

# Fairfax County Embraces Northern Virginia Salt Management Strategy (SaMS) – Progress Update

## *WSSC Salt Summit*

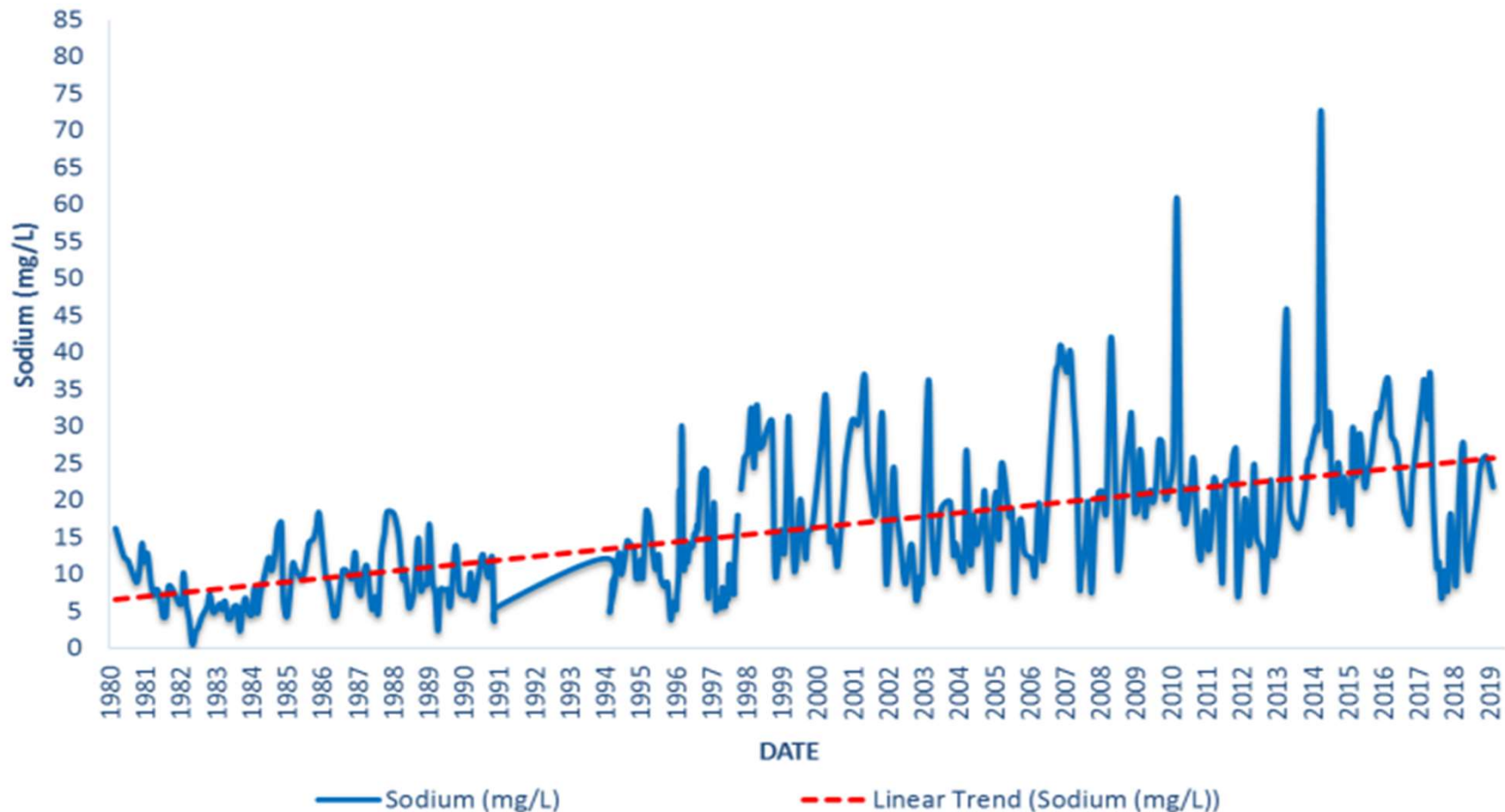
Department of Public Works and Environmental Services  
*Working for You!*



A Fairfax County, VA, publication  
January 2023

# Impacts to Drinking Water

Trends in sodium levels at the drinking water intake on the Occoquan Reservoir.



# Winter Operations – Level of Service



## FAIRFAX COUNTY PUBLIC WORKS AND ENVIRONMENTAL SERVICES 2022-23 Snow Brief

### FACILITY PRIORITIZATION

The Board of Supervisors has approved the prioritization of snow removal at county facilities as follows:

- **Priority 1 sites**
  - Government Centers/Judicial Complex
  - Police and Fire Stations
  - Emergency Operations/Communications Centers
  - Emergency Health Services
  - Mass Transit Facilities
- **Priority 2 sites**
  - Health Centers and 24-Hour Shelters
  - Other Essential Facilities
- **Priority 3 sites**
  - Community Centers, Libraries, Training Facilities
- **Priority 4 sites**
  - Developer Default/Neighborhood Road Segments
  - Metro Pilot Trails

### ACTIVATION LEVELS

We monitor the forecast closely and mobilize crews and resources.

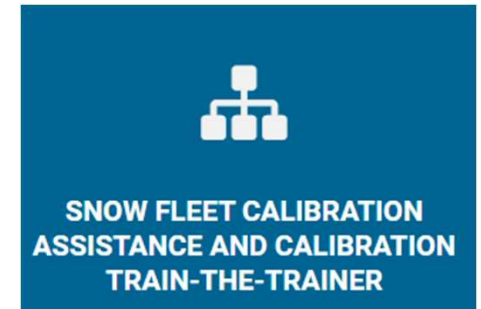
The amount and timing of the event factor into the activation level.

#### FOUR ACTIVATION LEVELS:

- Level 1 – Less than 2"
- Level 2 – More than 2"
- Level 3 – More than 4"
- Level 4 – More than 15"

Our snow teams are assigned facilities based on the activation level and work on 12-13 hour shifts until all facilities are cleared.

# Training and Calibration



Over-application



Correct application

# Facility and Equipment Updates



## NEWS

April 14th, 2021

### Fairfax County Salt Dome Projects Receive Building Design and Construction Award

### When preparing for snow, Fairfax County, VDOT work to limit salt use

Angela Woolsey January 20, 2022 at 11:00am



# Updating Contract Language



- **Stress Importance of Safety**
- **Referencing SaMS Best Practices**
- **Remove language incentivizing material application**
- **Requiring material usage reporting**



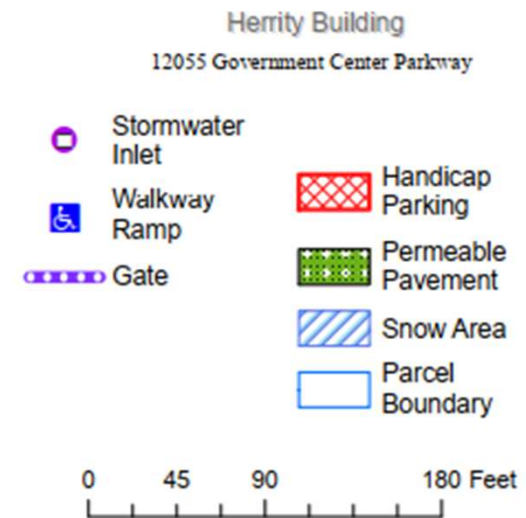
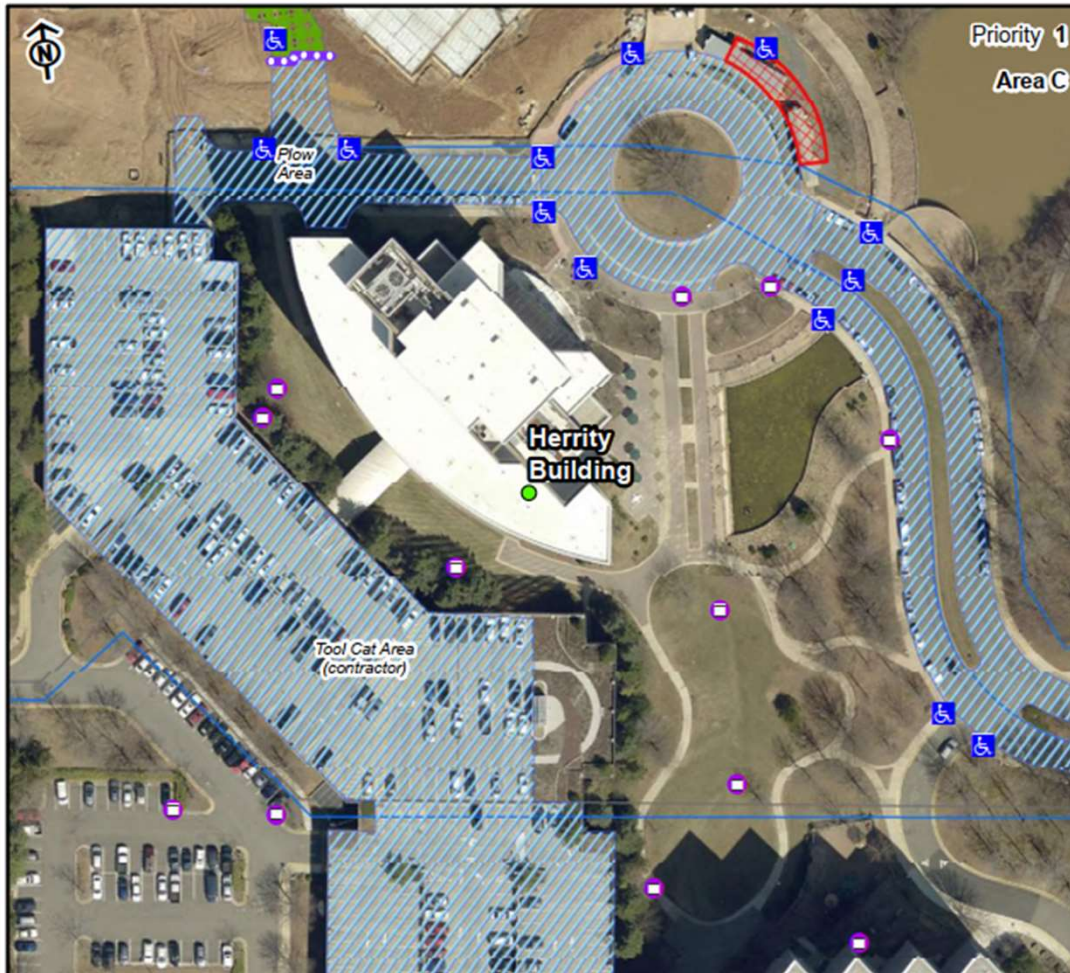
**2022  
WINTER SALT  
MANAGEMENT TRAINING**

**ABOUT THE TRAINING**

Join other winter salt management professionals for a day-long training on effective, environmentally-friendly salt application planning and practices.

September 20, 2022  
9 am - 4 pm  
3040 Williams Drive Ste #200  
Fairfax, VA

# Snow Book – Site Characterization



- Highlight storm drains and special areas
- Quantifies areas treated
- Provide estimates / expectations for material use

# Education & Outreach



## Salt and Sand Piles Storage Guidance

Business and property owners who plan to store loose or bagged salt or sand outside may not know that improper storage may harm the environment, destroy natural habitats and pollute the Chesapeake Bay.

Salt contains chloride, which is toxic to aquatic and plant life. It corrodes equipment and damages infrastructure. Salt also contains sodium which, once it enters our waterways, is not removed by wastewater treatment or even drinking water treatment processes. Salinization of the nation's waters is a growing concern and regulatory efforts are currently underway to reduce salt inputs to the environment.

Sand-laden runoff from developed areas clogs storm drains, degrades aquatic environments, and harms aquatic life.



*Improper salt storage due to lack of containment*

# Illicit Discharge & Improper Disposal Responses

Material Category	Number of Responses
Uncategorized	64
Salt	47
Unknown	37
Pool Discharge	36
FOG	32
Sediment	17
Sewage	16
Paint	14
Oil/Fuel	13
Litter	12
Yard Waste	11
Potable Water	8
Suds/Foam	8
Vehicle Washing	8
White Substance	8
Oily Sheen	7
Concrete/Granite Slurry or Dust	5
Algae	4
Groundwater	4
Blue Substance	3
Dog Waste	3
Cooling Tower	2
Fish Kill	2
Construction Material	1
Odor	1
Sump Water	1
<b>Total</b>	<b>358</b>

**2021**



**3**

# Monitoring and Assessment



USGS Home Contact

## Fairfax County Water Resources Monitoring Network

Home Study Overview Partners Maps Data Publications

### Study Overview



#### Problem

In the past decade, hundreds of millions of dollars have been invested into the implementation of Best Management Practices (BMPs), with the explicit goal of improving water quality. Earlier research has demonstrated that these implemented BMPs are effective at the plot-scale and the field-scale; however, less information is available to document the effectiveness of these BMPs at the watershed scale - precisely the scale at which water-quality compliance and water-quality improvements are typically judged. Because of the costs associated with the implementation of these BMPs, federal, state, and local agencies are asking:

1. Are the implementation activities working?
2. How long will it take for the BMPs to work?
3. Are there more time-efficient, cost-effective methods for detecting these improvements?

Answers are needed to these questions to support the development of watershed implementation plans, to motivate BMP implementation by stakeholders, and to ensure the vitality of the cost-share programs that have supplemented the cost of implementing these BMPs.

#### Objectives

Develop and initiate a water-resources monitoring network within Fairfax County to describe surface-water quantity and quality in numerous County streams. The data collection will be designed to provide a long-term record that can be used to address two fundamental objectives...

**Objective 1.** Develop four integrated water-resources monitoring stations throughout the County that can be used to describe current conditions and trends in both water quality and water quantity. These water-resources data also will be used to compute loads in water-quality constituents, such as sediment and nutrients. Finally, these data will be used to evaluate water-quality improvements that are associated with BMP implementation activities.

**Objective 2.** Evaluate the transferability of the results from the intensive water-resources monitoring stations to other watersheds. After determining the water-quality improvements that have occurred in the intensively monitored watersheds, evaluate whether the interpretations developed in these intensively monitored basins are consistent with trends and patterns in other less-intensively monitored (partial-record) watersheds. These partial-record trend sites will have slightly varied basin characteristics as the intensively monitored watersheds and will likely have differing amounts of BMP implementation activities.



## Addition of major ions to sampling programs:

- Calcium
- Sodium
- Potassium
- Magnesium
- Chloride

# Education & Outreach

## Board of Supervisors Environmental Committee Meeting: Feb. 15, 2022

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### Public Meetings

2/15/2022 11:00 am to 2/15/2022 12:30 pm

### Event Description

The Board of Supervisors [Environmental Committee](#) is scheduled to meet at 11:00 a.m. on Feb. 15, 2022 in the Board Auditorium of the Fairfax County Government Center.

## MEETING MATERIALS

- **Item 6 - Quarterly Review of Environment and Energy NIPs** 
  - [Maryland EV Incentives NIP](#) 
  - [Vehicle Emissions Standards NIP](#) 
  - [Fairfax Green Initiatives NIP](#) 
  - [CECAP Implementation NIP](#) 
  - [Chloride TMDL and Salt Management Strategy NIP](#) 

The Washington Post  
Democracy Dies in Darkness

D.C., Md. & Va. The District Maryland Virginia Crime & Public Safety Local Education Obituaries Transportation Capital Weather Gang

## Salt in water sources becoming worrisome in D.C. region, experts warn



By Antonio Olivo

August 8, 2022 at 6:00 a.m. EDT



### Do you know...

- It only takes one teaspoon of salt to permanently pollute 5 gallons of water.
- Salt seeped into the environment can:
  1. Raise sodium levels in our drinking water and increase treatment costs.
  2. Harm fish, plants, and other wildlife.
  3. Corrode vehicles, roads, bridges, and parking lots.
- Salt can make it safer for us to walk and drive around. It helps keep roads open, and allows businesses, government, and social services to stay open with little interruption.
- Since there's no easy or cheap way to remove salt from our environment, we can all do our part to reduce the amount of salt we use and be #WinterSaltSmart by following the below tips.



### Snow and Ice Maintenance Tips for Residents

### What should you do before a storm?



Have your shovel or snow blower ready. Shovels may be all that you need around Northern Virginia. To make it easier on your back, there are versions with wheels. Remember to take breaks and avoid overloading your shovel with wet snow.



Make sure to stock up on enough food, drinks and medicine (including prescriptions) before the storm.



**nvrc**  
Northern Virginia Regional Commission



www.wintersaltsmart.com

# Education & Outreach




 Fairfax County Environment  
January 27 · 🌐

Every Wednesday the Department of Public Works and Environmental Services will provide the community with helpful tips to be #WinterSaltSmart this season. To stay informed about all things snow and ice be sure to visit Fairfax County Government's website to formulate your Snow Battle Plan: <https://bit.ly/3u32fs4>

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1 comment



 Fairfax County Environment  
January 26 · 🌐

As preparations begin for a potential snowstorm this weekend we would like to remind residents to be #WinterSaltSmart. Follow Fairfax Water's resources to keep the environment and your family safe this season. <https://www.fairfaxwater.org/winter-salt>

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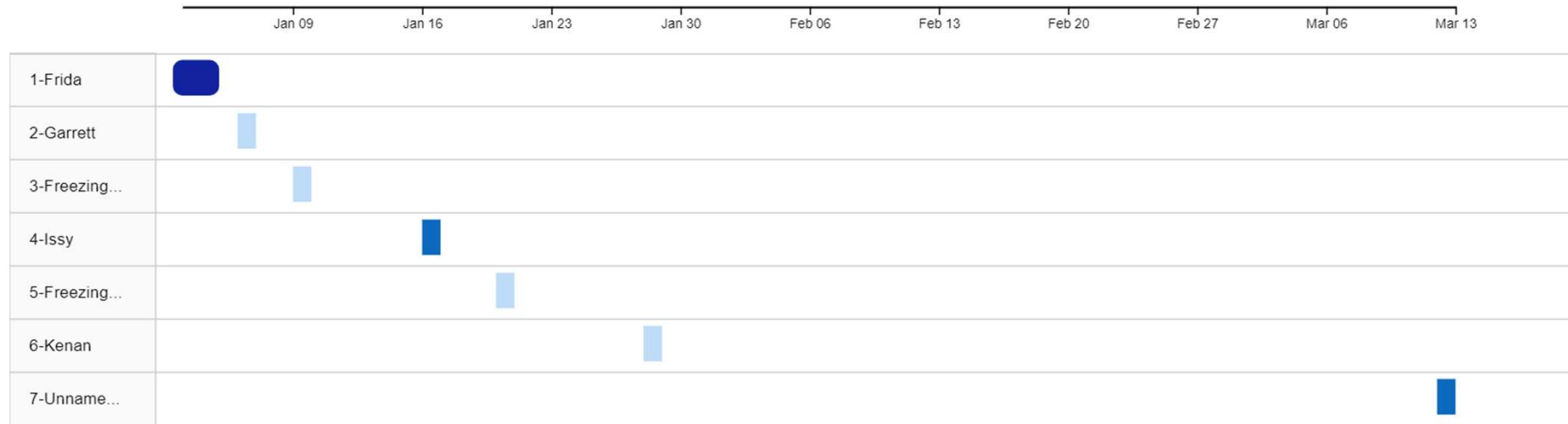
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# Public Safety and Essential Services



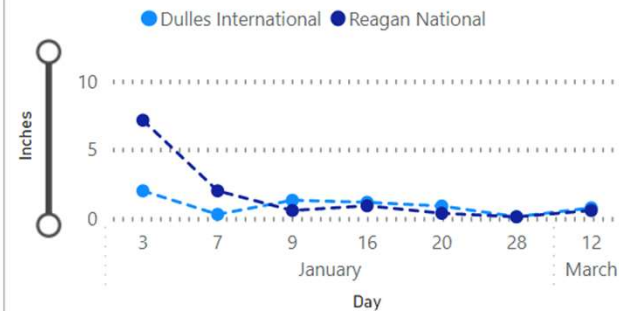
A snowstorm left drivers stranded on Interstate 95 near Fredericksburg, Va., for more than 24 hours.  
Virginia Department of Transportation, via Associated Press

# Tracking & Reporting – Winter Events



Storm Intensity ● High (>6") ● Light (<2") ● Medium (2-6")

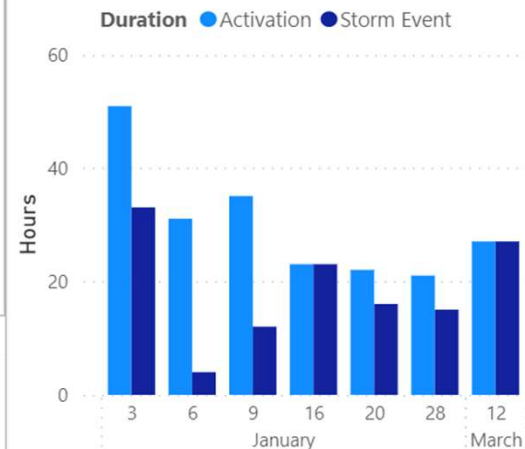
## Snowfall Amounts



## Storm Intensity



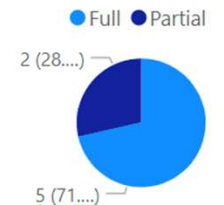
## Storm Events and Activations



## Precipitation Type and Post Storm Temperature Forecast

Early Storm Conditions	Falling	Rising	Total
Start as Snow	1	2	3
Start as Rain	2	0	2
Start as Freezing Rain	0	1	1
<b>Total</b>	<b>3</b>	<b>3</b>	<b>6</b>

## Activation Type



2022

Fiscal Year

7

Number of Events

Other/Narrative

State of Emergency  
Weather Advisory



# Tracking & Reporting – Material Usage

2018

- Seasonal Purchasing Records

2019

- Estimates based on vehicle capacity

2020

- Bucket Loader Scales

2021

- Accounting for unused materials

2022

- Refining Usage (Site & Event-specific)

# Tracking Implementation

Category	2018	2019-2020	2021-2022	2020 Comment
Level of Service	Good	Good	Good	LOS well documented, includes FCPS & FCPA
Training / Certification	Fair	Trending Good	Good	MSMD, FCPS, FCPA attended training events in 2022
Equipment Calibration	Fair	Trending Good	Good	Records developed for each truck and spreader.
Site Characterization	Fair	Trending Good	Trending Good	Working with FCPA to obtain GIS data for sites.
Operations Plan	Fair	Fair	Trending Good	Snow Plan final draft under review.
Quality Assurance	Fair	Fair	Fair	Update needed.
Salt Usage Documentation	Fair	Fair	Trending Good	Improving process to address lessons learned from year 1. Received material usage from FCPS and FCPA.
Material Storage	Fair	Trending Good	Trending Good	FCPS Woodson storage facility design completed. FCPS construction on hold.
Tracking and Reporting	Poor	Fair	Trending Good	Improved Event Tracking (SmartSheet). Metrics developed for program.
Education & Outreach	Poor	Fair	Trending Good	Developing Flyers, Improving messaging & coordination. Washington Post articles.
Snow Contracts	Poor	Poor	Trending Fair	Working with DMB and contract managers
Monitoring	Poor	Poor	Fair	Added ions to In-stream & MS4 Wet Weather Monitoring Program.

# Additional Information

**For additional information, please contact**



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*[www.fairfaxcounty.gov/dpwes](http://www.fairfaxcounty.gov/dpwes)*