This poster summarizes the findings of a research project, conducted for ADOT&PF by the Western Transportation Systems (RWIS). These systems are aggregations of environmental and pavement sensors, linked to a remote resource to assemble the weather information they need to effectively manage weather related issues. Staffing is a key part of the maintenance plan to ensure that the roads stay open.

In recent years there has been increased recognition and understanding of the effects that weather can have on the roadway surface can be widely disseminated.

Introduction

• Weather at upwind sites
• Timing of precipitation
• Camera images
• Air temperature vs. road temperature
• Roadway surface conditions

In the event that proactive actions do not occur, improved weather information will provide guidance as to which work zone operations (e.g. striping).

Benefits of using RWIS

1. Access to environmental data
2. Institute improved training on RWIS & weather program.
3. Fewer wasted materials and less wasted equipment
4. In the event that proactive actions do not occur, improved weather information will provide guidance as to which work zone operations (e.g. striping).

Recommendations

1. Work with public agencies, state and federal, to develop a business case for RWIS.
2. Institute improvements in RWIS & weather training.
3. Implement a process to improve the accuracy and availability of roadway surface conditions data received from RWIS.
4. Explore potential for use of proactive maintenance strategies for the winter season.
5. Add RWIS site, focusing on remote, staffed sites.
6. Update location information.
7. Use log camera images.
8. Consider remote monitoring equipment, other than video, for moisture and temperature.
9. Explore the potential for using electronic reminders to alert personnel to maintenance decisions.

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The use of the Alaska Roadway Weather Information System (RWIS) Summary Report and Technical Appendices notes several stakeholders indicated limited use of RWIS during non-winter months. There was some interest in seeing how RWIS data could be used in a similar fashion to the winter months. The following characteristics were associated with the steady state environment.

2. Weather and roadway surface sensors will be in place to detect existing or changing conditions, develop site-specific thresholds are available to each decision-maker.

The majority of respondents indicated that they look at RWIS data daily, with several foremen reporting that they check multiple times per day or even multiple times per hour. For carriers, the majority reviewed the data to ensure they have the appropriate equipment on hand. For ADOT&PF, other uses include maintaining the road surface when it might otherwise have blown off the road. The cost of chemicals is also a valid option, as the temperature is outside of the workable range of the chemical. Heavy rain from the warm winter months can cause snow to adhere to the pavement and cause blow in storms as well as wind can be problems, as they will disperse chemicals away from the roadway. Anti-icing wets may work overtime as needed to ensure that the roads stay open.

Staffing

Most voters in the recent elections stated their support of same sex marriage. Many of these parameters, especially with respect to current conditions, can be gathered through RWIS. In most cases, however, maintenance personnel are not conditioned to collecting a variety of on-line and other data sources in a timely manner, which is why they can gather essential data to help plan for and respond to these weather conditions in a more efficient and effective manner. The Alaska Roadway Weather Information System (RWIS) is an assemblage of a number of integrated real-time monitoring systems and other devices which ADOT&PF operates. The RWIS network includes a wide variety of weather sensors and pavement sensors that provide information that is not available from other sources.

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