

1
2 **MINUTES**
3 **WINTER MAINTENANCE TECHNICAL SERVICE PROGRAM (WMTSP)**
4 **Summer 2006 Meeting**

5 **July 20-21, 2006**
6 **Charleston Place Hotel**
7 **205 Meeting Street**
8 **Charleston, SC 29401**
9

10 **Attendees**

11
12 John Burkhardt, IN DOT—TRB Winter Maintenance Committee Chair
13 Dennis Burkheimer, IA DOT—AASHTO Region 3
14 Mark DeVries, McHenry County, IL—APWA
15 Ken Kobetsky—AASHTO Staff
16 Mike Lashmet, NYS DOT—AASHTO Region 1
17 Wayne Lupton, CO DOT—AASHTO Subcommittee on Maintenance, Snow and Ice
18 Task Force Leader
19 Wilfrid Nixon, University of Iowa—SICOP Webmaster
20 Greg Parker, Johnson County, IA—NACE
21 Paul Pisano, Washington DC—FHWA
22 Dan Roosevelt, VA DOT—AASHTO Region 2
23 Lee Smithson—AASHTO SICOP Coordinator
24

25 **Guests**

26 Thorsten Cypra, University of Karlsruhe, Germany
27

28 Chairman, Rick Nelson, was sick and unable to attend the meeting, so the meeting was
29 facilitated by Lee Smithson. Lee began the meeting with a review of the agenda.
30

31 **Outreach & Discussion of Outside Projects that WMTSP Members are Involved In**

- 32 • NCHRP 6-13, “Guidelines for Snow and Ice Control Materials and Methods” was
33 finished and the results of the research were published as NCHRP Report 526.
34 AASHTO proceeded to incorporate the findings of the 526 report into the
35 AI/RWIS CBT by inserting new storyboards into the appropriate lessons of the
36 CBT. If a student has completed all or part of the CBT, the on line assistant
37 “Jake” notifies the student that these additions have been made and asks the
38 student if he/she wants to review the entire CBT completed or if Jake can take the
39 student to just the added storyboards. The TWG has reviewed the storyboards
40 and have approved them for addition into a revised CBT. Several problems were
41 noted on Table A-6 of the 526 report, “Equivalent application rates for five ice
42 control chemicals”. These problems are that application rates for calcium
43 chloride, magnesium chloride, potassium acetate, and calcium magnesium acetate
44 were normalized to 100 lb/lane mile of dry solid sodium chloride. The specific
45 problems are that Table A-6 shows higher required application rates for calcium
46 chloride than sodium chloride and the application rates for potassium acetate are

1 identical to calcium magnesium acetate at all temperatures, even those lower than
2 the eutectic range for CMA. In an effort to resolve these problems Lee discussed
3 the difficulties encountered with the NCHRP Project Manager, Amir Hanna, and
4 Amir arranged for Levelton Consultants Ltd to review the Table A-6 and another
5 Table 9, “Multipliers for liquid chemical application rates, normalized to 100
6 lb/lane mile of dry NaCl in a 23-percent solution”. Levelton completed their
7 report April 25, 2006 and felt there were errors in Table A-6 and recommended
8 the application rates for solids be removed. The liquid amounts appear to be
9 technically correct. Lee will work with GanTek Multimedia and determine how
10 to proceed with developing a treatment design tool for application in the CBT.

- 11 • NCHRP 6-15, “Guidelines for Testing and Calibrating Road Weather Information
12 Systems (RWIS) Sensors in Field Deployments”. This work was completed in
13 December 2005 and posted on the NCHRP web site on June 14, 2006 at
14 http://trb.org/news/blurb_detail.asp?id=6163. WMTSP and the Aurora
15 Consortium had several members on the NCHRP 6-15 panel. Aurora
16 subsequently approved a project in their 2006 program entitled, “Pilot Test of
17 ESS Sensor Testing Guidelines (Project 2006-02)”. The purpose of this project is
18 to gain real-world experience with implementation of an ESS sensor testing
19 program, develop a standardized kit for testing ESS sensors, and develop data
20 collection software. The project will create six kits for testing ESS surface and
21 atmospheric sensors, pilot test them in three Aurora member states and publish
22 the results and findings. Dan Roosevelt of Virginia DOT and member of
23 WMTSP is the project champion. Following completion of this project, Aurora
24 and WMTSP should collaborate to support the adoption and implementation of
25 the guidelines as a national standard.
- 26 • NCHRP 6-16, “Guidelines for the Selection of Snow & Ice Control Materials to
27 Mitigate Environmental Impacts”. Lee Smithson serves on the technical panel for
28 this project. Work for this project with exception of corrosion data was
29 completed in the spring of 2006. Publication of the interim report final report is
30 scheduled for late summer 2006. The AASHTO CBT contractor has prepared
31 two versions of the 6-16 report. A short version which provides selected portions
32 of the research that would likely be used by field supervisors or managers and a
33 longer version for use by DOT Materials Testing or Environmental Assessment
34 personnel. The TWG is currently reviewing these storyboards. Before the CBT
35 can be finished the contractor needs the final published version of NCHRP 6-16
36 and the final version of the Material Selection Tool developed by the NCHRP
37 contractor. The CBT material contains material references to the final report and
38 the original version of the Material Selection Tool had some program problems,
39 so a bug-free version is needed. Lee will work with Chris Hedges, NCHRP
40 Project Manager to correct the Material Selection Tool and also get an electronic
41 version of the final report so GanTek can link it to the CBT.
- 42 • NCHRP 6-17, “Performance Measures for Snow & Ice Control Operations”.
43 Wayne Lupton serves on the technical panel for this project and reported that the
44 project is behind schedule. Phase I is under way and the contractor is collecting
45 and reviewing information relative to the use of performance measures in snow
46 and ice control operations. The effort includes information from both domestic

1 and foreign literature, contacts with road agencies, industry and other sources to
2 determine what relevant performance measures are being used.

- 3 • NCHRP 20-7(200), “Synthesis of Vehicle Based Winter Maintenance
4 Technologies”. Paul Pisano serves on the technical panel for this project. The
5 contractor has completed the data gathering and evaluation stages. The contractor
6 has also completed an outline of the final report and the panel has approved the
7 outline. The project is behind schedule, but report will be completed sometime in
8 the fall of 2006. When completed the report will provide a current practices
9 review relevant to the use of vehicle based technologies for winter maintenance.
10 It will include technologies such as automatic vehicle location, surface
11 temperature measuring devices, freezing point and ice-presence detection sensors,
12 salinity measuring devices, visual and multi-spectral devices, and millimeter
13 wavelength radar sensors.
- 14 • NCHRP Synthesis of Highway Practice 34-10, “Winter Highway Operations” is
15 completed and the results of the project were published in June 2005 in NCHRP
16 Synthesis 344, “Winter Highway Operations”. The synthesis focuses on changes
17 that occurred between 1994 and 2004 in practices and strategies being used to
18 control the impacts of winter weather and the safe and efficient movement of
19 traffic. Survey responses for the NCHRP indicate that emerging advanced
20 technologies and techniques are being agency tested and adopted into practice.
21 New chemicals, all-liquid applications and pre-wetting were the most significant
22 changes to winter operations over the past 10 years, with improved equipment,
23 RWIS and road weather forecasts following close behind. The synthesis placed
24 special emphasis on environmental protection and how that affects maintenance
25 operations, particularly with regard to the use of chemicals and abrasives, which
26 elevates the importance of optimizing the application rates of treatment materials,
27 management strategies and training. WMTSP discussed the synthesis findings
28 and related them to what the SICOP has accomplished with the AI/RWIS CBT.
29 WMTSP believes that more needs to be accomplished insure this technology gets
30 transferred into the winter maintenance toolbox of all agencies. A domestic scan
31 might be a technique for accomplishing this. Wilf will post a link on the SICOP
32 web site for easy access to the pdf file.
- 33 • FHWA MDSS Implementation, Paul Pisano reported that MDSS released version
34 4.0 and has had a good response. NCAR is working in a support role to help with
35 deployment. FHWA is developing a marketing plan and the “MDSS Road-
36 Show”, provided by Ray Murray is available in two versions. A short version for
37 top management and a longer more detailed version for maintenance personnel.
38 Ray has made presentations in Idaho, Nevada, and Maine, South Carolina and
39 Ohio are scheduled for later this summer. FHWA is currently updating the
40 compilation of MDSS RFPs and Aurora will host this on their web site. The
41 MDSS Stakeholder meeting will be August 10-11 and so far 29 state DOTs have
42 registered for the meeting. States will share their experiences of the past winter
43 and there will be vendor and FHWA presentations. NCAR is gathering
44 information about other weather related activities such as traffic marking
45 applications, herbicide spraying, etc. Paul felt they weren’t yet ready to approach
46 the construction industry.

- 1 • FHWA Clarus Initiative, Paul Pisano reported that Clarus is making good
2 progress in data assimilation, quality checking, and dissemination. Mixon Hill
3 has completed the data assimilation and several states are going through the proof
4 of concept field test. FHWA is exploring several options for the Regional
5 Concept of Operations. All of this will be reported at the August 8-9 Stakeholder
6 meeting. Paul reported that James Pol has been promoted and will be leaving the
7 Clarus Initiative.
- 8 • TRB Task Force on Surface Transportation Weather chairman Wilfrid Nixon
9 reported the first meeting of the Task Force at the TRB Annual meeting had a
10 good turnout with many of the needed disciplines in attendance. The Task Force
11 sponsored three sessions, two were technical sessions and one was a spotlight
12 session. Task Force membership now totals 20. The Task Force generated a list
13 of action items. It was anticipated the Task Forces would stay in touch between
14 meetings with conference calls. OFCM offered to co-host their national
15 workshop in May 2007 with the Task Force. The Task Force will also co-sponsor
16 with the TRB Winter Maintenance Committee the Joint International Conference
17 on Surface Transportation Weather, and Winter Snow and Ice Control to be held
18 in Indianapolis in 2008.
- 19 • American Public Works Association representative Mark DeVries updated
20 WMTSP in the upcoming APWA Congress and North American Snow
21 Conferences. The Winter Maintenance Committee was successful in getting a
22 snow and ice session at the Congress. APWA is partnering with the Salt Institute
23 for training development. Mark is on a working group to develop guidelines to
24 recognize a public agency each year for outstanding proactive snow and ice
25 control program.
- 26 • National Association of County Engineers representative Greg Parker reported on
27 the NACE annual meeting. Main message from Congress was “no new taxes”.
- 28 • PIARC member Paul Pisano reported on the PIARC 2006 Winter Road Congress
29 and SIRWEC conference in Torino, Italy that he and Wilfrid Nixon attended.
30 There were excellent presentations on advanced forecasting and new approaches
31 other countries are doing to meet the challenges of implementing maintenance
32 management systems and contract maintenance. Wilfrid presented a technical
33 paper written by Lee Smithson entitled, “Achieving Technology Transfer with
34 Interactive Computer-Based Training”. Paul presented papers on MDSS and
35 Clarus. There was strong international interest in MDSS. Boschung has
36 marketed their version of MDSS. Paul could see improvements in the two way
37 flow of technology at both conferences. PIARC had an excellent equipment
38 exhibition. Paul was impressed with a new quick change cutting edge system that
39 would stay in place during operation. Paul wanted WMTSP to know that the
40 SIRWEC proceedings would soon be posted on their website. He is trying to get
41 PIARC to do likewise on their website. Paul has links for SIRWEC and PIARC
42 on the FHWA website. Next PIARC Congress will be held in Quebec City.
43 Thorsten Cypra explained a Road Congress he is organizing and thought WMTSP
44 would be interested in. He will send brochures when they are developed.
- 45 • 11th Eastern Winter Road Maintenance Symposium and Equipment Expo update
46 was provided by Paul Pisano and Lee Smithson. The three track technical

1 program is in place and all the vendor booth spaces have been sold. The location
2 is in the center of Atlantic City with outstanding hotel and civic center facilities.
3 Equipment Expo will feature driver simulator training which is just entering the
4 training arena for DOTs.

5 • Other WMTSP member input

- 6 ○ John Burkhardt, Chair of TRB Winter Maintenance Committee reported
7 on the progress underway to organize the 2008 Joint International
8 Conference on Surface Transportation Weather, and Winter Snow and Ice
9 Control in Indianapolis. A call for papers is being written. It is
10 anticipated it will be a jointly sponsored conference with the Task Force
11 on Surface Transportation Weather. The call will cover both the
12 transportation and meteorology aspects for the conference.
- 13 ○ Paul Pisano distributed a feature article from the September 2005
14 American City & County magazine entitled, “Let it Snow, Let it Snow,
15 Let it Snow” which featured MDSS. He also distributed material on the
16 new training course “Principles and Tools for Road Weather
17 Management” being offered by NHI. He also handed out the July 2006
18 Summary of Products and Activities for the FHWA Road Weather
19 Management (RWM) Program which is attached as the last page in these
20 minutes.
- 21 ○ Dennis Burkheimer provided an update on Clear Roads activities. Clear
22 Roads currently has twelve member states. Their program is
23 concentrating on methods, materials and equipment. Clear Roads has a
24 project to determine the accuracy of ground speed systems and will do
25 testing this coming winter during actual snow and ice control operations.
26 Clear Roads plans to create some national safety messages and logos for
27 improving the safety of winter driving. Clear Roads also plans to do a
28 field test this winter at Alexandria, Minnesota on the performance of snow
29 and ice control materials. In August, Clear Roads plans to release a report
30 on how to keep frost and fog from building up on windshields and mirrors.
31 Clear Roads is also involved in building a multiple plow experiment to be
32 tested in Iowa and Indiana this winter. Clear Roads is also working on
33 developing a sensor to insure flow from the material spreader. Clear
34 Roads, Aurora, FHWA and PNS are working on organizing a national
35 conference for snow and ice managers, which would be like a peer
36 exchange, in conjunction with the Winter Road Maintenance Symposium
37 and Equipment Expo in 2007.
- 38 ○ Paul Pisano reported on the VII project. Current work is developing the
39 capability to pass information between vehicles and between vehicles and
40 roadside equipment.
- 41 ○ Dan Roosevelt passed out information on Aurora projects (past and
42 present) and answered questions.
- 43 ○ Ken Kobetsky discussed the domestic scan program. Two scans
44 underway now address project delivery and asset management. He feels
45 that the domestic scan program might feed into an international scan by

1 having a good understanding of what is in the United States before going
2 to the international countries.

3
4 **Project Review of SICOP Program**
5

- 6 • Deploy AI/RWIS CBT—Lee Smithson reported on his telephone contacts with
7 state DOTs now using the CBT to see if they had a preference on how to update
8 the CBT with the NCHRP 526 report and the pending NCHRP 6-16 report. A
9 majority would like the story boards for the 526 report inserted into the existing
10 CBT with the option that the student, who had completed part or all of the CBT,
11 could let Jake take them only to the newly inserted material so they didn't have to
12 work through the entire set of storyboards. New students would not need to have
13 such an option. Everyone agreed the 6-16 should be a separate CBT. GanTek
14 Multimedia is progressing with development of the storyboards and will have
15 them ready for Technical Working Group review in about a month. Lee is
16 working with NCHRP to resolve the errors found in the 526 report. WMTSP then
17 discussed the development of storyboards for the CBT proposed by the Clear
18 Roads Consortium. Dan Roosevelt wants to make sure we don't duplicate
19 anything that others like the Salt Institute are developing. It was suggested that
20 WMTSP should formalize our intention to partner with Clear Roads that was
21 discussed at the November 2005 WMTSP meeting. Dan Roosevelt moved and
22 Greg Parker seconded that WMTSP proceed with the CBT proposal outlined in
23 the April 2005 letter from Clear Roads, develop the CBT for Winter Maintenance
24 Snow/Ice Operations as listed in priority order and that Lee Smithson be
25 authorized to coordinate the development and scheduling with GanTek. Motion
26 approved. Dennis Burkheimer said that Clear Roads would provide Lee with
27 names for the Technical Working Group. He said Clear Roads would also
28 arrange for training videos from other DOTs be sent to Steve Gannon for review
29 and use as appropriate in the CBT. Clear Roads has approved \$1,500 to help
30 financially with the development of the CBT. Other funds will come from those
31 pooled to develop the original AI/RWIS CBT.
- 32 • Winter Maintenance Chemical Specifications—the portion of the SICOP website
33 displaying chemical specifications is still under reconstruction after the virus
34 attack. Dennis Burkheimer had participated last month in the PNS conference in
35 Spokane and noted there was considerable discussion on winter maintenance
36 chemicals. The price of corrosion inhibitors seems to be driving the cost
37 upwards. Wilfrid Nixon noted that PNS seems to also be moving more into the
38 environmental arena with some of the testing and that this is causing some
39 vendors products to not meet specification. This is resulting in the price of sodium
40 chloride to be well above \$100 per ton delivered in the Washington DOT area.
41 The Washington DOT needs and expects a longer life from their treated salt
42 applications, but doubt that they are achieving those results. With increased fuel
43 costs, longer effectiveness of chemical applications will pay good dividends.
44 PNS will likely do some field evaluation to determine the performance of
45 different chemicals and additives. WMTSP needs to monitor their progress and

1 get available reports so Wilf can get them posted to the SICOP web site and the
2 entire winter maintenance community can benefit.

- 3 • Vehicle Based Equipment Integration—Dan Roosevelt reported that the scope of
4 this project is now covered under the NCHRP 20-7 Task 200 project. The report
5 for this project will be available in fall 2006. When the NCHRP report becomes
6 available, Dan needs to compare the results to the scope of this project and
7 determine if this project can then be transferred to the completed projects list or
8 are there other on going needs that the spread sheets from this project provide to
9 keep the snow and ice community informed on the latest technology and who to
10 contact for more information. There was also discussion to look at the completed
11 report and determine if it should be incorporated into the next update of the
12 CBTs?
- 13 • Fixed Spray Technology—Dan reported the scope of this project is now covered
14 under the NCHRP 20-7 Task 200 project. The report for this project will be
15 available in fall 2006. When the report becomes available, Dan will need to
16 determine if the spread sheets now posted on the SICOP web need to be updated
17 or can they be listed in the completed projects and eliminate the updating effort.
18 Two other reports, one from Colorado DOT and the other from Hi-Tech need to
19 be linked to the SICOP website so users can easily reach them. Colorado has
20 their general specification posted and this should also be linked on the SICOP
21 website. Vendor support is very important to insure equipment reliability.
- 22 • Development of ESS Guidelines—Paul noted that *Public Roads* had an excellent
23 article about the ESS Guidelines in their November/December 2005 issue.
24 Aurora has completed their review of the metadata checklist. Implementation and
25 evaluation of the guidelines is scheduled to begin in late 2006.
- 26 • Promote Anti-drifting Measures with Pro-Active Road Design Considerations-
27 Mike Lashmet reported that New York State DOT continues to make progress
28 with this project called SNOWMAN. SUNY Buffalo has a graduate student on
29 staff working on this project to evaluate 9 cases. Program will provide two
30 solutions for each case; one being the shortest fence and the other being the fence
31 closest to the road. The Office of Design makes the determination which of the
32 two is best. The UNY Buffalo project report forecasted they would have a fully
33 functioning version of SNOWMAN by mid to late October. He summarized the
34 capabilities of SNOWMAN as follows: SNOWMAN will work as an add-on to
35 the Micro Station Environment as a Micro Station MDL application; SNOWMAN
36 will be able to use topographic information contained in the design files and
37 climate information supplied by the user to determine if a problem exists;
38 SNOWMAN will be able to propose both structural snow fences and changes to
39 the surrounding terrain to mitigate or reduce the problem; SNOWMAN will also
40 handle common constraints to height limitations, set back from road limits, and
41 porosity constraints; SNOWMAN is implemented using established algorithms
42 from a blowing/drifted snow expert (Ron Tabler) to make evaluations and
43 recommendations with additional expertise supplied by UNY Buffalo; and
44 SNOWMAN will not present multiple fence solutions at the completion of this
45 project nor will it be capable of presenting living snow fence solutions, but the

- 1 manual should be capable of presenting users with ways to use SNOWMAN to
2 get quantitative information regarding living snow fences.
- 3 • Road Condition Information—work continues on using friction to describe road
4 condition. There were two papers presented at the PIARC 2006 Road Congress
5 but neither showed much new progress. The Ministry of Transportation Ontario
6 continues their research on measuring friction and relating that to level of service.
7 The on-going evaluations at the Ohio DOT are discovering it makes a big
8 difference where the friction measuring wheel is measuring on the road surface.
 - 9 • Outreach to Local Government—Mark DeVries reported there have been
10 personnel changes in APWA and Bret is getting reconnected. Progress has been
11 made in reaching out to the local governments in that a snow and ice session has
12 been added to the 2006 APWA Congress. Up until now, the snow and ice control
13 sessions were only held at the North American Snow Conferences. Mark is on
14 the planning committee for the 2007 North American Snow Conference to be in
15 St. Paul, MN April 22-25, 2007. He would like to have several presentations
16 from SICOP and the Aurora programs on that agenda. John Burkhardt would like
17 to get the TRB Winter Maintenance Committee actively involved in that 2007
18 conference.
 - 19 • Communication Standards and Winter Maintenance—Paul updated WMTSP on
20 the progress made since the November 14-15, 2005 meeting. At that time the
21 white paper “ITS Standards Impacting the Maintenance Community” was
22 finished and posted on the SICOP website. Also a letter had been sent on June 2,
23 2005 to John Conrad, Chair of the AASHTO Subcommittee on Operations and
24 Management expressing WMTSP interest in the development of standards within
25 the ITS Standards program that affect the winter maintenance community. The
26 next step was to examine the communications standards needed for the Clarus
27 Initiative. Paul distributed a spread sheet entitled, “FHWA Road Weather
28 Management Program Roadmap-FY 2006-2010”. The spread sheet depicted the
29 timelines for the Clarus Initiative as well as other road weather research and
30 development initiatives. He also explained the relation of the spread sheet to
31 “Clarus ITS Standards Assessment” and “Clarus Other Standards Assessment”
32 developed by Mitretek Systems. It was suggested that Lee prepare another letter
33 to John to refresh our communication on WMTSP needs.
 - 34 • Integrated ITS Corridor—Paul reported that the synthesis of practices that Battelle
35 did for them entitled, “Integration of Emergency and Weather Elements into
36 Transportation Management Centers” is completed and will soon be on the
37 FHWA website. He reported that a follow on project to develop Guidelines for
38 Integration Needs Assessment has been initiated. They have also completed
39 analysis of weather and traffic flow data in three cities (Minneapolis, Seattle and
40 Baltimore) and preliminary weather impact models are being developed. They
41 are also working with the University Transportation Centers to build academic
42 interest in weather responsive traffic management. WMTSP discussed what was
43 discovered on the winter scanning tours to Japan and Europe in 1994, 1998 and
44 2002 is just now catching on in the TMC with their use of variable message signs.
45 However, the TMCs are mainly focused on an incident management reactive
46 approach rather than the proactive approach found in the winter scans. Dan

1 Roosevelt noted that five years ago Virginia had one TMC and now they have
2 five with a great deal of interest in cameras, speed and traffic data, but not much
3 interest in weather. John Burkhardt sees the same thing in the Indianapolis area.
4 WMTSP will continue to encourage and monitor progress with John Conrad on
5 the Highway Subcommittee on Systems Operation and Management he chairs and
6 look for ways to become involved and push this technology.

- 7 • Equipment and Facilities for RWIS and AI—Wilf Nixon, SICOP webmaster,
8 reported he is posting any new specifications received as they come in. It was
9 suggested that SICOP should also see if there are some specifications that should
10 be posted in response to the new emissions standards that will be in force next
11 year. Dan Roosevelt will call Erle Potter in Virginia DOT and chair of the
12 Equipment Focus Group of the AASHTO Subcommittee on Maintenance to get
13 Erle’s opinion on what might be appropriate to reference on the SICOP web.
- 14 • Develop Model Media Package—Wilf Nixon will be developing a power point on
15 a model media package for presentation at the 11th Eastern Road Maintenance
16 Symposium and Equipment Expo. Wilf will post that power point on the SICOP
17 website. It addresses suggestions for what a public agency should consider
18 communicating before, during and after the storm.

19
20 **WMTSP Program**

- 21
22 • Presentation of New Projects—the following suggestions were made to guide the
23 development of new WMTSP projects:
 - 24 ○ Develop a domestic scan to evaluate the progress the Canadian Provinces
25 have made on salt management and outsourcing.
 - 26 ○ Develop best method practices for winter operations and salt, sand and
27 chemical management (see NCHRP 25-25(4), September 2004 report for
28 guidance
 - 29 ○ Update the 1999 AASHTO Guide for Snow and Ice Control
 - 30 ○ Support the 2007 national conference for snow and ice managers
- 31
32 • Budget considerations—both budgets are in the black, although the
33 Administrative budget is nearly depleted. CBT has about \$125,000 which should
34 be sufficient to finish updates and Clear Roads additional CBT material.
35 Solicitations to replenish the Administrative budget have been sent to the DOTs,
36 so should see those funds be coming into AASHTO the next few months.

37
38 Revision date March 13, 2007

39
40 **FHWA Attachment**

FHWA ROAD WEATHER MANAGEMENT (RWM) PROGRAM
Summary of Products and Activities
July 2006

- General
 - Program now has 3 HQ staff – Paul Pisano, Roemer Alfelor and Pat Kennedy – and 1 Resource Center staff – Ray Murphy
 - Roadmap developed based on Section 5308 of SAFETEA-LU
 - Initiated a project to develop RWM program-wide performance measures.
- TRB Task Force on Surface Transportation Weather
 - More than 70 attended first meeting in Washington DC last January.
 - National symposium is being planned for Spring of 2007.
- Maintenance Decision Support System (MDSS) Deployment and Technical assistance:
 - MDSS Roadshows – free seminars to brief those involved with winter road operations. Two versions: an executive briefing and a shop session.
 - 3 conducted to date (ID, NV & ME)
 - 2 planned (SC, Lake Co., OH)
 - Distributing Version 4.0 of the software
 - Cost/Benefit Analysis of MDSS Pooled Funds Program
 - 8th Stakeholder Meeting scheduled for August 10-11 in Falls Church, VA
 - Expanding MDSS capabilities beyond Winter Maintenance
- RWIS Environmental Sensor Station (ESS) Siting Guidelines (published in April 2005)
 - November/December 2005 *Public Roads* Article
 - Metadata checklist completed and reviewed by Aurora
 - Implementation and Evaluation of Guidelines to begin in late FY 06
- *Clarus* – Nationwide Surface Transportation Weather Observing
 - *Clarus* System Design completed; Proof-of-Concept evaluation almost complete
 - Drafted Guiding Principles and Data Sharing Agreements
 - Working with the National Oceanic and Atmospheric Administration (NOAA) to aid in transition from a research environment to an operational environment
 - Regional Demonstrations to begin before end of calendar year
 - 4th *Clarus* Initiative Coordinating Committee (ICC) meeting scheduled for August 8-9 in Falls Church, VA
- Vehicle Infrastructure Integration (VII) and Road Weather Management
 - Working with the VII initiative managers to define weather-related applications
 - Seeking volunteers to assist in development of an application to support pothole maintenance. Contact Brian Cronin (brian.cronin@dot.gov; 202-366-8841) if you're interested.
 - Conducted 2 workshops on VII & Weather; will publish a report on the feasibility of collecting weather observations from vehicles.
 - Completed a field test on Winter Mobility Sensing (Mitrettek); report in review.

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- Principles and Tools for RWM, NHI Course 137030
 - 2 Training Courses Delivered in South Dakota DOT
 - Training to be scheduled in New Hampshire DOT
 - Web-based version to be developed

 - Road Weather Resource Identification Tool
 - Version 1.0 posted on FHWA website and downloaded by 120+ users.
 - Completed testing and evaluation of Version 1.0
 - Version 2.0 will be available in September 2006 from FHWA website.

 - Weather Responsive Transportation Management
 - Completed analysis of weather and traffic flow data in three cities (Minneapolis, Seattle and Baltimore). Preliminary *weather impact models* developed.
 - Developed, tested and evaluated Prototype *Weather Response System for Transportation Operations* in Missouri DOT. Report drafted and recommended enhancements are being evaluated.
 - Completed a synthesis of practices on *Integrating Weather in TMC Operations*. Report drafted and will be posted on our website soon. A follow-on project to develop Guidelines for Integration Needs Assessment has been initiated.
 - Working with the University Transportation Centers (UTC) program to build academic interest in weather responsive traffic management.

 - Meetings/Conferences
 - PAST:
 - PIARC 2006 Winter Road Congress in March.
 - Learned about new approaches to similar challenges (e.g., maintenance management systems, contract maintenance). Strong international interest in MDSS. Summary paper soon to be published in Routes/Roads.
 - UPCOMING:
 - 4th Clarus ICC meeting, Aug 8-9, 2006 in Falls Church, VA
 - MDSS Stakeholder meeting, Aug 10-11, 2006 in Falls Church, VA
 - Eastern Winter Maintenance Expo, Sept 6-7, 2006 in Atlantic City, NJ.