BRINGING AUTOMATED RWIS INFO TO THE MOTORIST

National Rural ITS & ITS Arizona Annual Meeting – Rural ITS Weather Applications
Oct 23, 2018

F. Todd Foster, P.E.
VP of ITS Engineering
Ver-Mac, Inc.
Do MORE with your existing RWIS / ITS Infrastructure to solve real problems.
BASIC SERVICE
• RWIS Systems & Devices Exist in Most Areas of Concern
  • These devices gather data and record RWIS information
  • Many of these systems can also provide operator alerts
  • Operators get Flooded with Tasks When Things Go Bad

SEMI-AUTOMATIC SERVICE
• RWIS Systems Provide Automatic Adverse Weather Alerts
• Operators Verify & Then Decide on What & How to Warn the Public

FULLY-AUTOMATED SERVICE
• RWIS Servers Communicate Directly to Warning Devices (Flashers, Signs, etc.)
• RWIS-Warning Device Systems Record:
  • All Incoming Weather Data (of interest)
  • All Warning Device Activities
  • Monitor Health (Data Feeds, Communication Loss & Loss/Low Power)
  • Auto-Alerts for Weather & System Outputs
  • Quick & Easy Reporting & Data Exporting

SYSTEM - LEVELS OF SERVICE
Portable RWIS is IDEAL for:
- Trial Projects
- Replacing Offline Systems
- Filling Gaps Until Perm.
APPLICATIONS

MANAGING TRAFFIC, MOVING PEOPLE.
Cloneen Ireland
Problem: Wet Roadway Related Crashes
Solution: Automated Advanced Warning Signs & Alerts
Cloneen Ireland
When water was 0.2 mm or thicker, the advanced warning sign activates & automatic alerts are sent to the road Authority.
Cloneen Ireland
Wind Avg Speed & Gusts & Direction Data was also collected
Flood Detection System

http://www.atstraffic.ca/case-studies/flood-detection-system/
Photo courtesy of EPCOR via the Flooding & Flood Prevention page.

FLOODED ROADWAYS / UNDERPASSES
1. 2 of 3 Sensors triggered by real-time flood conditions.
2. Automatic text/email alerts are sent to distribution list and message boards are automatically activated.
3. Personnel can log in to access on site cameras & verify flood conditions/override false alarms.
4. Additional countermeasures (i.e. emergency services) are deployed (if required).
APPLICATION - REDUCED VISIBILITY WARNINGS
PA I-81 Smart Work Zone with Automated Visibility System Logic

APPLICATION - REDUCED VISIBILITY WARNINGS
PA I-81 Smart Work Zone with Automated Visibility System Logic
APPLICATION - REDUCED VISIBILITY WARNINGS
APPLICATION – AUTOMATED WIND WARNING SYSTEM

BEFORE (24/7):
CAUTION
HIGH WIND AREA
Problem: The Wreckhouse area, in the SW part of Newfoundland, spans 40-50 km on the Trans-Canada Highway. Wreckhouse has a unique wind funneling phenomenon due to the topography of the local area. Wind gusts can exceed 180km/h, overturning larger vehicles.

Solution: An automated ITS solution, using existing Environment Canada - Automated Weather Station (AWS) data to provide real-time automated warning messages for traffic entering the wind zone.

Success: 16 warnings were triggered in January 2010, 3 of which advised all motoring traffic to pull over. Since its installation the Wind Advisory System has significantly decreased wind related incidents.

Project References
Eric Gionet, Wood (Formerly AMEC) eric.gionet@woodplc.com
AUTOMATED WIND WARNING SYSTEM

AFTER (Automated): SPECIFIC WIND WARNINGS BASED ON REAL-TIME CONDITIONS
AUTOMATED WIND WARNING SYSTEM

<table>
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<th>ActivationDetail</th>
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APPLICATION – SNOW / ICE ON ROADS
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RWIS-DMS COMBINED DATA (ALBERTA)
RWIS-DMS Combined Data (Alberta)
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<td>Automation</td>
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Canada just legalized recreational pot

Here's what you need to know

By Darran Simon and Nicole Chavez, CNN

Updated 4:20 PM ET, Wed October 17, 2018

Marijuana is now legal across Canada 01:37

Automated Pot Hole Warning Systems for 2019???
• Pick Custom Parameters
• Merge Inputs & Outputs
• Produce Quick & Easy Custom Reports-Graphs
CUSTOMIZED PUBLIC WEB SITES
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• MAKE BETTER USE OF EXISTING RWIS INFRASTRUCTURE

• AUTOMATE REAL-TIME ALERTS TO KEY PERSONNEL

• ALLOW TMC/TOC PERSONNEL TO FOCUS ON NON-AUTOMATED TASKS

• OPERATORS CAN STILL VERIFY & OVERRIDE AUTOMATED SYSTEMS

• HAVE QUICK & EASY ACCESS TO CUSTOM REPORTS & GRAPHS

BOTTOM LINE IS THE INCREMENTAL COST TO DO MORE WITH YOUR EXISTING RESOURCES IS LOW AND THE BENEFITS IN INCREASED SAFETY & CUSTOMER SATISFACTION IS HIGH