

**Chapter**  
**5**

# CALTRANS GOALS FOR RWIS

*This chapter presents the statewide, Headquarters, and District goals for Caltrans RWIS, as interpreted from interviews, surveys, and District visits.*

An important part of this project was to determine Caltrans' objectives regarding the improvement of RWIS and the development of proposed sites. In order to do this, Caltrans employees were interviewed to determine what uses they wanted for the future as discussed in Chapter 3. Collected data was used to determine the RWIS goals for California in general, and also for each individual District. (District 10 did not submit goals) The goals and the priorities for each District are discussed in the following sections and are summarized in TABLE 5-1.

## Caltrans Headquarters

As described earlier, Caltrans Headquarters does not currently have direct access to data from all RWIS sites. Caltrans headquarters would like develop a statewide RWIS network that allows Caltrans departments to be RWIS users, in particular its Emergency Operations Center. In the event of a large-scale weather event, both RWIS data and meteorology information would be helpful in planning emergency response activities and traffic operations. HQ would also like to combine RWIS information with expanded meteorological data (i.e. from a specialized vendor) to improve real-time forecasting capabilities.

## District 1

District 1 has two principal goals concerning RWIS: to decrease costs and increase the services that can be provided. To achieve these objectives, one of their proposals is to minimize the use of maintenance personnel for frost detection by using RWIS in a better manner. The District has been trying to implement the use

of radio communications and cell phones to access the data to eliminate the need for maintenance to visit the site to get the data. They would also like the road weather information to be incorporated into an information web page that can be accessed by statewide travelers. This will allow travelers to be aware of road conditions and plan their trip accordingly. They would like to see the weather information incorporated into ATMS and 511, as well.

Other cost reduction proposals include the installation of temperature sensors into Caltrans vehicles. This would allow crew members to get data readings while driving in their vehicles. District 1 also wants to reduce costs by building relationships with other agencies and sharing the information that is obtained from RWIS. This would allow more agencies to use the information to help the public, while reducing overall costs for each agency.

District 1 has also determined some goals for Caltrans concerning RWIS use in general. They feel that it would be in the Districts' best interests if Caltrans headquarters developed statewide recommendations for field equipment. They would also like to see policies and procedures developed that will help the user interpret the data. This would build overall confidence in RWIS. Another goal for Caltrans is to implement standard communication protocols. All of these goals would allow Districts to work together and exchange needed information.

## **District 2**

District 2's main goals are to use RWIS to improve maintenance scheduling and operations. To accomplish this, they would like to be able to access the RWIS data and other road weather information from the field, which would save them time and money. They would also like to incorporate the information into an information web page that is accessible to a statewide traveler, and to incorporate weather information into ATMS and 511. In addition, District 2 feels that it would be worthwhile to build relationships with other agencies, in order to save money and allow all of the agencies to use the data for their own purposes.

District 2 has developed some Caltrans goals that they would like to see implemented statewide. First, they would like Caltrans to implement a standard communication protocol for RWIS. This would allow Districts to access another District's RWIS data, and use it to help predict weather events. They would also like to see Caltrans develop statewide recommendations for RWIS field data. This would allow all Districts' equipment to be compatible.

District 2 staff would like to see an ITS Technician classification. This type of person would have electronics, computer, and communication skills instead of the electrician skills designated in the current classification system. This would help address some of the quality and cost issues with maintenance of RWIS and other ITS tools. Desired skills are listed on page D-10.

## District 3

Most District 3 goals are based on increasing the efficiency of RWIS. One of these goals is to increase staff training. They feel that the amount of training they have received to date is not adequate to properly run RWIS. They would also like to see Vaisala and SSI become NTCIP compliant so SSI can integrate the two systems. Another District 3 goal is to have Headquarters test the RWIS data for compliance. They would also like to see recommendations developed that would advise them of how often to access the data. This would save them time by not making the staff check the data more than is needed, and it would also allow them to make better predictions based on when the data should be accessed. District 3 would also like to see pop-up alarms developed into the system when conditions approach decision points. This would enable the operators to alert the public of any severe weather changes that may occur. Another major goal of District 3 is to have operation policies determined, in order to increase the usefulness of RWIS and allow the Districts to operate in a consistent manner. District 3 did not suggest any statewide goals.

## District 4

District 4 has drafted some goals to increase the usefulness of RWIS. One of these goals is to incorporate the road weather information into a statewide traveler information web page. This would allow travelers to access the data via the Internet and determine road conditions and the best route. District 4 would also like the Districts to work together and develop an improved computer application to help maintenance users make decisions. Another goal is to incorporate the weather data into ATMS and 511. They would like to access the RWIS data and other information from the field, which would save maintenance time because they would not have to return to the District headquarters to obtain the data. District 4 would also like to work with other agencies to share the information, in order to lower RWIS usage cost and make more information available to all agencies.

District 4 has also determined a few goals that they would like to see Caltrans achieve over the next few years. They would like Caltrans to develop a standard protocol for RWIS communications. This would allow Districts to have access to other Districts' information. District 4 supports the development of statewide recommendations for field equipment, which would also facilitate interface with other Districts. Another goal of District 4 is the development of statewide recommendations for forecasting services. Finally, they would like to have Caltrans identify policies and procedures that help personnel interpret the data, in order to build employee confidence in the system.

## District 5

The District 5 TMC currently receives weather-related Sig-Alerts from District 4. District 5 would be interested in receiving weather data from District 6 related to dust storms or low visibility. This information would serve to better inform travelers in District 5 who may be heading into the neighboring districts at the point, in District 5, where they have the option to take an alternative route.

The district generally supported all high level goals as shown in TABLE 5-1.

In general, they supported any documentation or support that headquarters could provide to help in siting RWIS, maintaining the systems, training, and other uses. District 5 supports Headquarters development of interoperability requirements and guidelines for site selection and use. Component selection, deployment, and use of the RWIS should be up to district discretion. Participants felt that headquarters should include use of weather information into the TMC operations guide that headquarters is developing.

## District 6

District 6 goals center on the best return on investment. Their highest internal priority is to have the weather information from RWIS incorporated into ATMS. They would also like to build relationships with other agencies to share the information that is obtained. Other goals include incorporating the road weather information into a website for statewide travelers and also into 511. The District would like to see a cost/benefit analysis.

Most of the high priority goals for District 6 deal with Caltrans developing standards for all of the Districts. Their most important goal is to have Caltrans develop recommendations for RWIS field data, in order to help integrate the different Districts so they could work together. Another high priority goal is having policies and procedures identified that will build confidence in RWIS; these policies would help personnel determine how to interpret and use the data. District 6 also supports the implementation of standard communication protocols.

## District 7

Many of District 7's priority goals address integration issues. One of these goals is to have a universal integration of RWIS. This would allow Districts to access weather information from outside agencies, which could increase the accuracy of forecasts. Another goal is to be able to use data from other Caltrans Districts to be able to monitor approaching weather conditions. District 7 would also like to see better placement of RWIS. Another goal of District 7 is to allow maintenance to

access the CCTV run from the Traffic Management Center. This change would save maintenance crews a lot of time, because they would be able to see the site condition and make decisions without having to visit the site. District 7 supports a linked system for all districts. They would also support a statewide system for maintenance.

## **District 8**

District 8 has determined some goals to increase the use of RWIS, most of which focus on making the system easier to use. District 8 would like the system to include alarms when wind or visibility conditions arise. This would allow personnel to be alerted if weather conditions change suddenly, and precautions need to be taken. Another goal of District 8 is to develop a user-friendly configuration display. They would also like web-based information to give to the California Highway Patrol. District 8 also feels that more than eight hours of training is needed to allow the employees to understand and use the RWIS information better. Another goal is to have the road weather information incorporated into ATMS, 511, and a web-based statewide traveler information site. District 8 would like to establish relationships with other agencies to share the information, in order to decrease costs and make the information available to more people.

District 8 has also developed statewide goals for Caltrans, the purpose of which are to allow the Districts to work together to improve the efficiency of RWIS. One of these goals is to develop consistent specifications. Other goals include developing statewide recommendations for field equipment and implementing standard communication protocols for RWIS. They would also like to see a formal agreement between Caltrans and SSI completed.

## **District 9**

For District 9, one of the most important goals is to have the weather information incorporated into ATMS. They would also like the road weather information incorporated into 511 and into a statewide traveler information web page. These changes would allow travelers to access the weather information and be able to choose routes that have good conditions, which would also help decrease incidents and increase the efficiency of roadways. Another goal of District 9 is to build relationships with other agencies to share the information, in order to decrease the cost of RWIS and increase the information that is accessible to everyone. They would also like to have a notification system developed. This system would use a pager or in-vehicle display to alert maintenance crews when severe conditions exist.

District 9 has also developed goals that they would like to see Caltrans implement throughout the state. One of these goals is to develop standard communication protocol for RWIS, in order to allow the individual Districts to access other Districts' data and be able to make more accurate predictions of future weather conditions. Another goal that District 9 would like to see Caltrans develop is consistent statewide recommendations for RWIS field data. This would also ensure that the Districts are compatible with each other.

## **District 12**

District 12 has developed RWIS goals that would increase the usage of RWIS, some of which deal with how the data should be used to show the information in a more understandable way. One of these goals is to incorporate the weather information into a traveler web page; they would also like to see the information incorporated into ATMS. Another goal they have developed is to build relationships with other agencies, in order to give them more information but not increase the cost associated with RWIS.

District 12 has also developed statewide goals for Caltrans. Their highest priority goal is to have Caltrans implement standard communication guidelines for all of the Districts. They would also like Caltrans to develop statewide recommendations for RWIS field equipment. Both of these goals would allow the Districts to work with others to increase RWIS use.

## **Summary of District Goals**

At the District level, staff expressed a strong desire to make RWIS services more efficient, less costly, and more accessible. The most frequently stated high priority goals include the ability to access RWIS information from the field instead of the District office, and the incorporation of weather information into ATMS, 511, and a traveler information web page.

District priorities for goals at the state level were remarkably consistent. Almost every District chose the implementation of a standard RWIS communications protocol as a high priority for Caltrans. The other goal that staff frequently listed as a high priority is the development of statewide standards and recommendations for RWIS field equipment.

TABLE 5-1 District Priorities

High-Level Requirements	Priority											
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
Caltrans Districts shall work together to develop an improved maintenance computer application for decision support for Caltrans maintenance				M	H		Y	M	M <sup>1</sup>		H	M
Caltrans shall incorporate road weather information into a statewide traveler information web page	M	H		H	H	6		M	ML		H	M
Weather information shall be incorporated into the ATMS	H	H		L	M	2(H)		M	H		M	M
Caltrans shall develop consistent statewide recommendations for RWIS needs and siting	M <sup>2</sup>				M <sup>3</sup>		Y <sup>4</sup>	M <sup>5</sup>				H
Caltrans shall develop consistent statewide recommendations for RWIS field equipment	H	M		M	M <sup>3</sup>	1(H)		H	M			M
Caltrans shall develop consistent statewide recommendations for forecasting services	M <sup>2</sup>			L	M			M	M			M
Caltrans shall identify policies and procedures to build confidence in RWIS (how do you interpret the data so you feel comfortable using it)	H			L	M	3(H)						
Caltrans shall implement a standard communications protocol for RWIS	H	H		H	H	4	Y <sup>6</sup>	H	H		L <sup>7</sup>	H
Caltrans shall develop capabilities to access RWIS data and other road weather information from the field		H		M	<sup>8</sup>				H			H
Caltrans shall build relationships with other agencies to share information	M	M		M	M	5	Y	L	M		M	M
Caltrans shall incorporate road weather information into 511	M	H		M	M	6		M	M		L	

H – High      M – Medium      L - Low

- 1 Incorporate into one system. Not enough room for multiple computers.
- 2 A body of knowledge would be helpful, but do not make statewide placement requirements (RWIS shall be located ...)
- 3 Not regulatory
- 4 Allow the Districts to place the sites
- 5 Siting design would be helpful
- 6 Linked system by whatever means to TMC and other Districts
- 7 If resources are available for District to implement
- 8 Access in supervisor's office

