

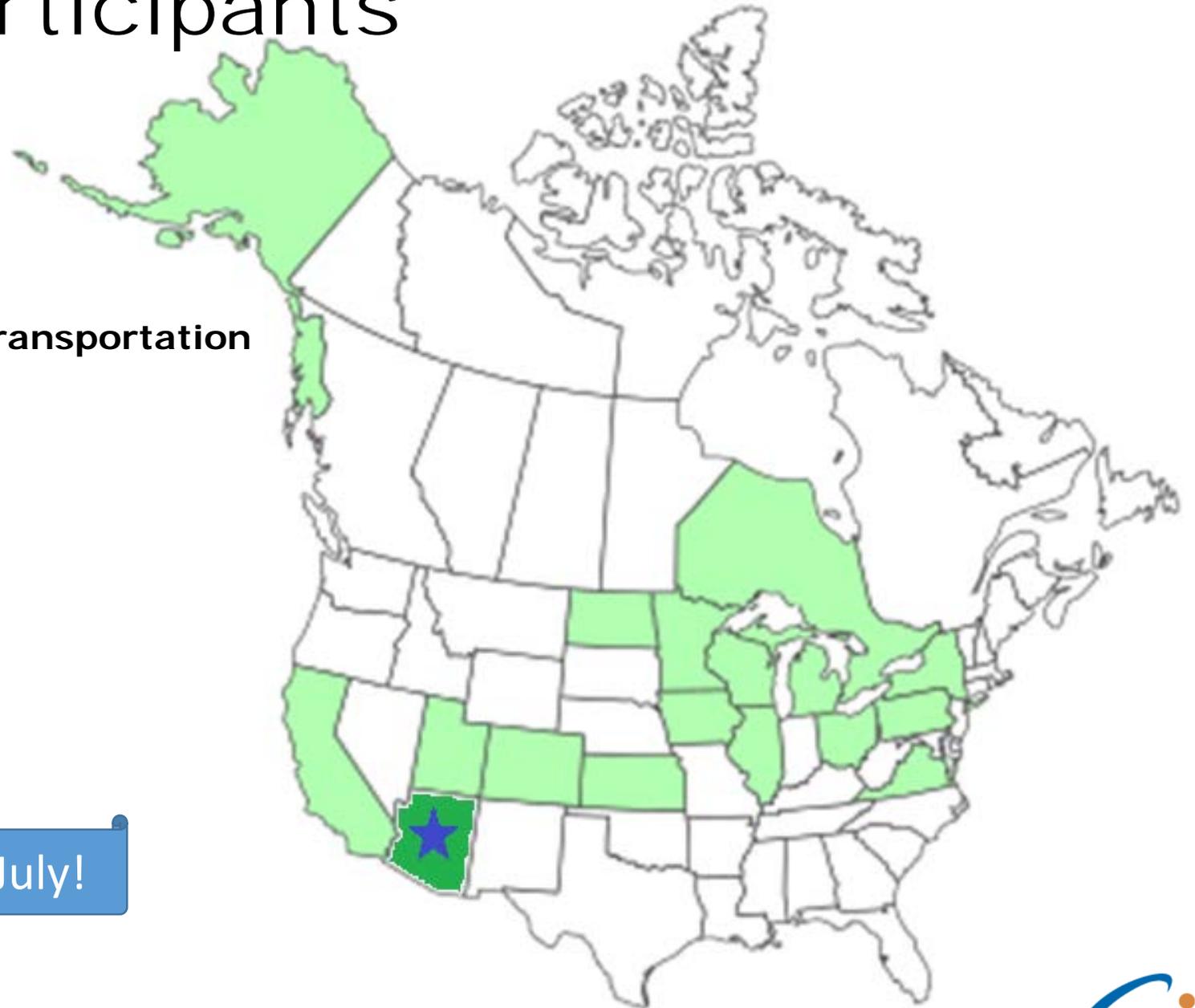
# Aurora Projects Proposed and Underway

AASHTO WMPCC, July 2016

# Active Participants

Alaska  
California  
Colorado  
Illinois  
Iowa  
Ontario Ministry of Transportation  
Kansas  
Michigan  
Minnesota  
New York  
North Dakota  
Ohio  
Pennsylvania  
Utah  
Virginia  
Wisconsin  
Arizona

New in July!



# Aurora Happenings

- Spring Board Meeting held in Phoenix AZ, April 5-7, 2016
  - Tour of AZ DOT Traffic Operations Center and flood mitigation stations
  - Agency updates, new project selection, project updates
- Fall Meeting to be held in Buffalo, NY October 4-6, 2016
  - Meet at/with Niagara International Transportation Technology Coalition and Buffalo area NWS
  - Agency updates, project updates
- Retiring representatives:
  - Jack Stickel (Alaska), Curt Pape (Minnesota), Joe Doherty (New York)
  - All with 12+ years serving on the board

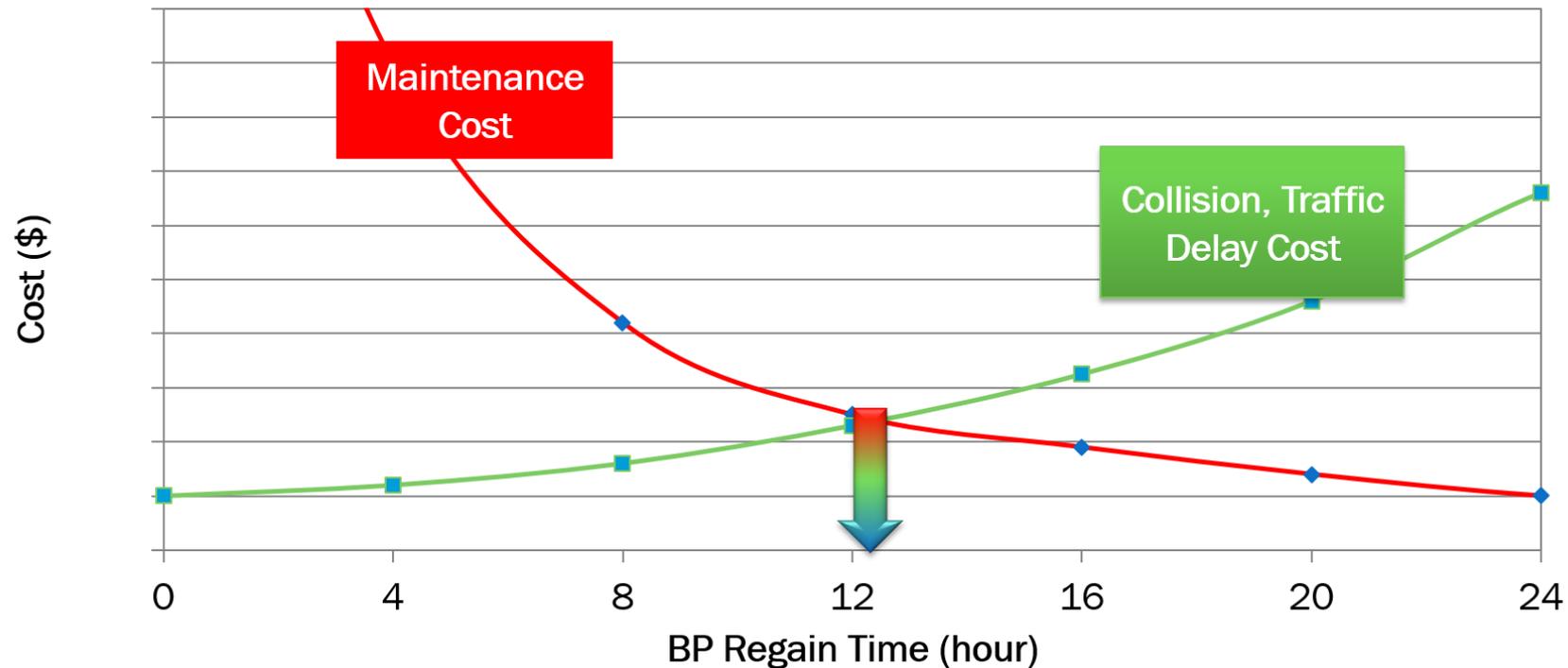
# April Board Meeting Results

- Status of existing projects
  - 2 projects accepted as complete
  - 4 projects cancelled
- Decision on proposed 2016 projects
  - 3 new projects accepted
  - 3 proposals left unfunded



# Results-Based Winter Road Maintenance Standards (Aurora 2010-03, A and B)

- Very near completion. Final report is awaiting MTO internal approval.

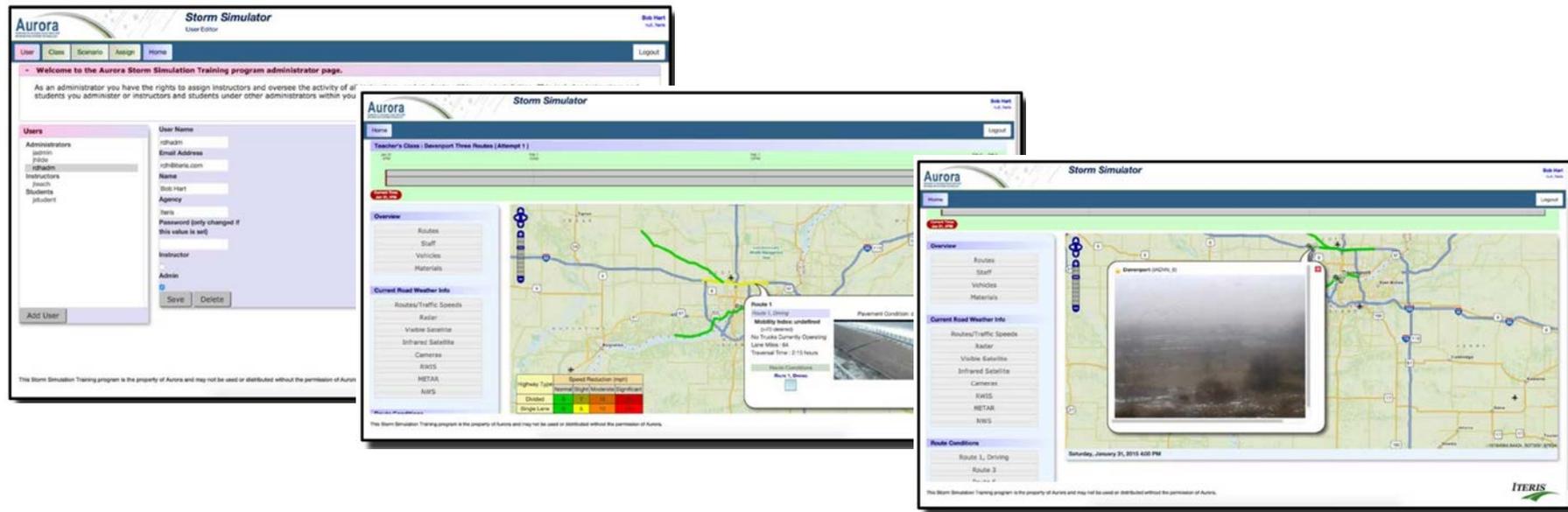


# RWIS Network Planning: Optimal Density and Location (Aurora 2010-04 and 2016-03)

- 2010-04 study is now accepted and complete. The study was very useful but had some limitations in terms of cost-benefit and looking at error between stations. Initial project is a great start but had to make some broad assumptions. Excellent step forward which allows us to see the next steps forward.
- MTO submitted a problem statement for this 12-month Phase II proposed effort as follows:
  - 1. Extend the kriging analysis to characterize the distance over which winter-time road-weather observations are transferrable within established climate zones, and by including temporal in addition to spatial aspects.
  - 2. Improve on the Benefit:Cost model with a web application that allows any participating agency to provide its own cost information or relevant assumptions. Further develop the accident-benefits model used in Project 2010-04 by recalibrating and validating the assumed RWIS sphere-of-influence assumptions used in that study.
- A number of states noted the desire to apply this tool in consideration of sites, microclimates, etc. After discussion by the board, the following decision was made.
- **Motion accepted to approve \$100,000 to support this Phase II effort (new project number 2016-03).**

# Storm Simulator Training Tool (Aurora 2011-02)

- The training tool is ready for user testing. ITERIS has most of the bugs resolved and the user manual finished. Testing logins have been distributed to the board for final testing.



# Validate Accuracy of Pavement Predictions (Aurora 2012-01, 2014-03)

- Neither of these projects were ever contracted. These projects were identified but never had sufficient momentum to develop a contract. Prior to the spring meeting, Mike Adams (Wisconsin) developed a draft proposal to go through the Iowa Highway Research Board, however, other than Iteris, there are not many other pavement prediction providers in the marketplace and there was concern among the group that it will only get one response on the RFP. After some discussion, the group did not feel this was a feasible project in terms of validation.
- **Motion accepted to eliminate these two projects (2012-01 \$30,000) and (2014-03 \$35,000).**

# Transition of Clarus to MADIS (Aurora 2013-02)

- This project has never been contracted. Jack (Alaska) has monitored the transition for Aurora and been involved with and monitoring NWS activities. Some dialogue is needed to continue monitoring this effort and keep dialogue with NWS. Encouraged states to check on MADIS surface display.
- **Motion accepted to eliminate this project (2013-02 \$5,000).**

# Improving Estimations of Real-Time Traffic Speeds during Weather for Winter Performance Measurement (Aurora 2013-03/2015-03)

- This project is with the ISU Stat Department and was one of the on-demand presentations at the TRB WM/STW conference. Modeling is progressing for a July finish, without the data from MTO. They have recently tried incorporating pavement condition as a variable with good luck although Tina (Iowa) really doesn't like including variables that the DOT can influence if it is going to be used for performance measurement. They are pursuing anyhow because it can benefit short term forecasting for things like traveler information.

# Aurora Accuweather Index (Aurora 2013-06 and 2016-02)

- The Aurora Accuweather Index was a product specifically built by Accuweather for Aurora project 2004-04. Support for this tool was discontinued at the end of 2015. By this time, only one Aurora state and roughly 10 Clear Roads states were still using the tool. Clear Roads has noted that they have enough interest in continued use of the tool to generate a problem statement for funding.
- Clear Roads and Aurora are jointly pursuing the upgrade and reestablishment of the index system
- Clear Roads proposed a budget of \$20,000 to update the tool in consideration of matching a \$20,000 from Aurora.
- **Given that 2013-06 is funded on the old SPR account, a motion was made to close this project number.**
- **Motion accepted to approve \$20,000 to support this effort contingent on Clear Roads approval and allocation of their matching \$20,000. This will be attached to a new project number 2016-02.**

# Seasonal Weight Restrictions, Phase II (Aurora 2014-01)

- New contract with USDA Dept. of Forestry was signed in early spring.
- The following models selected for Phase II:
  - MnDOT critical dates (spring 2015 and 2016)
  - Lakehead U (Ontario) critical dates (spring 2016 only)
  - Lakehead U (Ontario) and Model 158 degree-day thaw depth (spring 2015 and 2016)
  - CLARUS (spring 2015 only; subcontracted to UND).
- Model demonstrations will be run at instrumented sites in Ontario, Michigan, Wisconsin, Iowa, North Dakota and Alaska. Participants will provide USDA with access to weather and subsurface data and will obtain FWD or LWD measurements during the thaw period. Participants were reminded to provide their data to the consultant.

# Quantifying Salt Concentration on Pavement Phase 2 (Aurora 2014-02)

- Objective is to develop a better way to measure or predict salt concentration on the pavement with accuracy sufficient for planning salting rates.
- A contract was developed and sent to WTI for signatures on March 9. The total value is up to \$120,000, with completion by June 1, 2017.



# Snow Liquid Water Equivalent for PWD Sensors (Aurora 2015-01)

- Project with the National Center for Atmospheric Research on comparing optical sensor readings to gauges that directly measure water equivalent for the purpose of avalanche management
- Project is to end August 31st, 2016.

# Review Synthesis for Alternative Power Supplies (Aurora 2015-04)

- This project has just been contracted under the University of Alaska Anchorage.
- \$30,000 budget, report due December 30, 2016.

# Best Practices in Data Storage (Aurora 2015-05)

- Jack (Alaska) noted that there is no scope at this time and that he wanted to do some research and is discussing this potential effort with others at National Weather Service.

# Non-Traditional RWIS (Aurora 2015-06)

- The group discussed the merits of this project and felt that any type of information would quickly become obsolete since the marketplace quickly changes. Based on a lack of benefit, the group decided to terminate this project (which was never contracted).
- **Motion accepted to eliminate this project (2015-06 \$20,000).**

# Utah Snow and Ice Performance Measure Tool for Aurora (Aurora 2016-01)

- The group discussed the potential to make the Utah performance measurement tool available for all Aurora states. Jeff (Utah) will check with his IT staff on options as well with Narwhal (software support). The group discussed that the biggest challenge would be in getting data from each state in a usable format and that this might not fit all the data items used by Utah. Perhaps a basic set of data with additional data as options. Utah is currently hosting this service and owns the intellectual property rights.
- Goal is to make it easy for Aurora member states to adopt the tool which builds on the results and efforts made in Utah. There would also be a benefit where the Utah tool is enhanced by member efforts. Expect there would be some assessment for any state considering using the tool in terms of data and applicability.
- **Motion accepted to support a new project (Aurora 2016-01) at \$150,000.**

# Proposed Projects From Harris (3)

- Harris provided three draft project proposals, each of which involve different evaluations of their Helios product
  - Helios sensors on DOT fleet
  - Evaluation of decision support
  - Integration of mobile observations
- The group felt that this would be more palatable if this was something that had several competitors to contrast against. The group passed on these at this time, but highly encourages further discussion at the fall Friends of Aurora meeting to understand the potential for this evaluation, technology, and application.

# Project Status Summary

Project	New Status	Funding
2010-03 A and B	Active	\$259,662
2010-04	Completed	\$143,833
2011-02	Active	\$264,983
2013-02	Cancelled	\$5,000
2013-03/ 2015-03	Active	\$142,335
2013-06	Completed	\$23,193
2014-01	Active	\$213,621
2014-02	Active	\$120,000

Project	New Status	Funding
2012-01/ 2014-03	Cancelled	\$65,000
2015-01	Active	\$55,000
2015-04	Active	\$30,000
2015-05	Scoping	\$25,000
2015-06	Cancelled	\$20,000
2016-01	Scoping	\$150,000
2016-02	Scoping	\$20,000
2016-03	Scoping	\$100,000