

Wyoming WRTM Project Evaluation Results

National Rural ITS Conference

Snowbird, UT

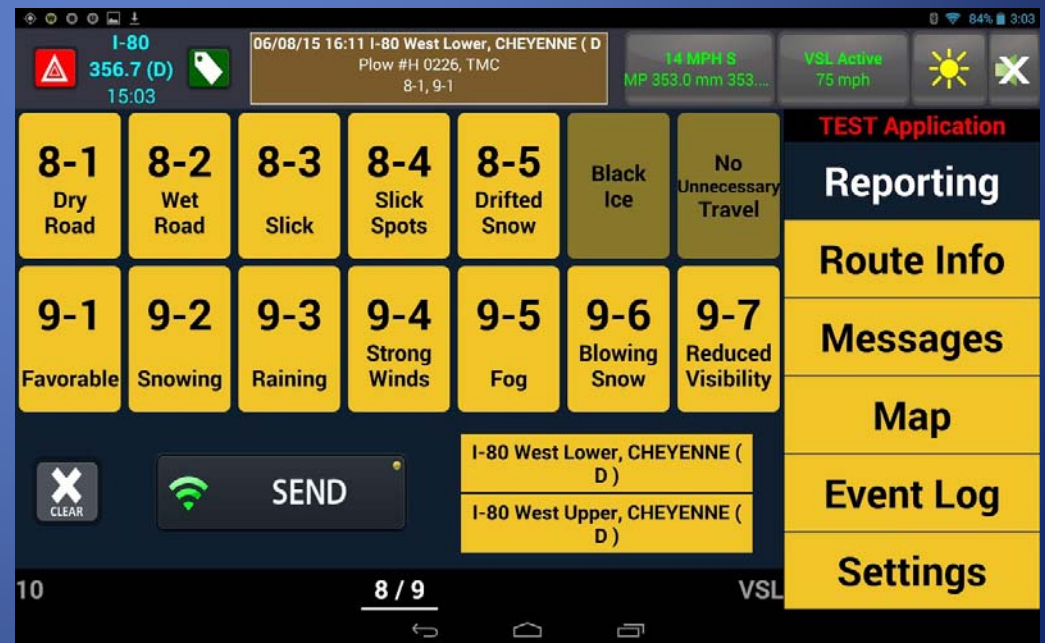
August 10, 2015

Fred M. Kitchener

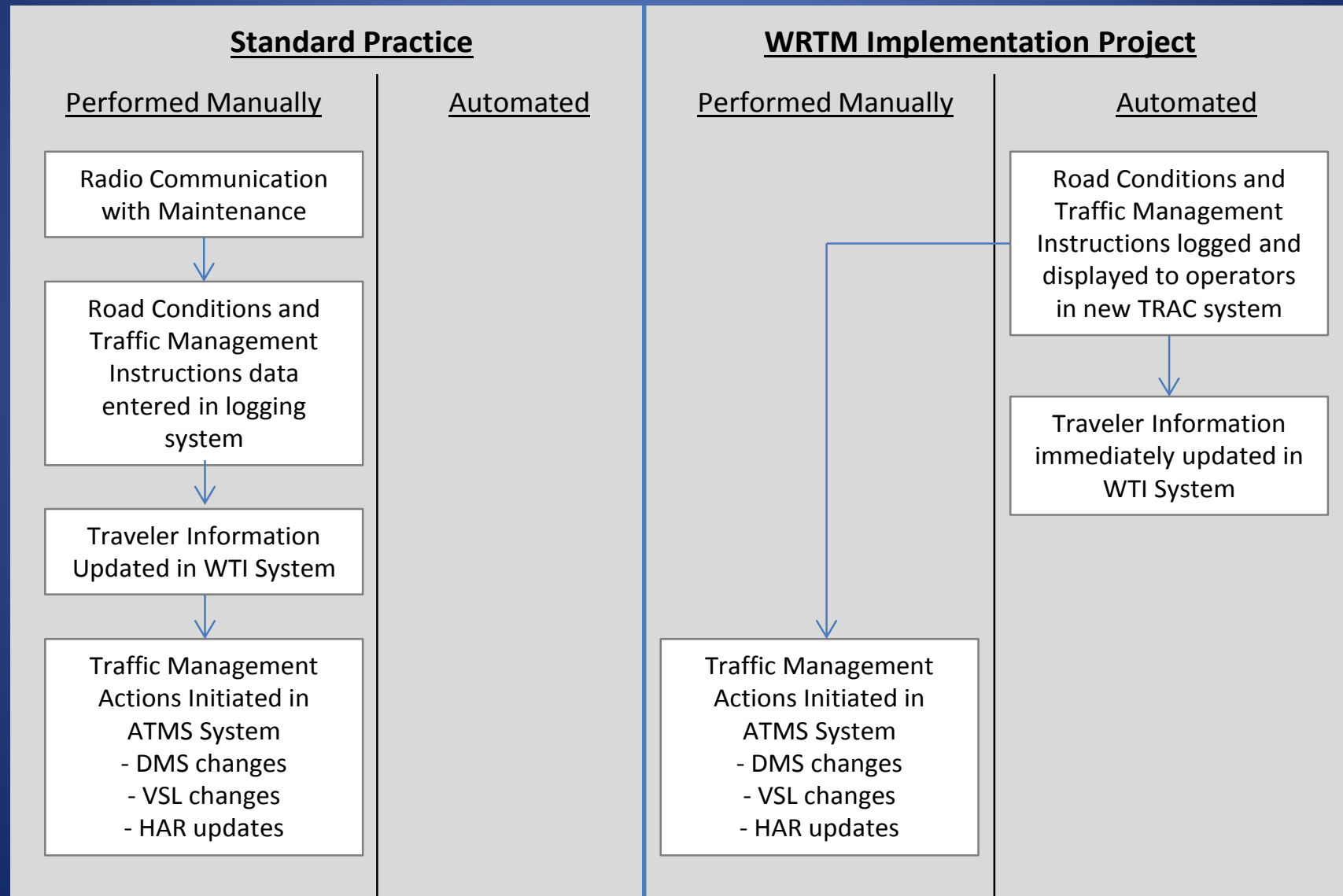
M^cFarland **M**anagement, LLC

Wyoming WRTM Project

- Road Condition Reporting Application
 - On tablet computers
 - Send reports from the field to the TMC
- Data processing enhancements
 - TRAC
 - WTI



Process Changes



Project Expected Benefits

- More efficient road weather condition data collection
 - Maintenance employees
 - TMC operators
- Richer dataset and higher frequency of road weather condition data collection
 - TMC operators
 - Travelers
- Improved traffic operations (through use of new information)
- Improved maintenance operations by providing enhanced information (forecasts, RWIS, Wx radar)

Evaluation objectives

1. Improve efficiency of condition reporting by maintenance employees and TMC operators
2. Improve traffic management capabilities at the TMC during weather events
3. Improve the timeliness of condition reporting updates to the public
4. Improve situational awareness of maintenance employees

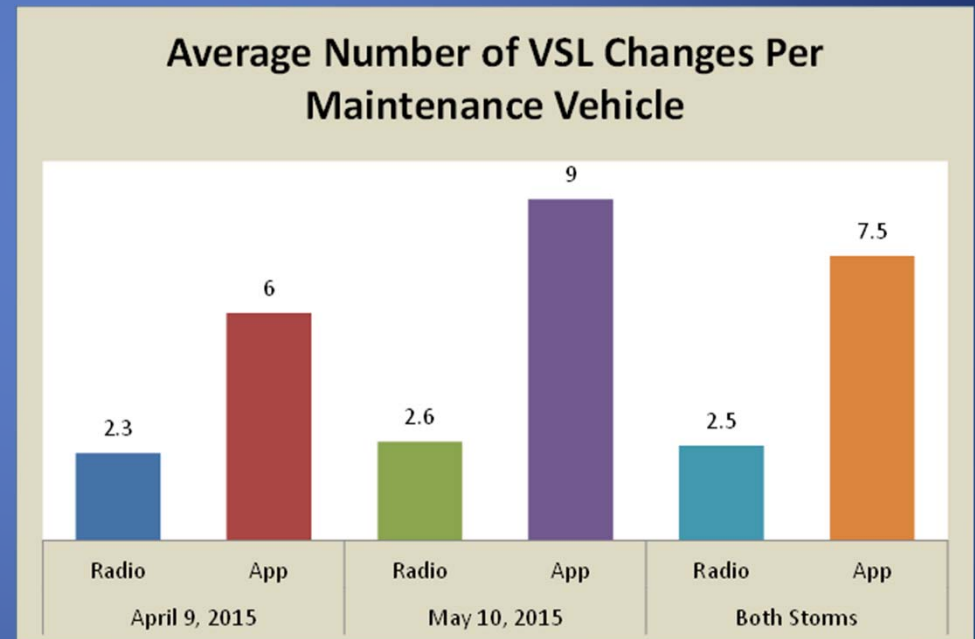
Evaluation Data Needs

- TMC logs and time studies
 - Radio time
 - Time saved processing incoming field reports
 - Time saved updating traveler information
- Maintenance staff survey
- TMC staff survey

Evaluation Results

Improved efficiency of road condition reporting

- Number of road reports submitted doubled
- Number of requested VSL changes increased by 3 times
- Time saved in TMC
 - No logging of reports
 - Automated WTI updates
 - 1 equivalent person
- 82% maintenance staff said App easy to use



Evaluation Results

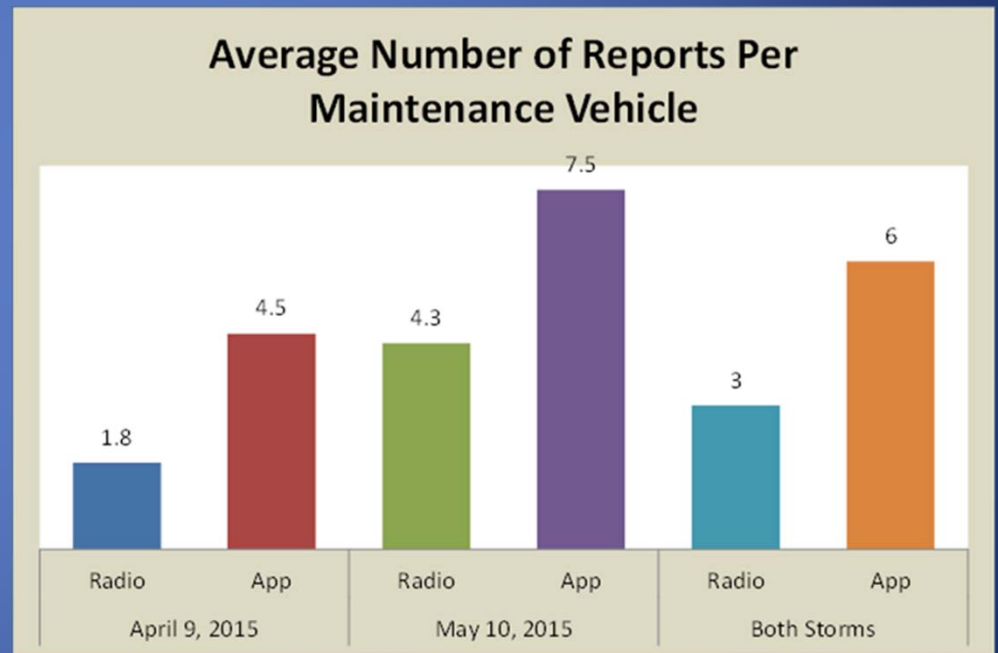
Improved traffic management capabilities

- VSL and DMS change requests
 - APP reported to be easier to use
 - Increased number of change requests
 - Information provided to TMC operators were more detailed and accurate, resulting in quicker TMC actions performed with higher confidence
- Time taken by TMC operators the same
 - Future system enhancements and process changes expect to reduce the time needed

Evaluation Results

Improved timeliness of reports to public

- Higher frequency of reporting implies improved timeliness of reports to public
- Automated information updating traveler information databases improves timeliness of reports to public
- 64% of maintenance staff reported App allowed them to make more reports with less time required to make the report



Evaluation Results

Improved maintenance situational awareness

- Maintenance staff reported improvements
 - Milepost location
 - Nearby road conditions
 - Weather radar
 - RWIS information

The screenshot shows the TEST Application interface. At the top, it displays the current location as I-80 West, ARLINGTON (1) with a plow #H 0226, TMC, and a speed of 14 MPH S. The interface includes a status bar with a warning icon, a location icon, and a sun icon. Below the status bar, there is a table of road conditions:

Location	Operator	Time	Notes
I-25 North, CHEYENNE (D)	TMC	06/08/15 16:12	8-1, 9-5
I-25 North, CHEYENNE (1)	TMC	06/08/15 16:12	8-1, 9-5
I-25 South, CHEYENNE (D)	TMC	06/08/15 16:12	8-24BINUT, 9-6
I-25 South, CHEYENNE (1)	TMC	06/08/15 16:12	8-24BINUT, 9-6
I-80 East, CHEYENNE (D)	alragan	06/12/15 15:05	8-24, 9-2

On the right side of the interface, there is a vertical menu with the following options: Reporting, Route Info, Messages, Map, Event Log, and Settings. The bottom of the screen shows the RWIS (Road Weather Information System) section with a 'Conditions' tab.

The screenshot shows the TEST Application interface with a detailed weather report for a specific location. The status bar at the top indicates the location as I-80 West Lower, CHEYENNE (D) with a plow #H 0226, TMC, and a speed of 14 MPH S. The interface includes a status bar with a warning icon, a location icon, and a sun icon. Below the status bar, there is a table of weather conditions:

Parameter	Value
Air Temp	65 °F
Dew point	
Rel. humidity	
Wind Speed Avg	6 mph
Wind Speed Gust	10 mph
Surface Temp	96 °F
Surface Status	Dry:Dry
Visibility	6560 ft
Time Stamp	06/12/2015 14:56:00

On the right side of the interface, there is a vertical menu with the following options: Reporting, Route Info, Messages, Map, Event Log, and Settings. The bottom of the screen shows the RWIS (Road Weather Information System) section with a 'Conditions' tab.

Evaluation Conclusions

- Strong support from TMC and Maintenance staff
 - App and enhancement to supporting systems
- Key findings
 - Time savings
 - Frequency of reporting and VSL changes
 - Accuracy and timeliness of traveler information
 - Accuracy of field reporting, resulting in efficiency of TMC operations
- Incorporating lessons learned into system enhancements for coming winter season
- Future expansion planned
 - Increased deployments
 - New Apps; focused on operational efficiencies using tablet

Wyoming WRTM Project Project or Evaluation Information

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