

# Reaching Beyond Residents: Smarter Public Education for Your MS4

July 10, 2025 | 10:30 a.m. – 11:30 a.m. (Eastern)



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# Gretchen Judkins Environmental Compliance Officer Metro Water Services, Nashville, TN gretchen.judkins@nashville.gov

# Reaching Beyond Residents Smarter Public Education for Your MS4



### Nashville's MS4

- Metro area covering 526 mi<sup>2</sup>
- MS4 home at Metro Water Services
- Tennessee Department of Environment and Conservation (TDEC)





#### Nashville's MS4

- Over 715,000 residents
- Nearly 10,000 employees across 51 departments
- Over 300 NPDES permitted sites
- Over 8,000 Stormwater Control Measures (SCMs)
- Average of 900 active grading permits





### Public Involvement and Education

#### Goal 1

Meet and/or exceed MS4 permit requirements

#### Goal 2

 Increase the fundamental understanding of water pollution for Nashville students, residents, businesses, and municipal employees

#### Goal 3

 Encourage use of better management practices that result in improved water quality of runoff from MS4 and private facilities within Metro's MS4 jurisdiction



### Target Audiences

**School Groups/Youth Camps** 

**General Metro Residency** 

**Large Community Events** 

**Social Media Audience** 

**Municipal Maintenance Employees** 

**Grading Contractors/Development Community** 

**Post Construction BMP Owners** 

**General "Hot Areas"** 

**High Citizen Complaint Zones** 



### School Groups/Youth Camps

- Public Education Specialist
- "Athens of the South"
- 159 Metro Nashville Public Schools
- Classroom projects
- Tours and Job Shadowing
- Summer camps





### School Groups/Youth Camps



#### NPDES Program Evaluation Plan

HOD 6200: Program Evaluation

Shayda Azmian, Holton Huntington, Gretchen Judkins, Amy Podraza, Tiffany Xu smART Yard Designs, LLC.

#### **Driving Question:**

How can we use media arts to show how human activities affect the environment?

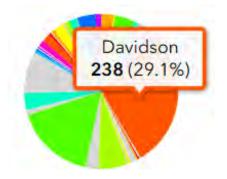
Design an interactive model of a smart yard or rain garden.





### General Metro Residency

- Focus on TN Smart Yards and pet waste
- Workshops
- Metro Nashville Network
- Public Signage
- Website
- Bill Inserts









### General Metro Residency

Which of the following are common pollutants that can wash off your property and into a creek or streams, choose all that apply Sediment Lawn Chemicals Vehicle fluids Dog Waste None of the above What are some of the benefits of using a rain barrel include, choose all that \* 1 point apply: Directing stormwater away from the house foundation. Collecting water for gardening. Collecting water for drinking There are no benefits



# General Metro Residency



#### **Mansker Creek Bank Stabilization**

In 2021. Metro Water Services' Stormwater NPDES Program completed a stream bank stabilization project along 320 feet of Mansker Creek. Special care had to be taken

during construction to

separate flowing creek waters

from the construction work.

Hundreds of tons of soil and

rock had to be hauled in to

one of the largest pollution in streams. sources and this bank of sker Creek was causing hundreds of pounds of sediment to flow downstream, impairing aquatic habitat. This erosion was so severe that it was also threatening public infrastructure such as the greenway, telecommunications lines. and a sanitary sewer main.

#### Before Construction



Due to the threat to public infrastructure. MWS sought supplemental reimbursement funding from the National Resources Conservation Services Emergency Watershed Program and the Tennessee Department of Agriculture Section 319 Non-Point Source Program. Over half of the construction costs were reimbursed to Metro through these programs.

Thank you to our partners:



carefully build the stream This stabilization project involved utilizing innovative bio-engineering products, such as articulated concrete blocks, which provide the hard-armoring necessary to withstand erosive forces of the creek waters during heavy rains while also allowing vegetation to grow

along the stream bank.



The design for this project included a small channel at the

#### Completed/Stabilized Bank



grow up within the articulated concrete block, which improves the water quality of Mansker Creek by filtering stormwater runoff. Additionally, the vegetation provides friction to slow down fast flowing waters during storm events to help minimize downstream erosion.





**Rain Barrel Sale** 

Now through March 6th!

#### Davidson County residents\* can purchase a 50-gallon rain barrel for only \$56!

\*Davidson County residents do not include the communities of Belle Meade, Berry Hill, Forest Hills, Goodlettsville, Oak Hill, and Ridgetop. Out-of-county residents can purchase a barrel for \$76.

rebrand.ly/2025Sale to purchase yours today!

#### Why should you buy a rain barrel?

- . Use stored water to water plants during droughts
- · Plants respond very well to rainwater
- · Capturing rain from your gutters and downspouts reduces runoff and water pollution
- Using less tap water saves money



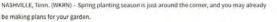
#### **Metro Water Services has** 'rain barrels' on sale

by: <u>Davis Nolan</u> Posted: Mar 6, 2024 / 03:35 PM CST Updated: Mar 6, 2024 / 05:27 PM CST









Metro Water Services has come up with a way to save money on your water bill, as well as protect

Why is TN peak tornado season in the spring months? >

They are having a sale on "Ivy Rain Barrels" made by Rain Water Solutions. It's like having your own personal cistern for watering your garden that gathers rainwater from your roof via the gutters.

#### TRENDING STORIES

COLLECTING RAIN WATER FROM GUTTER SYSTEM

- 1 AMBER Alert: Officials searching Kentucky landfill
- 2 TN soldier accused of selling information
- 3 Wig-wearing bandit steals register
- 4 TN House passes pretextual traffic
- 5 Man accused of selling unlicensed Nike merch



# Large Community Events



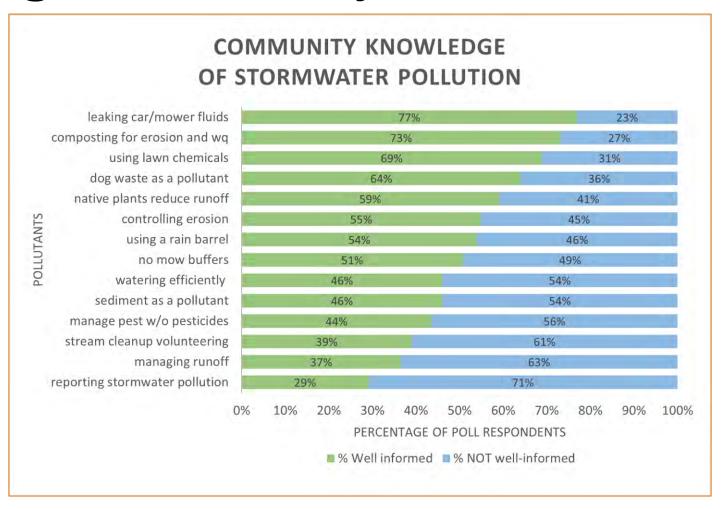




A certified Tennessee Smart Yard

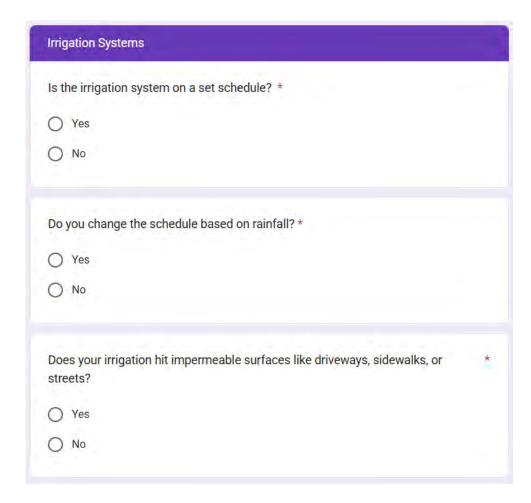


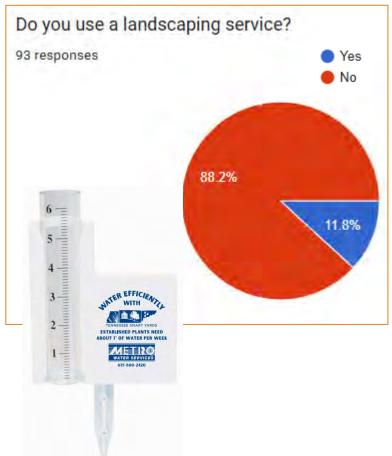
### Large Community Events





### Large Community Events







### Social Media Audience



#### In FY24

Totals across platforms		
posts	182	
impressions	164508	
engagement	3517	
engagement rate	2.14%	





#### Table 4 – List of Metro O&M Sites Requiring SWPPPs or RMPs

Note: This list does not include Metro O&M facilities that are located within the CSS drainage basins (outside of MS4 Jurisdiction

O&M Facility	Location	Metro Department	SWPPP or RMP Created
Cedar Hill Park Maintenance	860 Old Hickory Boulevard	Parks Department	RMP
Harpeth Hills Golf Course/Maintenance	7820 Coley Davis Road	Parks Department	RMP
McCabe Golf Course	4601 Murphy Road	Parks Department	RMP
Percy Warner Golf Course Maintenance	3150 McGavock Pike	Parks Department	RMP
Shelby Park Golf Course/Maintenance	1919 Fatherland Street	Parks Department	RMP
Ted Rhodes Golf Course/Maintenance			
Shop	1901 Ed Temple Boulevard	Parks Department	RMP
Two Rivers Park Maintenance	3150 McGavock Pike	Parks Department	RMP
Warner Park Maintenance	50 Vaughn Road	Parks Department	RMP
Public Works Headquarters	750 South 5 <sup>th</sup> Street	Department of Public Works	RMP
West Service Center/Salt Bin	3800 Charlotte Avenue	Department of Public Works	RMP
Metro Transit Authority Bus Terminal	130 Nestor Street	Metro Transit Authority	RMP
Schools Transportation Bus Terminal	336 Woodycrest	Metro Nashville Public Schools	RMP
Stormwater Maintenance/NPDES/Environmental Compliance	1607 County Hospital Road	Metro Water Services, Stormwater	Site under construction. RMP will be completed once site is complete
Tennessee State Fairgrounds	500 Wedgewood Avenue	Metro Fairground Commission	RMP
Dry Creek Treatment Plant	61 Edenwold Road	Metro Water Services	SWPPP
Central Wastewater Treatment Plant	1600 Second Avenue North	Metro Water Services	SWPPP



#### 3.0 POTENTIAL SOURCES OF POLLUTANTS

Pollutants from Metro operations and maintenance activities can include the following:

- Sand and/or soil flowing off-site from stockpile areas;
- Fertilizer, pesticides, fungicides, and herbicides;
- Detergents and other cleaning agents;
- Concentrated portions of grass clippings/leaves;
- Petroleum products from spills, leaking equipment, and/or washing equipment; and
- Other general maintenance products such as paint, solvents, etc.

#### 3.1 GENERAL MAINTENANCE ACTIVITIES

Maintenance activities, if not performed properly, can lead to significant impacts to stormwater runoff. The following maintenance activities have been identified as having the potential for impacting stormwater runoff and Standard Operating Procedures (SOPs) have been developed for each. In general, maintenance activities at all Metro facilities shall follow the below-listed SOPs, which are located in Appendix A of this document.

- Pesticide, Herbicide, Fertilizer Application, Storage, and Disposal.
- Petroleum Product Storage & Spill Clean-up
- Grass Clipping Disposal
- Equipment Washing/General Maintenance Activities
- Bare Soil/Sand Management

#### 3.2 SITE-SPECIFIC MANAGEMENT PRACTICES

Each Metro facility that houses operations and maintenance activities is different. Some Metro facilities have many sensitive areas such as streams, storm drains, or ditches, while others have very few. Cedar Hill Park happens to have one major drainage feature which could be impacted by runoff of pollutants from the maintenance shop due to the nature of the materials stored at the facility. Figure 1 depicts general stormwater drainage throughout the park. All stormwater drainage features, including inlets, ditches, and streams shall be protected from pollutant runoff that could result from maintenance activities such as chemical spraying and general material storage.

The area within the Cedar Hill Park that poses the most threat of pollutant runoff is the maintenance shop where materials and equipment are stored and maintained. The maintence shop and the critical sensitive areas are depicted within Figure 2. The following sensitive areas have been identified at the maintenance shop.

- Soil/Sand Stockpiles sand stockpiling on the paved surface in front of the maintenance shop can easily flow off-site into a storm ditch.
- Oil <u>Drums/containers</u> located in front of the maintenance shop. Lids were either not present or not secured properly. It is advisable that the oil drums are moved under shelter and oil absorbent kits are on-site for any accidental spills.
- 3. Above-Ground Fuel Tank Located behind the maintenance shop. Any leaks or spills could end up in storm channels below facility.



- Annual inspection by NPDES staff to review
  - Monthly inspections
  - Annual training
  - Site conditions
- Barriers to employee training
  - Unsure how to train
  - Time constraints
  - High turnover

#### 4.0 SITE SPECIFIC BMP PLAN

In general, following the SOPs outlined in Appendix A shall prevent pollutants from entering the storm drain. Specific BMPs, however, shall be deployed, at the sensitive areas identified within Figure 2.

#### 4.1 Stockpiled Soil and Sand

Any area where sand or soil is stockpiled in a manner that can mix with stormwater and drain off-site into an inlet, storm ditch, or stream shall be protected with perimeter controls. Perimeter controls can be trenched in silt fence, staked down weighted sediment tubes, or other suitable materials that allow stormwater to drain away while filtering out the sand and soil. Perimeter controls are not needed if the materials are stored in areas surrounded by established, thick vegetation, as the vegetation such as thick tall grass can act as a filter from stormwater runoff. Stockpiled areas shall also be inspected once per week using the same inspection form located in Appendix B. Some of the weekly inspections should occur during rain events to determine if materials are draining off the site.

#### 4.2 Oil Drums and Containers

The oil drums and containers should be moved to an area with a roof. They should have secured lids that are in place when the drum is not being used. Weekly inspections should be done to ensure that there are no leaks or spills. The person performing the inspection shall look for wet oily substances on the ground. Any discovered leaks or drips shall be repaired immediately. Any lost oil product shall be cleaned up promptly and properly with absorbent materials. A spill response kit shall be kept in close proximity to the storage area. In addition, the weekly inspection shall include looking at any equipment stored outside to determine if any oils are leaking.

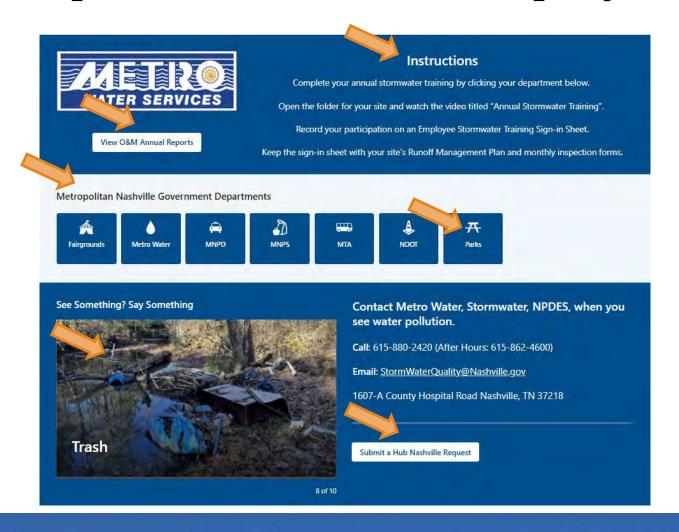
#### 4.3 Above-Ground Fuel Tank/Other Outside Equipment/Tanks

The large above-ground fuel tank shall be inspected weekly to determine if there are any leaks or spills. The person performing the inspection shall look for wet oily substances on the ground or on the hose of the tank. Any discovered leaks or drips shall be repaired immediately. Any lost oil product shall be cleaned up promptly and properly with absorbent materials. A spill response kit shall be kept in close proximity to the tank area. In addition, the weekly inspection shall include looking at any equipment stored outside to determine if any oils are leaking

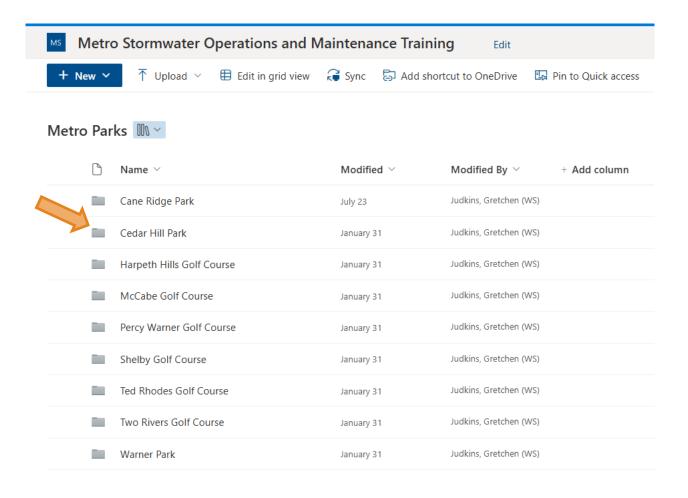
#### 4.4 Employee Training

It is imperative that all maintenance employees are properly trained on the SOPs located within Appendix A. Each year, management shall go over the SOPs with each employee and document the training with employee signatures on the form located within Appendix B.

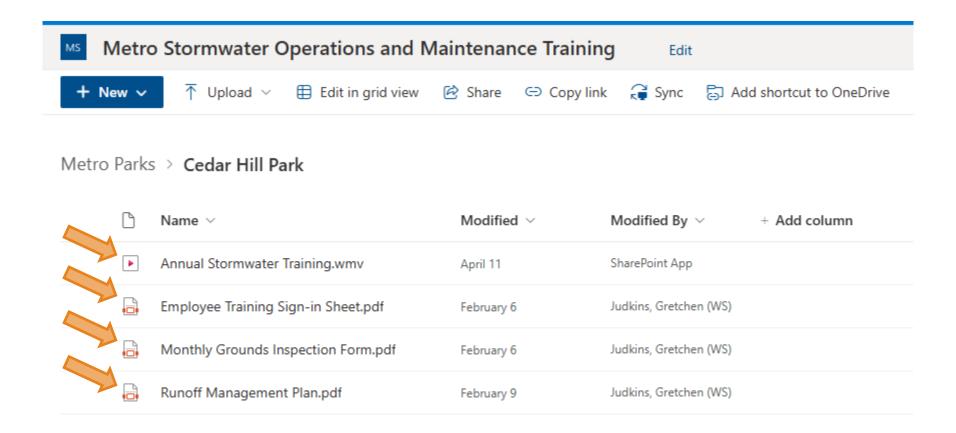














#### Permeable Pavement

#### General Maintenance:

- Remove trash regularly
- Look for oily drips from vehicles
- Observe during a rain event to see if stormwater is infiltrating
- Complete preventative maintenance by blowing off dirt, leaves, etc.
- May need professional cleaning to remove buildup







- Centennial Park
- SW Maintenance



- December audit results
- New RMP and training
  - Fairgrounds and GeodisPark
  - System Services and Fleet
- Quizzes?

Employee Stormwater Training Sign-in Sheet (Maintenance Employees to be trained on each Stormwater SOP located within

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training		
Cedar Hill Maintenance	2024	Brent Bergmiller		
Employee Name	Employee Signature	Date Trained		
Brent Bergmiller	8 W 00	3/11/2024		
Micheal Ambrose	Monda (my ul)	3/15/2024		
Russel Taylor	Town John	3/15/2024		
Charles Christopherson	1/2	3/15/2024		
Justin Seguret	Justi Seguret	3/15/2024		
Steve Brown	Stere Brown	3/15/2024		
rineo Catalan	Trines Notalem	3/15/2024		
Dylan Drury	almon	3/15/2024		
Ann Brown (	Im Sun	3/15/2024		
Lloyd Thompson	1 les ( ha 11 400	3/15/2024		
Gregory Powell	AL	3/15/2024		
	V			



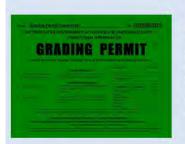
### Grading/Development Community

#### Welcome

Welcome to the first Metro Nashville Grading Permit Newsletter. This newsletter is being sent from Metro Water Services Stormwater NPDES to those of you who provided us your email addresses. We are using this resource to communicate to the development community for such items as notices, reminders, updates and other items of interest. I previously sent out emails but now am transitioning to this platform. Feel free to unsubscribe if you prefer not to receive these in the future.

I want to personally thank those of you who work with us to make our grading permit process a success for you, the development community and Metro Nashville.

Sincerely, Dale Binder - Grading Permit Section Manager



#### Did you know?

Did you know that you can check on the status and other inspection info of your grading permit project online?

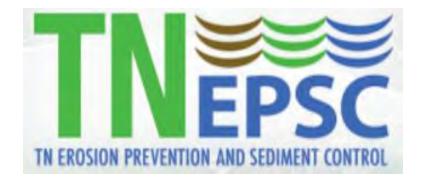
You can view this via the Nashville ePermits website at: ePermits

#### **Upcoming Training - Certification**

May 13-14, 2025 Stormwater Control Measure Inspection and Maintenance Certification for Tennessee

If interested please visit: https://tnpermanentstormwater.org/class1.asp

- Level 1 ESPC Class
- Grading permit emails





### Grading/Development Community

#### Checklist for the Pre-Con Meetings EPSC professional? (person will be performing twice weekly inspections) NOC if greater than 1 acre? Contractor's License Number if over \$25k grading and drainage **Building Application made?** Buffers? (no disturb, permanent signage) Variances? Utility Stream Crossings? Sediment Pond w/ outlet protection? Water should route to sediment pond (swale/berms) and have positive drainage Pit dewatering BMP? Inlet protection on existing catch basins? (not in ROW) Construction entrance? Concrete washout area? Fueling station / staging area? Construction waste controls (debris, chemicals, port-o-potties) If the EPSC plans are not being followed we must have written alteration plan. (SWPPP updated) EPSC professional must physically inspect site prior to submitting letter for inspection. Must be working off of a MWS approved grading plan. (any changes need to be approved first) Grading permit must be posted. EPSC prof. must notify MWS after 3 consecutive inspections where deficiencies have been found All temporary EPSC must be removed once site is completed and stabilized. Any excess fill to be exported must go to an approved permitted site. Have landscape plan for bio-retention / rain gardens? Asbuilts and pre-inspection 30days prior to request U&O or bond release. Photos of water quality structures and installations. Ensure bike friendly grates installed if inlet is in ROW Permanent SCM signage Fill piles outside of grading limits (provide epsc around stockpiles within grading limits) Grading w/out permit including clearing and grubbing. State / Federal Issues Waters of the State? ARAPs? SWPPP? Mill Creek Watershed? (Nashville Crayfish) Within 303d sediment listed watershed? CSI sheet and Grading inspection checklist discussed and handed out Penalties/Violation sheet and EPSC inspection checklist discussed and handed out Initial letter to install initial epsc only as discussed

- In FY24
  - 264 pre-con meetings
  - 8968 site inspections
  - 405 complaint inspections



#### Post Construction BMP Owners

Aka Stormwater Control Measures (SCMs)

- SCM Inspection and Maintenance Certifications
- Lunch and Learns with Development Services
- Metro Dept SCM Trainings
- Property Manager and HOA Webinars
- SCM Maintenance Company Presentations





### Post Construction BMP Owners

Aka Stormwater Control Measures (SCMs)

- In FY24
  - 2349 inspections
  - 35 complaint inspections
  - 571 inspection notices

Water Quality Unit

Water quality unit where cage looks to be installed backwards. May result in more maintenance needs. Significant sediment measured at time of inspection.







### Post Construction BMP Owners

Aka Stormwater Control Measures (SCMs)

- Website
  - Parcel Viewer
  - Annual Report
  - Maintenance Training Videos
  - SCM widgets
- Upcoming mailouts and door hangers

#### Stormwater Control Measures (SCM)

#### What is Bioretention?

Also known as a rain garden, a bioretention basin is a depression that has been filled with native plantings, a special soil mix, and landscape material. It is strategically located on a property to collect and treat stormwater runoff from developed (impervious) areas such as parking lots and rooftops.



Properly maintained and functional



Malfunctioning due to improper maintenance

#### **Maintaining Your Stormwater Control Measure**

Property owners are responsible for inspecting and maintaining SCMs on their property.

Inspection and maintenance requirements for your specific SCM are filed with your property deed.

These documents are available through the Metro Nashville Register of Deeds.

#### Typical Inspection and Maintenance Concerns Include:

- Observe the bed. Do the plants look healthy?
   Is there any erosion? Is there any trash? Does the mulch or stone need to be replaced? If so, the old layer of mulch or stone should be removed as to not reduce ponding volume.
- Inspect the outlet and inlets to ensure there is no sediment, trash, and/or vegetation growth which could result in a clogged outlet or inlet and improper draining.
- Is there evidence of water bypassing the bioretention basin?

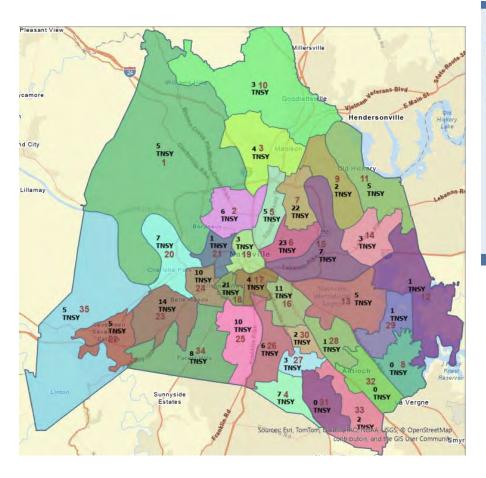
- Visit the bioretention site within 48 hours of a rain storm, and see if there is ponding. If so, maintenance may be required.
- Avoid fertilizers and pesticides
- Avoid possibly compacting soil by not using heavy equipment, such as riding lawnmowers, on the basin
- If maintenance needs are identified during the inspection, ensure that service is performed in a timely manner to prevent larger problems from occurring in the future.

For more information, visit summastiville gov or call Metro Water Services at (615)-880-2420





### General "Hot Areas"







Report to Hub.Nashville.Gov

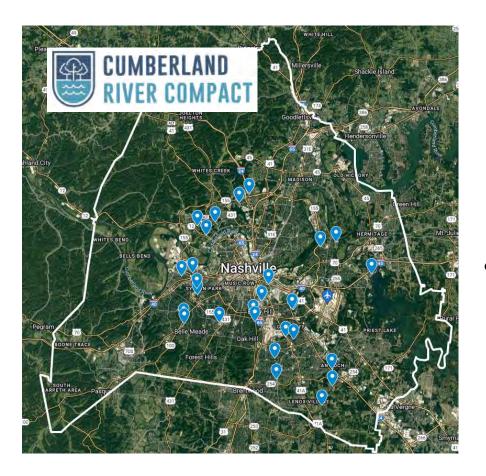
#### **Nater Quality**

lead to excess nutrients Algal blooms may lead to vays. West Fork Browns cessive algal growth that use of fertilizers in the ghborhoods.





### General "Hot Areas"





- FY24 Adopt-a-Stream
  - Signed up/renewed 9 groups
  - 17.15 miles with 25 groups
  - 34 cleanups with 438
     volunteers and 291 bags of trash collected



### High Complaint Zones









- Illicit discharge investigations
  - 156 investigations in FY24
- Dry-weather field screening via ½ mile grids
  - 153 grids completed in FY24
- Industrial inspections
  - 106 inspections in FY24





- Started as purely educational
- Discovered Tennessee Multi Sector Permit (TMSP) requirement

	SIC Code	Sector U: Food and Kindred Products Facilities		
	2076	Vegetable Oil Mills, Except Corn, Cottonseed, and Soybeans		
	2077	Animal and Marine Fats and Oils		
	2079	Shortening, Table Oils, Margarine, and Other Edible Fats and Oils, NEC		
Ī	2082	Malt Beverages		
	2083	Malt		
	2084	Wines, Brandy, and Brandy Spirits		
	2085	Distilled and Blended Liquors		



- Getting contacts
  - Google
  - Tourism guides
  - Beer permits
  - TN Craft Brewers Guild
  - TN Distillers Guild
  - TDEC Office of Sustainable Practices



**TMSP** 

VS

NEC

- Notice of Intent
- SWPPP
- Site inspections
- Analytical monitoring
- TDEC/MWS inspections
- Permit fee

- No Exposure Form
- Keep industrial processes/wastes away from stormwater
- MWS drive-by inspections
- Recertify every five years

Both options prevent stormwater contamination, solving the issue of illicit discharges.



#### Corrective Action Plan for Alcohol Manufacturers Due by May 31st, 2024

Please submit one Corrective Action Plan for each facility. Send completed forms to <u>Gretchen.Judkins@Nashville.gov.</u>

Facility	Name:			
	Address:			
Facility	Contact			
	Name:			
	Title:			
	Phone:			
	Email:			
Please a	answer th	ne following questions regarding the above facility:		
1.	Will this	site pursue a Tennessee Multi-Sector Permit or a No 6	Exposure Certific	ation?
2.		ontrols are you installing to become compliant with the gadumpster, changing loading/unloading procedures,		
3.	provide	date will you have these controls installed? If they have the install date below. If these are physical controls, so include photos in your email submission of this form.		**
4.	provide	date will you have applied for the TMSP or NEC? If yo the submission date. If you have applied and already or provide your permit number (beginning in TNR-).		



42 out of 43 in compliance

No Exposure sites so far

Windshield inspections





#### Webinar Agenda:

9:00 - 9:05 AM Introduction to Webinar - Josh Hayes, MWS NPDES Permit Group Manager

9:05 - 9:10 AM Overview of Industrial Stormwater Permits and Metro's Role – Gretchen Judkins, MWS NPDES Lead Industrial Stormwater Inspector

9:10 - 9:40 AM Overview of Nashville's Industrial Stormwater Inspection Process – Gretchen Judkins, MWS NPDES Lead Industrial Stormwater Inspector

<u>9:40 - 9:50 AM</u> **Overview of the Draft General TMSP** – Gretchen Judkins, MWS NPDES Lead Industrial Stormwater Inspector

9:50 - 10:00 AM Questions and Break

<u>10:00 - 10:20 AM</u> Overview of MWS Wastewater Pretreatment/Environmental Compliance Program – Andy Welch, MWS Environmental Compliance Manager

10:20 - 10:30 AM Questions

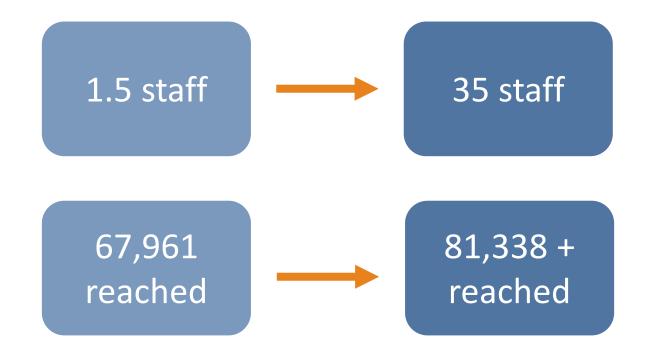
Everyone will be muted except the presenters until the question sessions.

Note any questions or put them in the chat to be answered during the question sessions.





### Where does that leave us?







### **THANK YOU**

Gretchen.Judkins@nashville.gov