

Best Practices for Road Weather Management

Version 3.0

media and public, and in this way, the message of travel impacts can reach a much larger audience than UDOT may be able to on its own.

Road condition reports are updated hourly from the TOC and at least twice daily from plow operators in the field. Plow operator reports are favored for their on-the-ground accuracy, but they lack the timeliness the public demands. Plow operations requires a high level of focus on safety and snow/ice mitigation, especially during hazardous and changing conditions, and reporting conditions becomes a lower priority. Utilizing in-field sensors, cameras, radar, forecasting models and direct communication with field personnel, the TI meteorologist populates these reports at a high frequency for UDOT's TI outlets. UDOT also plans to initiate a citizen reporting program in the near future.

Transportation Outcome(s): The TI Weather program has improved UDOT's level of service for public information. It has contributed to increased road weather awareness among media and public in Utah as they begin to understand the difference between "sensible" weather and road weather. For example, three inches of snow forecast to accumulate on grassy terrain may or may not translate to travel impacts, depending on road temperature, precipitation intensity, mitigation strategies, and so forth. It is assumed a road weather-savvy public will make more informed travel decisions before, during and after storms. Safer travel and increased road capacity during storms is an anticipated outcome.

Communications technology has greatly increased the ability for information to be disseminated to the public in real-time, and as a result, UDOT's road condition reports are more visible than prior technology would have enabled. Hourly updates satisfy a public need for this important safety information.

At less than \$140,000 per year, the cost of providing this service is relatively minimal for the important public service. UDOT has found that human-powered forecasts and road condition reports are produced at a much lower cost than running certain types of road weather models or relying strictly on automated field devices. Despite the low program cost, the forecasts are proven to be highly accurate, enabled in large part by human interaction in the forecast and observation processes. The TI meteorologists are removing some burden from the maintenance forecasters, who have been historically been limited to providing only a small component of public weather needs. This program has been very well received and supported in UDOT.

Implementation Issues: Basic software development was required to support the system. Local meteorologists with Bachelor's degrees were recruited for the positions.

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Reference(s):

- TI Weather products available at <udottraffic.utah.gov/RoadWeatherForecast.aspx>
- Jones, L., G. Merrill, K. Barjenbruch, R. Graham, "Innovations in Impact-Based Wintertime Road Weather Warnings in Utah," 1st Conference on Weather Warnings and

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Communication, Oklahoma City, June 2011, available at
<<http://ams.confex.com/ams/39BROADCAST/webprogram/Paper189115.html>>

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