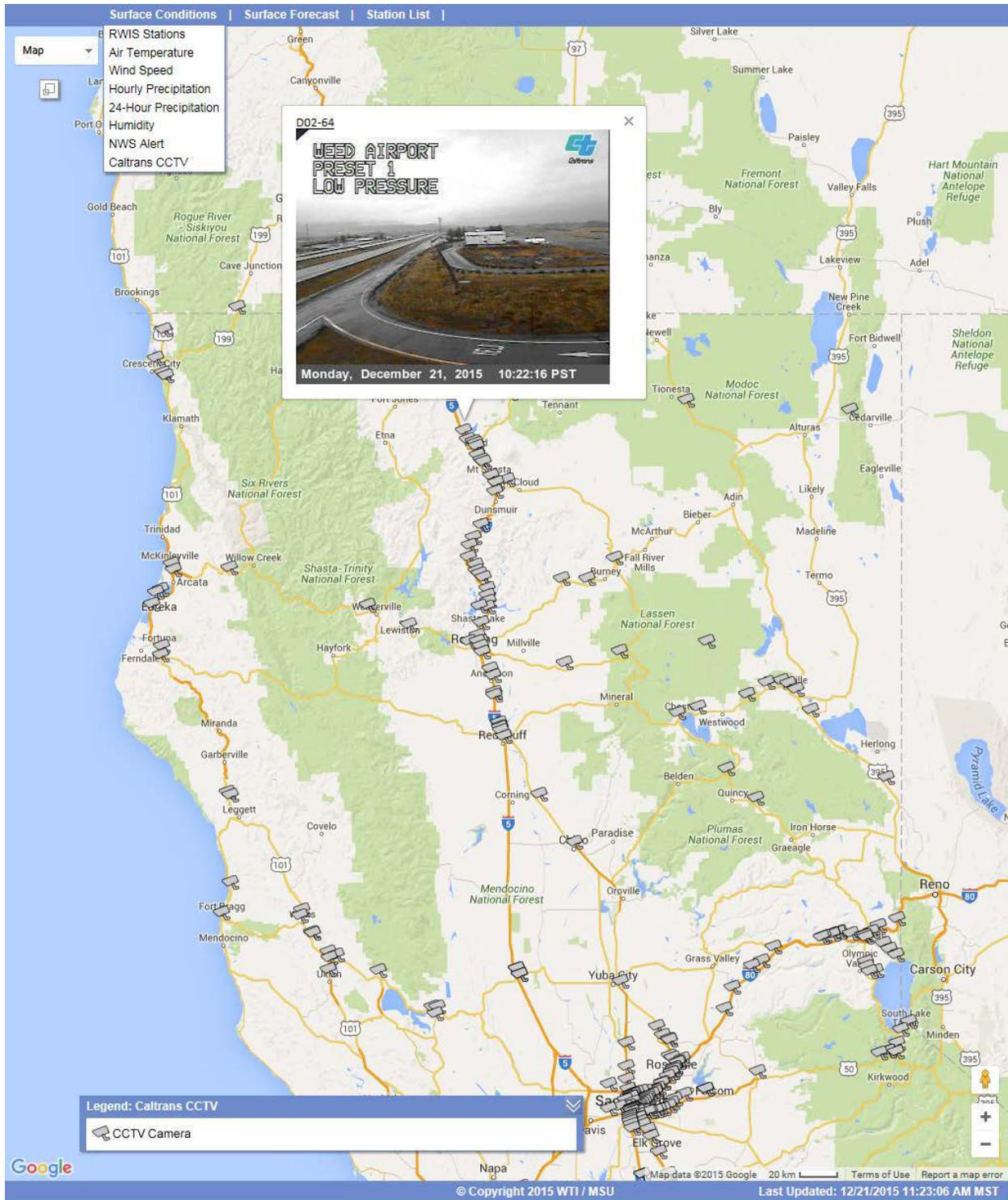


Figure 77: District 2 Weed Airport CCTV Image from Map Display

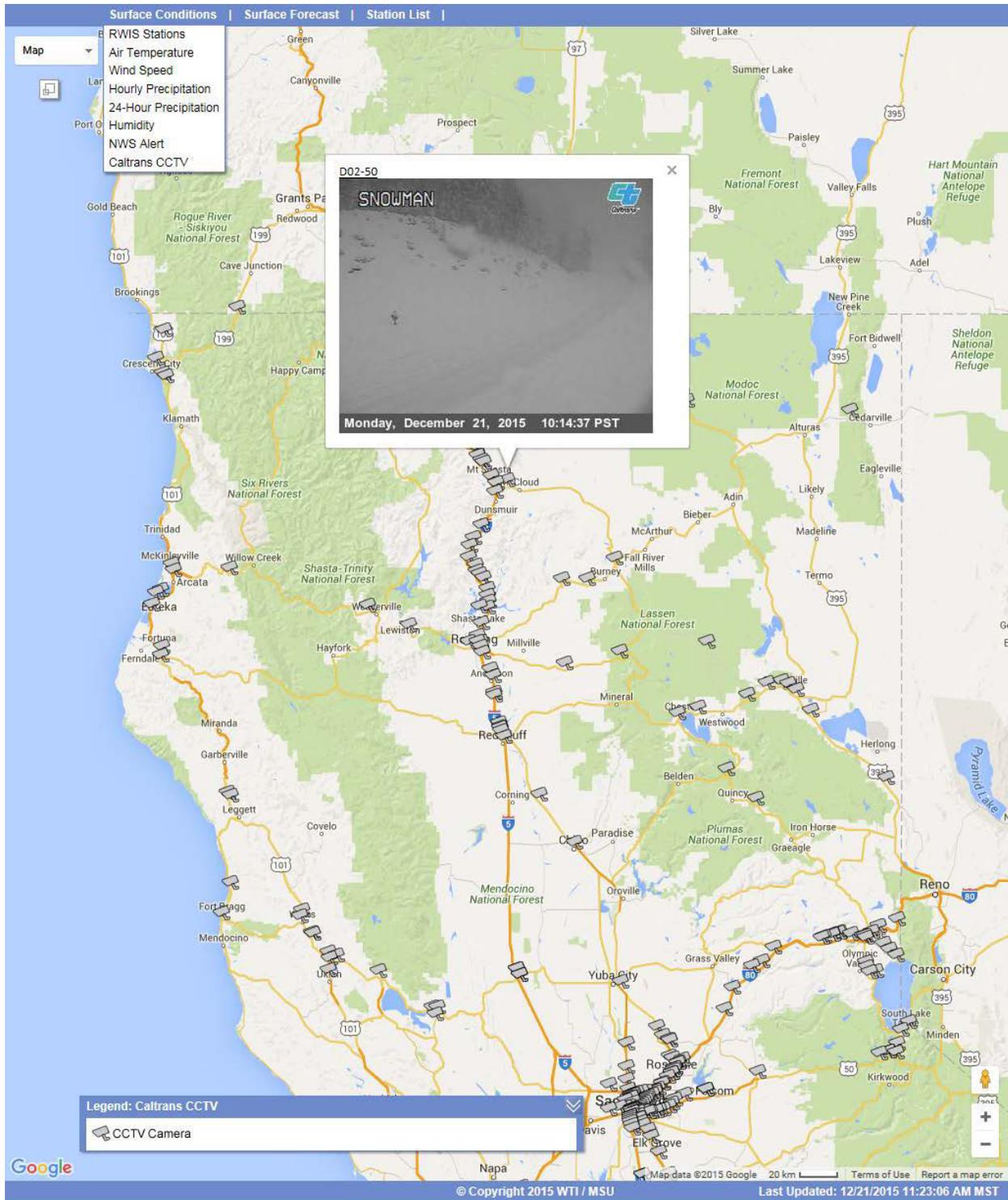


Figure 78: District 2 Snowman Summit CCTV Image from Map Display

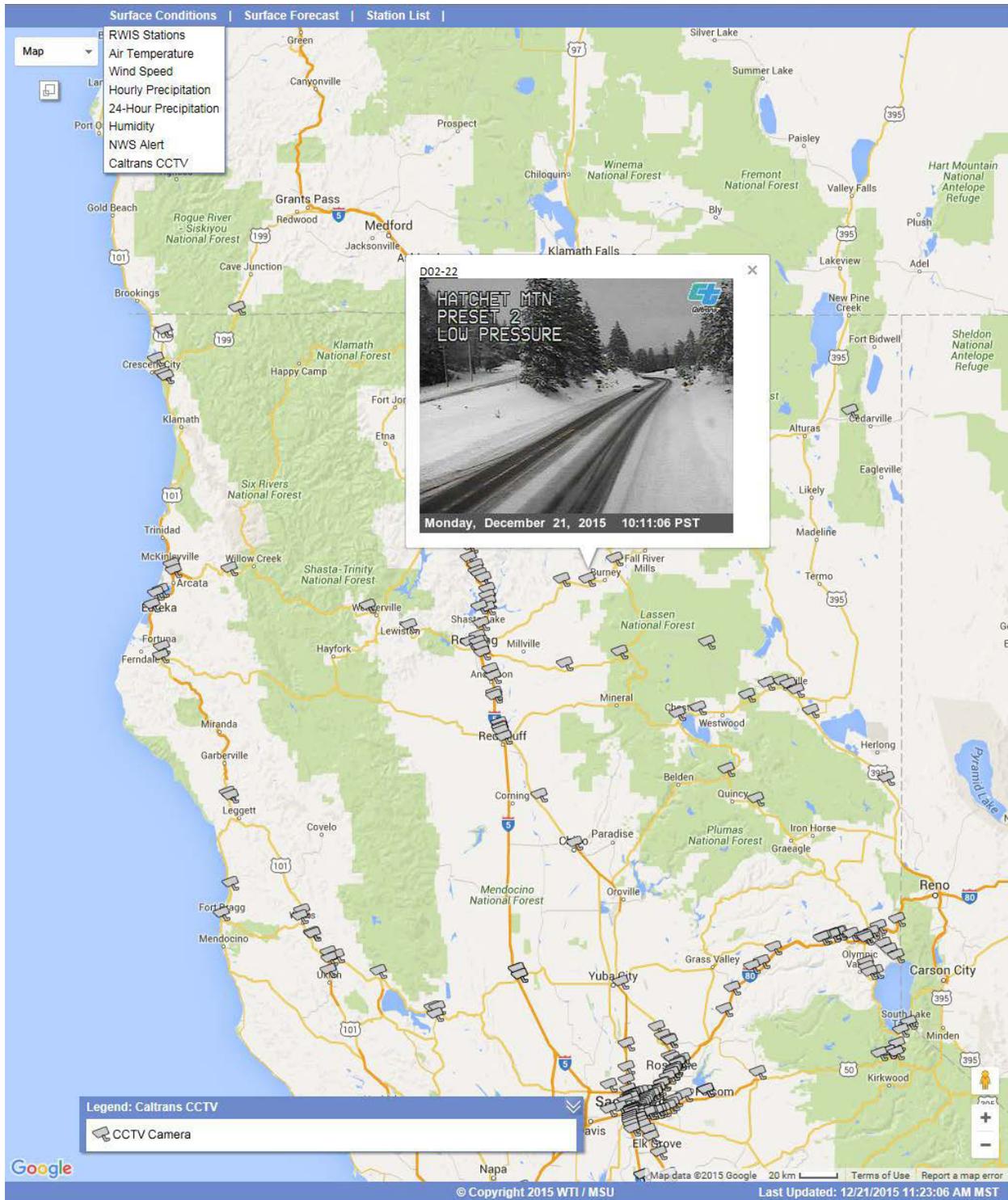


Figure 79: District 2 Hatchet Mountain CCTV Image from Map Display

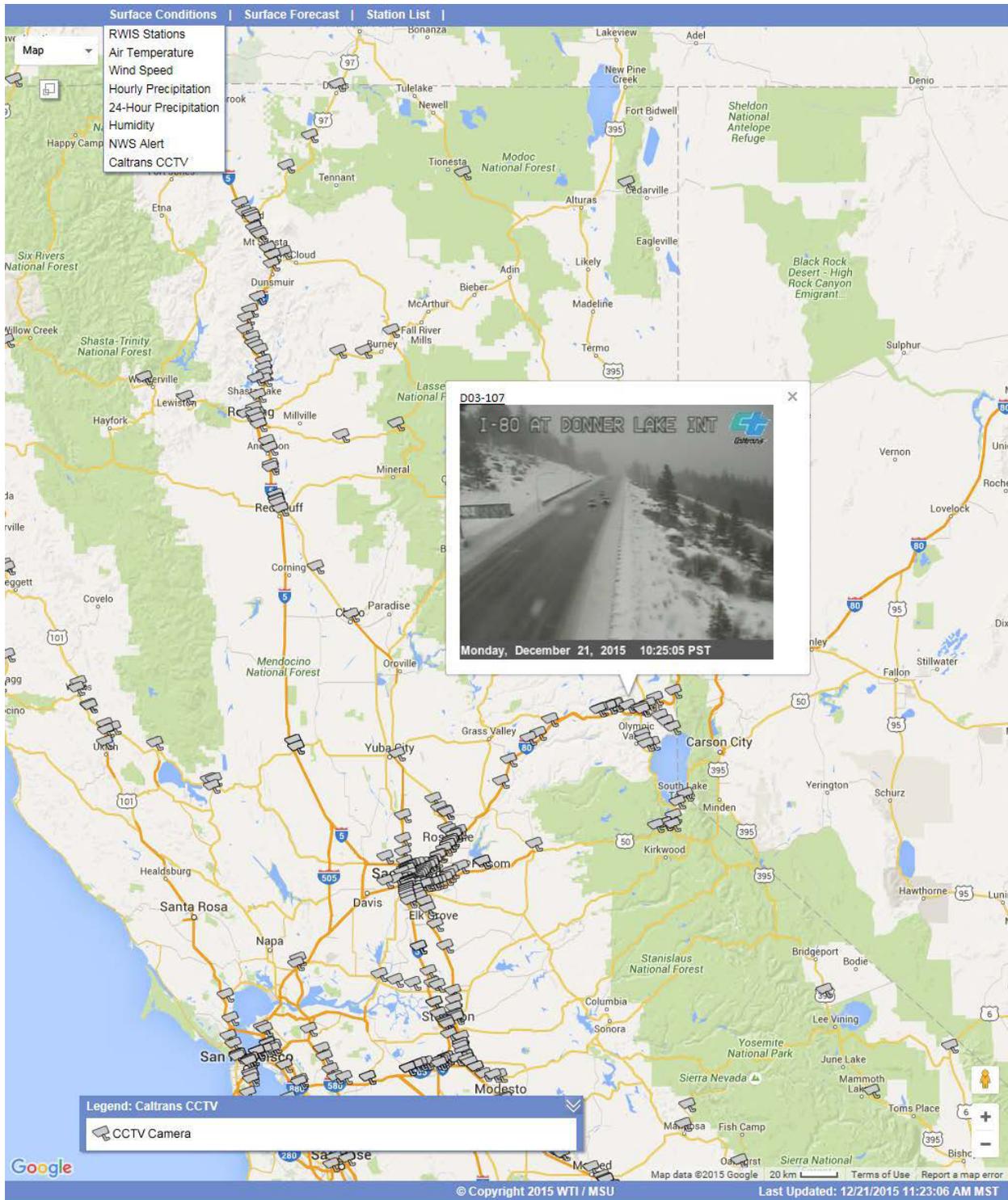


Figure 80: District 3 Donner Lake CCTV Image from Map Display

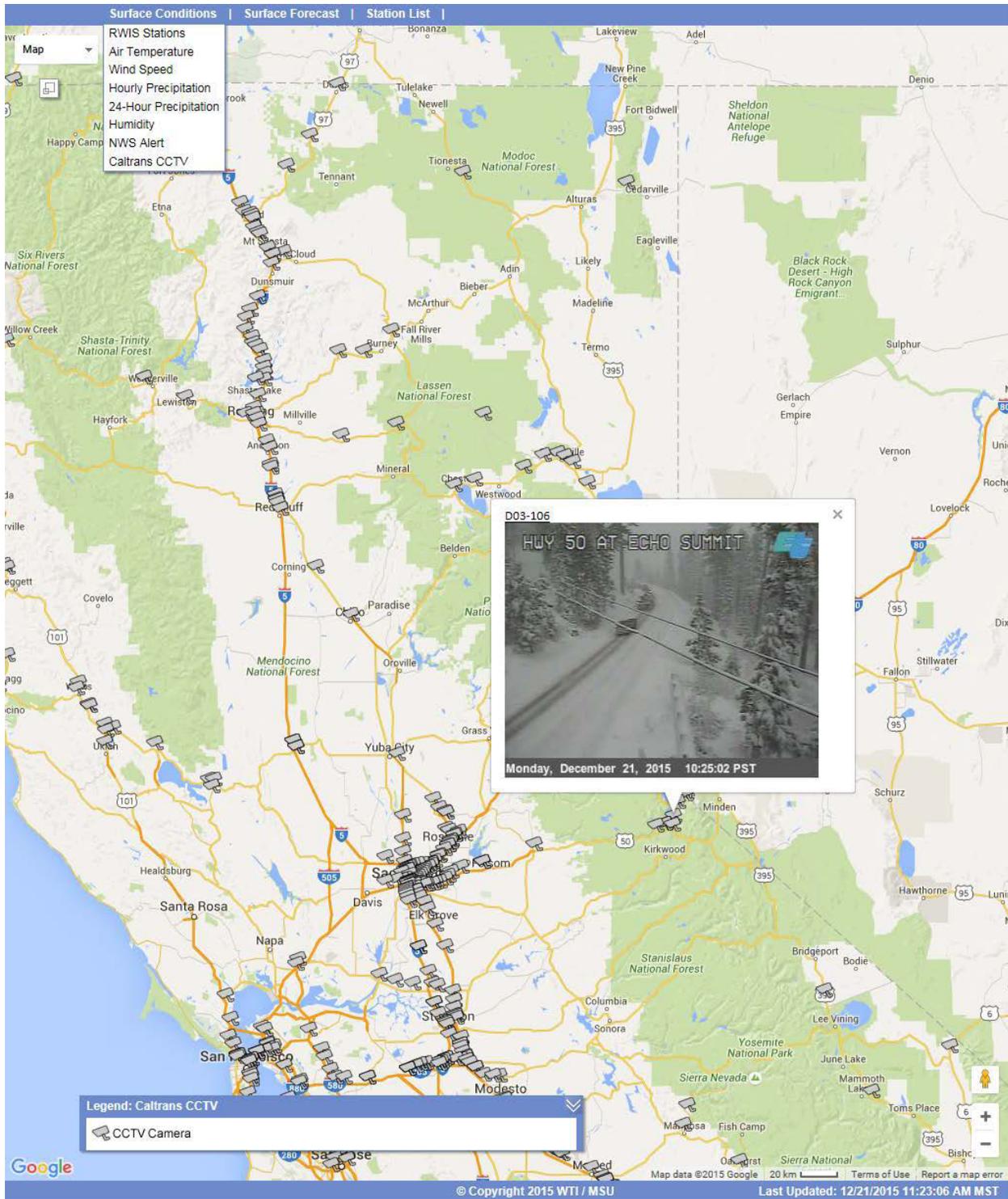


Figure 81: District 3 Echo Summit CCTV Image from Map Display

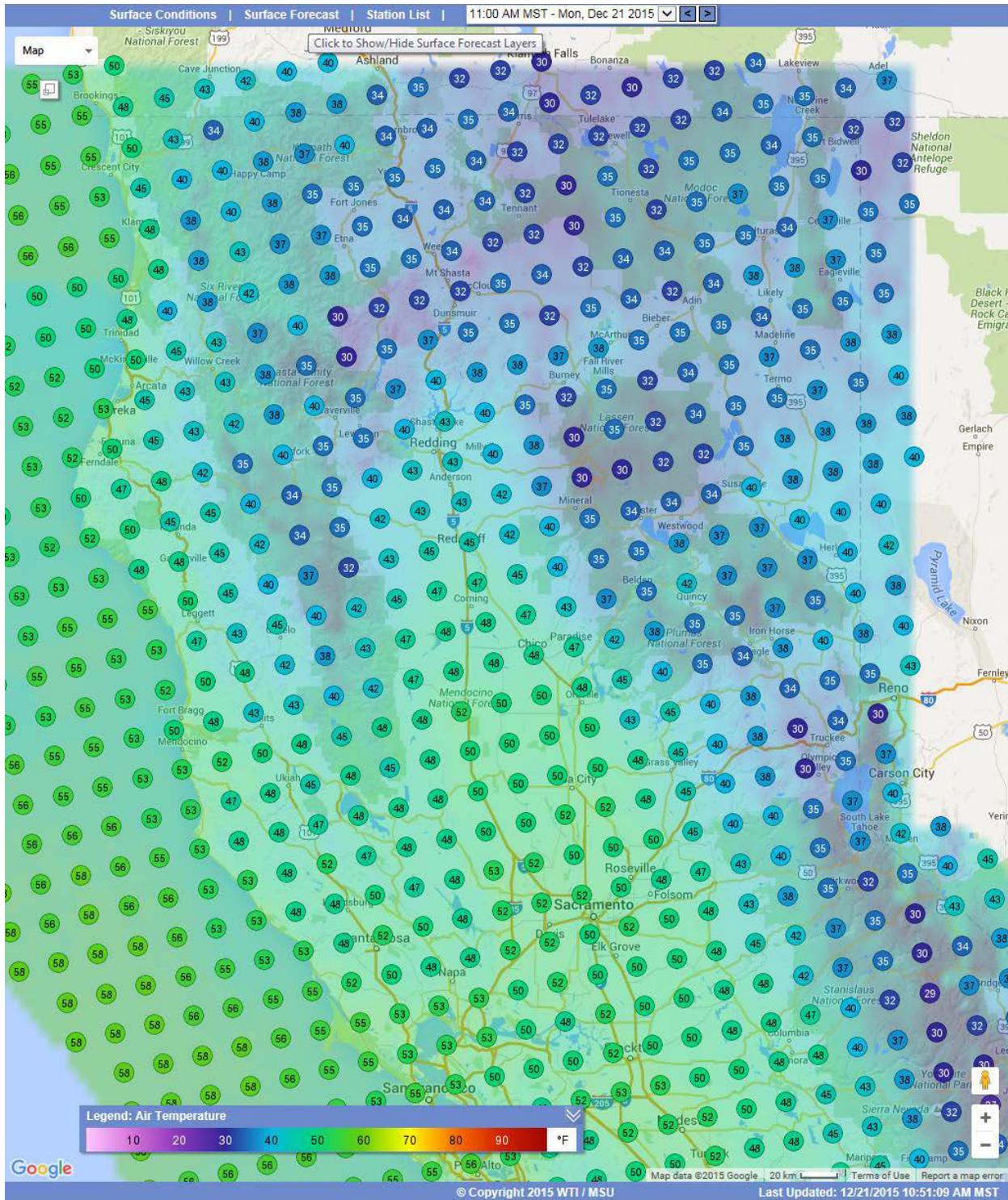


Figure 82: Air Temperature Forecast Map Display

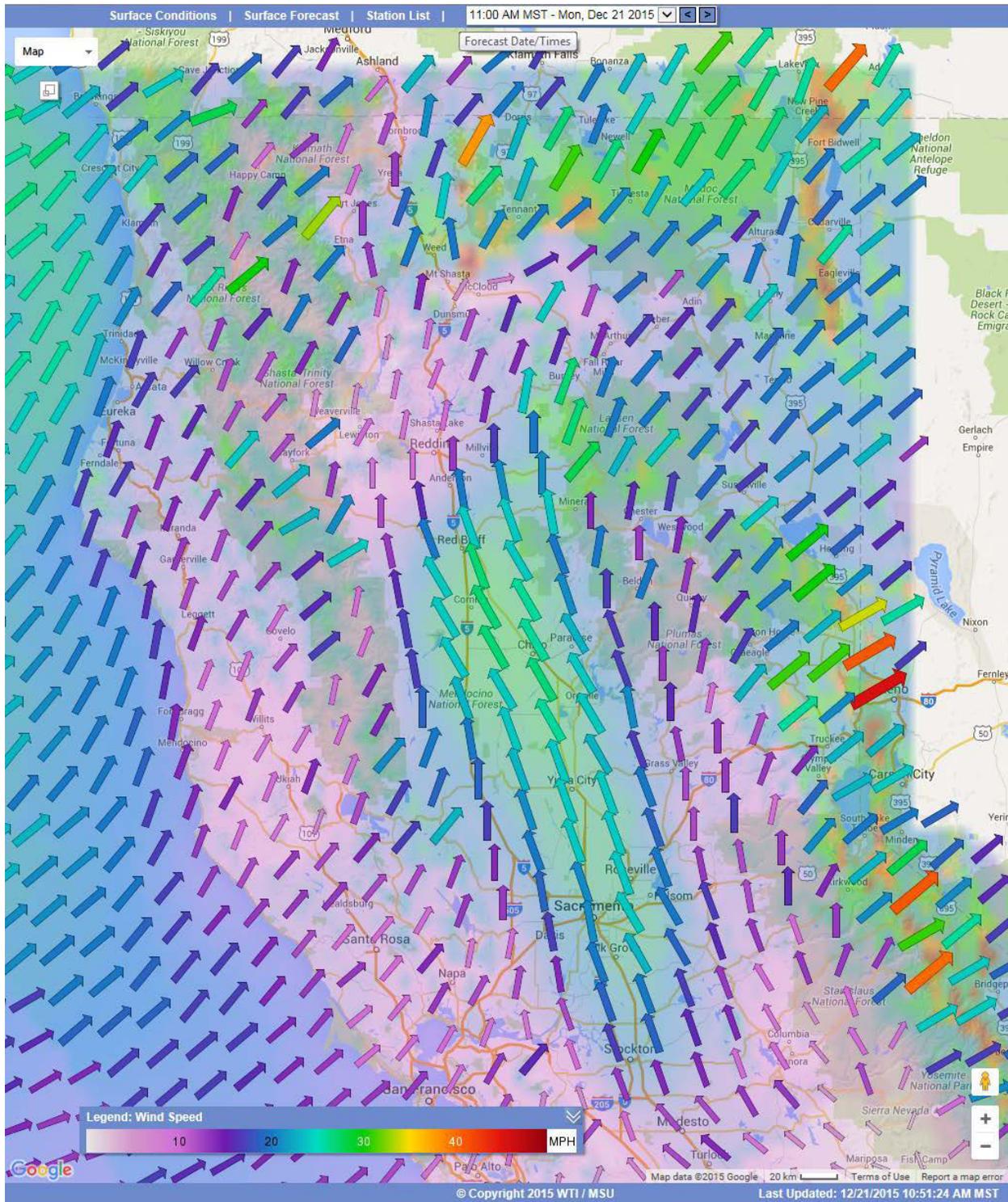


Figure 83: Wind Forecast Map Display

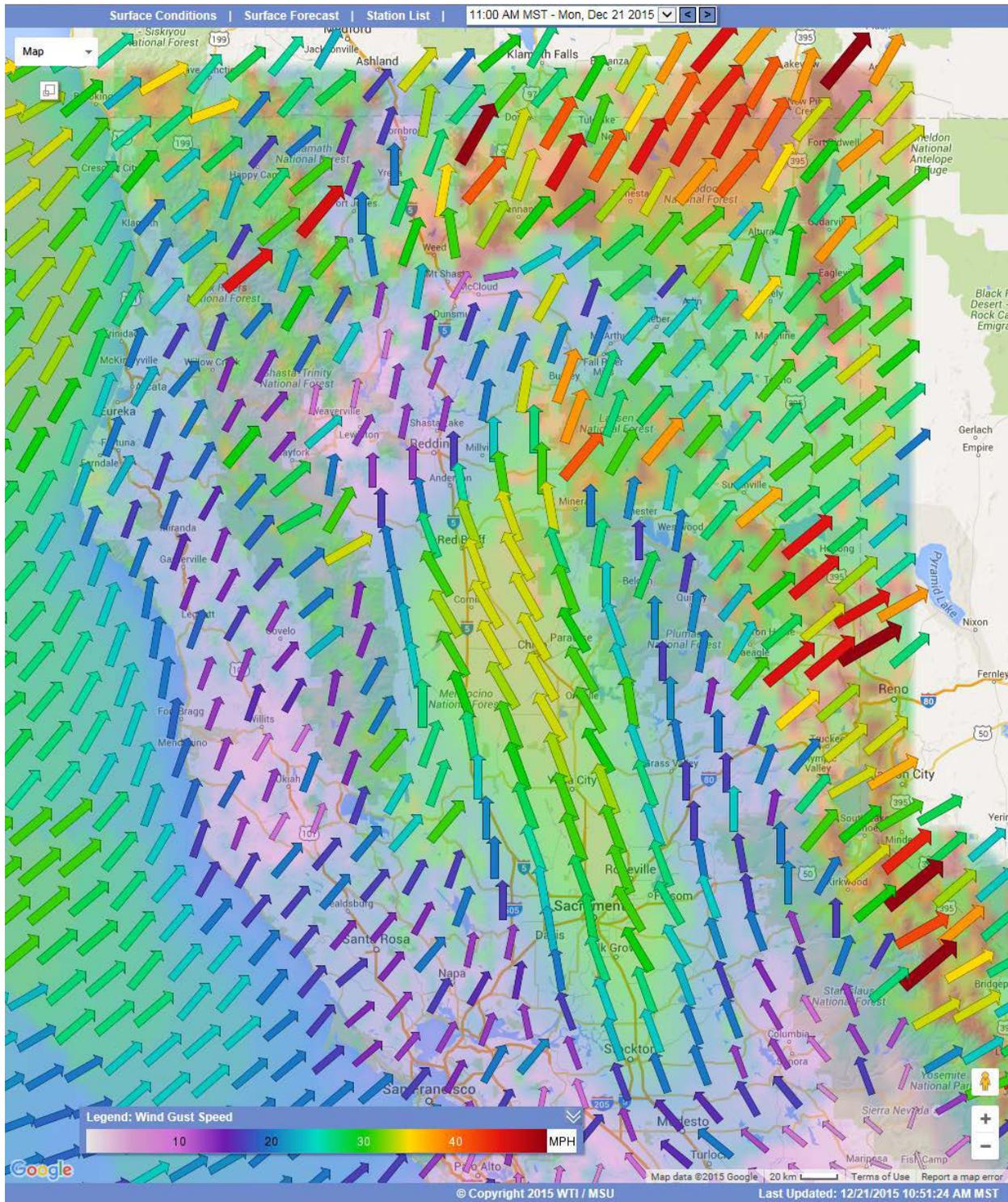


Figure 84: Wind Gust Forecast Map Display

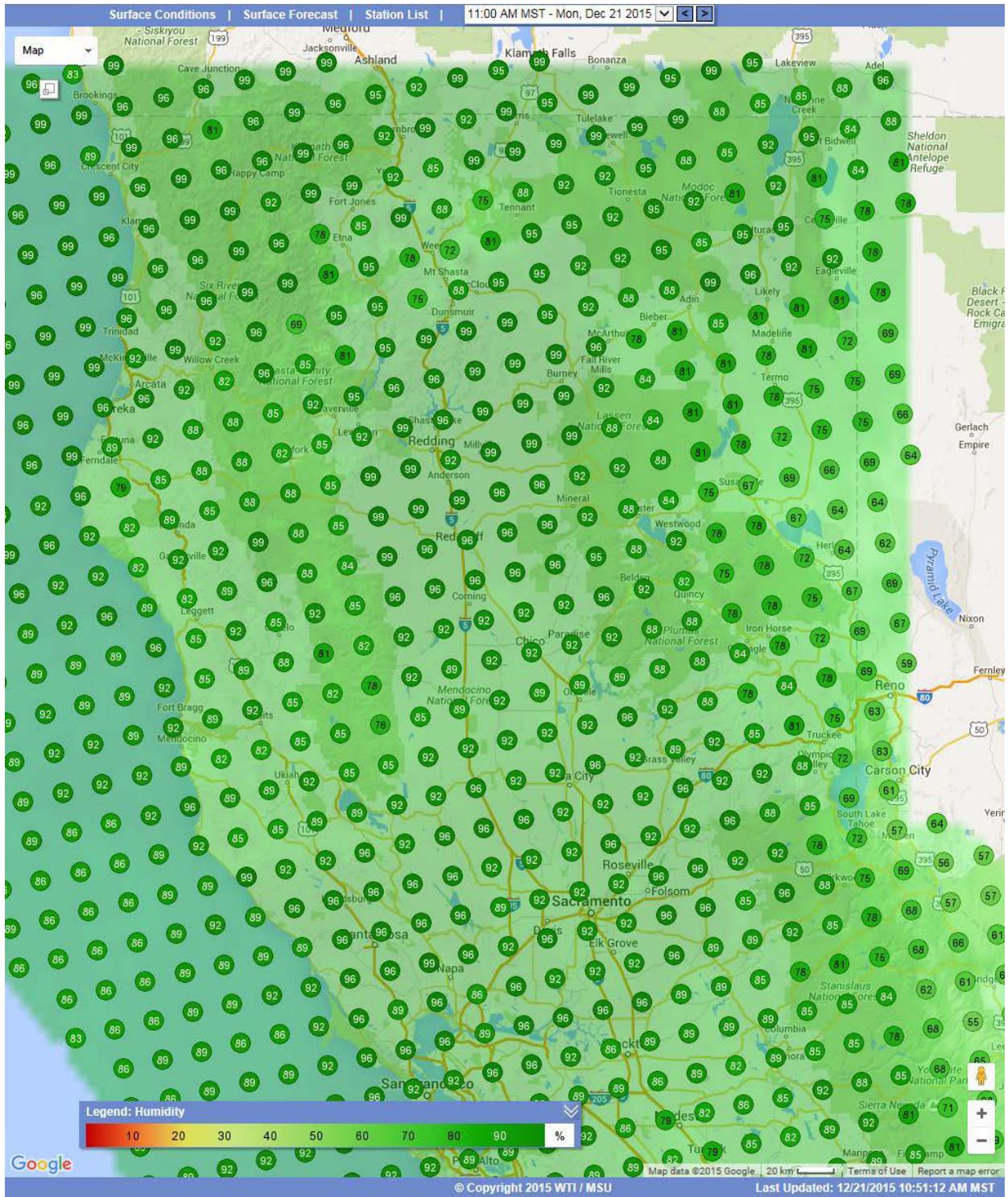


Figure 85: Humidity Forecast Map Display

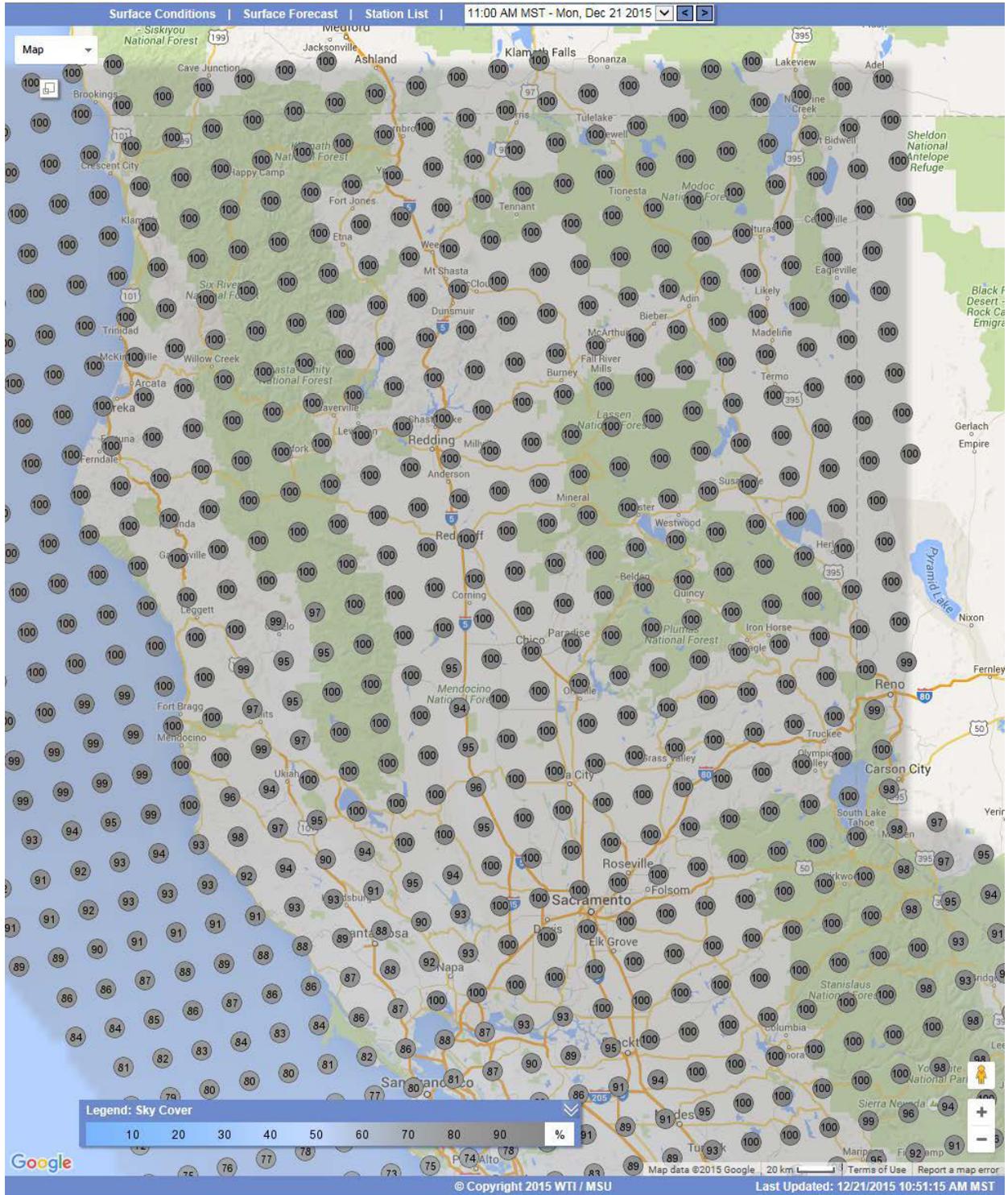


Figure 86: Sky Cover Forecast Map Display

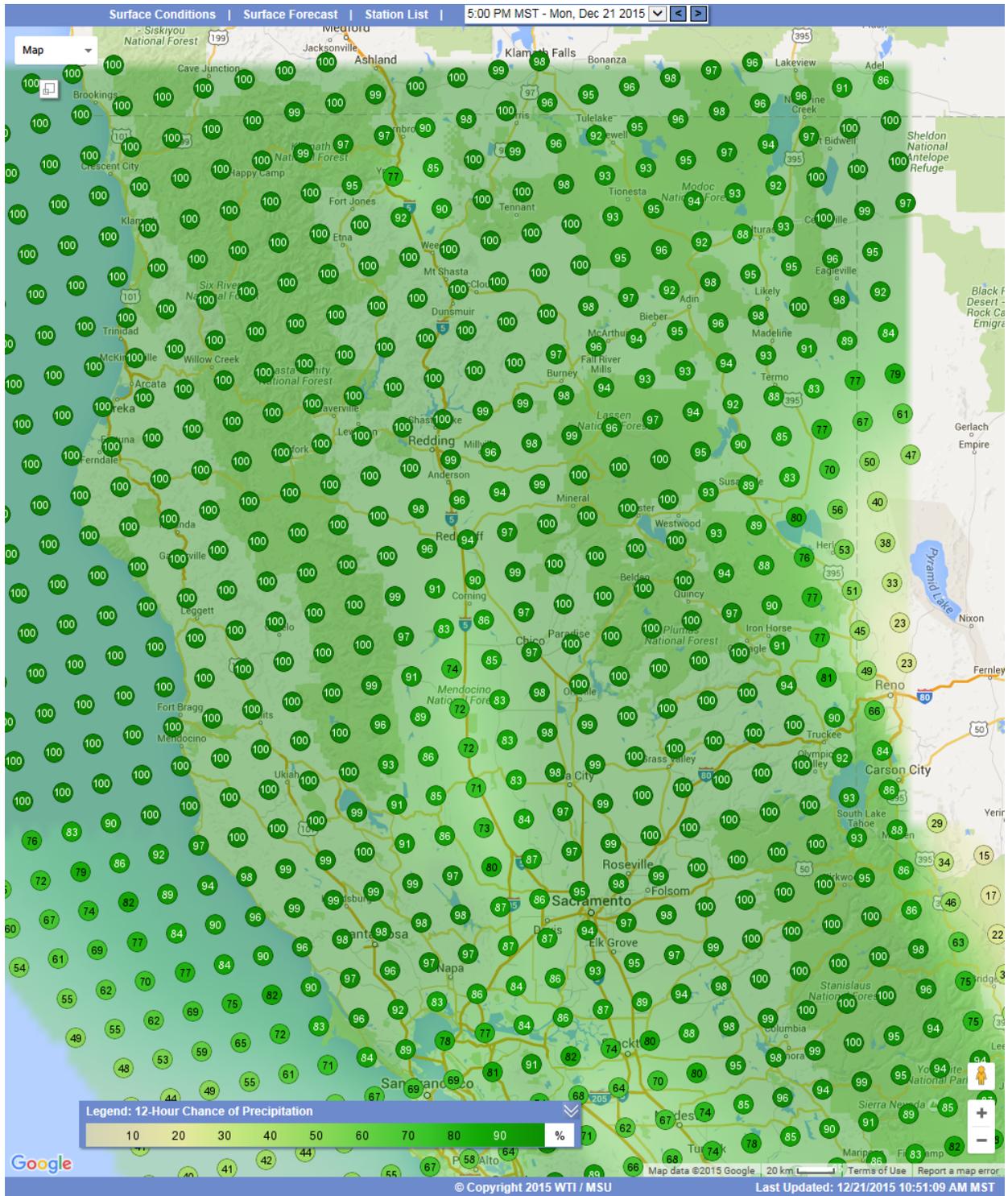


Figure 87: 12-Hour Chance of Precipitation Forecast Map Display

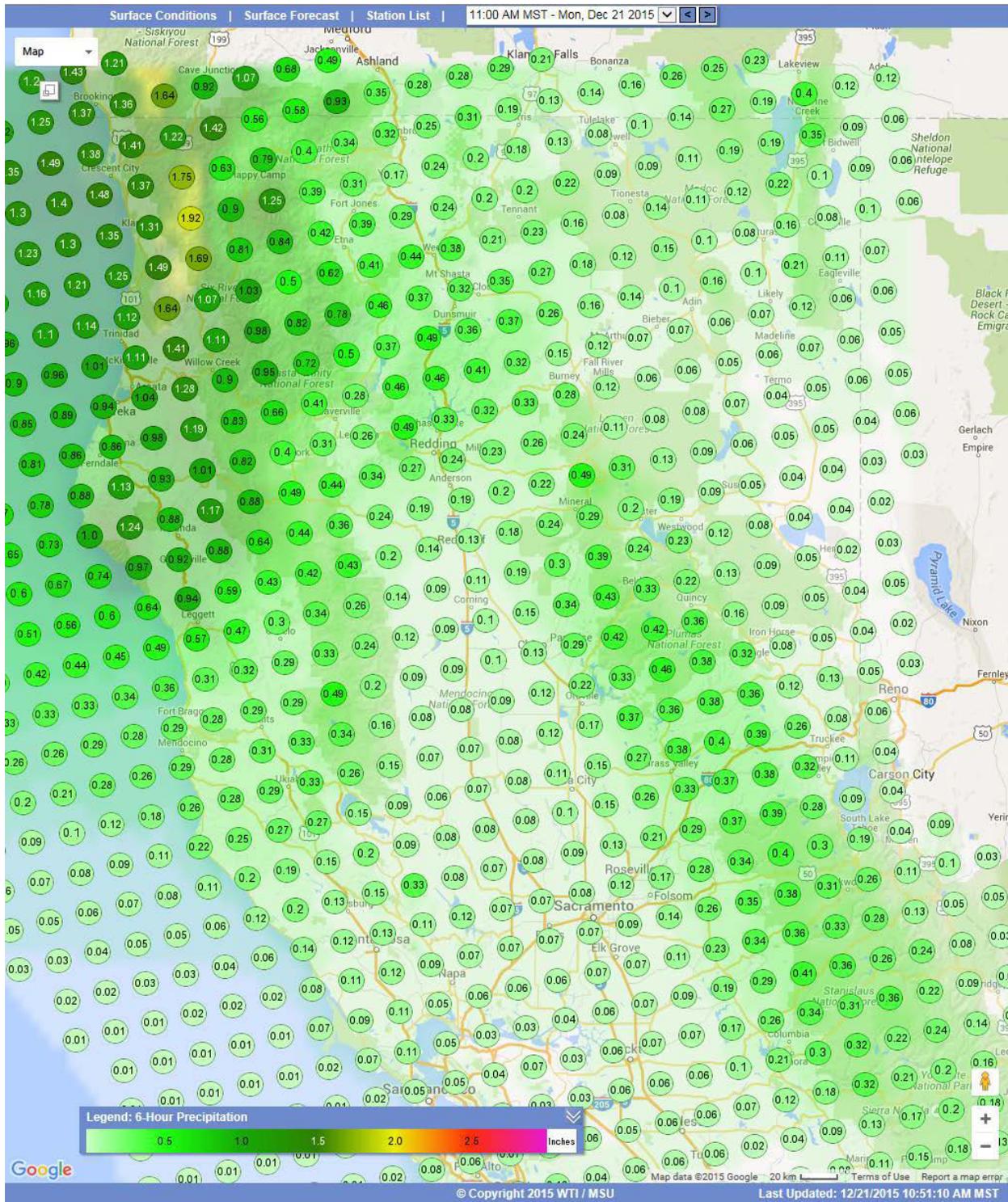


Figure 88: 6-Hour Precipitation Forecast Map Display

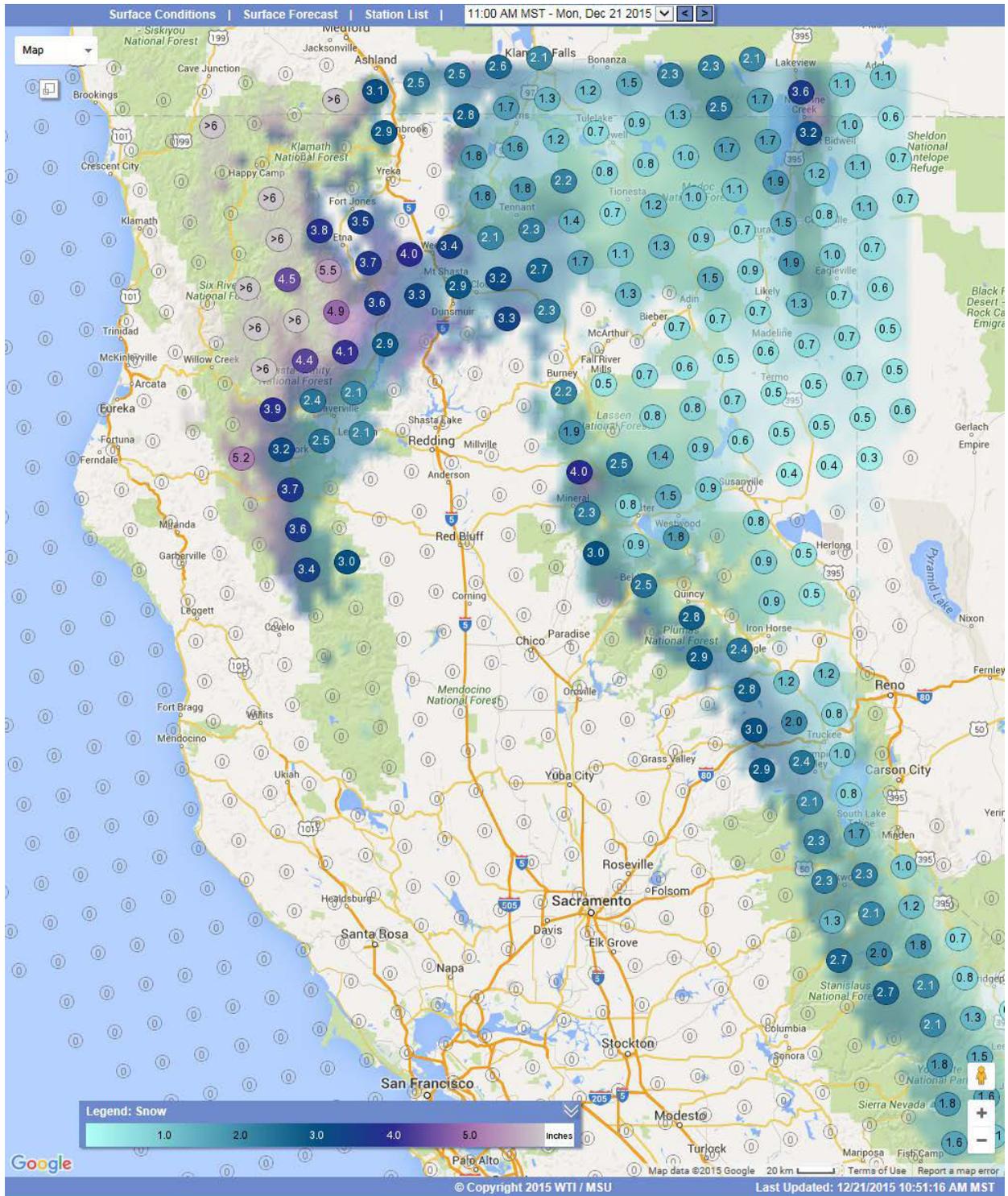


Figure 89: Snow Forecast Map Display

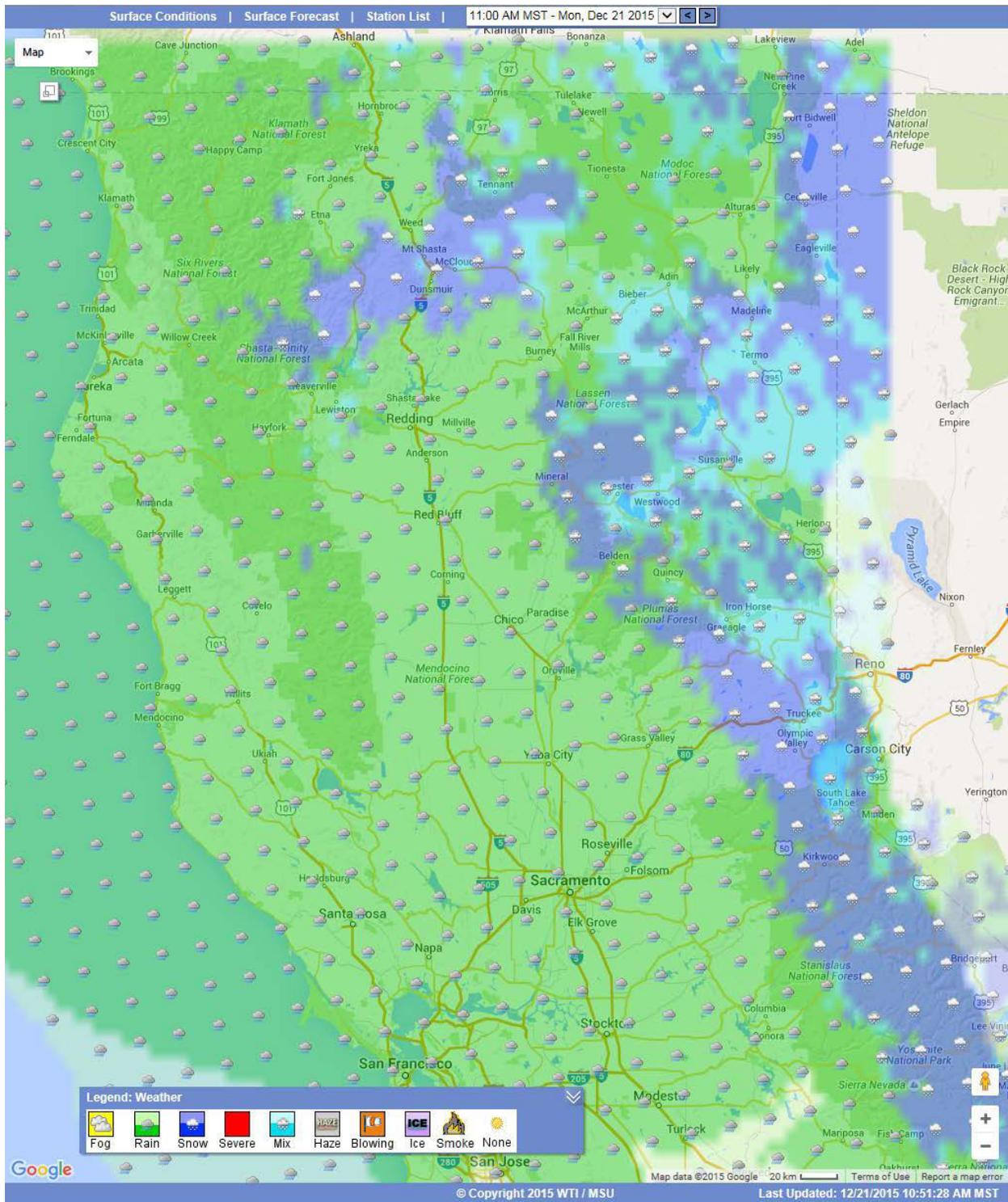


Figure 90: Weather Forecast Map Display

## Alert and User Profiles

Alerts and User Profiles were implemented in Phase 4 of the project. Users can define alerts for their own use and for the use of others. Users can subscribe to alerts and chose notification mechanisms (email and text message via email gateway). User profiles are used principally to manage alerts and subscriptions, as well as administrative capability within the application. The following figures show alert and user profiles functionality, as well as the administrative interface

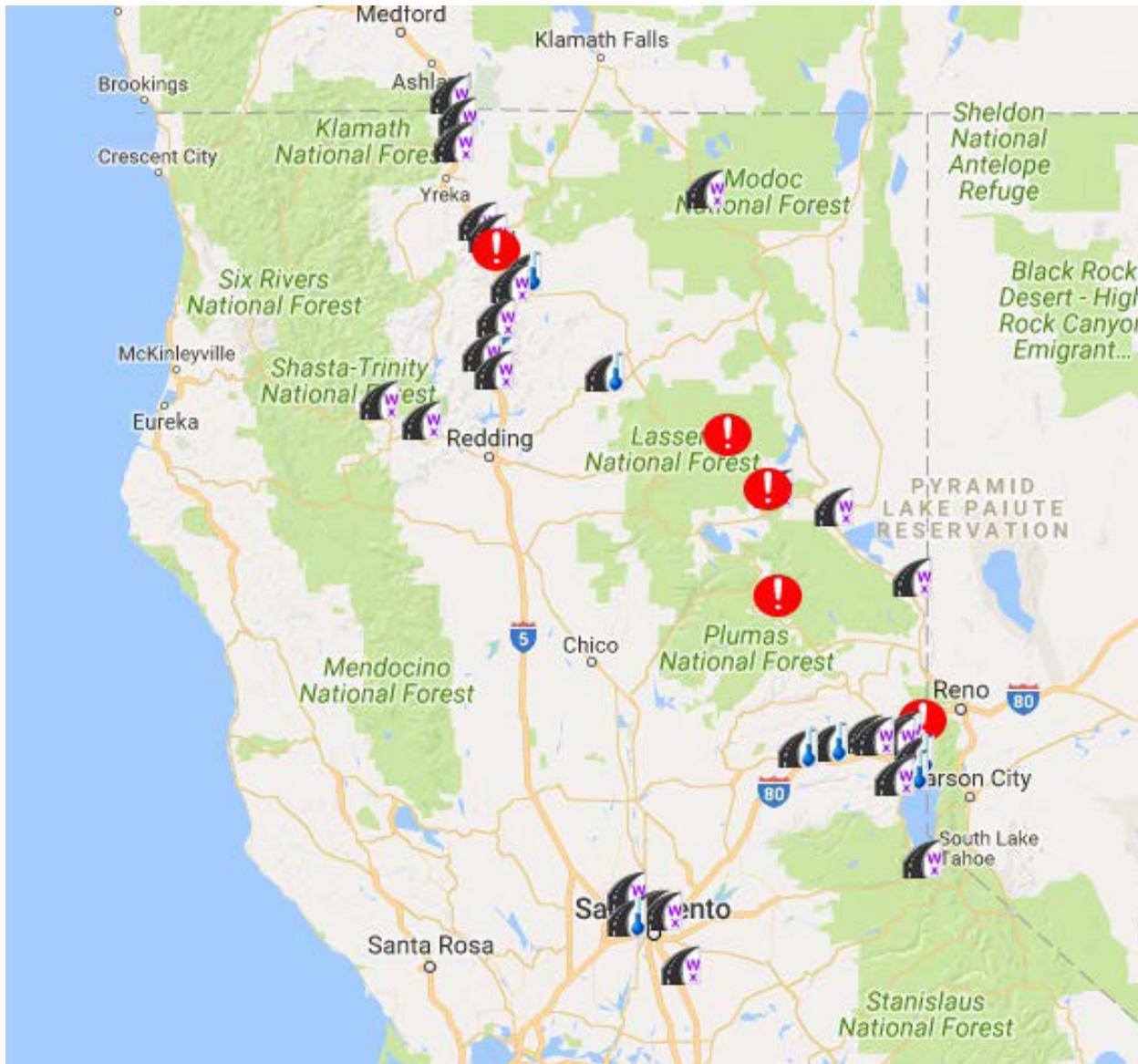


Figure 91: Activated Alerts Displayed on WeatherShare Map

Links	Station Name	ID	Last Updated	Active	Location	Elevation	Nearby Location	County	Route	Milepost	Alerts
<a href="#">graphs historical summary</a>	Anderson Grade	D02-02	03/24/2017 09:46 AM	yes	-122.58937° 41.79255°	3002 ft	Yreka	Siskiyou	I-5	780.283	Alerts
<a href="#">graphs historical summary</a>	Anderson Grade Summit	D02-81	03/24/2017 09:46 AM	yes	-122.58186° 41.80012°	3078 ft	Yreka	Siskiyou	I-5	780.993	Alerts
<a href="#">graphs historical summary</a>	Antlers SmtRWIS	D02-04	03/24/2017 09:46 AM	yes	-122.36559° 40.86709°	1512 ft	Lakehead	Shasta	I-5	700.038	Alerts
<a href="#">graphs historical summary</a>	Black Butte	D02-06	03/24/2017 09:52 AM	yes	-122.35590° 41.35411°	3912 ft	Mount Shasta	Siskiyou	I-5	741.746	Alerts
<a href="#">graphs historical summary</a>	Bogard	D02-07	03/24/2017 09:46 AM	yes	-121.08870° 40.58548°	5629 ft	Susanville	Lassen	SR-44	84.312	Alerts
<a href="#">graphs historical summary</a>	Buckhorn	D02-08	03/24/2017 09:40 AM	yes	-122.76080° 40.65457°	2646 ft	Lewiston	Trinity	SR-299	111.662	Alerts
<a href="#">graphs historical summary</a>	Doyle	D02-13	03/24/2017 09:49 AM	yes	-120.08530° 40.00069°	4300 ft	Doyle	Lassen	US-395	379.026	Alerts
<a href="#">graphs historical summary</a>	Dunsmuir	D02-14	03/24/2017 09:51 AM	yes	-122.27521° 41.21896°	2420 ft	Dunsmuir	Siskiyou	I-5	730.226	Alerts
<a href="#">graphs historical summary</a>	Fredonyer Smt	D02-19	03/24/2017 09:52 AM	yes	-120.86760° 40.36054°	5741 ft	Susanville	Lassen	SR-36	231.218	Alerts
<a href="#">graphs historical summary</a>	FredonyerEastRWIS	D02-20	03/24/2017 09:39 AM	yes	-120.83679° 40.36964°	5167 ft	Westwood	Lassen	SR-36	232.653	Alerts
<a href="#">graphs historical summary</a>	Hatchet Mtn	D02-22	03/24/2017 09:50 AM	yes	-121.76202° 40.85216°	4366 ft	Burney	Shasta	SR-299	182.338	Alerts
<a href="#">graphs historical summary</a>	HiltRWIS	D02-24	03/24/2017 09:41 AM	yes	-122.60745° 41.98883°	3097 ft	Hornbrook	Siskiyou	I-5	795.274	Alerts
<a href="#">graphs historical summary</a>	HornbrookRWIS	D02-25	03/24/2017 09:43 AM	yes	-122.56764° 41.90631°	2303 ft	Hornbrook	Siskiyou	I-5	789.158	Alerts
<a href="#">graphs historical summary</a>	Janesville	D02-28	03/24/2017 09:44 AM	yes	-120.50847° 40.29413°	4165 ft	Janesville	Lassen	US-395	410.23	Alerts
<a href="#">graphs historical summary</a>	NorthWeedRWIS	D02-37	03/24/2017 09:48 AM	yes	-122.40218° 41.42958°	3465 ft	Weed	Siskiyou	I-5	747.987	Alerts
<a href="#">graphs historical summary</a>	Oregon Mtn	D02-39	03/24/2017 09:48 AM	yes	-122.99080° 40.73877°	2775 ft	Weaverville	Trinity	SR-299	90.16	Alerts
<a href="#">graphs historical summary</a>	Perez	D02-78	03/24/2017 09:50 AM	yes	-121.20725° 41.60412°	4478 ft	Perez	Modoc	SR-139	88.66	Alerts
<a href="#">graphs historical summary</a>	Sims Road	D02-49	03/24/2017 09:50 AM	yes	-122.35592° 41.07786°	1804 ft	Castella	Shasta	I-5	718.468	Alerts
<a href="#">graphs historical summary</a>	SnowmanRWIS	D02-51	03/24/2017 09:53 AM	yes	-122.21339° 41.26848°	4485 ft	Dunsmuir	Siskiyou	SR-89	237.775	Alerts
<a href="#">graphs historical summary</a>	Spring Garden	D02-53	03/24/2017 09:53 AM	yes	-120.81840° 39.91438°	3813 ft	Quincy	Plumas	SR-70	131.351	Alerts
<a href="#">graphs historical summary</a>	Vollmers	D02-61	03/24/2017 09:43 AM	yes	-122.42692° 40.94086°	1322 ft	Lakehead	Shasta	I-5	706.888	Alerts
<a href="#">graphs historical summary</a>	Weed Airport	D02-64	03/24/2017 09:45 AM	yes	-122.45290° 41.47430°	2936 ft	Weed	Siskiyou	I-5	752.728	Alerts

Figure 92: Alerts Shown on District 2 Station List

### Alerts for D02-07 - Bogard

	Alert Name	Alert Created	Author	Last Evaluation	Last Status Change	Status	
<a href="#">Definition</a> <a href="#">History</a> <a href="#">Subscribe</a>	Bogard Freezing	02/01/2017 13:18:58 PM	dgalarusITS	03/24/2017 09:55:26 AM	03/24/2017 09:35:21 AM	Activated	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Definition</a> <a href="#">History</a> <a href="#">Subscribe</a>	BogartPrecip	02/15/2017 08:15:25 AM	dgalarusITS	03/24/2017 09:55:26 AM	03/24/2017 09:55:26 AM	Activated	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Definition</a> <a href="#">History</a> <a href="#">Subscribe</a>	Bogard near Freezing	03/21/2017 12:36:52 PM	dgalarusITS	03/24/2017 09:55:26 AM	03/24/2017 09:55:26 AM	Activated	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Definition</a> <a href="#">History</a> <a href="#">Subscribe</a>	Bogard Wet Pavement	03/22/2017 13:03:35 PM	dgalarusITS	03/24/2017 09:55:26 AM	03/24/2017 09:55:26 AM	Activated	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Definition</a> <a href="#">History</a> <a href="#">Subscribe</a>	Bogard Icy Road	03/23/2017 10:21:52 AM	dgalarusITS	03/24/2017 09:55:26 AM		Deactivated	<a href="#">Edit</a> <a href="#">Delete</a>

[New Alert](#)

Figure 93: Alerts Shown for a Site – Caltrans District 2 Bogard Site

## Bogard - D02-07

**Alert Name:** Bogard Freezing

**Description:** Bogard Air Temp below Freezing

**Created by:** dgalarusITS

**Defined For:** dgalarusITS

**Duration:** 30 The alert will be considered active for this amount of time(in minutes)

Any conditions met  All conditions met

Sensor Name	Condition	Threshold
essAirTemperature.1	<	32

94: Example Alert Definition, Air Temperature Freezing, for Caltrans District 2 Bogard Site

## Alert History D02-07 - Bogard

**Alert Name:** Bogard Freezing

**Description:** Bogard Air Temp below Freezing

Date

Date/Time	Alert	Status	Condition(s)
03/24/2017 02:50:25 AM	Bogard Freezing	Activated	essAirTemperature.1(31.82) < 32
03/24/2017 02:55:21 AM	Bogard Freezing	Activated	essAirTemperature.1(31.82) < 32
03/24/2017 03:00:20 AM	Bogard Freezing	Activated	essAirTemperature.1(31.82) < 32
03/24/2017 03:05:26 AM	Bogard Freezing	Activated	essAirTemperature.1(31.82) < 32
03/24/2017 03:10:21 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32
03/24/2017 03:15:20 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32
03/24/2017 03:20:25 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32
03/24/2017 03:20:26 AM	Bogard Freezing	Activated	essAirTemperature.1(31.28) < 32
03/24/2017 03:25:20 AM	Bogard Freezing	Activated	essAirTemperature.1(31.28) < 32
03/24/2017 03:30:21 AM	Bogard Freezing	Activated	essAirTemperature.1(31.28) < 32
03/24/2017 03:35:25 AM	Bogard Freezing	Activated	essAirTemperature.1(31.28) < 32
03/24/2017 03:35:25 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32
03/24/2017 03:40:21 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32
03/24/2017 03:45:20 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32
03/24/2017 03:50:26 AM	Bogard Freezing	Activated	essAirTemperature.1(31.46) < 32

Figure 95: Example Alert History, Air Temperature Freezing, for Caltrans District 2 Bogard Site

## Bogard

**Alert Name:**

**Alert Description:**

**Alert Created by:** dgalarusITS

**Alert Defined For:**

**Alert Duration:**  The alert will be considered active for this amount of time(in minutes)

Any conditions met  All conditions met

Sensor Name	Condition	Threshold
<input type="text" value="Air Temperature"/>	<input type="text" value="&lt;"/>	<input type="text" value="32"/>

Delete

Add Condition

Figure 96: Alert Definition Administrative Page

## Bogard - D02-07

**Alert Name:** BogartPrecip

**Description:** Bogart Precipitation

**Created by:** dgalarusITS

**Defined For:** dgalarusITS

**Duration:** 30 The alert will be considered active for this amount of

Any conditions met  All conditions met

Sensor Name	Condition	Threshold
essPrecipYesNo	is	Precipitation
essPrecipSituation	is	Unidentified Slight
essPrecipSituation	is	Unidentified Moderat
essPrecipSituation	is	Unidentified Heavy
essPrecipSituation	is	Snow Slight
essPrecipSituation	is	Snow Moderate
essPrecipSituation	is	Snow Heavy
essPrecipSituation	is	Rain Slight
essPrecipSituation	is	Rain Moderate
essPrecipSituation	is	Rain Heavy
essPrecipSituation	is	Frozen Precipitation
essPrecipSituation	is	Frozen Precipitation
essPrecipSituation	is	Frozen Precipitation
essPrecipitationOneHour	>	0

Figure 97: Example Alert Definition, Precipitation, for Caltrans District 2 Bogard Site

03/24/2017 08:00:22 AM	BogartPrecip	Activated	essPrecipitationOneHour(0.00787402) > 0
03/24/2017 08:05:21 AM	BogartPrecip	Activated	essPrecipitationOneHour(0.00787402) > 0
03/24/2017 08:05:21 AM	BogartPrecip	Activated	essPrecipYesNo(Precipitation) is Precipitation essPrecipitationOneHour(0.01574804) > 0
03/24/2017 08:10:27 AM	BogartPrecip	Activated	essPrecipYesNo(Precipitation) is Precipitation essPrecipitationOneHour(0.01574804) > 0
03/24/2017 08:15:21 AM	BogartPrecip	Activated	essPrecipYesNo(Precipitation) is Precipitation essPrecipitationOneHour(0.01574804) > 0
03/24/2017 08:20:21 AM	BogartPrecip	Activated	essPrecipYesNo(Precipitation) is Precipitation essPrecipitationOneHour(0.01574804) > 0
03/24/2017 08:20:21 AM	BogartPrecip	Activated	essPrecipitationOneHour(0.01574804) > 0
03/24/2017 08:25:27 AM	BogartPrecip	Activated	essPrecipitationOneHour(0.01574804) > 0

Figure 98: Example Alert History, Precipitation, for Caltrans District 2 Bogard Site

## Bogard - D02-07

**Alert Name:** Bogard Wet Pavement

**Description:** Board Wet Pavement - not dry and not ERRO

**Created by:** dgalarusITS

**Defined For:** dgalarusITS

**Duration:** 30 The alert will be considered active for this a

Any conditions met  All conditions met

Sensor Name	Condition	Threshold
essSurfaceStatus.1	isnt	Dry
essSurfaceStatus.1	isnt	ERROR

Figure 99: Example Alert Definition, Wet Pavement, for Caltrans District 2 Bogard Site

## Alert History D02-07 - Bogard

**Alert Name:** Bogard Wet Pavement

**Description:** Board Wet Pavement - not dry and not ERRO

Date < 03/24/2017 >

Date/Time	Alert	Status	Condition(s)
03/24/2017 02:50:26 AM	Bogard Wet Pavement	Activated	essSurfaceStatus.1(Trace Moisture) isnt Dry essSurfaceStatus.1(Trace Moisture) isnt ERROR
03/24/2017 02:55:21 AM	Bogard Wet Pavement	Activated	essSurfaceStatus.1(Trace Moisture) isnt Dry essSurfaceStatus.1(Trace Moisture) isnt ERROR
03/24/2017 03:00:20 AM	Bogard Wet Pavement	Activated	essSurfaceStatus.1(Trace Moisture) isnt Dry essSurfaceStatus.1(Trace Moisture) isnt ERROR

Figure 100: Example Alert History, Wet Pavement, for Caltrans District 2 Bogard Site

## Bogard - D02-07

**Alert Name:** Bogard Icy Road

**Description:** Bogard Icy Road as detected by surface sensc

**Created by:** dgalarusITS

**Defined For:** dgalarusITS

**Duration:** 30 The alert will be considered active for this

Any conditions met  All conditions met

Sensor Name	Condition	Threshold
essSurfaceStatus.1	is	Ice Watch
essSurfaceStatus.1	is	Snow Warning
essSurfaceStatus.1	is	Snow Watch
essSurfaceStatus.1	is	Frost
essSurfaceStatus.2	is	Ice Watch
essSurfaceStatus.2	is	Ice Warning
essSurfaceStatus.2	is	Snow Watch
essSurfaceStatus.2	is	Snow Warning
essSurfaceStatus.2	is	Frost

Figure 101: Example Alert Definition, Icy Road, for Caltrans District 2 Bogard Site

## Alert History D02-07 - Bogard

**Alert Name:** Bogard Icy Road

**Description:** Bogard Icy Road as detected by surface sensors

Date

Date/Time	Alert	Status	Condition(s)
03/28/2017 04:20:20 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:25:21 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:30:26 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:35:20 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:35:20 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:40:26 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:45:25 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:50:26 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:50:26 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 04:55:21 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 05:00:26 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 05:05:20 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch
03/28/2017 05:05:21 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch essSurfaceStatus.2(Ice Watch) is Ice Watch
03/28/2017 05:10:21 AM	Bogard Icy Road	Activated	essSurfaceStatus.1(Ice Watch) is Ice Watch essSurfaceStatus.2(Ice Watch) is Ice Watch

Figure 102: Example Alert History, Icy Road, for Caltrans District 2 Bogard Site

## Alert Subscriptions D02-07 - Bogard

**Alert Name:** Bogard Freezing

**Description:** Bogard Air Temp below Freezing

### User Subscriptions

Subscriptions for those having WeatherShare user accounts.

User Name	Contact Address	Notification Timing
<input type="text" value="dgalarusITS"/>	<input type="text" value="Email 1"/> ▼	<input type="text" value="15"/> ▼

Delete

[Add Subscription](#)

### Non-User Subscriptions

Subscriptions for those not having WeatherShare user accounts.

Name	Email Address	Notification Timing
<input type="text"/>	<input type="text"/>	<input type="text" value="0"/> ▼

Delete

[Add Non-Subscription](#)

Figure 103: Example Alert Subscription Interface, Freezing Air Temperature, Caltrans District 2 Bogard Site

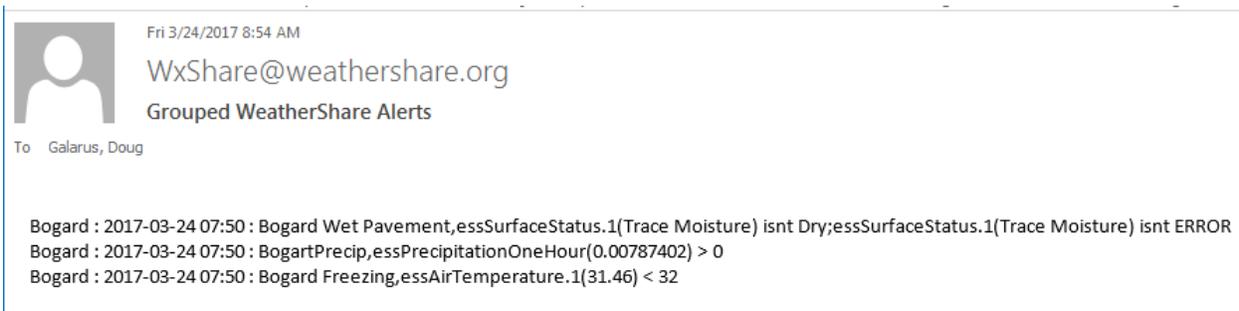


Figure 104: Example (Grouped) Alert Notification, Multiple Alerts

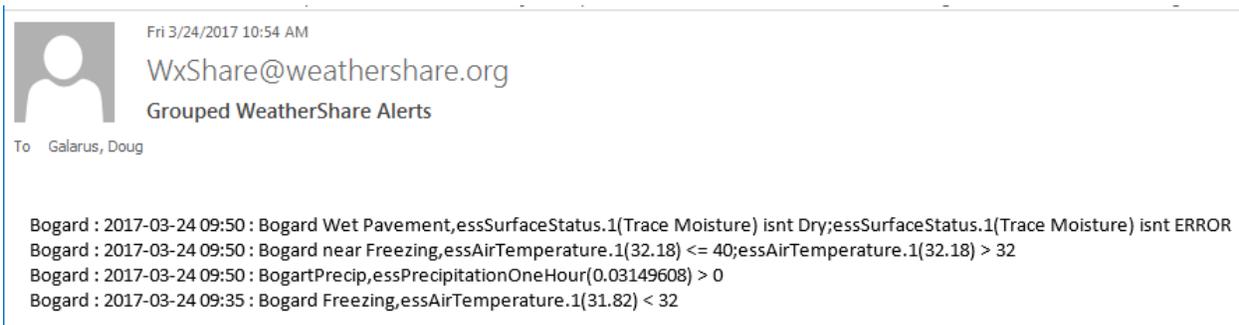


Figure 105: Example (Grouped) Alert Notification, Multiple Alerts



Figure 106: User Profile Options Administrative Page

## Edit User

**Username:** dgalarusITS

Email 1:  **Emails must have a valid email format.**

Email 2:  (optional) Second Email Address

SMS:  (optional) SMS Gateway Email Address

Group Notifications:  If checked, multiple notifications may be grouped in single emails.

Notification Timing:  Timing interval (in minutes) for grouped notifications.

Figure 107: Edit User Page



Figure 108: Administrative Options Page

## Edit User

**Username:** dgalarusITS

**Email 1:**  **Emails must have a valid email format.**

**Email 2:**  (optional) Second Email Address

**SMS:**  (optional) SMS Gateway Email Address

**Districts:**  Users must be assigned a district and may be assigned to multiple districts.

**Role:**  Users must be assigned a role.

**Group Notifications:**  If checked, multiple notifications may be grouped in single emails.

**Notification Timing:**  Timing interval (in minutes) for grouped notifications.

**Enabled:**

Figure 109: Administrative Edit User Page

### 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 functionality into WeatherShare. SCAN Sentry alert functionality and user profiles have been implemented and the prototype system is operating as planned.

WeatherShare includes relevant, external data for display via a Google Maps -based, web interface as well as tabular listings of RWIS 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 integrates RWIS data that is pushed via Caltrans Information Relays. At present, 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 System has been monitored and evaluated continuously by Caltrans District 2 staff, including during bad weather. When issues arose, or interesting conditions occurred, D2 personnel communicated directly with the project team and resolution occurred. Aside from several bugs that were identified, some configuration changes necessitated system updates. Early in this phase, the Caltrans RWIS Information Relay format was changed, necessitating extensive changes to the system.

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 on-going evaluation by Caltrans.