

December 31, 2019

TO: Fred Suffian, EPA Region 3  
Matt Konfirst, EPA Region 3

FROM: Gregorio Sandi  
Integrated Water Planning Program  
Water and Science Administration  
Maryland Department of the Environment (MDE)

SUBJ: Request for Approval  
2020 Addendum to Maryland's Nonpoint Source (NPS) Program Plan

On January 23, 2015, the United States Environmental Protection Agency (EPA) approved Maryland's NPS Management Plan for the period 2015-2019. An update to that plan was approved on February 16, 2018. Instead of a full revision to Maryland's NPS Management Plan, we agreed with EPA Region 3 to provide an addendum to extend the current plan for one year to include some revisions to our chlorides program and to add new milestones for 2020.

We have enclosed the addendum for calendar year 2020, which includes anticipated priorities and milestones for the upcoming year (Attachment A), and a schedule for a full Plan revision during 2020 (Attachment B), for your review and approval. The addendum is consistent with Maryland's Chesapeake Bay restoration and TMDL/alternative development priorities. More detail on the NPS component of MDE's plans to address chloride impairment is provided in Attachment C.

We look forward to your approval. If you have any questions, please contact Greg Sandi at [gregorio.sandi@maryland.gov](mailto:gregorio.sandi@maryland.gov) or 410-537-3742.

cc: Dinorah Dalmasy, Greg Busch, Kathy Stecker, Jeff White

Attachment A  
Maryland 2020 NPS Priorities and Milestones

303(d) Listings to be Addressed in 2020

Listed Waterbody	Impairing Substance
Baltimore Harbor	Sediment
Aberdeen Proving Ground	Toxics
Gwynns Falls	Temperature
Impoundment, Centennial Lake	Nutrients/Sediment
Impoundment, Lake Linganore	Nutrients/Sediment
Jones Falls	Temperature
Middle Harbor	Zinc
Potomac River Frederick County	PCBs
Potomac River Montgomery County	PCBs
Anacostia River	Toxics
Anacostia River (non-tidal)	Heptachlor Epoxide
Baltimore Harbor	PCBs
Bear Creek	Zinc
Catoctin Creek	Temperature
Curtis Bay/Curtis Creek	Zinc
Gwynns Falls	Chloride
Impoundment, Clopper Lake	Nutrients/Sediment
Impoundment, Tony Tank Lake	Nutrients/Sediment
Lower Susquehanna River	PCBs
Middle River	PCBs
Northwest Branch, Inner Harbor	Lead/Zinc
Port Tobacco River	Bacteria
POTMH – Lower Potomac River Mesohaline [Neale Sound]	Bacteria
Susquehanna River/Conowingo Dam	PCBs

Attachment A  
Maryland 2020 NPS Priorities and Milestones

Modified Chesapeake Bay Watershed Implementation Plan Milestones

Sector	Milestones for 2020
<b>Agriculture</b>	Conservation Technical Assistance   1,000,000 acres plans & design
	Cover Crops   430,000 acres/year
	Manure Transport   100,000 tons/year
<b>Conservation Practices</b>	Land Conservation; Local and State-level land conservation and land use programs and policies that prevent nutrient pollution
<b>Natural Filters on Public Lands</b>	Upland Tree Planting and Streamside Forest Buffers   230 acres
	Wetland Restoration   35 acres
	Stream Restoration   1.25 miles
	Shoreline Management (Living Shoreline Technique)   0.6 miles
	Oyster Aquaculture   70,000 bushels
	Oyster Reef Restoration   173 acres
<b>Septic</b>	Best Available Technology(BAT) Upgrades   288 systems
	Connection to Wastewater Treatment Plants (WWTP)   320 connections
<b>Stormwater</b>	Create training program for reduced road salt application Develop regulations for salt applicator certification Create training tracking tools for programs
	Complete current Phase 1 Municipal Separate Storm Sewer (MS4) permits restoration requirement   20,000 impervious acres through implementation or Water Quality Trading
	Miscellaneous implementation on non-MS4 counties (e.g. trading, trust fund)   80 impervious acres

Attachment B  
Maryland Schedule for 2021-2025 Update to NPS Program Plan

**Schedule for 2021-2025 update to MD's NPS Management Plan**

1. January 2020 - MDE outreach to other agencies
2. Feb.-Mar. 2020 - All State agency program review and input
3. April 2020 - Develop first draft
4. May 2020 - EPA conducts informal review of first draft
5. June 2020 - Revise draft based on EPA feedback
6. June 2020 - Update stakeholders on any significant plan changes
7. July-Aug. 2020 - State agencies and other significant partners review
8. September 2020 - Revise plan based on feedback
9. October 2020 - Internal review and approval
10. November 2020 - Public comment period
11. By December 31, 2020 - Submit final NPS Program plan update

Attachment C  
Maryland NPS Plan to Address Chloride Impairments

## **NPS Plan Update: Chlorides**

### **Introduction**

While salt is proven to be an effective deicer and helps commuters travel in poor weather conditions, research has shown it's a threat to both the environment and human health. It only takes one teaspoon of salt to pollute five gallons of water and once it enters surface, or groundwater, there is no traditional, structural Best Management Practice (BMP) to remove it. Maryland has identified 28 watersheds within the State as impaired by chlorides. The Maryland Department of the Environment's (MDE) strategy to address these impairments include creating a suite of training programs to combat this complicated pollutant, tracking the effectiveness of the training, and to incentivize the use of personnel trained in the effective application of salt during winter storm events.

### **Background**

Since 2018, Maryland has redoubled its effort to address chloride impairments as a high priority in the State. Biological stressor analysis has identified chloride as the probable cause of biological impairment in numerous watersheds throughout the State. Currently, twenty-eight watersheds are listed for chloride impairment (Integrated Report Category 5).

The largest contributor to chloride impairment in Maryland is the addition of deicing salt in the winter time on roads, parking lots, and sidewalks. The road salt is used by government agencies and private entities alike. Once the snow or ice melts, the salt flows with it into our streams, drinking water reservoirs, and into the groundwater. This has severe damaging impacts on human health, fish and aquatic bugs, plants, soil, pets, wildlife, and infrastructure.

Waters in Maryland that are listed for chloride impairment have shown concentrations that spike above both the acute and chronic EPA water quality standards for chlorides. Traditional stormwater management practices are ineffective in preventing instream chloride spikes. Reducing deicing road salt during application appears to be the only cost-effective solution.

### **Current Efforts**

Maryland State Highway Administration (SHA) developed a Statewide Salt Management Plan, which came into effect in 2011 and was updated in 2019. The plan includes a goal to reduce the environmental impacts associated with road salt storage, application, and disposal on Maryland's water and land resources, while maintaining public safety. This plan has helped reduce salt through increased training, tracking and recording usage, and implementing new techniques such as the use of brines. Since establishing this plan, SHA has seen approximately

50% reduction of road salt application, proving that this program can show success when executed properly.

MDE's next generation Phase I stormwater permits are likely to include new language requiring jurisdictions to develop a salt management plan (SMP). This plan must include a schedule for equipment replacements, improved tracking and reporting, and provide local training and outreach. However feedback from MDE's outreach efforts have indicated that in addition to permit plan requirements, a statewide effort led by MDE would be best to provide consistency among the various jurisdictions. With that in mind, we are proposing the creation a unified salt management training program to provide equal training to all counties.

## Plan to meet Water Quality Standards

MDE has a comprehensive plan to address chloride impairments. Strategies in addition to proposed reductions through MS4 permits are described below

### Certification and Incentivization

MDE is proposing the creation of a training and certification program for winter salt applicators as well as proposing new measures to provide a degree of protection to property owners, who employ certified applicators, from slips, trips, and falls. Through a contractor, MDE seeks to target both governmental and non-governmental salt applicators. The training will teach applicators best practices to help improve effectiveness, improve efficiency, and reduce their salt use all while maintaining public safety.

By improving road salt application tracking and reporting, MDE can monitor metrics for overall performance-based success and water quality monitoring. Since no traditional structural BMPs are effective at removing chlorides from the water, starting the training as soon as possible for winter maintenance employees is essential. If an applicator attends the trainings and is able to pass a test, then they will receive a "certified applicator" certificate. Organizations in Minnesota that participated and used certified applicators were able to reduce their salt use from 30-70% while not compromising public safety.

This approach not only reduces environmental impacts, but reduces cost for snow maintenance. Reduced applications can be incentivized economically through savings labor costs and salt purchased as well as reduced damage to soils, roadside plantings, infrastructure and vehicles. Furthermore if the proposed measures to protect property owners are adopted, it will provide further incentive to use certified applicators.

### Alternative Statewide Plan

MDE plans to develop a Statewide Chloride Management Plan to address chlorides as an alternative to creating 28 individual TMDLs as the solution, reducing salt application, is the

same in each watershed. Since traditional BMPs don't reduce chlorides, other restoration actions such as reduced application through training will be an important management strategy. The plan development will include working diverse areas of the state to prevent impairments by implementing salt application reduction strategies simultaneously across Maryland. For this pollutant, the metrics for success are more dependent on source reduction, rather than the endpoints measured in a typical TMDL.

MDE seeks to implement a Statewide Chloride Management Plan rather than a TMDL to focus on a performance-based approach for reducing chlorides in existing impaired water bodies, and to prevent further impairments from salt application. The plan will initially focus on means to address loads from private applicators operating in the existing impaired water bodies, and to protect drinking water sources. Through adaptive management and program expansion, the plan will address additional areas of the State.

This decision is based on providing an incentivized approach to reducing salt use by creating a partnership between government and private sectors, rather than a punitive approach which faces greater resistance. It is also driven by the idea of continuing to meet the public's winter travel expectations, while still reducing over-application at the source. Through this program, MDE plans to provide more monitoring to demonstrate progress towards meeting water quality standards for aquatic life.

## Adaptive Management:

MDE plans to work with the University of Maryland College Park (UMCP) on a study to monitor the impacts of chlorides on stormwater and nutrients leaching through the soil. This data along with information on SHA's application rates and methods will allow for the further study of the relationship between salt application rates and water conductivity levels, as well as the performance of stormwater management BMPs. These studies will be useful in guiding this program in the future, providing the foundation to determine long-term trends and the ability to adaptively manage chloride management strategies.

## Rough timeline

- 2020:
  - Hire contractor and begin outreach to training programs
    - commercial applicator
    - property manager
    - road crews
  - Develop regulations and get those into Code of Maryland Regulations
  - Begin program outreach through UMCP
  - Develop tracking tools for program
- 2021:
  - Begin training "certified trainers"
    - Commercial, property, and road crews
  - Introduce proposed property owner protection strategy

- 2022:
  - Review of program and adjustments to the State's training programs



## 2020 Priorities & Deliverables for Maryland's Salt Program

1. Develop draft regulations for COMAR
2. Identify a training and certification contractor
3. Draft course materials for salt application certification program
4. Develop new web pages and story map
5. Develop metrics for success (e.g. # of people trained by program type)
6. Develop list of potential trainee organizations (e.g., Chesapeake Bay Landscape Professionals, County DPWs, Environmental Programs, etc.)
7. Work with Region 3 to draft statewide 4b plan for addressing salt pollution
8. Begin development of tracking systems