



# WEATHER-SAVVY ROADS

#### PATHFINDER CASE STUDY

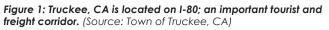
# weather-savvy roads Truckee, California: Adopting Pathfinder Principles

The intent of this case study is to illustrate the use of Pathfinder principles by a small rural municipality, namely Truckee, California.

## Background

Truckee, California is a resort town with approximately 16,000 full-time residents. That number increases to 30,000–40,000 during the weekends and holidays, in both summer and winter seasons, as visitors come to enjoy all that the Sierra Mountains have to offer. Recreation includes skiing and other winter sports/activities, access to Lake Tahoe, hiking, biking, and fishing. Truckee is located on 1-80 (See Figure 1) near the Nevada border and can experience extreme vehicle and truck crowding during winter closures on the interstate. Winter weather can include large amounts of snow and heavy rain—often causing a high risk of flooding.





During severe weather events, which could result in dangerous driving conditions, one cohesive message—coordinated with other agencies—is essential for Truckee to ensure safe public mobility and reduce possible confusion related to different messages from various sources. The town has strived to achieve this goal through the application of Pathfinder principles. Pathfinder (<u>http://go.usa.gov/xnS8m</u>) is a national initiative led by the Federal Highway Administration (FHWA) and the National Weather Service (NWS) to enhance collaboration ahead of and during weather events to share and translate weather forecasts and road conditions into consistent transportation impact messages for the public.





Figure 2: Heavy snow build-up on Truckee roadway. (Source: Town of Truckee, CA)

# **Stakeholder Collaboration**

Truckee can't accomplish its goals without strong relationships with various stakeholders—starting with the NWS and California Department of Transportation (CalTrans). The NWS Weather Forecast Office (WFO) that supports the Truckee area is in Reno, Nevada. Truckee staff have built a direct relationship with the NWS Reno WFO to obtain severe weather forecasts, warnings, and watches. Staff receive weather forecasts ahead of major weather events and are able to discuss the details and potential impacts of the event

with the NWS WFO. Truckee also has a strong relationship with CalTrans District 3 to help understand I-80 operations and traffic impacts, such as snow chain requirements or road closures. These relationships are essential to Truckee's road operations decisions and communication with travelers. Additionally, Truckee maintains relationships with law enforcement and emergency responders, such as the Truckee Police Department and the California Highway Patrol, to coordinate operations and public messaging during severe weather events.

## **Technology Applications**

Truckee has invested in operational and communication technologies to manage its resources and public information. All snow removal equipment includes automatic vehicle location (AVL) devices, which support operations staff to efficiently allocate resources. The location of snow removal equipment is also displayed on a public web portal (map-based) to let the public know where operations are taking place in real-time. The town's website (www.511portal. com/truckee) provides road weather and weather information, traffic conditions, and important related messages and alerts (see Figure 3). This information is also shared with the media and through the town's Facebook account.

Additionally, the Truckee Police Department uses a text blast system, called NIXLE, to alert the public of emergencies, dangerous situations or areas, major events, road conditions, and severe weather forecasts.

The town does not currently have its own Road Weather Information System (RWIS); however, it is investigating this option to enhance its road weather data.

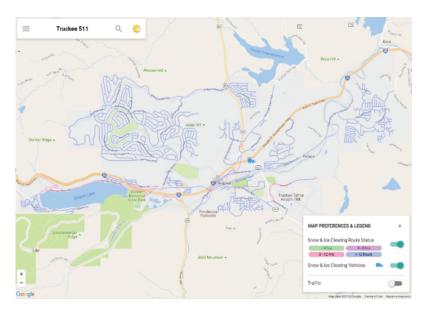


Figure 3: Screen shot of Truckee traveler information web portal: www.511portal.com/truckee (Source: Town of Truckee, CA)



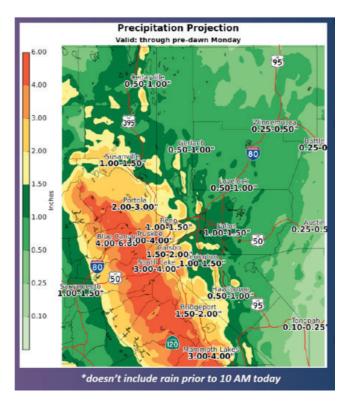


Figure 4: Sample NWS map-based information displaying potential severe weather, in this case precipitation projections. (Source: Town of Truckee, CA)

# **Pathfinder Principles Implemented**

Truckee has implemented key Pathfinder principles to achieve its goal of ensuring consistent public messages regarding travel impacts during severe weather events. In advance of a forecasted severe weather event (see Figure 4), staff receive a PowerPoint presentation (via email) from the Reno, NV NWS office describing the event and potential impacts. If needed, a conference call is conducted to discuss the event and answer any questions. Truckee staff then communicates with key stakeholders to fully understand potential roadway impacts, coordinate operations, and determine the most appropriate public messages. The stakeholders each disseminate consistent messages through their normal channels such as webpages, Facebook, and NIXLE.

Implementation of these fundamental Pathfinder principles ensures the public receives consistent, meaningful messages to help them make important travel decisions.

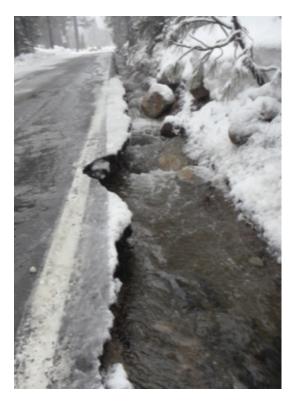


Figure 5: Impact of flooding on Truckee roadways. (Source: Town of Truckee, CA)

# **Truckee Experienced Benefits**

Through strong working relationships with key stakeholders, Truckee has enhanced its knowledge about pending severe weather, improved the efficiency and effectiveness of road operations in response to storms, expanded its public information and outreach, and increased public relations.

**Enhanced its weather knowledge.** Developing a direct relationship and communication with the Reno, NV NWS office has significantly enhanced Truckee's knowledge of expected severe weather, allowing it to more effectively prepare a response (i.e., staff call outs and clear streets/drains).

#### Expanded public information and outreach.

Providing as much information to the public as possible about road conditions and ongoing operations through Truckee's web portal, has increased safety and improved the town's public relations.





Figure 6: Heavy snow accumulations can make plowing operations challenging. (Source: Town of Truckee, CA)

Improved efficiency and effectiveness of road operations. Enhanced weather knowledge and public outreach has made improved road operations possible. Resources are better allocated, known problem areas can be mitigated, fewer motorists on the roads equates to more effective operations, environmental impacts have been reduced, and roads are generally in better condition year-round, which enhances safety.

Increased public relations. Providing complete information to the public and stakeholders, including trouble spots and real-time road operations, has significantly increased public relations between the town and traveling public, as well as coordination with other entities. Examples include:

- Better roads and travel conditions during severe weather is appreciated by the public.
- An informed public regarding town operations helps make the public feel better prepared for the conditions.
- Resort businesses are better prepared to serve their customers more effectively.
- Coordination and collaboration with stakeholders improves future interactions and cooperation.

#### **Future Plans**

Truckee is continuing to improve upon its response to severe weather with the following planned activities:

- Exploration of the RWIS to fill road condition data gaps in hot spots.
- Further expansion of telematics to enhance data collection from snow removal equipment.
- Enhancements to the public facing AVL portal to better display and provide the public with critical information.
- Continue to work on collaboration with private snow removal contractors to improve operations during severe weather events.

#### For More Information

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