Three TSPs self-evaluations: NTPEP, A.I.I. and SICOP are provided for a review and vote by the Standing Committee on Highways
May 2015 Technical Service Program Self-Evaluation:
National Transportation Product Evaluation Program (NTPEP)

NTPEP is a technical service program first established in 1994, which conducts coordinated evaluations on a wide array of highway safety products, maintenance products, and construction materials. The goal of the program is to provide quality and responsive engineering for the testing and evaluation of products, materials, and devices which are commonly used by the AASHTO Member Departments of Transportation. The primary services of the program is to conduct evaluations and manufacturing audits of traffic safety devices/materials, construction materials, maintenance materials, and provide corresponding data online through AASHTO’s NTPEP DataMine website, http://data.ntpep.org.

Program Activities and Accomplishments for FY12 through FY14

- During the 2012 fiscal program year, NTPEP conducted field evaluations and nationally-coordinated laboratory testing in 18 product categories. Additionally, the geotextiles (which includes both domestic and international participants) and polypropylene pipe programs were launched. The number of manufacturing audits completed within FY12 are as follows: HDPE pipe: 44; polypropylene pipe: 1; PVC pipe: 2; rebar: 33; welded wire reinforcement: 9; geotextiles: 15.

- During the 2013 fiscal program year, NTPEP staff conducted a data usage survey to learn which AASHTO Member Departments were using the data and audit reports generated by NTPEP. The contact information for the individual who provided the survey results is also included online, which allows for neighboring AASHTO Member Departments to communicate with one another when implementing the utilization of NTPEP programs into their state specifications. This information is available on the NTPEP website, www.ntpep.org.

- In the spring of 2014, NTPEP launched two new evaluation programs; concrete coatings and epoxy and resin based adhesive systems. Four systems were submitted in 2014 for concrete coatings. The concrete coatings evaluation program resides under the protective coatings technical committee. There have not been any products submitted yet for the epoxy and resin based adhesive systems, but NTPEP believes there will be products submitted within CY2015.

- During FY13, AASHTO’s Product Evaluation List (APEL) technical service program was moved from AASHTO Subcommittee on Materials (SOM) to NTPEP. All APEL activities are reviewed by the NTPEP executive committee and APEL convenes as part of the annual NTPEP meeting.

- During FY13, the NTPEP executive committee and AASHTO staff drafted and approved a five year business plan, which is now available to all AASHTO Member Departments on the NTPEP website. The following items are described in this document: program growth highlights, business opportunities, strategy for implementing new programs, and marketing strategies for NTPEP.
• A task force comprised of industry and state members was formed in FY13 to begin the development of the next version of AASHTO DataMine. This software is expected to be completed during FY15. It will include many additional tools and an improved user interface compared to the current AASHTO DataMine software.

• During FY14, NTPEP continued to expand with transition of the task forces to technical committees. NTPEP will begin performing product evaluations for Warm Mix Additives and Spray Applied Non-Structural Pipe Liners. Manufacturing audits will begin for Elastomeric Bridge Bearings and Guardrail/Guiderail. Additionally, the Erosion Control Products technical committee will be adding an audit portion to their current product evaluation program.

• NTPEP members and staff work closely with the AASHTO Subcommittee on Materials (SOM) to assist with review and revision to the AASHTO standards and specifications. This coordination allows seamless incorporation into the NTPEP work plans. The chairman and vice-chairmen of each SOM tech section are also invited to participate on all technical committee conference calls conducted throughout the year.

• Beginning in spring 2015, NTPEP is working to build a better relationship with several AASHTO subcommittees. Volunteers have come forth from the following AASHTO subcommittees to act as liaison between NTPEP and the associated subcommittee: Research Advisory Committee (RAC), Bridges and Structures (SCOBS), Materials (SOM), Traffic Engineering (SCOTE), and Maintenance (SCOM). The goal of the liaisons is to strengthen the connection between the two groups. NTPEP will ask the liaison to provide feedback from their respective committees by fostering an open dialogue between these committees and the NTPEP. Also, we are asking the liaisons to assess the value that NTPEP may provide for other committees within the AASHTO structure.

• The current voluntary contribution for NTPEP is $12,000. For FY12 through FY14, AASHTO has received contributions from an average of 45 states. Due to increases in the number of evaluations and audits being conducted, additional resources are necessary. The NTPEP Executive Committee is asking SCOH to increase the annual contribution to $17,000 to allow the NTPEP program to hire additional personnel to help administer current and new programs. In addition, the cost of the new AASHTO DataMine software is not currently covered under our current cost structure. This would also allow for AASHTO to cover all costs incurred for the next version of AASHTO DataMine.

Ongoing Activities supporting NTPEP expansion and promotion:

• NTPEP is positioned well to continue to grow. There is no comparable program collaboratively overseen by state agencies that provides the information and support provided through NTPEP. Strategic growth through targeted outreach to member departments and industry associations has realized substantial growth in the appeal and use of NTPEP. Additionally, AASHTO staff and leadership of NTPEP suggest the following actions for continued outreach:
- Attend subcommittee meetings and workshops that are not exclusively focused on the materials testing and evaluation of products. This would promote the participation of Subject Matter Experts from other areas within the Member Departments in the program and allow the program to serve a wider audience within AASHTO.
- Capitalize on the private partners who participate in NTPEP. This may include attending and presenting the value of the program at industry conferences and trade associations.
- Encourage members of the appropriate Subcommittees (focusing first on Materials and Traffic Engineering) to become participating members of NTPEP. This will provide continuity and input for program acceptance at all levels within the member department. Additional participants from states would be encouraged to attend the meeting, but significant participation through Technical Committee conference calls and working meetings will allow expanded DOT participation as well.

**Goals for Next 3 Years:**

- Within the next 3 years, NTPEP plans to expand our services to the member departments in the following areas:
  - Audit Programs:
    - Guardrail (AASHTO M180)/Guiderail (AASHTO M30)
    - Elastomeric Bridge Bearing Pads (AASHTO M251)
    - Erosion Control Products
    - Metal Pipe (AASHTO M36)
    - Reinforced Polyethylene Pipe (AASHTO MP20)
  - Product Evaluation Programs:
    - Warm Mix Additives
    - Timber Products
    - Portland Cement
    - Manhole Covers
    - Truncated Domes
- NTPEP will continue to provide updates and information sessions to all users regarding revisions to DataMine and the benefits that can be realized by the use of the online data repository.
- Restructure the NTPEP staff with additional resources for efficient and improved management of the program.
- Evaluate the use of the program by member departments. Determine needs and appropriate evaluations for expanding services to state members.
## National Transportation Product Evaluation Program

### Participation and Revenue | FY14 | FY13 | FY12
---|---|---|---
**Number of Participates** | 44 | 46 | 45

**Contributions**
- **Amount**
  - FY14: $540,000
  - FY13: $547,415
  - FY12: $345,000
- **% of Total Revenue**
  - FY14: 19.0%
  - FY13: 20.4%
  - FY12: 17.9%

**Testing Fees**
- **Amount**
  - FY14: $2,919,571
  - FY13: $2,138,870
  - FY12: $1,586,936

**Refund**
- **Amount**
  - FY14: $(15,207)
  - FY13: $-
  - FY12: $(600)

**Deferred Revenue**
- **Amount**
  - FY14: $(603,227)
  - FY13: $-
  - FY12: $-

### Revenue Total
- FY14: $2,841,137
- FY13: $2,686,285
- FY12: $1,931,336

### Expenses

### Travel
- **Amount**
  - FY14: $107,332
  - FY13: $108,025
  - FY12: $116,174
- **% of Total Expenses**
  - FY14: 3.9%
  - FY13: 4.2%
  - FY12: 6.1%

### Admin (Salary, Fringe & OH)
- **Amount**
  - FY14: $710,241
  - FY13: $627,488
  - FY12: $578,181
- **% of Total Expenses**
  - FY14: 25.9%
  - FY13: 24.3%
  - FY12: 30.6%

### Professional Services
- **Amount**
  - FY14: $1,915,282
  - FY13: $1,839,011
  - FY12: $1,185,276
- **% of Total Expenses**
  - FY14: 69.9%
  - FY13: 71.2%
  - FY12: 62.7%

### Meeting Expenses
- **Amount**
  - FY14: $184
  - FY13: $321
  - FY12: $1,059
- **% of Total Expenses**
  - FY14: 0.0%
  - FY13: 0.0%
  - FY12: 0.1%

### Other
- **Amount**
  - FY14: $8,739
  - FY13: $9,194
  - FY12: $11,034
- **% of Total Expenses**
  - FY14: 0.3%
  - FY13: 0.4%
  - FY12: 0.6%

### Expense Total
- FY14: $2,741,778
- FY13: $2,584,040
- FY12: $1,891,724

### Net
- FY14: $99,359
- FY13: $102,245
- FY12: $39,612
AASHTO INNOVATION INITIATIVE (A.I.I.)

This report will be made available at the SCOH meeting.
AASHTO Winter Maintenance Technical Service Program (WMTSP)
Snow and Ice Cooperative Program (SICOP) Pooled Fund
2015 Triennial Review

Background
The WMTSP/SICOP program was created in 1994 by AASHTO in response to recommendations from the International Winter Technology Scan of Japan and Europe. The purpose defined in AASHTO Administrative Resolution 3-94 remains as relevant today as it did then: “In order to experiment with snow and ice control technology and systems not now in use in this nation, to determine their suitability to the United States and help introduce the use of those with most promise, the AASHTO Board of Directors endorses the concept of establishing a voluntary AASHTO Snow and Ice Pooled Fund Cooperative Program, under which testing by AASHTO Member Departments volunteering to sponsor and conduct tests can be supported financially with public sector funds voluntarily contributed by AASHTO Member Departments, Federal agencies, toll authorities, counties and cities.” The program was directed to work towards establishing a sustainable, systems approach to snow and ice control in the United States—involving the vehicle, the driver, the equipment, the materials and practices, and the receiving environment. With an eye toward new operational technologies being used around the world coupled with the research outcomes here in the US the WMTSP is positioned to guide the development and implementation of improved snow and ice control equipment, materials and practices, and enhanced work force development techniques. The result has been that many states and local governments have made improvements in their equipment, retrained their workforce and incorporated strategies and tactics to create a sustainable winter maintenance program improving highway safety, mobility and reliability of the transportation network while reducing negative impacts to the environment.

Accomplishments
Performance management of winter maintenance
Map 21 has drawn attention to the need for performance management metrics for winter maintenance. The WMTSP has been involved in the discussion of several methods for quantifying the performance of both self-performed and contracted winter maintenance. This has become increasingly important as states strive to improve transparency and report performance to users. WMTSP serves as a clearinghouse to gather information regarding the various methods of measuring performance and sharing that information with other developing programs and member states. WMTSP is represented on the NCHRP project panel for Project 14-24: Performance-Based Winter Maintenance: Developing a Toolkit of Measures, Standards, and Monitoring Tools. WMTSP is also represented on Aurora project 2010-03 that is a pre-cursor to this one: Results-Based Winter Road Maintenance Standards

Strengthen workforce development
Initially developed in 2004, the RWIS/Anti-icing Computer Based Training (CBT) program provides the foundation for an expanded suite of training modules incorporated from the results of NCHRP projects and latest best practices. Currently there are a total of eight modules included in the CBT suite. The WMTSP has taken steps to ensure the CBT remains an effective tool for workforce development by transitioning from CD based delivery to one that is web-based and Shareable Content Object Reference Model (SCORM) compatible. This enables the CBT to operate from, and work with, standard SCORM Learning Management Systems (LMS) in place in many DOTs. Initiated in November 2010, this conversion has been completed and remains compatible with the variety of web browsers being utilized. A total of 30 states along with the Aurora and Clear Roads consortia contributed to this project. Coordination and support is ongoing as states implement the CBT for their winter maintenance workforce development.

The WMTSP is also represented on the project panel of the NCHRP Synthesis topic 46-17, Training and Certification of Maintenance Workers.
Promote national and international research and assist in technology transfer

Identification of the “Top 10” practices necessary for a world-class winter maintenance program

In 2010 winter maintenance research thrust areas were identified in the “Grand Challenges: A Research Plan for Winter Maintenance”. Building on the Grand Challenges report, the WMTSP undertook a project in 2013 to identify the top 10 practices necessary for a world-class winter maintenance program. Utilizing the Snow and Ice List Serve and the Permanent International Association of Road Congresses (PIARC) Winter Service Technical Committee membership, winter maintenance professionals from across the globe provided input into the process. Through a process of voting the list of over 200 was pared to the top 11. This process and results were documented and presented at the Highway Subcommittee on Maintenance (HSCOM) Highway Safety & Reliability Technical Working Group (HS&R TWG) meeting, at the 2015 TRB Annual Meeting and at several APWA conferences, and the basis for the 2015 National Winter Maintenance Peer Exchange.

Co-sponsor of the National Winter Maintenance Peer Exchanges

Bringing state DOT snow and ice experts together with winter maintenance professionals from across the US has been a key element for technology transfer in the WMTSP work plan. Held every other year, the last National Winter Maintenance Peer Exchange (NWMPE) was held in Vancouver, Washington in 2013. The Peer Exchange provides an opportunity for winter maintenance professionals to hear the latest advancements in equipment, chemistry, strategies, tactics, and sustainability from the researchers and states who have implemented their results. In addition, breakout sessions are held where participants with common interests can discuss and identify gaps in research and implementation that would further advance the state of the practice in winter maintenance. In 2013, like previous Peer Exchanges, the WMTSP took the lead in organizing, contracting for facilities and meeting logistics and preparing the final report and research needs statements (RNS). A total of 37 states were represented at the 2013 Peer Exchange.

International Technology Transfer

WMTSP provides a connection to the PIARC Winter Service Technical Committee, a mirror committee to the WMTSP. During the past four years a WMTSP member has served as the English Secretary to this technical committee providing opportunities to exploit synergies in the winter maintenance research agendas in the US and abroad and encourage cooperation and communication. The WMTSP represented US winter maintenance at 3 PIARC sponsored events: International Winter Road Congress in 2014, seminar on Winter Maintenance at High Altitudes and Extreme Zones and the workshop of Mobile Road Condition Measurements in 2013, and the Workshop on Mobile Road Surface Condition Measurements in Winter in 2015. Participating WMTSP members provided briefings on International work at winter maintenance consortia meetings as well as for the HSCOM HS&R TWG meetings.

Facilitate communication between winter maintenance practitioners

In 1996 the WMTSP created a subscriber-based list serve to facilitate communication between winter maintenance practitioners. This has proven to be an effective means to connect individuals from state and local government agencies, contractors, vendors, academia, and others with an interest in winter maintenance. This list serve remains an effective method to seek advice and answers to topical questions and to promote research results, meeting notices and webinars, and to convey other news and best practices to the winter maintenance community. Threads are archived for future reference. The WMTSP provides support and maintenance of the list serve, which currently serves approximately 900 members.

Support the Highway Subcommittee on Maintenance (HSCOM), Highway Safety & Reliability Technical Working Group (HS&R TWG) and other AASHTO subcommittees

The WMTSP works closely with the leadership of the HSCOM to provide support to the HS&R TWG throughout the year, including promotion of winter maintenance research needs and advancements.
The WMTSP assists in the planning of future events supported by HS&R TWG such as the annual meetings and other maintenance meetings with a connection to winter maintenance. During the last three years assistance was provided regarding issues with the intellectual property associated with Maintenance Decision Support Systems.

Provide assistance to individual member states
The WMTSP provides assistance directly to member states in the form of brief technical reports, e.g. active deicing technologies and route optimization; and identification of research reports and other reference material on specific winter maintenance topics. The WMTSP provides expert input to public relations projects and press releases to ensure accurate representation of winter maintenance practices.

Part 2: Goals/Objectives
Future Outlook Statement
Provide member states with a world-class Winter Maintenance Technical Service Program to support their winter maintenance needs. Advancements in technologies utilized by road users like intelligent vehicles, connected vehicles, and even autonomous vehicles are making an impact on the winter maintenance landscape as well. The winter maintenance community worldwide is utilizing these and other technology developments to improve winter maintenance performance and the changing demands of the motorists. Increasing importance of sustainability, resilience, and the changing climate is influencing the evolution of winter maintenance strategies and techniques. The WMTSP is positioned to ensure the necessary research is conducted and member states are aware of these opportunities and have information necessary for implementation.

As states become more oriented towards Transportation System Management and Operations (TSMO) there is a growing need to integrate winter maintenance operations into the broader operations environment. The WMTSP will play a critical role in bringing the TSMO and winter maintenance communities together to improve network operations during weather events.

Guiding and Focusing WMTSP
To accomplish the program objectives outlined in AASHTO AR-3-94, the WMTSP works closely and collaboratively with HSCOM HS&R TWG. The WMTSP Four Year Program (2015-2018) approved at the July 2014 WMTSP meeting and subsequently presented and accepted at the HSCOM HS&R TWG meeting in July, 2014 provides a roadmap to guide the WMTSP for the next three year period.

The WMTSP utilizes the National Winter Maintenance Peer exchanges, collaboration with the HS&R TWG, and participation on the PIARC Winter Service Technical Committee to identify emerging, critical an cross-cutting issues and technologies listed in the work plan. The WMTSP remains poised to contribute to the winter maintenance agenda of other consortia and organizations for the mutual benefit of our member states. Improving communications with member states remains a goal through the use of other mediums like targeted emails and social media.

Part 3: Financial Assessment
States making the $4,000 voluntary annual contribution to the SICOP Program (6455) were:
• FY 2012=AK, AL, AZ, CA, CO, CT, ID, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, NC, ND, NH, NV, NY, OR, PA, RI, SD, TN, TX, UT, WA, WV, WY
• FY 2013=AK, AZ, CA, CT, DE, GA, IA, ID, IL, KS, MD, MI, MN, MO, NC, ND, NE, NJ, NV, NY, OH, OK, OR, PA, RI, SD, TN, TX, UT, VT, WA, WI, WY
• FY 2014=AK, AL, AZ, CA, CO, CT, GA, IA, IL, KS, KY, MD, ME, MI, MN, MO, NC, ND, NH, NV, OH, OK, OR, PA, RI, SD, TN, TX, UT, VT, WI, WV, & WY
States making contributions to the AI/RWIS CBT Program (6456) were:
• FY 2012=Aurora Consortia.
Identification of needs, additional resources, and opportunities for funding

- Needs—although significant progress has been made in implementing pro-active snow and ice control practices, additional effort is needed on “system concept” set forth in 1994 in AR-3-94 and solutions for the emerging, cross cutting issues associated with “sustainable transportation” and resiliency in winter operations.

- Additional resources—increased and enhanced collaboration with both the TSMO community is needed. This might necessitate a modest increase in the $4,000 annual voluntary contribution; however, none is contemplated at this time.

- Opportunities for funding—WMTSP members actively participate on boards and committees of TRB, Aurora, and Clear Roads, PIARC and have representation from FHWA at each of the WMTSP meetings to avoid duplication of efforts and leverage funding for research and implementation of findings.

Benefit/Cost Analysis—The utilization of technology in winter maintenance operations is rapidly advancing from the introduction of Road Weather Information Systems (RWIS), Maintenance Decision Support Systems (MDSS), and mobile road condition data systems. Several studies have demonstrated favorable benefit-cost results for these technologies. Combining technological advances with proactive response and trained workforce utilizing the RWIS/Anti-icing CBT yields very effective and efficient winter maintenance programs. Below is a brief selection of the benefit-cost studies:

- The WMTSP participated in the Strategic Highway Research Program Reliability focus area; particularly project L-07, which created a Design Guide for Addressing Non-recurrent Congestion and an Analysis Tool for Design Treatments to Address Non-recurrent Congestion. Insuring weather related design treatments to help mitigate the effects of weather on traffic; the spreadsheet-based design tool provides agencies a tool for estimating the effectiveness and comparative benefit/cost of weather related design treatments.

- RWIS remains an important element of winter maintenance practices, particular when used to support Maintenance Decision Support Systems (MDSS). A recent study published in March 2014 by Chien, e.t.al. for the New York State DOT titled “Road Weather Information System (RWIS) to Support NYSDOT Operations and MDSS Applications” showed that investments in RWIS sites can yield benefit cost ratios of 10.8 to 15.52.

- A Benefit-Cost Analysis Toolkit for Road Weather Management Technologies completed in June 2013 for Clear Roads showed agency specific results of implementing RWIS in Iowa at 3.8 and RWIS along with MDSS in Indiana at 3.1.