

Aurora Program

minutes

**Aurora Board Meeting
September 9-12, 2013 – Vancouver, Washington, USA**

Individuals Participating in the Meeting:

Jason Norville, Pennsylvania DOT
Travis Lutman, North Dakota DOT
Jimmy White, Virginia DOT
Curt Pape, Minnesota DOT
Ron Hall, Kansas DOT
Tina Greenfield, Iowa DOT
Mike Adams, Wisconsin DOT
Jack Stickel, Alaska DOT&PF
Joe Doherty, New York State DOT
Max Perchanok, Ontario MOT
Mike Chapman, NCAR
Gabe Guevera, FHWA
Neal Hawkins, Iowa State University
Chris Albrecht, Iowa State University

I. Open and General Items

Jason Norville began the meeting by asking fellow board members to review the agenda. The agenda was then formally approved by the board as the order of business for the meeting. *A copy of the meeting agenda is attached to these minutes, along with an attendees list.* Chris Albrecht then briefly reviewed the latest program activities and the plan for the week's activities.

II. Project Updates

Chris Albrecht provided a summary of ongoing research projects. *A copy of this summary is attached to these minutes as Attachment A.* Details of project discussions follow:

Project 2007-05 – Multiple-Use ITS Data Collection Practices: Chris Albrecht noted that the project team had held a conference call on August 14 to discuss results of the initial state-of-practice electronic survey of agency practices. He also noted that he has an initial list of agencies to follow-up with; including New York, Iowa, Ontario, North Dakota, Pennsylvania, Minnesota, Sweden, Alberta, Colorado, Utah, Ontario, and a few local agencies. As a result of the project discussion, Chris noted that he would follow up with these agencies as soon as possible. Chris also noted that the project allocation was \$15,000 and was approximately 45% complete.

Project 2009-01 – Summary and Comparison of Agency Experiences with Sensors: Chris Albrecht briefly reviewed the history of this project, noting that Joe Doherty was currently updating the spreadsheet with NYSDOT history/experiences. Chris also noted that the project allocation was now \$5,000 and that the project was approximately 85% complete.

Project 2010-02 – Mobile-Weather Data Collection Guidelines: Chris Albrecht noted that this project was essentially complete and that the \$5,000 allocated to it would not be expended.

Project 2010-03 – Results-Based Winter Road Maintenance Standards: Chris Albrecht briefly reviewed this effort, noting that the \$155,000 research project was approximately 85% complete.

Project 2010-04 – RWIS Sensor Density and Location: Chris Albrecht then reviewed the background of this project, noting that the University of Waterloo had completed the literature review, web-based survey, and a preliminary model. Overall, he noted, the research project was about 50% complete, with \$100,000 in funding allocated.

Project 2010-05 – Determining RPU and Sensor Failure: Chris Albrecht noted that the project team had met in the summer, wherein they agreed to roll the tasks under this project into Project 2009-01. Therefore, he added, the board had voted to discontinue this effort.

Project 2011-02 – RWIS Training Tool: Max Perchanok reported on this effort, noting that the project is now under contract with Iteris/Meridian, with an estimated completion in March 2015. A few other project details were also discussed. Chris Albrecht noted that the project funding was officially increased to \$265,000 to accommodate the project scope.

Project 2011-04 – Study of MDSS Costs: Mike Adams reviewed this project, noting that the project report was sent to the Aurora team by Chris Albrecht. He added that he was still waiting on final comments, but that the project should be complete by the end of 2013.

Project 2011-05 – Funding Source Identification: Jack Stickel reviewed the scope of this project. Chris Albrecht noted that he would work with Jack and InTrans staff to set up the knowledge base page that covers this issue.

Project 2012-01 – Validate the Accuracy of Pavement Condition Predictions from Various Sources: Chris Albrecht briefly reviewed the background to this effort, noting that he would be helping Max in completing the RFP. Chris also noted that the project allocation was \$100,000.

Project 2012-02 – Winter Severity Index, Phase 2: Chris Albrecht noted that the board then voted to approve this project as complete on August 8. He also noted that the \$5,000 allocated for this effort would be rolled back into the general project fund.

Project 2012-03 – Cameras and Operational Impacts of Remote Road Conditions: Travis Lutman reported that the researchers had started conducting interviews at various locations around Utah. To date, the first two tasks were complete, he added. Chris Albrecht also noted that the project allocation was now \$25,000 and that the project was approximately 25% complete.

Project 2012-04 – Communicating and Publicizing Road Weather and Operations Information: Chris Albrecht noted that he and Joe Doherty had a detailed meeting to discuss the scope of this effort, wherein they had revised the scope to accommodate an RFP and are considering additional funding to support it. Chris also noted that the project allocation was currently \$30,000.

Project 2012-05 – Seasonal Weight Restrictions Demonstration: Chris Albrecht reviewed the background on this project, noting that the RFP had been advertised over the summer, with a few proposals received to date.

Project 2013-01 – Fourth Peer Exchange: No update was provided for this effort.

Project 2013-02 – Transition of Clarus to MADIS: Jack Stickel briefly reviewed this project. He noted that the effort would include adding missing RWIS sites to the MADIS system, updating metadata, and participating in the MADIS Surface System web reviews. Chris Albrecht noted that the project allocation was now \$5,000 and that the project was approximately 10% complete.

Project 2013-03 – Improving Real-Time Traffic Speeds for Performance Measurement: Tina Greenfield briefly reviewed this effort. She noted that her preferred plan was to sole-source this effort to Iowa State University's Statistics Department, with a starting time in fall 2013. She also noted that the scope was being prepared. Chris Albrecht noted that the project allocation was \$130,000.

Project 2013-04 – Quantifying Salt Concentration on Pavement: Chris Albrecht briefly reviewed the rough scope of this effort, noting that the RFP should be ready by the end of 2013. Chris also noted that the project allocation was \$130,000.

Project 2013-05 – Knowledge Base Content Management: Chris Albrecht noted that this project is being undertaken by InTrans as a way to update and market the knowledge base. Chris also noted that he and Neal Hawkins had been working with Tom Lindsley on a new site format and content management system.

Project 2013-06 – Make Aurora Severity Index Available to Other Agencies: Tina Greenfield noted that this effort was still in the contracting process between negotiated on by Iowa DOT and AccuWeather.

III. Joint Meeting with Clear Roads

The Aurora Program Board then met jointly with the Clear Roads board to discuss the details of the September 10-11 peer exchange event.

IV. Program Administration and Financials

Chris Albrecht briefly reviewed the status of Aurora membership payments for the attendees, stating that all payments through FY2012 were correct and accounted for.

V. Future Aurora Meetings and Calls

The board then discussed dates and times of future web-based conference calls and the next on-site board meeting. After a lengthy discussion, they decided on the following:

- Administrative call on Thursday, October 10, 2013 (2:00 p.m. CDT)
- Board web meeting on Thursday, October 17, 2013 (2:00 p.m. CDT)
- Administrative call on Thursday, November 7, 2013 (2:00 p.m. CDT)
- Board web meeting on Thursday, November 14, 2013 (1:00 p.m. CDT)

In addition to the conference call and web meeting, the board agreed to hold the next on-site board meeting in Boulder, Colorado. The week of March 17-21 was the most likely timeframe.

VI. 2013-2014 Work Plan and Projects

The board briefly discussed several of the research needs statements that resulted from the peer exchange. Chris noted that he would summarize them for review as Aurora research ideas for FY2014 and beyond.

VII. Other Business

The board also briefly reviewed potential new program members. Idaho, Colorado, California, Oregon, Wyoming, Montana, Indiana, West Virginia, Kentucky, and Nebraska were identified as possibilities.

No further items were discussed, and the board meeting was adjourned.

Agenda

Aurora Program Board Meeting

September 9-12, 2013
Red Lion Hotel, Vancouver, Washington, USA

AGENDA

Monday, September 9, 2013:

- I. 1:00 Open and General Items**
- 1:00 Review and approval of agenda Jason Norville
1:10 Review of previous minutes and actions Chris Albrecht
- II. 1:20 Project Updates**
- 1:20 2007-05 - Multiple Use ITS Sites Jack Stickel
1:25 2009-01 - Comparison of Sensors Dawn Gustafson
1:30 2010-02 - Mobile-Weather Data Collection Guidelines Curt Pape
1:35 2010-03 - Results Based Maintenance Standards Max Perchanok
1:40 2010-04 - RWIS Sensor Density Study Max Perchanok
1:45 2010-05 - Determining RPU and Sensor Failure Jack Stickel
1:50 2011-02 - RWIS Training Tool Tina Greenfield
1:55 2011-04 - Study of MDSS Costs Mike Adams
2:00 2011-05 - Funding Source Identification Jack Stickel
2:05 2012-01 - Validate Predictions Max Perchanok
2:10 2012-02 - Winter Index 2 Tina Greenfield
2:15 2012-03 - Cameras and Remote Conditions Travis Lutman
2:20 2012-04 - Communicating and Publicizing Information Joe Doherty
2:25 2012-05 - Seasonal Weight Restrictions Max Perchanok
2:30 2013-01 - Fourth Peer Exchange Jason Norville
2:35 2013-02 - Transition Clarus to MADIS Jack Stickel
2:40 2013-03 - Improving Estimation of Speed Tina Greenfield
2:45 2013-04 - Quantifying Salt Concentration Max Perchanok
2:50 2013-05 - Knowledge Base Content Management Tina Greenfield
2:55 2013-06 - Weather Index Expansion Tina Greenfield
- 3:00 Break**
- III. 3:10 Joint Meeting with Clear Roads**
- 5:30 Group Dinner at Hotel**

Thursday, September 12, 2013:

- IV. 8:00 Program Administration and Financials** Chris Albrecht
8:00 Discussion of membership payments and other contributions
8:15 Discussion of program expenditures and contracting issues
8:30 Discussion of management contract
- V. 8:45 Future Meetings and Calls** Jason Norville
- VI. 9:00 2014 Work Plan and Projects** Chris Albrecht
- VII. 11:30 Other Business**
12:15 Adjourn (Boxed Lunches)

Aurora Program Board Meeting and NWMPE

September 9-12, 2013

Red Lion Hotel at the Quay, Vancouver, Washington, USA

AURORA PROGRAM

<u>Name, Agency</u>	<u>Arrive / Depart</u>	<u>Notes</u>
Jimmy White, Virginia DOT	7 th pm / 13 th am	6 nights (25372105/pay own Sat)
Curt Pape, Minnesota DOT	8 th pm / 12 th pm	4 nights (25372107)
Travis Lutman, North Dakota DOT	8 th pm / 13 th am	5 nights (25372113)
Jason Norville, Pennsylvania DOT	8 th pm / 13 th am	5 nights (25390451)
Mike Adams, Wisconsin DOT	8 th pm / 12 th am	4 nights (25372109)
Jack Stickel, Alaska DOT&PF	8 th pm / 12 th pm	4 nights (25372106)
Tina Greenfield, Iowa DOT	9 th am / 12 th pm	3 nights (25372111)
Joe Doherty, New York DOT	9 th am / 12 th pm	3 nights (25390454)
Ron Hall, Kansas DOT	9 th am / 12 th pm	3 nights (25372110)
Derek Parish, Illinois DOT	9 th pm / 12 th pm	3 nights (25414459)

PEER EXCHANGE GUESTS

<u>Name, Agency</u>	<u>Arrive / Depart</u>	<u>Notes</u>
David Cook, South Carolina DOT	8 th am / 11 th pm	3 nights (25372237/pay own Sun)
Wayne Gammell, Vermont AOT	8 th pm / 13 th am	5 nights (25390476)
Jon Swartz, Montana DOT	9 th am / 13 th am	4 nights (25372256/pay own Thu)
James Stumpner, Illinois DOT	9 th am / 12 th am	3 nights (25414480)
Phil Anderle, Colorado DOT	9 th am / 12 th am	3 nights (25372245)
Steve Cook, Michigan DOT	9 th am / 12 th pm	3 nights (25372249)
Randi Vint, Kentucky TC	9 th am / 12 th pm	3 nights (25372255)
Branco Vlacich, Virginia DOT	9 th am / 12 th am	3 nights (25372240)
Stephen Moran, Connecticut DOT	9 th am / 12 th am	3 nights (25372246)
Robert Dunning, Alaska DOT&PF	9 th am / 12 th am	3 nights (25372242)
David Bowlby, New Jersey DOT	9 th pm / 12 th am	3 nights (25372260)
Erany Robinson-Perry, Georgia DOT	9 th pm / 12 th am	3 nights (25310746)
John Kallfelz, New Hampshire DOT	9 th pm / 12 th am	3 nights (25390490)
William Davenport, Pennsylvania DOT	9 th pm / 12 th am	3 nights (25390487)
Ken Hampton, Tennessee DOT	9 th pm / 12 th am	3 nights (25372262)
Tom Fountain, Maryland SHA	9 th pm / 12 th pm	3 nights (25390494)
Jeff Pifer, West Virginia DOH	9 th pm / 12 th am	3 nights (25372258)
Jesse Skinner, Missouri DOT	9 th pm / 12 th am	3 nights (25414484)
Kent Ketterling, Wyoming DOT	9 th pm / 12 th am	3 nights (25372261)
Steve Spoor, Idaho TD	9 th pm / 12 th pm	3 nights (25390493)
Ray Branstiter, Nebraska DOR	9 th pm / 12 th am	3 nights (25372243)

September 6, 2013

Alastair Probert, Delaware DOT	9 th pm / 12 th am	3 nights (25372259)
Dave Bierschbach, Washington DOT	9 th pm / 12 th pm	3 nights (25390500)
Joseph Turner, North Carolina DOT	9 th pm / 12 th am	3 nights (25414486)
Luci Moore, Oregon DOT	10 th am / 11 th pm	1 night (25371955)

CLEAR ROADS

<u>Name, Agency</u>	<u>Arrive / Depart</u>	<u>Notes</u>
Allen Williams, Virginia DOT	8 th am / 13 th am	5 nights (25372675)
Kyle Stolings, West Virginia DOH	8 th am / 13 th am	5 nights (25372424)
Cliff Spoonemore, Wyoming DOT	8 th pm / 13 th pm	5 nights (25372679)
Rich Roman, Pennsylvania DOT	8 th pm / 13 th am	5 nights (25414512)
Tim Chojnacki, Missouri DOT	8 th pm / 13 th am	5 nights (25372677)
Justin Droste, Michigan DOT	8 th pm / 13 th am	5 nights (25372689)
Mike Kisse, North Dakota DOT	8 th pm / 13 th am	5 nights (25390516)
Scott Lucas, Ohio DOT	8 th pm / 13 th am	5 nights (25414514)
Joe Bucci, Rhode Island DOT	8 th pm / 13 th am	5 nights (25372676)
Monty Mills, Washington DOT	8 th pm / 13 th am	5 nights (25390509)
Lynn Bernhard, Utah DOT	8 th pm / 13 th am	5 nights (25414489)
Randy Gray, Maine DOT	8 th pm / 13 th pm	5 nights (25372678)
Mike Sproul, Wisconsin DOT	9 th am / 13 th am	4 nights (25372680)
Justun Juelfs, Montana DOT	9 th am / 13 th am	4 nights (25372685)
David Wieder, Colorado DOT	9 th am / 13 th am	4 nights (25390524)
Mike Mattison, Nebraska DOR	9 th am / 13 th am	4 nights (25390528)
Ron Wright, Idaho TD	9 th am / 13 th am	4 nights (25372683)
David Frame, California DOT	9 th am / 13 th pm	4 nights (25390526)
Tim Peters, Illinois DOT	9 th am / 12 th pm	3 nights (25414515)
Tom Peters, Minnesota DOT	9 th am / 13 th am	4 nights (25390525)
Mike Lashmet, New York DOT	9 th am / 13 th am	4 nights (25372681)
Caleb Dobbins, New Hampshire DOT	9 th am / 13 th am	4 nights (25372684)
Clay Adams, Kansas DOT	9 th pm / 12 th pm	3 nights (25372686)
Patti Caswell, Oregon DOT	9 th pm / 12 th pm	3 nights (25372688)

OTHER ATTENDEES (SELF PAY)

<u>Name, Agency</u>	<u>Arrive / Depart</u>	<u>Notes</u>
Gabe Guevera, FHWA	8 th am / 12 th pm	4 nights (25289078)
Chris Albrecht, ISU/CWIMS	8 th pm / 12 th pm	4 nights (25371956)
Wilf Nixon, University of Iowa	8 th pm / 12 th pm	4 nights (25371940)
Ben Dow, City of Fargo, ND	8 th pm / 12 th am	4 nights (25390552)
Steve Lund, Minnesota DOT	8 th pm / 10 th pm	2 nights (25357815)
Robert Faley, Vermont AOT	8 th pm / 13 th am	5 nights (25390553)

Max Perchanok, Ontario MOT	8 th pm / 13 th am	5 nights (25372112)
Colleen Bos, CTC	8 th pm / 13 th am	5 nights (25390519)
Greg Parker, Johnson County, IA	8 th pm / 11 th pm	3 nights (25390554)
Lee Smithson, AASHTO	9 th am / 13 th am	4 nights (25371943)
Mark DeVries, McHenry County, IL	9 th am / 12 th pm	3 nights (25384791)
Rick Nelson, Nevada DOT	9 th am / 13 th am	4 nights (25371944)
Paul Rizzo, Connecticut DOT	9 th am / 12 th pm	3 nights (25371941)
Darrell Burks, Kentucky TC	9 th am / 14 th am	5 nights (25249169)
Greg Adams, Oregon DOT	9 th pm / 11 th pm	2 nights (25371945)
Joe Arnold, Oregon DOT	9 th pm / 11 th pm	2 nights (25371946)
Joe Harmon, Oregon DOT	9 th pm / 12 th pm	3 nights (25371949)
Tim McGinnis, Oregon DOT	9 th pm / 12 th pm	3 nights (253711951)
Jimmy Witherow, Georgia DOT	9 th pm / 12 th am	3 nights (25310750)
Thomas Mims, Georgia DOT	9 th pm / 12 th am	3 nights (25310752)
Laura Fay, WTI	9 th pm / 11 th pm	2 nights (25266831)
Tim Croze, Michigan DOT	9 th pm / 12 th am	3 nights (25371942)
Paul Howland, Oregon DOT	9 th pm / 12 th pm	3 nights (25371952)
Jerry Marmon, Oregon DOT	9 th pm / 12 th pm	3 nights (25371953)
Darrin Neavoll, Oregon DOT	9 th pm / 11 th pm	2 nights (25371954)
Jay Wells, Washington DOT	9 th am / 11 th pm	2 nights (25390559/WSDOT)
Greg Selstead, Washington DOT	10 th am / 11 th pm	1 night (25390556/WSDOT)
Brent Schiller, Washington DOT	10 th am / 11 th pm	1 night (25390558/WSDOT)
Ray Willard, Washington DOT	10 th am / 11 th pm	1 night (25390560/WSDOT)
Oai Tang, Washington DOT	10 th am / 11 th pm	1 night (2530561/WSDOT)
Neal Hawkins, ISU/CWIMS	10 th am / 12 th pm	2 nights (25371971)

VENDORS (SELF PAY)

<u>Name, Company</u>	<u>Notes</u>
Bob Lannert, Viking Cives	(primary contact, \$95 fee, \$300 sponsorship)
Steve Rider, Viking Cives	(\$95 fee)
Kenberley Field, EnviroTech	(primary contact, \$95 fee, \$300 sponsorship)
Jerold Vincent, EnviroTech	(\$95 fee)
Steve Clark, EnviroTech	(\$95 fee)
Jeff Collins, EnviroTech	(\$95 fee)
Brett Hansen, High Sierra Electron.	(primary contact, \$95 fee, \$200 sponsorship)
Kevin Barron, DTS	(primary contact, \$95 fee, \$200 sponsorship)
Eric Cottone, Boschung America	(primary contact, \$95 fee, \$200 sponsorship)
Erik Wright, Lufft USA	(primary contact, \$95 fee, \$200 sponsorship)
Tyler Comerford, NW Weathernet	(primary contact, \$95 fee, \$200 sponsorship)
Ken Rosenow, NW Weathernet	(\$95 fee)
Bev Edelstein, AmeriTrak	(primary contact, \$95 fee, \$200 sponsorship)

Jeff Edelstein, AmeriTrak (\$95 fee)
 Dave Studdert, Live View Tech. (primary contact, \$95 fee, \$200 sponsorship)
 Ryan Porter, Live View Tech. (\$95 fee)
 Shawn Truelson, Schneider Electric (primary contact, \$95 fee)
 Ralph Patterson, Narwhal Group (primary contact, \$95 fee)
 Jason Kiely, Rivertop Renewables (primary contact, \$95 fee)

OTHER ATTENDEES (NO HOTEL)

<u>Name, Agency</u>	<u>Arrive / Depart</u>	<u>Notes</u>
Jim Andersen, Washington DOT	-	-
Bob Kofstad, Washington DOT	-	-
Scott Wilcox, Washington DOT	-	-
Chris Christopher, Washington DOT	-	-
Mark Buffington, Oregon DOT	-	-
Larry Olson, Oregon DOT	-	-
Jake Peters, Oregon DOT	-	-
Mike Chapman, NCAR	-	-

Attachment A

Aurora Program - Ongoing Project Status

September 5, 2013

FY 2007 through FY2009

- 2007-05: Multiple-Use ITS Data Collection Practices (\$15,000) = 40% complete
- 2009-01: Summary and Comparison of Agency Experience w/ Sensors (\$5,000) = 85% complete

FY 2010

- 2010-02: Mobile Weather Data Collection Guidelines (\$5,000) = 80% complete
- 2010-03: Results-Based Winter Road Maintenance Standards (\$155,000) = 85% complete
- 2010-04: RWIS Sensor Density and Location (\$100,000) = 50% complete
- 2010-05: Determining RPU and Sensor Failure (\$5,000) = 20% complete

FY 2011

- 2011-02: RWIS Training Tool (\$265,000) = 10% complete
- 2011-04: Study of MDSS Costs (\$5,000) = 75% complete
- 2011-05: Funding Sources Identification (\$5,000) = 10% complete

FY 2012

- 2012-01: Validate the Accuracy of Pavement Condition Predictions (\$100,000) = 5% complete
- 2012-02: Winter Weather Severity Index, Phase 2 (\$5,000) = 50% complete
- 2012-03: Cameras and Operational Impact of Remote ... Monitoring (\$20,000) = 20% complete
- 2012-04: Communicating and Publicizing Information (\$30,000) = 5% complete
- 2012-05: Seasonal Weight Restrictions Demonstration (\$250,000) = 5% complete

FY 2013

- 2013-01: 2013 National Winter Maintenance Peer Exchange (\$35,000) = 45% complete
- 2013-02: Transition of Clarus to MADIS (\$5,000) = 10% complete
- 2013-03: Improving Estimation ... for Performance Measurement (\$130,000) = 5% complete
- 2013-04: Quantifying Salt Concentration on Pavement (\$150,000) = 5% complete
- 2013-05: Knowledge Base Content Management and Marketing (\$10,000) = 10% complete
- 2013-06: Make the Aurora Winter Severity Index Available to All (\$30,000) = 10% complete

Project Status Report

July 24, 2013

Project: 2007-05: Multiple-Use ITS Data Collection Practices

Champion: Jack Stickel, Alaska Department of Transportation and Public Facilities

Objective: The ultimate objective of this project is to use RWIS-equipped sites for different types of data collection, such as air-quality and traffic; and to use existing traffic and ITS infrastructure as a platform for RWIS equipment. The addition of multiple intelligent transportation system (ITS) applications at established RWIS sites has the potential to maximize available funding, reduce maintenance and operational risks, and produce more robust data sets per segment.

Status:

- The effort being conducted by Iowa State University will support the overall objective of this project by documenting existing practices where agencies have bundled data collection sensors at RWIS collection sites.
- The InTrans scope was accepted and is now under contract. To date, InTrans has helped develop the scope and initial survey for the project.
- A project team conference call was held on March 19, 2013 to discuss the initial state-of-practice electronic survey of agency practices. A project mini-meeting was also held on April 2, 2013.
- Results will likely be documented as part of the Knowledge Base.
- The survey was revised in late May, and is being reviewed by the team before being sent to the Snow-Ice list and other potential respondents.
- The survey was sent to snow-ice and ITS contacts in mid-June.
- Survey results are being reviewed.

Approximate % Complete: 40 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$35,000 in FY 2007. This amount was reduced to \$15,000 at the September 2010 board meeting.
- Project Team: Jack Stickel (champion), Tina Greenfield, Joe Doherty, Curt Pape, Dawn Gustafson

Project Status Report

May 24, 2013

Project: 2009-01: Summary and Comparison of Agency Experience with Sensors

Champion: Dawn Gustafson, Michigan Department of Transportation

Background: This project was originally established to summarize and compare the Lufft R2S. Before this project began, several states had obtained and installed sensors. Ultimately, the team decided to proceed with this project as a summary of what sensors Aurora members have installed and their experiences with them. Clear Roads has a working document similar to this.

Objective: The objective of this project is to develop a matrix that will summarize different agencies' experiences with sensors used in road weather information data collection.

Status:

- A final detailed scope was developed and approved by the board in October 2012. Tasks are:
 1. InTrans to resend matrix to Aurora members with note added: survey results will only be used as an internal document for Aurora members. Please complete and return by December 30, 2012. (start 10-10-2012 / end 1-30-2013)
 2. InTrans will compile the responses from Aurora members and distribute the results before the spring 2013 meeting. (start 2-10-2013 / end 4-30-2013)
- A comparison matrix was developed and sent to the team for review and modified from comments received. A tab was added to the bottom of the spreadsheet for sensor types.
- Further agency responses would be needed, with a planned closing date for this project of June 30, 2013.
- The spreadsheet will be resent to all Aurora members for their input.

Approximate % Complete: 85 %

Recommendations: X continue as planned
 continue with modifications
 discontinue

Additional Comments:

- The board agreed to reduce project funding to \$5,000.
- Project Team: Dawn Gustafson (champion), Curt Pape, Jack Stickel, Joe Doherty

Project Status Report

July 31, 2013

Project: 2010-02: Mobile Weather Data Collection Guidelines

Champion: Curt Pape, Minnesota Department of Transportation

Status:

- After a lengthy discussion in Toronto, the board agreed to let Curt Pape write a short position paper explaining Aurora's position on mobile sensing of weather parameters.
- The team also agreed that following up to see what happens in Michigan in the winter of 2012-2013 would be a good idea.
- A mini-meeting was held on April 2, 2013 in Virginia.
- The project team has drafted a short white paper detailing Aurora's position on mobile atmospheric data from snow plows. Data addressed included air temperature, precipitation, visibility, wind speed, humidity, and road surface temperature.
- The board agreed to provide further comments on the paper and have Chris Albrecht and InTrans staff edit it as necessary.
- Comments from Mike Adams and Tina Greenfield have been incorporated into the draft document, and a revised version was sent out by Chris Albrecht.

Approximate % Complete: 90 %

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- Funding amount for this project was reduced from \$25,000 to \$5,000.
- Project Team: Curt Pape (champion), Max Perchanok, Mike Adams, Tina Greenfield, Joe Doherty, Gabe Guevera, Li Fu, Sheldon Drobot

Project Status Report

June 24, 2013

Project: 2010-03: Results-Based Winter Road Maintenance Standards

Champion: Max Perchanok, Ontario Ministry of Transportation

Status:

- Project is nearing completion, on schedule.
- Safety analysis and modelling: 100%.
- Mobility analysis and modelling: 100%.
- Performance measures and service standards: 60%
 - Speed as a performance measure: complete
 - Friction as a performance measure: 70%
 - Performance standards: 70% (Literature review complete, benefit/cost analysis tool in progress to complete by July 31)
 - GIS system prepared to analyze system-wide impacts to changes in winter maintenance performance standards.
- Road Surface Condition Monitoring, Technology, Tools 80%
 - Vaisala non-invasive sensor; complete
 - Friction trailer; complete
 - Automated video interpretation (MSc)
 - Benefit:cost of hot water sanding; complete

Approximate % Complete: 85 %

Barriers / Issues: The partnership agreement for this project ends on September 20, 2013. Since some work is behind schedule an extension or addendum is needed.

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- Project Team: Max Perchanok (Champion), Dawn Gustafson, Joe Doherty, Sheldon Drobot, Neal Hawkins, Chris Albrecht
- MTO funding schedule ends March 31 2012.
- Aurora funding continues to December 2013.
- Earlier status reports incorrectly listed a Cost model as a deliverable for this project however, the research group is developing a cost model using other resources that will support the work done in this project.

Project Status Report

June 21, 2013

Project: 2010-04: RWIS Sensor Network Density and Location

Champion: Max Perchanok, Ontario Ministry of Transportation

Status:

- A 2 year contract was signed on September 28, 2012
- Work completed:
 - Literature review
 - Web-based survey on practices used to site RWIS stations.
 - Preliminary model development, data collection, exploratory analysis and a case study for Ontario
 - The current model uses a case study approach rather than theoretical, to identify and rank weather and traffic factors influencing winter conditions, and uses them to estimate the importance of situating an RWIS in alternate locations.
 - Approximately 20 data sets of road surface friction and video data sets were obtained in Ontario during winter 2013-14. Data are now being reduced to a form that can be used for analysis and modelling of local road-weather variations that would impact network spacing.
 - Additional data sets were obtained from Iowa and Minnesota
- Next steps
 - Another case study will be undertaken using Minnesota data focussing on different location criteria from those used in Ontario
 - Investigate factor weightings in the model
 - Develop framework for optimum RWIS siting
 - Generalize the model based on the additional case studies from different areas.
 - Develop a benefits model to predict how benefits from RWIS vary with spacing under different geographic conditions.
 - Present interim results at fall 2013 board meeting.

Approximate % Complete: 50 %

Barriers/Issues: Limitation on availability of weather and traffic data reduces scope somewhat.

Recommendations: X continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$100,000 in FY 2010
- MTO funding of \$55,000 for field data collection is proposed as an MTO in-kind contribution.
- Project Team: Max Perchanok (champion), Jack Stickel, Curt Pape, Dawn Gustafson, Mike Adams, Jason Norville, Tina Greenfield, Sheldon Drobot, Travis Lutman

Project Status Report

May 24, 2013

Project: 2010-05: Determining RPU and Sensor Failure

Champion: Jack Stickel, Alaska Department of Transportation and Public Facilities

Background: Determining the life expectancy of ITS devices such as RWIS RPUs and sensors would help anticipate the mean time between failures and help agencies plan for funding, maintenance, procurement, and replacement.

Status:

- A two-volume report, NCHRP Report 713, “Estimating Life Expectancies of Highway Assets”, is now available from NCHRP.
- Project 08-71, “Methodology for Estimating Life Expectancies of Highway Assets” is summarized at <http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=2497>.
- The three deliverables from NCHRP are links from the summary page (also posted on the Knowledge Base): guidebook, research documentation and background information, and spreadsheet that illustrates the computations used for estimating life expectancies of particular assets.
- A final detailed scope was developed and approved by the board in October 2012.
- Project tasks are:
 1. Review the NCHRP Report 713 to see how it can apply to the RWIS Sensor and RPU life expectancy question.
 2. Contact WTI on their work involving ITS sensor life expectancies.
 3. Determine how Project 2010-05 can be integrated with Project 2009-01.
 4. Pending the results of Tasks 1-3, InTrans can perform a literature review (includes the 2-volume NCHRP Report 213), summarize the results of the literature review, and recommend the next steps for further research.
- A mini-meeting was held on April 2, 2013.
- The board agreed to add sensor longevity information to the spreadsheet for Project 2009-01.
- Jack will send a survey to the vendors to get their input on expected sensor and RPU life.
- Jack suggested that the remaining funds could be used to produce a summary of NCHRP 713.
- The group agreed to hold another conference in late April to push progress.

Approximate % Complete: 20 %

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$5,000 in FY 2010
- Project Team: Jack Stickel (champion), Tina Greenfield, Jason Norville, Sheldon Drobot

Project Status Report

May 31, 2013

Project: 2011-02: RWIS Training Tool

Champion: Tina Greenfield, Iowa Department of Transportation

Background: It is often the case across states and even within states that winter maintenance supervisors or foremen do not have a consistent understanding of RWIS and weather information in real-world decision making. Training may be administered but it is difficult to determine how much is retained, whether understanding was reached, and which parts of the training were successfully integrated into decision making practice. Therefore it is difficult to assess supervisor/foremen competency and it is difficult to tailor training to their needs. This is especially a problem when hiring new staff or hiring contractors because there are few tools to evaluate their ability to perform as required. This project involves the creation of a supervisor evaluation tool which can measure a supervisor's ability to incorporate RWIS and risk management into their decision making process.

Status:

- This project is estimated to last 3 years.
- The project is now under contract with Iteris/Meridian.
- A project kickoff conference call was held on April 26, 2013.

Approximate % Complete: 10 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$265,000 in FY 2011 and FY 2014.
- Project Team: Tina Greenfield (champion), Max Perchanok, Mike Kisse, Jack Stickel, Mike Adams

Project Status Report

August 30, 2013

Project: 2011-04: Study of MDSS Costs

Champion: Mike Adams, Wisconsin Department of Transportation

Background: This project concept was presented as a concern at the 2009 Peer Exchange and ranked at #9 among those ideas. The objective of this effort is to determine the upfront costs vs. long-term benefits for implementing MDSS systems. Also, determine necessary equipment, how to best equip the trucks, and quantify secondary benefits of equipping the fleet for MDSS. Initially this project will require a survey of the states.

Status:

- This project will be conducted internally by Wisconsin DOT and InTrans. No outside contract work will be performed.
- The initial portion of data gathering is being done internally through a survey.
- Mike Adams drafted questions as a starting point for this effort.
- Survey developed July 2012 and distributed to Aurora Board in September 2012.
- A new scope was developed and approved by the board in October 2012. Project tasks are:
 - Develop survey covering costs of MDSS, AVL-GPS, and manpower costs associated with deploying MDSS. The survey will use Wisconsin DOT's survey engine.
 - Distribute survey first to Aurora Program members, then to a wider audience using the Snow-Ice listserv.
 - Analyze results.
 - Prepare report showing costs for various levels of MDSS deployments.
 - Publish report on the Winter Wiki and publicize results via Snow-Ice listserv.
- Chris Albrecht distributed the survey link to the Aurora board.
- The board agreed that analysis of the survey should be completed by May 31, 2013.
- Board agreed to re-scope the project to only discuss Wisconsin DOT's cost information.
- The report is complete and being reviewed by Wisconsin DOT.

Approximate % Complete: 95 %

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$5,000 in FY 2011.
- Project Team: Mike Adams (champion), Mike Kisse, Jason Norville, Sheldon Drobot

Project Status Report

May 22, 2013

Project: 2011-05: Funding Sources Identification

Champion: Jack Stickel, Alaska Department of Transportation and Public Facilities

Background: Road weather management programs and Road Weather Information Systems (RWIS) can tap into various federal funding sources. This includes standard funding allocations and grant allocations. These sources are not well known to all agencies.

Objective: This project will compile potential funding sources and approaches that state department of transportation agencies can tap to fund the road weather management program. This would include funding partnerships, grants, standard allocations, and shared cost opportunities.

Status:

- This project will involve surveying the Aurora member agencies on the funding sources they use, how to tap into them, and the processes they use to secure the funding
- This may be done internally by board members or through ISU.
- The new surface transportation program authorization “Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed in July 2012. The funding authorization is for federal fiscal year (FFY) 2013-2014. There have been several webinars covering funding eligibility since the authorization bill was signed, including ITS America:
- A new scope was developed and approved by the board in October 2012. Tasks are:
 - Establish a Funding Source section in the Aurora Knowledge Base.
 - Review MAP-21 and reference the applicable funding avenues for RWIS technologies.
 - Provide links to applicable webinars on MAP-21 that cover ITS, RWIS, traveler information funding.
 - Establish an Aurora website notification process where members can add short term funding opportunities and have this information distributed automatically to Aurora members.
- Jack will send information on MAP-21 funding to the team by April 15.
- Chris Albrecht is working with Jack and InTrans staff to set up the knowledge base page.

Approximate % Complete: 10 %

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$5,000 in FY 2011.
- Project Team: Jack Stickel (champion), Joe Doherty, Jason Norville, Lee Smithson

Project Status Report

June 21, 2012

Project: 2012-01: Validate the Accuracy of Pavement Condition Predictions from Various Sources

Champion: Max Perchanok, Ontario Ministry of Transportation

Background: MDSS of various types have been implemented in several agencies. They combine RWIS forecasts with rules of practice, real-time plow and salt records, and other information to predict the current and future snow/ice status of the pavement during storms. Successful operations require accurate predictions. There is a need to close the loop on the "open loop" status of pavement forecasting.

Objective: This project would validate the accuracy of the pavement condition predictions and provide confidence in the MDSS recommendations.

Status:

- The project team identified a large number of clarifications required in the RFP and is now working on draft #4.
- The current scope:
 - Requires special, iterative forecasts including both the recommended treatments and the actual treatments (extra cost to be paid by the highway agency with possible help from Aurora).
 - To be undertaken at 1 patrol route in Wisconsin and 1 in Minnesota, where the Pooled Fund MDSS is currently running.
 - Investigating whether Vaisala and Federal MDSS can be included for comparison (Costs be paid by the highway agency with possible assistance from Aurora)..
 - RFP will list the sties and all data to be provided by the highway agencies.
 - RFP will focus on the desired outcome. Bidders will be evaluated on their proposed methodology.

Approximate % Complete: 5 %

Barriers/Issues: Complex logistics involving multiple MDSS providers and multiple highway agencies. Delay in finalizing RFP may postpone the project by a year, since all aspect must be in place by late fall to collect winter data.

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$100,000 in FY 2012.
- Project Team: Max Perchanok (champion), Dawn Gustafson, Tim Peters, Curt Pape, Mike Adams, Tina Greenfield, Gabe Guevera

Project Status Report

May 22, 2013

Project: 2012-02: Winter Weather Severity Index Enhancements, Phase 2

Champion: Tina Greenfield, Iowa Department of Transportation

Background: Further work on winter storm or winter season weather indices was suggested at the 2011 Peer Exchange. This need was passed to Aurora. There are already many indices available and several agencies are using them operationally. Through discussion amongst the board it was proposed that perhaps the true problem was the inability to find or understand the indices that were already available.

Objective: Summarize the general purpose and function of a winter storm, winter season index and their proper use in understanding winter maintenance performance. Summarize specific existing indices so users can select the index that best fits their agency needs and data availability.

Status:

- A final detailed scope was developed and approved by the board in October 2012.
- Project tasks are:
 1. Create a general summary of indices and their use and misuse (due December 1, 2012)
 2. Gather information from published indices and those in use at Aurora agencies. Compile the results in a table with information on index formula, necessary data, agencies that are using it, and purpose (due April 1, 2013)
 3. Prepare a short report of the findings and post on a Winter Wiki page (due July 1, 2013)
- Tina Greenfield has distributed a draft guide to the project team, and the team is currently reviewing it.

Approximate % Complete: 50 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$5,000 in FY 2012.
- Project Team: Tina Greenfield (champion), Max Perchanok, Curt Pape, Mike Adams

Project Status Report

June 13, 2013

Project: 2012-03: Cameras and Operational Impact of Remote Road Condition Monitoring

Champion: Travis Lutman, North Dakota Department of Transportation

Background: This idea came out of the September 2011 peer exchange in Montana. Utah DOT and a private contractor have developed a low-cost live PTZ camera system to monitor road conditions at locations not covered by conventional traffic cameras or RWIS sites. The purpose of this is to identify if treatment is needed or not. The outcome is that the local manager can decide whether a truck needs to go out or not. The system has had impacts on how and when dispatch is done. It has also enhanced road condition observation in rural areas for the purposes of traffic management.

Objective: This project would identify efficiencies gained, impacts on road condition, costs, cost avoidance, and document the model for other agencies to follow.

Status:

- A contract is now in place with BYU, and they have begun work on this effort.
- A project team call was scheduled with BYU and the camera manufacturer for late April.
- The research team met with Chris Albrecht on June 5 to go over progress.

Approximate % Complete: 20 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$20,000 in FY 2012.
- Project Team: Travis Lutman (champion), Ron Hall, Mike Kisse, Curt Pape, Gene Martin

Project Status Report

May 21, 2013

Project: 2012-04: Communicating and Publicizing Road Weather and Operations Information

Champion: Joe Doherty, New York State Department of Transportation

Background: This idea also came out of the 2011 peer exchange. Road weather systems are designed to meet a broad array of stakeholder needs. Key stakeholders include winter weather maintenance operations, first responders, emergency managers, value-added forecast providers, commercial trucking operations, transit and the traveling public. Information delivery to this stakeholder base may include data feeds, tabular listings, graphical presentations, and weather data integrated with other data sources (real-time traffic data, for example). Having an understanding of the stakeholder's key operational weather thresholds and how stakeholders make decisions based on these thresholds can help transportation agencies tailor a road weather information system program to meet the stakeholder needs.

Objective: This research would likely compile the best practices on how road weather information is being transferred to stakeholders. It is also important to identify the best method(s) for notifying the public/media and operations staff of current RWIS data. It is not clear how much information is needed to inform the public and government officials of "current" operations during a storm. Research should look at how new operational processes and sensor output can be quickly adopted.

Status:

- A discussion has been had with SICOP as well.
- Chris Albrecht will work with Joe to develop a revised objective and research scope that would include a state-of-the-practice review on what states are doing to communicate road weather information
- A scope should be completed by June 30, 2013.

Approximate % Complete: 5 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$30,000 in FY 2012.
- Project Team: Joe Doherty (champion), Jack Stickel, Jason Norville, Dawn Gustafson, Tim Peters
- Clear Roads is also a partner on this effort.

Project Status Report

June 24, 2012

Project: 2012-05: Seasonal Weight Restrictions

Champion: Max Perchanok, Ontario Ministry of Transportation

Objective: The objective of this research is to validate the predicted thaw depths and restriction dates recommended using the *Clarus* EICM approach and alternative, degree-day based approaches to provide an understanding of reliability of different approaches in setting load restriction dates.

Status:

- Details of the draft RFP were discussed in length during the mini-meeting. The draft RFP is ready for advertisement with Iowa DOT.
- Chris Albrecht sent the RFP to Linda Narigon for final comments and direction on who it can be sent to.
- An RFP is now ready for posting by Iowa DOT and IHRB.

Approximate % Complete: 5 %

Barriers/Issues: The RFP calls for two phases; planning and implementation. Based on experience with previous RWIS-related projects, a planning phase is needed for literature review and to see which agencies have the appropriate infrastructure to provide case studies for the project. Posting of the RFP was delayed since March by a miscommunication with IHRB.

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$250,000 in FY 2012.
- Project Team: Max Perchanok (champion), Mike Adams, Jack Stickel, Dawn Gustafson, Travis Lutman, Mike Kisse
- TRB Winter Maintenance Committee submitted a proposal for an NCHRP synthesis on spring load restrictions. If funded it would provide useful input to Phase 1.
- TRB Winter Maintenance Committee will propose a workshop at the 2015 TRB meeting that would support this project.

Project Status Report

May 24, 2013

Project: 2013-01: 2013 National Winter Maintenance Peer Exchange

Champion: Jason Norville, Pennsylvania Department of Transportation

Background: Aurora has been actively researching a number of surface transportation weather projects while Clear Roads is researching materials, equipment and practices related to winter maintenance operations. Unfortunately the information/results sometimes does not reach end users in all states or at different agency levels. The winter maintenance community needs to be more aware of the research conducted by Aurora and Clear Roads and other research organizations and take a more active role in requesting research to meet winter operational needs.

Objective: The objective of this project is to conduct a national winter maintenance meeting to share research results from the peer exchanges held in 2007, 2009, and 2011, get updates from each snow-belt state, and discuss other issues related to winter snow removal operations. Each state would send a representative to the meeting that is most actively involved with the areas covered by Aurora, Clear Roads, PNS, SICOP and FHWA efforts.

Status:

- Just underway.
- Chris Albrecht is making arrangements with a hotel in Vancouver, Washington.
- Dates have been set for the week of September 9-13, 2013.

Approximate % Complete: 45 %

Recommendations: X continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$35,000 in FY 2013.
- Project Team: Jason Norville (champion), Mike Adams, Dawn Gustafson, Tina Greenfield

Project Status Report

May 21, 2013

Project: 2013-02: Transition of Clarus to MADIS

Champion: Jack Stickel, Alaska Department of Transportation and Public Facilities

Background: The Clarus System functionality (observations, quality checks, metadata, and spatial location) is transitioning to the MADIS System. Existing FHWA funding will carry the existing Clarus System into CY 2013/2. Aurora needs to materially participate in the transition to ensure the Clarus functionality is captured in the new MADIS system. There will be four phases in the transition:

- Each transportation agency's RWIS network will be added as a mesonet.
- A metadata interface to add and modify RWIS site information will be added.
- The Clarus quality checks for atmospheric and surface observations will be added.
- Subscription services similar to Clarus will be added.

The initial MADIS Surface Display web site has been established. No specific Aurora funding opportunities to assist in the transition have been identified as of yet. There potentially could be assistance requests or design review meetings.

Objective: The objective of this project is to participate in the transition of the Clarus System to the NOAA's ESRL Meteorological Assimilation Data Ingest System (MADIS) system.

Status:

- Just underway.
- The effort would include adding missing RWIS sites to the MADIS system, updating metadata, and participating in the MADIS Surface System web reviews.
- Research Approach:
 1. Add missing RWIS sites to the new MADIS system.
 2. Update RWIS metadata through Mixon Hill.
 3. Participate in MADIS Surface System web site reviews for a) how well it captures the Clarus System functionality, and b) how efficient the web site operates.

Approximate % Complete: 10 %

Barriers/Issues: None

Recommendations: X continue as planned
 continue with modifications
 discontinue

Additional Comments:

- This project was funded for \$5,000 in FY 2013.
- Project Team: Jack Stickel (champion), Mike Adams, Ron Hall

Project Status Report

May 24, 2013

Project: 2013-03: Improving Traffic Speed Estimations for Winter Maintenance Performance

Champion: Tina Greenfield, Iowa Department of Transportation

Background: The Iowa DOT is interested in developing a dynamic model capable of predicting in real time acceptable drops in traffic speed at major highway during major weather events with realistic uncertainty measures. The primary usage of such model is to evaluate the performance of highway winter maintenance operations and optimize resource allocation.

Objective: The objective of this project is to develop point level performance measurements based on an improved model which can produce real time prediction of traffic speed drops with uncertainty measures. This model will be tested and improved based on traffic, weather, and maintenance activity data from several different states/regions.

Status:

- Just underway.
- The preferred plan is to sole-source this effort to the Iowa State University Statistics Department.

Approximate % Complete: 5 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- Project Team: Tina Greenfield (champion), Max Perchanok, Jack Stickel, Ron Hall
- This project was funded for \$130,000 (\$30,000 for task 1, \$35,000 for task 2, \$35,000 for task 3, \$30,000 for task 4) in FY 2013.

Project Status Report

June 21, 2012

Project: 2013-04: Quantifying Salt Concentration on Pavement

Champion: Max Perchanok, Ontario Ministry of Transportation

Background: Peer exchanges have shown the need for a mobile and/or more accurate surface salinity sensor. An alternative is to develop a better way to predict the salt concentration on the pavement considering the records of application rate, time plowing, precipitation type and rate, surface temperature, traffic, pavement type, wind speed, etc. Road salt management is a key issue for many highway agencies that are required to provide safe roads during winter storms while protecting the natural environment from excessive exposure to its environmental effects. Critical methods to manage salt loadings are by applying the right amount of salt at the right place and the right time, and this requires accurate knowledge of how much salt is already on the road before re-applying during a storm.

Objective: To develop a better way to build upon and combine previously attempted approaches to measure or predict representative salt concentration on the pavement to a precision that can be used for tactical planning of salt application rates in advance of and during winter storms. It should consider past applications and timing, plowing, precipitation type and rate, surface temperature, traffic, pavement type, wind speed, etc. The pooled fund MDSS initiative should do a lot of this for its surface condition and treatment predictions, so this effort could just focus on just what MDSS may be lacking.

Status:

- A project description was prepared and discussed by the team in Virginia Beach.
- Budget requested: \$150,000

Approximate % Complete: 5 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- Project Team: Max Perchanok (champion), Tina Greenfield, Jason Norville, Tim Peters, Curt Pape, Annette Dunn, Lee Smithson
- This project was funded for \$150,000 in FY 2013.
- This project was given a high priority at the National Winter Maintenance Peer Exchange.

Project Status Report

May 21, 2012

Project: 2013-05: Knowledge Base Content Management and Marketing

Champion: Tina Greenfield, Iowa Department of Transportation

Background: This idea was suggested by Tina Greenfield as a way to help populate and maintain the knowledge base website with several of the smaller Aurora projects that do not fall under the management contract. Periodically, certain road weather topics arise that seem well suited to be added to the “wiki” site. If the information is easily available it can simply be posted by Aurora members or administration. Sometimes the topic requires a little bit of work before a good product can be posted, such as collecting opinions from a survey, literature reviews, and other minor analysis and arrangement. Other topics may require regular reviews and updates in order for the information to stay pertinent. For example, information on funding sources or calls for papers may change regularly.

Objective: To create a mechanism by which topics requiring extra work can be added to the Wiki.

Status:

- Chris Albrecht and Neal Hawkins are producing a scope and plan for this effort to be done through ISU.

Approximate % Complete: 10 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

This project was funded for \$10,000 in FY 2013.

- Project Team: Tina Greenfield (champion), Jack Stickel, Jason Norville

Project Status Report

May 24, 2012

Project: 2013-06: Make the Aurora Winter Severity Index Available to All

Champion: Tina Greenfield, Iowa Department of Transportation

Background: This idea also came out of the September 2011 peer exchange in Montana. This effort would involve making the Aurora winter index available to anyone and extend the length of the record from the current period (2002-2008). Another component would be to develop technology transfer sessions at APWA or AASHTO.

Objective: This effort would involve making the Aurora winter index available to anyone and extend the length of the record from the current period (from now back to the 2008-2002 period as well).

Status:

- An extension with AccuWeather is almost in place, but there have been issues with the contracting process.

Approximate % Complete: 10 %

Barriers/Issues: None

Recommendations: continue as planned
 continue with modifications
 discontinue

Additional Comments:

- Project Team: Tina Greenfield (champion), Mike Adams, Curt Pape, Jack Stickel, Jason Norville
- This project was funded for \$30,000 in FY 2013.