

AASHTO Snow and Ice Pooled Fund Cooperative Program (SICOP) 2021 Triennial Review July 2021

Background

Each year approximately 6,000 deaths and 445,000 people are injured in weather-related crashes in the US. Providing safety and mobility during weather-related events consumes significant amount of DOT budgets and other resources. SICOP, established by AASHTO in 1994 as a pooled-funded effort, is focused on identifying promising weather-related operational techniques, technologies, and strategies, making sure they are appropriate for implementation, and to promote their implementation to assist States achieve their winter maintenance mission.

SICOP is strategically positioned within the winter maintenance, road weather, and other weather-related operations communities to provide a clearinghouse of knowledge on work being contemplated, conducted, and completed to leverage individual state needs and assist in the coordination efforts to advance weather-related maintenance strategies and technologies.

Throughout the life of SICOP 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. SICOP will continue to develop and provide resources beneficial to member states to assist them in the delivery of their winter maintenance mission.

Leadership

The SICOP Technical Service Program is aligned with AASHTO's Committee on Maintenance (CoM) and works closely with the Maintenance Operations Technical Working Group (MOTWG). AASHTO Administrative Resolution AR-3-94 established program guidance by creating the Winter Maintenance Policy Coordinating Committee (WMPCC), SICOP's steering committee. The WMPCC is designed to represent our member states and the winter maintenance and road weather communities. The inaugural committee was comprised of representatives from each AASHTO region, APWA, NACE, and FHWA; the original members of an international winter maintenance scan that determined the need for a comprehensive, coordinated, systems approach to advancements in winter maintenance in the United States. Over the years additional representatives have been added as voting or non-voting members to ensure a broad representation of the winter maintenance and road weather community including the Committee on Transportation System Operations (CTSO), TRB committees on Winter Maintenance and Road Weather, and the American Meteorological Society. Operating Guidelines for the WMPCC were adopted on February 1, 2016, as revised on February 19, 2020.

Accomplishments 2019-2021

The following is a partial list of SICOP's most significant accomplishments since the last triennial review during AASHTO's CoM Annual Meeting in 2018.

The 3-Year National Winter Maintenance Strategic Plan (NWMSP)

SICOP operates under the NWMSP which is adopted on a 3-year cycle to correspond with the Triennial Review <https://sicop.transportation.org/strategic-plan/>. The 2018-2020 NWMSP was developed from a set of topics identified by the winter maintenance community and ranked by SICOP member states as the most important issues to their winter maintenance programs. This process yielded 7 Strategic Initiatives that defined SICOP's focus during the past 3-years. The accomplishments

for the period 2018-2020 were consistent with the Strategic Initiatives outlined in the NWMSP and the underpinning mission objectives of SICOP.

Technology Transfer

- In September 2017 SICOP launched “SICOP Talks Winter Ops”, a podcast devoted to all things winter maintenance. These 30-minute episodes are discussions with experts on a wide variety of winter maintenance and road weather topics designed to expose listeners to the topic and provide resources for additional discovery. As of July 2021, SICOP has produced 48 episodes that have been downloaded over 6,600 times. <https://sicop.transportation.org>
- Working in collaboration with the CoM MOTWG, SICOP produced a series of webinars titled “Utilizing Technology to Achieve the Maintenance Mission”. A total of 5 webinars were produced during this period. Webinar attendance averaged 100 with a total of approximately 300 views of the recordings. <https://sicop.transportation.org>
- The WMPCC Chair represents SICOP on the US National Committee of the World Road Association as part of the Winter Service Technical Committee and is serving as the English Speaking Secretary. Through this appointment SICOP is positioned to observe and learn about international winter maintenance technologies and operational advancements as well as share accomplishments made in the US.
- The WMPCC participated in the planning of a joint TRBs quadrennial International Winter Maintenance and Surface Transportation Weather Conference, and National Winter Maintenance Peer Exchange planned for 2020 however these events were canceled due to the pandemic.

Education

In 2004 the initial modules of a Computer Based Training program on Anti-icing and Road Weather Information Systems (RWIS) were released in a 2-CD set. In 2009-10 additional modules were delivered incorporating the findings of NCHRP research on winter operations. During this last period these modules were incorporated into AASHTO’s TC3 platform and converted to the latest file format for utilization by the winter maintenance community. This relationship with TC3 will ensure these modules remain current and available.

Identify and Promote Winter Maintenance Technologies

- NCHRP Project 14-24: Performance-Based Winter Maintenance: Developing a Toolkit of Performance Measures, Standards, and Monitoring Tools was undertaken and completed. WMPCC member Dobbins has spearheaded a NCHRP implementation project to move this work into practice.
- A research needs statement was developed for a new Guide for Snow and Ice Operations that lead to NCHRP Project 06-18: Guide for Snow and Ice Operations.
- A research needs statement was developed to look at non-chemical methods for deicing that lead to NCHRP Project 06-19: Guidebook for Mechanical Methods for Snow and Ice Control Operations.
- SICOP collaborated with the Community of Practice on Road Weather Management to develop a research needs statement looking at real-time warnings and variable speed limits that lead to NCHRP Project 03-142: Evaluating the impacts of real-time warnings and variable speed limits on safety and travel time reliability during weather events.
- Being a clearinghouse for winter maintenance research and activities is an important element of SICOPs mission. WMPCC members participate and contribute to the work and research of

many other consortia e.g. Aurora and Clear Roads as well as TRB committees and other AASHTO committees with intersecting interests in winter maintenance.

- Winter maintenance in the news and other general interest topics are made available through our Facebook page @aashtoSICOP.
- Maintenance of the Snow and Ice List Serve as a vehicle for the winter maintenance community to ask questions and exchange information continues.

Collaboration with Others

- Support the CoM and the MOTWG through various activities including assisting in the production of the Maintenance Manager newsletter.
- Collaborate with the Committee on Transportation System Operations Community of Practice on Road Weather Management.

Goals/Objectives

Providing safe mobility during winter storm events through an effective winter maintenance program remains a critical mission for state DOTs throughout the US. SICOP continues to serve its member states with technical, operational, and informative resources.

Advancements in technology utilized by road users like Connected and Automated Vehicle technology are making an impact on the winter maintenance landscape as well. The winter maintenance community worldwide is utilizing these and other technological developments to improve winter maintenance performance to meet the changing demands of the motorist. Increasing importance of sustainability, resilience, and the changing climate is influencing the evolution of winter maintenance strategies and techniques. SICOP is positioned to ensure the necessary research is conducted and member states are aware of these opportunities and have information necessary for implementation.

Drawing input from member states and the winter maintenance community through a series of virtual regional meetings, SICOP developed the 2021-2023 NWMSP. Building on the activities and progress from the last Plan, 6 Strategic Initiatives and 2 Focused Projects were identified to assist agencies in achieving their winter maintenance mission. In April 2021 the WMPCC adopted the 2021-2023 NWMSP to address the needs of member states and accomplish the program objectives outlined in AASHTO AR-3-94.

Working closely and collaboratively with the CoM and the MO TWG SICOP will promote technologies and successful research findings that exemplify the goals and objectives laid out for SICOP. Relying on the expertise of the WMPCC and the network of national and international subject matter experts we will work to identify emerging, critical, and cross-cutting issues and technologies to execute the Plan and support the winter maintenance mission of DOT's.

During the next 3-year period SICOP will support the exchange of information through National Winter Maintenance Peer exchanges, symposiums, conferences, and in collaboration with the many other consortia, pooled funded projects, committees, and organizations engaged in winter service. We will develop, coordinate, and advocate for research important to our member states and the winter maintenance and road weather communities to improve safety and mobility during road weather events.

SICOP remains poised to collaborate with other consortia and organizations for the mutual benefit of member states. Maintaining communications with member states remains a high priority goal through the use of other mediums like webinars, podcasts, targeted emails and social media.

Financial Assessment

Identification of needs, additional resources, and funding

The need for SICOP remains as relevant today as when the program was conceived. While significant progress has been made in implementing proactive and systems-oriented snow and ice control practices many new opportunities still exist to provide knowledge-based resources to support and advance weather related operations, strategies, and techniques no matter the geographic location.

Delivering a successful response to a weather-related event against a backdrop of workforce and environmental concerns has significant challenges to maintenance organizations. This was never more evident than through the outreach efforts utilized in establishing the strategic initiatives and focused projects of the recently adopted NWMSP. These strategic initiatives are cross-cutting and lend themselves to the kind of collaborative effort and coordination across multiple entities that SICOP and our network of member states can provide.

SICOP remains vigilant in the search for additional opportunities to identify new weather-related operational strategies, tools, and techniques. In many cases these may not be initially intended specifically for weather-related operations but could be adapted to our benefit. Promoting these new concepts and projects through knowledge sharing remains an important element of the SICOP mission.

SICOP can execute the work outlined the NWMSP and our underlying mission with no increase in the \$4,000 voluntary contribution.

Program Benefits

SICOP contributes to the advancement of winter maintenance and weather-related operations by promoting and providing information on proven strategies and technologies.

A central theme for SICOP is the transfer of knowledge to help agencies achieve their weather-related operations mission. This takes the form of webinars focused on winter maintenance and other maintenance operations topics, “SICOP Talks Winter Ops” the podcast devoted to all things winter maintenance, peer exchanges in collaboration with other consortia, and conferences, and the virtual training programs developed by SICOP that are now available through the AASHTO TC3 program for workforce development.

SICOP’s steering committee is positioned to advocate for strategic initiatives and research into promising strategies and technologies through specific groups best suited to accomplish the activity. In addition to each AASHTO region, we are connected to the TRB weather related committees, American Meteorological Society, Community of Practice on Road Weather Management, local public works agencies through APWA and NACE, and FHWA. These connections allow us to help coordinate, collaborate, promote, and share information between the groups and individual states to help advance their winter maintenance and weather-related operations.

SICOP fills a void that occurs between many organizations that are focused on specific winter maintenance and road weather topics either directly or tangentially. Providing a forum where collective knowledge can be shared between organizations help ensure that issues important to SICOPs member states are communicated across the board and cross-cutting activities that might not directly align with a specific organization are not overlooked. SICOP ensures that information from the individual organizations is made aware to everyone. The continued support from SICOP member states makes these activities a reality.

Financial Statement Summary

SICOP 6455	FY18	FY19	FY20
Revenue	\$144,000	\$132,000	\$132,000
Expense			
Salaries	\$1,007	\$1,959	\$2,308
Benefits	\$516	\$1,066	\$1,340
Travel	\$31,097	\$25,388	\$22,592
Professional Services	\$76,756	\$71,548	\$70,993
TSP Marketing Services	\$0	\$1,578	\$2,276
Supplies & Services	\$84	\$329	\$251
Overhead	\$1,297	\$2,132	\$3,051
Total Expense	\$110,757	\$104,000	\$102,811

AI/RWIS CBTs 6456	FY18	FY19	FY20
Revenue	\$0	\$0	\$0
Expense			
Salaries	\$0	\$0	\$0
Benefits	\$0	\$0	\$0
Professional Services	\$1,395	\$0	\$0
Total Expense	\$1,395	\$0	\$0

States making the \$4,000 voluntary annual contribution to the SICOP Program (6455) were:

- FY 2018 (35 States): AK, AL, CA, CO, CT, GA, IA, ID, IL, IN, KY, LA, MD, MI, MN, MO, MS, NC, ND, NH, NM, NV, NY, OH, OK, OR, PA, RI, SD, TN, TX, WA, WI, WV, WY
- FY 2019 (31 States): AK, AL, CO, CT, GA, IA, ID, IN, KY, MA, MD, ME, MI, MN, MO, MS, NC, ND, NH, NV, NY, OK, OR, PA, RI, TN, UT, WA, WI, WV, WY
- FY 2020 (32 States): AK, AL, CO, CT, GA, IA, ID, IL, IN, LA, MA, MD, MI, MN, MO, MS, MT, NC, ND, NH, NM, NY, OR, PA, SD, TN, UT, VA, WA, WI, WV, WY