

# Salt Management Strategy (SaMS)

## 3<sup>rd</sup> Traditional BMPs Workgroup Meeting

August 8, 2019

The third meeting of the Traditional Best Management Practices (BMPs) Workgroup for the Salt Management Strategy (SaMS) was held from 9:30 am – 12:30 pm on August 8, 2019 at Fairfax Water's Griffith Water Treatment Plant (9600 Ox Road, Lorton, Virginia).

### **Attendance**

Seventeen (17) individuals, including two Virginia Department of Environmental Quality (DEQ) staff members and one staff member from the Interstate Commission on the Potomac River Basin (ICPRB; DEQ's contractual support), participated in the meeting. Two participants joined the meeting via teleconference.

Christina Alexander, City of Fairfax  
Brice Boyd, Fairfax County Public Schools  
John Burke, Fairfax County  
Scott Crafton, VDOT  
Steven Edgemon, Fairfax Water<sup>i</sup>  
Dave Evans, DEQ\*  
Jeremy Hassan, Arlington County  
Will Isenberg, DEQ\*  
Raven Jarvis, VDH  
Steve Kirkpatrick, Metropolitan Washington  
Airport Authority<sup>†</sup>

Neely Law, Center for Watershed Protection  
Jennell Lowry, Metropolitan Washington  
Airport Authority<sup>†</sup>  
Jonathan Murray, Fairfax County  
Andrew Reinoso, Fairfax County Public  
Schools  
Niffy Saji, Fairfax Water<sup>i</sup>  
Erfaneh Sharifi, ICPRB\*  
Greg Waters, Snow and Ice Mgmt Co.

\*Facilitator

<sup>†</sup>Participated via teleconference

<sup>i</sup>Non-member of the Traditional BMPs Workgroup

### **Meeting Highlights**

At this meeting, the workgroup members followed-up on action items from the second Traditional BMPs Workgroup meeting, reviewed notes from the third SAC meeting and other workgroups and discussed the final workgroup recommendations. The main take-aways from this meeting are below:

- The workgroup was satisfied with the status of the 3 workgroup recommendations and provided some minor suggested edits. The workgroup agreed on a process for finalizing the recommendations via a review process that does not include a fourth workgroup meeting.
- The workgroup discussed how to frame the different recommendations in the final SaMS document, agreeing that the purpose of each recommendation should be highlighted and easy to comprehend. Additionally, the workgroup agreed that the application rate survey administered to public winter maintenance operations should be used to provide context to the recommendations.

### *Notes for Other Workgroups / Potential Areas of Overlap:*

- The effectiveness part of the BMP Implementation and Winter Maintenance Planning Process document should be reviewed by the Salt Tracking and Reporting Workgroup.
- The Application Rate Evaluation Process document contains processes that may also be recommended in the Salt Tracking & Reporting workgroup. After edits proposed by the Traditional BMPs workgroup

members are made, the Salt Tracking & Reporting workgroup should review the document for consistency with their recommendations.

### **Follow-up Action Items**

The following action items were identified during this meeting:

1. BMP Implementation and Winter Maintenance Planning Process: DEQ will revise the [Traditional BMP Implementation in Phases \(Iterative Process\)](#) document. This revised document will be shared with workgroup members for final review and comment.
2. Application Rate Evaluation Process: DEQ will revise the [Voluntary Process for Evaluating Deicer Application Rate Achievement](#) document. This revised document will be shared with workgroup members for review and comment. The revised document will then be shared with the Salt Tracking & Reporting Workgroup, after which the document will be shared with the Traditional Best Management Practices Workgroup for final review and comment.
3. BMP Pros and Cons: DEQ will revise the [BMP pros and cons](#) document to explain the document's use, highlight certain BMPs as the fundamental 5 and other 6, and reorganize it into a logical/chronological order. Greg Waters will provide additional information on plowing BMPs. This revised document will be shared with workgroup members for final review and comment.
4. Application Rates Survey for Public Operations Follow-up: John Burke will follow up on the respondents to seek contact information and whether they are willing to have this information available online.
5. American Public Works Association Conferences Presentations: DEQ agreed to review these presentations and see how they may be referenced in the final SaMS document.
6. Clear Roads Qualified Products List: DEQ agreed to share this resource with the workgroup.

## **Meeting Summary**

### **Introductions**

The meeting opened with brief introductory remarks from DEQ and a round of introductions by participants. The main objective for this meeting was to follow up on action items from the last meeting, identify anything about them that needs modifying, and to consider options for discussing the workgroup recommendations in the strategy.

DEQ also reviewed the meeting highlights from the last workgroup meeting. The summary for the second Traditional BMPs Workgroup meeting is available [online](#). Highlights of the second meeting included:

- For the most part, public transportation organizations use similar application rates according to the research of workgroup members. There is more variability in the application rates of private sector winter maintenance professionals (primarily for parking lots and sidewalks).
- The universe of operational BMPs is generally consistent in the literature. However, when considering BMPs for a specific operation, special consideration needs to be given to whether it is a public or private operation and the unique characteristics of each operation.

- The workgroup agreed that recommendations will focus on outlining BMP pros and cons in addition to developing processes for improving application rates and for integrating BMPs into operations. The workgroup decided to make these process recommendations rather than recommending specific application rates or BMPs.

DEQ reviewed the [Notes from Other Workgroups & the SAC](#). The summary for the third SAC meeting is available [online](#).

The Education & Outreach workgroup recommended:

- To consider running pilot projects concurrently.
- To coordinate funding needs and possible funding opportunities with other workgroups.

The Non-Traditional BMPs workgroup recommended:

- Including recommendations for temporary salt pile storage by private applicators.
- Include recommended application rates for private applicators.

The SAC members recommended consideration of the following items in the final recommendations:

- Include cost savings from reducing material use in the BMP pros and cons.
- Document lessons learned from successes and failures in the BMP pros and cons document after implementing the salt use tracking recommendations.
- Consider the source of the information when framing the BMP pros and cons.
- Document how application rates relate to levels of service.

After sharing the notes from other workgroups and the SAC, DEQ noted that some of the recommendations have already been incorporated into the action items from the last meeting, and the remaining items will be folded into the discussion later in the meeting.

### **Action Item Discussion**

DEQ shared the [ideas for Finalizing WQMR Workgroup Products, Recommendations, & Additional Considerations before the meeting, and used it to guide discussions throughout the meeting](#).

*Action Item: BMP Implementation and Winter Maintenance Planning Process (Camila Goncalves Dias)*

DEQ summarized the [BMP Implementation and Winter Maintenance Planning Process](#) document, and opened the floor for discussion on any necessary modifications.

Discussion:

- A workgroup member emphasized the need for communication among decision-makers.
- One member stated that during winter events constituents call their representatives/agencies and ask for more salt, which may not be in line with a winter maintenance plan. Workgroup members agreed that the goal is to enhance current practices and improve communication. As a result, workgroup members agreed that language should be added to the top of this process document to emphasize the importance

of communication to decision-makers. In particular, this language should highlight the need to discuss the winter maintenance plan and its relationship to levels of service with decision-makers.

- Additionally, workgroup members agreed that the goals of the maintenance planning process should be clarified at top of the document.
- Workgroup members discussed mechanisms to plan short-term and long-term BMPs. DEQ pointed the workgroup's attention to the document's use of the 5 Fundamental BMPs (Calibration, Measurement, Accountability, Level of Service, and Training) and the other 6 BMPs (Variable Application Rates, Forecasts, Cold Temperature Usage, Liquid Usage, Pre-wetting, and Anti-Icing) that were outlined in the SaMS SAC Training by Wilf Nixon from the Salt Institute. DEQ reminded the workgroup of a decision from the last meeting to not identify priority BMPs since each operation is unique. With that decision in mind, DEQ asked if this reference should be removed, or the decision about priority BMPs be reconsidered.
- A workgroup member asked about the pre-wetting and anti-icing, and whether these practices are becoming common BMPs. A workgroup member referenced the survey results, stating that pre-wetting is an emerging technique and that anti-icing (brine specifically) is now a standard practice.
- Other workgroup members shared their experience using pre-wetting, acknowledging that it may not be cost-effective for operations that manage property (e.g., sidewalks, parking lots, etc.), and that this is particularly true in the private sector.
- Acknowledging that the break out of the 5 fundamental and other 6 BMPs makes sense for the region, the workgroup agreed to use these BMPs as a guide to inform short-term (e.g., 5 fundamental) versus long-term (e.g., other 6) BMPs. The workgroup agreed that the SaMS document should make sure to acknowledge that these are not priority BMPs, but serve as a guide to identifying short-term and long-term BMPs.
- The workgroup then discussed the note in the document about application rate goals, and agreed that the objective is not to set a specific application rate goal. Instead the document can point to the Application Rate Evaluation Process drafted by this workgroup and include a note that this winter maintenance planning process is intended to meet the shared goal of reducing excess salt use.
- A workgroup member mentioned that it is not easy for localities to publish application rates as they relate to levels of service because of the numerous factors that change throughout a storm.

Lastly, the workgroup agreed that the effectiveness section of the document could be revised for consistency between sections. This section has applicability in the Salt Tracking & Reporting workgroup, and the workgroup agreed that these recommendations should line up with those of the Salt Tracking & Reporting Workgroup. DEQ will modify the document with the changes outlined above and will email it along with a note on what has changed for final review and approval by the workgroup.

*Action Item: Application Rate Evaluation Process (DEQ)*

DEQ summarized the [Voluntary Process for Evaluating Deicer Application Rate Achievement process and reviewed its purpose](#). DEQ opened the discussion by returning to the notes from the Non-Traditional BMPs Workgroup and the SAC, which recommended including application rates for private applicators, and for tying application rates to Levels of Service.

Discussion:

- Workgroup members discussed the association between levels of service and application rates, and highlighted the numerous changing factors that affect achieving levels of service during a winter weather event. As a result the group agreed that it was best to maintain the example application rates included as appendices in the process document since these are based on experience.

- Discussing the practicality of the approach, workgroup members agreed that the eyeballing deicer loads is not precise, and that many factors such as re-weighting loads after/during a storm (especially when the load is in a contractor's equipment) are challenging to accomplish. Therefore, the workgroup agreed that language should be added that recommends "random spot checks" at a proportion of the operation that is feasible.
- A workgroup member suggested explaining the process up-front in the narrative. While this is written out in the beginning of the document, the workgroup agreed that the process needs to be summarized clearly and early so that users can understand what the document covers. Additionally, the workgroup agreed that each section's purpose should be clearly stated at the top of each section.
- A workgroup member stated that the volunteer process may become a requirement for permitted entities over time and that the focus of the application rate evaluation process should be on the voluntary nature of the process. Therefore, the workgroup agreed that this process should be addressed in the SaMS document by discussing the reason for developing this process, the purpose of this process, and the challenges of conducting this process. Additionally, when discussing this process in the document, it must explicitly state that this is a voluntary process.
- The workgroup suggested ensuring consistency and minimizing redundancy with other workgroups. In particular, many of the processes described in this document (i.e., winter severity index and measuring salt use) need to be reviewed by the Salt Tracking & Reporting workgroup.
- DEQ mentioned that each workgroup is developing products, but the final SaMS document may not be organized by workgroup. This process document has applicability for both Salt Tracking & Reporting and Traditional BMPs workgroups.

DEQ will refine the document with the agreed upon revisions, and share it for review. After the Salt Tracking & Reporting Workgroup reviews the process, DEQ will share the updated version with the workgroup members for final review and approval by the workgroup.

*Action Item: BMP Pros and Cons (DEQ)*

DEQ summarized the [BMP Pros & Cons](#) document. Workgroup members discussed the ways to improve the document for the final recommendations.

Discussion:

- A workgroup member suggested adding page numbers to the final document.
- Returning to the notes from the SAC and the Non-Traditional BMPs workgroup, the workgroup observed that cost savings from material reductions and the sources of material reduction data have already been incorporated into the BMP pros and cons, which occurred after the SAC meeting in response to those comments. Additionally, the workgroup agreed to add recommendations from Fairfax County for temporary salt pile storage by private applicators. This involves using a windrowed pile as opposed to a conical pile since rectangular tarps cover rectangles (windrows) better than circles.
- The workgroup members then identified the need for more BMPs on plowing practices for property management operations (e.g., equipment, snow placement, timing, etc.). Greg Waters from the Snow and Ice Management Company agreed to provide these practices, and asked the local governments to provide information on their plowing practices to ensure consistency.
- In another point of discussion, the workgroup agreed that the document should define the property management and transportation categories at the beginning of the document.
- One workgroup member asked if any of these practices apply to homeowners, and DEQ stated that homeowner BMPs are being developed by the Non-Traditional BMPs workgroup since they need to be approached differently (i.e., simplified and apply to smaller areas).

- Workgroup members then discussed the organization of the document and suggested a few changes. They agreed that generally, the document should be organized chronologically (e.g., calibration procedures before calibration, winter maintenance planning moved to the beginning of the document, etc.). A workgroup member suggested the document highlight the fundamental five and other six BMPs discussed earlier. Workgroup members agreed that these practices should be highlighted, but the preference for a chronological order should be maintained.
- Workgroup members agreed that Winter Maintenance Planning is important and provides simple, cost neutral ways to reduce salt loads to waterways (e.g., through planning snow placement areas). It was agreed that when addressing these recommendations in the SaMS document, language should be added that highlights how simple BMPs that result in a reduction of wasted salt can be added to Standard Operating Procedures and guidance without increasing operational costs.
- Finally, it was agreed that DEQ will add an introduction to the BMP Pros and Cons document that explains how to use the document.

DEQ will revise the [BMP Pros & Cons](#) document with the revisions outlined above and will share it for final review and approval by the workgroup.

*Action Item: Application Rates Survey for Public Operations (John Burke & Camila Goncalves Dias)*

John Burke presented the new results of the Application Rates Survey for Public Operations, which focused on equipment, calibration, and the use of brine as a deicer. Many of the responses came from Pacific Northwest transportation agencies. Examples of onboard electronic systems that can link to Automatic Vehicle Location systems and temperature sensors used by these agencies were presented. Generally, respondents indicated that they calibrate equipment at the beginning of the season, with some saying they recalibrate during the season after any of the hydraulics have been worked on. Lastly, the use of brine as a deicer did not seem widespread, although some agencies that responded are exploring its use. DEQ will share the presentation and spreadsheet of responses with the workgroup members. John Burke will ask responders if they are OK to publicly share their responses.

Discussion:

- Workgroup members agreed that this information will be valuable in providing context with data when discussing the other recommendations from this workgroup in the SaMS document.
- A workgroup member suggested reviewing publicly available presentations that document local government efforts to improve winter maintenance operations. In particular, it was recommended that the presentations from conferences of the American Public Works Association be reviewed and shared as applicable.
- The workgroup agreed that Clear Roads and SIMA are other great sources of information.
- A workgroup member asked about the environmental impact of alternative deicers. This survey did not include the environmental impacts of the deicers, but DEQ mentioned that the Non-Traditional BMPs workgroup has assembled some of this information. Additionally, DEQ noted that Clear Roads is now overseeing the Qualified Products List, which includes a list of deicers, their providers, and some technical aspects like corrosion rates. DEQ agreed to share this resource with the workgroup.

**Additional Considerations**

After the discussion of the workgroup action items, workgroup members contributed additional thoughts on the workgroup's recommendations around training and funding:

- Because the BMP pros and cons address training and because other workgroups are addressing coordinated training efforts, the workgroup agreed to not add any more recommendations about training. The workgroup agreed this decision was in line with the preference to not recommend any priority BMPs.
- It was decided at the first Traditional BMPs Workgroup meeting that the recommendations should be finalized before considering recommendations around funding. The workgroup agreed that funding is addressed by the BMP pros and cons, but could be summarized in a table in the SaMS document. As a result, the workgroup agreed that, if possible, a table that organizes the BMPs by cost should be organized by high, medium, and low cost BMPs. Additionally, where possible, opportunities to collaborate on BMPs should be noted.

### **Meeting Wrap-up and Next Steps**

DEQ proposed a process for finalizing the action items into the workgroup recommendations. The process involved revising the action items based on the discussion from this meeting and sharing them with the workgroup for final review via email. The revised action items would be considered this workgroup's final recommendations if all comments received were positive (acknowledging that no comments received will be considered support for the recommendation(s)). However, if comments expressing significant concern (i.e., cannot live with the recommendation as is) are received, then a conference call will be scheduled with the workgroup to resolve the concerns. DEQ highlighted the fact that this implies there will not be another in-person meeting of this workgroup.

After reviewing this process and ensuring that the workgroup members understood the proposal, DEQ conducted polling with 4 options: 1) In support of the proposal, 2) Can live with the proposal, 3) Cannot live with the proposal, and 4) Not ready to make a decision. While 2 members from Fairfax County Public Schools had to leave early for an emergency, the remaining workgroup members all voted "In support of the proposal."

DEQ sent out a follow-up survey on August 8, 2019, to obtain additional feedback from workgroup members (see below).

Handouts from the meeting are available on the SaMS Meeting Materials [website](#).

All information, questions, additional resources, etc. should be emailed to Will Isenberg ([william.isenberg@deq.virginia.gov](mailto:william.isenberg@deq.virginia.gov)) and Dave Evans ([David.Evans@deq.virginia.gov](mailto:David.Evans@deq.virginia.gov)) to reduce email traffic among workgroup members.

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Meeting notes were prepared and submitted by the Interstate Commission on the Potomac River Basin.

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### **Additional Feedback Contributed to the Follow Up Survey:**

A survey was shared with workgroup members following the meeting to capture any additional thoughts members may have had following the meeting. Feedback is arranged below based on the sections of the agenda. Only sections where additional thoughts were provided are included:

#### **Finalizing Workgroup Recommendations - Last Meeting Action Item #3: BMP Pros and Cons**

*"Under calibration, we should look at adding a recommendation, if possible recalibrations after each event and after cleaning of spreaders"*