

**DRAFT MINUTES**  
**WINTER MAINTENANCE POLICY COORDINATING COMMITTEE**  
**May 4-5, 2003**  
**Helena, Montana**

**Attendees**

Pat Hughes, Chairman—Minnesota DOT  
Lee Smithson—AASHTO SICOP Coordinator  
Paul Pisano—FHWA  
Steve Brandau—NACE (Geneseo County Engineer, Illinois)  
John Blacker—AASHTO Western Region (Montana DOT)  
Diana Clonch—APWA (Ohio DOT)  
Mujeeb Basha--AASHTO  
Dan Roosevelt—AASHTO Southeastern Region (Virginia DOT)  
Joe Doherty—AASHTO Northeastern Region (New York State DOT)  
Ed Fink—AASHTO Highway Subcommittee on Maintenance (Colorado DOT)

**Work Plan Reports**

**Project #1: Develop a RWIS Anti-icing Computer Based Training Program.** Lee Smithson provided the project update. All seven lessons of the generic version are completed and were sent to the state DOTs for their customization recommendations. States will be customized on a first come first serve basis. Lee will periodically call each state to be sure their training coordinators are progressing on getting their customization recommendations to the contractor. Work continues on developing the scenarios using some of the lessons learned from last winter's field test on the FHWA Maintenance Decision Support System. Pat asked about selling the CBT to contractors and LTAPP. A price of \$1,500 had been established by AASHTO to sell a copy to contractors for training their employees, but a price has not been set for LTAPP since both NACE and APWA will be the primary vendor to the cities and counties. It is anticipated that each local government agency should be purchasing their CBT through APWA or NACE so those two agencies can recover their \$5,000 investments. Joe Doherty asked how to handle providing a copy to SSI since they will doing NYSDOT's training. The answer was that NYSDOT should provide a copy of the CBT to SSI with the understanding that SSI could only use the copy in the training they provided to NYSDOT. WMPCC felt we should have a booth at the September 2003 AASHTO Annual Meeting in Minneapolis and use some people from Iowa and Minnesota who had been using the CBT to staff the booth.

**Project #2: State-of-the-Practice Equipment and Facilities for RWIS and Anti-icing Operations.** The emphasis for this project during the next two months will be to populate the SICOP web site with specifications from each WMPCC member's state by providing a web site link to their current specifications. Each member was asked to send their State DOT's links and/or specifications to Wilf Nixon with copy to Lee.

**Project #8: Document the State-of-the-Art for Automatic Remote Fixed Location Anti-icing and Deicing Distribution Systems.** Dan Roosevelt sent out a questionnaire to use in updating the existing matrix. He now has 21 replies from the 45 known sites that currently exist and will use these to update the matrix. He will send this information to Wilf Nixon who will post it to the web site and also move the project to the completed project list. A note will be added to the matrix to advise viewers that the matrix will be periodically updated as new information is received. Pat has a project evaluation survey from PIARC that has criteria that may be useful to add to the matrix. He and Paul Pisano will review this material and determine if it should be posted to the SICOP web. Mujeeb will convert portions of the PIARC questionnaire to electronic copy and send to the 21 contacts that are in the matrix. Robert Stowe's report on the benefit cost study needs to appear as a link on the matrix. Pat will check and see Paul Kernan's report should be added also as a link. The next useful step would be to develop a FAST Best Practices matrix but WMPCC did not know if we had enough information to do that.

**Project #10: Determine the State-of-the Practice for Automated Vehicle Location (AVL) with an Emphasis on Benefit/Cost and Route Optimization Technology.** Dan Roosevelt found 19 locations that had AVL systems and was able to obtain information from 10 of these users. He will post a matrix of these to the SICOP web. Wilf Nixon will post the matrix and move it to the completed projects list with a note that it will be further updated as new information becomes available. WMPCC believes that the technology works but there are major impediments to implementation. These include tight budget times and cultural and institutional barriers. Since those who have installed and used AVL intuitively feel there are operational benefits and cost savings, but yet there doesn't appear to be any published material on the quantifiable results of AVL will cause WMPCC to have a continued interest in further implementation, evaluation and promotion of the technology.

**Project #3: Road Condition Information to the Customer.** WMPCC discussed this project and decided with the publication of the NCHRP 6-14 Final Report, "Feasibility of Using Friction Indicators to Improve Winter Maintenance Operations and Mobility" the project should be moved to the completed projects list. Dan Roosevelt reviewed his March 14, 2003 memorandum to WMPCC for recommended courses of future actions. Diana voiced her support for the project and reported the progress that the Ohio DOT made measuring friction with the Haliday Technologies fifth wheel measuring device and their intent to expand the program with the purchase of six addition units for evaluation during next winter. It was concluded that Dan and Wilf should write a letter to the Chairman of the AASHTO Highway Subcommittee on Maintenance to raise awareness of what has been accomplished in winter friction measurement and asking for HSCOM support for future research and evaluation to validate NCHRP 6-14 findings. New technologies emerging since 6-14 was published, ie, Haliday Technologies of Ohio (fifth wheel measurement), University of Minnesota (piezo sensors embedded in tire tread), Forensic Dynamics of British Columbia (fixed roadway sensor) need to be included in this research and evaluation program. Dan and Wilf will write the letter on behalf of WMPCC and Ed will endorse the letter on behalf of the AASHTO HSCOM Winter Maintenance Task Force Leader

**Project #4: Develop a Driver Education Program for Snowcovered and Icy Roads and a Plan for Marketing the Program.** WMPCC discussed this project and the apparent lack of national interest in developing such a program. It was decided that John should write a summary and wrap up on the Montana DOT project, include links to any other similar projects, and provide e-mail and phone number for any contact people that might be helpful in answering inquiries to the web.

**Project #5: Winter Maintenance Chemical Specifications.** PNS power point will be posted to SICOP web and a link provided to PNS, so the current project is complete. Ed will prepare another project statement that reflects new efforts underway ie, NCHRP 6-16 that will affect specifications and purchasing considerations.

**Project #9: Develop a Model Media Relations Package to be Used Before and During the Winter Season.** Wilf will post a message on the SICOP List Serve advising that WMPCC would like to compile a selection of useful media tools for winter maintenance. He will ask that media resources such as press releases, media day handouts and other materials related to media affairs be sent to him for posting on the SICOP web site.

**Project #11: Determine the State-of-the-Practice for Vehicle Mounted (on-board) Road Condition Freezing Point Measurements.** The project report for the field evaluation of the Frensor unit can be found at <http://www.ctre.iastate.edu/conceptv/>. This technology performed successfully in measuring the freezing point of road surface moisture and snow. The device does need some type of cleaning device capable of removing packed snow or slush which tends to accumulate and can't be removed with the existing blow pipe. WMPCC decided to keep this project in the active projects list and search for other chemical sensors that are ready for evaluation. WMPCC is also interested in determining how this technology fits into the FHWA MDSS project and custom application of chemicals. More details on this will be forthcoming at the MDSS meeting being held in Des Moines, Iowa on June 17-18.

**Project #6: Promote Anti-Drifting Measures with Pro-Active Road Design Considerations and Improved Snow Fence Configurations.** Lee will continue to monitor progress on getting NCHRP to approve the CD-ROM that was prepared for this update. As soon as NCHRP approves the CD-ROM, Lee will insure it gets put on the SICOP web and use the SICOP List-Serve to notify the snow and ice community the information is now available. He will also contact the AASHTO Subcommittee on Design and write an article for the AASHTO Newsletter to get as wide a distribution as possible encouraging design engineers to use the material in future roadway design.

### **Outreach**

Dan Roosevelt—will post the International Winter Scan Power Point on the SICOP web site. He handed out and discussed a one-page information sheet on Aurora project status. Dan is a member of the NCHRP 6-15 panel “Testing and Calibration Methods for RWIS

Sensors” and gave us an update on that project. Dan participated in the Scan briefing at the 2003 Annual TRB meeting.

Diana Clonch—is now the new RWIS person at Ohio DOT and her duties will include implementing the CBT. She discussed a road friction tester program that Ohio DOT conducted during the past summer and winter. They are using the Halliday Technologies Inc. Road Friction Tester. With a constant down pressure and a slight toe angle, the sensors inside the hub register a varying side load which is dependent on the road friction. This is a different technology than what was used in the Iowa Maintenance Concept Vehicle and the devices covered in the NCHRP 6-14 project. Diana told WMPCC that Ohio has a strong interest in evaluating friction for application in snow and ice control operations. WMPCC felt this supports the previous SICOP road friction measuring project and the Iowa Maintenance Concept Vehicle project and encouraged her to contact James Wambold and Tom Yager at NASA to participate in their summer and winter friction measuring devices project testing.

Mujeeb—because of his position at AASHTO, he has an interest in getting the CBT in the hands of the LTAP centers. Mujeeb will visit with Ken Kobetsky about appropriate ways for distributing CBT to LTAP. If LTAP is teaching State DOTs, they will already have their copy of the CBT, but the local governments will not. So the question is should the local governments purchase their copies through either NACE or APWA or should LTAP be purchasing a generic copy from AASHTO and distributing copies to each center.

John—attended the PNS meeting last week, but Jan Williams is now Montana’s representative. John was impressed with Ed Fink’s excellent power point on chemicals. Montana’s Training Academy opens tomorrow and the AI/RWIS CBT will be part of the career ladder course work. Montana implemented 511 about mid December. WTI is administering 511 through an ear mark project. One weekend storm brought over 200,000 calls which is very large considering Montana’s population.

Lee—Dennis Burkheimer of the Iowa DOT presented AASHTO AI/RWIS CBT power point at the APWA at Quebec City last week. His presentation was well received and brought several calls and e-mails the following week asking for more information.

Pat—attended PIARC C-17 Committee meeting to plan the next PIARC Winter Road Congress which will be held in Turin, Italy. PIARC is putting together a database on weather (Winter Maintenance Terminology). PIARC has a book on winter related weather definitions. PIARC has an outreach program to support developing countries with technology transfer.

Joe—discussed NTSDOT latest downsizing and reorganization. He is still working the same areas only with fewer staff after the 40% central office staff reduction. They may be able to put in a few new RWIS sites. SSI says all their sites will be on their web site by 2004. They are finding several of their retired folks are now teaching equipment operators training at the area community colleges. NY lacks salt storage at the local

level, so Joe will be making “Sensible Salting” presentations to the local agencies to help them build background and understanding.

Paul—Shelley’s leaving is a blow to his area and maybe to the program. Her replacement will have an impact on the weather program. Paul discussed the reorganization of the Resource Centers. The Eastern Center will take on a different discipline which will impact Deb Vocke’s role with winter operations. Winter maintenance has now gone to the Midwest center. MDSS is currently the major effort in Pauls office. Finished the Iowa demo, found lots of bugs but feel they have been worked out. A major MDSS workshop will be held in June in Iowa. The vision is for FHWA to do the core work and then hand it off to the private sector. With only a few storms this past winter the program is not ready to hand off. The NHI course on “Fundamentals of Road Weather Management” is just about finished. Course is geared to transportation managers in all weather conditions. Pilot course will be done in June. Next will be a course on buying RWIS equipment to be sure it is NTCIP and ITS compatible. The CD-ROM for the course on “Best Practices for Road Management” will be distributed next week. The International Scan Report is almost finished. Scan members are reviewing it. Steve Conger and another person are drafting up a questionnaire to all the states to be used in updating the Winter Maintenance Manual.

Steve—reported on his efforts to present WMPCC activities at the NACE annual meeting.

Ed—discussed that Denver was designated as a non-attainment area for PM-10 and how they have been using MgCl to address that concern. He also discussed other environmental concerns. He discussed the maintenance academy Colorado has been using for several years. They have three dormitories which house people while they go through the academy. There are separate tracks for workers, supervisors, and lead workers. Probably won’t use the CBT in the academy, but will use it as a standalone at the garage level. Avalanche control is a major item in Colorado. Colorado is trying to get chemical down ahead of every storm in the high country to prevent the bond from forming. Ed gave WMPCC an update on the ongoing problem they are having with MgCl concerning corrosion in wiring, brakes, and some rims. He has completed a report on MgCl and Paul encouraged him to turn the report into a TRB paper. Ed will put the power point summarizing the report on the SICOP web site

Diana—discussed a research project they finished about salt residue on pavements. They found the residue only lasts a couple of hours under certain conditions. She will provide WMPCC a copy of the report.

Lee—discussed the next meeting to be held August 27-28 at Albany. This meeting will be held in conjunction with the Aurora meeting which will occur August 25 and the morning of August 26, followed by the COMET meeting on the afternoon of August 26. Most of WMPCC said they would be available. WMPCC requested Lee to ask Jim Wright to come to the WMPCC meeting.

## **WMPCC SICOP Program**

### **1. Evaluation of existing programs**

- Project #1—Develop a RWIS/AI CBT program
  - Development of scenarios is a top priority
  - Keep states moving on customization process
  - Monitor implementation and determine if state or local need assistance
  - Develop a process for updating the program
  - Develop an evaluation program
- Project #2—State of the Practice Equipment and Facilities for RWIS/AI
  - WMPCC members post their states specs and provide website links
  - Determine how to evaluate and promote good practice
- Project #8—Document the State of the Art for Automatic Remote Fixed Location Anti-icing and Deicing Distribution Systems
  - Collect FAST data during the next winter
  - Monitor Hi Tech Phase III next winter
  - Develop synthesis (criteria-when/where/why +B/C) in summer 2004
  - Develop Best Practices
- Project #10—Determine the State of the Practice for Automated Vehicle Location (AVL) with an Emphasis on Benefit/Cost and Route Optimization Technology
  - AVL matrix is basis for synthesis
  - Determine how integrated data can best support operations
  - Determine how AVL can support MDSS
- Project #3—Road Condition Information to the Customer
  - Validate scenario 1 of NCHRP 6-14 report
  - Continue equipment validation
  - Evaluate approaches to communicating this information to the public
- Project #4—Develop a Driver Education Program for Snowcovered and Icy Roads and a Plan for Marketing the Program
  - Prepare summary and post on SICOP web as completed project
- Project #5—Winter Maintenance Chemical Specification
  - Post power point to SICOP website
  - Assist in the formation of regional groups
  - Prepare new project statement to include the work of NCHRP 6-16
- Project #9—Develop a Model Media Relations Package to be Used Before and During the Winter Season
  - Post a request for information on the List-Serve
  - Determine if there is sufficient information for a synthesis
- Project #11—Determine the State of the Practice for Vehicle Mounted (on-board) Road Condition Freezing Point Measurements
  - Continue monitoring field evaluations in Iowa and Sweden
  - Maintain contact with the OMRON Corporation of Kyoto, Japan on the development of their optical sensor

- Project #6—Promote Anti-Drifting Measures with Pro-Active Road Design Consideration and Improved Snow Fence Configurations
  - Post NCHRP update to SICOP website by August meeting
  - Assess the SNOWMAN software and determine what is required to complete it

## **2. Evaluation of new projects**

- ESS Siting Guidelines—the end product of this work is to produce a set of guidelines for the optimal siting of Environmental Sensor Stations (ESS) for the roadway environment. The principal audience for these guidelines is state and local government personnel responsible for procuring, siting, operating, and maintaining ESS along the public roadways. This project was recognized as a need from the January 2002 International Winter Scan. The present scope of work to be accomplished by FHWA details seven tasks required to produce a literature search synthesis and a final approved ESS Siting Guidelines document. The proposed new project would be for WMPCC to develop a Task 8, Technology Transfer, for this project. This project would be accomplished in late 2004 or early 2005.
- RWML—Road Weather Mark-Up Language was being used in Japan to refine mark up language for specific transportation applications, specifically road information, weather, disaster and local event to achieve a seamless interoperability for traveler information for Internet and mobile phone access. Since the assessment of adopting the RWML standard reaches far beyond the scope and understanding of WMPCC, it was felt that other resources should be invited to the next WMPCC meeting to help determine what this committee's role should be and help develop some appropriate courses of action.
- Integrated ITS Corridor—Finland's E-18 is a heavily traveled corridor where a complete ITS/CVO integrated corridor has been implemented. A complete field detection and surveillance system monitors existing environmental, traffic and roadway performance on the corridor and the system provides automated corridor management. WMPCC interest and involvement would be with the winter maintenance management aspects of the corridor. While ITS and traffic engineers should be taking the lead in this project, WMPCC should watch for ways to be involved and stand ready to assist when an opportunity exists.
- Winter Maintenance Performance Standards—numerous papers have been presented recently at SIRWEC, PIARC and TRB conferences and workshops that included performance standards for winter maintenance of roads. A synthesis needs to be prepared containing winter road maintenance standards, by road classification and include the evaluation standards for the winter road maintenance performed.

## **3. Reprioritization of program**

- WMPCC members voted on each of the existing and new projects. The projects listed in the SICOP 4 Year Program reflect the order of their vote. Project champions are shown in parenthesis.

## **SICOP 4 Year Program**

### **RWIS/AI CBT (Rick & Lee)**

- Scenario development
- Deployment to state and local governments
- Evaluation program
- Update process

### **Winter Maintenance Chemical Specifications (Ed & Wilf)**

- Post PNS power point to SICOP web
- Prepare new project statement including NCHRP 6-16
- Develop QA/QC component

### **Vehicle Based Equipment Integration (Dan, Diana, & Lee)**

- Synthesis
  - AVL
  - On board freeze point detection
  - Friction
- Integrated system design

### **FAST (Dan & Paul)**

- After winter 2003-2004
- Synthesis (Criteria-when/where/why/etc + B/C
- Best Practice

### **ESS Guidelines (Paul & Dan)**

- FHWA to fund initial project to develop recommendations
- SICOP to fund deployment (includes validation/promotion)

### **Synthesis of Winter Maintenance Practices of Roadway Information (Ed & John)**

### **Baselining Winter Performance Standards (Pat)**

- Synthesis

### **Anti-drifting (Joe)**

- Finish updating manual
- Post update to SICOP web
- Assess SNOWMAN and take to completion if appropriate

### **Road Condition Information (Wilf & Dan)**

- Prepare letters to SCOR/NCHRP to look at validation of TCS, and other devices
- Use of friction to provide traveler information



## **Project to Look at Deployment/Outreach to Local Governments (Steve & Mujeeb)**

### **RWML (Paul & Lee)**

- Participate in development of ITS standards related to winter maintenance.
  - Clarify with Aurora each organizations role
  - Paul will prepare a white paper on maintenance needs to be included in the development of RWML
- Invite Jim Wright to joint Aurora/COMET/WMPCC meeting in August to help insure all needs are understood and met

### **Integrated ITS Corridor (Pat & Mujeeb)**

- Monitor planning/development activities
- Investigate opportunities to become involved and help develop winter maintenance management aspects

### **Equipment/Facilities for RWIS & Anti-Icing Operations (Rick & John)**

- Post Specifications and Website Links
- Next 4 years efforts
  - Synthesis
  - Best Practice

Champions are to put together a draft work plan to include schedule and budget requirements for discussion at the August meeting. If the project requires a pooled fund, WMPCC felt the initial funding to get the project started should, if possible, come from the Administration fund account and be paid back as pooled funding becomes available.

### **Next Meeting & Closing Remarks**

The next meeting will be held in Albany, New York August 27-28, 2003. Aurora is taking the lead in contracting for hotel meeting rooms and lodging.

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