The State of Road Weather Research

SIRWEC 2016

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Max Perchanok
Ontario Ministry of Transportation
TRB Maintenance and Preservation Section
Messages

Our work is critical!
Advance of the discipline
Where we are headed......
Road-weather is critical
Critical when there is a snow squall

Hwy 400, Feb. 27 2014
12 hour closure over 15 km
AADT: 84,000; 42,000 trips
96 vehicles
3 injuries
Critical when there is black ice

Hwy 401, March 8 2015
18 hour closure, 15,000 trips
AADT: 40,000
50 vehicles
4 injuries
Critical when visibility is nil

Hwy 401, Sept. 3, 1999
24 hour closure, 24,000 trips
AADT: 24,000
87 vehicles
62 injuries
8 deaths
Critical in extreme white-out

Hwy 402, December 13 2010
360 vehicles trapped
3 day closure
75,000 trips delayed
1 person dead
Yes, road-weather is important!

- 22% of vehicle accidents (USA)
- Speed reduction
- Capacity reduction
- Economic loss
- Injury
- Loss of life
- # vehicles per incident
- Longest time to recovery
Advance of a discipline

February 1984, the Hague

The Standing International Road Weather Commission (SIRWEC) operates as a forum for the exchange of information relevant to the field of road meteorology. ..

...seeks to identify those areas where increased and/or new research and development may yield improvements in practices, techniques, systems and methodology, to the general benefits of the art.
1984 and beyond...

Weather research supporting transportation.
Information to knowledge; mapping
Information to knowledge; climatology
Information to knowledge; forecasting
Information to knowledge; decision support
Information to knowledge; mapping
Information to knowledge; climatology

U.S. Winter Severity
for Winter Road Maintenance

Map generated July 2012 by Meridian Environmental Technology under funding of Clear Roads Project #10-02.

Winter Severity data as portrayed in this map were generated from gridded datasets of mean annual snowfall amounts and the mean annual durations of snowfall, freezing rain, and blowing snow (each for which maps are separately available), giving approximately equal weighting to the snowfall amount and the duration of these wintry weather conditions. Particular winter severity values have no specific interpretation and are intended only to facilitate comparison between locations. More information as to the specific process used to develop this map is available from Clear Roads.

STANDING INTERNATIONAL ROAD WEATHER COMMISSION
Information to knowledge; forecasting
Information to knowledge; decision support
Where we are headed....

1. Big data
2. Micro forecasting
3. Environmental sustainability
Big data fusion

Integrated service
Operations planning
Public information/511
Analysis
Reliable travel

Traffic
weather + road conditions
road conditions + operations
Micro forecasting

Site information

Mobile observation

Micro-forecast

STANDING INTERNATIONAL ROAD WEATHER COMMISSION
Sustainability
Information...knowledge...wisdom

to make our roads safer to drive on in all weather conditions.