ECO-CITY ALEXANDRIA
CLEAN WATERWAYS

MS4 ANNUAL REPORT

Year 5
2022 - 2023

Department of
Transportation and
Environmental Services
2900-B Business Center Dr.
Alexandria, VA 22314

General VPDES Permit for
Small Municipal Separate Storm Sewer Systems
Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023

In compliance with the "General VPDES Permit for Discharges of Stormwater from Small Municipal Separate
Storm Sewer Systems" VAR040057

City of Alexandria, Virginia

Submitted by
City of Alexandria
Department of Transportation and Environmental Services
2900-B Business Center Drive, Alexandria, VA 22314

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CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Jesse E. Maines	Division Chief, Transportation and Environmental Services, Stormwater Management	9/28/2023
Name	Title	Date

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General VPDES Permit for Small Municipal Separate Storm Sewer Systems Permit No. VAR040057

Year 5 Annual Report
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City of Alexandria, Virginia

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ACRONYMS

AWL – Animal Welfare League
BMP – Best Management Practice
C&I – Construction and Inspection
CSS – Combined Sewer System
CRM - Customer Relations Management
DEQ – Virginia Department of Environmental Quality
E&SC – Erosion and Sediment Control
EIU – Environmental Industrial Unit
EMO – Environmental Management Ordinance
EPC – Environmental Policy Commission
GI – Green Infrastructure
HOA – Home Owners Association
LID – Low Impact Development
MCM – Minimum Control Measure
MS4 - Municipal Separate Storm Sewer System
NMP - Nutrient Management Plans
NVRC – Northern Virginia Regional Commission
OEQ – Office of Environmental Quality
PCB - polychlorinated biphenyls
PSA - Public Service Announcement
PY – Permit Year
RPCA – Department of Recreation, Parks and Cultural Activities
SEAS - School Environmental Action Showcase
SWCB – State Water Control Board
SWM - Stormwater Management Division
SWPPP – Stormwater Pollution Prevention Plan
SWWG – Stormwater Work Group
T&ES – Department of Transportation and Environmental Services
TMDL – Total Maximum Daily Load
VCA – Veterinary Centers of America
VESCL – Virginia Erosion and Sediment Control Law
VESCR –Virginia Erosion and Sediment Control Regulations
VPDES - Virginia Pollutant Discharge Elimination System
VSMP – Virginia Stormwater Management Program

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1 Introduction

This 2022 – 2023 MS4 Annual Report is prepared by the City of Alexandria (City) Department of Transportation and Environmental Services (T&ES) in accordance with the requirements of the General VPDES (Virginia Pollutant Discharge Elimination System) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (9VAC25-890-40 *et seq.*). The City was originally issued General Permit VAR040057 on July 8, 2003, under the program. DEQ reissued the current five-year permit effective November 1, 2018.

Under the terms of the General Permit, the City has developed a Municipal Separate Storm Sewer System (MS4) Program Plan to implement six minimum control measures aimed at reducing the discharge of pollutants to the "maximum extent practicable." Minimum control measures are:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illegal Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands
6. Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee within the MS4 Service Area

The General Permit requires that the City submit annual reports no later than October 1st covering the reporting period of the preceding July 1st through June 30th. This annual report covers the period of July 1, 2022, through June 30, 2023. The 2018-2023 General Permit outlines the requirements for the annual report in 9VAC25-890.

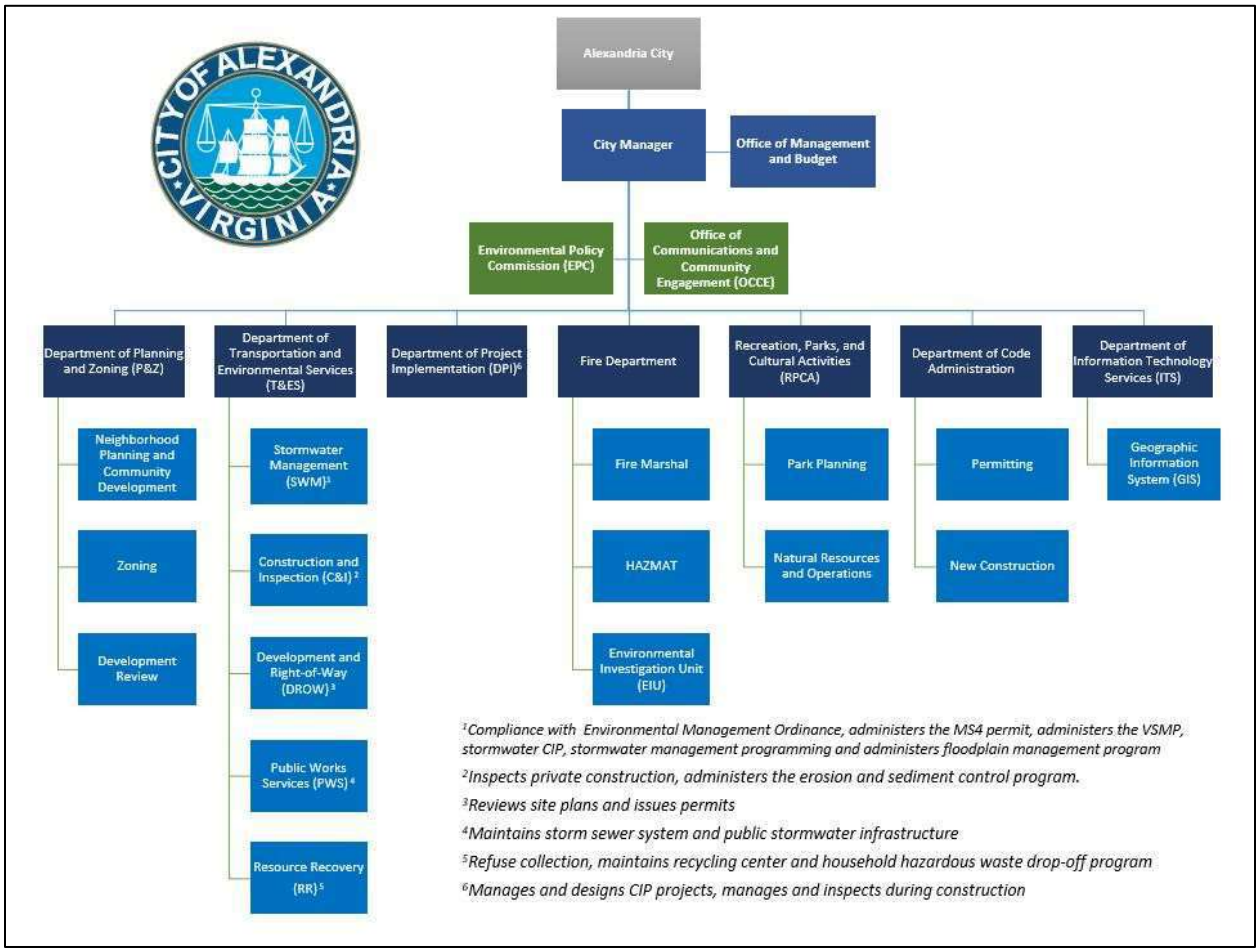
2 General Information

This section provides general information as required in Part I D 2 of the General Permit.

Name of Permittee:	**System Name:**	**Reporting Period:**	**Permit Number:**
City of Alexandria	City of Alexandria MS4	2022-2023	VAR040057
Modifications to Roles and Responsibilities: None.			
6th Order HUC:	**Potomac River (PL28)**	**Cameron Run (PL26)**	**Four Mile Run (PL25)**

The organizational chart outlines major stormwater activities and functions divided among several different departments and divisions. Additional information about each department is found in the MS4 Program Plan. In 2016, The City created a separate Stormwater Management Division (SWM) in Transportation and Environmental Services that has the primary responsibility for coordinating permit compliance, in addition to other duties.

Stormwater Management Organizational Chart – Roles and Responsibilities



3 2022 – 2023 Permit Conditions Compliance Status

The following provides the status of best management practices for each of the six minimum control measures (MCMs) during the 2022 – 2023 reporting period or Permit Year 5 (PY5). The MS4 Program Plan is up to date based on the requirements in the 2018-2023 General Permit, revised in 2020, 2021, and 2022, and will be revised for the next permit cycle (2023 – 2028). This annual report is organized to reflect the City's current MS4 Program Plan – BMPs under each MCM follow the format for the Program Plan. Each section in this report begins with a summary table describing the task, the implementation year, the measurable goal as described in the City's MS4 Program Plan, and task status. Following the summary table is a more detailed discussion of the implementation status of each task. Additional support materials are found in the appendices.

3.1 Public Education and Outreach (MCM #1)

Table 1 summarizes activities associated with Minimum Control Measure #1 and their completion status. Additional detail is provided after the table and in Appendix A.

Table 1. Summary of Activities for MCM #1

Strategy	BMP	Measurable Goal	Status
1A – Traditional Written Materials	Distribute pamphlets and other written materials about proper fertilization, pet waste, household hazardous waste, and other water quality topics at outreach events.	Dates and location of outreach events with the approximate number of attendees.	✓ Complete
1B – Alternative Materials	Distribute promotional items (giveaways) at education and outreach events. Include the Eco-City Alexandria Clean Waterways logo on these items, where possible.	Dates and location of outreach events with the approximate number of attendees.	✓ Complete
1C - Signage	Place BMP identification signs at surface structural stormwater BMPs (bioretention, swales, green roofs, etc.)	The total number of BMPs within the City.	✓ Complete
1C - Signage	Installation, maintenance, and re-stocking of pet waste stations with appropriate signage.	Number of existing and new pet waste stations. Number of pet waste bags used and distributed to refill stations.	✓ Complete
1C - Signage	Install storm drain markers.	Number of markers placed.	✓ Complete
1C - Signage	Install and maintain stream crossing signs.	Number of existing signs and number of signs added or replaced.	✓ Complete
1D – Media Materials	Use eNews (City electronic news distribution system), social media (Facebook or X (formerly Twitter)), television, and/or websites to convey message.	The number of individuals signed up to receive the City's eNews. The number of Facebook Page followers and X (formerly Twitter) followers. The number of visits to the Stormwater Management webpage. Clean Water Partners Only Rain Summary Report of Findings.	✓ Complete
1D – Media Materials	Have a reporting mechanism on the City's website so that residents can report potential illicit discharges.	The number of stormwater pollution related complaints received.	✓ Complete
1D – Media Materials	Use social media (Facebook, Instagram, or X (formerly Twitter)), website, and/or television including airing the City's stormwater pollution prevention video on the government/community access channel.	The number of individuals signed up to receive the City's eNews and the number of Facebook Page, Instagram, and X (formerly Twitter) followers. The number of visits to the Stormwater Management	✓ Complete

Strategy	BMP	Measurable Goal	Status
		webpages including the TMDL, MS4, and What You Can Do to Protect Stormwater webpages.	
1E – Speaking Engagements	Present at no less than 2 events per year and include messages about excess nutrients, pet waste, illicit discharges and other stormwater quality issues.	Dates and locations of presentations with the approximate number of attendees.	✓ Complete

*The City uses Alexandria eNews, which is a service that allows users to receive information through email on nearly 100 topics (including stormwater related messages).

Public Education and Outreach Plan Development

The Public Education and Outreach Program identified (1) Chesapeake Bay Nutrients (phosphorus and nitrogen), (2) Pet Waste; and (3) Illicit Discharges, as high-priority water quality issues as part of the update to the Program Plan and created three distinct sets of BMPs to address these issues. A summary of specific strategies chosen from General Permit Table 1 and implemented during this reporting period for each of the high-priority water quality issues is provided at the end of this BMP section. The City also continues to implement BMPs associated with other aspects of water quality and has included these in the updated Public Education and Outreach Plan.

Clean Water Partners

The City continues to participate in the Northern Virginia Regional Commission (NVRC) Clean Water Partners, a regional educational partnership among other MS4 permittees: Fairfax County; Arlington County; Loudoun County; Fairfax Water; City of Fairfax; City of Falls Church; City of Manassas; Town of Leesburg; Town of Dumfries; Doody Calls; Northern Virginia Regional Commission; George Mason University; Virginia Coastal Zone Management Program; Fairfax County Public Schools; Prince William County Public Schools; and the Northern Virginia Soil and Water Conservation District. For the 2022 – 2023 reporting period, the Clean Water Partners used television, print, internet advertising and the "Only Rain" website (www.onlyrain.org) to distribute messages linked to specific stormwater problems associated with high-priority water quality issues, such as proper pet waste disposal, not bagging lawn clippings, planting native plants, and proper disposal of waste.

The program's three high-priority water quality issues are specifically bacteria, nutrients, and chemical contaminants which are consistent with the City's identified issues.

Included in Appendix A and referenced below under BMP 1D measure of effectiveness is the annual report on the Clean Water Partners program efforts with information on the effectiveness of the program based on the results of the program's annual survey. Specifically, the program conducted an online poll survey of 596 Northern Virginia residents to determine the effectiveness of on-line efforts and a series of TV, Facebook, and X (formerly Twitter) ads to reveal any changes in behavior, and to aid in directing the future efforts of the campaign. As a new strategy in 2020,

the Partners contracted with a digital communications firm to develop and implement a social media campaign on Facebook and X (formerly Twitter); Instagram came online in 2022. The results so far have shown that these platforms are an effective way to engage with the target audiences.

Approximately 33% of Alexandrians responding to the survey recalled seeing ads on TV, Facebook, or X (formerly Twitter) on reducing water pollution.

The annual survey found that due to seeing the reducing water pollution advertisements:

- 80% of respondents reported they have a greater understanding of pet waste, fertilizer, and motor oil impacts on local water quality;
- 65% of respondents pick up pet waste more often;
- 66% of respondents plan to fertilize fewer times during the year; and
- 66% of respondents now properly dispose of motor oil.

The survey also documented the following regarding responding Alexandrians:

- 64% believe stormwater ends up in the Chesapeake Bay or Potomac River watershed; 59% reported that it would go in a stream or creek (respondents could select more than one option)56% recognized the "Only Rain Down the Storm Drain" logo used by the program;
- 32% have received information about reducing water pollution in the past 12 months;
- 30% had heard of water quality activities in the past 12-months; and
- 64% said that they probably or would report potential pollution to the City.

BMP 1A Traditional Written Materials

Traditional written materials are a proven and reliable strategy. The City has created stormwater educational flyers/brochures that are distributed at various outreach events. The brochures are included in Appendix A.

Measure of Effectiveness

Dates and locations of outreach events where these brochures were made available with the approximate number of attendees can be found in the table under BMP 2C. No changes to the MS4 Program Plan were deemed necessary.

BMP 1B Alternative Materials

Also distributed at outreach events are promotional items, or alternative materials, which are giveaways that include the City's Eco-City Clean Waterways logo. T&ES-SWM makes it a priority to select promotional items that are useful and related to stormwater while the logo brings awareness of the City's goal of improved water quality and clean waterways.

Measure of Effectiveness

Dates and locations of outreach events where these promotional items were distributed with the approximate number of attendees can be found in the table under BMP 2C. No changes to the MS4 Program Plan were deemed necessary.

BMP 1C Signage

The City continues to require all new and redevelopment projects to provide signage or labeling to identify new surface structural stormwater BMPs as part of the site plan approval process.

Additionally, the City has installed stream crossing signs at locations where hike and/or bike trails cross major waterways. The City maintains and replaces these signs as needed. No additional signs were installed during this reporting period. The City maintains 20 signs at 18 road crossings and five signs at three trail crossings. The signs promote awareness of Alexandria's surface water resources, water bodies, drainage basins, and location in the Chesapeake Bay Watershed.

The City was one of the first localities in Northern Virginia to implement a storm drain marking program. The City continues to require new development and redevelopment to mark storm drain inlets within the development and located within 50 feet of the project with information on the drainage destination of waters entering the structures. In addition, City staff continue to promote the storm drain marking program at community outreach events and to work with interested residents to implement storm drain marking.

Measure of Effectiveness

- BMP signage is required for surface structural stormwater BMPs installed and a photo of the BMP sign and a copy of a final site plan sheet calling for the BMP signage can be found in Appendix A. See Appendix D for a list of all stormwater BMPs installed in this permit cycle.

- The City continues to maintain the stream crossing signs so that they are in good condition. A photo of one of the stream crossing signs can in found in Appendix A.

- Storm drain markers were installed as a requirement of development or redevelopment and a sample plan sheet with this requirement is provided in Appendix A. During FY23 approximately 50 new drain markers have been placed by developers and volunteer efforts.

- No changes to the MS4 Program Plan were deemed necessary.

BMP 1D Media Materials

The City continues to host a stormwater quality webpage, located at www.alexandriava.gov/Stormwater. The page includes information about the City's Stormwater Management Program, the Chesapeake Bay Action Plan, the City's Virginia Stormwater Management Program (VSMP), the MS4 Program – to include the Program Plan and annual reports – and provides information for residents to learn how they can protect local streams and rivers. In addition, pages linked to this main page contain external links for the Chesapeake Bay Preservation Act, VSMP

requirements, and the Construction General Permit. It also contains information and links to the City's Environmental Management, and Erosion and Sediment Control ordinances. Staff continues to add new content to the site and update existing content.

In addition, the City highlights upcoming events or important information, and posts information on the T&ES Facebook, Instagram, and X (formerly Twitter) accounts. These tools are used to promote water quality events such as volunteer stream cleanups, build your own rain barrel workshops, and pre-made rain barrel sales events, and raise awareness of water quality topics.

The City also uses *Alexandria eNews* to distribute information through email on nearly 100 topics (including stormwater related messages). Users sign up for these email alerts and choose to receive specific informational topics. For example, individuals may choose to receive news with a specific focus on environmental and water quality issues, and/or information on volunteer opportunities, tips, and workshops. T&ES and the Office of Communication & Public Information (OCPI) work closely together to widely distribute eNews messages and other Citywide information. Example eNews distributed during FY2023 is included in Appendix A.

The City maintains its online resident reporting capabilities (See BMP 3A). The City's Alex311 system information is prominent on the City's main page and subordinate pages.

Measure of Effectiveness

See the tables under the High Priority Issues for the following:

- The number of individuals signed up to receive the City's eNews.
- The number of Facebook Page followers, Instagram followers, and X (formerly Twitter) followers.
- The number of visits to the Stormwater Management webpage.

See Appendix A for the following:

- Sample eNews, Facebook posts, Instagram posts, and X (formerly Twitter) posts
- The Clean Water Partners Only Rain Summary Report of Findings

No changes to the MS4 Program Plan were deemed necessary.

BMP 1E Speaking Engagements

T&ES-SWM staff often presents at various meetings and events including rain barrel workshops, homeowner association meetings, community events, and stream clean-ups. These activities all create awareness regarding the importance of preventing stormwater pollution. Table 3 provides an overview of Outreach activities including speaking engagements.

Measure of Effectiveness

The events were virtual, with dates and approximate number of attendees at each speaking engagement can be found in the table under General Stormwater Pollution Prevention Public Education and Outreach. No changes to the MS4 Program Plan were deemed necessary.

High-Priority Issues

#1 – Chesapeake Bay Nutrients

Chesapeake Bay nutrients (nitrogen and phosphorus) have been identified as the as the first high-priority water quality issue. The following strategies were implemented in accordance with the MS4 Program Plan and as described in the BMPs 1A, 1C, 1D, and 1E above. Documentation of each activity is found in Appendix A.

1. Distributed proper fertilization brochures and other written materials at outreach events, where applicable.
2. Used eNews (City electronic news distribution system), social media (Instagram, Facebook, and X (formerly Twitter)), television, and/or websites to convey messages regarding Chesapeake Bay Nutrients. Message addressed seasonally specific stormwater pollution prevention tactics for nutrients and pointed readers back to the City's website with additional information on the topic.
3. Maintained and updated a "Stormwater Management" webpage at www.alexandriava.gov/Stormwater related to the proper application and use of fertilizers to protect water quality. Also, a link to the NVRC www.onlyrain.org website was included.
4. Placed BMP identification signs at surface structural stormwater BMPs (bioretention, swales, green roofs, etc.) as each BMP is installed.
5. Presented at events and included a message about excess nutrients in stormwater.
6. Continued to participate in the NVRC Clean Water Partners program he partners used television, print, internet advertising and the Only Rain website to distribute messages such as over fertilization of lawns and gardens. The Clean Water Partners 2023 Summary and Survey may be found in Appendix A.

The goal of these strategies is to reach a wide audience with a message regarding the potential impact of nutrients on the Chesapeake Bay as well as specific actions that can be taken to reduce pollution. The table below provides the potential reach of different media used in the City's Public Education and Outreach Plan.

For a list of public education and outreach events, please see the table under BMP 2C. In addition, Appendix A contains examples and supporting materials for these best management practices.

#2 – Pet Waste

The second high-priority water quality issue identified is bacteria from pet waste. The following activities were implemented during this permit cycle in accordance with the MS4 Program Plan to address pet waste.

Figure 1. Poop Fairy Yard Sign (Photo Credit: Lisa Frye)

1. Distributed pet waste pamphlets and other written materials at all appropriate outreach events where applicable.
2. Created and distributed "Poop Fairy" yard signs to promote residents to pick up after their pets.
3. Used eNews (City electronic news distribution system), social media (Facebook, Instagram, and X (formerly Twitter)), television, and/or websites to convey message of the importance of picking up after pets and disposing of the waste properly.
4. Continued to maintain City pet waste stations and supply bags for stations. Two hundred (200) pet waste bags were provided during this permit cycle. Additional installations of stations will continue to occur, where appropriate, to make pick-up and disposal more convenient. Also, there are many residential communities in the City that install and maintain their own pet waste stations.
5. Distributed "dog bone" pet waste bag dispensers and refills at outreach event. During FY2023, the City also purchased and distributed plastic-free pet waste bag holders.
6. Continues to participate in the NVRC Clean Water Partners regional efforts, with the survey found in Appendix A.

The goal of these strategies is to reach a wide audience with the pet waste message and specific actions to reduce pollution.

The Clean Water Partners annual survey found that 65% of respondents picked up pet waste more often after seeing the advertisements.

For a list of public education and outreach events, please see the table in Section BMP 2C. In addition, Appendix A contains examples and supporting materials for these best management practices.

#3 – Illicit Discharges

The third high-priority water quality issue identified is illicit discharges. The following activities were implemented in accordance with the MS4 Program Plan during the permit year to address illicit discharges.

1. Used eNews (City electronic news distribution system), social media (Facebook or X (formerly Twitter)), television, and/or websites to convey messages regarding illicit discharges.
2. Maintained the www.alexandriava.gov/Stormwater webpage which includes a page specifically related to illicit discharges for the targeted businesses and the general public, and included a link to the NVRC www.onlyrain.org website.
3. Continued to participate in the NVRC Clean Water Partners regional efforts. During FY2023, the Partners focused on bacteria, pet waste, illicit discharges, and salt. A new video PSA was developed and disseminated. The Northern Virginia Clean Water Partners 2023 Summary and Survey can be found in Appendix A.

The goal of these strategies is to reach a wide audience with an illicit discharge message and specific actions to reduce pollution.

Table 2 provides strategy, potential target reach, and estimated reach information for the high-priority issues.

Table 2. Estimated Reach of High-Priority Issues

Media	Potential Target Reach	Estimated Permit Year Reach
eNews message	Environmental eNews Subscribers – 7,911	100% of Environmental eNews Subscribers
Social Media Message	Instagram, Facebook, and X (formerly Twitter) Followers	T&ES Facebook Page has 2,465 followers. T&ES has 2,613 X (formerly Twitter) followers. Instagram has 1,607 followers.
Stormwater Webpage	2,045 unique page views	100% of unique page views
Clean Water Partners Video PSAs	865,060 Impressions	100% of Impressions

General Stormwater Pollution Prevention Public Education and Outreach

The City implemented the following activities during the permit cycle in accordance with the MS4 Program Plan.

1. Distributed other written materials about water quality and stormwater pollution prevention at outreach events. For FY2023, this information was shared during in-person

and virtual events; the City continued to update and refine it's online stormwater presence, including the Stormwater Quality webpage which includes a link to the City's BMP site tour.

2. The City maintained several webpages to help engage the community with stream restoration efforts:
    - Taylor Run Stream Restoration
    - Strawberry Run Stream Restoration
    - Lucky Run Stream Restoration
3. Used social media (Facebook, Instagram, and X (formerly Twitter)), webpages, and/or television including airing the City's stormwater pollution prevention video on the government/community access channel.
4. Maintained stream crossing signs to promote awareness of Alexandria's surface water resources, water bodies, and drainage basins.
5. Presented at events to include message about water quality and stormwater pollution prevention.

The goal of this BMP is to reach a wide audience with a general pollution prevention message as well as specific actions that can be taken to reduce pollution. The following table summarizes the City's public education and outreach activities and events where information on pollution prevention and water quality were distributed. Appendix A contains examples from the City's general education program.

Table 3. Summary of Public Education and Outreach Activities

Activity	Date	Topic	Number of Participants (approximate)
George Washington Middle School – Careers Day	5/24/2023	Met with middle school students who were interested in careers in stormwater management and climate change.	20
Alexandria Libraries Sustainability Committee	6/29/2023	Met with libraries to discuss the City's stormwater initiatives and programming and partnership ideas.	15
City Council Chesapeake Bay Awareness Proclamation	5/23/2023	Discussed the City's Bay stewardship and informed residents on how to help prevent pollution as aired on public TV.	City-Wide
Taylor Run Stream Health Improvement Community Collaboration	3/8/2023	Discussed ideas to stabilize the stream and protect the infrastructure.	15
Taylor Run Stream Health Improvement Community Collaboration	2/13/2023	Consultant presented on sanitary sewer stabilization concept	15

Activity	Date	Topic	Number of Participants (approximate)
		design. City staff presented on modeling of the upstream watershed and BMP analysis to reduce runoff.	
Taylor Run Stream Health Improvement Community Collaboration	1/31/2023	Consultant presented on a large wood concept design for the stream.	15
Taylor Run Stream Health Improvement Community Collaboration	11/17/2022	The group met at the path entrance at Chinquapin Park and walked with Consultant to hear about an alternative approach using large wood structures.	15
Taylor Run Stream Health Improvement Community Collaboration	11/15/2022	City Staff and Consultant presented on in-stream sewer stabilization methods.	15
Taylor Run Stream Health Improvement Community Collaboration	9/29/2022	Discussion of project goals and review of current design options.	15
Taylor Run & Strawberry Run Stream Health Workshop	9/10/2022	Day long presentation on stream health improvements with subject matter experts. There were also break out sessions to establish community groups specific to each stream.	50
Strawberry Run Stream Health Improvement Community Collaboration	3/20/2023	Reviewed ideas to stabilize the stream and protect the infrastructure.	20
Strawberry Run Stream Health Improvement Community Collaboration	3/14/2023	Reviewed ideas to stabilize the stream and protect the infrastructure.	20
Strawberry Run Stream Health Improvement Community Collaboration	1/26/2023	Consultant presented on a large wood concept design for the stream.	20
Stormwater Utility Fee Credit Manual Updates	11/9/2022	Staff presented on the updates to the credit manual for the Stormwater Utility Fee to City Council.	City-Wide
Strawberry Run Stream Health Improvement Community Collaboration	11/18/2022	The group met at the path entrance at the corner of Fort Williams Pkwy and Fort Worth Ave and walked with Consultant to hear about an alternative approach using large wood structures.	20
Stormwater Utility Fee Credit Manual Updates	12/15/2022	Staff presented on the updates to the credit manual for the Stormwater Utility Fee to the Ad	20

Activity	Date	Topic	Number of Participants (approximate)
		Hoc Stormwater Utility and Flood Mitigation Advisory Committee.	
Stormwater Utility Fee Credit Manual Updates	12/20/2022	Staff presented on the updates to the credit manual for the Stormwater Utility Fee to a local civic association: Auburn Village.	20
Strawberry Run Stream Health Improvement Community Collaboration	10/11/2022	Discussion of project goals and review of current design options.	20

3.2 Public Involvement/Participation (MCM #2)

The following table is a summary of activities for Minimum Control Measure #2 and their completion status. Additional detail is provided after the table and in Appendix B.

Table 4. Summary of Activities for MCM #2

BMP	Measurable Goal	Status
2A Public Reports, Input, and Participation Procedures		
Maintain the City's web-based reporting (Alex311) and call center systems.	Include a screen shot of Alex311 and phone number for T&ES Stormwater management.	✓ Complete
Post MS4 Program Plan on webpage and document input/feedback.	Document that the program plan has been placed on the webpage and any input received on the plan.	✓ Complete
2B MS4 Program and Stormwater Pollution Prevention Webpage		
Maintain the City's MS4 and Stormwater Pollution Prevention Webpage	Provide the address of the webpage and a snapshot of the webpage.	✓ Complete
2C Local Activities Public Involvement		
Implement at least two clean-ups per year	Document sponsorship and participation in clean-up events including approximate participation	✓ Complete
Participate in at least two educational events per year	Document sponsorship and participation in educational events, including approximate participation	✓ Complete

BMP	Measurable Goal	Status
Continuously implement the storm drain marker program and maintain City owned pet waste stations.	Document the number of individuals marking storm drains and the maintenance of City owned pet waste stations	✓ Complete

BMP 2A Public Reports, Input, and Participation Procedures

The City implemented the following BMPs during this permit year in accordance with the MS4 Program Plan.

1. Maintained Alex311 web-based problem reporting/service request and call center (311) that can be used by residents and others to report suspected illicit discharges (including improper disposal or spills), complaints (including ones regarding land disturbing issues), and other input. During this reporting period, no public input on the MS4 program was received. Input pertaining to stormwater illicit discharges is included in Section 3 of this report.

2. Posted the updates to the MS4 Program Plan no later than 30 days after the update (10/1) to the City's Stormwater MS4 Program webpage (www.alexandriava.gov/93364). The webpage includes a general email address (MS4ProgramPlan@alexandriava.gov) and the main phone number for T&ES-SWM for the public to use to submit input and feedback on the plan.

Measure of Effectiveness

1. A hyperlink to the Alex311 webpage is provided in Appendix B. Potential illicit discharge complaints, some which were received through Alex311, may be found in Appendix C. The MS4 Program Plan was updated with information on Alex311 in FY20.

2. The updated MS4 Program Plan was posted in July 2020. No comments were received for the plan.

BMP 2B MS4 Program and Stormwater Pollution Prevention Webpage

The City maintains a website dedicated to stormwater pollution prevent, water quality and the MS4 Program at www.alexandriava.gov/Stormwater that has links to other aspects of the stormwater management program. The site provides information about the program, serves as a forum to distribute educational materials, includes information on where to report suspected illegal dumping, and makes documents accessible to the public for review and comment.

In accordance with Part I.E.2.b, the City's MS4 Program and Stormwater Pollution Prevention webpage was updated to contain:

1. Current MS4 permit and coverage letter;
2. Most current MS4 Program Plan;
3. Annual reports from FY2015 to current;
4. T&ES-SWM main phone number and Alex311 link through "Contact Us" at the top of the page for reporting illicit discharges or other potential stormwater pollution concerns; and
5. Email address (MS4ProgramPlan@alexandriava.gov) for providing input on the MS4 Program Plan and other general inquiries about the program.

Measure of Effectiveness

The address to the City's MS4 Program webpage is https://www.alexandriava.gov/stormwater-management/municipal-separate-storm-sewer-system-ms4-permit. No updates to the MS4 Program Plan were deemed necessary.

BMP 2C Local Activities Public Involvement

The City sponsors, promotes, and participates in numerous local events to educate citizens about the importance of preventing stormwater pollution. During FY2023, the City held many activities to promote stormwater awareness and water quality including those listed below and those presented in Table 5.

- The City held three clean up events during FY2023, as indicated in Table 5.
- The City hosted a rain barrel raffle contest during FY2023; over 300 residents signed up for a free rain barrel and 50 were distributed across the City.
- The City hosted one storm drain marking event in partnership with Volunteer Alexandria however, the event was not well attended.
- The City hosted "Imagine a Day without Water" in October through "One Water Alexandria". Initiated in 2018, One Water Alexandria is a partnership between the three water entities that serve the City of Alexandria: Virginia American Water, who provides drinking water; the City of Alexandria, who owns the sanitary and storm sewer infrastructure; and Alexandria Renew Enterprises (AlexRenew), who owns the water resource recovery facility, interceptors, pump stations, and combined sewer outfalls.
- The City's annual Earth Day event was updated into a month-long celebration with events across the City. The City's Stormwater Management Division participated in two public involvement and outreach events: Del Ray Garden Fest and the 2nd Annual ALX Dog Walk.

Measure of Effectiveness

The T&ES-SWM organized, coordinated, and participated in several virtual activities focused on water quality in the City of Alexandria where staff had the opportunity to educate participants about stormwater pollution and prevention and provide online resources focused on education and outreach (see Table 5). These activities all create awareness regarding the importance of preventing stormwater pollution. No updates to the MS4 Program Plan were deemed necessary.

Table 5. Public Stormwater Outreach Events during PY4

Activity	Date	Participants	Event Details
Chesapeake Bay Clean Up at the Potomac River	6/10/2023	10	Volunteers came out to pick up litter along the Potomac River at Windmill Hill, the City's living shoreline project.
Storm Drain Marking - Volunteer Alexandria	4/18/2023	1	The City worked with Volunteer Alexandria to host a storm drain marking event with interested public. Only one person attended.
Student Environmental Action Showcase (SEAS) Event	4/18/2023	30	Participated in SEAS which focuses on middle school students in the DC Metro area. The hands-on activity offered education on different types of stormwater pollutants while creating a key chain.
Del Ray Garden Fest	4/23/2023	200	Educated community about stormwater and launched the inaugural "Poop Fairy" yard signs for residential use.
Spring Clean Up at Four Mile Run	4/15/2023	30	Volunteers came out to pick up litter at Four Mile Run.
ALX Dog Walk	4/29/2023	800	Shared information on picking up pet waste including pet waste bag holders and the Poop Fairy yard signs.
Bike To Work Day	5/19/2023	30	Provided general information on stormwater management and the key education topics.
International Coastal Cleanup and Ocean Conservancy with Clean VA Waterways	9/24/2023	30	Volunteers came to Historic Holmes Run for litter pick up in support of the International Coastal Cleanup and alongside our partners at Clean Virginia Waterways.
Imagine a Day without Water	10/20/2022	30	One Water Alexandria hosted an event at City Hall in Old Town, Alexandria, where materials were distributed to the public who stopped by to learn about water resources in the City.

Flood Action Alexandria

During PY5, the City continued implementation of the Flood Action Alexandria program. Launched in early 2021, Flood Action Alexandria brings together experts from the Department of Transportation and Environmental Services Stormwater Management Division, Public Works Services, and Sanitary Infrastructure Division, as well as the Department of Project Implementation and an Ad Hoc Stormwater Utility and Flood Mitigation Advisory Group to address stormwater flooding issues across the City. The City has experienced more frequent and severe storms due to climate change and is working through Flood Action Alexandria to accelerate stormwater capital infrastructure improvements, conduct education and outreach, support monitoring and emergency operations, and help improve the City's overall resilience.

As part of this effort, the City installed new rain gauges throughout the City in May 2021, which are tracked by local watershed. In 2021, the City launched a new "Locate Your Watershed" built on a GIS platform to help educate residents on which local watershed they live in. A Project Dashboard, also built on a GIS platform, that provides details on flood mitigation infrastructure projects. The Ad Hoc

group participates in frequent meetings to learn and discuss issues pertaining to sewer infrastructure, flooding, and the stormwater utility fee. The City received funding from the Virginia Department of Conservation and Recreation to enhance hardened infrastructure projects aimed at reducing flood impacts and incorporating green infrastructure.

The Flood Mitigation Pilot Grant – the first in Virginia – was launched in August 2021 as part of the new Flood Action Alexandria Program as a partnership between the City and property owners to incentivize property owners to implement eligible flood mitigation measures on their property providing a matching 50/50 reimbursement grant up to $5,000 for $10,000 spent on implementing eligible flood mitigation practices, with cleanup and damage repair not constituting eligible practices. The grant incentivizes property owners to implement these small-scale flood mitigation practices in the near term to protect their property while staff works on Large Scale Capacity and Spot Improvement projects that take longer to deliver.

Staff worked with the City's Legislative Director and a local state senator to introduce a bill to revise the Code of Virginia effective July 1, 2021, to allow for the use of public funds on private property for the purpose of the grant program. Staff from T&ES worked with the City Attorney's Office, Planning and Zoning, and Code Administration to develop the requirements of the Flood Mitigation Pilot Grant Program, and worked with ITS staff for the application process.

Energy and Climate Change Action Plan and Office of Climate Action

The City's Stormwater Management Division supported the development of the Energy and Climate Change Action Plan 2023 in coordination with Department of General Services (Energy) and the Office of Environmental Quality. The Plan focuses on both climate change mitigation and resilience, specifically in the areas of heat island impacts and flooding, which ties into the Flood Action Alexandria initiative described above. During FY2023, the City announced the development of the new Office of Climate Action in the City Manager's Office.

3.3 Illicit Discharge Detection and Elimination (MCM #3)

The following table is a summary of activities for Minimum Control Measure #3 and their completion status. Additional detail is provided after the table and in Appendix C.

Table 6. Summary of Activities for MCM #3

BMP	Measurable Goal	Status
3A Storm Sewer System Outfall Map and Outfall Information Table		
Maintain an up-to-date storm sewer map and outfall information table.	Keep up-to-date storm sewer map and outfall information table available on request.	✓ Complete
Update the storm sewer map and outfall table by October 1st of each year.	Include PDF of updated storm sewer map and information table in the annual report. Provide a summary of updates.	✓ Complete

BMP	Measurable Goal	Status
Provide GIS shapefiles to DEQ no later than July 1, 2019	Include documentation of submittal.	✓ Complete
Notify downstream MS4s of any new physical interconnections.	Include copies of previous notifications and list and provide any notifications from the permit year.	✓ Complete
3B Prohibition on Illicit Discharges		
Enforce prohibition on illicit discharges (Chapter 13 of City Code).	Report number of illicit discharges identified and report how they were controlled or eliminated. Review City IDDE Program Manual and corresponding City Code and make recommendations accordingly.	✓ Complete
3C Illicit Discharge Detection and Elimination Written Procedures		
Maintain, implement and enforce the written procedures found in the City's IDDE Program Manual.	Follow procedures and update as necessary.	✓ Complete
Investigate suspected illicit discharges.	Report number of suspected illicit discharges and provide a narrative on how they were controlled or eliminated.	✓ Complete
Screen at least 50 outfalls annually such that no more than 50 are screened in the previous 12-month period.	Include documentation of the outfall screening completed during the permit year to include results, resolution, and investigation closure. Any follow-up actions will also be included.	✓ Complete
3D Alex311		
Maintain Alex311	Include a screen capture of Alex311. Document the number and types of incidents handled.	✓ Complete
3E Household Hazardous Waste (HHW) Program		
Provide HHW collection services to all residents	Provide copies of the program web site and brochures. Document program participants and the number of equivalent barrels of waste accepted.	✓ Complete
3F Identification of Permitted Stormwater Discharges		

BMP	Measurable Goal	Status
Keep up-to-date permitted discharges information and distribute to field crews.	Provide up-to-date map and list of state-permitted stormwater discharges.	✓ Complete
3G Prohibition of Outdoor Cleaning of Restaurant Equipment		
Enforce prohibition on outdoor cleaning of restaurant equipment.	Document example SUP, if one has been done in the permit year.	✓ Complete

BMP 3A Storm Sewer System Outfall Map and Outfall Information Table

The City has previously developed and continues to maintain a storm sewer system map showing all features required in the MS4 permit, including all stormwater outfalls discharging to the waters of the Commonwealth, as well as pipes, catch basins, and inlets. The map provides a valuable tool to fully understand the storm system and aids in investigating and eliminating possible illicit discharges. The data used to develop this map is continuously updated as new systems are installed and needed refinements to the system area discovered. The updated data is used to create the map which is exported for the annual report each permit cycle. Therefore, data shown on the map reflects all changes and updates to the City's documented storm sewer system as the date on the map.

The City shall continue to identify physical interconnections with other regulated MS4s and notify in writing any downstream regulated MS4 of any new physical interconnections.

Measure of Effectiveness

The storm sewer system map and corresponding outfall information table have been updated to reflect any changes to the MS4 occurring on or before June 30th of the reporting year. Updates to the storm sewer system map are completed as redevelopment occurs and when refinements to the system are realized. The most current storm sewer system map and associated outfall table has been provided in Appendix C.

On July 30, 2020, the City provided an updated letter of adjacent MS4 jurisdictions where likely interconnections exist however, none have been identified. The letters were shared with National Park Service for George Washington Memorial Parkway, Arlington County, Fairfax County, and Virginia Department of Transportation. Copies of these notifications can be found in Appendix C. No updates to the MS4 Program Plan were deemed necessary.

BMP 3B Prohibition on Illicit Discharges

The purpose of this BMP is to ensure that the City has the legal tools necessary to effectively prohibit illicit discharges and to conduct necessary enforcement in the case of an illicit discharge. City Council has adopted appropriate measures, including civil and criminal penalties, to prohibit illicit discharges. The City Attorney has reviewed the City Code and has determined that no additional changes are needed at this time. In recent years, the City did recognize the need for

civil penalties for offenses that are not categorized as criminal. As a result, the City updated the Environmental Offenses ordinance to include civil penalties for identified illicit discharges.

Measure of Effectiveness

Appendix C provides a summary of illicit discharge complaints and a narrative on how each complaint was handled, including how any actual discharge was controlled or eliminated as appropriate. No pattern of illicit discharges necessitated a review of policies, procedures, or ordinances. No updates to the MS4 Program Plan were deemed necessary.

BMP 3C Illicit Discharge Detection and Elimination Written Procedures

Pursuant to the 2013-2018 General Permit program plan update requirements, the City developed the Illicit Discharge Detection and Elimination Program manual which includes written policies, procedures, and legal authority for the detection, investigation, and elimination of illicit discharges. Outfall field screening is performed in accordance with the IDDE Program manual which includes the requirement outlined in Part I.E.3.c of the 2018-2023 permit. The City's IDDE Program manual was updated to ensure current methodology and compliance with the current permit, to include the use of civil penalties. This manual can be found in the City's MS4 Program Plan.

The City continues to maintain, implement, and enforce the written policies and procedures found in the City's IDDE Program manual. This includes:

- Documenting and tracking reported suspected illicit discharges or illicit discharges discovered during dry weather field screening, and the results of any investigations in accordance with the requirements in Part I.E.3.c.(2) of the 2018-2023 permit.
- Performing dry weather field screening on at least 50 outfalls annually such that no more than 50% are screened in the previous 12-month period. Outfalls were prioritized for field screening by the City in accordance with the rationale and procedure found in the IDDE Program manual.
- The use of enforcement actions and legal penalties as outlined in the IDDE Program manual, when necessary.

Measure of Effectiveness

A list of illicit discharges to the MS4 including spills reaching the MS4 can be found in Appendix C. In addition, a list of all investigations performed for reported suspected illicit discharges to include results, resolution, and date of investigation closure can also be found in Appendix C.

A total of 50 outfalls were screened during the reporting period as part of the dry weather screening program, with a table summarizing the effort found in Appendix C. During this Permit Year, the MS4 Program Plan and IDDE written procedures (Program Manual) was updated (September 2022) to include the updated afterhours Emergency Standby Procedures that include after-hours notification and reporting for illicit discharges to clarify this process.

BMP 3D Alex311

Alex311 uses a web-based reporting form, smart phone app, and call center built upon the Salesforce Customer Relationship Management (CRM) system. The Salesforce CRM system is a cloud-based repository for public complaints and service requests. The CRM is integrated with the City's asset management database, Cityworks™, for public submissions requiring asset maintenance or investigation. Illicit discharge and illegal dumping complaints are investigated by T&ES-Stormwater Management Division and the Fire Marshal's Environmental and Industrial Unit (EIU). All public submissions are tracked through the City's CRM database and Cityworks™.

The Alex311 customer service center connects customers to information, services, and solutions using phone (703-746-HELP or 311) and web-based portals to receive and process requests and complaints. Alex311 enables the City to standardize best practices and knowledge base information throughout the City in support of citizen engagement, customer service, service request and case management services. Alex311 provides improved tracking and information updates for customers through the life cycle of the service request, streamlined service request creation and management, and data-driven analytics such as dashboards and maps.

Measure of Effectiveness

The City (through T&ES-Stormwater and EIU reporting mechanisms) handled 36 water quality and illicit discharge related complaints or incidents during this reporting period. Appendix C provides a summary of the complaints and a narrative on how each discharge was controlled or eliminated. The T&ES SWM Division receives complaints directly from Alex311 and/or documents the information received via email, phone, or another source. Reports are also made via 911. The EIU is responsible for entering this information into the EnerGov database. The SWM Division receives and enters data into Alex311 for incidents handled solely by their office. During coordinated responses, the EIU and SWM Division maintain both the EnerGov and Alex311 database. Screen shots of EnerGov, Alex311, and Cityworks™ are provided in Appendix C.

BMP 3E Household Hazardous Waste (HHW) Program

Participation in the household hazardous waste (HHW) program continues to be a popular and effective program with approximately 14,311 participants using the program in this permit year. Materials are calculated based on 55-gallon drums or equivalent (barrels). The number of barrels has been tracked since 2008 when the materials were put into the large barrels or drums. As a result, the City continues to track this number as "equivalent" barrels. The webpage alexandriava.gov/19206 includes information on the types of materials that may be left at the drop-off points and the schedule for drop-offs. The following table provides a snapshot of HHW program statistics.

Table 7. HHW Users and Barrels by Fiscal Year (FY)

Year	Users	Barrels (or Equivalent Barrels) of HHW
FY2008	4,987	-
FY2009	6,067	754
FY2010	7,059	875
FY2011	7,920	822
FY2012	7,698	702
FY2013	8,424	759
FY2014	9,535	516
FY2015	10,476	504
FY2016	9,976	409
FY2017	10,974	359
FY2018	11,431	309
FY2019	12,278	328
FY2020	11,975	298
FY2021	16,359	385
FY2022	14,528	353
FY2023	14,311	250

Measure of Effectiveness

Table 7 shows the quantity of material collected. Hyperlinks to the HHW webpage and the most recent program brochure is provided in Appendix C. No updates to the MS4 Program Plan were deemed necessary.

BMP 3F Identification of Permitted Stormwater Discharges

The City continues to obtain updated information annually on state-permitted stormwater discharges within the City limits and maintains a map of these discharges. The purpose of this BMP is to provide field operations staff with a visual tool for identifying permitted and non-permitted discharges.

Measure of Effectiveness

A current map and table of state-permitted stormwater discharges, current as of June 2023 is in Appendix C. No updates to the MS4 Program Plan were deemed necessary.

BMP 3G Prohibition of Outdoor Cleaning of Restaurant Equipment

The City continues to include in the Special Use Permit (SUP) issued for restaurant facilities a standard condition that states: “Kitchen equipment shall not be cleaned outside, nor shall any cooking residue be washed into the streets, alleys, or storm sewers.”

Measure of Effectiveness

A sample of a Development Special Use Permit (DSUP) reviewed during the reporting period with the appropriate language regarding restaurant equipment is found in Appendix C. No updates to the MS4 Program Plan were deemed necessary.

3.4 Construction Site Stormwater Runoff Control (MCM #4)

The following table is a summary of activities for Minimum Control Measure #4 and their completion status. Additional detail is provided in the table below and in Appendix D.

Table 8. Summary of Activities for MCM #4

BMP	Measurable Goal	Status
4A Maintain DEQ Erosion and Sediment Control Program Consistency		
Maintain E&SC program consistency with State regulations.	Document the City program consistency with state law and regulations.	✓ Complete
4B Site Control Implementation		
Ensure that the proper controls are implemented to prevent nonstormwater discharges to the MS4.	Implement City's Policies and Procedures for Construction Site Runoff Control Inspections	✓ Complete
4C Construction General Permit Inspections and Tracking		
Require applicable land-disturbing activities secure coverage under the construction general permit.	Require construction general permits as required in accordance with City ordinance.	✓ Complete
Review and approve SWPPPs and ensure SWPPP implementation.	Review and approve SWPPPs. Document total number of inspections; provide a summary of enforcement actions included number and type.	✓ Complete
Maintain a database log for tracking all land disturbing activities.	Summarize annual land disturbing activities that secured a construction general permit	✓ Complete

BMP	Measurable Goal	Status
Inspect land-disturbing activities in compliance with the E&S ordinance, the EMO and written policies and procedures.	Document total number of inspections; provide a summary of enforcement actions included number and type.	✓ Complete
Ensure inspectors and plan reviewers are certified and keep records on file.	Document certifications held by City staff and ensure they stay up-to-date.	✓ Complete
Utilize legal authority to require compliance with an approved plan or require plan revisions or modifications if the inspection shows an approved plan to be inadequate to control stormwater runoff.	Document total number of inspections; provide a summary of enforcement actions included number and type.	✓ Complete

BMP 4A Maintain Erosion and Sediment Control Program Consistency

The City's construction site stormwater runoff program is implemented in accordance with Part I.E.4.a of the permit.

The City's Erosion and Sediment Control Program continues to be consistent with the Virginia Erosion and Sediment Control Law (VESCL) and attendant regulations. During the 2014 – 2015 permit year, the City reviewed the Erosion and Sediment Control (E&SC) Ordinance for consistency with the Environmental Management Ordinance (EMO) and adopted the appropriate amendments to the E&SC ordinance.

Measure of Effectiveness

The effectiveness of the City's program is measured by consistency with State regulations as determined by staff from the T&ES-SWM. No consistency issues were identified during this permit year. Following review of the E&SC ordinance in the 2014-2015 permit year, the City amended the language for consistency with the EMO. The City Council adopted the amendments on June 10, 2015. No updates to the MS4 Program Plan were deemed necessary.

BMP 4B Site Control Implementation

The City has incorporated language into its plan review checklist, policies and procedures, and Sec. 13-111of the EMO which requires applicable proposed land disturbing activities to secure coverage under the construction general permit prior to commencing land-disturbance. Proper controls are required to be implemented at these sites to prevent nonstormwater discharges to the MS4. These nonstormwater discharges include wastewater, concrete washout, fuels and oils, and other illicit discharges. To ensure that these controls are in place, the City has developed a policies and procedures

document entitled *Policies and Procedures for Construction Site Runoff Control Inspections* which can be found in Appendix D of the City's MS4 Program Plan.

Measure of Effectiveness

Continue to implement City's *Policies and Procedures for Construction Site Runoff Control Inspections*.

BMP 4C Construction General Permit Inspections and Tracking

The City received local VSMP authority approval to administer the Construction General Permit effective July 1, 2014. Since this date, applicable construction sites had to submit stormwater pollution prevention plans (SWPPP) to the City for review and approval in order to secure coverage under the General VPDES Permit for Stormwater Discharges Associated with Construction Activities prior to final site plan release. This requirement is found in Sec. 13-111 of the EMO. The City also revised the plan review checklist and plan review standard conditions to reflect this requirement. A copy of the SWPPP template can be found on the City's website at www.alexandriava.gov/50216.

Part I.E.4.c of the permit requires the City to conduct inspections and have written inspection procedures of land-disturbing activities. The City has developed a policies and procedures document entitled *Policies and Procedures for Construction Site Runoff Control Inspections* as described in BMP 4B and found in the City's MS4 Program Plan.

Land disturbing activities are tracked by T&ES-Development and Right-of-Way (DROW) through the plan review process. The information is recorded and logged when final approved plan mylars and grading plans are released. Reports are sent to T&ES-SWM who provides the data quarterly to DEQ.

In accordance with 9VAC25-850-40, inspectors and plan reviewers are required to maintain the appropriate certification of competency from the state.

The City continues to use its legal authority to require compliance with an approved plan or require plan revisions or modifications if the inspection shows and approved plan to be inadequate to control stormwater runoff. Stormwater staff reviewed each plan set the City receives for compliance with the EMO. If changes to the plans are required, the plans will be reviewed again to ensure compliance.

Measure of Effectiveness

Land disturbing projects that occurred during the reporting period have been conducted in accordance with the department approved standards and specifications for erosion and sediment control. No updates to the MS4 Program Plan were deemed necessary.

The following table provides an annual summary of land-disturbing activities data required to be reported under permit Section II 4.f. This data, broken down quarterly, has been provided to DEQ through the construction general permit process. A total of 38 projects were released; with a total of approximately 111 acres disturbed.

Table 9. Land-Disturbing Activities

Reference #	Address	Disturbed Acres	Release Date
DSUP2021-10004	1525 Kenwood Avenue	4.92	1.13.2023
GRD2021-00063	1603 King James Place	0.2806	1.31.2023
DSP2021-00012	5801 Duke Street	60.64	1.31.2023
GRD2022-00044	418 S Washington Street	0.057	10.12.2022
GRD2022-00027	1120 Roan Lane	0.5456	10.25.2022
GRD2022-00043	5000 Seminary Road	1.2093	10.25.2022
DSUP2021-10025	2600 Richmond Highway	3.88	10.26.2022
GRD2022-00046	107 Randolph Avenue	0.156	10.27.2022
GRD2022-00037	703&705 South View Terrace	0.3039	10.6.2022
DSUP2020-10032	450 S Patrick Street	2.59	11.10.2022
GRD2022-00041	1 Prince Street	0.111	11.15.2022
GRD2022-00019	1309 Oakcrest Drive	0.1973	11.4.2022
DSUP2021-10021	220 S Union Street	0.824	11.9.2022
GRD2022-00048	304 Cambridge Road	0.3099	11.9.2022
DSUP2021-10002	100 Jones Point Drive	1.09	12.9.2022
DSUP2021-10020	805 N Columbus Street	0.9265	2.21.2023
DSUP2021-10032	510 S Patrick Street	2.4389	2.23.2023
GRD2022-00050	4150 Lawrence Avenue	1.2972	2.8.2023
GRD2022-00042	404 S Windsor Avenue	0.198	3.16.2023
GRD2022-00054	29 W Glendale Avenue	0.1482	3.30.2023
DSP2019-000033	116 N Henry Street	0.6155	3.7.2023
GRD2023-00006	1600 N Frost Avenue	0.1316	4.10.2023
GRD2022-00022	5241 Seminary Road	0.1601	4.11.2023
GRD2022-00055	303 Yale Drive	0.2495	4.4.2023
DSUP2022-10012	263 W Glebe Road	3.96	5.26.2023
GRD2022-00004	1 Uhler Street	0.3242	7.12.2022
GRD2022-00023	3602 Russell Road	0.1273	7.13.2022
DSUP2020-00012	3650 University Drive	4.01	7.13.2022
GRD2022-00018	3316 Circle Hill Road	0.2361	7.18.2022
GRD2021-00024	2007 Commonwealth Avenue	0.18	7.22.2022
CIP2022-00001	4600 Duke Street	0.0122	7.22.2022
GRD2022-00015	300 North View Terrace	0.1135	7.28.2022
GRD2021-00027	2600 Commonwealth Avenue	6.2684	7.7.2022
GRD2021-00080	605 N Overlook Drive	0.5665	8.3.2022
GRD2022-00028	104 Cedar Street	0.1523	8.8.2022
GRD2022-00036	317 E Howell Avenue	0.1273	8.8.2022
DSUP2021-10026	3701 W Braddock Road	11.71	8.8.2022
GRD2021-00042	2406 Terrett Avenue	0.124	9.23.2022

The City performed a total of 1,711 onsite inspections – 1,033 outside of the MS4 boundary and 678 inside of the MS4. As described in the MS4 Program Plan, T&ES-C&I inspectors perform other duties beyond E&SC inspections. For this reason, inspectors may visit a site up to two times daily. During this time, inspectors may provide verbal direction regarding E&SC and stormwater measures. This verbal direction is considered formal but may not always be documented formally in an inspection report unless a required inspection and report is due, or if a major corrective action is required. Due to this enhanced oversight, City inspectors provide continual direction which helps keep a site in order. Staff confirmed no enforcement actions and no Stop Work Orders were issued during the permit year.

The applicable City staff have obtained DEQ certifications (Stormwater Management Program Administrator, Plan Reviewer, and/or Inspector) or are in the process of obtaining these certifications. All applicable staff are currently fully certified, provisionally certified, or have the necessary training scheduled.

3.5 Post Construction Stormwater Management (MCM #5)

The following table is a summary of activities for Minimum Control Measure #5 and their completion status. Additional detail is provided after the table and in Appendix E.

Table 10. Summary of Activities for MCM #5

BMP/Task	Year	Measurable Goal	Status
5A Stormwater Facility BMP Inventory			
Maintain an updated electronic BMP database for reporting.	All	Provide a table and electronic spreadsheet of all BMPs brought online during the reporting period.	✓ Complete
5B Stormwater Facility BMP Maintenance Agreements and Guidelines			
Require the proper execute and recordation of BMP maintenance agreements.	All	Provide a sample of a properly executed and recorded BMP agreement.	✓ Complete
5C Implement Bay Act and Local VSMP Authority			
Continue to implement the Environmental Management Ordinance.	All	Comply with DEQ Bay Act reporting and review requirements and implement the ordinance.	✓ Complete
5D Stormwater Facility BMP Design Guidelines			
Require adherence to Virginia BMP Clearinghouse and Virginia BMP Handbook.	All	Ensure design is consistent with VSMP regulations and summarize any changes to standards.	✓ Complete

5E Public Stormwater BMP Facility Inspection and Maintenance			
Inspect public BMP facilities for proper operation at least once annually.	All	Document the number of BMPs inspected each year and provide summary information.	✓ Complete
5F Private Stormwater BMP Facility Inspection and Enforcement			
Inspect all BMP facilities for proper operation at least once during the permit period.	All	Document total number of inspections completed, and the number of enforcement actions, when applicable.	✓ Complete

BMP 5A VSMP Implementation

The City amended the EMO for consistency with the new VSMP regulations and maintained consistency with the Chesapeake Bay Act requirements and received provisional approval as a local VSMP authority effective July 1, 2014, and received full approval in November 2014.

The City continues to implement a stormwater management program, including design standards, that are compliant with the Chesapeake Bay Preservation Area Designation and Management Regulations and the VSMP regulations, as incorporated in the EMO. Section 13-109 of the EMO, requires that development and redevelopment projects subject to VSMP Part II.B technical criteria conform to the design specifications of the Virginia BMP Clearinghouse for stormwater facility BMPs, and utilize the Virginia Runoff Reduction Method spreadsheet to demonstrate compliance with water quality and quantity requirements. Grandfathered projects and those meeting the "time limits" associated with coverage under the construction general permit are subject to Part II. C technical criteria and may use stormwater facility BMPs previously approved by the City and adhere to the design guidelines in the Alexandria Supplement to the Northern Virginia BMP Handbook. The City has also adopted a Green Building Policy that includes a requirement for all new private development and redevelopment projects to meet a minimum of 65% of their state phosphorous reductions using green infrastructure, which was first promulgated through a "Use of manufactured/Proprietary Stormwater BMPs" memo to industry. The Green Building Policy require City projects must meet 100% of their state phosphorous reductions through green infrastructure.

The City adopted a combination of homeowner outreach and education for owners of stormwater facility BMPs on individual residential lots.

Measure of Effectiveness

A copy of the approval letter designating the City as a local VSMP authority and a copy of the City's adopted ordinance is provided in Appendix E. No updates to the MS4 Program Plan were deemed necessary.

BMP 5B Public Stormwater Facility Inspection and Maintenance

Pursuant to the general permit, the City inspects public facilities at least once every year. The inspections are performed according to the written policies and procedures entitled *Policies and Procedures for Post-Construction BMP Inspection and Maintenance* which can be found in Appendix

E of the City's MS4 Program Plan. The City inspected all 124 stormwater facility BMPs that it currently owns and operates.

Measure of Effectiveness

A summary of inspection results is provided in Appendix E. Twenty-nine (29) facilities required maintenance based on the annual inspection. None required "significant maintenance" (defined as non-routine maintenance). Additional information about the significant maintenance can be found in Appendix E. No updates to the MS4 Program Plan were deemed necessary.

BMP 5C Private Stormwater Facility Inspection and Enforcement

Pursuant to the general permit, the City inspects privately-owned stormwater facilities at least once every five years. Per Section 13-109 of the EMO, facility owners must perform periodic inspection and required maintenance to ensure the long-term functioning of the facilities as originally designed to protect water quality. The inspections are performed according to the written policies and procedures entitled *Policies and Procedures for Post-Construction BMP Inspection and Maintenance* which can be found in Appendix E of the City's MS4 Program Plan. These policies and procedures were reviewed and updated in April 2019 as part of continuous improvement and for consistency with the current permit.

Measure of Effectiveness

Seventy-eight (78) total private stormwater facility inspections were completed this permit year, with no actions being sent out this permit year related to these inspections. Please note that additional enforcement actions may be taken in response to these inspections; however, these actions may not take place until the next reporting period since owners have 90 days to complete the maintenance. A list of the inspections and corresponding data is provided in Appendix E. No updates to the MS4 Program Plan were deemed necessary.

BMP 5D Stormwater Facility Inventory and Reporting

The City continues to use Microsoft Access to track all stormwater facilities and/or BMPs that were implemented to improve water quality. As required by Part I.E.5.d of the permit, tracked information includes:

1) Stormwater management facility or BMP type:
2) Stormwater management facility or BMPs location as latitude and longitude;
3) Acres treated by the stormwater management facility or BMP, including total acres, pervious acres, and impervious acres;
4) Date the facility was brought online (MM/YYYY). If the date brought online is not known, a date of June 30, 2005 will be used.
5) 6th Order Hydrologic Unit Code (HUC) in which the stormwater management facility is located;
6) Whether the facility stormwater management facility or BMP is owned or operated by the permittee or privately owned;

7) Whether or not the stormwater management facility or BMP is part of the permittee's Chesapeake Bay TMDL action plan required in Part II A or local TMDL action plan required in Part II B, or both;
8) If the stormwater management facility or BMP is privately owned, whether a maintenance agreement exists; and
9) The date of the permittee's most recent inspection of the stormwater management facility or BMP.

Measure of Effectiveness

During this permit year, 36 stormwater management facilities and/or BMPs were installed in the City to improve water quality. All required information for the new facilities brought online is provided in Appendix E, Stormwater Management Facilities Installed this Permit Year. During this Program Year, one Development Site Plan, DSP2022-00004, also known as "Edgewood Towns", utilized an off-site nutrient credit purchase of .04 nutrient credits (.04 lbs) from the Whispering Hills Nutrient Bank to comply with the remainder of the project's onsite phosphorus reduction requirements. Whispering Hills Nutrient Bank is an authorized bank sponsor by the Virginia Department of Environmental Quality Nutrient Reduction Implementation Plan. A map of the City's stormwater management facilities and/or BMPs is provided in Appendix E. No updates to the MS4 Program Plan were deemed necessary.

The City electronically reported the BMPs installed under the construction general permit using the construction general permit database during this reporting period.

The City electronically reported the BMPs installed this permit year (excluding the ones already submitted using the construction general permit database) using the DEQ BMP Reporting Warehouse.

BMP 5E Stormwater Facility Maintenance Agreements

The City continues to require the execution and subsequent recordation of Stormwater BMP Facilities Maintenance / Monitoring Agreement to ensure long term operation and maintenance of new BMPs per the EMO. In addition, staff has also created a BMP maintenance vendor list for use by facility owners and operators.

Measure of Effectiveness

A sample BMP maintenance agreement that was submitted during this permit year and a screen capture that the form may be downloaded from the City's website Appendix E. The City continues the program of mailing educational letters that include maintenance responsibilities to single-family property owners with on-lot BMPs. An example of the letter and sample maintenance information sent to single-family residential BMP owners during this permit year is also located in Appendix E. No updates to the MS4 Program Plan were deemed necessary.

3.6 Pollution Prevention and Good Housekeeping for Municipal Facilities (MCM #6)

For the purposes of this annual report, municipal facilities are those facilities owned or operated by the City.

The following table is a summary of activities for Minimum Control Measure #6 and their completion status. Additional detail is provided after the table and in Appendix F.

Table 11. Summary of Activities for MCM #6

BMP	Measurable Goal	Status
6A Written Pollution Prevention and Good Housekeeping Procedures		
Implement Standard Operating Procedures for Daily Operations	Document any updates to SOPs and any new SOPs.	✓ Complete
6B Stormwater Pollution Prevention Plans for High-Priority Facilities		
Implement SWPPPs and annually review and add/remove as necessary	Document any new facilities requiring SWPPPs or any removed. Continue to implement SWPPPs.	✓ Complete
6C Turf and Nutrient Management Plans		
Implement Turf and Nutrient Management Plans and annually review and add/remove as necessary	Document any new areas requiring turf and nutrient management plans or any removed. Continue to implement SWPPs.	✓ Complete
6D Prohibiting Deicing Agents with Urea		
Ensure that the City did not use deicing agents that included urea.	Statement that the City didn't using deicing agents that included urea.	✓ Complete
6E Contractor Controls and Oversight		
Ensure proper procedures and controls are implemented by City contractors.	Document any changes to process or procedures.	✓ Complete
6F Training		

BMP	Measurable Goal	Status
Conduct annual training to applicable employees. Training topics will rotate each year between recognizing illicit discharge and pollution prevention and good housekeeping.	A summary report on the required training, including a list of training events, the training date, the number of employees attending training and the objective of the training.	✓ Complete
6G Street Sweeping and Leaf Collection Programs		
Continue to implement the City's street sweeping and leaf collection programs.	Document lane miles swept and cubic yards of debris collected. Document the amount of leaves collected.	✓ Complete
6H Catch Basin and Inlet Cleaning Program		
Continue the City's catch basin and inlet cleaning program.	Document the number of catch basins and inlets cleaned.	✓ Complete
6I Employee Complaint Reporting Program		
Continue to implement the "Report a Problem" program.	Document ongoing implementation.	✓ Complete
6J Environmental Stakeholder Groups		
Participate in Environmental Stakeholder Groups	Presentation with the City's Environmental Policy Commission	✓ Complete

BMP 6A Written Pollution Prevention and Good Housekeeping Procedures

Part I.E.6.a of the permit requires the maintenance and implementation of written procedures for public facilities for best practices for stormwater pollution prevention. During the 2013-2018 permit cycle, the City developed standard operating procedures (SOPs) to minimize or prevent pollutant discharge from daily operations such as road, street, and parking lot maintenance; equipment maintenance; and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers.

The City continues to implement these SOPs and are utilized as part of the employee training program in accordance with Permit Part I.E.6.b. These SOPs will be reviewed once during this permit cycle to ensure they include up-to-date information and effective procedures.

Measure of Effectiveness

The SOPs for Daily Operations are included in Appendix F of the City's MS4 Program Plan for those applicable operations. No SOPs required updating during this permit year. No updates to the MS4 Program Plan were deemed necessary.

BMP 6B Stormwater Pollution Prevention Plans for High-Priority Facilities

During the 2013-2018 permit cycle, the City identified its high-priority municipal facilities that may require the development and implementation of a SWPPP. This list was further refined for those high-priority municipal facilities with a high potential for discharging pollutants. Also completed during the previous permit cycle, the City developed an inspection checklist to be used at municipal facilities. The checklist covers good housekeeping practices, material storage and handling, as well as maintenance practices. The checklist is included in the SWPPPs developed for applicable municipal facilities.

The City continues to maintain and implement the SWPPPs for the identified municipal facilities. Facilities implementing SWPPPs keep an updated copy onsite, and SWPPPs have been incorporated into the pollution prevention training given to municipal employees.

Measure of Effectiveness

The following table provides the list of the municipalities with SWPPPs along with other pertinent information. Upon review of the City's municipal facilities, no additional SWPPPs were developed or removed during the permit year. Periodic inspections continue to be completed and documented in the SWPPPs. No updates to the MS4 Program Plan were deemed necessary.

Table 12. Summary Public Facilities with SWPPPs

Facility	Facility Location	Site Activity	SWPPP Location
Middle Yard at 3220 Colvin Street ("Sign Shop")	3220 Colvin Street	Equipment and Material Storage	3220 Colvin Street
Household Hazardous Waste & Electronics Recycling Center	3224 Colvin Street	Waste Storage and Transfer	2900-B Business Center Dr. – Resource Recovery Office
Equipment and Materials Storage and Vehicle Wash Facility	133 South Quaker Lane	Vehicle, Material and Equipment Storage and Vehicle Wash Facility	2900-B Business Center Dr. – Operations Office
Material Storage Yard	3130 Business Center Drive	Material and Waste Storage	2900-B Business Center Dr. – Operations Office

Facility	Facility Location	Site Activity	SWPPP Location
Field Operations Center	2900-A/B Business Center Drive	Vehicle, Material and Equipment Storage	2900-B Business Center Dr. – Operations Office
Leaf Mulch Facility	4125 Eisenhower Avenue	Material Storage	3220 Colvin Street
Transportation Division Impound Lot	5249 Eisenhower Avenue	Vehicle Storage	5249 Eisenhower Avenue
Impound Lot	3000 Business Center Drive	Vehicle Storage	5249 Eisenhower Avenue
Vehicle and Equipment Maintenance Center	3550 Wheeler Avenue	Vehicle, Material and Equipment Storage	3550 Wheeler Avenue
Fuel Island	3400 Duke Street	Vehicle Fueling and Fuel Transfer	3550 Wheeler Avenue

BMP 6C Turf and Nutrient Management

Part I.E.6.i of the permit requires the maintenance and implementation of turf and landscape nutrient management plans (NMPs) that were developed during the permit cycle. These plans were developed for municipal properties where nutrients were applied in acres that exceeded one acre contiguous.

The list of municipal lands where nutrient management plans are required and have been completed is presented below. This list includes the location and corresponding acreage for each plan and will be updated as needed.

Measure of Effectiveness

A majority of NMPs expired during the Program Year. The updated list and information for completed plans is presented below, which includes the location of the NMPs. The total acreage of managed turf with approved and active NMPs for facilities greater than one-acre is 81.6 acres.

Upon review of the City's municipal operations, seven (7) new locations that required NMPs were identified: Angel Park; Braddock Park; Charles Barrett Elementary School; Chinquapin Park; John Adams Elementary School; Mount Vernon Community Center; Nannie J. Lee Recreation Center; Polk Elementary School; President Gerald Ford Park; Stevenson Square Field; and Lyles-Crouch Traditional Academy. Further, Armistead Boothe Field was removed due to field conversion. The MS4 Program Plan was updated to reflected the most current information on NMPs in the City.

Table 13. Nutrient Management Plans for More than One-Acre

Facility	Street Address	Latitude	Longitude	Acres	Plan End Date	Total
Angel Park	201 W. Taylor Run Parkway	38°48’35”N	77°4’30”W	2.5	3/31/2026	3.1%
Armistead Boothe Park	520 Cameron Station Blvd	38°48’18.9”N	77°07’37.5”W	1.2	3/31/2026	13.1%
Ben Brenman Park	4800 Ben Brenman Park Dr.	38°48’30”N	77° 6’52”W	10.7	3/31/2026	6.3%
Braddock Park	1005 Mt. Vernon Ave	38°49’15.5”N	77° 3’13.3”W	5.1	3/31/2026	1.5%
Charles Barrett Elementary School	1115 Martha Custis Drive	38°50’32”N	77° 4’37”W	1.2	3/31/2026	3.6%
Chinquapin Park	3210 King St.	38°49’15.5”N	77° 3’13.3”W	2.9	3/31/2026	1.3%
Duke St Dog Park	4657 Duke St	38°48’43.5”N	77° 6’45.8”W	1.1	11/30/2023	4.5%
Founders Park	351 North Union Street	38°48’27”N	77° 2’20”W	3.7	11/30/2023	8.9%
Four Mile Run Park	3700 Commonwealth Ave	38°50’24”N	77° 3’34”W	7.3	11/30/2023	3.4%
George Washington Middle School	1005 Mt. Vernon Ave	38°49’15.6”N	77°03’13.4”W	2.8	3/31/2026	1.6%
Harborside Park	487 S. Union St	38°47’58.8”N	77°02’28.5”W	1.3	11/30/2023	5.8%
Hensley Park	4200 Eisenhower Ave	38°48’12”N	77° 6’29”W	4.7	3/31/2026	1.6%
Luckett Park	3540 Wheeler Ave	38°48’26.3”N	77°05’22.8”W	1.3	3/31/2026	1.3%
Montgomery Park	901 North Royal Street	38°48’51”N	77° 2’27”W	1.1	11/30/2023	1.5%
Mount Vernon Community Center	2601 Commonwealth Ave.	38°49’41”N	77° 3’34”W	1.2	3/31/2026	4.7%
Oronoco Park	100 Madison Street	38°48’40”N	77° 2’23”W	3.8	11/30/2023	9.4%
Polk Elementary School	5000 Polk Ave.	38°49’18”N	77° 6’57”W	7.7	3/31/2026	6.7%
Potomac Yards Park	2501 Potomac Ave	38°49’44.2”N	77° 2’52.6”W	5.5	3/31/2026	3.4%
Rivergate Park	2 Montgomery Street	38°48’46”N	77° 2’17”W	2.8	11/30/2023	6.5%
Simpson Park	426 E. Monroe Ave	38°49’18”N	77° 3’4”W	5.3	3/31/2026	2.3%
Lyles-Crouch Traditional Academy	530 S St Asaph St.	38°47’58”N	77° 2’47”W	1.9	3/31/2026	4.0%
West Point	1 Oronoco St.	38°48’12”N	77° 2’21”W	3.3	3/31/2026	3.9%
Windmill Hill Dog Park	501 South Union Street	38°47’58”N	77° 2’30”W	3.2	11/30/2023	3.1%
			Total	**81.6**		**100.0%**

BMP 6D Prohibiting Deicing Agents with Urea

Nutrients, if improperly applied, have the potential to pollute the local waterways, the Potomac River and the Chesapeake Bay. Part I.E.6.k of the permit prohibits the use of deicing agents containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved surfaces.

Measure of Effectiveness

The City did not apply deicing agents containing urea or other forms of nitrogen or phosphorus to roadways, parking lots, sidewalks, or other paved surfaces during this reporting period, consistent with the SOP. No updates to the MS4 Program Plan were deemed necessary.

BMP 6E Contractor Controls and Oversight

The City continues to ensure that contractors working on behalf of the City follow procedures and employ required control measures to ensure that operations do not contribute to stormwater pollution. SOPs for pesticide and herbicide application place requirements on contractors. City employees charged with oversight of City capital projects receive annual water quality training. City capital improvement projects include pollution prevention language. The City will continue to implement this BMP and report on changes annually.

Measure of Effectiveness

During the permit year, the City continued to implement SOPs (described under BMP 6A), required necessary permits and certifications, had necessary language in contracts, and provided water quality training to City employees charged with oversight of City capital projects. No updates to the MS4 Program Plan were deemed necessary.

BMP 6F Training

Staff whose normal duties require a considerable amount of field work play a valuable role in identifying and addressing illicit discharges. Employees performing applicable duties shall be trained in recognizing and reporting illicit discharges no less than once every 24-months. Training provides the appropriate tools for field staff to recognize, document relevant information and report the incident for follow up by the appropriate staff.

City staff engages in daily activities that have the potential to adversely impact water quality. The likelihood of these impacts occurring may be minimized or avoided by providing staff training on pollution prevention and good housekeeping. Employees performing applicable duties shall be trained in pollution prevention and good housekeeping no less than once every 24-months.

In addition, employees hired by the City who apply pesticides and herbicides shall be trained or certified with the Virginia Pesticide Control Act. Certification by the Virginia Department of Agriculture and Consumer Services (VDACS) Pesticide and Herbicide Applicator program shall constitute compliance with this requirement.

The City's employees and contractors serving as plan reviewers, plan inspectors, program administrators, construction site operators and those implementing the City's stormwater program will obtain and maintain the appropriate certification as required under the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act. The employees whose duties include emergency response will be properly trained in spill reporting which may be satisfied through a larger emergency response training program.

Measure of Effectiveness

The T&ES-SWM continues to provide annual training in compliance with the permit and the City's MS4 Program Plan. As indicated in the MS4 permit plan, this program year's (PY5) training focused on Pollution Prevention and Good Housekeeping. During PY5, training was administered via an in-person format at the Transportation & Environmental Services Field Services Office and at Fleet Services Division. Training also was delivered via a pre-recorded video. Staff were all trained in Pollution Prevention and Good Housekeeping, and, where applicable, information on IDDE, also was shared with the groups. Further, in addition to the training summarized in Table 14, a brief video highlighting staff's role in IDDE was shared in an employee newsletter during the Program Year that reached over 100 staff (see Appendix F). During the next program year, a new IDDE short video specific to Alexandria is anticipated to be produced for both public and internal use.

Table 14. Summary of Pollution Prevention & Good Housekeeping Training

Date	Department	Trainees
5/24/2023	Recreation, Parks & Cultural Activities (In Person)	27
5/1/2023	Transportation & Environmental Services Impound Lot (Video Recording)	3
5/2/2023	Transportation & Environmental Services Fleet Services (In Person)	16
6/30/2023	General Services (Video Recording)	12
5/3/2023	Transportation & Environmental Services Public Works Services (In Person)	38
5/16/2023	Transportation & Environmental Services Traffic Operations (In Person)	4
6/22/2022	General Services (In Person)	10
5/1/2023	Transportation & Environmental Services Resource Recovery (Video Recording)	33

BMP 6G Street Sweeping and Leaf Collection Programs

The City continues to implement a City-wide street sweeping program to remove possible sources of nutrients, sediment, and impacts to biological and chemical oxygen demand in order to protect local waterways, the Potomac River and the Chesapeake Bay. Additionally, collected leaves are turned to mulch and provided to for use on residential lawns; which decreases the use of fertilizers.

Measure of Effectiveness

The City swept approximately 2,577 lane miles this permit year. The amount of street lane miles swept changes slightly each year depending on weather conditions and other factors. No updates to the MS4 Program Plan were deemed necessary.

The City's Curbside Leaf Collection program performed the following:

1. Distributed approximately 72,000 biodegradable bags to various locations throughout city facilities.
2. Total cubic yards collected: 17,130

The City collected 835.26 tons of leaves taken off-site.

BMP 6H Catch Basin and Inlet Cleaning Program

The City has a long-standing program to inspect and clean stormwater catch basins and inlets. The catch basin and inlet cleaning program is meant to both reduce spot flooding and drainage problems as well as to prevent materials, including floatables and vegetative debris captured in inlets, from continuing to local streams. Catch basin cleaning varies year by year depending on the weather.

Measure of Effectiveness

The City maintained approximately 2,495 catch basins and inlets during this permit year which consists of inspection, cleaning and reparations. No updates to the MS4 Program Plan were deemed necessary.

BMP 6I Employee Complaint Reporting

The City continues to implement the "Report a Problem" program to empower employees to report problems, to include illicit discharges or issues with the functioning of City assets. The program provides a way of reporting problems associated with City infrastructure, including stormwater management.

Measure of Effectiveness

A hyperlink to the Alex311 reporting system is provided in Appendix F. The MS4 Program Plan has been updated to reflect the City's intranet is no longer being used for this function.

BMP 6J Environmental Stakeholder Groups

The City receives input on the stormwater program from several stakeholder groups including the Environmental Policy Commission (EPC), the Stormwater Work Group (SWWG), the Fire Department's Environmental and Industrial Use Unit (EIU), and the Eco-City Steering Committee.

The EPC is appointed by the City Council and makes recommendations on environmental issues, including stormwater management. The City Manager has established two internal stakeholder groups to work on stormwater issues and make policy decisions to ensure regulatory compliance and shape the stormwater program. The Water Quality Steering Committee, transitioned into the Eco-City Alexandria Steering Committee during the final reporting period of the 2013-2018 permit and is comprised of deputy city managers, department heads, and staff from T&ES-IEQ, and is charged with making policy decisions and setting the course for the City's environmental programming under the Eco-City Alexandria initiative, which include Water Resources. The Stormwater Work Group (SWWG) is an internal stakeholder group comprised of interdepartmental City staff with the deputy director of IEQ as the chair, the division chief as alternate, and other supervisory level staff. The

SWWG's mission is to develop and coordinate the City's response across various City departments to MS4 permit requirements, including the Chesapeake Bay TMDL. The SWWG is charged with supporting development of policy, programs and plans to administer the local VSMP program and the MS4 general permit. The EIU acts as the lead for coordination of environmental issues, including water quality investigation, enforcement, and documentation.

Measure of Effectiveness

During the program year, informal and more formal staff discussions occurred between the Stormwater Management Division and departments across the City. It was determined that during PY5, the SWWG did not need to hold a separate meeting because of these discussions taking place. However, as the new MS4 permit comes online, the SWWG will start to ramp up and meet to discuss the impacts of that on the City and the Stormwater Program moving forward. The MS4 Program Plan was updated to indicate that the SWWG will meet as necessary.

3.7 Evaluation of MS4 Program Implementation

In accordance with Part I.D.2.e of the permit, the City has reviewed and assessed program implementation, including a review of each MCM and corresponding BMPs established to meet the requirements of the City's permit and have found them to be appropriate and effective. During the program year, the following updates were made to the MS4 Program Plan:

- Updated the IDDE section (page 17 and the Program Manual found in Appendix C) to include afterhours information.
- Updated the Employee Compliant Reporting Information.
- Updated the Nutrient Management Plan section to reflect the most current information including updated expiration dates and the addition and removal of plans.

3.8 Chesapeake Bay TMDL

Finalized in December 2010 by the United States Environmental Protection Agency (EPA), the Chesapeake Bay TMDL and the associated Watershed Implementation Plans (WIPs) developed by the Commonwealth of Virginia, set limits on nitrogen, phosphorus and sediment entering the Bay. The 2013 – 2018 MS4 general permit included new special conditions to address the Chesapeake Bay TMDL to achieve 5% of the target reductions captured in the City's Phase 1 Action Plan. The subsequent 2018 – 2023 MS4 general permit contained special conditions requiring the City to meet a total of 40% of the targeted reductions for the Bay that were captured in the City's Phase 2 Action Plan.

Strategies identified in the Phase 1 and 2 Action Plans have been implemented to achieve 70% reductions, above the required total 40% reductions in the 2018 – 2023 MS4 general permit. The City's Chesapeake Bay TMDL Action Plan for 5% Reductions was approved in 2016 and the Phase 2 Action Plan was approved in 2019. It also can be found in Appendix G and incorporated into

the MS4 Program Plan. The Phase 3 Action Plan will be developed in accordance with the forthcoming 2023 – 2028 MS4 general permit.

The City completed several BMP retrofit projects during Phase 1 and 2 to help meet the Bay special conditions. More details on these projects are included in the Bay TMDL Action Plan.

- The Eisenhower Pond 19 has been completed and was reported with the permit year 2015-2016 Annual Report.
- The Four Mile Run Urban Stream Restoration Project was substantially complete in the summer of 2016 and brought online during permit year 2016-2017.
- The Windmill Hill Living Shoreline, although not documented in the Phase 1 Action Plan, was substantially complete during permit year 2017-2018.
- Several retrofits on City properties were completed in during this permit cycle as documented in the Phase 2 Action Plan.
    - Construction of the Lake Cook Retrofit project was substantially complete in September 2018 or during the beginning of permit year 2018-2019. The project was awarded Stormwater Local Assistance Fund (SLAF) grant funding from DEQ.
    - Construction of the Ben Brenman (Cameron Station) Pond Retrofit project was substantially complete in June 2020.
- Lucky Run Stream Restoration will be completed during Phase 3.

Table 16 provides a summary of the required reductions per permit cycle as of the 2018-2023 MS4 General Permit specific to Alexandria, VA, as indicated in the Phase 2 Chesapeake Bay Action Plan.

Table 15. Summary of Required Reductions by Permit Cycle

Phase	Permit Cycle	Required Reduction (%)	Nitrogen (TN) (lbs/yr)	Phosphorus (TP) (lbs/yr)	Suspended Solids (TSS) (lbs/yr)
1	2013-2018	5%	380	50	43,097
2	2018-2023	35%	2,659	351	301,678
3	2023-2028	60%	4,558	602	517,162
Total		**100%**	**7,597**	**1,004**	**861,937**

In accordance with the Phase 1 and Phase 2 Action Plans, BMPs installed as part of redevelopment projects have been certified, documented, and uploaded to the DEQ BMP Warehouse. A list of BMPs installed during the permit year is included in Appendix E. During this Program Year, One Development Site Plan, DSP2022-00004, also known as "Edgewood Towns", utilized an off-site nutrient credit purchase of .04 nutrient credits (.04 lbs) from the Whispering Hills Nutrient Bank to comply with the remainder of the project's onsite phosphorus reduction requirements. Whispering Hills Nutrient Bank is an authorized bank sponsor by the Virginia Department of Environmental Quality Nutrient Reduction Implementation Plan.

During PY4, two voluntary BMPs were identified to be removed or in major disrepair. BMP ID 2007-0102 was a Vegetated Roof at Windsor Avenue that was found to be completely removed from the facility. BMP ID 2004-0038 01 is a stream restoration completed in 2010 on the lower portion of Strawberry Run that was found to have "failed" based on a forensic analysis that was completed. The stream project restored approximately 600 linear feet of the downstream portion of Strawberry Run and the City calculated 40.80 lbs/yr of TP reductions using the linear foot method. However, the published Strawberry Run Downstream Forensic Investigation (June 2022) found that the restoration no longer functions as designed. The Credits received for these two SMFs were removed from the BMP Warehouse; the Bay TMDL calculations; and reflected in the Phase 3 Bay TMDL Action Plan (draft is included in the Registration Statement for coverage under the 2023 – 2028 MS4 general permit).

Progress made during this reporting period toward the Chesapeake Bay required pollutant reductions are presented in Table 17.

Table 17. Progress during PY5 – Individual Facilities/Retrofits (July 1, 2022 – June 30, 2023)

Project	TN Reductions (lbs/yr)	Percent of TN 100% Goal	TP Reductions (lbs/yr)	Percent of TP 100% Goal	TSS Reductions (lbs/yr)	Percent of TSS 100% Goal
Development SWM Facilities	24	0.31%	6	0.57%	2,689	0.31%

The City's overall progress toward meeting the Chesapeake Bay required pollutant reductions are presented in Table 18. This table incorporates the removal of the Credits Received from the 2010 Strawberry Run Restoration and the Vegetated Green Roof, Windsor Ave. (Table 16) as shown "As of June 30, 2022".

Table 18. Cumulative Progress by Permit Year (2019 – Current)

Cumulative Progress	TN Reductions (lbs/yr)	Percent of TN 100% Goal	TP Reductions (lbs/yr)	Percent of TP 100% Goal	TSS Reductions (lbs/yr)	Percent of TSS 100% Goal
As of June 30, 2018	2,690	35%	402	40%	361,990	42%
As of June 30, 2019	4,314	57%	571	57%	498,151	58%
As of June 30, 2020	5,265	69%	728	72%	588,728	68%
As of June 30, 2021	5,327	70%	743	74%	595,822	69%
As of June 30, 2022	5,282	70%	702	70%	568,889	66%
As of June 30, 2023	5,306	70%	708	70%	571,578	66%

Consistent with the Phase 2 Action Plan, it was anticipated that the Taylor Run and Strawberry Run stream restorations would be part of the strategies to meet the 100% target reductions anticipated in

the 2023 – 2028 MS4 general permit. However, after the City Council 'paused' the projects in April 2021 for further public engagement. The City continued it's efforts to build a consensus on the design approach for these two stream restoration projects. Each stream had a tailored list of consensus derived recommendations that went before City Council in June 2023. City Council decided to adopt the consensus approach to stabilize the exposed sanitary sewer infrastructure using a minimal approach that did not comport to the Expert Panel stream restoration approach that would not earn credits towards the Bay goals. Additionally, at the June 2023 meeting, City Council decided to 'table' the Strawberry Run stream restoration project with no further action; also removing this project from the planned reductions. However, the Lucky Run Stream Restoration project broke ground in May 2023 and is expected to be completed by Winter 2023/2024 and will be included in the Phase 3 Bay Action Plan.

As of June 2019, the City achieved over 40% of the required pollutant reductions during the 2018 – 2023 MS4 permit. The City will provide the Draft Phase 3 Chesapeake Bay TMDL Action Plan with the Registration Statement for coverage under the 2023 – 2028 MS4 general permit and develop the final during the next permit cycle consistent with the upcoming permit. Through this process, the City anticipates achieving 100% compliance with required reductions by FY2028.

3.9 Local TMDLs

The City has four existing TMDLs with an approved WLA for the MS4 area, two of which were approved prior to July 2008 and two of which were approved between July 2008 and June 2013.

A TMDL for bacteria related to fecal coliform was approved in 2004 for the non-tidal portion of Four Mile Run, and in 2007 a TMDL for PCBs was approved for the Tidal Potomac watershed. Given that these TMDLs were approved prior to July 2008, TMDL Action Plans were completed by June 30, 2015 and were submitted with the permit year 2015-2016 Annual Report.

In 2010, the SWCB issued approval of bacteria TMDLs for Tidal Four Mile Run, and the Hunting Creek, Cameron Run, and Holmes Run watersheds. In both recent TMDLs, bacterial water quality is based on levels of *E. coli*. Since these TMDLs were approved between July 2008 and June 2013, the corresponding TMDL Action Plans were completed by June 30, 2016 and were submitted with the 2016-2017 annual report. Based on guidance and conversations with DEQ staff, the City developed a comprehensive Bacteria TMDL Action Plan that addresses bacteria impairments for those affected watersheds. Beginning with the Non-Tidal Four Mile Run TMDL Action Plan which was due by June 30, 2015, the City incorporated the successive TMDLs for Hunting Creek, Cameron Run, and Holmes Run to create a comprehensive Bacteria TMDL Action Plan.

In accordance with the permit, these Local TMDL Action Plans were updated prior to May 2020 (18 months after the permit effective date). The permit also has a requirement for plans to be developed for TMDLs approved by EPA between July 1, 2013 and June 30, 2018 that have WLAs no later than May 2021 (30 months after permit effective date); however, the City does not have any new TMDLs that meet this criteria. Part II.B.3 of the permit provides a list of items to be included in each Local TMDL Action Plan. Based on the type of TMDL (bacteria, sediment, phosphorus, nitrogen, or PCBs), there is list of different strategies the City must choose from to address the impairments.

The City of Alexandria's Bacteria TMDL Action Plan was updated in 2020 after a 15-day public comment period (no comments were received). This Action Plan is found in Appendix G. Information pertaining to the updates are found in the PY2 Annual Report. DEQ completed their review and found the Plan acceptable on April 13, 2022.

The City of Alexandria's Tidal Potomac PCB TMDL Action Plan was updated in 2020 after a 15-day public comment period (no comments were received). This Action Plan is found in Appendix G. Information pertaining to the updates are found in the PY2 Annual Report. DEQ completed their review of the updated Action Plan and found it acceptable on April 13, 2022.

Actions taken pursuant to these updated TMDL action plans are in alignment with the education and outreach and public participation sections of the MS4 Program Plan and are included in this Annual Report under MCM #1 and #2 for pet waste (bacteria). In addition, the City developed best management practices regarding BMPs as documented in the June 30, 2015, Tidal Potomac PCB TMDL Action Plan.

The Action Plan is currently being implemented and includes the following BMPs:

1. City will include standard condition language for all site plan (DSP and DSUP) requiring a site characterization for PCBs during the redevelopment of a property where PCBs have been historically used or stored; or during the redevelopment of a property that falls into a DEQ identified high risk category for PCBs. The language was updated in permit year 2015-2016 and was included in all site plan reviews, placing the onus on the developer to perform due diligence; and is reviewed by the City.
2. The PCB brochure updated in PY4. The brochure educates about residents and development community about PCBs and may be found on the website. Hyperlinks to the website and the brochure can be found in Appendix A.

4 Results of Information Collected and Analyzed

No information, including monitoring data, was required to be collected or analyzed under the City's permit.

5 MS4 Program Regional Efforts and Agreements

The City continues to participate in with other localities in the Northern Virginia Regional Commission's Clean Water Partners to conduct regional public education and outreach activities, as discussed in Section 3.1. A copy of the Clean Water Partners Agreement can be found in Appendix A of the City's MS4 Program Plan. The City does not rely on other government entities to satisfy permit obligations.

6 Approval Status of Qualifying Local Programs

The City relies on implementation of the Erosion and Sediment Control Ordinance, mandated by the Virginia Erosion and Sediment Control Regulations (VESCR), to help satisfy Minimum Control Measure #4 - Construction Site Stormwater Runoff Control. During permit year 2014-2015, the City's Erosion and Sediment Control (E&SC) Ordinance was reviewed and revised for consistency with amendments to the Virginia Stormwater Management Act and the Virginia Stormwater Management Program (VSMP) Regulations, and the renumbering of these, as well as the Virginia Erosion and Sediment Control Law (VESCL) and VESCR when administration of these programs was shifted from DCR to DEQ. The adoption of amendments to the City's E&SC ordinance during permit year 2014-2015 are discussed in BMP 4A.

In addition, the City relies on implementation of the EMO, mandated by the Virginia Chesapeake Bay Preservation Area Designation and Management Regulations, and the VSMP regulations as incorporated into the EMO, to help satisfy Minimum Control Measure #5 - Post Construction Stormwater Management.

The City's Erosion and Sediment Control Program has been reviewed and found consistent by the Virginia Soil and Water Conservation Board. In addition, the Chesapeake Bay Local Assistance Board (now superseded by the Virginia Soil and Water Conservation Board) has also found the City's Environmental Management Ordinance to be fully consistent with state regulations.

The City's approved VSMP Local Stormwater Management Program application included amendments to the EMO Ordinance for consistency with the new VSMP regulations and maintained the Chesapeake Bay Act requirements. The City received provisional approval as a local VSMP authority effective July 1, 2014, and received full approval in November 2014. Documentation of approval is included in Appendix E.

7 Contact Information

Mr. Jesse Maines, MPA, PMP, Division Chief
T&ES, Stormwater Management
703.746.4643 (direct)
703.746.6499 (main)

Ms. Jessica Lassetter, MNR
Senior Environmental Specialist
T&ES, Stormwater Management
703.746.4127

8 Appendicies

General VPDES Permit for Small Municipal Separate Storm Sewer Systems Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix A (*Hyperlinks are Provided for Some Materials*)
Minimum Control Measure #1, Public Education and Outreach

1. Best Management Practices for Lawn Care Companies Brochure
2. Best Management Practices for Restaurant and Food Service Brochure
3. Best Management Practice for Automotive Garages and Service Centers Brochure
4. You Can Protect Alexandria Waterways Brochure
5. Pet Waste Brochure
6. Polychlorinated Biphenyls Brochure
7. Household Hazardous Waste & Electronics Recycling Program Pamphlet
8. BMP Sign Requirement on Plan Set with Storm Drain Marker
9. Sign for Stormwater Management Facilities
10. Photo of Stream Crossing Sign
11. City's Stormwater Management Website
12. City's Stormwater Management Website Metrics, FY2023
13. City's Website with Information about Volunteering for Storm Drain Marking
14. Sample eNews
15. Social Media Examples
16. Northern Virginia Region Commission 2023 Only Rain Survey (Clean Water Partners)
17. Northern Virginia Clean Water Partners 2023 Summary

Project Description

Development (Redevelopment)

Drainage Area	Impervious	Pervious	Total
Site Area	1.16	3.89	5.06
On-Site Treated	1.16	2.07	3.23
Off-Site Treated	0.00	0.00	0.00
Total Treated	1.16	2.07	3.23
Any On-Site Disconnected by a Vegetated Buffer (25')	0.00		
Total On-Site Treated or Disconnected			3.23

Water Treatment On-Site

BMP Type	Area Treated by BMP (acres)	Impervious Area treated by BMP (acres)	BMP Efficiency (%)
Bioretention	3.23	1.16	20%/40%RR

Miscellaneous Information

Total WQV treated (yes) no

Detention on Site yes (no)

Project is within which watershed? FOUR MILE RUN

Project Discharges to which body of water? POTOMAC RIVER

NOTE:
THE SITE ARE FOR THE WQVd IS THE LIMITS OF CLEARING AND GRADING ASSOCIATED WITH THIS BLOCK. THE TREATMENT AREAS ASSOCIATED WITH THE FACILITIES CONSTRUCTED WITH THIS BLOCK ARE SHOWN ON SHEET C601A-C601G. ADDITIONAL AREAS AROUND THE BLOCKS ARE TREATED UNDER SEPARATE PLANS (INFRASTRUCTURE AND INDIVIDUAL BLOCK PLANS). WQVD IS MET WITH THIS APPLICATION.

STORMWATER MASTERPLAN COMPLIANCE SPREADSHEET

Phosphorous Removal Tracking

DSP/Building Number	Total Acres	Pre-Impervious Area	Pre-Pervious Area	Post-Impervious Area	Post-Pervious Area	Final Post TP Load	Phosphorous Reduction (lbs)	Actual Phosphorous Reduction (lbs)
18	0.55	0.36	0.16	0.55	0.00	1.19	0.38	0.57
20	0.70	0.32	0.38	0.70	0.00	1.52	0.22	0.95
15	0.77	0.73	0.04	0.77	0.00	1.67	0.91	1.31
16	0.97	0.74	0.23	0.97	0.00	2.10	0.32	1.62
10	1.14	0.97	0.17	1.14	0.00	2.47	1.52	2.41
14	0.98	0.72	0.26	0.98	0.00	2.12	0.61	1.40
VA Tech	3.51	2.76	0.75	3.21	0.30	7.13	3.46	
Infrastructure	7.29	4.99	2.3	6.19	1.10	14.04	7.37	
Park	2.97	1.11	1.86	0.78	2.19	2.94	0.49	2.14
Total Phase 1	18.88	12.73	6.15	15.29	3.59	35.18	15.09	
Required Phase 1	Total LOD 22.99						Total P removal required phase 1 35.18*0.4 = 14.07 LBS/YR	

THIS PLAN

NOTE:
THIS SPREADSHEET REFLECTS THE LATEST PER THE DESIGNS SHOWN FOR EACH BLOCK. THE MASTERPLAN WILL BE UPDATED ONCE COMMENTS HAVE BEEN PROVIDED.

STORMWATER BEST MANAGEMENT PRACTICES (BMP) NOTES

THE STORMWATER BEST MANAGEMENT PRACTICES (BMP) REQUIRED FOR THIS PROJECT SHALL BE CONSTRUCTED AND INSTALLED UNDER THE DIRECT SUPERVISION OF THE DESIGN ENGINEER OR HIS DESIGNATED REPRESENTATIVE. THE DESIGN ENGINEER SHALL MAKE A WRITTEN CERTIFICATION TO THE CITY THAT THE BMPs ARE CONSTRUCTED AND INSTALLED AS DESIGNED AND IN ACCORDANCE WITH THE APPROVED SITE PLAN. IN ADDITION, AGGREGATE LAYERS AND COLLECTOR PIPES MAY NOT BE INSTALLED UNLESS THE DESIGN ENGINEER OR HIS REPRESENTATIVE IS PRESENT.

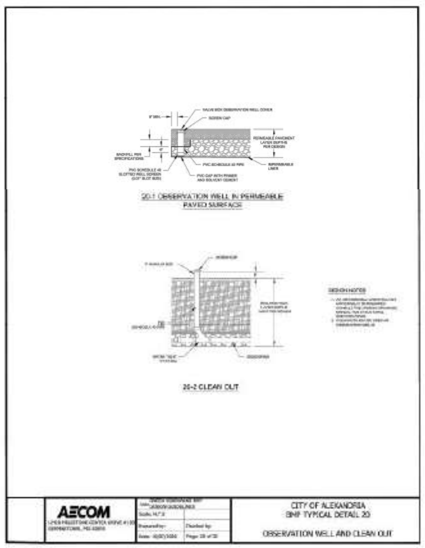
THE CONTRACTOR SHALL FURNISH THE CITY WITH AN OPERATION AND MAINTENANCE MANUAL FOR ALL BMPs ON THE PROJECT. THE MANUAL SHALL INCLUDE AN EXPLANATION OF THE FUNCTIONS AND OPERATIONS OF EACH BMP AND ANY SUPPORTING UTILITIES, CATALOG CUTS ON ANY MECHANICAL OR ELECTRICAL EQUIPMENT AND A SCHEDULE OF ROUTINE MAINTENANCE FOR THE BMPs AND SUPPORTING EQUIPMENT.

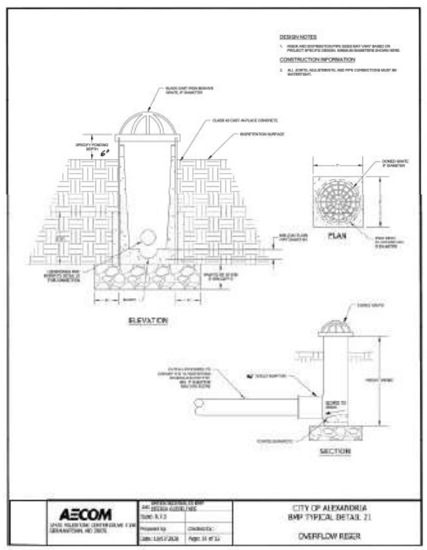
BIORETENTION MATERIAL SPECIFICATIONS:

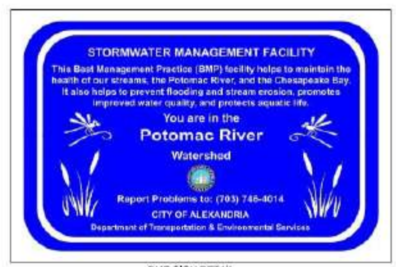

VA DCR STORMWATER DESIGN SPECIFICATION NO. 9 BIORETENTION

Table 9.7. Bioretention Material Specifications

Material	Specification	Notes
Filter Media Composition	Filter Media to contain: 80% - 90% sand; 10%-20% soil fines; 3%-5% organic matter	The volume of filter media based on 110% of the plan volume, to account for settling or compaction.
Filter Media Testing	Available P between L+ and M (per DCR 2005 Nutrient Management Criteria).	The media should be certified by the supplier.
Mulch Layer	[illegible]	[illegible]
Alternative Surface Cover	[illegible]	[illegible]
Top Soil For Turf Cover	[illegible]	[illegible]
Geotextile/Liner	[illegible]	[illegible]
Choking Layer	[illegible]	
Stone Jacket for Underdrain and/or Storage Layer	[illegible]	[illegible]
Underdrains, Cleanouts, and Observation Wells	[illegible]	[illegible]
Plant Materials	[illegible]	[illegible]







BMP SIGN DETAIL

NOTE:
THE OTHER CITY STANDARD BMP DETAIL IS SHOWN ON THE STORMWATER MASTERPLAN (DSP2020-00012).

ALL ON-SITE STORMWATER CURB INLETS AND PUBLIC CURB INLETS WITHIN 50 FEET OF THE PROPERTY LINE SHALL BE DULY MARKED USING STANDARD CITY MARKERS, OR TO THE SATISFACTION OF THE DIRECTOR OF T&ES.

APPROVED
SPECIAL USE PERMIT NO. 2006-0006
DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. ____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED ____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

christopher consultants
2920 w. broad st. suite 222 richmond, va 23230 p 804.389.9903
engineering • surveying • land planning

NORTH POTOMAC YARD PARK
FINAL SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

MARK	DATE	DESCRIPTION
1	11/10/2021	ESI RESUBMISSION
2	12/10/2021	UPDATED PER CITY COMMENTS

PROJECT No.: 08004.172.07
DRAWING No.: 111910
DATE: 10/2021
DESIGN: JLH
DRAWN: VH
CHECKED: KAW

SHEET TITLE:
SWM COMPUTATIONS AND NARRATIVES

SHEET No.
C602A

Appendix A

Sign for Stormwater Management Facility

Appendix A

Sign for Stream Crossing

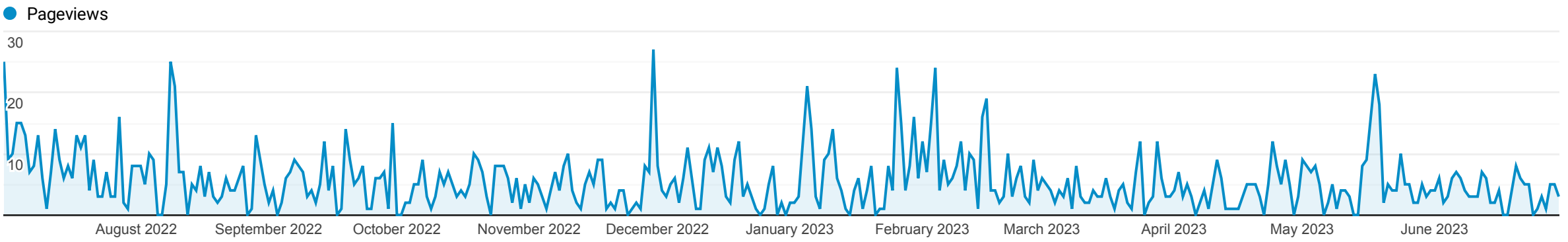
Stormwater pages

ALL » PAGE: www.alexandriava.gov/Stormwater

Jul 1, 2022 - Jun 30, 2023

All Users
0.02% Pageviews

Explorer



Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	2,045 % of Total: 0.02% (9,459,984)	**1,732** % of Total: 0.02% (7,702,993)	**00:01:35** Avg for View: 00:01:13 (29.98%)	**1,121** % of Total: 0.03% (3,868,900)	**51.52%** Avg for View: 52.31% (-1.51%)	**40.64%** Avg for View: 40.90% (-0.64%)	**$0.00** % of Total: 0.00% ($0.00)
1. www.alexandriava.gov/Stormwater	**2,045** **(100.00%)**	1,732 (100.00%)	00:01:35	1,121 (100.00%)	51.52%	40.64%	$0.00 (0.00%)

Rows 1 - 1 of 1

From: Alexandria eNews
To: Jessica Lassetter
Subject: Observe Chesapeake Bay Awareness Week and Clean the Bay Day
Date: Thursday, May 25, 2023 11:00:40 AM

Observe Chesapeake Bay Awareness Week and Clean the Bay Day

You Can Help Protect the Bay!

During the annual observance of Chesapeake Bay Awareness Week (June 3-11), Virginia residents are encouraged to participate in events, activities, and educational programs that increase awareness of the importance of the Chesapeake Bay in their communities. In a proclamation read by the Alexandria City Council on May 23, 2023, the City affirmed its commitment to the Chesapeake Bay and its natural resources.

As part of this week-long observance, the Department of Transportation and Environmental Services invites the community to participate in the Chesapeake Bay Foundation's annual Clean the Bay Day on **Saturday, June 10, from 9-11 a.m. at Windmill Hill Park (501 S. Union Street)**. Register to volunteer for the event by visiting the Chesapeake Bay Foundation webpage (*registration is encouraged but not required*). The City will provide gloves, trash bags, and first aid kits, but it is recommended that you bring your own water, snacks, and sun protection.

Participating in Chesapeake Bay watershed cleanup events is just one way to celebrate the importance of the Bay, not only this week but throughout the year. Here are some additional actions you can take to help protect the Chesapeake Bay:

- Test your soil using a soil kit from Virginia Cooperative Extension to know how much fertilizer to use and avoid over-fertilizing. Do not fertilize or use pesticides if it rains within 24 hours, as they can harm aquatic life.
- Do not discharge pool water into storm drains. Use this guide to learn how to dispose of pool water safely and follow any property swimming pool discharge guidelines to avoid harm to aquatic and wildlife resources. If you suspect contamination in the City's waterways, please contact Alex311.
- Plant a tree to prevent nutrients from entering our streams and hold soil in place to prevent erosion.
- Landscape your yard using native plants adapted to local conditions, requiring less water and care, and supporting butterflies, birds, bees, and other pollinators. Visit plantnovanatives.org for ideas on suitable native plants for your yard.
- Use a rain barrel to capture roof runoff during storms and water your plants. This may also earn you a credit reduction on your Stormwater Utility Fee. Visit the

City's rain barrel page to learn more.

- Build a rain garden to help capture runoff and help filter out pollutants, like sediment and nutrients.
- Pick up after your dog and dispose of bagged waste in a trash can to prevent it from washing into storm drains or streams. Consider educating other residents about the importance of picking up after their pets through the City's yard sign campaign.
- Keep our City litter-free, as waste dropped on streets, sidewalks, or parks harms the environment and wildlife and eventually ends up in the Chesapeake Bay.
- Educate your family, friends, and neighbors about protecting our local water resources, the Potomac River, and the Chesapeake Bay.

For more information on the City's efforts to protect the Chesapeake Bay, please visit alexandriava.gov/CleanWaterways.

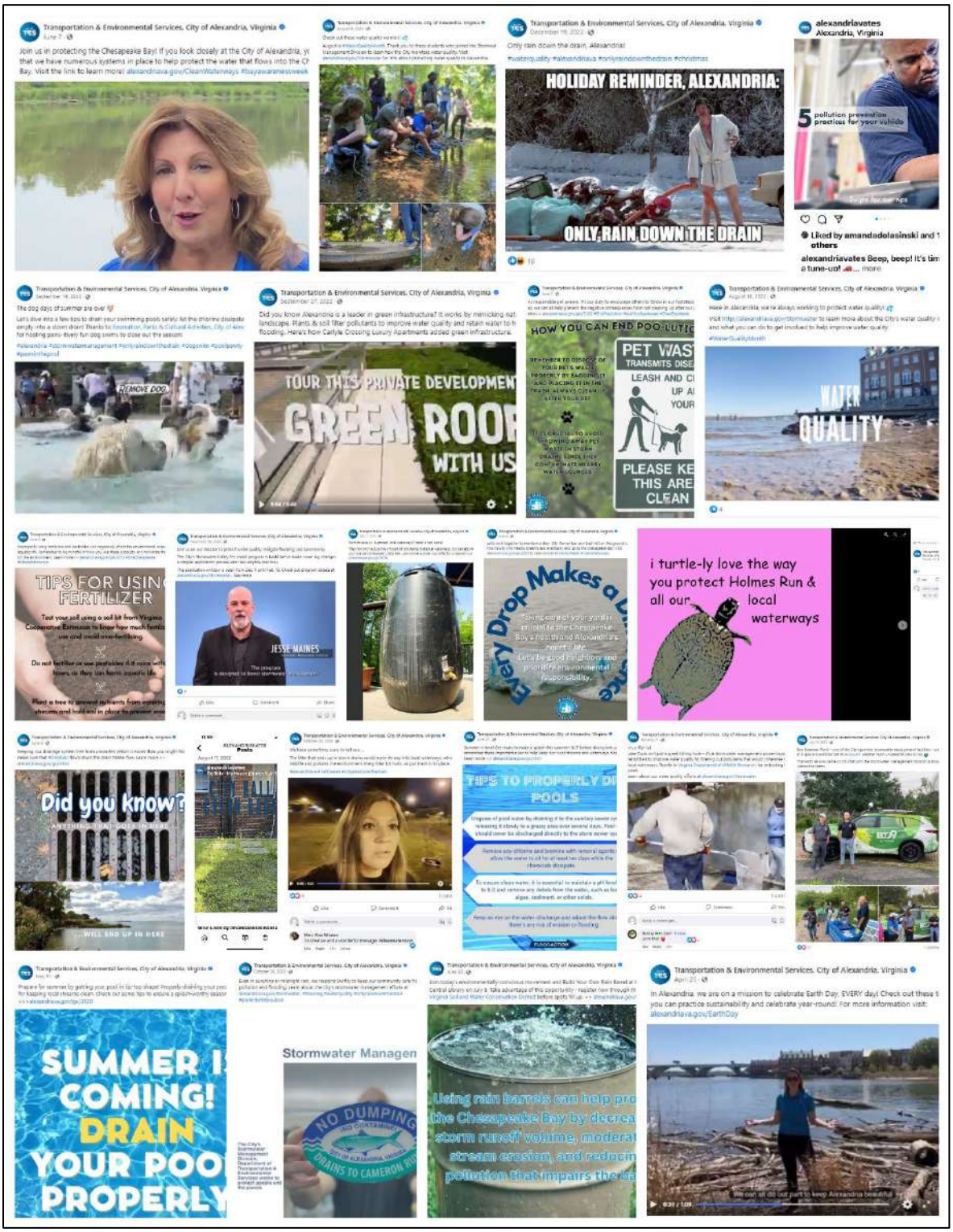
To request reasonable disability accommodation, contact jessica.lassetter@alexandriava.gov or call 703.746.4127, Virginia Relay 711.

# # #

This news release is available at alexandriava.gov/go/4644.

Appendix A

Social Media Examples | Facebook; Twitter; & Instagram Social Media Handle: @alexandriavates



Keisler SOCIAL & BEHAVIORAL RESEARCH

Northern Virginia Resident Stormwater Knowledge and Behavior Study

2023 Summary Report of Findings

September 1, 2023

Prepared for:
Northern Virginia Clean Water Partners

Prepared by:
Keisler Social & Behavioral Research
Authors:
Aysha Keiser, PhD*
Meghan Eife
Bani Saluja, MPH
Kirsten Michel, MA
Erin Eife, PhD

**Contractor Point of Contact:*
aysha@keislersbr.com

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1 INTRODUCTION AND APPROACH

Keisler Social & Behavioral Research (Keisler Research) was contracted by the Northern Virginia Regional Commission (NVRC) to conduct a survey of northern Virginia residents to capture knowledge, perceptions, beliefs, and behaviors surrounding stormwater and water pollution. The survey also assesses awareness and perceptions of two media campaigns conducted by the Northern Virginia Clean Water Partners (NVCWP) on stormwater drainage and water pollution, as well as awareness perceptions of NVCWP as an organization. The survey instrument is provided in the APPENDIX.

The survey was administered online in June of 2023 on the Alchemer survey platform. Individuals that participate in Alchemer's survey panel, and other partner survey panels, were invited to participate in the survey. Compensation was provided in the form of points on the Alchemer panel system, which can be redeemed for gift cards, prize drawings, and retail deals. To qualify for the survey, respondents must have been 21 years of age or older at the time of participation and reside in of the following cities and counties in northern Virginia: Fairfax County, Loudoun County, Prince William County, Arlington County, and Alexandria.

2 SUMMARY OF 2023 FINDINGS

2.2 Participant Characteristics

The final dataset includes surveys of 596 adults residing in Northern Virginia. Northern Virginia is defined as the following cities and counties: Fairfax County, Loudoun County, Prince William County, Arlington County, and Alexandria. All participants were above 21 years of age.

A demographic summary of survey participants is provided in Table 1. Survey participants were about evenly split between men (51.6%) and women (46.9%). All participants were above 21 years of age. About one-quarter of respondents fell between 25-to-34-years-olds, while only 1.3% of respondents were 75 or older. White people make up over 40% of the sample and African American or Black people comprised just over one-third of the sample. Participants

were asked which locality they reside in and the locality with the highest rate is Fairfax County (16.5%) followed by Alexandria (15.7%) with Falls Church (3.3%) and Manassas Park (1.2%) having the smallest rates in the sample. Household income is fairly evenly split amongst participants, with most participants living in a household with an income between $50,000 and $149,999.

About three-fourths of the sample have lived in their residence between 1 and 19 years, while 17.0% have lived in their current residence for over 20 years. A majority of participants (57.8%) own their residence. Most participants also have a lawn or garden in their home (79.0%) and a majority also own or lease a vehicle (88.3%). About half (51.0%) own at least one dog.

Table 1. Survey participant demographic characteristics. .

Demographic	Sub-category	Percentage
Gender	Male	51.6%
	Female	46.9%
Age	21 to 24	16.5%
	25 to 34	28.9%
	35 to 44	25.9%
	45 to 54	12.2%
	55 to 64	8.8%
	65 to 74	6.3%
	75 or older	1.3%
Ethnicity	African American/Black	33.9%
	American Indian/Native Alaskan	2.7%
	Asian	14.4%
	Hispanic/Latino	12.9%
	Native Hawaiian/Pacific Islander	1.5%
	White/Caucasian	41.2%
	Other	2.7%
Locality	Alexandria	15.7%
	Arlington	12.0%
	Fairfax City	8.7%
	Herndon	5.0%
	Vienna	4.2%

Demographic	Sub-category	Percentage
	Fairfax County	16.5%
	Falls Church	3.3%
	Leesburg	6.8%
	Loudoun County	8.5%
	Dumfries	5.0%
	Manassas	5.3%
	Manassas Park	1.2%
	Prince William County	7.7%
Years of Residence	Less than 1 year	12.4%
	1 to 3 years	28.4%
	4 to 9 years	26.2%
	10 to 19 years	16.0%
	20 or more years	17.0%
Home Ownership	Owned	57.8%
	Rented	39.6%
	Military housing	1.5%
	Transitional housing	0.7%
	Other (write-in)	0.5%
Household Income	Less than $35,000	12.2%
	$35,000 to $49,999	10.9%
	$50,000 to $74,999	19.9%
	$75,000 to $99,999	16.7%
	$100,000 to $124,999	11.2%
	$125,000 to $149,999	11.0%
	$150,000 to $174,999	6.3%
	$175,000 to $199,999	3.8%
	$200,000 or greater	8.0%
Lawn or Garden at Residence	Yes	79.0%
	No	21.0%
Own or Lease a Vehicle	Yes	88.3%
	No	11.7%
Dog Ownership	Yes	51.0%
	No	49.0%

2.3 Behaviors and Behavioral Drivers

2.3.3 Lawn/Garden Fertilization

Respondents were asked about their behavior regarding lawns or gardens and if their residence has a lawn or garden regardless of size. Results are summarized in Table 2 and displayed in

Figure 1. Over three-fourths of those surveyed (79.0%) report having a lawn or garden, no matter how small. Of those with a lawn or garden, 66.1% report using a lawn care service at least once per year and almost all (91.6%) are familiar with how their lawn is cared for. Respondents with lawns were asked how often their lawns were fertilized, regardless of whether fertilization was done by someone in the household or an outside service. The response options were "1 time a year", "2 times a year", "3 times a year", "4+ times a year", "Only if/when a soil test indicates the grass needs fertilizer", "Never", or "Not sure". Far fewer (12.4%) fertilize only when a soil test indicates the grass needs fertilizer, and about one-fifth (19.8%) never fertilize their lawn or garden.

More men than women are familiar with how their lawn or garden is cared for, and more men use lawn services than women. Familiarity with how the lawn/garden is cared for also generally increases with resident tenure (i.e., how long the respondent lived in the location). Men report fertilizing more frequently than women, and women reported higher rates of never fertilizing compared to men. Additionally, in general, higher age groups had higher rates of never fertilizing.

Table 2. Lawn and garden fertilization behaviors by demographic group.

Demographic	Sub-category	Familiar with Lawn/Garden Care	Lawn Care Service Used at Least Once a Year	Frequency of Lawn Fertilization					
				1 time a year	2 times a year	3 times a year	4+ times a year	Only if soil test indicates	Never
	All Respondents	**91.6%**	**66.1%**	**18.2%**	**25.5%**	**16.3%**	**11.3%**	**9.9%**	**13.0%**
Gender	Male	93.3%	75.2%	15.8%	29.9%	23.5%	13.7%	7.7%	8.1%
	Female	90.7%	54.9%	20.5%	20.5%	7.6%	7.6%	12.4%	19.5%
Age	21 to 24	83.1%	68.8%	17.2%	32.8%	14.1%	14.1%	9.4%	6.3%
	25 to 34	92.4%	71.8%	17.4%	26.6%	13.8%	15.6%	11.0%	10.1%
	35 to 44	93.9%	73.1%	22.1%	23.8%	22.1%	9.8%	8.2%	8.2%
	45 to 54	94.7%	66.7%	16.7%	24.1%	13.0%	7.4%	18.5%	16.7%

Demographic	Sub-category	Familiar with Lawn/Garden Care	Lawn Care Service Used at Least Once a Year	Frequency of Lawn Fertilization					
				1 time a year	2 times a year	3 times a year	4+ times a year	Only if soil test indicates	Never
	55 to 64	90.7%	30.2%	15.4%	17.9%	5.1%	7.7%	5.1%	41.0%
	65 to 74	93.5%	56.3%	17.2%	24.1%	24.1%	6.9%	6.9%	13.8%
	75 or older	100.0%	71.4%	0.0%	28.6%	28.6%	14.3%	0.0%	14.3%
Locality	Alexandria	84.2%	72.9%	16.7%	33.3%	16.7%	12.5%	6.3%	8.3%
	Arlington	81.6%	65.8%	16.1%	35.5%	9.7%	12.9%	6.5%	16.1%
	Fairfax - Inclusive	94.2%	68.4%	20.2%	22.5%	19.1%	11.2%	12.4%	11.8%
	Prince William - Inclusive	92.4%	58.7%	20.8%	21.9%	10.4%	11.5%	11.5%	11.5%
	Leesburg/Loudon	94.7%	65.3%	11.3%	28.2%	19.7%	9.9%	5.6%	19.7%
Ethnicity	Hispanic/Latino	86.0%	66.7%	22.9%	27.1%	14.6%	12.5%	6.3%	10.4%
	Not Hispanic/Latino	92.4%	66.0%	17.6%	25.3%	16.5%	11.2%	10.4%	13.3%
Years of Residence	Less than 1 year	76.7%	53.5%	12.1%	30.3%	6.1%	3.0%	18.2%	12.1%
	1 to 3 years	87.5%	67.5%	26.9%	21.2%	12.5%	8.7%	13.5%	10.6%
	4 to 9 years	95.2%	71.7%	15.1%	32.8%	17.6%	10.9%	5.0%	14.3%
	10 to 19 years	97.6%	63.0%	12.5%	22.5%	21.3%	15.0%	7.5%	13.8%
	20 or more years	93.6%	65.3%	19.3%	21.6%	18.2%	14.8%	11.4%	13.6%
Home Ownership	Owned	96.0%	68.0%	18.1%	26.2%	15.9%	13.3%	9.1%	13.9%
	Rented	81.5%	60.6%	18.9%	22.6%	17.9%	3.8%	13.2%	10.4%
Household Income	Less than $35,000	78.7%	52.2%	24.3%	24.3%	10.8%	2.7%	16.2%	16.2%
	$35,000 to $49,999	90.2%	62.8%	10.8%	27.0%	16.2%	8.1%	13.5%	16.2%
	$50,000 to $74,999	88.2%	62.4%	17.3%	19.8%	14.8%	13.6%	12.3%	14.8%
	$75,000 to $99,999	93.5%	75.9%	13.9%	30.6%	15.3%	12.5%	9.7%	9.7%
	$100,000 to $124,999	88.2%	60.0%	26.7%	26.7%	13.3%	6.7%	6.7%	15.6%
	$125,000 to $149,999	100.0%	62.7%	20.3%	27.1%	16.9%	10.2%	8.5%	13.6%
	$150,000 to $174,999	100.0%	71.9%	12.5%	25.0%	31.3%	12.5%	6.3%	6.3%
	$175,000 to $199,999	95.2%	90.5%	15.0%	20.0%	35.0%	15.0%	5.0%	10.0%
	$200,000 or greater	95.5%	69.8%	22.0%	26.8%	7.3%	19.5%	7.3%	12.2%

** Red font indicates significant differences within a demographic subgroup.*

Figure 1. Frequency of lawn fertilization.

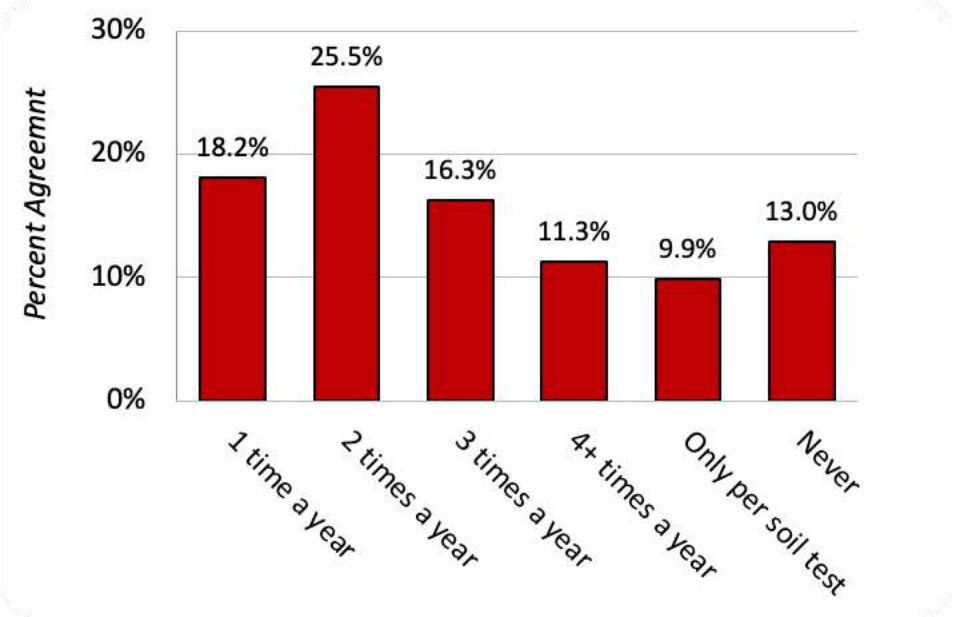
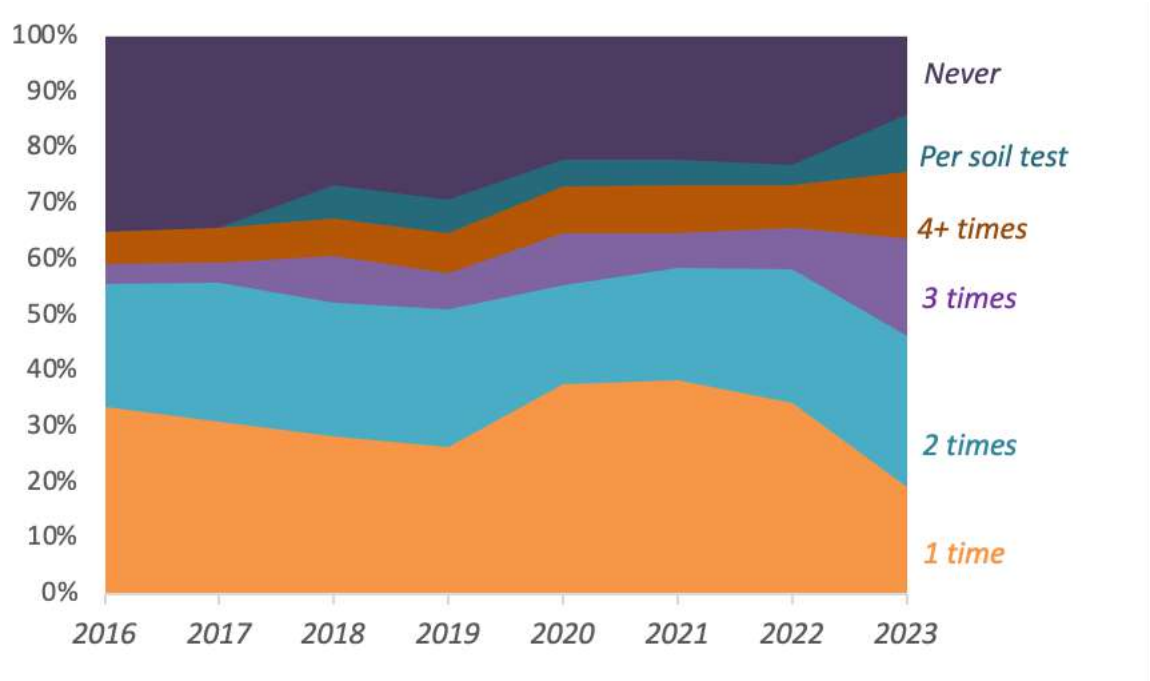


Table 3. Lawn fertilization frequency across years.

	Year of Survey							
How often lawn is fertilized per year	2016	2017	2018	2019	2020	2021	2022	2023
1 time	33.6%	31.0%	28.4%	26.4%	37.8%	38.3%	34.3%	19.3%
2 times	22.0%	24.8%	23.9%	24.8%	17.7%	20.3%	24.1%	27.1%
3 times	3.6%	3.8%	8.3%	6.4%	9.2%	6.2%	7.3%	17.3%
4+ times	5.8%	6.2%	6.8%	7.2%	8.4%	8.6%	7.7%	12.0%
Per soil test	-	-	6.1%	6.0%	4.8%	4.5%	3.5%	10.5%
Never	35.0%	34.3%	26.5%	29.2%	22.1%	22.1%	23.1%	13.8%

** Red font indicates that the value significantly differs from the current 2023 value.*

Figure 2. Lawn fertilization frequency across years.



2.3.4 Grass Clipping Disposal

Respondents that reported having a lawn or garden were asked how they dispose of their grass clippings. The provided response options were “Bagged and put in the regular trash”, “Bagged and put in compost/recycling bags for pick up”, “Left on the lawn/garden”, “Put in a compost pile/bin”, “Not sure”, “Other”, and “Not applicable/don’t have grass clippings”. As shown in Table 4 and Figure 3, the most common response is bagging the grass and putting it in compost or recycling for pickup, with 31.7% providing this response. The next most common response (28.6%) is leaving the grass on their lawn/garden, while 23.6% of respondents bag it and put it in the regular trash. Finally, 9.0% report putting their grass in a compost pile or bin, 3.5% are not sure how their grass is disposed of, and 0.4% reported disposing of their grass clippings in some other way. Older age groups had higher rates of leaving their grass clippings on the lawn. Men had higher rates of bagging and putting their clippings in the regular trash. People from Arlington had higher rates of putting their grass clippings in the compost pile.

Table 4. Disposal of grass clippings by demographic group.

Demographic	Sub-category	Grass Clippings Handling					
		Bagged and put in Regular Trash	Bagged and put in Compost/ Recycling for Pickup	Left on Lawn/Garden	Put in Compost Pile/Bin	Not Sure	Other
	All Respondents	**23.6%**	**31.7%**	**28.6%**	**9.0%**	**3.5%**	**0.4%**
Gender	Male	27.5%	31.8%	28.8%	9.0%	1.3%	0.4%
	Female	18.8%	31.7%	28.5%	8.6%	6.5%	2.2%
Age	21 to 24	28.1%	31.3%	28.1%	7.8%	3.1%	0.0%
	25 to 34	28.7%	38.0%	13.9%	11.1%	2.8%	2.8%
	35 to 44	25.4%	34.4%	25.4%	8.2%	4.1%	0.8%
	45 to 54	24.1%	29.6%	33.3%	7.4%	5.6%	0.0%
	55 to 64	10.3%	20.5%	48.7%	10.3%	2.6%	2.6%
	65 to 74	10.3%	13.8%	58.6%	10.3%	3.4%	0.0%
	75 or older	0.0%	42.9%	42.9%	0.0%	0.0%	0.0%
Locality	Alexandria	25.0%	39.6%	22.9%	6.3%	2.1%	0.0%
	Arlington	30.0%	30.0%	16.7%	23.3%	0.0%	0.0%
	Fairfax - Inclusive	18.6%	34.5%	27.7%	10.2%	4.5%	1.7%
	Prince William - Inclusive	26.8%	26.8%	30.9%	7.2%	3.1%	2.1%
	Leesburg/Loudon	28.2%	26.8%	36.6%	4.2%	4.2%	0.0%
Ethnicity	Hispanic/Latino	26.5%	42.9%	18.4%	8.2%	4.1%	0.0%
	Not Hispanic/Latino	23.3%	30.2%	29.9%	9.1%	3.5%	1.3%
Years of Residence	Less than 1 year	30.3%	21.2%	24.2%	9.1%	9.1%	0.0%
	1 to 3 years	26.7%	37.1%	26.7%	4.8%	2.9%	1.9%
	4 to 9 years	24.4%	32.8%	26.1%	9.2%	2.5%	0.8%
	10 to 19 years	21.8%	32.1%	30.8%	11.5%	1.3%	1.3%
	20 or more years	18.2%	27.3%	34.1%	11.4%	5.7%	1.1%
Home Ownership	Owned	22.4%	32.1%	30.2%	8.8%	2.9%	1.3%
	Rented	26.4%	31.1%	25.5%	7.5%	5.7%	0.9%
Household Income	Less than $35,000	21.6%	21.6%	35.1%	13.5%	2.7%	2.7%
	$35,000 to $49,999	29.7%	21.6%	24.3%	5.4%	8.1%	2.7%
	$50,000 to $74,999	32.1%	34.6%	22.2%	4.9%	3.7%	1.2%
	$75,000 to $99,999	18.1%	33.3%	31.9%	11.1%	4.2%	0.0%
	$100,000 to $124,999	37.8%	24.4%	22.2%	11.1%	2.2%	2.2%
	$125,000 to $149,999	6.8%	40.7%	39.0%	8.5%	1.7%	0.0%
	$150,000 to $174,999	25.8%	41.9%	16.1%	9.7%	3.2%	0.0%

Demographic	Sub-category	Grass Clippings Handling					
		Bagged and put in Regular Trash	Bagged and put in Compost/ Recycling for Pickup	Left on Lawn/Garden	Put in Compost Pile/Bin	Not Sure	Other
	$175,000 to $199,999	26.3%	21.1%	26.3%	10.5%	10.5%	0.0%
	$200,000 or greater	19.0%	33.3%	35.7%	9.5%	0.0%	2.4%

** Red font indicates significant differences within a demographic subgroup.*

Figure 3. Disposal of grass clippings.

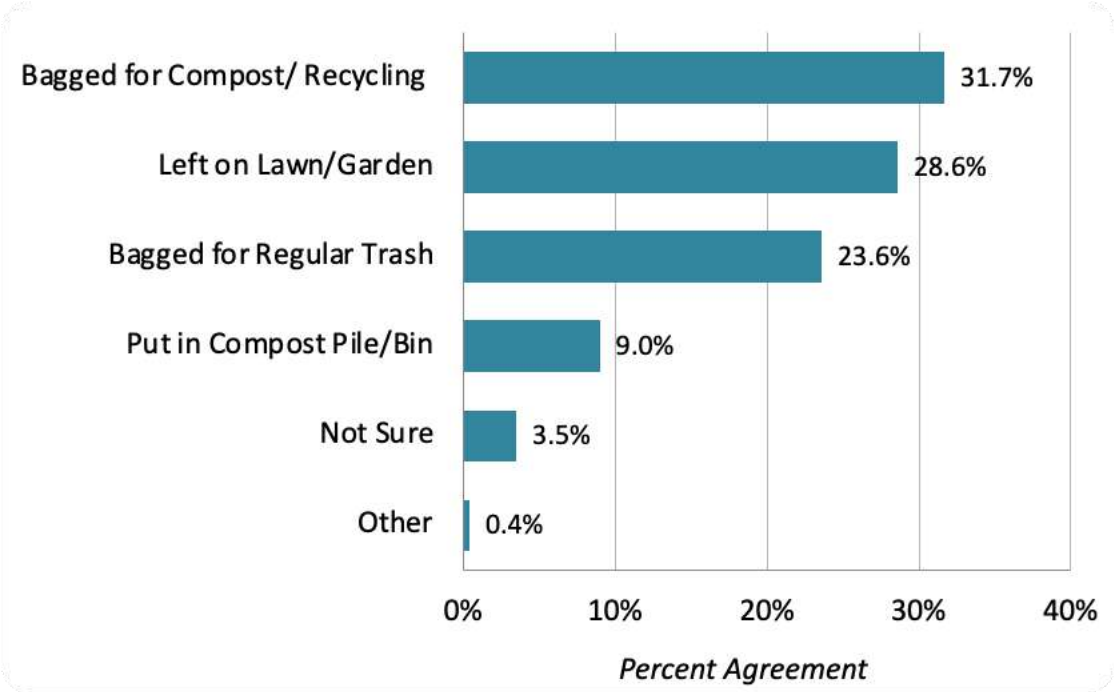


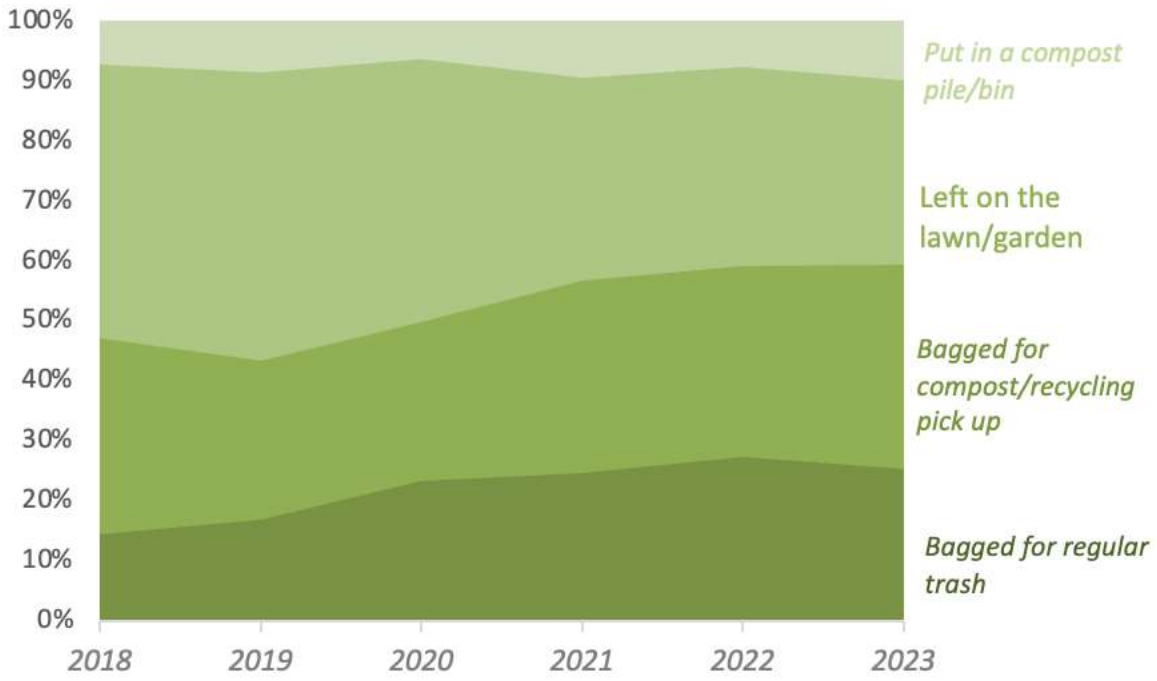
Table 5. Disposal of grass clippings across years.

Year of Survey								
Grass clipping disposal	2016	2017	2018	2019	2020	2021	2022	2023
Bagged for regular trash	*	*	14.5%	17.0%	23.3%	24.6%	27.3%	25.4%
Bagged for compost/recycling pick up	*	*	32.8%	26.4%	26.7%	32.3%	32.0%	34.1%

Year of Survey								
Grass clipping disposal	2016	2017	2018	2019	2020	2021	2022	2023
Left on the lawn/garden	*	*	45.7%	48.1%	43.8%	33.7%	33.1%	30.8%
Put in a compost pile/bin	5.8%	6.2%	7.0%	8.5%	6.3%	9.5%	7.6%	9.7%

** Red font indicates that the value significantly differs from the current 2023 value.*
Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 4. Disposal of grass clippings across years.



Participants were also asked what is done with grass clippings if they end up in the street, if anything. The response options were “They are left there”, “They are swept or blown back into the lawn”, “They are swept or blown into the storm drain”, “Not applicable/don’t have grass clippings”, “Not Sure”, or “Other” with write-in option. Of those with a lawn or garden, 53.1% report sweeping or blowing them back into their lawn, while 19.7% report leaving them in the street, as can be seen in Table 6 and Figure 5. Lastly, 14.5% report sweeping or blowing them

into the storm drain. People from Leesburg/Loudon (34.7%) had higher rates of leaving grass clippings on the street, compared to other localities.

Table 6. Handling of grass clippings in street by demographic group.

Demographic	Sub-category	Grass Clippings on Street Handling				
		Leave There	Swept or Blown Back into the Lawn	Swept or Blown into Storm Drain	Not Sure	Other
	All Respondents	**19.7%**	**53.1%**	**14.5%**	**3.8%**	**4.0%**
Gender	Male	22.3%	53.6%	16.3%	1.3%	3.4%
	Female	16.8%	52.2%	12.5%	6.5%	4.3%
Age	21 to 24	26.6%	54.7%	15.6%	1.6%	0.0%
	25 to 34	20.4%	46.3%	22.2%	3.7%	2.8%
	35 to 44	19.7%	49.2%	18.0%	6.6%	3.3%
	45 to 54	18.5%	68.5%	7.4%	0.0%	1.9%
	55 to 64	17.9%	48.7%	0.0%	7.7%	15.4%
	65 to 74	7.1%	67.9%	0.0%	0.0%	10.7%
	75 or older	14.3%	57.1%	14.3%	0.0%	0.0%
Locality	Alexandria	20.8%	52.1%	16.7%	2.1%	2.1%
	Arlington	23.3%	43.3%	23.3%	0.0%	6.7%
	Fairfax - Inclusive	16.6%	58.9%	12.0%	4.0%	2.9%
	Prince William - Inclusive	12.4%	54.6%	16.5%	5.2%	7.2%
	Leesburg/Loudon	34.7%	41.7%	12.5%	4.2%	2.8%
Ethnicity	Hispanic/Latino	28.6%	49.0%	14.3%	6.1%	0.0%
	Not Hispanic/Latino	18.5%	53.6%	14.5%	3.5%	4.6%
Years of Residence	Less than 1 year	25.0%	43.8%	15.6%	6.3%	0.0%
	1 to 3 years	15.4%	56.7%	16.3%	5.8%	3.8%
	4 to 9 years	20.2%	54.6%	12.6%	2.5%	5.9%
	10 to 19 years	23.8%	47.5%	16.3%	3.8%	3.8%
	20 or more years	18.4%	55.2%	12.6%	2.3%	3.4%
Home Ownership	Owned	20.8%	52.1%	14.7%	3.3%	3.9%
	Rented	15.1%	56.6%	14.2%	5.7%	3.8%
Household Income	Less than $35,000	10.8%	56.8%	18.9%	5.4%	0.0%
	$35,000 to $49,999	19.4%	55.6%	16.7%	0.0%	0.0%

Demographic	Sub-category	Grass Clippings on Street Handling				
		Leave There	Swept or Blown Back into the Lawn	Swept or Blown into Storm Drain	Not Sure	Other
	$50,000 to $74,999	18.3%	50.0%	17.1%	7.3%	4.9%
	$75,000 to $99,999	15.5%	59.2%	12.7%	5.6%	5.6%
	$100,000 to $124,999	17.8%	57.8%	15.6%	6.7%	0.0%
	$125,000 to $149,999	19.0%	53.4%	17.2%	0.0%	5.2%
	$150,000 to $174,999	28.1%	40.6%	12.5%	0.0%	0.0%
	$175,000 to $199,999	35.0%	55.0%	0.0%	0.0%	0.0%
	$200,000 or greater	26.8%	46.3%	9.8%	2.4%	14.6%

** Red font indicates significant differences within a demographic subgroup.*

Figure 5. Handling of grass clippings in the street.

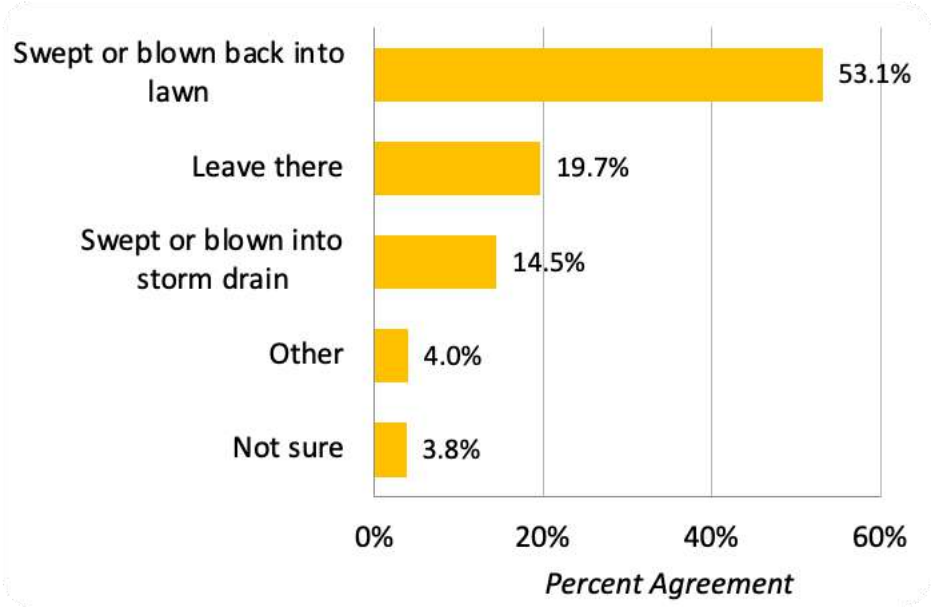
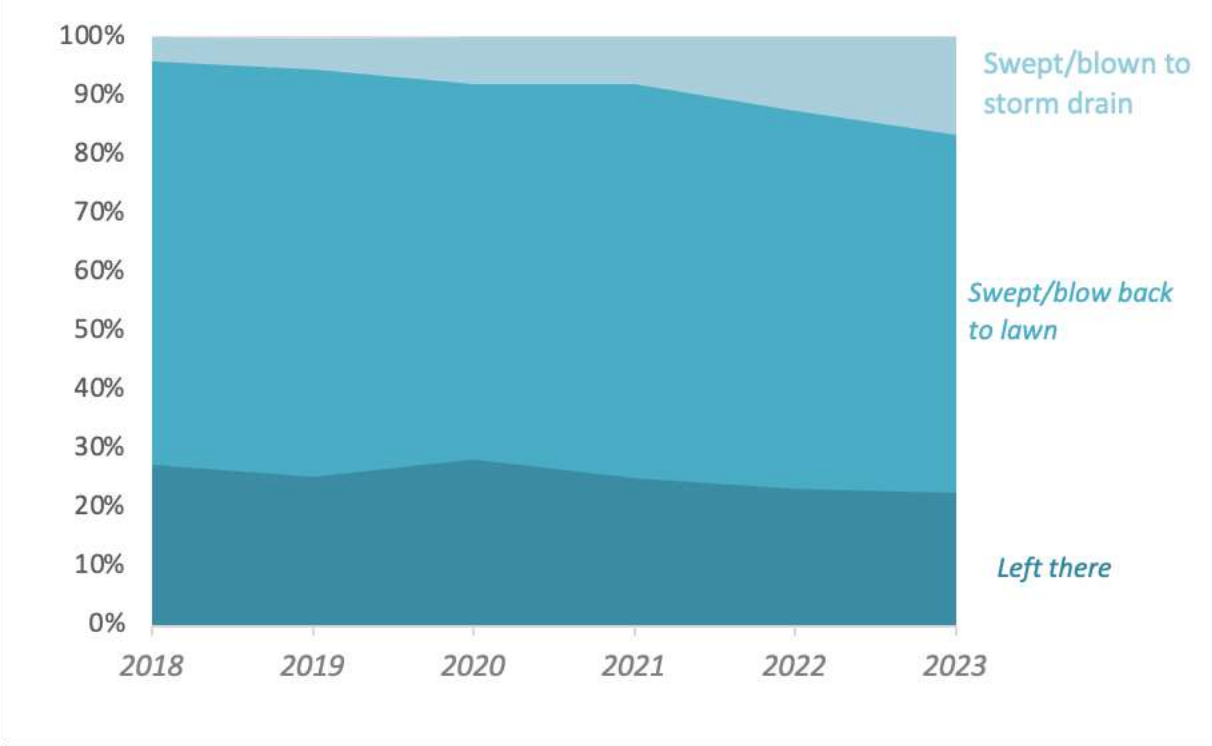


Table 7. Handling of grass clippings in the street across years.

Year of Survey								
Grass clippings in street	2016	2017	2018	2019	2020	2021	2022	2023
Left there	*	*	27.5%	25.3%	28.3%	25.1%	23.4%	22.6%
Swept/blow back to lawn	*	*	68.4%	69.3%	63.9%	67.0%	64.2%	60.9%
Swept/blown to storm drain	*	*	4.1%	5.3%	7.8%	7.9%	12.4%	16.6%

** Red font indicates that the value significantly differs from the current 2023 value.*
Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 6. Handling of grass clippings in the street across years.



2.3.5 Pet Waste Pickup

Respondents who indicated they are responsible or partially responsible for at least one dog were asked how often they pick up after their dog(s) while on a walk. The response options were “Always”, “Usually”, “Sometimes”, “Rarely”, “Never”, or “Not applicable/I don’t take the dog(s) on walks”. The responses are summarized in Table 8 and displayed in Figure 7. Of all respondents, 51.0% report having one or more dog(s) in their household for which they are at least partially responsible. Most dog owners (88.7%) report they always or usually pick up after their dog(s) on walks, 8.6% report sometimes picking up after their dog(s) and 2.9% report rarely or never picking up after their dog(s).

Table 8. Frequency of picking up dog waste by demographic group.

Demographic	Sub-category	Own a Dog	Frequency Pickup Dog Waste on Walks	Frequency Pickup Dog Waste in Yard
	All Respondents	**51.0%**	**88.7%**	**61.3%**

Demographic	Sub-category	Own a Dog	Frequency Pickup Dog Waste on Walks	Frequency Pickup Dog Waste in Yard
Gender	Male	57.5%	88.5%	64.3%
Gender	Female	43.7%	90.2%	56.3%
Age	21 to 24	63.3%	88.7%	57.1%
Age	25 to 34	58.1%	87.0%	59.5%
Age	35 to 44	55.2%	85.7%	65.8%
Age	45 to 54	45.2%	93.9%	58.6%
Age	55 to 64	30.2%	100.0%	69.2%
Age	65 to 74	18.4%	100.0%	50.0%
Age	75 or older	12.5%	0.0%	100.0%
Locality	Alexandria	43.6%	95.1%	65.5%
Locality	Arlington	37.5%	85.2%	89.5%
Locality	Fairfax - Inclusive	50.4%	85.7%	54.2%
Locality	Prince William - Inclusive	58.8%	90.9%	57.6%
Locality	Leesburg/Loudon	60.9%	89.1%	66.0%
Ethnicity	Hispanic/Latino	57.9%	93.2%	55.0%
Ethnicity	Not Hispanic/Latino	50.0%	87.9%	62.4%
Years of Residence	Less than 1 year	40.8%	93.1%	55.0%
Years of Residence	1 to 3 years	50.0%	92.9%	48.5%
Years of Residence	4 to 9 years	59.9%	76.6%	65.9%
Years of Residence	10 to 19 years	50.0%	91.5%	65.1%
Years of Residence	20 or more years	47.1%	100.0%	71.4%
Home Ownership	Owned	58.4%	88.9%	60.8%
Home Ownership	Rented	39.4%	93.5%	65.6%
Household Income	Less than $35,000	38.0%	85.2%	69.6%
Household Income	$35,000 to $49,999	46.2%	90.0%	57.1%
Household Income	$50,000 to $74,999	44.5%	90.6%	71.1%
Household Income	$75,000 to $99,999	54.0%	85.2%	56.8%
Household Income	$100,000 to $124,999	64.2%	95.2%	53.3%
Household Income	$125,000 to $149,999	47.0%	74.2%	55.2%
Household Income	$150,000 to $174,999	64.9%	82.6%	55.0%
Household Income	$175,000 to $199,999	69.6%	100.0%	81.3%
Household Income	$200,000 or greater	54.2%	100.0%	56.0%

** Red font indicates significant differences within a demographic subgroup.*

Figure 7. Frequency of picking up dog waste.

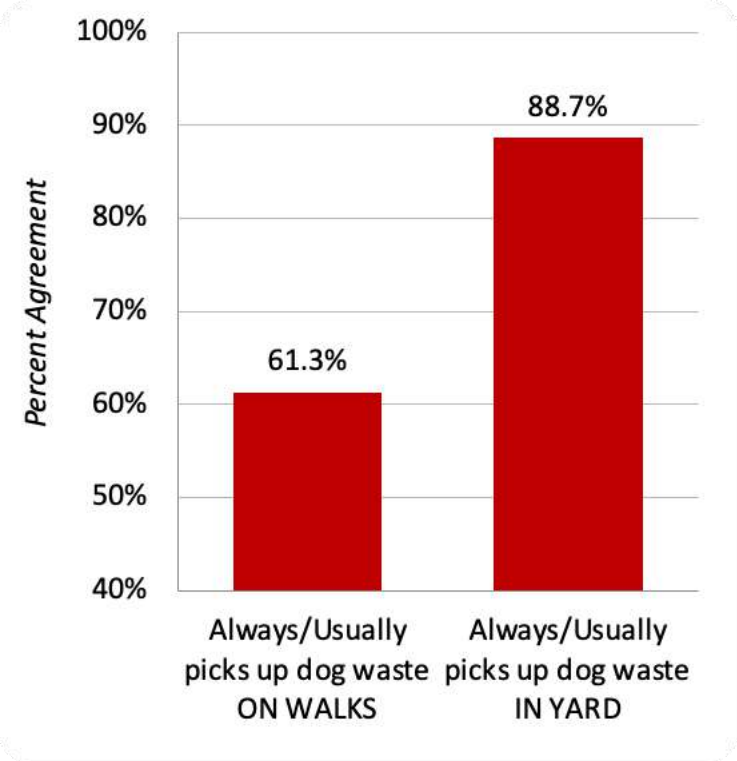
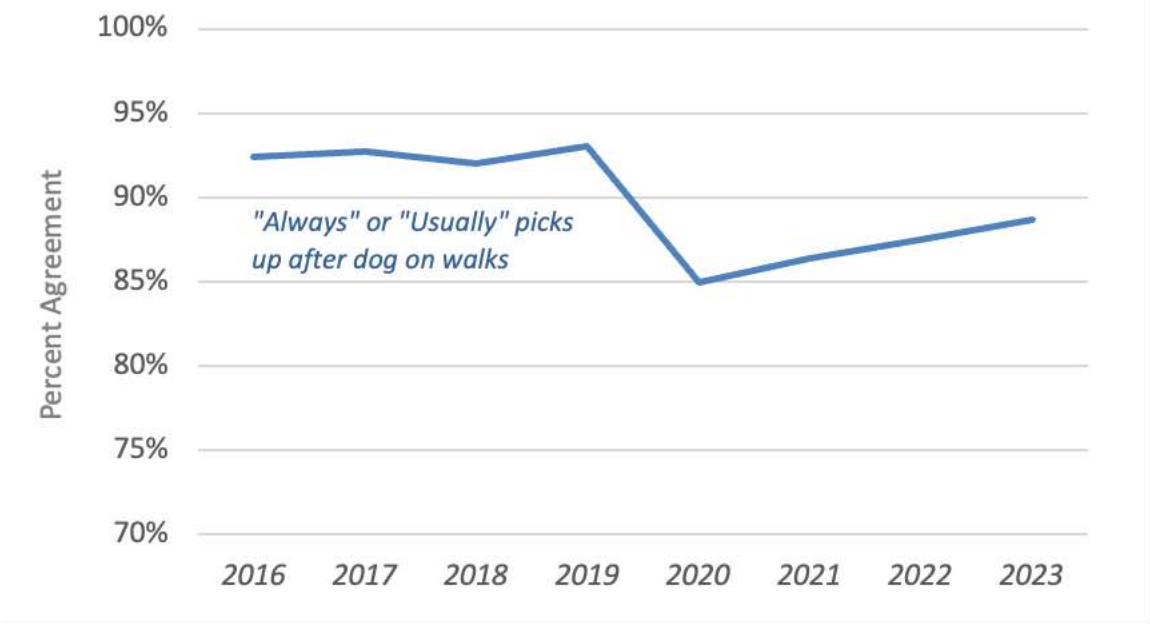


Table 9. Frequency of picking up dog waste across years.

Year of Survey	2016	2017	2018	2019	2020	2021	2022	2023
"Always" or "Usually" picks up after dog on walks	92.4%	92.7%	92.1%	93.0%	85.0%	86.4%	87.5%	88.7%

** Red font indicates that the value significantly differs from the current 2023 value. There are no significant differences from the 2023 value in this table.*

Figure 8. Frequency of picking up dog waste across years.



In comparison, dog owners were also asked how often they (or someone from their household) remove dog waste from their yard. The response options were “Not applicable - dog not allowed to go in the home’s yard”, “Daily”, “Weekly”, “Monthly”, “Less often than once a month”, “Never”, or “Not sure”. When asked about picking up after their dog(s) in their own yard, 61.3% report doing so daily (as shown in Table 8 and Figure 7) and 25.7% report doing so weekly. Men report picking up after their dog(s) in their own yard daily more than women (57.5% of men versus 43.7% of women), whereas 10.1% of women report picking up monthly as compared to 3.2% of men. Individuals from Arlington (89.5%) report higher rates of picking up dog waste in their yard daily more often than people from other localities.

Participants who indicated that they pick up dog waste with any frequency either on walks or in their own yard were asked the most important reason for doing so, the results of which can be seen in Table 10 and Figure 9. The response options were “City/county ordinance”, “Don’t want to step in it”, “It causes water pollution”, “It is gross”, “It’s what good neighbors do”, “Odor”, “Other reason”, or “None/No reason to”. In response to this question, 24.9% of dog owners report their most important reason being that it is required by city or county ordinances. Additionally, 19.8% report not wanting to step in it and 16.9% report doing so because it’s what

good people do. Finally, 14.8% report their reason being because it causes water pollution, 19.4% said because it is gross, and 3.4% do so because of the odor. People from Prince William and people who have lived in their residence for under 1 year are most likely to report they pick up dog waste because it is gross (38.9%) when compared to other localities and for longer tenures, respectively.

Table 10. Most important reason for picking up dog waste by demographic group.

Demographic	Sub-category	Reason for Picking Up Dog Waste						
		City/county ordinance	Don't want to step in it	It causes water pollution	It is gross	It's what good neighbors do	Odor	Other reason
	All Respondents	**24.9%**	**19.8%**	**14.8%**	**19.4%**	**16.9%**	**3.4%**	**0.8%**
Gender	Male	29.7%	18.6%	13.1%	17.2%	17.2%	4.1%	0.0%
	Female	15.7%	22.5%	16.9%	23.6%	16.9%	2.2%	2.2%
Age	21 to 24	22.7%	18.2%	22.7%	20.5%	15.9%	0.0%	0.0%
	25 to 34	22.4%	18.4%	17.1%	23.7%	14.5%	3.9%	0.0%
	35 to 44	28.8%	19.2%	11.0%	20.5%	12.3%	5.5%	2.7%
	45 to 54	32.1%	14.3%	10.7%	10.7%	28.6%	3.6%	0.0%
	55 to 64	8.3%	50.0%	0.0%	8.3%	33.3%	0.0%	0.0%
	65 to 74	25.0%	25.0%	25.0%	0.0%	25.0%	0.0%	0.0%
	75 or older	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Locality	Alexandria	23.1%	19.2%	15.4%	26.9%	11.5%	3.8%	0.0%
	Arlington	42.1%	10.5%	10.5%	15.8%	21.1%	0.0%	0.0%
	Fairfax - Inclusive	19.8%	24.2%	19.8%	11.0%	18.7%	6.6%	0.0%
	Prince William - Inclusive	20.4%	13.0%	13.0%	38.9%	11.1%	0.0%	3.7%
	Leesburg/Loudon	34.0%	23.4%	8.5%	10.6%	21.3%	2.1%	0.0%
Ethnicity	Hispanic/Latino	16.2%	18.9%	21.6%	21.6%	13.5%	8.1%	0.0%
	Not Hispanic/Latino	26.5%	20.0%	13.5%	19.0%	17.5%	2.5%	1.0%
Years of Residence	Less than 1 year	21.1%	5.3%	5.3%	42.1%	26.3%	0.0%	0.0%
	1 to 3 years	23.3%	16.7%	13.3%	25.0%	16.7%	3.3%	1.7%
	4 to 9 years	15.9%	24.4%	19.5%	18.3%	17.1%	4.9%	0.0%
	10 to 19 years	30.8%	20.5%	17.9%	10.3%	17.9%	2.6%	0.0%
	20 or more years	43.2%	21.6%	8.1%	10.8%	10.8%	2.7%	2.7%
Home Ownership	Owned	20.8%	23.8%	16.7%	17.9%	16.1%	3.6%	1.2%
	Rented	36.1%	11.5%	8.2%	24.6%	18.0%	1.6%	0.0%
Household Income	Less than $35,000	27.3%	13.6%	22.7%	9.1%	27.3%	0.0%	0.0%
	$35,000 to $49,999	28.6%	23.8%	19.0%	9.5%	19.0%	0.0%	0.0%
	$50,000 to $74,999	27.9%	14.0%	20.9%	23.3%	7.0%	4.7%	2.3%

Demographic	Sub-category	Reason for Picking Up Dog Waste						
		City/county ordinance	Don't want to step in it	It causes water pollution	It is gross	It's what good neighbors do	Odor	Other reason
	$75,000 to $99,999	23.8%	19.0%	14.3%	21.4%	19.0%	2.4%	0.0%
	$100,000 to $124,999	14.3%	25.0%	10.7%	28.6%	21.4%	0.0%	0.0%
	$125,000 to $149,999	23.1%	15.4%	7.7%	23.1%	11.5%	19.2%	0.0%
	$150,000 to $174,999	22.2%	38.9%	5.6%	27.8%	5.6%	0.0%	0.0%
	$175,000 to $199,999	43.8%	25.0%	0.0%	6.3%	25.0%	0.0%	0.0%
	$200,000 or greater	19.0%	14.3%	23.8%	14.3%	23.8%	0.0%	4.8%

** Red font indicates significant differences within a demographic subgroup.*

Figure 9. Reason for picking up dog waste.

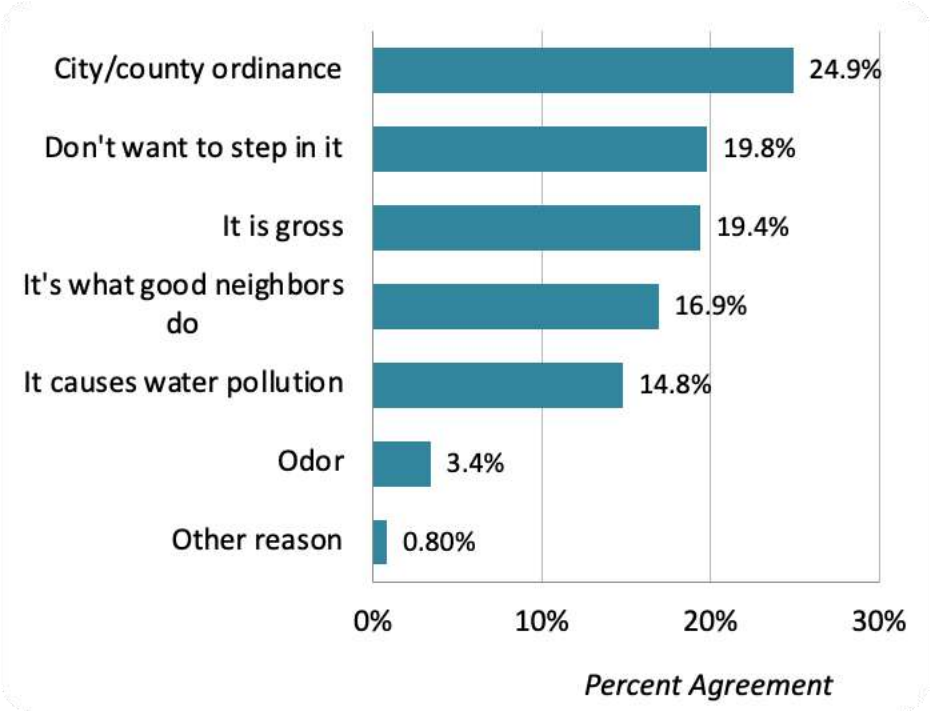
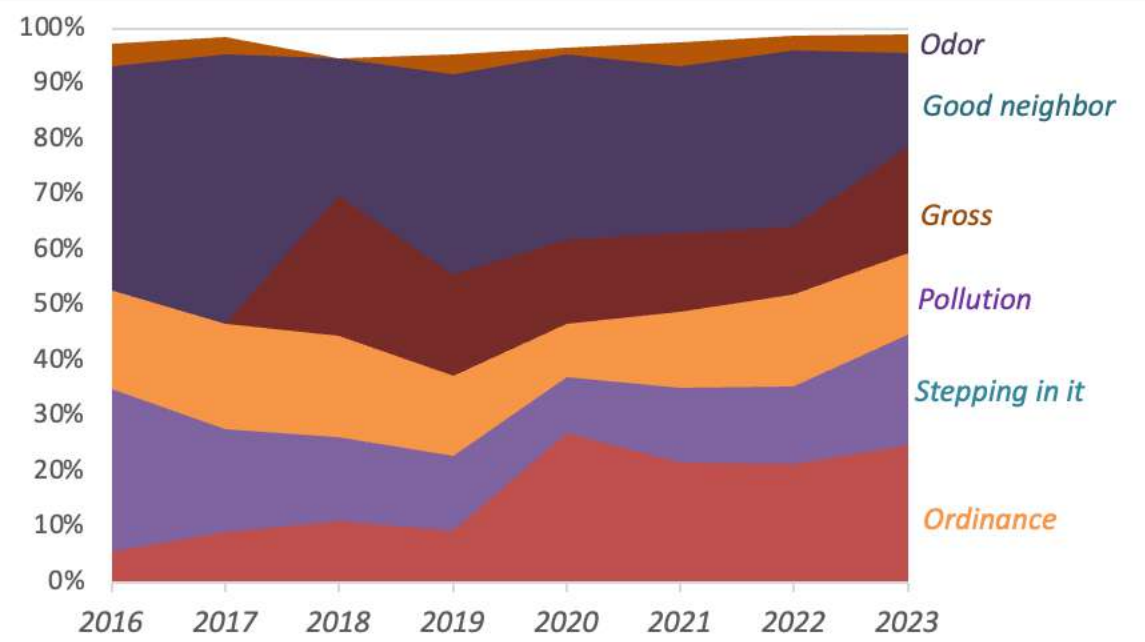


Table 11. Reason for picking up dog waste across years.

Year of Survey								
Reason	2016	2017	2018	2019	2020	2021	2022	2023
City/county ordinance	5.5%	9.2%	11.1%	9.4%	27.0%	21.6%	21.4%	24.9%
Don't want to step in it	**29.5%**	**18.4%**	**15.0%**	**13.5%**	**10.1%**	**13.7%**	**13.9%**	19.8%
It causes water pollution	17.8%	19.1%	18.3%	14.6%	9.6%	13.7%	16.8%	14.8%
It is gross	*	*	25.5%	18.1%	15.2%	14.1%	12.2%	19.4%
It's what good neighbors do	40.4%	48.7%	24.8%	36.3%	33.7%	30.3%	31.9%	16.9%
Odor	4.1%	3.3%		3.5%	1.1%	4.1%	2.5%	3.4%
Other reason	2.7%	1.3%	5.2%	4.7%	3.4%	2.5%	1.3%	0.8%

** Red font indicates that the value significantly differs from the current 2023 value.*
Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 10. Reason for picking up pet waste across years.



2.3.6 Behaviors Related to Vehicles

Respondents were asked if they owned or leased a vehicle, and if so they were asked about their behavior regarding changing motor oil and how the used motor oil is disposed. Because the survey queries knowledge and behaviors regarding changing the motor oil of their personal

vehicles, respondents were first asked if they own a personal vehicle. The majority of respondents (88.3%) report having a personal vehicle that they own or lease, as seen in Table 12. Alexandria and Arlington had lower rates of owning or leasing a personal vehicle. People who own their home have higher rates of owning or leasing a vehicle.

2.3.6.1 Disposing of Motor Oil

Those who own or lease a personal vehicle were then asked about how they dispose of motor oil when their vehicle oil is changed (Table 12 and Figure 11). Response options were "I don't change the oil myself/I take it to a garage/oil change service", "Take the motor oil to a gas station or hazmat facility for recycling", "Store it in my garage", "Put it in the trash", "Dump it in the gutter or down the storm sewer", "Dump it down the sink", "Dump it on the ground", and an option to write-in another method not listed. Most of these respondents (70.0%) report taking their vehicle to a garage or oil changing service when the oil needs to be changed. Alternatively, 17.1% report taking the old motor oil to a gas station or hazmat facility, 4.8% store it in their garage, 3.7% put it in the trash, 2.3% dump it on the ground, 1.0% dump it in the gutter or storm drain, and 0.7% dump it down the sink. Women had higher rates of using a garage or oil change service when compared to men, as did older age groups when compared to younger age groups.

Table 12. Vehicle possession and motor oil handling by demographic group.

Demographic	Sub-category	Own or Lease Vehicle	Vehicle Oil Handling						
			Uses a Garage or Oil Change Service	Gas Station or Hazmat Facility	Store in Garage	Put in the Trash	Dump in Gutter or Storm Sewer	Dump in Sink	Dump on Ground
	All Respondents	**88.3%**	**70.0%**	**17.1%**	**4.8%**	**3.7%**	**1.0%**	**0.7%**	**2.3%**
Gender	Male	91.2%	50.9%	25.1%	10.8%	7.5%	2.2%	2.5%	0.7%
	Female	85.7%	72.4%	15.9%	4.2%	3.3%	1.7%	0.0%	2.1%
Age	21 to 24	84.5%	58.5%	17.1%	9.8%	6.1%	3.7%	2.4%	1.2%
	25 to 34	87.8%	50.7%	22.0%	14.0%	8.7%	1.3%	1.3%	2.0%
	35 to 44	91.0%	54.6%	24.1%	7.1%	7.8%	2.8%	2.1%	1.4%

Demographic	Sub-category	Own or Lease Vehicle	Vehicle Oil Handling						
			Uses a Garage or Oil Change Service	Gas Station or Hazmat Facility	Store in Garage	Put in the Trash	Dump in Gutter or Storm Sewer	Dump in Sink	Dump on Ground
	45 to 54	90.4%	68.2%	25.8%	1.5%	1.5%	1.5%	0.0%	1.5%
	55 to 64	88.7%	87.0%	10.9%	0.0%	0.0%	0.0%	0.0%	0.0%
	65 to 74	84.2%	81.3%	18.8%	0.0%	0.0%	0.0%	0.0%	0.0%
	75 or older	87.5%	85.7%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Locality	Alexandria	83.0%	59.0%	19.2%	11.5%	6.4%	1.3%	1.3%	1.3%
	Arlington	76.4%	53.7%	20.4%	11.1%	14.8%	0.0%	0.0%	0.0%
	Fairfax - Inclusive	91.0%	60.1%	24.1%	5.4%	4.4%	1.5%	2.5%	1.0%
	Prince William - Inclusive	91.3%	63.5%	20.2%	6.7%	4.8%	2.9%	0.0%	1.9%
	Leesburg/Loudon	92.4%	64.7%	16.5%	8.2%	3.5%	3.5%	1.2%	2.4%
Ethnicity	Hispanic/Latino	87.0%	60.6%	22.7%	9.1%	3.0%	1.5%	0.0%	1.5%
	Not Hispanic/Latino	88.4%	60.7%	20.7%	7.4%	6.1%	2.0%	1.5%	1.3%
Years of Residence	Less than 1 year	78.4%	63.2%	24.6%	5.3%	7.0%	0.0%	0.0%	0.0%
	1 to 3 years	85.8%	71.7%	14.5%	7.6%	3.4%	1.4%	0.0%	1.4%
	4 to 9 years	92.3%	50.0%	25.7%	9.0%	7.6%	2.8%	3.5%	0.7%
	10 to 19 years	89.6%	60.0%	14.1%	9.4%	5.9%	4.7%	2.4%	2.4%
	20 or more years	92.1%	59.1%	28.0%	5.4%	5.4%	0.0%	0.0%	2.2%
Home Ownership	Owned	95.3%	55.5%	24.8%	7.7%	6.1%	2.8%	1.5%	1.5%
	Rented	78.1%	71.7%	13.6%	6.5%	4.9%	0.5%	0.5%	1.1%
Household Income	Less than $35,000	58.9%	67.4%	14.0%	7.0%	7.0%	0.0%	0.0%	4.7%
	$35,000 to $49,999	79.7%	56.9%	25.5%	9.8%	7.8%	0.0%	0.0%	0.0%
	$50,000 to $74,999	91.6%	59.3%	24.1%	9.3%	1.9%	2.8%	0.9%	0.9%
	$75,000 to $99,999	87.9%	58.6%	18.4%	8.0%	10.3%	1.1%	2.3%	0.0%
	$100,000 to $124,999	97.0%	67.2%	18.8%	3.1%	6.3%	3.1%	1.6%	0.0%
	$125,000 to $149,999	98.5%	60.0%	21.5%	9.2%	3.1%	0.0%	4.6%	1.5%
	$150,000 to $174,999	97.4%	54.1%	18.9%	8.1%	8.1%	8.1%	0.0%	2.7%
	$175,000 to $199,999	100.0%	52.2%	30.4%	13.0%	0.0%	4.3%	0.0%	0.0%
	$200,000 or greater	97.9%	67.4%	19.6%	2.2%	6.5%	0.0%	0.0%	4.3%

** Red font indicates significant differences within a demographic subgroup.*

Figure 11. Motor oil handling behaviors.

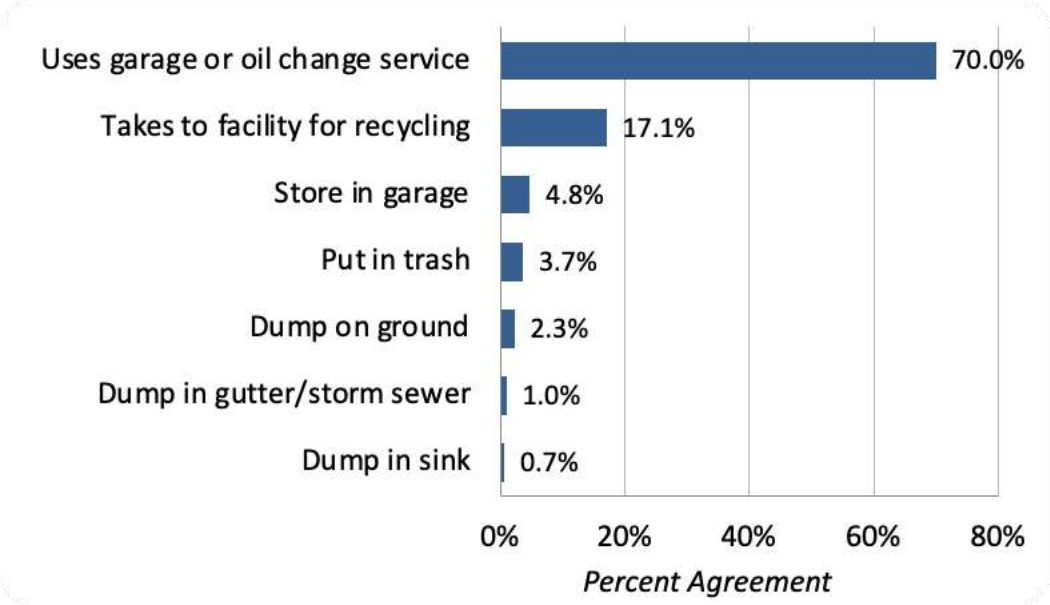
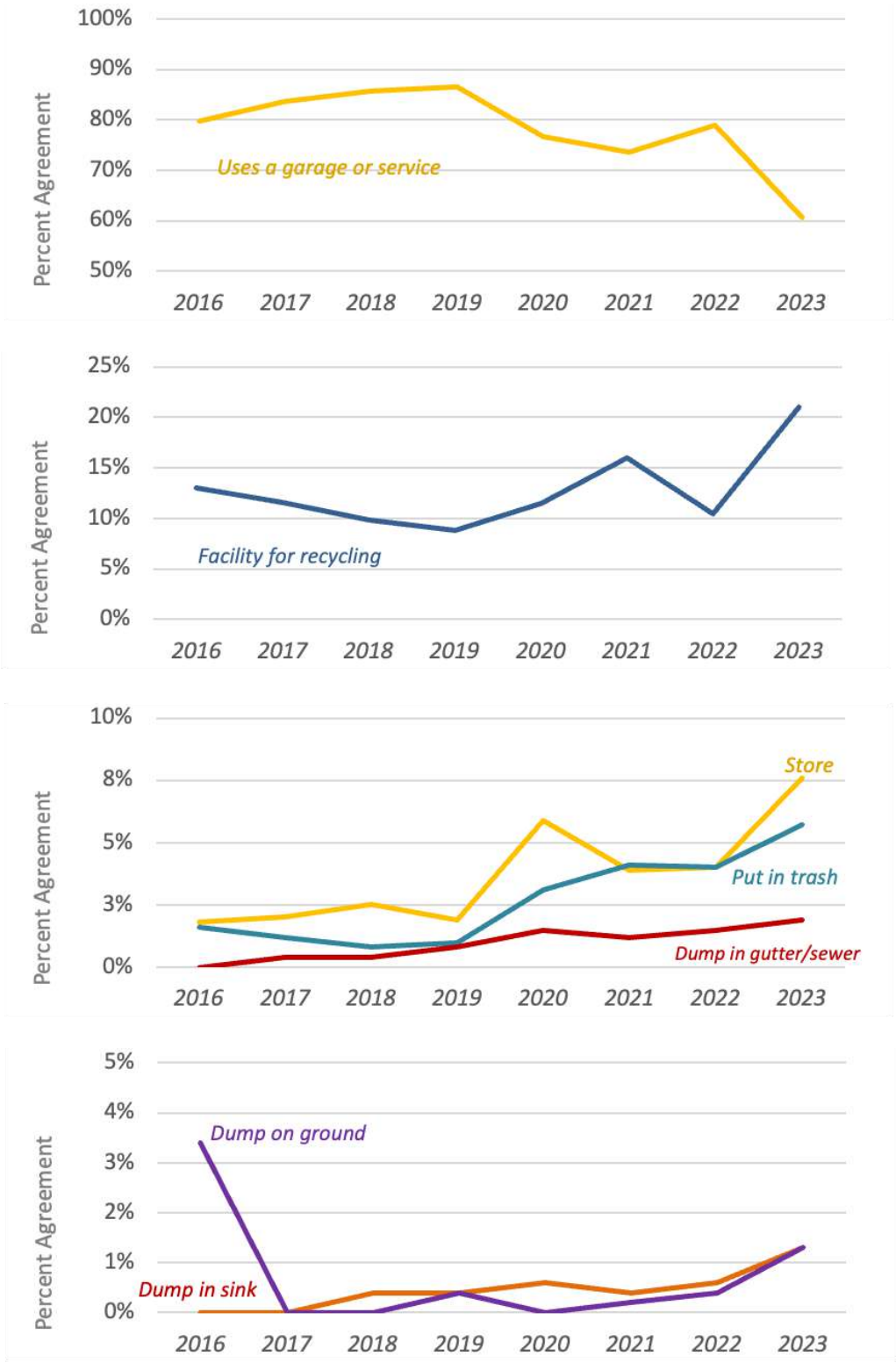


Table 13. Motor oil handling behaviors across years.

Year of Survey								
Motor oil disposal	2016	2017	2018	2019	2020	2021	2022	2023
Uses a Garage or Oil Change Service	79.8%	83.7%	85.7%	86.5%	76.8%	73.7%	78.9%	60.7%
Facility for Recycling	13.0%	11.6%	9.8%	8.8%	11.5%	16.0%	10.5%	21.0%
Store	1.8%	2.0%	2.5%	1.9%	5.9%	3.9%	4.0%	7.6%
Put in the Trash	1.6%	1.2%	0.8%	1.0%	3.1%	4.1%	4.0%	5.7%
Dump in Gutter/Sewer	0.0%	0.4%	0.4%	0.8%	1.5%	1.2%	1.5%	1.9%
Dump in Sink	0.0%	0.0%	0.4%	0.4%	0.6%	0.4%	0.6%	1.3%
Dump on Ground	3.4%	0.0%	0.0%	0.4%	0.0%	0.2%	0.4%	1.3%

** Red font indicates that the value significantly differs from the current 2023 value.*

Figure 12. Motor oil handling behaviors across years.



2.3.6.2 Vehicle Washing

Participants who reported owning or leasing a vehicle were also asked about their vehicle washing behaviors. Behaviors related to vehicle washing were also probed. Respondents were asked where they have washed their personal vehicle in the past year, with response options being "At my home or someone else's home", "At a commercial car wash", "I haven't washed my vehicle", and the option to write in another response not listed. Of those who own or lease a personal vehicle, 21.0% said they wash their car/truck at home, as shown in Table 14 and

Demographic	Sub-category	Wash Car at Home	Wash Car in Grass, Gravel, or Dirt	Wash Car using Environmentally Friendly Detergent	Wash Car using only Water (No Soap)	Wash Car at Commercial Location	Have not Washed Car in Past Year
	All Respondents	**21.0%**	**52.6%**	**60.3%**	**28.5%**	**63.1%**	**9.3%**
Gender	Male	47.2%	53.8%	66.2%	33.6%	66.0%	9.4%
	Female	29.5%	50.6%	50.0%	20.0%	60.5%	8.9%
Age	21 to 24	49.5%	58.3%	57.4%	24.5%	47.5%	10.1%
	25 to 34	37.0%	60.9%	59.4%	26.6%	64.2%	9.2%
	35 to 44	45.8%	57.7%	67.6%	40.0%	68.4%	10.3%
	45 to 54	26.0%	36.8%	52.6%	31.6%	72.6%	8.2%
	55 to 64	24.5%	15.4%	46.2%	0.0%	66.0%	13.2%
	65 to 74	34.2%	23.1%	61.5%	16.7%	55.3%	0.0%
	75 or older	25.0%	50.0%	50.0%	0.0%	62.5%	12.5%
Locality	Alexandria	36.2%	52.9%	48.5%	26.5%	58.5%	6.4%
	Arlington	25.0%	55.6%	66.7%	16.7%	56.9%	11.1%
	Fairfax - Inclusive	45.1%	51.0%	63.7%	31.7%	58.8%	10.2%
	Prince William - Inclusive	39.1%	34.1%	50.0%	17.8%	67.8%	7.0%
	Leesburg/Loudon	34.8%	81.3%	71.9%	43.3%	77.2%	12.0%
Ethnicity	Hispanic/Latino	35.1%	40.7%	40.7%	18.5%	54.5%	11.7%
	Not Hispanic/Latino	39.1%	54.2%	62.9%	29.9%	64.4%	9.0%
Years of Residence	Less than 1 year	21.6%	60.0%	80.0%	31.3%	58.1%	10.8%
	1 to 3 years	37.1%	50.8%	58.7%	28.6%	62.4%	8.8%
	4 to 9 years	41.4%	50.8%	56.3%	25.4%	68.2%	9.6%
	10 to 19 years	50.0%	60.4%	54.2%	39.6%	56.3%	14.6%
	20 or more years	38.2%	46.2%	69.2%	18.4%	66.7%	3.9%
Home Ownership	Owned	46.8%	50.9%	65.6%	31.9%	66.8%	10.4%
	Rented	27.4%	56.9%	47.7%	18.8%	59.9%	5.9%
Household Income	Less than $35,000	19.2%	69.2%	46.2%	21.4%	37.0%	9.6%
	$35,000 to $49,999	33.8%	50.0%	63.6%	28.6%	53.8%	12.3%

Demographic	Sub-category	Wash Car at Home	Wash Car in Grass, Gravel, or Dirt	Wash Car using Environmentally Friendly Detergent	Wash Car using only Water (No Soap)	Wash Car at Commercial Location	Have not Washed Car in Past Year
	$50,000 to $74,999	37.8%	55.6%	48.9%	20.0%	65.5%	9.2%
	$75,000 to $99,999	43.0%	51.2%	52.4%	27.9%	60.0%	6.0%
	$100,000 to $124,999	35.8%	37.5%	54.2%	8.3%	70.1%	7.5%
	$125,000 to $149,999	48.5%	56.3%	75.0%	33.3%	66.7%	10.6%
	$150,000 to $174,999	47.4%	72.2%	66.7%	50.0%	86.8%	15.8%
	$175,000 to $199,999	43.5%	80.0%	90.0%	60.0%	87.0%	13.0%
	$200,000 or greater	47.9%	26.1%	69.6%	34.8%	70.8%	6.3%

** Red font indicates significant differences within a demographic subgroup.*

Figure 13. Men had higher rates of home car washing than women and as did participants who owned homes.

Table 14. Vehicle washing behaviors by demographic group.

Demographic	Sub-category	Wash Car at Home	Wash Car in Grass, Gravel, or Dirt	Wash Car using Environmentally Friendly Detergent	Wash Car using only Water (No Soap)	Wash Car at Commercial Location	Have not Washed Car in Past Year
	All Respondents	**21.0%**	**52.6%**	**60.3%**	**28.5%**	**63.1%**	**9.3%**
Gender	Male	47.2%	53.8%	66.2%	33.6%	66.0%	9.4%
	Female	29.5%	50.6%	50.0%	20.0%	60.5%	8.9%
Age	21 to 24	49.5%	58.3%	57.4%	24.5%	47.5%	10.1%
	25 to 34	37.0%	60.9%	59.4%	26.6%	64.2%	9.2%
	35 to 44	45.8%	57.7%	67.6%	40.0%	68.4%	10.3%
	45 to 54	26.0%	36.8%	52.6%	31.6%	72.6%	8.2%
	55 to 64	24.5%	15.4%	46.2%	0.0%	66.0%	13.2%
	65 to 74	34.2%	23.1%	61.5%	16.7%	55.3%	0.0%
	75 or older	25.0%	50.0%	50.0%	0.0%	62.5%	12.5%
Locality	Alexandria	36.2%	52.9%	48.5%	26.5%	58.5%	6.4%
	Arlington	25.0%	55.6%	66.7%	16.7%	56.9%	11.1%

Demographic	Sub-category	Wash Car at Home	Wash Car in Grass, Gravel, or Dirt	Wash Car using Environmentally Friendly Detergent	Wash Car using only Water (No Soap)	Wash Car at Commercial Location	Have not Washed Car in Past Year
	Fairfax - Inclusive	45.1%	51.0%	63.7%	31.7%	58.8%	10.2%
	Prince William - Inclusive	39.1%	34.1%	50.0%	17.8%	67.8%	7.0%
	Leesburg/Loudon	34.8%	81.3%	71.9%	43.3%	77.2%	12.0%
Ethnicity	Hispanic/Latino	35.1%	40.7%	40.7%	18.5%	54.5%	11.7%
	Not Hispanic/Latino	39.1%	54.2%	62.9%	29.9%	64.4%	9.0%
Years of Residence	Less than 1 year	21.6%	60.0%	80.0%	31.3%	58.1%	10.8%
	1 to 3 years	37.1%	50.8%	58.7%	28.6%	62.4%	8.8%
	4 to 9 years	41.4%	50.8%	56.3%	25.4%	68.2%	9.6%
	10 to 19 years	50.0%	60.4%	54.2%	39.6%	56.3%	14.6%
	20 or more years	38.2%	46.2%	69.2%	18.4%	66.7%	3.9%
Home Ownership	Owned	46.8%	50.9%	65.6%	31.9%	66.8%	10.4%
	Rented	27.4%	56.9%	47.7%	18.8%	59.9%	5.9%
Household Income	Less than $35,000	19.2%	69.2%	46.2%	21.4%	37.0%	9.6%
	$35,000 to $49,999	33.8%	50.0%	63.6%	28.6%	53.8%	12.3%
	$50,000 to $74,999	37.8%	55.6%	48.9%	20.0%	65.5%	9.2%
	$75,000 to $99,999	43.0%	51.2%	52.4%	27.9%	60.0%	6.0%
	$100,000 to $124,999	35.8%	37.5%	54.2%	8.3%	70.1%	7.5%
	$125,000 to $149,999	48.5%	56.3%	75.0%	33.3%	66.7%	10.6%
	$150,000 to $174,999	47.4%	72.2%	66.7%	50.0%	86.8%	15.8%
	$175,000 to $199,999	43.5%	80.0%	90.0%	60.0%	87.0%	13.0%
	$200,000 or greater	47.9%	26.1%	69.6%	34.8%	70.8%	6.3%

** Red font indicates significant differences within a demographic subgroup.*

Figure 13. Vehicle washing locations.

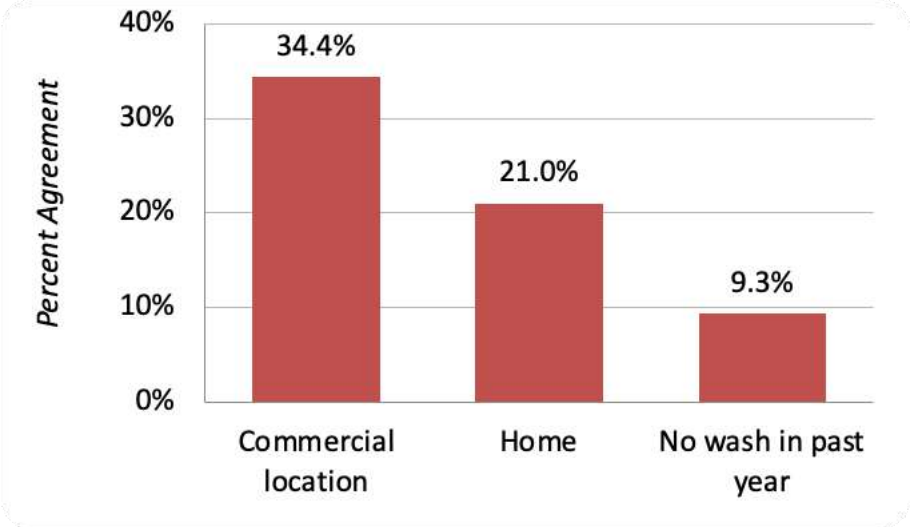


Figure 14. Desirable behaviors associated with vehicle washing.

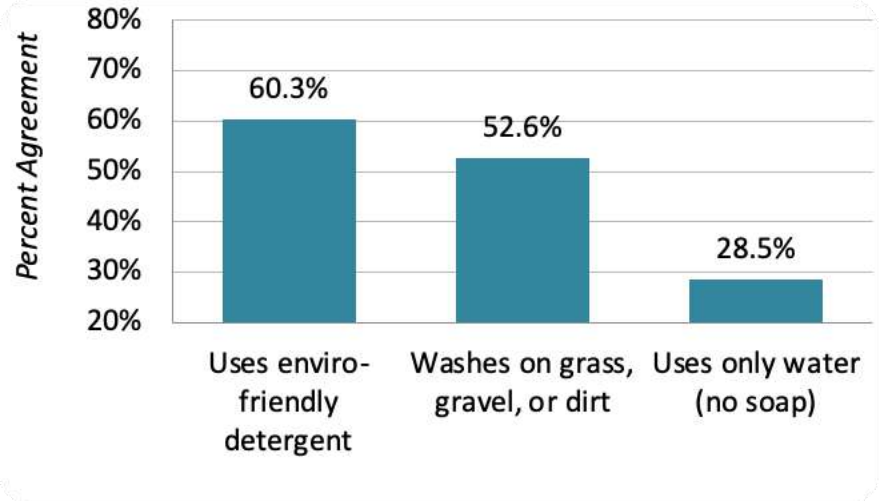
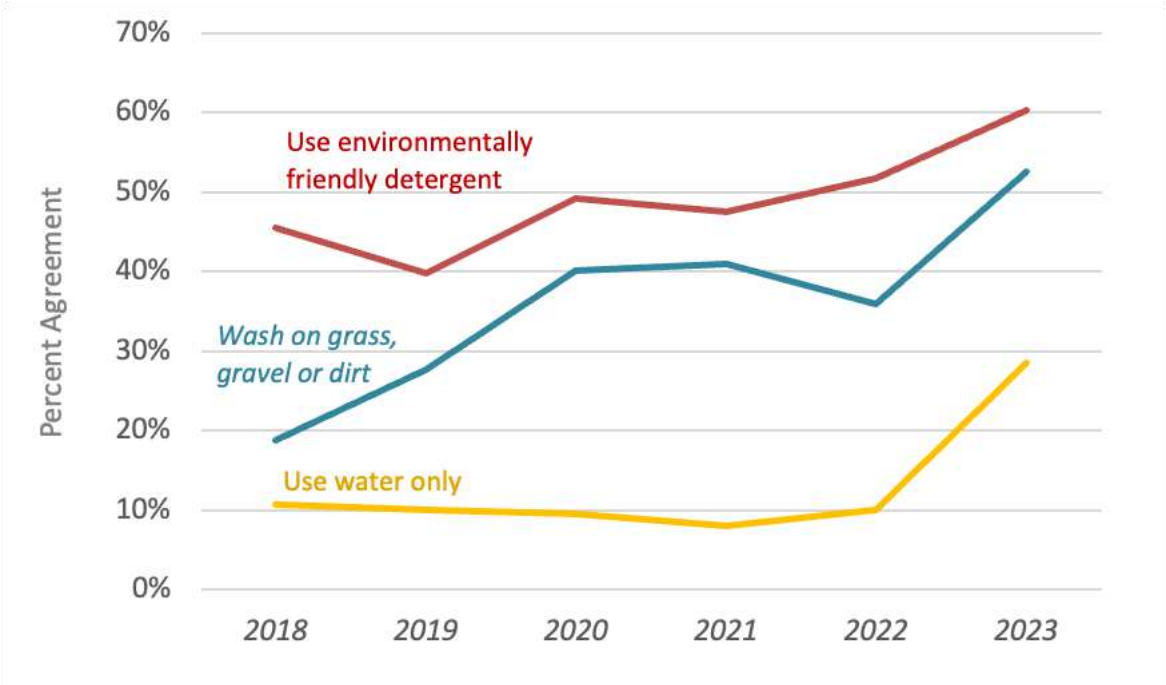


Table 15. Vehicle washing behaviors across years.

Year of Survey						
Vehicle washing behavior	2018	2019	2020	2021	2022	2023
Wash on grass, gravel or dirt	18.8%	27.7%	40.1%	41.0%	36.0%	52.6%
Use environmentally friendly detergent	45.6%	39.9%	49.2%	47.5%	51.7%	60.3%
Use water only	10.7%	10.1%	9.6%	8.0%	10.0%	28.5%

** Red font indicates that the value significantly differs from the current 2023 value.*

Figure 15. Vehicle washing behaviors across years.



Those who reported washing their vehicle at home were asked about their behaviors when washing their car. Response options were “Yes”, “No”, and “Not sure” for the following statements:

- I wash it on the grass, gravel, or dirt
- I use environmentally friendly detergent
- I use water only (no soap or detergent)

Of the 21.0% of respondents that wash their vehicle at home, 52.6% report washing it on the grass, gravel, or dirt (Table 14 and Figure 14). Additionally, 60.3% report using environmentally friendly detergent. Homeowners had higher rates of using environmentally friendly detergent when compared to renters, as did non-Latino participants when compared to Latino participants, and men when compared to women. Finally, 28.5% report only using water with higher rates for men than women and higher rates for non-Latino than Latino participants. These results suggest that people may wash their vehicle using multiple different methods depending on certain circumstances.

Alternatively, 63.1% report washing their vehicle at a commercial car wash. People from higher income groups have higher rates of washing their car at a commercial location when compared to lower income groups.

Next, those who report washing their vehicle at home were asked how many times per year they do so, with response options being “Less than once a year”, “1-2 times per year”, “3-4 times per year”, “5-6 times per year”, “7-12 times per year”, “12+ times per year”. These response rates can be seen in Table 16 and Figure 16. The most common response, at 26.1%, was 3-4 times per year. Next, 22.6% report washing their vehicle at home 1-2 times per year, and 17.8% do so 5-6 times per year. Less commonly, 16.5% of those who wash their personal vehicle at home report doing so 12+ times per year, 11.7% report doing so 7-12 times per year, and 5.2% do so less than once per year. Latino participants have higher rates of washing their car at home 12+ times per year when compared to non-Latinos, 40.7% compared to 13.3% respectively. There are otherwise no strong demographic trends among frequency of home car washing.

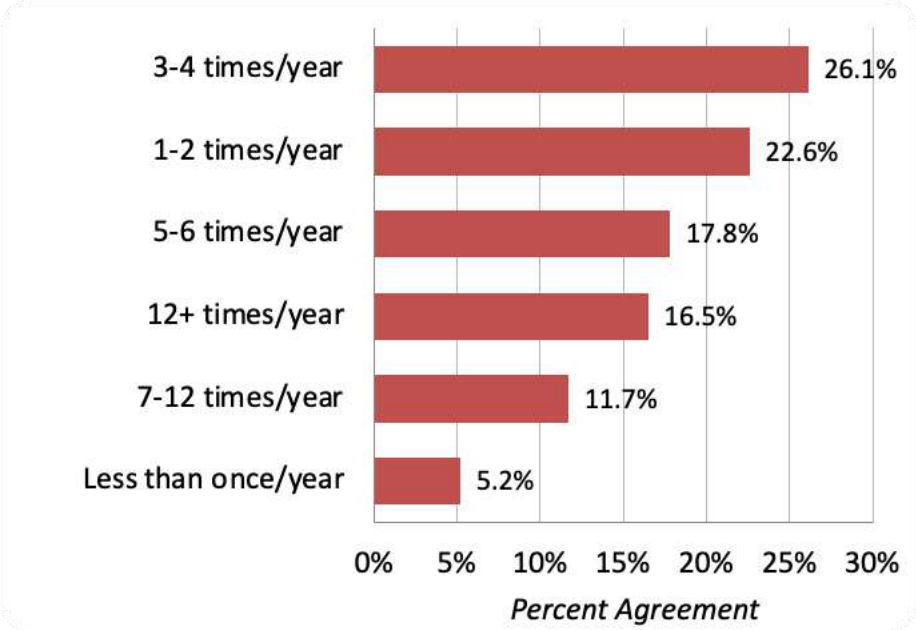
Table 16. Frequency of car washing at home by demographic group.

Demographic	Sub-category	Frequency of Car Washing at Home					
		Less than once a year	1-2 times per year	3-4 times per year	5-6 times per year	7-12 times per year	12+ times per year
	All Respondents	**5.2%**	**22.6%**	**26.1%**	**17.8%**	**11.7%**	**16.5%**
Gender	Male	4.8%	22.1%	25.5%	20.0%	11.0%	16.6%
	Female	6.0%	24.1%	27.7%	14.5%	12.0%	15.7%
Age	21 to 24	8.2%	28.6%	26.5%	12.2%	12.2%	12.2%
	25 to 34	3.1%	25.0%	26.6%	15.6%	9.4%	20.3%
	35 to 44	5.7%	15.7%	22.9%	24.3%	11.4%	20.0%
	45 to 54	10.5%	21.1%	31.6%	10.5%	21.1%	5.3%
	55 to 64	0.0%	23.1%	23.1%	15.4%	15.4%	23.1%
	65 to 74	0.0%	23.1%	38.5%	23.1%	7.7%	7.7%
	75 or older	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%
Locality	Alexandria	8.8%	17.6%	23.5%	11.8%	8.8%	29.4%
	Arlington	11.1%	22.2%	33.3%	11.1%	5.6%	16.7%
	Fairfax - Inclusive	4.9%	26.5%	22.5%	16.7%	11.8%	17.6%

Demographic	Sub-category	Frequency of Car Washing at Home					
		Less than once a year	1-2 times per year	3-4 times per year	5-6 times per year	7-12 times per year	12+ times per year
	Prince William - Inclusive	2.2%	26.7%	35.6%	15.6%	11.1%	8.9%
	Leesburg/Loudon	3.2%	9.7%	22.6%	35.5%	19.4%	9.7%
Ethnicity	Hispanic/Latino	3.7%	14.8%	7.4%	22.2%	11.1%	40.7%
	Not Hispanic/Latino	5.4%	23.6%	28.6%	17.2%	11.8%	13.3%
Years of Residence	Less than 1 year	18.8%	18.8%	18.8%	0.0%	31.3%	12.5%
	1 to 3 years	6.3%	27.0%	27.0%	15.9%	4.8%	19.0%
	4 to 9 years	3.1%	26.2%	27.7%	13.8%	9.2%	20.0%
	10 to 19 years	4.3%	17.0%	19.1%	29.8%	19.1%	10.6%
	20 or more years	2.6%	17.9%	33.3%	20.5%	10.3%	15.4%
Home Ownership	Owned	4.3%	23.6%	26.1%	20.5%	9.9%	15.5%
	Rented	6.2%	20.0%	27.7%	9.2%	16.9%	20.0%
Household Income	Less than $35,000	14.3%	28.6%	35.7%	0.0%	14.3%	7.1%
	$35,000 to $49,999	4.5%	13.6%	27.3%	13.6%	22.7%	18.2%
	$50,000 to $74,999	4.4%	28.9%	11.1%	20.0%	17.8%	17.8%
	$75,000 to $99,999	4.7%	25.6%	23.3%	11.6%	9.3%	25.6%
	$100,000 to $124,999	0.0%	12.5%	50.0%	16.7%	0.0%	20.8%
	$125,000 to $149,999	6.3%	31.3%	28.1%	18.8%	3.1%	12.5%
	$150,000 to $174,999	5.9%	5.9%	35.3%	17.6%	17.6%	17.6%
	$175,000 to $199,999	10.0%	20.0%	10.0%	50.0%	10.0%	0.0%
	$200,000 or greater	4.3%	21.7%	26.1%	26.1%	13.0%	8.7%

** Red font indicates significant differences within a demographic subgroup.*

Figure 16. Frequency of car washing at home.



2.3.7 Home Landscaping Water Conservation

Respondents were asked about their familiarity with and possession of various water conservation methods including rain barrels, rain gardens, and conservation landscaping. Results are summarized in Table 17 and displayed in Figure 17. Survey participants were given a definition of each conservation method and asked "Which of the following statements are true for you?" with response options "Yes", "No", and "Don't know" for the listed statements (using rain barrels as an example):

- I have a rain barrel.
- I am familiar with rain barrels.
- I don't have a rain barrel but I'm interested in getting one.

When asked about rain barrels, 27.7% report having one, 70.7% report being familiar with them, and 44.9% are interested in getting one. Regarding rain gardens, 25.5% have one, 50.5% are familiar with them and 41.6% are interested in getting one. Finally, when asked about their familiarity with conservation landscaping, 37.1% report having it, 59.1% report being familiar with it and 42.0% report being interested in installing it.

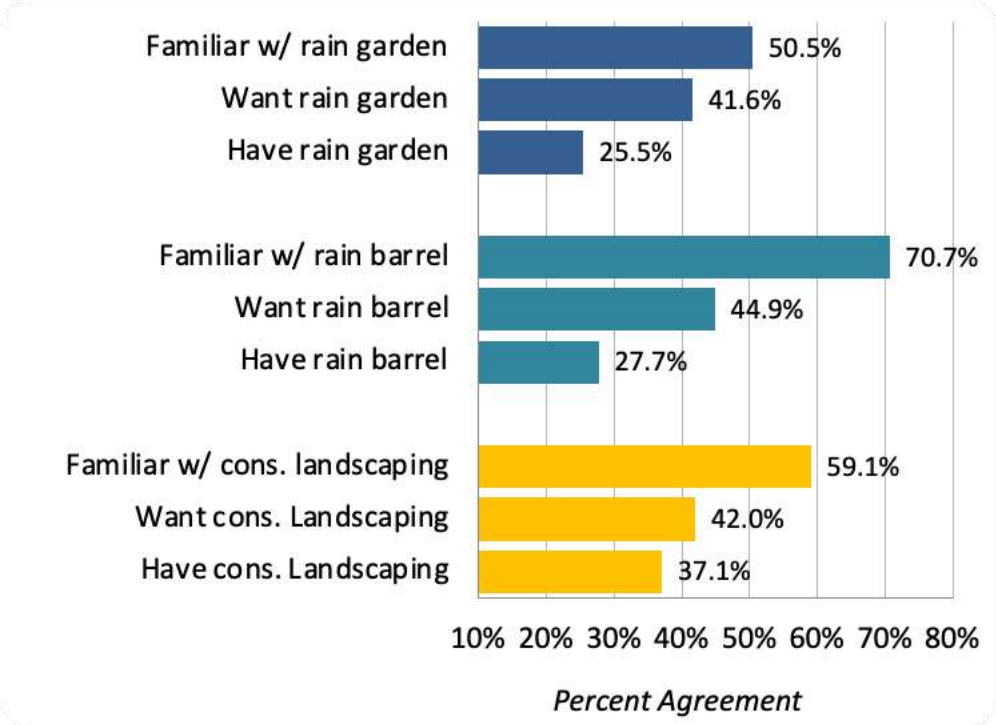
Table 17. Familiarity of home water conservation methods by demographic group.

Demographic	Sub-category	Have Rain Barrel	Familiar with Rain Barrel	Want a Rain Barrel	Have Rain Garden	Familiar with Rain Garden	Want a Rain Garden	Have Conservation Landscaping	Familiar with Conservation Landscaping	Want Conservation Landscaping
	All Respondents	**27.7%**	**70.7%**	**44.9%**	**25.5%**	**50.5%**	**41.6%**	**37.1%**	**59.1%**	**42.0%**
Gender	Male	36.1%	74.2%	45.0%	34.8%	56.1%	43.0%	44.3%	64.0%	42.0%
	Female	18.5%	67.5%	44.8%	15.0%	44.0%	40.0%	29.1%	53.6%	41.2%
Age	21 to 24	29.9%	58.8%	46.9%	30.2%	53.1%	48.4%	43.3%	62.6%	42.7%
	25 to 34	28.1%	68.2%	44.4%	28.7%	54.1%	42.5%	35.7%	58.8%	38.9%
	35 to 44	39.7%	74.7%	53.0%	33.1%	55.3%	48.0%	43.1%	62.5%	54.3%
	45 to 54	21.1%	77.1%	47.1%	17.8%	39.7%	37.5%	30.1%	54.2%	41.7%
	55 to 64	11.5%	69.2%	32.0%	5.9%	40.4%	28.0%	28.0%	51.0%	29.2%
	65 to 74	11.4%	86.5%	27.3%	14.7%	48.6%	21.2%	33.3%	62.9%	25.0%
	75 or older	0.0%	75.0%	12.5%	0.0%	25.0%	25.0%	12.5%	37.5%	12.5%
Locality	Alexandria	30.1%	73.6%	42.9%	26.1%	47.8%	46.7%	33.0%	52.7%	43.5%
	Arlington	26.5%	70.0%	40.3%	28.6%	59.2%	35.7%	36.2%	60.0%	40.6%
	Fairfax - Inclusive	29.2%	68.9%	46.3%	27.1%	51.1%	41.9%	39.0%	58.1%	42.6%
	Prince William - Inclusive	18.4%	67.5%	47.3%	15.8%	47.0%	42.9%	28.8%	58.6%	35.8%
	Leesburg/Loudon	34.1%	76.7%	43.8%	31.1%	49.5%	38.6%	47.3%	68.5%	47.7%
Ethnicity	Hispanic/Latino	24.0%	59.5%	41.9%	22.7%	46.1%	42.5%	36.5%	59.5%	37.5%
	Not Hispanic/Latino	28.2%	72.4%	45.3%	25.9%	51.2%	41.4%	37.2%	59.1%	42.6%
Years of Residence	Less than 1 year	16.7%	61.4%	45.8%	20.5%	45.8%	38.9%	28.2%	54.9%	44.3%
	1 to 3 years	20.5%	67.9%	46.1%	18.1%	48.5%	42.7%	29.2%	60.7%	41.2%
	4 to 9 years	32.1%	72.4%	46.1%	29.0%	55.2%	45.8%	46.8%	64.1%	41.8%
	10 to 19 years	31.1%	69.9%	50.0%	32.2%	48.9%	40.0%	39.1%	54.3%	49.5%
	20 or more years	37.6%	80.0%	35.4%	30.0%	51.5%	36.5%	39.6%	56.1%	34.7%
Home Ownership	Owned	33.9%	75.5%	48.0%	30.1%	52.4%	42.9%	46.3%	63.4%	45.3%
	Rented	16.9%	65.5%	39.2%	18.5%	46.8%	37.9%	24.4%	54.3%	35.2%
Household Income	Less than $35,000	21.1%	63.4%	50.0%	19.7%	39.4%	36.2%	25.7%	41.4%	42.0%
	$35,000 to $49,999	18.5%	61.5%	33.8%	25.0%	48.4%	39.1%	30.8%	55.4%	37.5%
	$50,000 to $74,999	25.0%	69.3%	46.0%	21.9%	46.6%	47.0%	35.1%	51.7%	40.0%
	$75,000 to $99,999	29.2%	70.1%	49.5%	28.9%	58.2%	40.6%	40.8%	70.1%	41.5%

Demographic	Sub-category	Have Rain Barrel	Familiar with Rain Barrel	Want a Rain Barrel	Have Rain Garden	Familiar with Rain Garden	Want a Rain Garden	Have Conservation Landscaping	Familiar with Conservation Landscaping	Want Conservation Landscaping
	$100,000 to $124,999	16.4%	64.6%	37.9%	15.4%	37.9%	36.9%	31.3%	51.5%	37.3%
	$125,000 to $149,999	39.4%	84.4%	51.6%	30.8%	65.6%	55.6%	42.4%	73.8%	58.1%
	$150,000 to $174,999	50.0%	71.1%	43.2%	44.7%	52.6%	33.3%	55.3%	71.1%	41.7%
	$175,000 to $199,999	50.0%	87.0%	52.2%	40.9%	63.6%	36.4%	52.2%	78.3%	56.5%
	$200,000 or greater	25.0%	80.9%	39.1%	20.8%	53.2%	37.8%	38.3%	57.8%	31.8%

** Red font indicates significant differences within a demographic subgroup.*

Figure 17. Familiarity with home water conservation methods.



Men are more likely than women to report having a rain barrel or rain garden or conservation landscaping, as are homeowners when compared to renters. Additionally, younger individuals are more likely to report having a rain barrel or rain garden. There are no differences across age groups when it comes to having conservation landscaping.

2.3.8 Engagement in Water Quality Improvement Activities

Respondents were asked about their awareness of and engagement in community activities that promote better water quality in the past 12 months. Results are summarized in Table 18 and displayed in Figure 18. When asked about their familiarity with water quality activities, 33.2% report being aware of a water quality activity in the past 12 months. There are no trends among demographic subgroups.

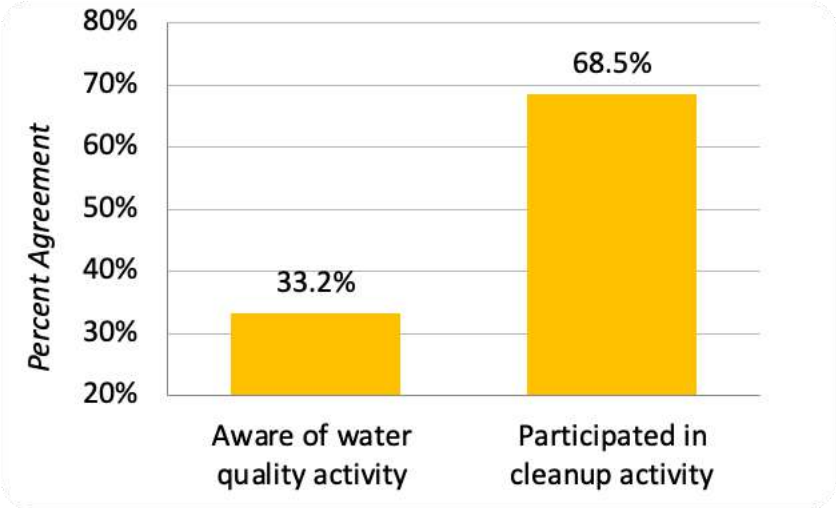
Table 18. Cleanup engagement behaviors by demographic group.

Demographic	Sub-category	Aware of Water Quality Activity in Last 12 Months	Participated in Cleanup Activity in Last 12 Months
	All Respondents	**33.2%**	**68.5%**
Gender	Male	39.4%	76.0%
	Female	26.7%	56.8%
Age	21 to 24	46.9%	64.4%
	25 to 34	32.4%	71.4%
	35 to 44	35.7%	83.6%
	45 to 54	21.9%	68.8%
	55 to 64	28.3%	26.7%
	65 to 74	24.3%	44.4%
	75 or older	12.5%	100.0%
Locality	Alexandria	30.1%	60.7%
	Arlington	38.9%	53.6%
	Fairfax - Inclusive	36.4%	71.6%
	Prince William - Inclusive	25.2%	72.4%
	Leesburg/Loudon	34.1%	77.4%
Ethnicity	Hispanic/Latino	31.2%	73.9%
	Not Hispanic/Latino	33.5%	67.8%
Years of Residence	Less than 1 year	25.7%	47.4%
	1 to 3 years	29.4%	69.4%
	4 to 9 years	34.0%	77.4%
	10 to 19 years	35.8%	67.6%
	20 or more years	41.6%	66.7%
Home Ownership	Owned	38.1%	73.3%
	Rented	26.2%	57.4%
Household Income	Less than $35,000	21.9%	75.0%
	$35,000 to $49,999	33.8%	77.3%
	$50,000 to $74,999	30.3%	66.7%

Demographic	Sub-category	Aware of Water Quality Activity in Last 12 Months	Participated in Cleanup Activity in Last 12 Months
	$75,000 to $99,999	36.4%	68.6%
	$100,000 to $124,999	25.4%	47.1%
	$125,000 to $149,999	42.4%	67.9%
	$150,000 to $174,999	44.7%	76.5%
	$175,000 to $199,999	63.6%	71.4%
	$200,000 or greater	25.5%	66.7%

** Red font indicates significant differences within a demographic subgroup.*

Figure 18. Cleanup activity engagement.



Of those who were aware of an event in the past 12 months, 68.5% report participating in the event. There are no trends among demographic subgroups.

As discussed in the Knowledge Section below, about two-thirds (63.4%) of respondents say they would report a potential source of water pollution. Reporting potential pollution will be discussed in more detail in the next section.

2.4 Knowledge

2.4.3 Awareness of "Watersheds"

Respondents were asked a series of questions in order to assess their knowledge about local water systems and stormwater drainage. Participants were asked if they were familiar with the

term “watershed”. Regardless of the response (yes or no), all respondents were then shown this definition of the term:

- A watershed is an area of land that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points such as reservoirs, bays, and the ocean.

Of all respondents, 69.2% report that they are familiar with the term “watershed”, as can be seen in Table 19 and * *Red font indicates significant differences within a demographic subgroup.*

Figure 19. Men are more likely to be familiar with the term (75.5%) compared to women (63.2%). Homeowners are also more likely to be familiar with the term (74.8%) compared to renters (61.7%). Respondents whose household income is above $35,000 were more often familiar with the term “watershed” compared to those who make under $35,000 (50.0%).

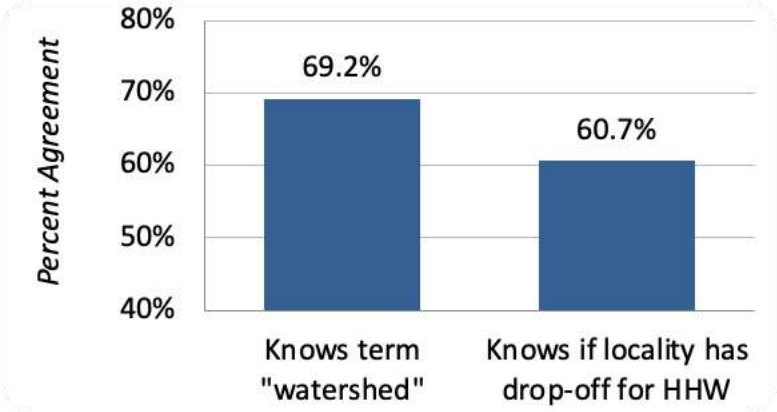
Table 19. Awareness of watersheds and knowledge of stormwater drainage by demographic group.

Demographic	Sub-category	Know term "water shed"	Waste Water Treatment	Chesapeake or Potomac Watershed	Stream Creek Watershed	Knows if Locality has Location for HHW
	All Respondents	**69.2%**	**45.6%**	**61.6%**	**57.1%**	**60.7%**
Gender	Male	75.5%	51.8%	66.2%	55.7%	68.8%
	Female	63.2%	39.2%	56.0%	57.9%	52.7%
Age	21 to 24	77.8%	43.9%	59.6%	56.6%	54.5%
	25 to 34	67.4%	50.3%	64.3%	54.2%	49.7%
	35 to 44	68.6%	51.0%	66.0%	57.8%	67.5%
	45 to 54	58.3%	34.2%	47.2%	52.8%	64.4%
	55 to 64	73.6%	38.0%	58.8%	67.3%	73.6%
	65 to 74	68.4%	41.7%	69.7%	65.7%	68.4%
	75 or older	87.5%	33.3%	62.5%	50.0%	87.5%
Locality	Alexandria	68.1%	51.6%	63.7%	58.9%	51.6%
	Arlington	61.4%	42.6%	67.1%	55.2%	52.8%
	Fairfax - Inclusive	73.2%	45.5%	60.6%	57.1%	63.6%
	Prince William - Inclusive	66.1%	41.6%	60.0%	57.1%	64.9%
	Leesburg/Loudon	70.7%	47.3%	59.6%	56.8%	64.1%
Ethnicity	Hispanic/Latino	69.9%	47.6%	54.7%	52.6%	53.3%

Demographic	Sub-category	Know term "water shed"	Waste Water Treatment	Chesapeake or Potomac Watershed	Stream Creek Watershed	Knows if Locality has Location for HHW
	Not Hispanic/Latino	64.5%	32.0%	62.6%	57.8%	61.8%
Years of Residence	Less than 1 year	66.2%	43.8%	58.9%	52.1%	46.6%
	1 to 3 years	68.6%	39.9%	59.5%	49.1%	50.0%
	4 to 9 years	66.0%	47.4%	61.6%	57.0%	64.5%
	10 to 19 years	68.1%	48.4%	62.6%	67.0%	67.7%
	20 or more years	78.4%	51.6%	66.3%	65.6%	76.5%
Home Ownership	Owned	74.8%	53.9%	67.2%	62.6%	69.6%
	Rented	61.7%	35.8%	55.5%	49.3%	50.2%
Household Income	Less than $35,000	50.0%	39.7%	48.6%	47.1%	45.2%
	$35,000 to $49,999	70.3%	46.8%	64.5%	48.4%	53.1%
	$50,000 to $74,999	67.2%	38.8%	55.7%	49.1%	60.2%
	$75,000 to $99,999	70.7%	41.1%	62.5%	58.9%	61.0%
	$100,000 to $124,999	71.6%	43.3%	62.7%	58.2%	46.3%
	$125,000 to $149,999	75.4%	52.4%	72.7%	62.5%	80.3%
	$150,000 to $174,999	73.7%	60.5%	65.8%	73.7%	71.1%
	$175,000 to $199,999	82.6%	78.3%	47.8%	69.6%	87.0%
	$200,000 or greater	77.1%	45.7%	77.3%	71.1%	68.1%

** Red font indicates significant differences within a demographic subgroup.*

Figure 19. Knowledge of watersheds and HHW.



2.4.4 Understanding of Stormwater Drainage

Participants were asked, “To the best of your knowledge, does storm water eventually end up in…?” and given a list of three destinations as well as an option to write-in another destination not listed. Response options were “Yes”, “No”, and “Don’t know” for the listed destinations:

- A wastewater treatment facility?
- Potomac River or Chesapeake Bay?
- A nearby stream or creek

As seen in Table 19 and **Error! Reference source not found.** nearly a third (30.6%) report b elieving it goes to a wastewater treatment facility, 61.6% report believing it goes into the Chesapeake Bay or Potomac River and 57.1% report believing it goes into a nearby stream or creek. As reported in Behaviors and Behavioral Drivers, 70.7% of respondents report being familiar with rain barrels, 50.5% report being familiar with rain gardens and 59.1% report being familiar with conservation landscaping.

Figure 20. Stormwater destination beliefs.

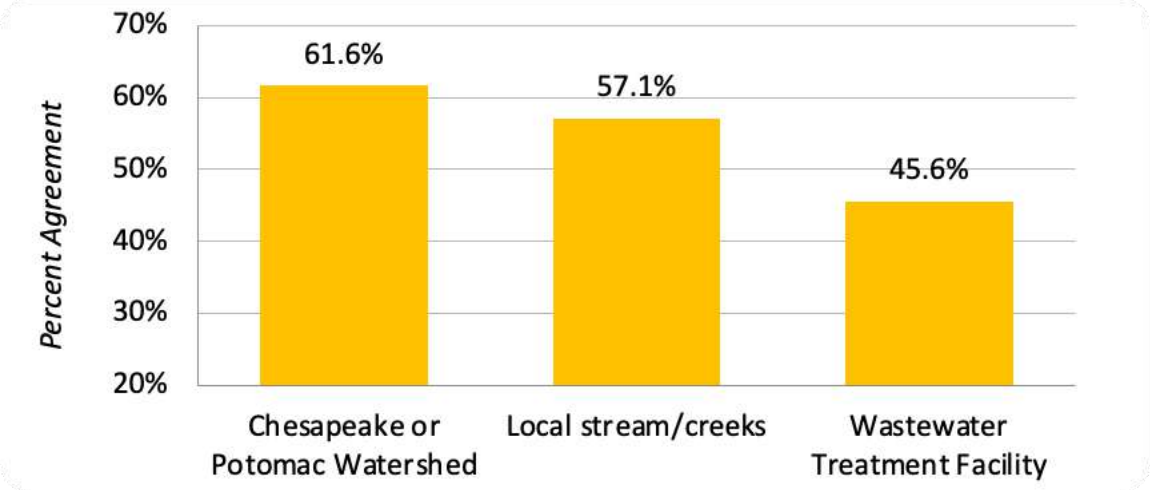
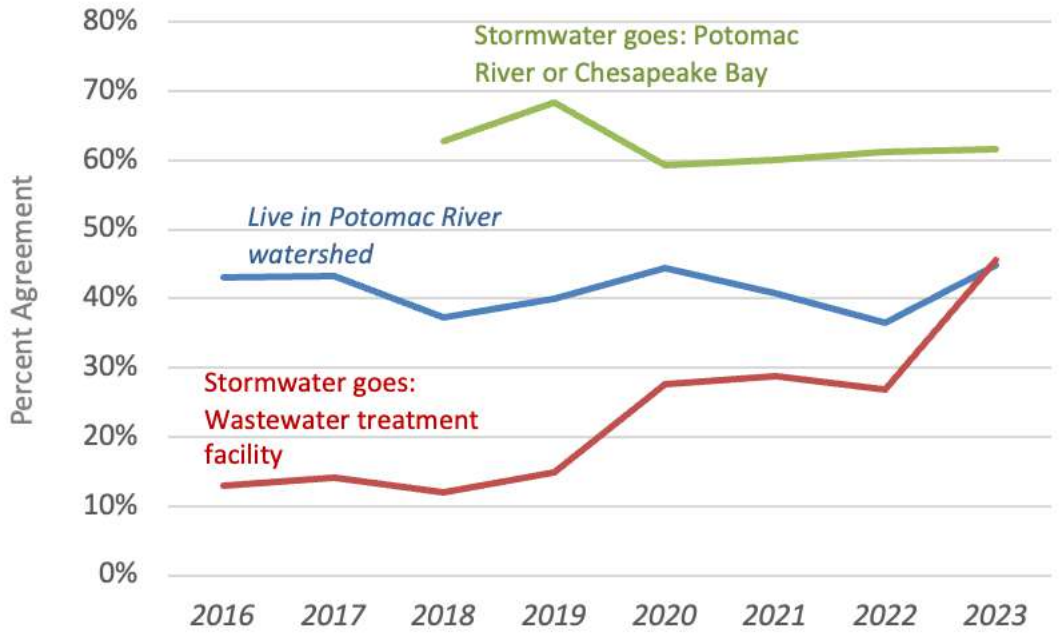


Table 20. Storm water destination beliefs across years.

Year of Survey								
Survey Questions Response	2016	2017	2018	2019	2020	2021	2022	2023
"Yes" to *Do you live in the Potomac River watershed?*	43.0%	43.2%	37.2%	40.0%	44.4%	40.8%	36.6%	44.9%
"A wastewater treatment facility" to *[Where does] storm water eventually end up?*	**13.0%**	**14.2%**	**12.0%**	**14.8%**	**27.6%**	**28.8%**	**26.8%**	45.60%
"Potomac River or Chesapeake Bay" to *[Where does] storm water eventually end up?*	*	*	62.8%	68.4%	59.4%	60.0%	61.2%	61.6%

** Red font indicates that the value significantly differs from the current 2023 value.*
Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 21. Storm water destination beliefs across years.



2.4.5 Awareness of Household Hazardous Waste (HHW) Disposal

Participants were also asked whether they knew if their locality has a specific place for residents to drop off Household Hazardous Waste (HHW), with response options being “Yes, I

know whether we have a location for drop-offs" and "No, I'm not sure whether we have a location for drop-offs". When asked about HHW 60.7% of respondents report knowing if their locality has a specific drop off location for it, which can be seen in Table 19 and * *Red font indicates significant differences within a demographic subgroup.*

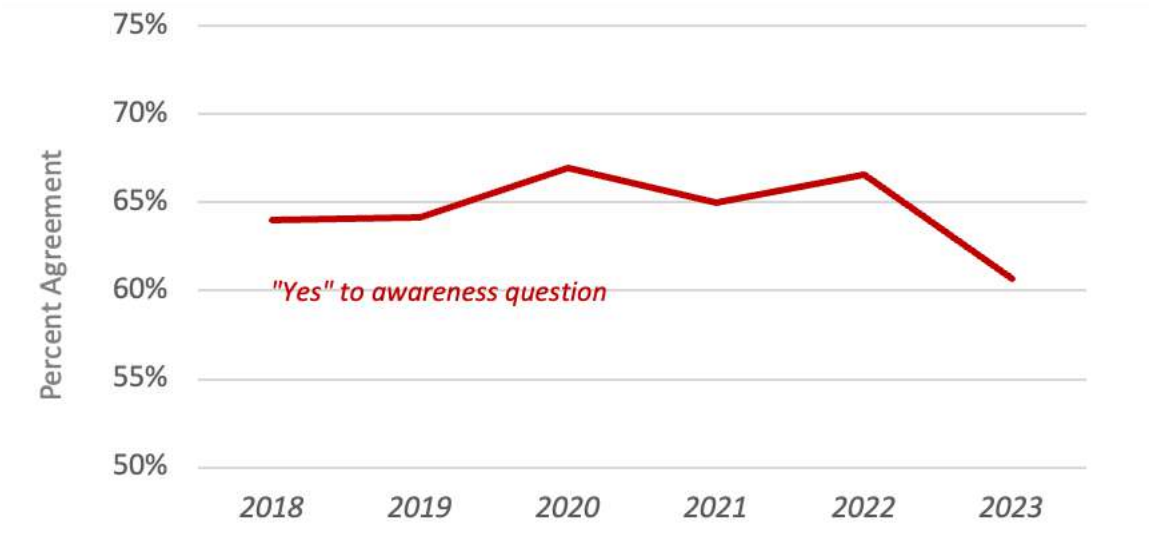
Figure 19. Finally, 33.2% of respondents have heard about water quality activity in the past 12 months. Men (68.8%) are more likely than women (52.7%) to report knowing if their locality has a location for HHW. Older residents and residents who have lived in a locality longer are more likely to report knowing if the locality has a location for HHW. Homeowners (69.6%) are more likely than renters (50.2%) to report knowing about HHW disposal in their community.

Table 21. Awareness of HHW across years.

Year of Survey	2016	2017	2018	2019	2020	2021	2022	2023
"Yes" to awareness question	*	*	64.0%	64.2%	67.0%	65.0%	66.6%	60.7%

** Red font indicates that the value significantly differs from the current 2023 value.*
Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 22. Awareness of HHW across years.



2.4.6 Identifying the Local Watershed

Survey participants were asked "Do live in the…" and given a list of three watershed areas. Response options were "Yes", "No", and "Don't know" for the listed areas:

- Chesapeake Bay watershed?
- Potomac River watershed?
- Another watershed not listed?

As can be seen in Table 22 and Figure 23, almost one-third (29.7%) report that they live in the Chesapeake Bay watershed, 44.0% report that they live in the Potomac River watershed, and 14.5% report that they live in another watershed that was not listed in the survey. Across all areas men had higher rates of reporting that they lived in a watershed, as did those who own their home. Men reported living in the Chesapeake Bay watershed at a rate of 39.1%, the Potomac River watershed at a rate of 52.8%, and another watershed at a rate of 19.4%. These frequencies are compared to women's response rates being 19.4% in the Chesapeake Bay watershed, 35.0% in the Potomac River watershed, and 8.8% in another watershed. When comparing homeowners to renters, as can be seen in Table 22, 39.2% of homeowners report living in the Chesapeake Bay watershed while only 16.0% of renters do. Additionally, 50.0% of homeowners report living in the Potomac River watershed compared to 31.8% of renters, and finally 17.4% of owners report living in another watershed as compared to 10.4% of renters. For reference, a map of the Chesapeake Bay watershed and the Potomac River watershed can be seen below in Figure 24.

Table 22. Identifying the local watershed by demographic.

Demographic	Sub-category	Chesapeake Bay watershed	Potomac River watershed	Another watershed
	All Respondents	**29.7%**	**44.9%**	**14.5%**
Gender	**Male**	39.1%	52.0%	19.4%
	Female	19.4%	36.8%	8.8%
Age	21 to 24	37.1%	37.8%	13.5%
	25 to 34	30.8%	46.1%	11.7%
	35 to 44	30.3%	54.0%	24.1%
	45 to 54	12.7%	33.8%	9.0%

Demographic	Sub-category	Chesapeake Bay watershed	Potomac River watershed	Another watershed
	55 to 64	26.0%	38.0%	8.9%
	65 to 74	40.5%	50.0%	10.3%
	75 or older	28.6%	62.5%	0.0%
Locality	Alexandria	30.8%	45.6%	13.6%
	Arlington	22.9%	48.5%	12.7%
	Fairfax - Inclusive	33.2%	43.6%	15.6%
	Prince William - Inclusive	23.0%	41.1%	11.0%
	Leesburg/Loudon	33.7%	50.0%	18.8%
Ethnicity	Hispanic/Latino	25.0%	39.4%	11.4%
	Not Hispanic/Latino	30.3%	45.7%	15.0%
Years of Residence	Less than 1 year	14.1%	32.9%	7.9%
	1 to 3 years	24.1%	39.0%	9.9%
	4 to 9 years	28.4%	45.7%	17.4%
	10 to 19 years	41.7%	48.9%	22.7%
	20 or more years	41.1%	58.9%	14.8%
Home Ownership	Owned	39.2%	52.9%	17.4%
	Rented	16.0%	33.3%	10.4%
Household Income	Less than $35,000	19.4%	24.6%	7.4%
	$35,000 to $49,999	21.5%	48.4%	14.8%
	$50,000 to $74,999	19.1%	38.1%	14.0%
	$75,000 to $99,999	30.6%	45.7%	12.1%
	$100,000 to $124,999	30.8%	36.9%	4.6%
	$125,000 to $149,999	41.3%	55.4%	25.0%
	$150,000 to $174,999	43.2%	64.9%	25.7%
	$175,000 to $199,999	56.5%	63.6%	35.0%
	$200,000 or greater	40.0%	57.4%	12.8%

** Red font indicates significant differences within a demographic subgroup.*

Figure 23. Local watershed identification.

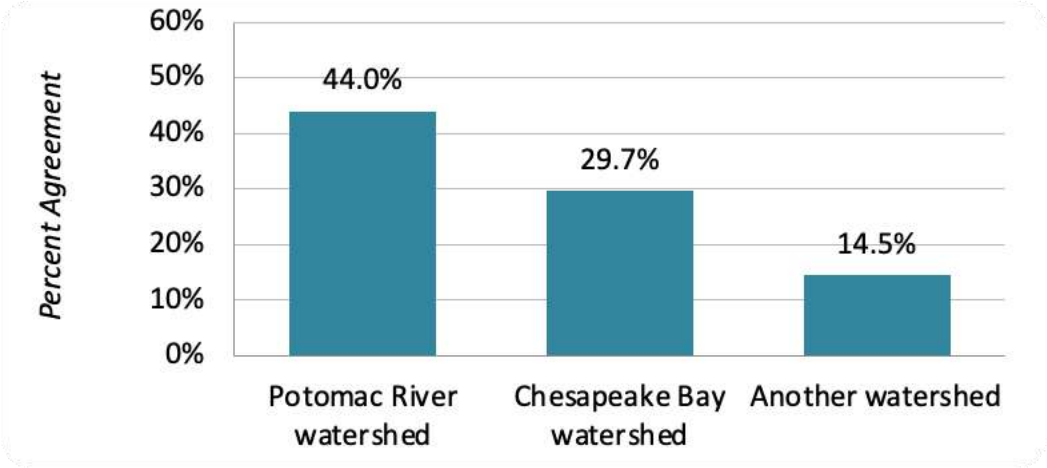
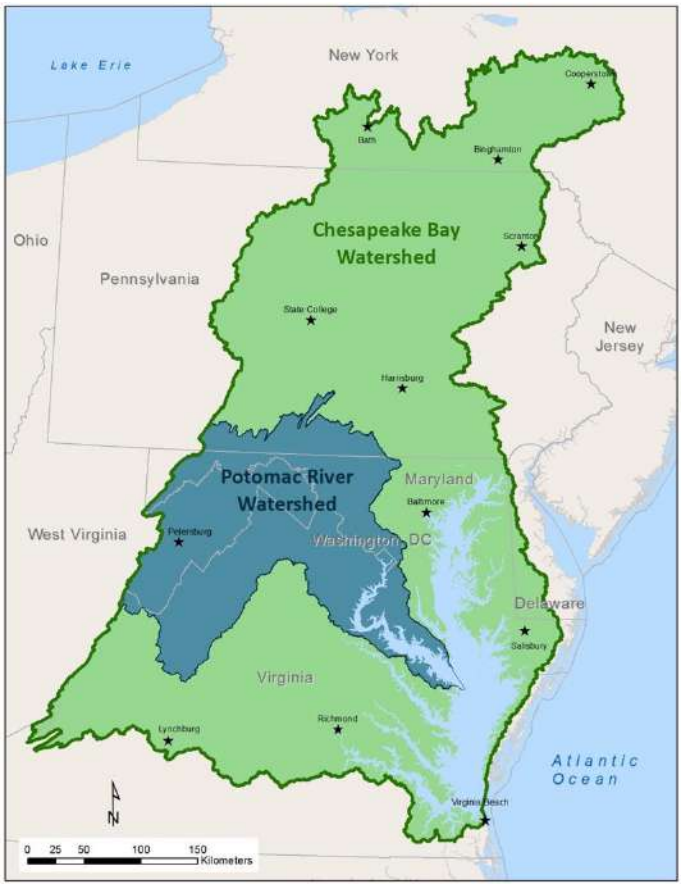


Figure 24. Map of Chesapeake Bay and Potomac River watersheds.[1]



[1] Interstate Commission on the Potomac River Basin. (n.d.). *Potomac River Basin Atlas*. Potomac River Basin Atlas - Subwatersheds. https://www.potomacriver.org/Atlas-Maps/Subwatersheds/

2.4.7 Identification of Pollution

Participants were provided with two images, as seen below (Figure 25), and asked if either photo contains a potential source of water pollution, with response options being “Yes”, “No”, “Not sure”, and “Cannot see image”. The results are summarized in Table 23 and displayed in Figure 26. When asked about the provided images, 72.4% report that yes, they would consider the images to be a potential source of water pollution. Homeowners were more likely to report the photos contained a potential source of water pollution (76.3%) compared to those who rent their residence (66.7%).

Figure 25. Images shown to participants for assessment of knowledge regarding potential sources of water pollution.

2.4.8 Barriers to Reporting Pollution

Participants were asked if they knew who to contact to report potential water pollution with the response options “I definitely know”, “I think I know”, “I don’t think I know”, and “I definitely don’t know”. They were also asked the likelihood that they would call officials to

report potential pollution so it could be investigated with the response options being “I definitely would”, “I probably would”, “I’m equally likely to call and to not call”, “I probably would not”, and “I definitely would not”. The responses are summarized in Table 23.

When asked about who to contact for reporting potential water pollution, 56.5% report knowing who to contact. Men (67.2%) are more likely than women (44.6%) to indicate knowing who to contact in the case of suspected water pollution. 63.4% report that they would contact someone to report a potential source of water pollution. Men (72.2%) are also more likely to indicate they would contact someone to report a potential source of water pollution than women (53.6%).

Those who reported being equally likely to call and not to call and who reported that they would probably or definitely not call were asked what their primary reason is for not calling. Response options given were “I’m too busy”, “It’s not my responsibility”, “It’s none of my business”, “I prefer not to communicate with officials or authorities”, and an option to write-in another reason not listed. Of these respondents, 31.5% report their reason for not calling being that they’d prefer not to communicate with officials or authorities. Additionally, 23.1% report it being none of their business, 17.6% report that they are too busy, and 17.6% report that it is not their responsibility. These results are summarized in Table 23 and displayed in Figure 27.

Table 23. Barriers to reporting water pollution by demographic group.

Demographic	Sub-category	Water Pollution	Know Who to Contact	Would Call Officials	No Contact Reason				
					Too Busy	Not my Responsibility	None of my Business	Don't Want to Communicate with Authorities	Other
	All Respondents	**79.0%**	**56.5%**	**63.4%**	**17.6%**	**17.6%**	**23.1%**	**31.5%**	**10.2%**
Gender	Male	80.6%	67.2%	72.2%	14.1%	20.0%	22.4%	38.8%	4.7%
	Female	77.2%	44.6%	53.6%	20.2%	14.7%	24.0%	27.1%	14.0%
Age	21 to 24	85.7%	55.7%	51.5%	21.3%	21.3%	21.3%	34.0%	2.1%
	25 to 34	77.4%	53.5%	59.6%	21.7%	15.9%	24.6%	26.1%	11.6%
	35 to 44	79.6%	62.6%	69.5%	8.5%	25.5%	23.4%	36.2%	6.4%
	45 to 54	71.4%	56.9%	65.3%	20.0%	4.0%	16.0%	44.0%	16.0%

Demographic	Sub-category	Water Pollution	Know Who to Contact	Would Call Officials	No Contact Reason				
					Too Busy	Not my Responsibility	None of my Business	Don't Want to Communicate with Authorities	Other
	55 to 64	75.5%	41.5%	69.8%	18.8%	12.5%	25.0%	12.5%	31.3%
	65 to 74	83.3%	68.4%	78.9%	14.3%	14.3%	28.6%	28.6%	14.3%
	75 or older	87.5%	50.0%	37.5%	0.0%	20.0%	40.0%	40.0%	0.0%
Locality	Alexandria	72.9%	50.5%	63.8%	9.1%	36.4%	15.2%	27.3%	12.1%
	Arlington	83.6%	66.7%	76.1%	41.2%	17.6%	17.6%	17.6%	5.9%
	Fairfax - Inclusive	80.8%	54.9%	58.7%	16.3%	18.5%	23.9%	30.4%	10.9%
	Prince William - Inclusive	78.0%	57.9%	61.1%	15.9%	6.8%	31.8%	38.6%	6.8%
	Leesburg/Loudoun	78.6%	56.5%	67.4%	20.0%	10.0%	20.0%	36.7%	13.3%
Ethnicity	Hispanic/Latino	78.6%	52.6%	52.0%	13.9%	13.9%	25.0%	33.3%	13.9%
	Not Hispanic/Latino	79.1%	57.0%	65.0%	18.3%	18.3%	22.8%	31.1%	9.4%
Years of Residence	Less than 1 year	83.3%	54.8%	61.6%	28.6%	17.9%	14.3%	28.6%	10.7%
	1 to 3 years	78.9%	52.4%	60.4%	13.4%	19.4%	22.4%	34.3%	10.4%
	4 to 9 years	78.9%	63.9%	64.7%	20.4%	16.7%	20.4%	29.6%	13.0%
	10 to 19 years	80.0%	53.1%	64.2%	14.7%	11.8%	44.1%	26.5%	2.9%
	20 or more years	75.5%	56.4%	66.7%	15.2%	21.2%	15.2%	36.4%	12.1%
Home Ownership	Owned	81.6%	61.8%	67.1%	19.5%	16.8%	21.2%	33.6%	8.8%
	Rented	75.2%	49.6%	59.3%	15.8%	16.8%	23.2%	31.6%	12.6%
Household Income	Less than $35,000	80.9%	49.3%	56.2%	15.6%	28.1%	21.9%	28.1%	6.3%
	$35,000 to $49,999	70.2%	61.5%	58.5%	19.2%	11.5%	23.1%	23.1%	23.1%
	$50,000 to $74,999	70.6%	56.8%	71.2%	8.8%	20.6%	23.5%	38.2%	8.8%
	$75,000 to $99,999	81.3%	52.0%	58.0%	11.9%	16.7%	35.7%	33.3%	2.4%
	$100,000 to $124,999	83.3%	44.8%	58.2%	17.9%	10.7%	21.4%	35.7%	14.3%
	$125,000 to $149,999	78.6%	57.6%	69.7%	25.0%	15.0%	20.0%	25.0%	15.0%
	$150,000 to $174,999	85.7%	63.2%	59.5%	46.7%	6.7%	20.0%	20.0%	6.7%
	$175,000 to $199,999	81.8%	82.6%	78.3%	0.0%	40.0%	0.0%	20.0%	40.0%
	$200,000 or greater	92.7%	66.0%	67.4%	21.4%	21.4%	7.1%	50.0%	0.0%

** Red font indicates significant differences within a demographic subgroup.*

Figure 26. Water pollution identification and knowledge.

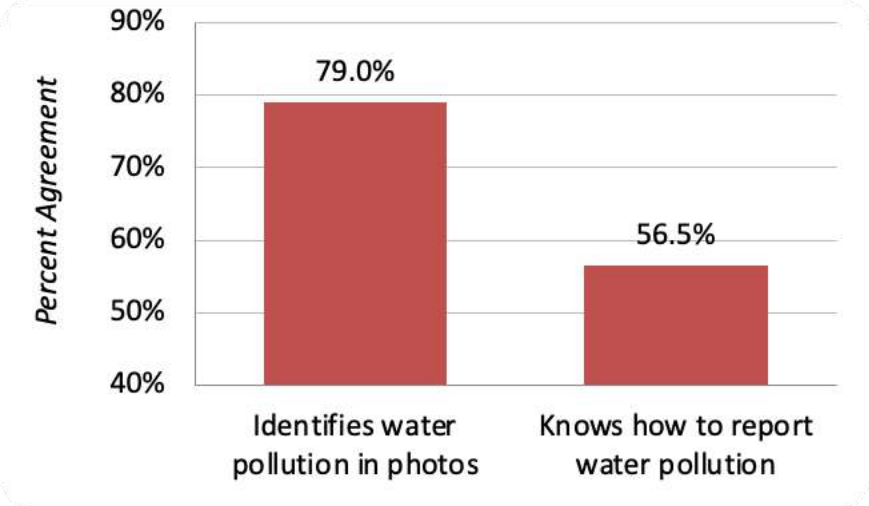


Figure 27. Barriers to reporting water pollution.

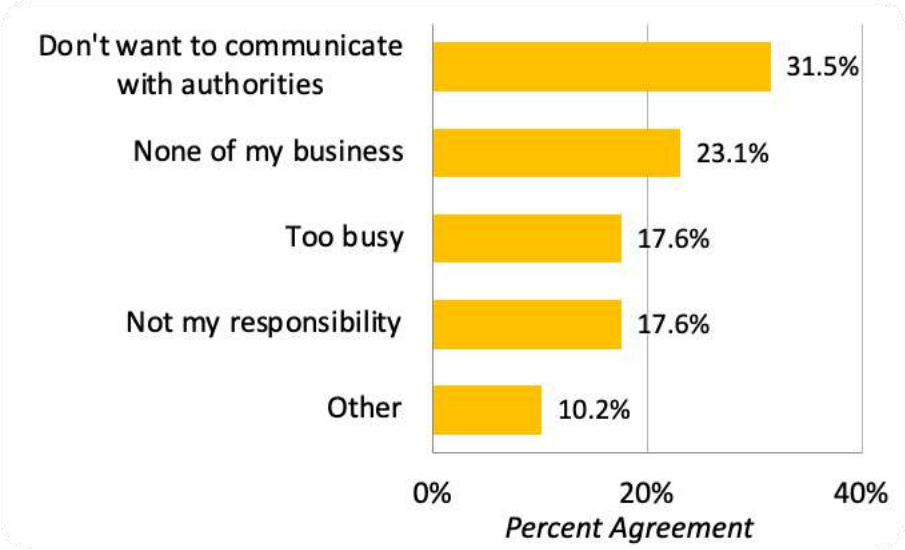
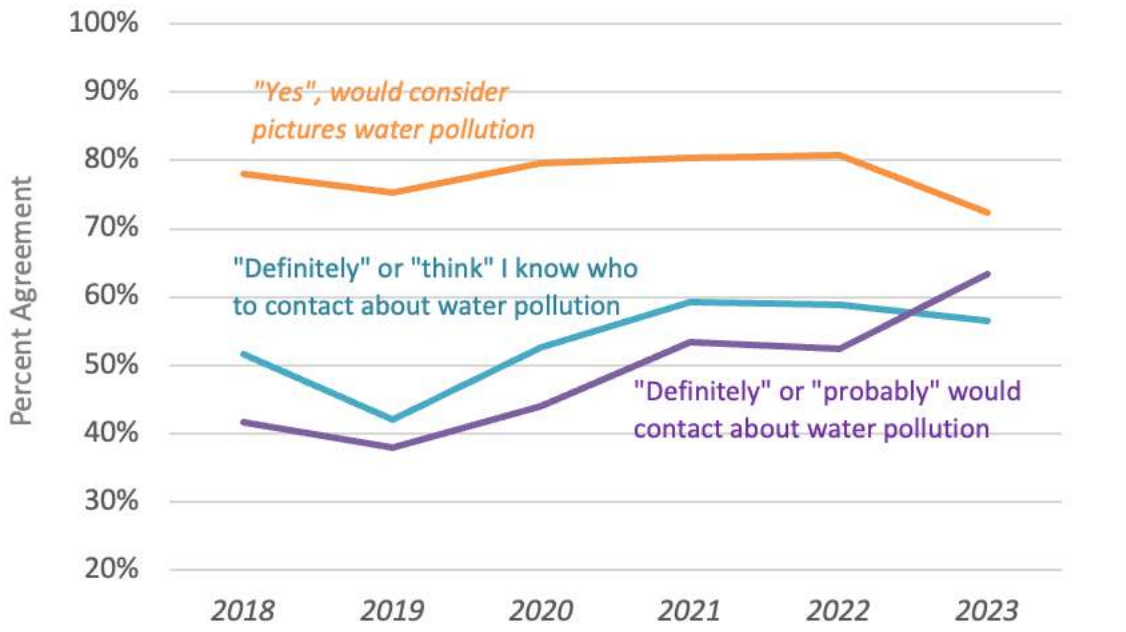


Table 24. Water pollution knowledge across years.

Year of Survey						
Survey Questions Response	2018	2019	2020	2021	2022	2023
"Yes", would consider pictures water pollution	78.0%	75.2%	79.6%	80.4%	80.8%	72.4%
"Definitely" or "think" I know who to contact about water pollution	51.6%	42.0%	52.6%	59.2%	58.8%	56.5%
"Definitely" or "probably" would contact about water pollution	41.6%	38.0%	44.0%	53.4%	52.4%	63.4%

** Red font indicates that the value significantly differs from the current 2023 value.*

Figure 28. Water pollution knowledge across years.



2.5 Campaign Perceptions

2.5.3 Campaign Awareness

Figure 29. Logo provided to survey participants.

Survey participants were asked questions to better understand their level of awareness of water pollution campaigns; their responses are below in Table 25 and Figure 30. Respondents were provided with the logo depicted in Figure 29 and asked if they had seen the logo before. Of respondents, 60.7% report having previously seen the provided logo. Respondents with a longer tenure in their homes were more likely to have seen the logo previously than people with shorter tenures. Homeowners (69.3%) are more likely to have seen the logo than renters (48.5%).

Table 25. Percentage of respondents who have seen campaigns by demographic group.

Demographic	Sub-category	Seen the Logo Previously	Seen Water Pollution Reduction Campaign
	All Respondents	**60.7%**	**34.1%**
Gender	Male	65.5%	40.2%
	Female	56.1%	27.8%
Age	21 to 24	61.6%	44.4%
	25 to 34	60.1%	35.9%
	35 to 44	63.6%	39.0%
	45 to 54	54.8%	24.7%
	55 to 64	59.6%	19.6%
	65 to 74	68.4%	16.2%
	75 or older	28.6%	37.5%
Locality	Alexandria	56.4%	32.3%
	Arlington	59.7%	40.8%
	Fairfax - Inclusive	66.4%	37.5%
	Prince William - Inclusive	54.8%	29.2%
	Leesburg/Loudon	59.8%	28.6%

Demographic	Sub-category	Seen the Logo Previously	Seen Water Pollution Reduction Campaign
Ethnicity	Hispanic/Latino	55.8%	31.6%
	Not Hispanic/Latino	61.5%	34.5%
Years of Residence	Less than 1 year	56.8%	31.5%
	1 to 3 years	47.6%	30.2%
	4 to 9 years	64.3%	34.8%
	10 to 19 years	67.4%	37.6%
	20 or more years	73.5%	38.2%
Home Ownership	Owned	69.3%	38.3%
	Rented	48.5%	27.4%
Household Income	Less than $35,000	47.2%	28.2%
	$35,000 to $49,999	56.3%	34.9%
	$50,000 to $74,999	53.8%	32.2%
	$75,000 to $99,999	57.6%	35.0%
	$100,000 to $124,999	67.2%	22.7%
	$125,000 to $149,999	69.7%	42.4%
	$150,000 to $174,999	71.1%	47.4%
	$175,000 to $199,999	78.3%	47.8%
	$200,000 or greater	72.9%	31.9%

** Red font indicates significant differences within a demographic subgroup.*

Figure 30. Water pollution reduction campaign awareness.

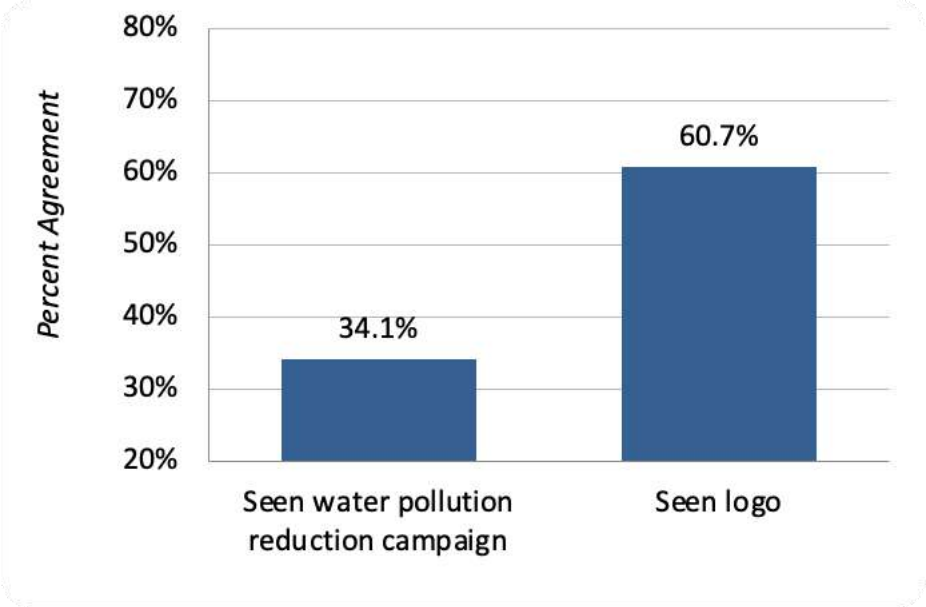
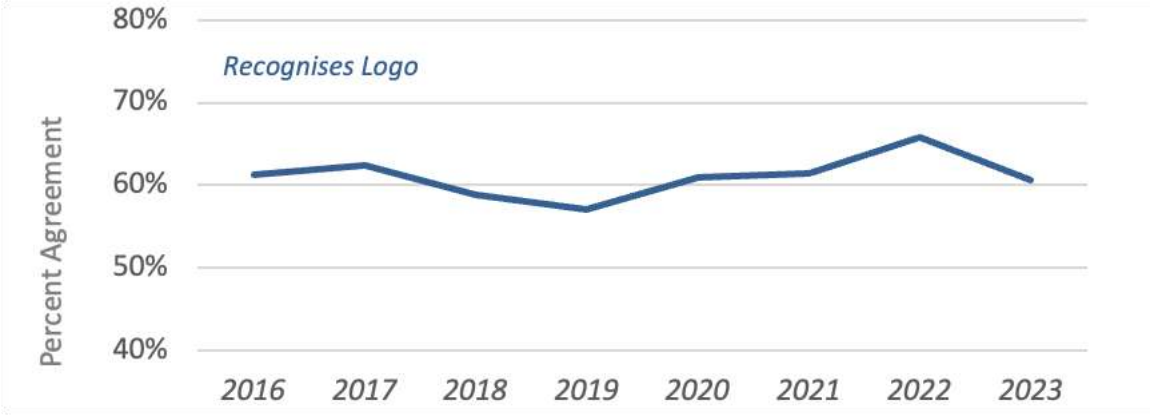


Table 26. Logo recognition across years.

Year of Survey	2016	2017	2018	2019	2020	2021	2022	2023
Recognizes Logo	61.2%	62.4%	58.8%	57.0%	61.0%	61.4%	65.8%	60.7%

** Red font indicates that the value significantly differs from the current 2023 value.*

Figure 31. Logo recognition across years.



Additionally, as described previously, 33.2% report being aware of a water quality activity in the past 12 months. Lastly, respondents were asked if they have seen or received information

about reducing water pollution from any source in the past 12 months, with 34.1% of respondents reporting yes, they have seen or received this kind of information. Men (40.2%) are much more likely to have seen this information than women (27.8%). Homeowners (38.3%) are more likely to have received information about reducing water pollution than renters (27.4%).

Survey participants were shown both the "Only Rain Down the Drain" and "Cleaner Streets Means Cleaner Water" advertisements in a random order and asked questions about both of them. Some participants report not being able to see one or both of the videos, in which case their data was excluded from analysis for these questions.

2.5.3.1 Only Rain Down the Drain (ORDD)

Participants were shown the advertisement "Only Rain Down the Drain" (ORDD) and asked a series of questions about it. First, participants were asked if they had seen the ad or a similar one on TV, Facebook, or Twitter and given the response options "Yes", "No", "Not sure", and "Video did not play". After seeing the ORDD advertisement, 23.3% of respondents report having seen the ad previously, as can be seen in Table 27 and Figure 32. Men (30.8%) were more likely to have seen the ad previously than women (15.2%). Participants were then asked about their perceptions of the ad by listing a series of statements with the option to "Strongly disagree", "Disagree", "Neither disagree nor agree", "Agree", and "Strongly Agree". The statements were:

- I understand the information in the ad.
- The ad is relevant to me.
- I trust the information in the ad.
- The ad's message is important.
- The ad is persuasive.
- I think the ad would be effective.

In response to these statements, 79.4% report understanding the information in the ad, 70.7% report believing that the ad is relevant, 78.9% report trusting the information in the ad, 84.2%

report thinking the information in the ad is important, 68.5% report believing the ad is persuasive, and 73.0% think the ad is effective. The full results are displayed in Figure 33.

Table 27. Perceptions of 'Only Rain Down the Drain' (ORDD) advertisement by demographics.

Demographic	Sub-category	Recognize Ad	Understand Ad	Ad is Relevant	Trust Ad	Ad is Important	Ad is Persuasive	Ad is Effective
	All Respondents	**23.3%**	**79.4%**	**70.7%**	**78.9%**	**84.2%**	**68.5%**	**73.0%**
Gender	Male	30.8%	79.0%	72.8%	81.0%	84.6%	71.9%	76.5%
	Female	15.2%	80.4%	69.7%	76.9%	84.1%	65.5%	69.8%
Age	21 to 24	29.4%	75.3%	65.1%	81.7%	82.7%	75.3%	75.0%
	25 to 34	25.5%	77.6%	74.3%	75.5%	81.1%	60.8%	72.0%
	35 to 44	27.1%	78.4%	71.5%	81.1%	85.7%	74.6%	74.6%
	45 to 54	16.7%	79.7%	69.6%	76.8%	83.9%	64.3%	71.4%
	55 to 64	2.3%	84.8%	65.1%	76.7%	86.0%	60.5%	65.9%
	65 to 74	16.7%	90.0%	71.9%	82.8%	90.0%	76.7%	76.7%
	75 or older	37.5%	100.0%	85.7%	85.7%	100.0%	83.3%	83.3%
Locality	Alexandria	32.9%	78.9%	61.5%	74.7%	85.3%	66.7%	73.3%
	Arlington	14.0%	78.7%	77.2%	80.4%	83.9%	71.4%	75.0%
	Fairfax - Inclusive	26.3%	79.0%	72.9%	78.7%	83.4%	68.8%	69.0%
	Prince William - Inclusive	17.0%	74.5%	65.9%	72.5%	79.1%	68.1%	72.5%
	Leesburg/Loudon	20.5%	87.2%	75.3%	89.6%	90.9%	67.5%	81.6%
Ethnicity	Hispanic/Latino	21.0%	81.5%	65.1%	73.0%	83.6%	59.0%	68.9%
	Not Hispanic/Latino	23.6%	79.1%	71.5%	79.7%	84.2%	69.8%	73.6%
Years of Residence	Less than 1 year	15.3%	66.7%	66.7%	71.7%	76.7%	63.3%	63.3%
	1 to 3 years	17.2%	78.1%	72.2%	77.4%	82.4%	67.9%	74.0%
	4 to 9 years	26.8%	81.7%	67.6%	80.1%	85.3%	66.2%	73.3%
	10 to 19 years	27.3%	79.5%	71.1%	79.7%	85.1%	68.9%	69.9%
	20 or more years	28.6%	86.5%	75.9%	83.3%	89.4%	76.2%	80.7%
Home Ownership	Owned	27.5%	83.9%	76.7%	83.7%	88.7%	73.9%	78.6%
	Rented	15.1%	74.1%	64.8%	74.0%	79.2%	61.5%	66.7%
Household Income	Less than $35,000	16.4%	75.4%	55.0%	66.1%	74.6%	64.4%	60.3%
	$35,000 to $49,999	18.4%	79.2%	68.6%	76.5%	80.4%	64.7%	74.5%
	$50,000 to $74,999	23.2%	75.2%	73.2%	79.4%	85.3%	71.6%	77.7%
	$75,000 to $99,999	23.6%	74.2%	72.1%	79.5%	83.3%	67.5%	72.3%
	$100,000 to $124,999	14.8%	76.3%	70.7%	77.2%	80.7%	61.4%	70.2%
	$125,000 to $149,999	24.1%	91.1%	80.0%	84.9%	92.5%	75.5%	84.6%
	$150,000 to $174,999	46.9%	78.8%	67.7%	77.4%	90.3%	64.5%	74.2%

Demographic	Sub-category	Recognize Ad	Understand Ad	Ad is Relevant	Trust Ad	Ad is Important	Ad is Persuasive	Ad is Effective
	$175,000 to $199,999	36.8%	89.5%	72.2%	88.9%	83.3%	72.2%	72.2%
	$200,000 or greater	24.3%	92.1%	76.9%	89.5%	92.1%	76.3%	68.4%

** Red font indicates significant differences within a demographic subgroup.*

Figure 32. Recognition of 'Cleaner Streets Means Cleaner Water' and 'Only Rain Down the Drain' advertisement.

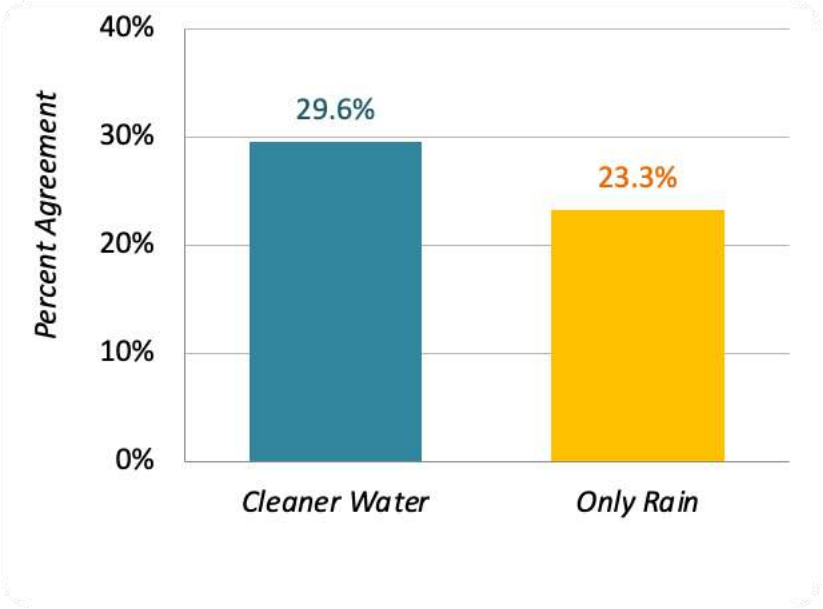
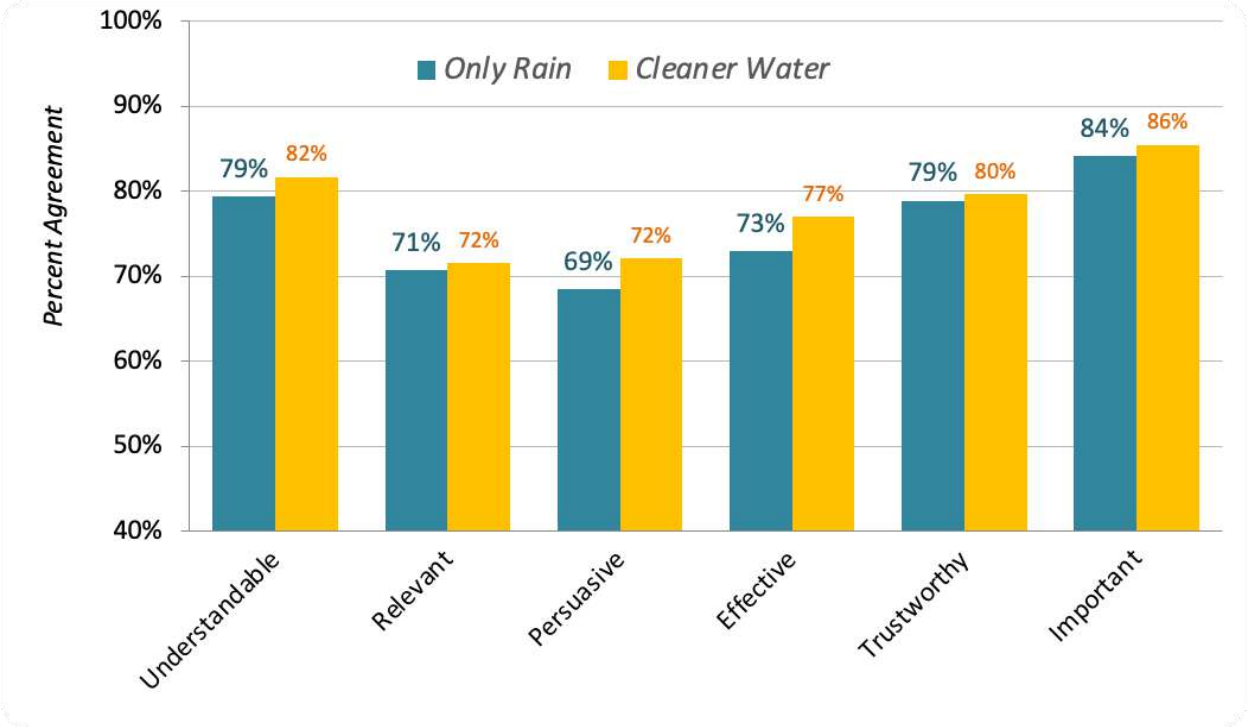


Figure 33.Perceptions of 'Only Rain Down the Drain' and 'Cleaner Streets Means Cleaner Water' advertisement.



2.5.3.2 Cleaner Streets Means Cleaner Water (CSMCW)

Participants were shown the ad "Cleaner Streets Means Cleaner Water" (CSMCW) and asked a series of questions about it. First, participants were asked if they had seen the ad or a similar one on TV, Facebook, or Twitter and given the response options "Yes", "No", "Not sure", and "Video did not play". After seeing the CSMCW ad, 29.6% of respondents report having seen the ad previously, as shown in Table 28 and Figure 32. Men (36.2%) were more likely to report having seen the ad previously than women (22.8%). Participants were then asked about their perceptions of the ad by listing a series of statements with the option to "Strongly disagree", "Disagree", "Neither disagree nor agree", "Agree", and "Strongly Agree". The statements were:

- I understand the information in the ad.
- The ad is relevant to me.
- I trust the information in the ad.
- The ad's message is important.
- The ad is persuasive.
- I think the ad would be effective.

In response to these statements, 81.7% of respondents report understanding the ad, 71.6% report believing the ad is relevant, 79.7% report trusting the information in the ad, 85.5% report thinking the information in the ad is important and 72.1% report believing the ad is persuasive, and 77.0% report thinking the ad is effective. The full results are displayed in Figure 33.

Table 28. Perceptions of 'Cleaner Streets Means Cleaner Water' (CSMCW) advertisement by demographic group.

Demographic	Sub-category	Recognize Ad	Understand Ad	Ad is Relevant	Trust Ad	Ad is Important	Ad is Persuasive	Ad is Effective
	All Respondents	**29.6%**	**81.7%**	**71.6%**	**79.7%**	**85.5%**	**72.1%**	**77.0%**
Gender	Male	36.2%	81.6%	73.8%	80.2%	85.3%	74.6%	80.7%
	Female	22.8%	83.1%	70.0%	80.0%	86.8%	69.8%	73.5%
Age	21 to 24	28.9%	81.2%	60.2%	79.0%	85.4%	65.9%	72.0%
	25 to 34	32.2%	80.4%	72.4%	76.4%	84.7%	68.5%	74.1%
	35 to 44	32.3%	80.2%	71.2%	80.5%	85.1%	74.6%	77.7%
	45 to 54	19.3%	81.3%	74.6%	78.0%	83.1%	74.6%	81.0%
	55 to 64	17.8%	84.4%	75.0%	84.1%	86.4%	79.1%	74.4%
	65 to 74	33.3%	93.9%	87.9%	91.2%	93.9%	83.3%	93.8%
	75 or older	75.0%	75.0%	75.0%	75.0%	87.5%	62.5%	87.5%
Locality	Alexandria	32.9%	74.1%	64.2%	72.0%	80.2%	65.4%	72.8%
	Arlington	32.3%	84.1%	78.3%	80.0%	90.0%	71.9%	80.7%
	Fairfax - Inclusive	37.6%	82.3%	72.0%	82.5%	86.3%	73.5%	75.4%
	Prince William - Inclusive	15.7%	84.2%	69.2%	76.7%	81.1%	70.0%	80.9%
	Leesburg/Loudon	21.3%	83.5%	75.9%	84.6%	91.0%	78.2%	77.9%
Ethnicity	Hispanic/Latino	32.4%	85.9%	67.6%	86.6%	92.5%	67.7%	74.2%
	Not Hispanic/Latino	29.2%	81.0%	72.3%	78.6%	84.4%	72.7%	77.4%
Years of Residence	Less than 1 year	24.6%	77.0%	67.8%	79.7%	82.8%	71.2%	78.0%
	1 to 3 years	23.3%	84.5%	72.1%	80.1%	86.8%	70.9%	73.3%
	4 to 9 years	31.2%	77.5%	67.4%	77.1%	84.1%	72.0%	80.9%
	10 to 19 years	26.6%	81.7%	71.6%	77.5%	83.8%	67.1%	70.9%
	20 or more years	43.5%	87.4%	80.2%	85.1%	89.4%	79.5%	81.9%
Home Ownership	Owned	31.6%	85.7%	76.3%	83.0%	87.9%	77.9%	81.5%
	Rented	27.3%	78.5%	67.0%	77.0%	84.2%	65.6%	72.7%
Household Income	Less than $35,000	32.3%	75.8%	58.6%	72.4%	82.8%	64.9%	75.0%
	$35,000 to $49,999	34.7%	76.4%	72.2%	78.8%	81.1%	71.7%	75.5%
	$50,000 to $74,999	25.5%	86.5%	74.3%	84.2%	88.1%	75.0%	82.0%

Demographic	Sub-category	Recognize Ad	Understand Ad	Ad is Relevant	Trust Ad	Ad is Important	Ad is Persuasive	Ad is Effective
	$75,000 to $99,999	29.1%	75.9%	68.4%	71.8%	79.2%	68.8%	71.8%
	$100,000 to $124,999	16.4%	76.7%	67.2%	79.3%	84.5%	65.5%	72.4%
	$125,000 to $149,999	36.2%	86.2%	78.0%	86.2%	91.2%	73.7%	78.9%
	$150,000 to $174,999	40.0%	83.3%	70.0%	79.3%	86.2%	78.6%	78.6%
	$175,000 to $199,999	44.4%	94.4%	72.2%	72.2%	88.9%	77.8%	83.3%
	$200,000 or greater	25.0%	92.5%	87.5%	90.2%	92.5%	82.1%	79.5%

** Red font indicates significant differences within a demographic subgroup.*

2.5.4 Campaign Impact

Survey participants who reported recognizing one or both advertisements were asked a series of questions about the potential impact of the ad(s) on their behaviors.

2.5.4.1 Impact of advertisements on pet waste clean-up

Respondents were asked how certain behaviors have changed since they first saw the ad(s), if they had seen the advertisements prior to the current survey. The first set of questions asked about their current pet waste disposal behaviors, the results of which can be seen in Table 29 and

Demographic	Sub-category	Understands Pet Waste	Want Pet Waste	More Pet Waste	Pet Waste Already
	All Respondents	**72.6%**	**42.5%**	**42.4%**	**58.5%**
Gender	Male	74.6%	51.1%	51.5%	63.3%
	Female	71.0%	33.6%	32.3%	53.1%
Age	21 to 24	80.4%	59.4%	51.6%	67.7%
	25 to 34	72.4%	43.9%	44.6%	65.7%
	35 to 44	71.0%	49.7%	53.6%	61.5%
	45 to 54	76.4%	38.0%	38.6%	47.9%
	55 to 64	67.9%	17.0%	17.0%	37.7%
	65 to 74	63.9%	13.9%	11.4%	41.7%
	75 or older	50.0%	12.5%	12.5%	50.0%

Demographic	Sub-category	Understands Pet Waste	Want Pet Waste	More Pet Waste	Pet Waste Already
Locality	Alexandria	74.2%	42.9%	42.9%	56.7%
	Arlington	71.8%	42.3%	46.5%	57.1%
	Fairfax - Inclusive	76.2%	41.7%	42.2%	58.5%
	Prince William - Inclusive	69.9%	42.9%	41.3%	60.0%
	Leesburg/Loudon	65.9%	44.0%	40.7%	59.3%
Ethnicity	Hispanic/Latino	71.6%	43.4%	42.1%	57.2%
	Not Hispanic/Latino	79.7%	36.5%	44.4%	67.6%
Years of Residence	Less than 1 year	72.2%	43.1%	41.7%	60.6%
	1 to 3 years	73.8%	42.3%	43.3%	59.6%
	4 to 9 years	75.2%	42.9%	46.1%	57.0%
	10 to 19 years	68.8%	48.9%	46.1%	62.2%
	20 or more years	70.3%	36.3%	32.7%	54.0%
Home Ownership	Owned	73.9%	44.0%	44.4%	61.2%
	Rented	73.2%	41.5%	40.2%	54.7%
Household Income	Less than $35,000	65.8%	41.1%	41.7%	56.9%
	$35,000 to $49,999	76.9%	36.9%	39.1%	57.1%
	$50,000 to $74,999	78.6%	40.0%	46.5%	58.8%
	$75,000 to $99,999	68.0%	46.8%	43.0%	59.8%
	$100,000 to $124,999	69.7%	38.8%	34.8%	59.1%
	$125,000 to $149,999	77.3%	48.5%	40.0%	56.9%
	$150,000 to $174,999	68.4%	47.4%	47.4%	52.6%
	$175,000 to $199,999	69.6%	60.9%	56.5%	73.9%
	$200,000 or greater	73.9%	34.0%	40.0%	57.8%

** Red font indicates significant differences within a demographic subgroup.*

Figure 34. Participants were provided the following statements with response options being "Yes", "No", or "Does not apply":

- I understand more about the impact of pet waste on water quality.
- I'd like to pick up pet waste more often, though I haven't made any changes yet.
- I now pick up pet waste more often.

- I was already doing what is recommended to reduce water pollution from pet waste.

Of those respondents who had seen the ad prior to completing the current survey, 72.6% report understanding more about pet waste, 42.5% report wanting to pick up pet waste more often despite not having made any changes yet, 42.4% report now picking pet waste up more often and 58.5% report already doing what is recommended.

Table 29. Ad impact on pet waste clean-up behavior by demographic group among participants who had seen the advertisement prior to completing the current survey.

Demographic	Sub-category	Understands Pet Waste	Want Pet Waste	More Pet Waste	Pet Waste Already
	All Respondents	**72.6%**	**42.5%**	**42.4%**	**58.5%**
Gender	Male	74.6%	51.1%	51.5%	63.3%
	Female	71.0%	33.6%	32.3%	53.1%
Age	21 to 24	80.4%	59.4%	51.6%	67.7%
	25 to 34	72.4%	43.9%	44.6%	65.7%
	35 to 44	71.0%	49.7%	53.6%	61.5%
	45 to 54	76.4%	38.0%	38.6%	47.9%
	55 to 64	67.9%	17.0%	17.0%	37.7%
	65 to 74	63.9%	13.9%	11.4%	41.7%
	75 or older	50.0%	12.5%	12.5%	50.0%
Locality	Alexandria	74.2%	42.9%	42.9%	56.7%
	Arlington	71.8%	42.3%	46.5%	57.1%
	Fairfax - Inclusive	76.2%	41.7%	42.2%	58.5%
	Prince William - Inclusive	69.9%	42.9%	41.3%	60.0%
	Leesburg/Loudon	65.9%	44.0%	40.7%	59.3%
Ethnicity	Hispanic/Latino	71.6%	43.4%	42.1%	57.2%
	Not Hispanic/Latino	79.7%	36.5%	44.4%	67.6%
Years of Residence	Less than 1 year	72.2%	43.1%	41.7%	60.6%
	1 to 3 years	73.8%	42.3%	43.3%	59.6%
	4 to 9 years	75.2%	42.9%	46.1%	57.0%
	10 to 19 years	68.8%	48.9%	46.1%	62.2%
	20 or more years	70.3%	36.3%	32.7%	54.0%
Home Ownership	Owned	73.9%	44.0%	44.4%	61.2%
	Rented	73.2%	41.5%	40.2%	54.7%

Demographic	Sub-category	Understands Pet Waste	Want Pet Waste	More Pet Waste	Pet Waste Already
Household Income	Less than $35,000	65.8%	41.1%	41.7%	56.9%
	$35,000 to $49,999	76.9%	36.9%	39.1%	57.1%
	$50,000 to $74,999	78.6%	40.0%	46.5%	58.8%
	$75,000 to $99,999	68.0%	46.8%	43.0%	59.8%
	$100,000 to $124,999	69.7%	38.8%	34.8%	59.1%
	$125,000 to $149,999	77.3%	48.5%	40.0%	56.9%
	$150,000 to $174,999	68.4%	47.4%	47.4%	52.6%
	$175,000 to $199,999	69.6%	60.9%	56.5%	73.9%
	$200,000 or greater	73.9%	34.0%	40.0%	57.8%

** Red font indicates significant differences within a demographic subgroup.*

Figure 34. Ad impact on pet waste behaviors.

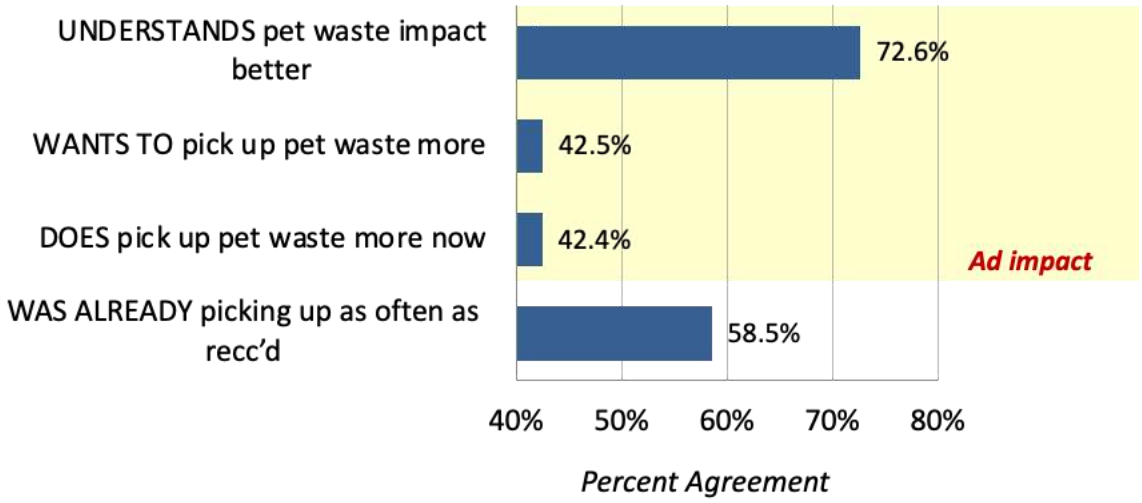
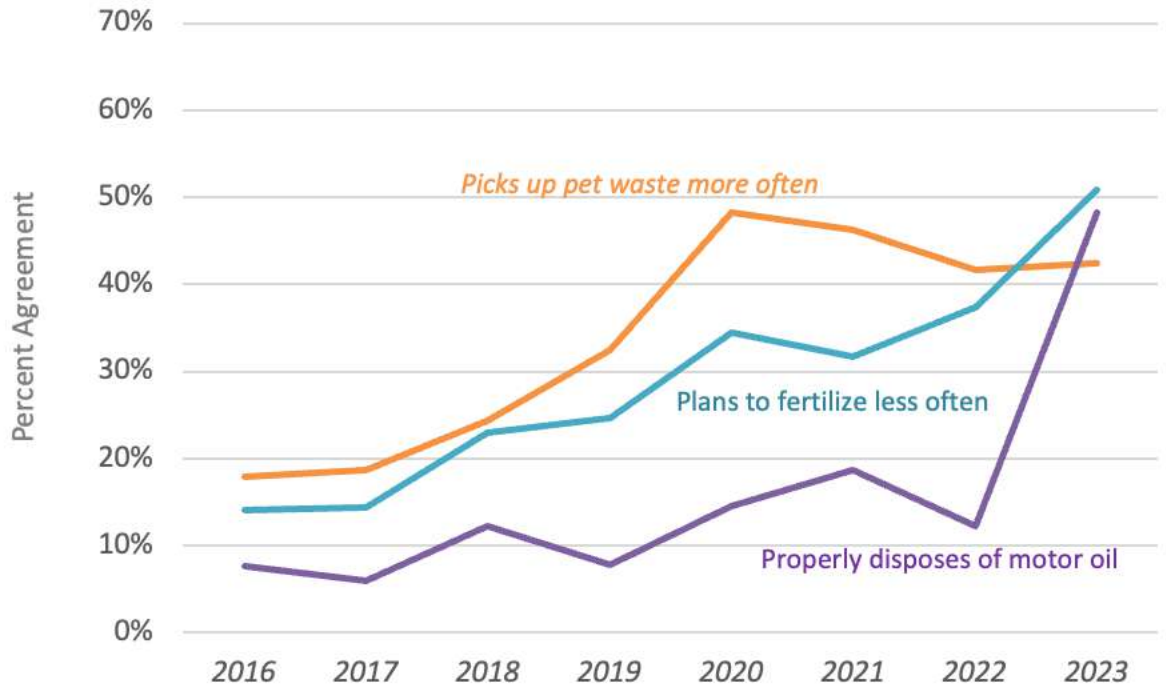


Figure 35. Ad impact across years.

Year of Survey								
Survey Questions Response	2016	2017	2018	2019	2020	2021	2022	2023
Picks up pet waste more often	17.9%	18.6%	24.3%	32.5%	48.2%	46.2%	41.7%	42.4%
Plans to fertilize less often	14.1%	14.4%	23.0%	24.7%	34.5%	31.7%	37.4%	50.8%
Properly disposes of motor oil	7.7%	5.9%	12.2%	7.8%	14.5%	18.6%	12.2%	48.2%

** Red font indicates that the value significantly differs from the current 2023 value.*

Figure 36. Ad impact across years.



2.5.4.2 Impact of advertisements on lawn/garden fertilization

Next, respondents were asked about their fertilizer behaviors. Participants were provided with the following statements with the response options being "Yes", "No", or "Does not apply":

- I understand more about the impact of fertilizer on water quality.
- I'd like to fertilize fewer time during the year.
- I now plan to fertilize fewer times during the year.
- I was already doing what is recommended to reduce water pollution from fertilizer.

Of respondents who reported seeing the ad(s) previously, 73.2% report understanding more about the impact of fertilizer on water quality, 50.3% report wanted to fertilize fewer times

despite not making any changes yet, 50.8% report now fertilizing less frequently and 52.9% report that they were already doing what is recommended as can be seen in Table 30 and Figure 37.

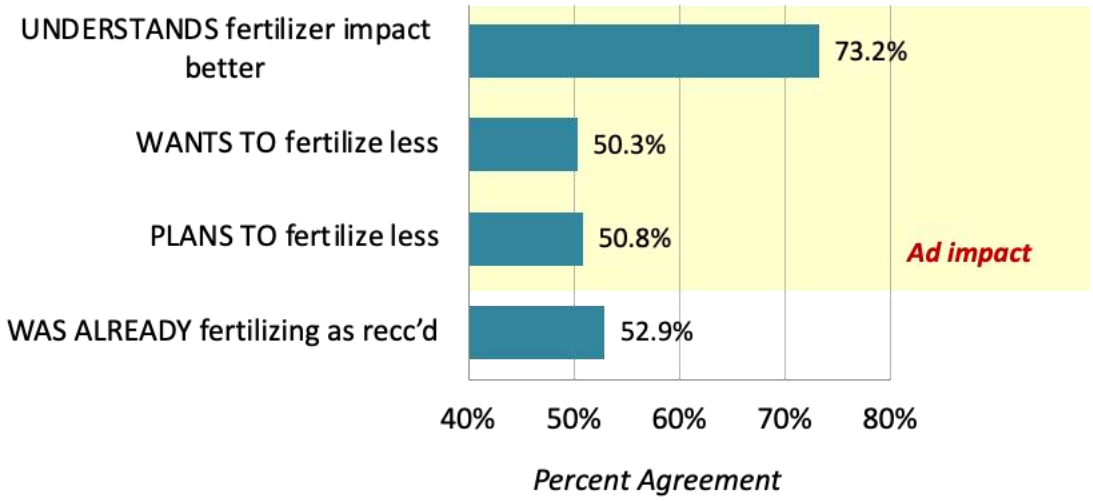
Table 30. Ad impact on fertilizing behavior by demographic group of those who had seen the advertisement prior to completing the survey.

Demographic	Sub-category	Understand Fertilizer	Want Fertilizer	Less Fertilizer	Fertilizer Already
	All Respondents	**73.2%**	**50.3%**	**50.8%**	**52.9%**
Gender	Male	77.5%	57.1%	56.3%	60.5%
	Female	69.3%	42.9%	44.8%	44.2%
Age	21 to 24	76.8%	63.4%	66.0%	57.4%
	25 to 34	72.8%	53.3%	52.7%	47.0%
	35 to 44	76.4%	56.1%	54.1%	61.5%
	45 to 54	74.6%	43.7%	45.1%	52.1%
	55 to 64	58.5%	30.2%	32.1%	36.5%
	65 to 74	71.4%	26.5%	32.4%	52.8%
	75 or older	75.0%	25.0%	25.0%	75.0%
Locality	Alexandria	68.9%	45.6%	47.2%	45.5%
	Arlington	77.1%	48.6%	54.3%	52.9%
	Fairfax - Inclusive	75.2%	53.7%	53.0%	55.5%
	Prince William - Inclusive	72.7%	48.6%	48.2%	51.8%
	Leesburg/Loudon	70.3%	50.5%	49.5%	54.9%
Ethnicity	Hispanic/Latino	73.0%	50.7%	50.9%	53.3%
	Not Hispanic/Latino	75.0%	47.9%	50.0%	50.0%
Years of Residence	Less than 1 year	75.0%	50.0%	45.8%	49.3%
	1 to 3 years	74.1%	44.2%	47.9%	44.8%
	4 to 9 years	69.7%	53.9%	54.6%	55.9%
	10 to 19 years	75.3%	53.9%	59.6%	63.3%
	20 or more years	74.0%	52.0%	45.5%	54.5%
Home Ownership	Owned	76.1%	56.5%	54.8%	59.0%
	Rented	70.4%	43.8%	45.3%	44.0%
Household Income	Less than $35,000	63.9%	43.7%	42.3%	54.9%
	$35,000 to $49,999	71.9%	47.6%	55.6%	49.2%

Demographic	Sub-category	Understand Fertilizer	Want Fertilizer	Less Fertilizer	Fertilizer Already
	$50,000 to $74,999	74.8%	53.5%	48.7%	53.0%
	$75,000 to $99,999	71.4%	61.5%	65.9%	62.0%
	$100,000 to $124,999	63.6%	28.8%	30.3%	24.6%
	$125,000 to $149,999	81.5%	61.5%	60.0%	58.5%
	$150,000 to $174,999	73.7%	55.3%	52.6%	39.5%
	$175,000 to $199,999	87.0%	47.8%	43.5%	65.2%
	$200,000 or greater	84.4%	46.7%	51.1%	73.3%

** Red font indicates significant differences within a demographic subgroup.*

Figure 37. Ad impact on fertilization behaviors.



2.5.4.3 Impact of advertisements on motor oil disposal

Finally, these survey participants were asked about their behaviors regarding disposing of motor oil after watching the advertisements. Respondents were provided the following statements with the option to respond "Yes", "No", or "Does not apply":

- I understand more about the impact of motor oil on water quality.
- I'd like to dispose of motor oil properly, though I haven't made any changes yet.
- I now properly dispose of motor oil.
- I was already doing what is recommended to reduce water pollution from motor oil.

Of the respondents, 73.8% report understanding more about the impact of motor oil on water quality, 43.7% report wanting to dispose of motor oil properly despite not making any changes yet, 48.2% report now properly disposing of motor oil and 68.8% of respondents were already doing what is recommended as shown in Table 31 and Figure 38.

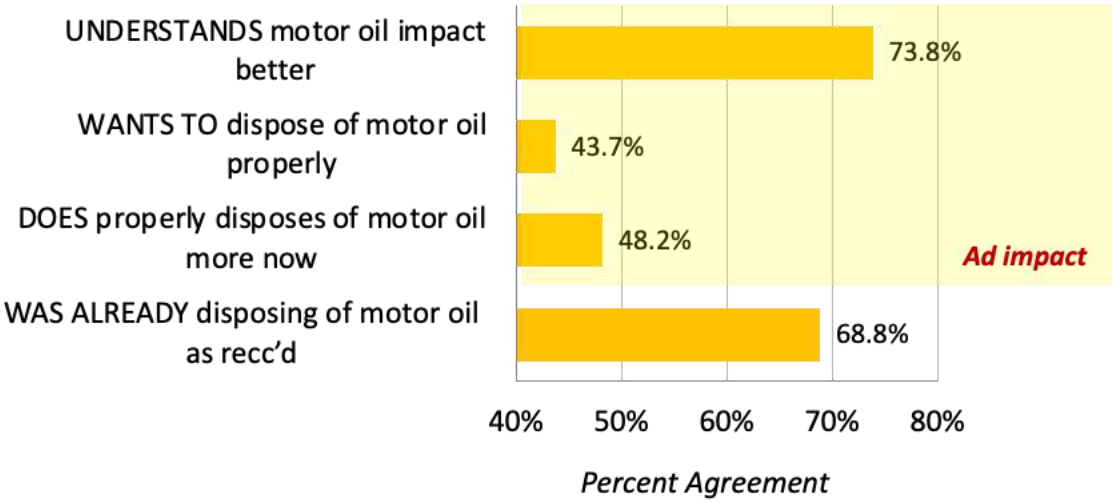
Table 31. Ad impact on motor oil (MO) disposal by demographic group among respondents who had seen the advertisement prior to completing the survey.

Demographic	Sub-category	MO Understand	MO Want	MO Now	MO Already
	All Respondents	**73.8%**	**43.7%**	**48.2%**	**68.8%**
Gender	Male	76.5%	51.3%	56.7%	73.1%
	Female	71.3%	34.7%	38.7%	64.3%
Age	21 to 24	73.4%	67.0%	51.6%	68.1%
	25 to 34	73.8%	47.9%	48.2%	64.5%
	35 to 44	77.0%	48.0%	53.7%	68.7%
	45 to 54	76.1%	29.6%	46.5%	80.0%
	55 to 64	66.0%	15.1%	26.9%	62.3%
	65 to 74	71.4%	17.6%	44.1%	72.2%
	75 or older	62.5%	25.0%	75.0%	100.0%
Locality	Alexandria	76.4%	46.1%	51.7%	69.7%
	Arlington	77.1%	47.1%	53.6%	71.4%
	Fairfax - Inclusive	74.8%	44.2%	47.7%	67.7%
	Prince William - Inclusive	71.8%	41.8%	46.4%	70.0%
	Leesburg/Loudon	68.9%	39.6%	44.0%	67.0%
Ethnicity	Hispanic/Latino	73.9%	44.8%	49.1%	68.9%
	Not Hispanic/Latino	73.6%	36.1%	41.7%	68.1%
Years of Residence	Less than 1 year	70.8%	38.9%	38.9%	70.8%
	1 to 3 years	74.4%	49.7%	47.9%	69.5%
	4 to 9 years	73.0%	44.1%	52.0%	65.8%
	10 to 19 years	76.4%	42.7%	49.4%	67.8%
	20 or more years	74.0%	37.4%	48.5%	71.7%

Demographic	Sub-category	MO Understand	MO Want	MO Now	MO Already
Home Ownership	Owned	76.0%	43.1%	50.8%	70.1%
	Rented	72.0%	45.3%	44.6%	67.5%
Household Income	Less than $35,000	70.4%	39.4%	42.3%	73.2%
	$35,000 to $49,999	71.9%	39.7%	41.9%	59.4%
	$50,000 to $74,999	74.8%	48.7%	53.9%	73.9%
	$75,000 to $99,999	72.5%	45.1%	51.6%	71.4%
	$100,000 to $124,999	70.8%	37.9%	39.4%	60.6%
	$125,000 to $149,999	76.9%	50.8%	51.6%	73.8%
	$150,000 to $174,999	73.7%	47.4%	44.7%	52.6%
	$175,000 to $199,999	87.0%	39.1%	43.5%	65.2%
	$200,000 or greater	75.6%	37.8%	57.8%	77.3%

** Red font indicates significant differences within a demographic subgroup.*

Figure 38. Ad impact on motor oil behaviors.



2.5.5 Perceptions of the Campaign Sponsor (NVCWP)

Survey participants were asked about their perceptions of the campaign sponsor, the Northern Virginia Clean Water Partners, as perceptions of the campaign sponsor are known to impact consumer perceptions of the campaign. Table 32 and Figure 39 shows the percentage of respondents that indicate that they "Agree" or "Strongly Agree" with statements about NVCWP, on a 5-point scale of "Strongly Disagree", "Disagree", "Neither agree nor Disagree", "Agree" and "Strongly Agree". The statements were:

- I was familiar with the NVCWP before this survey
- I trust information from the NVCWP
- I would contact the NVCWP if I had a question or concern about water quality
- The NVCWP shares my values when it comes to water quality

An unusual proportion of respondents did not answer this series of questions. It may be likely that those who skipped the series of questions are not familiar with NVCWP but it cannot be determined from the current data.

Of those who did respond, 42.2% indicate they are familiar with NVCWP. In addition, 73.5% of participants reported they trust information from NVCWP. Respondents in higher household incomes exhibit greater prevalence of trust, with almost 90% of those with a household income greater than $200,000 voicing trust in the organization. Next, 74.5% of participants reported

believing that they share values about water quality with NVCWP. Finally, 70.9% of respondents stated that they would contact NVCWP if they had questions about water with consistent results across subgroup demographics.

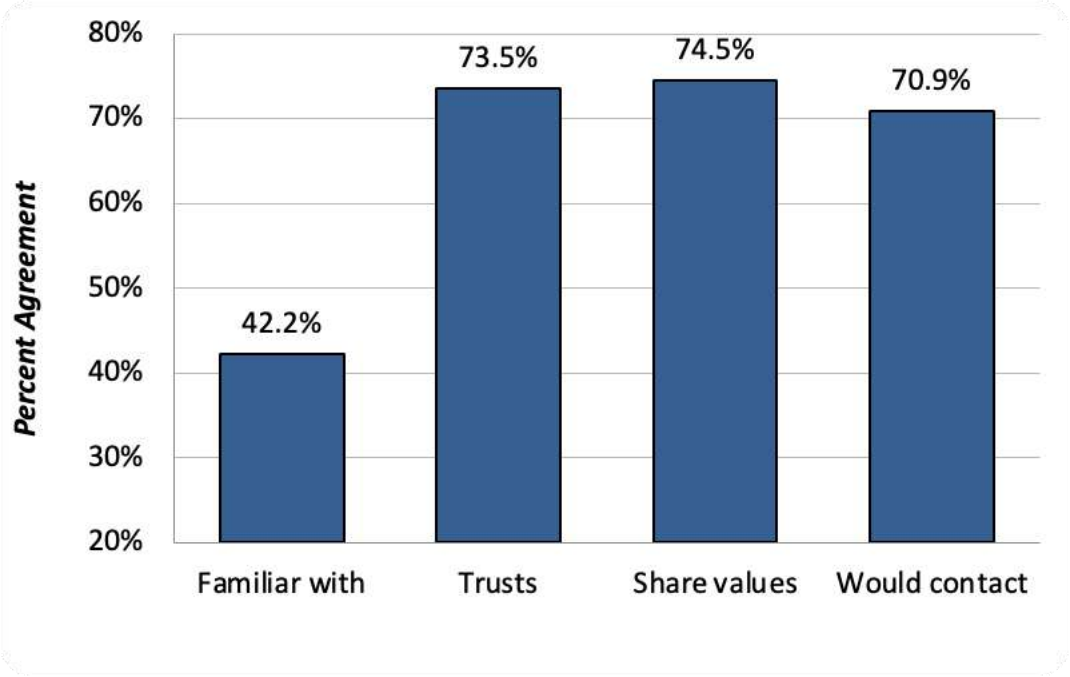
Table 32. Perceptions of the campaign sponsor, NVCWP, by demographic group.

Demographic	Sub-category	Familiar with NCVWP	Trust NCVWP	Share Values with NCVWP	Would Contact NCVWP
		Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree
	All Respondents	**42.2%**	**73.5%**	**74.5%**	**70.9%**
Gender	Male	50.0%	75.9%	75.8%	73.9%
	Female	34.2%	71.2%	73.1%	68.2%
Age	21 to 24	33.3%	68.9%	68.9%	57.3%
	25 to 34	38.7%	72.2%	74.7%	72.8%
	35 to 44	53.5%	76.0%	78.8%	75.3%
	45 to 54	49.3%	79.7%	72.5%	72.5%
	55 to 64	31.4%	63.3%	66.0%	62.0%
	65 to 74	35.1%	80.6%	80.6%	83.3%
	75 or older	37.5%	87.5%	100.0%	87.5%
Locality	Alexandria	41.5%	65.2%	71.1%	67.4%
	Arlington	39.4%	77.3%	79.1%	83.8%
	Fairfax - Inclusive	42.8%	76.9%	75.5%	70.3%
	Prince William - Inclusive	40.9%	71.8%	70.9%	71.3%
	Leesburg/Loudon	45.1%	73.3%	76.7%	65.6%
Ethnicity	Hispanic/Latino	32.9%	70.3%	68.9%	68.5%
	Not Hispanic/Latino	43.5%	74.0%	75.4%	71.3%
Years of Residence	Less than 1 year	34.2%	68.6%	71.4%	65.7%
	1 to 3 years	33.9%	71.4%	74.7%	70.8%
	4 to 9 years	48.7%	74.1%	74.0%	75.9%
	10 to 19 years	50.5%	74.7%	72.8%	63.0%
	20 or more years	43.6%	78.6%	78.8%	74.7%
Home Ownership	Owned	48.7%	77.2%	78.0%	73.1%
	Rented	33.8%	69.6%	69.6%	69.1%
Household Income	Less than $35,000	35.2%	60.6%	60.6%	55.4%

Demographic	Sub-category	Familiar with NCVWP	Trust NCVWP	Share Values with NCVWP	Would Contact NCVWP
		Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree
	$35,000 to $49,999	51.6%	67.8%	78.0%	73.3%
	$50,000 to $74,999	34.7%	77.6%	76.7%	73.0%
	$75,000 to $99,999	38.8%	72.5%	72.5%	72.5%
	$100,000 to $124,999	29.9%	71.4%	75.4%	72.3%
	$125,000 to $149,999	54.5%	78.5%	76.9%	76.6%
	$150,000 to $174,999	50.0%	64.9%	67.6%	67.6%
	$175,000 to $199,999	65.2%	82.6%	82.6%	69.6%
	$200,000 or greater	47.9%	89.4%	85.1%	74.5%

** Red font indicates significant differences within a demographic subgroup.*

Figure 39. Perceptions of NVCWP.



2.6 Message Sources

Survey participants were asked about their TV service provider and which channels they watch in order to get a better understanding of their sources of messaging. Provided options for TV

service provider were “Verizon”, “Comcast”, “Cox”, “Xfinity”, “Do not have cable TV”, “Do not watch TV”, “I don’t know”, and the option to write-in another provider not listed. As shown in Table 33 and Figure 40, 38.6% of participants report using Verizon as their TV service provider, 10.2% report using Cox, 19.6% report using Xfinity and 6.5% report using Comcast. Additionally, 18.6% report not having cable, 2.5% report not watching TV, 2.2% report using some other service not listed, and 1.8% of respondents report not knowing which TV service provider they use. Verizon appears to be the most popular TV service provider among participants in Fairfax, Prince William, Leesburg/Loudon Counties, those who own their homes, those who have longer tenures in their home, and those with higher household incomes.

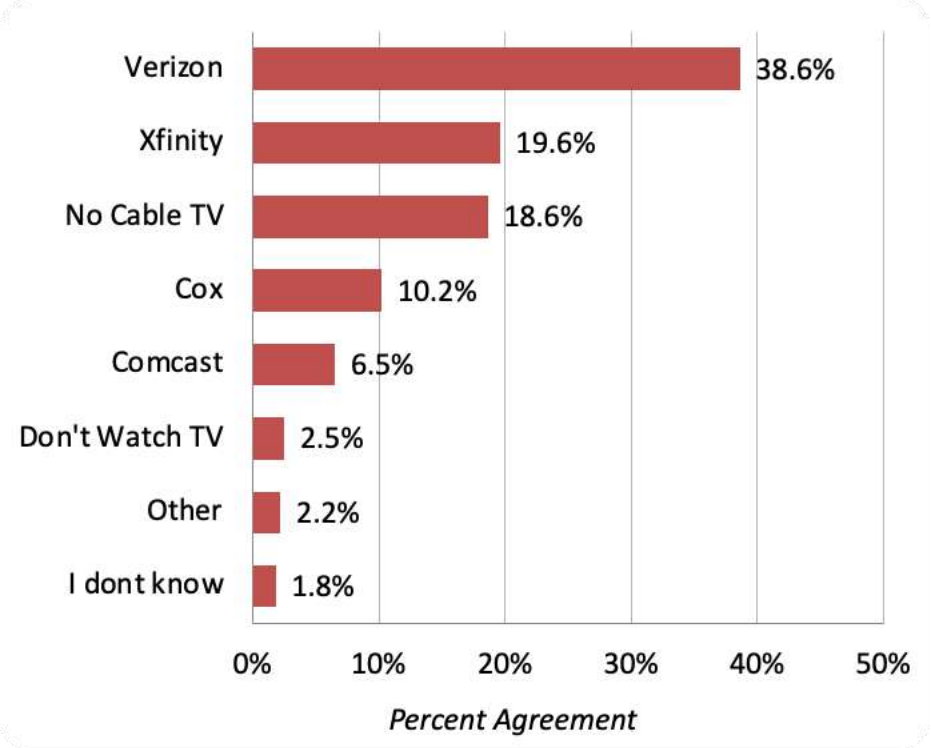
Table 33. TV service providers among respondents by demographic group.

Demographic	Sub-category	TV Service Provider							
		Verizon	Comcast	Cox	Xfinity	No Cable TV	Don't Watch TV	I dont know	Other
	All Respondents	**38.6%**	**6.5%**	**10.2%**	**19.6%**	**18.6%**	**2.5%**	**1.8%**	**2.2%**
Gender	Male	41.2%	6.5%	10.4%	21.4%	13.3%	3.6%	1.6%	1.9%
	Female	35.6%	6.4%	10.0%	17.8%	24.6%	1.1%	2.1%	2.5%
Age	21 to 24	42.9%	4.1%	13.3%	22.4%	10.2%	1.0%	3.1%	3.1%
	25 to 34	34.1%	9.8%	8.1%	22.0%	19.1%	3.5%	2.3%	1.2%
	35 to 44	36.1%	6.5%	9.0%	22.6%	18.1%	3.2%	1.9%	2.6%
	45 to 54	46.6%	6.8%	9.6%	13.7%	21.9%	0.0%	0.0%	1.4%
	55 to 64	35.8%	0.0%	13.2%	13.2%	32.1%	0.0%	1.9%	3.8%
	65 to 74	39.5%	7.9%	10.5%	13.2%	18.4%	7.9%	0.0%	2.6%
	75 or older	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Locality	Alexandria	25.5%	7.4%	10.6%	31.9%	17.0%	3.2%	2.1%	2.1%
	Arlington	23.6%	12.5%	5.6%	25.0%	23.6%	5.6%	2.8%	1.4%
	Fairfax - Inclusive	43.4%	4.0%	18.6%	11.5%	16.8%	1.8%	1.3%	2.7%
	Prince William - Inclusive	45.2%	4.3%	3.5%	23.5%	20.9%	0.9%	0.9%	0.9%
	Leesburg/Loudon	44.0%	9.9%	1.1%	17.6%	17.6%	3.3%	3.3%	3.3%
Ethnicity	Hispanic/Latino	45.5%	5.2%	6.5%	15.6%	22.1%	2.6%	1.3%	1.3%
	Not Hispanic/Latino	37.6%	6.7%	10.7%	20.2%	18.0%	2.5%	1.9%	2.3%
Years of Residence	Less than 1 year	17.6%	5.4%	13.5%	24.3%	24.3%	4.1%	6.8%	4.1%
	1 to 3 years	33.5%	9.4%	7.1%	17.6%	26.5%	3.5%	1.2%	1.2%
	4 to 9 years	46.5%	5.1%	10.2%	20.4%	12.1%	1.3%	2.5%	1.9%
	10 to 19 years	42.1%	5.3%	11.6%	22.1%	16.8%	0.0%	0.0%	2.1%
	20 or more years	47.1%	5.9%	11.8%	15.7%	12.7%	3.9%	0.0%	2.9%
	Owned	48.4%	6.4%	8.4%	15.9%	13.9%	2.0%	1.4%	3.5%

Demographic	Sub-category	TV Service Provider							
		Verizon	Comcast	Cox	Xfinity	No Cable TV	Don't Watch TV	I dont know	Other
Home Ownership	Rented	24.9%	5.9%	11.4%	25.7%	26.2%	3.0%	2.5%	0.4%
Household Income	Less than $35,000	20.5%	6.8%	5.5%	24.7%	26.0%	8.2%	6.8%	1.4%
	$35,000 to $49,999	33.8%	9.2%	12.3%	24.6%	15.4%	1.5%	3.1%	0.0%
	$50,000 to $74,999	31.9%	9.2%	11.8%	19.3%	20.2%	3.4%	0.8%	3.4%
	$75,000 to $99,999	40.0%	3.0%	15.0%	23.0%	14.0%	0.0%	3.0%	2.0%
	$100,000 to $124,999	40.3%	9.0%	9.0%	13.4%	22.4%	3.0%	0.0%	3.0%
	$125,000 to $149,999	47.7%	3.1%	6.2%	23.1%	15.4%	1.5%	0.0%	3.1%
	$150,000 to $174,999	55.3%	7.9%	7.9%	10.5%	18.4%	0.0%	0.0%	0.0%
	$175,000 to $199,999	56.5%	4.3%	8.7%	21.7%	8.7%	0.0%	0.0%	0.0%
	$200,000 or greater	50.0%	4.2%	10.4%	8.3%	20.8%	2.1%	0.0%	4.2%

** Red font indicates significant differences within a demographic subgroup.*

Figure 40. TV service providers.



TV channel options provided in the survey were “HLN TV”, “Oxygen”, “Toon”, “ENT”, “Animal Planet”, “CNN”, “ESPN”, “History”, “National Geographic”, “Home and Garden”, and “None of the above”. When asked which TV channels they watched (see Table 34 and Figure 41), 42.9% of participants reported watching ESPN, 42.6% watch CNN, 34.1% watch History, 40.1% watch National Geographic, 26.0% watch Home and Garden, 28.0% watch Animal Planet, 9.2% watch HLN, 12.4% Toon, 16.4% watch Oxygen and 7.7% watch ENT. Finally, 19.5% of respondents report that they do not watch any of the listed channels. Among male participants, ESPN (57.0%) and CNN (50.1%) were reported as the most watched TV channels.

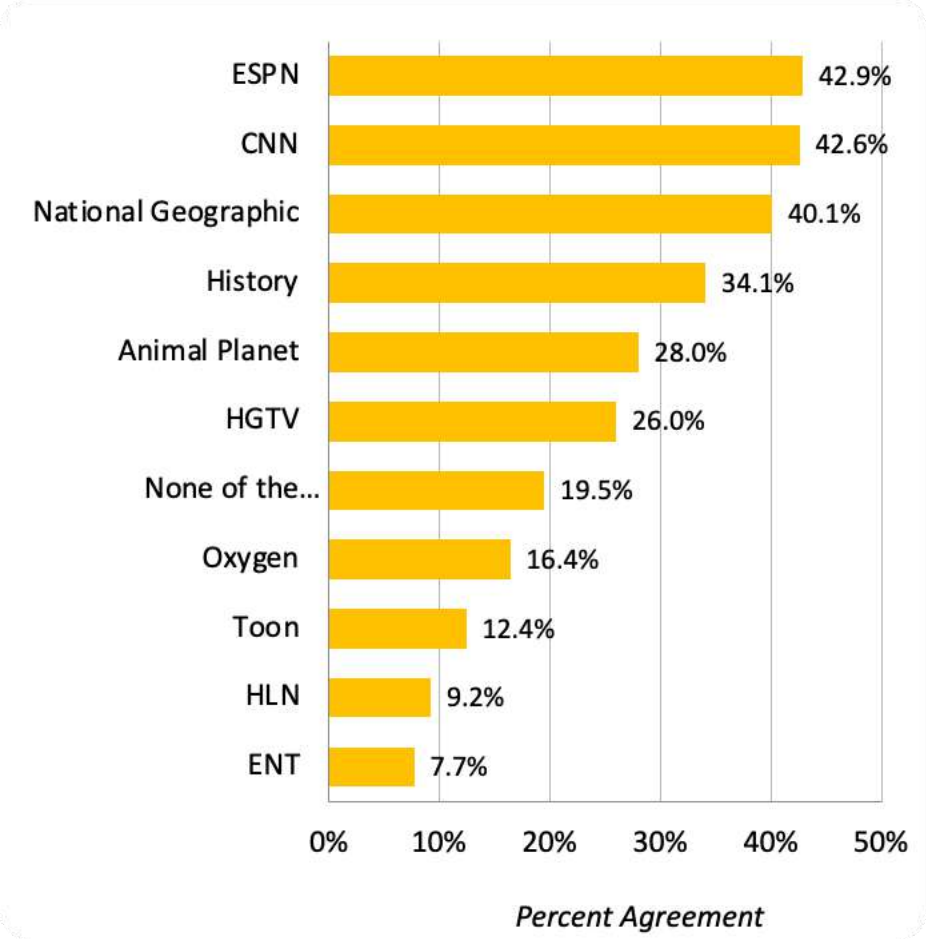
Table 34. TV channels that respondents report watching by demographic group.

Demographic	Sub-category	TV Channels Watched										
		HLN	ENT	ESPN	HGTV	Oxygen	Toon	Animal Planet	History	National Geographic	CNN	None of the Channels Listed
	All Respondents	**9.2%**	**7.7%**	**42.9%**	**26.0%**	**16.4%**	**12.4%**	**28.0%**	**34.1%**	**40.1%**	**42.6%**	**19.5%**
Gender	Male	12.0%	11.3%	57.0%	23.0%	17.5%	16.5%	26.2%	38.8%	40.8%	47.6%	13.3%
	Female	6.4%	3.9%	27.4%	29.2%	15.7%	8.2%	29.9%	29.5%	39.9%	37.7%	26.7%
Age	21 to 24	7.1%	6.1%	47.5%	15.2%	11.1%	14.1%	27.3%	21.2%	29.3%	30.3%	20.2%
	25 to 34	9.2%	8.1%	39.9%	26.0%	20.2%	17.3%	31.8%	32.9%	43.4%	41.0%	17.9%
	35 to 44	11.0%	13.5%	49.0%	27.1%	22.6%	11.6%	26.5%	34.8%	40.0%	49.0%	18.1%
	45 to 54	12.3%	6.8%	47.9%	28.8%	13.7%	11.0%	31.5%	41.1%	39.7%	50.7%	19.2%
	55 to 64	3.8%	0.0%	32.1%	39.6%	5.7%	5.7%	24.5%	43.4%	49.1%	43.4%	22.6%
	65 to 74	5.3%	0.0%	28.9%	26.3%	2.6%	2.6%	18.4%	36.8%	39.5%	39.5%	26.3%
	75 or older	25.0%	0.0%	25.0%	25.0%	37.5%	0.0%	25.0%	62.5%	50.0%	37.5%	25.0%
Locality	Alexandria	12.8%	6.4%	41.5%	24.5%	18.1%	11.7%	22.3%	27.7%	37.2%	44.7%	22.3%
	Arlington	6.9%	2.8%	33.3%	25.0%	13.9%	6.9%	26.4%	31.9%	31.9%	43.1%	22.2%
	Fairfax - Inclusive	11.1%	9.3%	47.8%	26.5%	16.4%	11.1%	29.2%	35.8%	38.9%	46.5%	16.4%
	Prince William - Inclusive	7.0%	7.0%	43.5%	27.0%	16.5%	17.4%	33.9%	35.7%	50.4%	42.6%	15.7%
	Leesburg/Loudon	5.4%	9.8%	39.1%	26.1%	16.3%	14.1%	25.0%	35.9%	39.1%	30.4%	27.2%
Ethnicity	Hispanic/Latino	5.2%	5.2%	39.0%	19.5%	13.0%	10.4%	28.6%	27.3%	29.9%	40.3%	20.8%
	Not Hispanic/Latino	9.8%	8.0%	43.5%	27.0%	16.9%	12.6%	28.0%	35.1%	41.6%	42.9%	19.3%
Years of Residence	Less than 1 year	6.8%	4.1%	32.4%	16.2%	8.1%	5.4%	25.7%	31.1%	35.1%	39.2%	28.4%
	1 to 3 years	7.6%	4.1%	44.1%	23.5%	17.1%	8.8%	30.6%	29.4%	40.6%	44.1%	21.2%
	4 to 9 years	9.6%	8.9%	47.8%	27.4%	15.3%	15.9%	22.9%	33.8%	42.7%	44.6%	14.6%
	10 to 19 years	9.4%	12.5%	38.5%	25.0%	19.8%	13.5%	29.2%	34.4%	35.4%	37.5%	21.9%
	20 or more years	12.7%	9.8%	45.1%	36.3%	19.6%	16.7%	32.4%	44.1%	43.1%	44.1%	15.7%
Home Ownership	Owned	9.8%	8.7%	48.6%	30.3%	16.8%	13.3%	28.6%	35.5%	40.5%	43.6%	15.9%
	Rented	8.0%	5.5%	36.3%	19.8%	15.2%	11.0%	27.4%	31.2%	40.1%	42.2%	24.9%
Household Income	Less than $35,000	8.2%	6.8%	28.8%	19.2%	15.1%	17.8%	21.9%	30.1%	28.8%	31.5%	32.9%
	$35,000 to $49,999	3.1%	3.1%	23.1%	15.4%	16.9%	12.3%	29.2%	29.2%	29.2%	38.5%	30.8%

Demographic	Sub-category	TV Channels Watched										
		HLN	ENT	ESPN	HGTV	Oxygen	Toon	Animal Planet	History	National Geographic	CNN	None of the Channels Listed
	$50,000 to $74,999	7.6%	7.6%	42.9%	20.2%	13.4%	10.9%	31.1%	31.1%	42.0%	42.0%	18.5%
	$75,000 to $99,999	12.0%	8.0%	41.0%	37.0%	21.0%	14.0%	28.0%	32.0%	44.0%	48.0%	15.0%
	$100,000 to $124,999	10.4%	1.5%	53.7%	26.9%	16.4%	10.4%	25.4%	37.3%	47.8%	43.3%	23.9%
	$125,000 to $149,999	6.1%	7.6%	57.6%	30.3%	13.6%	9.1%	27.3%	37.9%	37.9%	59.1%	10.6%
	$150,000 to $174,999	10.5%	10.5%	39.5%	26.3%	15.8%	13.2%	28.9%	42.1%	39.5%	26.3%	13.2%
	$175,000 to $199,999	17.4%	26.1%	69.6%	21.7%	30.4%	13.0%	26.1%	34.8%	43.5%	26.1%	4.3%
	$200,000 or greater	14.6%	12.5%	50.0%	37.5%	12.5%	10.4%	33.3%	41.7%	50.0%	52.1%	14.6%

** Red font indicates significant differences within a demographic subgroup.*

Figure 41. TV channels watched.



3 APPENDIX

3.1 Survey Instrument

2023 Stormwater Survey

Survey Instrument

Programming instructions

- Programming instructions are in [SQUARE BRACKETS].
- Skip/branch logic is in [RED SQUARE BRACKETS].
- All items are single-select unless otherwise noted.
- Retain response option order unless noted.
- Retain grid item order unless noted.
- Allow respondents to go back/forward.
- Respondents may skip any question, but give one prompt if they move forward without a response. Terminate if a screener question is skipped.

Consent and screening

We're conducting this survey to understand opinions related to storm water. Everything you say will be anonymous. You'll watch a couple short videos, so please make sure your sound is on. The survey should take about 10 minutes.

Do you want to proceed?
Yes
No [END SURVEY]

Section	Construct	Q #	Question
Demographics	Sex	S1	First, we'll ask a few questions about you. What is your gender identity? Male Female Non-binary/non-conforming Prefer not to answer
Demographics	Age	S2	Which of the following categories includes your age? Under 18 [END SURVEY] 18 to 20 [END SURVEY] 21 to 24 25 to 34 35 to 44 45 to 54 55 to 64 65 to 74 75 or older
Demographics	Residence Type	S3	Is your home…? Owned Rented Military housing Transitional housing Other (Please specify): None of the above [END SURVEY]
Demographics	VA Residency	S4	Do you live in the state of Virginia? Yes No [END SURVEY]

Demographics	NoVA Residency	S5	Do you live in one of the following towns, cities, or counties? Please select only one location. Alexandria Arlington Fairfax County: Fairfax City Fairfax County: Herndon Fairfax County: Vienna Fairfax County, but not one of the cities/towns listed Falls Church Henrico County [END SURVEY] Loudoun County: Leesburg Loudoun County, but not Leesburg Prince William County: Dumfries Prince William County: Manassas Prince William County: Manassas Park Prince William County, but not one of the cities/towns listed Richmond [END SURVEY] Virginia Beach [END SURVEY] None of the above [END SURVEY]
Demographics	HH Income	S6	What is your household's annual income? Less than $35,000 $35,000 to $49,999 $50,000 to $74,999 $75,000 to $99,999 $100,000 to $124,999 $125,000 to $149,999 $150,000 to $174,999 $175,000 to $199,999 $200,000 or greater
Demographics	Ethnicity	S7	Which of the following describes your ethnicity? (Please select all that apply) African American/Black American Indian/Native Alaskan Asian Hispanic/Latino Native Hawaiian/Pacific Islander White/Caucasian Other: _____

Demographics	Years in residence	Q1	How many years have you lived in your current residence? Less than 1 year 1 to 3 years 4 to 9 years 10 to 19 years 20 or more years
Behavior	Lawn or garden at residence	Q2	Does your home have a lawn or garden, no matter how small? Yes No
Behavior	Lawn care familiarity	Q3	[IF Q2 = YES] Are you familiar with how your garden or lawn is cared for (e.g., fertilizer use, mowing)? Yes No
Behavior	Lawn care use	Q4	[IF Q2 = YES] Do you use a lawn care service at least once a year? Yes No
Behavior	Vehicle owner	Q5	Do you own or lease a personal vehicle? Yes No
Demographics	Own a dog	Q6	Is there one or more dogs in your home that you are at least partially responsible for? Yes No
Knowledge	Watershed	Q7	Are you familiar with the term “watershed”? Yes No [DISPLAY TEXT ON NEXT PAGE AFTER RESPONSE HAS BEEN ENTERED.] A **watershed** is an area of land that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points such as reservoirs, bays, and the ocean.

<table>
<tr><td>Demographics</td><td>Reside within watershed</td><td>Q8</td><td>Do you live in the….

<table><tr><td></td><td>YES</td><td>NO</td><td>Don’t Know</td></tr><tr><td>Chesapeake Bay watershed?</td><td></td><td></td><td></td></tr><tr><td>Potomac River watershed?</td><td></td><td></td><td></td></tr><tr><td>Another watershed not listed?</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Perceptions</td><td>Storm water final destination</td><td>Q9</td><td>“Stormwater” is rainwater that flows into the street, along the gutter and into the storm drain. To the best of your knowledge, does storm water eventually end up in…?

<table><tr><td></td><td>YES</td><td>NO</td><td>Don’t Know</td></tr><tr><td>A wastewater treatment facility?</td><td></td><td></td><td></td></tr><tr><td>Potomac River or Chesapeake Bay?</td><td></td><td></td><td></td></tr><tr><td>A nearby stream or creek</td><td></td><td></td><td></td></tr></table>
Other: _____</td></tr>
<tr><td>Behavior</td><td>Dog walk cleanup frequency</td><td>Q10</td><td>[IF Q6= YES]
When taking your dog(s) for a walk, how often do you pick up after your dog(s)?

Always
Usually
Sometimes
Rarely
Never
Not applicable/I don’t take the dog(s) on walks</td></tr>
<tr><td>Behavior</td><td>Dog yard clean up frequency</td><td>Q11</td><td>[IF Q6 = YES AND Q2 = YES]
How often do you (or someone else from your household) remove your dog’s waste from your yard?

Not applicable – dog not allowed to go in the home’s yard
Daily
Weekly
Monthly
Less often than once a month
Never
Not sure</td></tr>
</table>

Belief	Reason for dog clean up	Q12	[IF Q10 = (Always, Usually, Sometimes, Rarely) AND Q11 = (Daily, Weekly, Monthly, Less often than once a month)] What is the most important reason to pick up after your dog(s)? (Please select only one) City/county ordinance Don't want to step in it It causes water pollution It is gross It's what good neighbors do Odor Other reason None/no reason to
Behavior	Grass clippings handling	Q13	[IF Q3 = YES] How are your grass clippings disposed of? Bagged and put in the regular trash Bagged and put in compost/recycling bags for pick up Left on the lawn/garden Put in a compost pile/bin Not sure Other Not applicable/don't have grass clippings
Behavior	Grass clippings on street handling	Q14	[IF Q3 = YES] After your grass has been mown, what is done if grass clippings end up in the street? They are left there. They are swept or blown back into the lawn. They are swept or blown into the storm drain Not applicable/don't have grass clippings Other: _____ Not sure
Behavior	Lawn fertilization frequency	Q15	[IF Q3 = YES] Which of the following best describes how often your lawn is fertilized? 1 time a year 2 times a year 3 times a year 4+ times a year Only if/when if a soil test indicates the grass needs fertilizer Never Not sure

<table>
<tr><td>Knowledge</td><td>Rain barrel familiarity</td><td>Q16</td><td>A rain barrel is a barrel you put under your downspout to collect rain water that you can use around your yard. Which of the following statements are true for you?

<table><tr><td></td><td>YES</td><td>NO</td></tr><tr><td>I have a rain barrel.</td><td></td><td></td></tr><tr><td>I am familiar with rain barrels.</td><td></td><td></td></tr><tr><td>I don’t have a rain barrel but I’m interested in getting one.</td><td></td><td></td></tr></table></td></tr>
<tr><td>Knowledge</td><td>Rain garden familiarity</td><td>Q17</td><td>A rain garden is a bowl-shaped garden area where runoff can collect and soak into the ground. Which of the following statements are true for you?<table><tr><td></td><td>YES</td><td>NO</td></tr><tr><td>I have a rain garden.</td><td></td><td></td></tr><tr><td>I am familiar with rain gardens.</td><td></td><td></td></tr><tr><td>I don’t have a rain garden but I’m interested in installing one.</td><td></td><td></td></tr></table></td></tr>
<tr><td>Knowledge</td><td>Conservation landscaping familiarity</td><td>Q18</td><td>Conservation landscaping is replacing an area of lawn or bare soil in your yard with native plants. Which of the following statements are true for you?

<table><tr><td></td><td>YES</td><td>NO</td></tr><tr><td>I have conservation landscaping in my yard.</td><td></td><td></td></tr><tr><td>I am familiar with conservation landscaping.</td><td></td><td></td></tr><tr><td>I don’t have conservation landscaping but I’m interested in installing it.</td><td></td><td></td></tr></table></td></tr>
<tr><td>Behavior</td><td>Vehicle oil handling</td><td>Q19</td><td>[IF Q5 = YES]
When you need to change the oil in your car or truck, what do you do with the old motor oil?

I don’t change the oil myself/I take it to a garage/oil change service
Take the old motor oil to a gas station or hazmat facility for recycling
Store it in my garage
Put it in the trash
Dump it in the gutter or down the storm sewer
Dump it down the sink
Dump it on the ground
Other: _____</td></tr>
</table>

Knowledge	HHW drop off knowledge	Q20	Do you know whether or not your locality has a specific place for residents to drop off household hazardous waste (HHW)? HHW includes items like automobile fluids, pesticides and herbicides, oil-based paint and paint thinners, etc. Yes, I know whether we have a location for drop-offs. No, I'm not sure whether we have a location for drop-offs.
Knowledge	Pollution reporting knowledge	Q21	Do you feel that you know who to contact to report potential water pollution? I definitely know I think I know I don't think I know I definitely don't know
Behavior	Likelihood to report pollution	Q22	What is the likelihood that you would call county or town officials to report potential pollution so they could investigate the cause? I definitely would I probably would I'm equally likely to call and to not call I probably would NOT I definitely would NOT
Behavior	Reason for not reporting pollution	Q23	[IF Q26 = Equally likely, Probably not or Definitely not] What is the primary reason that you would **not** call county or town officials to report potential pollution? I'm too busy It's not my responsibility It's none of my business I prefer not to communicate with officials or authorities Other: _____
Behavior	Wash vehicle at home	Q24	[IF Q5 = YES] In the past year, where have you washed your personal vehicle? Check all that apply. [MULTISELECT] At my home or someone else's home At a commercial car wash I haven't washed my vehicle Other: _____ [please specify]

<table>
<tr><td>Behavior</td><td>Wash vehicle at home frequency</td><td>Q25</td><td>[IF Q24 = At my/someone else's home]
How often do you typically wash your car/truck at home?

Less than once a year
1- 2 times per year
3-4 times per year
5-6 times per year
7-12 times per year
12+ times per year</td></tr>
<tr><td>Behavior</td><td>Wash vehicle method</td><td>Q26</td><td>[If Q24 = At home]
When you wash your car/truck at home, which of the following apply?

<table><tr><th></th><th>YES</th><th>NO</th><th>NOT SURE</th></tr><tr><td>I wash it on the grass, gravel or dirt</td><td></td><td></td><td></td></tr><tr><td>I use environmentally friendly detergent</td><td></td><td></td><td></td></tr><tr><td>I use water only (no soap or detergent)</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Knowledge</td><td>Pollution identification</td><td>Q27</td><td>Looking at the picture below, would you consider either to be a potential source of water pollution?
[MEDIA: SurveyImage_POLLUTION.png]

Yes
No
Not sure
Cannot see image</td></tr>
<tr><td>Sources</td><td>TV service provider</td><td>Q28</td><td>What TV service provider do you use? [RANDOMIZE FIRST FOUR OPTIONS]

Verizon
Comcast
Cox
Xfinity
Do not have cable TV
Do not watch TV
Other: _____
I don't know</td></tr>
</table>

Sources	TV channels	Q29	Which of the following channels, if any, do you watch? [RANDOMIZE] HLN TV Oxygen Toon ENT Animal Planet CNN ESPN History National Geographic Home and Garden None of the above
Knowledge	Clean up activity awareness in past 12 months	Q30	Thinking about the last 12 months, have you ***heard about*** any opportunities to participate in a water quality activity, such as a stream clean up, helping to install storm drain labels, etc.? Yes No Not sure
Behavior	Cleanup activity participation in the past 12 months	Q31	[IF Q30 = YES] Thinking about the last 12 months, have you ***participated in*** a water quality activity, such as a stream clean up, helping to install storm drain labels, etc.? Yes No
Instruction			Please watch the video below, then we'll ask you a couple questions about it. [VIDEO ORDER RANDOMIZED: "Only Rain Down the Drain!", "Cleaner Streets Means Cleaner Water"]
Awareness	Ad familiarity	Q32	Before this survey, had you seen this ad, or a similar one on TV, Facebook, or Twitter? Yes No Not sure Video did not play

<table>
<tr>
<td>Perception</td>
<td>Ad perceptions</td>
<td>Q33</td>
<td>[IF Q32 NOT ‘Video did not play”]
Thinking of the ad video you just saw, indicate whether you agree or disagree with the following statements about it.

<table>
<tr><th></th><th>Strongly Disagree</th><th>Disagree</th><th>Neither disagree or agree</th><th>Agree</th><th>Strongly Agree</th></tr>
<tr><td>I understand the information in the ad.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The ad is relevant to me.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>I trust the information in the ad.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The ad’s message is important.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The ad is persuasive.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>I think the ad would be effective.</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr>
<td>Behavior</td>
<td>Ad impact</td>
<td>Q34</td>
<td>[IF Q32 = YES]
Thinking back to when you first saw the ad(s), please indicate if the following statements are true for you now compared to then? (Select all that apply.)

<table>
<tr><th></th><th>YES</th><th>NO</th><th>DOES NOT APPLY</th></tr>
<tr><td>I understand more about the impact of pet waste on water quality.</td><td></td><td></td><td></td></tr>
<tr><td>I’d like to pick up pet waste more often, though I haven’t made any changes yet.</td><td></td><td></td><td></td></tr>
<tr><td>I now pick up pet waste more often.</td><td></td><td></td><td></td></tr>
<tr><td>I was already doing what is recommended to reduce water pollution from pet waste</td><td></td><td></td><td></td></tr>
</table>

[PAGE BREAK. KEEP QUESTION AND RESPONSE LABELS ON SCREEN
<table>
<tr><th></th><th>YES</th><th>NO</th><th>DOES NOT APPLY</th></tr>
<tr><td>I understand more about the impact of fertilizer on water quality.</td><td></td><td></td><td></td></tr>
<tr><td>I’d like to fertilize fewer times during the year.</td><td></td><td></td><td></td></tr>
<tr><td>I now plan to fertilize fewer times during the year.</td><td></td><td></td><td></td></tr>
<tr><td>I was already doing what is recommended to reduce water pollution from fertilizer.</td><td></td><td></td><td></td></tr>
</table>

[PAGE BREAK. KEEP QUESTION AND RESPONSE LABELS ON SCREEN.]
<table>
<tr><th></th><th>YES</th><th>NO</th><th>DOES NOT APPLY</th></tr>
<tr><td>I understand more about the impact of motor oil on water quality.</td><td></td><td></td><td></td></tr>
<tr><td>I’d like to dispose of motor oil properly, though I haven’t made any changes yet.</td><td></td><td></td><td></td></tr>
<tr><td>I now properly dispose of motor oil.</td><td></td><td></td><td></td></tr>
<tr><td>I was already doing what is recommended to reduce water pollution.</td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr><td>Instruction</td><td></td><td></td><td>Please watch the video below, then we'll ask you a couple questions about it.
[VIDEO ORDER RANDOMIZED: “Only Rain Down the Drain!”, “Cleaner Streets Means Cleaner Water”]</td></tr>
<tr><td>Awareness</td><td>Ad familiarity</td><td>Q35</td><td>Before this survey, had you seen this ad, or a similar one on TV, Facebook, or Twitter?

Yes
No
Not sure
Video did not play</td></tr>
<tr><td>Perception</td><td>Ad perceptions</td><td>Q36</td><td>[IF Q32 NOT ‘Video did not play”]
Thinking of the ad video you just saw, indicate whether you agree or disagree with the following statements about it.

<table>
<tr><th></th><th>Strongly Disagree</th><th>Disagree</th><th>Neither disagree or agree</th><th>Agree</th><th>Strongly Agree</th></tr>
<tr><td>I understand the information in the ad.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The ad is relevant to me.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>I trust the information in the ad.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The ad’s message is important.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The ad is persuasive.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>I think the ad would be effective.</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

Behavior	Ad impact	Q37	[IF Q32 = YES] Thinking back to when you first saw the ad(s), please indicate if the following statements are true for you ***now*** compared to ***then***? (Select all that apply.) [PAGE BREAK. KEEP QUESTION AND RESPONSE LABELS ON SCREEN [PAGE BREAK. KEEP QUESTION AND RESPONSE LABELS ON SCREEN.]

	YES	NO	DOES NOT APPLY
I understand more about the impact of pet waste on water quality.			
I'd like to pick up pet waste more often, though I haven't made any changes yet.			
I now pick up pet waste more often.			
I was already doing what is recommended to reduce water pollution from pet waste			

	YES	NO	DOES NOT APPLY
I understand more about the impact of fertilizer on water quality.			
I'd ***like to*** fertilize fewer times during the year.			
I now plan to fertilize fewer times during the year.			
I was already doing what is recommended to reduce water pollution from fertilizer.			

	YES	NO	DOES NOT APPLY
I understand more about the impact of motor oil on water quality.			
I'd like to dispose of motor oil properly, though I haven't made any changes yet.			
I now properly dispose of motor oil.			
I was already doing what is recommended to reduce water pollution.			

Awareness	Received info about water pollution	Q38	Have you seen or received information about reducing water pollution from any source in the past 12 months? Yes No Not sure
Awareness	Rain logo familiarity	Q39	Have you seen the logo below before? [MEDIA: SHOW SURVEYIMAGE_LOGO] Yes No Cannot see image

<table>
<tr>
<td>Perceptions</td>
<td>Sponsor awareness and perceptions</td>
<td>Q40</td>
<td>[DISPLAY TEXT ON SEPARATE PAGE.]
The Northern Virginia Clean Water Partners is a group of local governments, drinking water and sanitation authorities, and businesses that share the common goals to keep Northern Virginia residents healthy and safe by reducing the amount of pollution from stormwater runoff that reaches local creeks and rivers, and empower individuals to take action to reduce pollution.
[PAGE BREAK.]

Indicate whether you agree or disagree with the following statements about the Northern Virginia Clean Water Partners (NVCWP).

<table>
<tr><th></th><th>Strongly Disagree</th><th>Disagree</th><th>Neither disagree or agree</th><th>Agree</th><th>Strongly Agree</th></tr>
<tr><td>I was familiar with the NVCWP before this survey.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>I trust information from the NVCWP.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>I would contact the NVCWP if I had a question or concern about water quality.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>The NVCWP shares my values when it comes to water quality.</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

[FINAL PAGE]

Thank you for completing the survey! The survey was sponsored by the Northern Virginia Clean Water Partners. To learn about the Northern Virginia Clean Water Partners, visit onlyrain.org.

General VPDES Permit for
Small Municipal Separate Storm Sewer Systems
Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix B (*Hyperlinks are Provided*)
Minimum Control Measure #2, Public Involvement and Participation

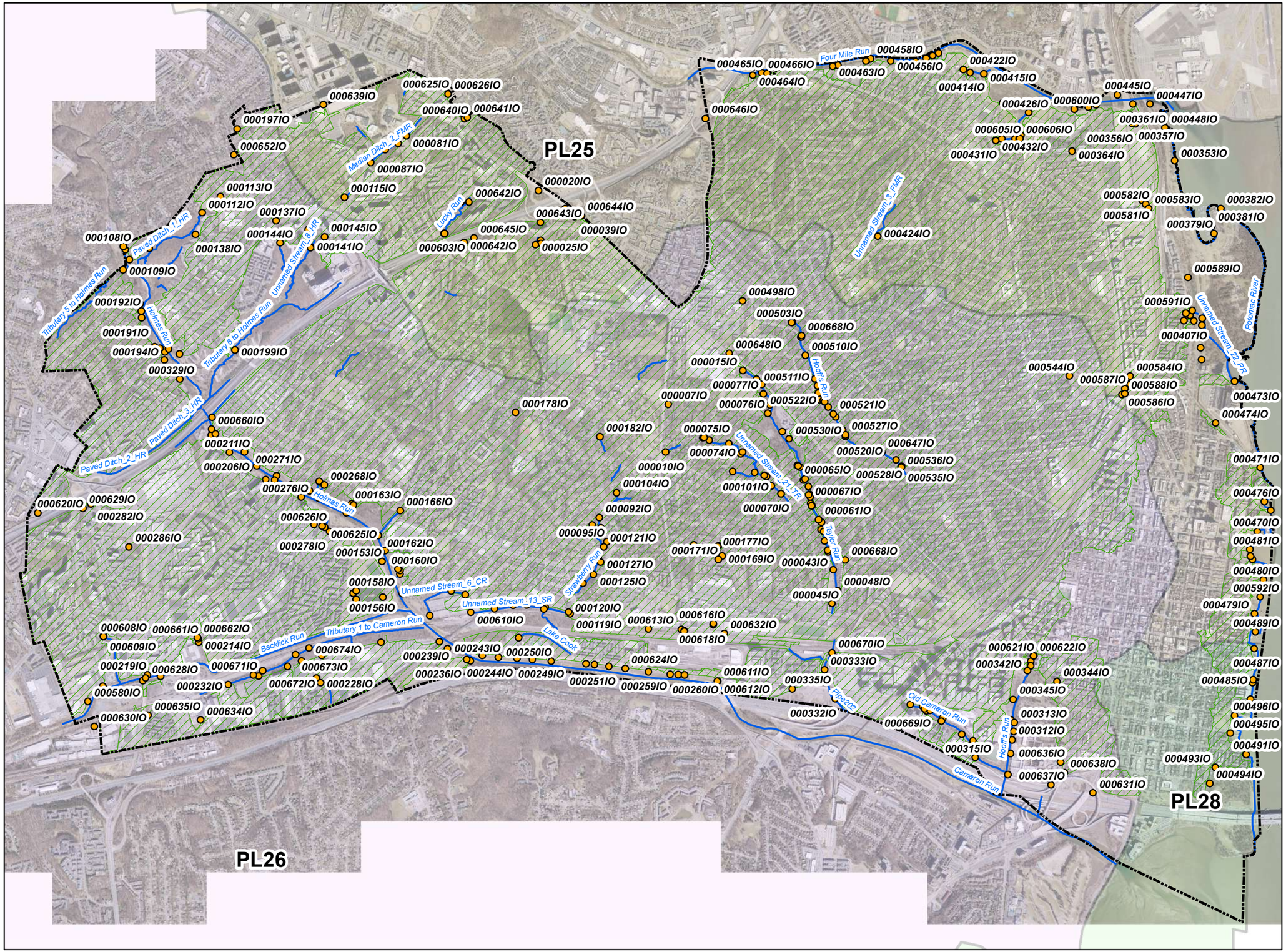
1. City's Webpage for Alex311
2. City's Webpage with MS4 Program Plan and Annual Report
3. City's Webpage for the One Water Partnership
4. City's Webpage for Earth Day

General VPDES Permit for Small Municipal Separate Storm Sewer Systems Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix C (*Hyperlinks are Provided for Some Materials*)
Minimum Control Measure #3, Illegal Discharge Detection and Elimination

1. MS4 Outfalls Map, September 2023
2. MS4 Outfalls Table
3. Notice of Potential Interconnections (2009) and Resent 2020
4. Illicit Discharges to the MS4
5. Illicit Discharge Complaints
6. Outfall Inspections
7. EnerGov Code Case Search
8. Alex311 Web-based Form
9. CityWorks
10. City's Household Hazardous Waste webpage
11. State Permitted Discharges Map
12. State Permitted Discharges Table
13. Conditions Regarding Cooking Residue



City of Alexandria

Storm Sewer System Outfall Map

Legend

- Outfall Points
- City Boundary Line
- MS4_Area

VA_HUC12

HUC

- PL25
- PL26
- PL28

September 2023

City of Alexandria
Outfall and Point of Discharge Table

Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000001IO	7.89	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11886440.46	6984163.82
000002IO	13.11	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887433.77	6985111.699
000003IO	7.70	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11886723.66	6983909.517
000004IO	6.82	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11886768.19	6983959.464
000005IO	9.26	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11886527.7	6983494.552
000008IO	5.16	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885959.42	6984253.376
000010IO	28.90	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11884893.22	6983957.149
000015IO	260.86	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11886772.62	6985948.308
000016IO	10.53	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887114.73	6985732.021
000017IO	6.29	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887237.89	6985607.025
000041IO	31.67	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888852.69	6981534.963
000042IO	0.61	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888839.71	6981576.72
000043IO	2.93	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888978.05	6981101.434
000044IO	22.51	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889063.01	6981533.091
000045IO	6.09	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888946.51	6980279.499
000048IO	26.41	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889082.33	6980591.082
000050IO	13.52	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888159.24	6983592.744
000051IO	6.27	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888369.04	6983123.82
000052IO	2.35	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888399.7	6982932.266
000053IO	0.71	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888415.94	6982864.731
000054IO	0.94	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888419.47	6982706.854
000055IO	21.02	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888460.54	6982655.803
000056IO	17.93	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888447.75	6982658.441
000057IO	2.06	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888681.1	6982256.677
000058IO	2.47	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888674.7	6982076.896
000059IO	4.38	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888760.68	6981795.462
000060IO	4.15	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888738.67	6982030.953
000061IO	0.96	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888613.22	6982314.863
000062IO	3.21	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888098.71	6983638.702
000063IO	0.13	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888118.97	6983622.493
000064IO	3.77	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888245.47	6983276.601
000065IO	1.32	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888285.14	6983309.497
000067IO	1.74	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888375.89	6982913.114
000068IO	3.26	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887349.24	6983366.923
000069IO	0.74	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887298.84	6983388.581
000070IO	2.71	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887704.72	6982949.739
000074IO	83.60	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885800.97	6984307.115
000075IO	0.06	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885834.11	6984309.427
000076IO	3.17	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887379.89	6984905.205
000077IO	3.78	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887269.74	6985371.613
000100IO	3.27	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887473.68	6983140.415
000101IO	2.47	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887067.13	6983467.829
000105IO	2.88	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11871772.65	6988871.466
000106IO	1.34	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872351.47	6988913.388

City of Alexandria
Outfall and Point of Discharge Table

Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000107IO	0.54	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11871868.81	6988632.407
000108IO	0.18	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11871717.05	6988957.849
000109IO	21.82	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11871709.92	6988392.875
000111IO	6.81	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872121.4	6987563.654
000112IO	12.47	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873633.7	6989781.374
000116IO	24.22	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11875459.07	6989850.611
000137IO	2.90	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11875428.37	6989580.595
000138IO	54.02	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873477.22	6989249.213
000139IO	13.28	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11876210.96	6989363.584
000140IO	36.50	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876260.94	6988957.362
000141IO	7.02	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876271.96	6988924.012
000144IO	39.79	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875529	6989042.071
000145IO	23.06	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11876612.34	6989189.499
000148IO	2.62	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11878443.82	6980994.703
000149IO	174.66	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11878439.43	6981085.436
000150IO	1.08	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11878394.06	6981111.526
000160IO	10.72	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11878082.06	6981564.146
000167IO	19.08	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11877911.78	6981936.063
000168IO	6.11	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11877136.98	6982486.439
000187IO	33.71	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872480.58	6986519.899
000188IO	0.14	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872719.14	6986432.001
000189IO	53.32	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872727.84	6986390.825
000190IO	0.20	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872609.86	6986480.859
000191IO	18.63	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872162.41	6987222.227
000192IO	3.49	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872157.94	6987385.018
000193IO	9.44	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872820.91	6986465.417
000194IO	5.16	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872716.75	6986195.981
000196IO	26.43	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873082.39	6986343.762
000199IO	19.72	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874431.35	6986442.873
000205IO	2.79	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874958.15	6983625.44
000206IO	17.30	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874658.4	6983959.895
000207IO	37.93	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873856.13	6984375.101
000208IO	1.33	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873960.35	6984405.523
000209IO	15.08	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874220.58	6984243.16
000210IO	2.83	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874028.17	6984111.987
000211IO	54.30	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874299.01	6983950.406
000261IO	25.97	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875441.23	6983386.159
000262IO	139.25	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875796.74	6983158.759
000263IO	10.01	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876249.98	6983015.281
000264IO	119.20	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876474.07	6982840.734
000266IO	31.26	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876489.67	6983233.711
000267IO	0.29	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876482.58	6983243.472
000268IO	85.06	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876603.31	6983160.824
000269IO	43.19	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875185.9	6983294.572

City of Alexandria
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Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000270IO	8.66	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875394.33	6983279.187
000271IO	7.08	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874773.85	6983567.035
000274IO	0.95	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875664.7	6983084.295
000275IO	0.89	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875749.91	6983031.874
000276IO	5.38	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876040.87	6982862.205
000277IO	17.22	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876358.23	6982198.8
000278IO	3.14	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876731.02	6982030.494
000299IO	1.45	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11892314.2	6976838.147
000300IO	2.08	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11892091.22	6977100.812
000301IO	0.03	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11892488.42	6976728.197
000302IO	7.41	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11892373.97	6976944.812
000303IO	0.10	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11891237.48	6977672.186
000305IO	0.19	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11891328.29	6977688.155
000306IO	24.47	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11891627.92	6977488.735
000307IO	2.03	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11891596.3	6977417.922
000308IO	1.80	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893291.47	6977448.84
000309IO	0.00	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893279.27	6976636.308
000311IO	0.00	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893358.07	6977170.991
000312IO	0.00	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893321.63	6976970.877
000313IO	0.00	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893377.67	6977385.415
000314IO	0.00	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893216.82	6976125.102
000315IO	0.88	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11892427.5	6976535.047
000329IO	13.88	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873089.95	6985731.367
000330IO	45.37	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873471.42	6985145.152
000332IO	3.19	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889021.66	6977964.611
000333IO	2.47	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888756.38	6978667.449
000339IO	31.53	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893835.8	6979007.152
000340IO	1.10	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893771.36	6978878.931
000341IO	9.18	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893770.71	6978765.68
000342IO	22.90	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893687.46	6978645.541
000343IO	1.16	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11891144.8	6977778.141
000345IO	3.97	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893347.93	6977952.632
000477IO	6.17	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899425.95	6980856.343
000499IO	115.43	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887957.9	6987122.845
000500IO	13.08	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887977.39	6987119.421
000501IO	0.02	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887985.29	6987106.255
000503IO	0.16	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887961.33	6987104.763
000509IO	0.07	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888189.54	6986745.918
000510IO	14.54	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888289.4	6986308.817
000511IO	6.78	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888524.98	6985738.758
000512IO	1.76	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888635.96	6985228.64
000513IO	4.14	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888607.65	6985390.952
000514IO and 000516IO	1.94	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888733.03	6985216.088
000517IO	1.80	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888852.75	6985058.527

City of Alexandria
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Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000518IO	13.55	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889036.06	6984809.284
000519IO	3.38	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889194.24	6984492.096
000520IO	2.29	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889264.36	6984339.698
000521IO	10.49	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888973.7	6984889.746
000522IO	3.85	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888592.34	6985576.612
000527IO	35.68	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889265.48	6984379.21
000528IO	4.07	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11890503.11	6983766.34
000529IO	0.22	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887734.92	6984458.919
000530IO	5.78	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11887900.99	6984281.077
000535IO	2.15	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11890630.67	6983613.107
000536IO	1.78	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11890625.82	6983589.708
000575IO	61.89	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11890841.65	6977825.425
000153IO	0.09	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11878002.88	6981297.641
000154IO	2.22	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11878024.15	6980434.469
000155IO	2.41	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11877378.05	6980380.58
000156IO	83.18	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11877308.78	6980532.431
000158IO	45.24	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11877375.12	6980585.74
000162IO	48.37	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11877978.71	6981527.501
000213IO	13.49	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873099.89	6978734.989
000214IO	0.22	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873553.67	6979339.892
000216IO	36.07	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11871219.53	6978269.913
000218IO	0.53	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872192.49	6978410.296
000219IO	0.32	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872310.74	6978543.623
000220IO	0.31	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872625.8	6978511.084
000279IO	21.82	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873428.97	6979692.276
000608IO and 000609IO	152.21	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11871233.5	6979481.27
000580IO	5.39	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11870862.82	6977900.473
000146IO	143.54	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880028.61	6980493.867
000147IO	9.96	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11878503.95	6980523.88
000159IO	23.57	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11879694.56	6980577.07
000098IO	77.58	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11886181.22	6981682.23
000099IO	4.21	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11886160.13	6981666.553
000151IO	0.00	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11879169.15	6979988.369
000171IO	1.13	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11886177.99	6981349.272
000175IO	5.45	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885280.29	6979647.181
000177IO	9.62	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11886138.29	6981566.832
000222IO	13.74	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875007.37	6978513.511
000223IO	4.80	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11875712.95	6978751.43
000225IO	28.11	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876049.89	6978885.445
000230IO	10.54	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876542.26	6979011.289
000232IO	18.68	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11874274.07	6978307.225
000233IO	15.55	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11877981.82	6979339.378
000234IO	0.29	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880444.26	6979011.491
000235IO	2.06	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880161.03	6978883.289

Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000236IO	2.68	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880066.59	6978921.541
000237IO	5.60	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11879597.06	6979186.565
000239IO	18.36	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11879399.17	6979351.053
000242IO	15.37	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11877266.2	6979195.948
000243IO	0.61	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880835.6	6978979.844
000244IO	0.55	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11881283.49	6978950.336
000245IO	14.37	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall - Pond	PL26	11881322.96	6979451.111
000247IO	1.61	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883173.19	6978796.949
000248IO	3.90	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11882964.55	6978815.446
000249IO	1.14	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11881661.07	6978924.296
000250IO	1.65	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11882117.72	6978880.28
000251IO	4.70	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883525.38	6978752.362
000257IO	0.02	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885199.34	6978557.125
000258IO	9.15	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885013.64	6978565.314
000259IO	2.07	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11884485.44	6978625.494
000260IO	0.73	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885358.9	6978545.929
000611IO and 000612IO	183.43	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11886156.54	6978395.62
000614IO and 000615IO	22.16	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11885351.2	6979617.37
000613IO	50.79	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11884484.87	6979664.457
000023IO	21.09	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall - Pond	PL25	11881862.88	6989104.991
000024IO	1.83	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall - Pond	PL25	11881871.58	6989023.44
000025IO	27.84	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall - Pond	PL25	11881734.63	6988996.356
000294IO	28.57	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11879517.26	6989272.799
000295IO and 000603IO	165.48	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11879527.29	6989274.32
000414IO	0.44	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11892303.12	6993182.401
000415IO	5.16	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11892632.15	6993149.696
000416IO	12.84	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893091.67	6992445.754
000417IO	129.85	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11891391.27	6993589.596
000418IO	0.87	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11891536.69	6993657.921
000419IO	0.89	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11891232.3	6993525.851
000420IO	2.37	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11890977.69	6993440.809
000422IO	44.02	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11892133.87	6993252.545
000423IO	0.93	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893066.17	6991568.178
000424IO	49.26	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11890056.31	6989201.547
000426IO	14.14	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893722.17	6992206.379
000427IO	1.93	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893389.3	6991573.821
000428IO	4.76	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893386.94	6991574.315
000429IO, 000605IO, 000606IO	283.02	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893493.05	6991573.139
000430IO	0.58	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11893527.94	6991655.21
000431IO and 000432IO	175.22	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11892922.94	6991532.446
000450IO	8.16	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11895169.35	6992340.963
000451IO	5.87	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11895361.1	6992393.396
000452IO and 000600IO	18.22	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11894838.04	6992290.594

City of Alexandria
Outfall and Point of Discharge Table

Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000454IO	130.45	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11887681.57	6993316.229
000456IO	55.69	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11890367.89	6993456.194
000457IO	0.11	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11889812.16	6993494.613
000458IO	0.47	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11889878.84	6993519.764
000459IO	0.57	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11889767.66	6993458.942
000460IO	1.74	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11889087.66	6993356.607
000461IO	2.05	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11888131.58	6993375.136
000462IO	3.33	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11888229.8	6993334.763
000463IO	18.86	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11888959.42	6993335.478
000464IO	0.51	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11887016.52	6993114.02
000465IO	51.04	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11887236.44	6993171.464
000466IO	0.70	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11887363.62	6993154.696
000079IO	0.23	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11878392.77	6991456.818
000011IO	3.70	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11878084.23	6991300.581
000084IO	34.44	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11877732.58	6990995.936
000087IO	28.12	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall	PL25	11877733.56	6990992.406
000353IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897269.55	6991045.02
000361IO	210.26	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11896259.78	6992413.289
000379IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898226.43	6989274.819
000381IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898173.26	6989458.104
000382IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898387.87	6989880.871
000396IO	0.01	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897918.7	6986205.557
000397IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897899.31	6986492.831
000398IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897905	6986765.268
000402IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897936.5	6987212.757
000403IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897929.62	6987038.286
000404IO	0.75	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897735.5	6987146.48
000405IO	46.32	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897635.48	6987281.737
000406IO	4.50	Potomac River	Potomac River	Yes	PCBs	Outfall - Pond	PL28	11897538.98	6987335.751
000407IO	45.04	Potomac River	Potomac River	Yes	PCBs	Outfall - Pond	PL28	11897493.34	6987153.774
000447IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11896671.66	6992411.516
000448IO	0.00	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897034.41	6991838.966
000469IO	6.73	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899598.7	6982537.477
000470IO	7.17	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899274.57	6982030.579
000471IO	14.14	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899346.02	6983582.765
000472IO	3.32	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898724.86	6985681.776
000473IO	0.14	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898729.15	6985674.047
000475IO	0.26	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899632.92	6982943.543
000476IO	0.73	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899447.45	6982756.021
000478IO	0.54	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899164.11	6981353.557
000479IO	8.44	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899211.91	6980033.524
000480IO	3.50	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899106.9	6981429.171
000481IO	3.24	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899090.24	6981596.498
000482IO	1.16	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899118.54	6977767.156

City of Alexandria
Outfall and Point of Discharge Table

Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000483IO	3.70	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899107	6977958.021
000484IO	4.21	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899161.83	6978365.66
000485IO	0.09	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899176.78	6978428.621
000486IO	5.22	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899253.3	6978787.148
000487IO	17.16	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899201.25	6979183.219
000489IO	8.53	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899232.88	6979594.487
000491IO	6.02	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899003.88	6976613.722
000493IO	1.46	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898260.33	6976296.936
000494IO	2.06	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898120.95	6975913.388
000495IO	16.77	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898622.46	6977129.506
000495IO and 000496IO	5.25	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11898722.45	6977560.075
000092IO	96.39	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883287.15	6982366.915
000093IO	7.97	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883326.8	6982117.109
000094IO	17.66	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883116.46	6982186.014
000095IO	2.77	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883467.54	6981784.938
000104IO	39.49	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883709.61	6982971.088
000119IO	56.24	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11882579.12	6980036.325
000120IO	3.64	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11882545.18	6980074.069
000124IO	2.60	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883256.09	6981387.195
000127IO	5.10	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883313.69	6981285.708
000128IO	1.17	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11881967.95	6980192.612
000130IO	7.41	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11881517.46	6980244.8
000133IO	9.57	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880744.71	6980158.563
000134IO	23.40	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11881196.01	6980229.609
000135IO	8.69	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11881936.87	6980148.008
000610IO	3.93	Strawberry Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11880163.71	6980062.784
000586IO	1.44	Potomac River	Potomac River	Yes	PCBs	Outfall - Pond	PL28	11895991.98	6985357.602
000588IO	30.32	Potomac River	Potomac River	Yes	PCBs	Outfall - Pond	PL28	11896057.16	6985376.432
000589IO	35.57	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897592.62	6988200.249
000591IO	19.13	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11897701.93	6987397.715
000592IO	5.47	Potomac River	Potomac River	Yes	PCBs	Outfall	PL28	11899348.09	6980443.038
000121IO	13.49	Strawberry Run				Outfall	PL26	11883394.31	6981652.8
000621IO and 000622IO	1247.79	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11893852.18	6979004.593
000624IO	10.25	Cameron Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11883917.66	6978699.662
000628IO	94.16	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11872259.35	6978466.72
000642IO	47.22	Four Mile Run	Four Mile Run Tidal	Yes	E. Coli	Outfall - Pond	PL25	11880117.33	6990035.114
000647IO	51.29	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873876.92	6984802.006
000647IO	51.29	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11890149.55	6983954.071
000660IO	0.02	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873868.37	6984516.587
000661IO	52.35	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873534	6979431.994
000662IO	7.11	Backlick Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11873518.87	6979455.317
000668IO	4.62	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11889255.88	6981334.995
000668IO	4.62	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888200.33	6986790.098
000669IO	48.69	Hooffs Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11891191.4	6977728.452

City of Alexandria
Outfall and Point of Discharge Table

Outfall ID	Estimated MS4 Acreage Served (acres)	Receiving Water	Ultimate Receiving Water	Ultimate Receiving Water Impairment	TMDLs	Type	HUC	Latitude Decimal Degrees	Longitude Decimal Degrees
000670IO	0.31	Taylor Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11888943.74	6979086.277
000675IO	0.00	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876609.36	6982136.583
000676IO	0.00	Holmes Run	Hunting Creek/Cameron Run/Holmes Run	Yes	E. Coli	Outfall	PL26	11876545.07	6982158.99

City of Alexandria

Department of Transportation and Environmental Services
Office of Environmental Quality
301 King Street
City Hall, Room 3000
Alexandria, VA 22314
www.alexandriava.gov/Environment

July 15, 2009

Gayle England
Stormwater Specialist
Department of Environmental Services
Arlington County, Virginia

DELIVERED VIA EMAIL: Gengland@arlingtonva.us

Subject: Notice of Potentially Interconnected Municipal Separate Storm Sewer System (MS4)

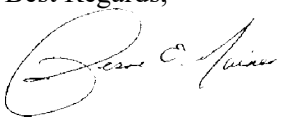
Attention: MS4 Permit Manager

The City of Alexandria operates as a Phase II MS4 community with coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (No. VAR 040057).

Pursuant to Section II.B.3.g of this permit, the City must "Notify, in writing, any downstream regulated MS4 to which the small regulated MS4 is physically interconnected of the small regulated MS4's connection to that system." This letter is to notify you of the potential for interconnections between the City's MS4 and the permitted stormwater system operated by Arlington County. Currently, we have not identified any points where the City's MS4 discharges stormwater into Arlington's regulated MS4; however, it is likely that interconnections exist.

As mentioned in our previous email correspondences and pursuant to Section II.B.3.b, the City is currently working on a mapping effort that will verify the "location of all known outfalls …including those physically interconnected to a regulated MS4…" City GIS Staff will be contacting you very soon to share information in order to identify and map any interconnections that may exist between our regulated stormwater systems. The City is scheduled to provide this map with its Annual Report due no later than October 1, 2010 to DCR.

Best Regards,



Jesse E. Maines
Water Quality Compliance Specialist
703-746-4071
Jesse.maines@alexandriva.gov

Cc: Mary Beth Fletcher, GIS Mapping Center Bureau Chief, mfletcher@arlingtonva.us

Jessica Lassetter

From: Jessica Lassetter
Sent: Thursday, July 30, 2020 9:42 AM
To: 'Jason Papacosma (Jpapacosma@arlingtonva.us)'
Subject: City of Alexandria Physical Interconnection
Attachments: Arlington County 071509.pdf

Hi Jason –

I hope you are doing well.

The City of provided a letter on July 15, 2009, to Ms. Gayle England, to satisfy the requirements indicated in the MS4 General Permit pertaining to physical interconnections (see attached). This letter referenced a regional stormwater flow map which was produced in September 2010 and included in the City's 2010-2011 MS4 Annual Report. This letter also satisfies the requirements outlined in the 2018-2023 MS4 General Permit, Part I. E.3.a.(5).

Please maintain this email and attached document in your MS4 program files and let me know if you have any questions.

Thank you,

Jessica

Jessica E. B. Lassetter
Senior Environmental Specialist/CE III
City of Alexandria, Virginia
T&ES Stormwater Management
Office: 703.746.4127
Cell: 703.915.5695
alexandriava.gov

City of Alexandria

Department of Transportation and Environmental Services
Office of Environmental Quality
301 King Street
City Hall, Room 3000
Alexandria, VA 22314
www.alexandriava.gov/Environment

July 15, 2009

Kate Bennett, MS4 Permit Coordinator
Fairfax County Stormwater Planning Division
10255 Fairfax County Parkway
Fairfax, Virginia 22035

DELIVERED VIA EMAIL:

Subject: Notice of Potentially Interconnected Municipal Separate Storm Sewer System (MS4)

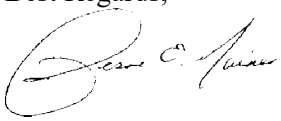
Attention: MS4 Permit Manager

The City of Alexandria operates as a Phase II MS4 community with coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (No. VAR 040057).

Pursuant to Section II.B.3.g of this permit, the City must "Notify, in writing, any downstream regulated MS4 to which the small regulated MS4 is physically interconnected of the small regulated MS4's connection to that system." This letter is to notify you of the potential for interconnections between the City's MS4 and the permitted stormwater system operated by Arlington County. Currently, we have not identified any points where the City's MS4 discharges stormwater into Arlington's regulated MS4; however, it is likely that interconnections exist.

As mentioned in our previous email correspondences and pursuant to Section II.B.3.b, the City is currently working on a mapping effort that will verify the "location of all known outfalls …including those physically interconnected to a regulated MS4…" City GIS Staff will be contacting you very soon to share information in order to identify and map any interconnections that may exist between our regulated stormwater systems. The City is scheduled to provide this map with its Annual Report due no later than October 1, 2010 to DCR.

Best Regards,



Jesse E. Maines
Water Quality Compliance Specialist
703-746-4071
Jesse.maines@alexandriva.gov

Cc: Mary Beth Fletcher, GIS Mapping Center Bureau Chief, mfletcher@arlingtonva.us

Jessica Lassetter

From: Jessica Lassetter
Sent: Thursday, July 30, 2020 9:41 AM
To: Ambrose, Heather
Subject: City of Alexandria Physical Interconnection
Attachments: Fairfax County 071509.pdf

Hi Heather –

I hope you are doing well.

The City of provided a letter on July 15, 2009, to Ms. Kate Bennett, MS4 Permit Coordinator, Fairfax County Stormwater Planning Division, to satisfy the requirements indicated in the MS4 General Permit pertaining to physical interconnections (see attached). This letter referenced a regional stormwater flow map which was produced in September 2010 and included in the City's 2010-2011 MS4 Annual Report. This letter also satisfies the requirements outlined in the 2018-2023 MS4 General Permit, Part I. E.3.a.(5).

Please maintain this email and attached document in your MS4 program files and let me know if you have any questions.

Thank you,

Jessica

Jessica E. B. Lassetter
Senior Environmental Specialist/CE III
City of Alexandria, Virginia
T&ES Stormwater Management
Office: 703.746.4127
Cell: 703.915.5695
alexandriava.gov

City of Alexandria

Department of Transportation and Environmental Services
Stormwater Management Division
2900-B Business Center Drive
Alexandria, VA 22314

May 24, 2018

Brenda Wasler
Environmental Protection Specialist
National Park Service
George Washington Memorial Parkway
700 George Washington Memorial Parkway
McLean, VA 22101

DELIVERED VIA EMAIL: brenda_wasler@nps.gov

Subject: Notice of Interconnected Municipal Separate Storm Sewer System (MS4)

Attention: MS4 Permit Manager

The City of Alexandria operates as a Phase II MS4 community with coverage under the Virginia Stormwater Management Program (VSMP) General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (No. VAR 040057).

Pursuant to Section II.B.3.a of this permit, the City shall "notify in writing the downstream MS4 of any known physical interconnection." This letter is to notify you of the interconnection between the City's MS4 and the permitted stormwater system operated by the National Park Service, George Washington Memorial Parkway.

Thank you for providing your MS4 boundaries in April 2018. We confirmed that the City does operate outfalls that discharge into Jones Point Park in the southeast portion of the City and into the area east of the George Washington Memorial Parkway in the northeast portion of the City. We will review and update the City's MS4 boundaries as needed to ensure consistency between the data sets. After this is completed, the City's boundaries will be sent for your reference.

Sincerely,

Jesse E. Maines
Division Chief
Transportation and Environmental Services
Stormwater Management Division
Jesse.maines@alexandriva.gov

Cc: Hannah Dean via email – Hannah_Dean@nps.gov

Jessica Lassetter

From: Jessica Lassetter
Sent: Thursday, July 30, 2020 9:45 AM
To: robert_mocko@nps.gov
Subject: City of Alexandria Physical Interconnection
Attachments: GW Parkway.pdf

Mr. Mocko,

The City of provided a letter on May 24, 2018, to Ms. Brenda Wasler, to satisfy the requirements indicated in the MS4 General Permit pertaining to physical interconnections (see attached).

Please maintain this email and attached document in your MS4 program files and let me know if you have any questions.

Thank you,

Jessica

Jessica E. B. Lassetter
Senior Environmental Specialist/CE III
City of Alexandria, Virginia
T&ES Stormwater Management
Office: 703.746.4127
Cell: 703.915.5695
alexandriava.gov

City of Alexandria

Department of Transportation and Environmental Services
Office of Environmental Quality
301 King Street
City Hall, Room 3000
Alexandria, VA 22314
www.alexandriava.gov/Environment

July 15, 2009

Roy T. Mills
Location and Design Division
State Stormwater Program Administrator
Virginia Department of Transportation

DELIVERED VIA EMAIL: Roy.Mills@VDOT.Virginia.gov

Subject: Notice of Potentially Interconnected Municipal Separate Storm Sewer System (MS4)

Attention: MS4 Permit Manager

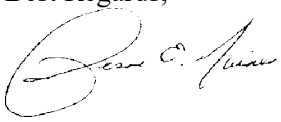
The City of Alexandria operates as a Phase II MS4 community with coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (No. VAR 040057).

Pursuant to Section II.B.3.g of this permit, the City must "Notify, in writing, any downstream regulated MS4 to which the small regulated MS4 is physically interconnected of the small regulated MS4's connection to that system." This letter is to notify you of the potential for interconnections between the City's MS4 and the permitted stormwater system operated by the Virginia Department of Transportation (VDOT). Currently, we have not identified any points where the City's MS4 discharges stormwater into VDOT's regulated MS4; however, it is likely that interconnections exist.

As mentioned in my July 15, 2010 email and pursuant to Section II.B.3.b, the City is currently working on a mapping effort that will verify the "location of all known outfalls …including those physically interconnected to a regulated MS4…" We would like to work together and share information so that each party may have adequate information to identify any interconnections that may exist between our regulated stormwater systems. The City is scheduled to provide this map with its Annual Report due no later than October 1, 2010 to DCR.

Please contact me at your earliest convenience to work together on the mapping effort.

Best Regards,



Jesse E. Maines
Water Quality Compliance Specialist
703-746-4071
Jesse.maines@alexandriva.gov

Cc: Morris Z. Walton via email – Morris.Walton@VDOT.Virginia.gov

Jessica Lassetter

From: Jessica Lassetter
Sent: Thursday, July 30, 2020 3:56 PM
To: alex.foraste@vdot.virginia.gov
Subject: City of Alexandria Physical Interconnection
Attachments: VDOT 071509.pdf

Hi Alex,

The City of provided a letter on July 15, 2009, to Mr. Roy Mills, to satisfy the requirements indicated in the MS4 General Permit pertaining to physical interconnections (see attached). This letter referenced a regional stormwater flow map which was produced in September 2010 and included in the City's 2010-2011 MS4 Annual Report. This letter also satisfies the requirements outlined in the 2018-2023 MS4 General Permit, Part I. E.3.a.(5).

Please maintain this email and attached document in your MS4 program files and let me know if you have any questions.

Thank you,

Jessica

Jessica E. B. Lassetter
Senior Environmental Specialist/CE III
City of Alexandria, Virginia
T&ES Stormwater Management
Office: 703.746.4127
Cell: 703.915.5695
alexandriava.gov

FY2023 Discharges to the MS4

Tracking ID	Method of Discovery	Date Initiated	Date Closed	Problem Address	Incident	Narrative & Result	Reach MS4?
22-00020803	Reported by public	7/18/2022	7/18/2022	4420 VERMONT AVE	Possible Illicit Discharge	Report of milky substance in tributary to Holmes Run. Source determined to be approximately 2 gallons of latex paint dumped in an upstream catchbasin. City SWM staff had PWS staff remove the paint within the catchbasin with a vacuum truck.	Yes
22-00027784	Reported by public	9/19/2022	9/19/2022	4800 MARK CENTER DR	Hydrant Break	Report of fire hydrant break during testing entering MS4 system Winkler Preserve. No death of wildlife was observed in downstream channel.	Yes
9.20.2022	Reported internally	9/20/2022	9/20/2022	1049 W GLEBE RD	Possible Illicit Discharge	Internal report of contracted restaurant cleaning staff causing an illicit discharge in the restaurant parking lot, resulting in a discharge of water, grease, and cleaning fluid necessitating emergency cleanup response. Volume of material estimated to be at least 15 gallons entering the MS4. City T&ES and FMO called City hazmat contractor for immediate cleanup. Restaurant recieved illicit discharge violation and SUP violation from City FMO and P&Z staff and had to cover the cleanup costs.	Yes
10.13.2022	Reported by public	10/13/2022 Follow ups: 10/14/2022, 10/17/2022, 10/18/2022	10/18/2022	3700 COMMONWEALTH AVE	Possible Illicit Discharge	City T&ES, AFD, FMO, and AFD HazMat staff responded to a complaint forwarded by Arlington County Dept. Of Environmental Services concerning a sheen observed at Four Mile Run Park. Substance determined to be approximately 10 gallons of petroleum based product with no found source or responsible party. AFD HazMat deployed absorbent booms at tributary confluence with Four Mile Run. City T&ES staff revisited 3x and had the booms removed. VA DEQ NRO Pollution Response Coordinator visited location with City T&ES staff during follow up visit.	Yes
10.20.2022	Reported internally	10/20/2022	10/20/2023	1501 HANCOCK AVE	Possible Illicit Discharge	Internal report of single family home contractor allowing concrete washwater discharge to the ROW and MS4 system. City T&ES staff issued immediate stop work order and cleanup of the discharge, approximately 25 gallons entered the MS4. FMO issued Notice of Violation for illegal dumping.	Yes
11.03.2022	Reported internally	11/3/2022	11/3/2022	101 N UNION ST	Possible Illicit Discharge	Internal report of illicit power washing activities by restaurant cleaning contractor--aproximately 5 gallons of soapy water discharged to the MS4. City T&ES staff had contractor cease activities and discussed allowable power washing activities per City Ordinances with contractor and restaurant management.	Yes
11.08.2022	Reported internally	11/8/2022	11/8/2022	3801 W BRADDOCK RD	Possible Illicit Discharge	Internal report of discoloration in Taylor Run. City T&ES staff determined the source of discoloration to be dewatering activities at a construction site. Approximately 50 gallons of sediment laden water entered to the MS4. City T&ES staff worked with site operators to have the dewatering tank's sediment removed upon discovery.	Yes

FY2023 Discharges to the MS4

Tracking ID	Method of Discovery	Date Initiated	Date Closed	Problem Address	Incident	Narrative & Result	Reach MS4?
12.02.2022	Reported internally	12/2/2022	12/2/2022	4251 EISENHOWER AVE	Possible Illicit Discharge	Internal report of City leaf tub shredder catching fire, burning through the hydraulic fluid line, and discharging hydraulic fluid to Cameron Run. Approximately 50 gallons entered the MS4. City T&ES staff & City HAZMAT officials deployed absorbent booms to receiving waters of Cameron Run. City T&ES staff reported event to VADEQ NRO. City T&ES staff deployed subcontractor to remove remnant material on the evening of 12/02/2022. City T&ES staff followed up with additional sweeping of remnant mulch debris around adjacent recycling facility.	Yes
23-00001834	Reported by public	1/19/2023	1/20/2023	419 TIMBER BRANCH PWY	Possible Illicit Discharge	Report of discolored water in Timber Branch. City T&ES staff, Fire Marshal's Office, and AFD investigated and determined the course to be dry wall/ paint product from interior renovations at Woodbine Living Center on King St. Product was considered non-hazardous/nontoxic based on field sampling data with an estimated volume of 5-10 gallons. City staff directed management to remove remnant product from the catch basin and to dispose of the product into a mop sink to ensure treatment by sanitary authority.	Yes
23-00010109	Reported by public	4/18/2023	4/18/2023	200 N PICKETT ST	Water Main Break	Report of discoloration in Holmes Run. City T&ES staff determined the source to be a broken water main and associated repairs by VA American water at the intersection of N Paxton St and Taney Avenue.	Yes
23-00011972	Reported by public	5/5/2023	5/5/2023	2726 BRYAN PL	Possible Illicit Discharge	Report of utility contracting crews dumping soapy water into storm drain. City T&ES staff identified crews performing the work, issued a warning for illicit discharge violation, and communicated violation with utility contractor foreman. Approximately 2-3 gallons of soapy water entered the MS4	Yes

FY2023 Illicit Discharge Complaints

Tracking ID	Method of Discovery	Date Initiated	Date Closed	Problem Address	Incident	Narrative & Result	Reach MS4?
22-00020578	Reported by public	7/15/2022 Follow ups: 7/18/2022, 8/8/2022, 8/10/2022	8/10/2022	5750 SANGER AVE	Possible Illicit Discharge	Report of dead fish within Holmes Run. No source could be determined. Subsequent follow ups did not uncover a source.	N/A
22-00020803	Reported by public	7/18/2022	7/18/2022	4420 VERMONT AVE	Possible Illicit Discharge	Report of milky substance in tributary to Holmes Run. Source determined to be approximately 2 gallons of latex paint dumped in an upstream catchbasin. City SWM staff had PWS staff remove the paint within the catchbasin with a vacuum truck.	Yes
22-00022161	Reported by public	8/1/2022	8/1/2022	309 HOLLAND LN	Possible Illicit Discharge	Report of waste water dumped in MS4 system. City staff investigated and found no illicit discharge occurring. Staff observed pumped groundwater entering MS4 system from garage sump pump failure.	N/A
22-00027784	Reported by public	9/19/2022	9/19/2022	4800 MARK CENTER DR	Hydrant Break	Report of fire hydrant break during testing entering MS4 system Winkler Preserve.	Yes
9.20.2022	Reported internally	9/20/2022	9/20/2022	1049 W GLEBE RD	Possible Illicit Discharge	Internal report of contracted restaurant cleaning staff causing an illicit discharge in the restaurant parking lot, resulting in a discharge of water, grease, and cleaning fluid necessitating emergency cleanup response. Volume of material estimated to be at least 15 gallons entering the MS4. City T&ES and FMO called City hazmat contractor for immediate cleanup. Restaurant	Yes
22-00028621	Reported by public	9/26/2022	9/26/2022	515 FORT WILLIAMS PWY	Water Main Break	City T&ES staff received complaint concerning water leaking from ROW median. Staff forwarded complaint to VA American Water for repairs.	No
22-00029632	Reported by public	10/5/2022	10/5/2022	1122 W TAYLOR RUN PWY	Possible Water Main Break	City T&ES staff responded to a complaint concerning a resident reporting the smell of chlorine near an inlet to the MS4 system. T&ES staff visited the location and found no evidence of water quality-related issues.	No
22-00030337	Reported by public	10/12/2022	10/12/2022	2251 EISENHOWER AVE	Possible Illicit Discharge	City T&ES Staff received complaint concerning illicit power washing activities. Staff visited the location and discussed power-washing activities with the community management. Management sent work report photos showing that storm drains were covered during the cleaning process.	No
22-00030345	Reported by public	10/12/2022	10/12/2022	2251 EISENHOWER AVE	Possible Illicit Discharge	City T&ES Staff received complaint concerning illicit power washing activities. Staff visited the location and discussed power-washing activities with the community management. Management sent work report photos showing that storm drains were covered during the cleaning process.	No
10.13.2022	Reported by public	10/13/2022 Follow ups: 10/14/2022, 10/17/2022, 10/18/2022	10/18/2022	3700 COMMONWEALTH AVE	Possible Illicit Discharge	City T&ES, AFD, FMO, and AFD HazMat staff responded to a complaint forwarded by Arlington County Dept. Of Environmental Services concerning a sheen observed at Four Mile Run Park. Substance determined to be approximately 10 gallons of petroleum based product with no found source or responsible party. AFD HazMat deployed absorbent booms at tributary	Yes
10.20.2022	Reported internally	10/20/2022	10/20/2023	1501 HANCOCK AVE	Possible Illicit Discharge	Internal report of single family home contractor allowing concrete washwater discharge to the ROW and MS4 system. City T&ES staff issued immediate stop work order and cleanup of the discharge, approximately 25 gallons entered the MS4. FMO issued Notice of Violation for illegal dumping.	Yes
22-00032019	Reported by public	10/27/2022	10/27/2022	1707 MOUNT VERNON AVE	Possible Illicit Discharge	City T&ES staff received report of automobile shop leaving car parts exposed to rain. City T&ES staff required the business to follow the conditions of the Special Use Permit requiring sheltered/contained storage of parts.	No

FY2023 Illicit Discharge Complaints

Tracking ID	Method of Discovery	Date Initiated	Date Closed	Problem Address	Incident	Narrative & Result	Reach MS4?
11.03.2022	Reported internally	11/3/2022	11/3/2022	101 N UNION ST	Possible Illicit Discharge	Internal report of illicit power washing activities by restaurant cleaning contractor--aproximately 5 gallons of soapy water discharged to the MS4. City T&ES staff had contractor cease activities and discussed allowable power washing activities per City Ordinances with contractor and restaurant management.	Yes
11.08.2022	Reported internally	11/8/2022	11/8/2022	3801 W BRADDOCK RD	Possible Illicit Discharge	Internal report of discoloration in Taylor Run. City T&ES staff determined the source of discoloration to be dewatering activities at a construction site. Approximately 50 gallons of sediment laden water entered to the MS4. City T&ES staff worked with site operators to have the dewatering tank's sediment removed upon discovery.	
12.02.2022	Reported internally	12/2/2022	12/2/2022	4251 EISENHOWER AVE	Possible Illicit Discharge	Internal report of City leaf tub shredder catching fire, burning through the hydraulic fluid line, and discharging hydraulic fluid to Cameron Run. Approximately 50 gallons entered the MS4. City T&ES staff & City HAZMAT officials deployed absorbent booms to receiving waters of Cameron Run. City T&ES staff reported event to VADEQ NRO. City T&ES staff deployed	
22-00035911	Reported by public	12/5/2022	12/6/2022	211 E NELSON AVE	Possible Illicit Discharge	City T&ES staff received report of "bubbling water" emanating from the ROW. City staff visited the location and determined the source of "bubbling water" to be related to a private municipal water service line break. Staff observed private contractors repairing the line during the visit.	No
23-00001265	Reported by public	1/12/2023	1/12/2023	5005 DUKE ST	Possible Illicit Discharge	City AFD, FMO, and T&ES staff investigated report of "oil" in Holmes Run and found the material in question to be non-hazardous in nature.	No
23-00001834	Reported by public	1/19/2023	1/20/2023	419 TIMBER BRANCH PWY	Possible Illicit Discharge	Report of discolored water in Timber Branch. City T&ES staff, Fire Marshal's Office, and AFD investigated and determined the course to be dry wall/ paint product from interior renovations at Woodbine Living Center on King St. Product was considered non-hazardous/nontoxic based on field sampling data with an estimated volume of 5-10 gallons. City staff directed management to	Yes
23-00005191	Reported by public	2/28/2023	2/28/2023	200 CAMERON STATION BLVD	Possible Illicit Discharge	Report of "oily substance" in pond. City staff investigated the Ben Brenman Pond (Cameron Station Pond) and found natural, non-hazardous film accumulated on the surface of the water.	No
23-00006842	Reported by public	3/16/2023	3/17/2023	5300 HOLMES RUN PWY	Possible Illicit Discharge	Report of discoloration in Holmes Run. City staff tracked the source of discoloration to an outfall along Holmes Run Parkway, the material was determined to be naturally occuring and nonhazardous iron-laden precipitation.	N/A
23-00010087	Reported by public	4/18/2023	4/18/2023	103 ORONOCO ST	Water Quality Concern	Report of firefighting activities discharging foam to MS4 system. City AFD staff deployed gutter buddy prevention to eliminate material entrance to MS4. No material entered MS4 system.	No
23-00010109	Reported by public	4/18/2023	4/18/2023	200 N PICKETT ST	Water Main Break	Report of discoloration in Holmes Run. City T&ES staff determined the source to be a broken water main and associated repairs by VA American water at the intersection of N Paxton St and Taney Avenue.	Yes
23-00010784	Reported by public	4/24/2023	4/24/2023	710 DEVON PL	Possible Illicit Discharge	Report of red paint being dumped in CSO inlet. City staff spoke with the resident concerning the "red liquid" dumped into a nearby alley inlet and found that red paint had desiccated and solidified onto the inlet grate. No material entered MS4 system.	No
23-00011923	Reported by public	5/5/2023	5/5/2023	430 TIMBER BRANCH PWY	Sanitary Overflow	Report of murky water within Timber Branch. City T&ES staff located source to be sanitary overflow within channel of Timber Branch. City T&ES crews cleared the blockage, halting the overflow. City T&ES staff posted signs, sent Enews alerts to community warning of SSO. City T&ES staff notified VA DEQ upon discovery.	No

FY2023 Illicit Discharge Complaints

Tracking ID	Method of Discovery	Date Initiated	Date Closed	Problem Address	Incident	Narrative & Result	Reach MS4?
23-00011963	Reported by public	5/5/2023	5/5/2023	430 TIMBER BRANCH PWY	Sanitary Overflow	Report of murky water within Timber Branch. City T&ES staff located source to be sanitary overflow within channel of Timber Branch. City T&ES crews cleared the blockage, halting the overflow. City T&ES staff posted signs, sent Enews alerts to community warning of SSO. City T&ES staff notified VA DEQ upon discovery.	No
23-00011965	Reported by public	5/5/2023	5/5/2023	W BRADDOCK RD & E TIMBER BRANCH PKWY	Sanitary Overflow	Report of murky water within Timber Branch. City T&ES staff located source to be sanitary overflow within channel of Timber Branch. City T&ES crews cleared the blockage, halting the overflow. City T&ES staff posted signs, sent Enews alerts to community warning of SSO. City T&ES staff notified VA DEQ upon discovery.	No
23-00011968	Reported by public	5/5/2023	5/5/2023	2901 POTOMAC AVE	Water Quality Concern	Report of iron coloration in outfall channel to Potomac River. City T&ES staff discussed known iron-concentrated groundwater emanating from a sub garage in Potomac Yard into the Potomac River with the resident.	N/A
23-00011972	Reported by public	5/5/2023	5/5/2023	2726 BRYAN PL	Possible Illicit Discharge	Report of utility contracting crews dumping soapy water into storm drain. City T&ES staff identified crews performing the work, issued a warning for illicit discharge violation, and communicated violation with utility contractor foreman. Approximately 2-3 gallons of soapy water entered the MS4	Yes
23-00012138	Reported by public	5/8/2023	5/8/2023	0 CAMERON ST	Possible Illicit Discharge	Report of commercial boat dumping grease into City sanitary system. City T&ES staff discussed proper disposal of grease waste with boat captain and referred captain to City T&ES Sanitary staff for further guidance on disposal requirements.	No
23-00012196	Reported by public	5/8/2023	5/8/2023	29 W GLENDALE AVE	Possible Illicit Discharge	Report of construction crew tapping into groundwater source while performing geothermal work and causing a sediment laden discharge to MS4. Drilling company called in to correct issue.	Yes
23-00012436	Reported by public	5/10/2023	5/10/2023	5300 HOLMES RUN PWY	Water Main Break	Report of discoloration in Holmes Run. City T&ES staff determined the source to be a broken water main and associated repairs by VA American water at the intersection of Duke St and N Jordan St.	Yes
23-00015164	Reported by public	6/5/2023	6/5/2023	725 E TIMBER BRANCH PWY	Water Quality Concern	Resident question concerning previous months sanitary sewage overflow. City T&ES staff spoke with the resident and discussed whether or not Timber Branch is "safe" to recreate in.	No

FY2023 Outfall Inspections

Outfall ID	Outfall Location	HUC	DATE INSPECTED	FLOW DESCRIPTION	WERE FIELD PARAMETERS MEASURED	PHYSICAL INDICATORS	Illicit Discharge Characterization	Follow Up	Observations & Comments
000120IO	Wheeler and Early St	PL26	4/20/2023	No Flow – No Maintenance Required	No	No	None	No	
000133IO	4000 Wheeler Ave	PL26	4/26/2023	Flow – No Maintenance Required	No	No	None	No	
000151IO	4501 Wheeler Ave (Tarelton Park)	PL26	4/26/2023	No Flow – No Maintenance Required	No	No	None	No	
000213IO	628 South Pickett St	PL26	5/11/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000214IO	600 South Pickett St, East Parking Lot	PL26	5/11/2023	Flow – No Maintenance Required	No	No	None	No	
000215IO	600 South Pickett St, Armistead Park East	PL26	5/11/2023	No Flow – No Maintenance Required	No	No	None	No	
000216IO	600 South Pickett	PL26	5/11/2023	Flow – No Maintenance Required	No	No	None	No	
000217IO	600 South Pickett	PL26	5/11/2023	No Flow – No Maintenance Required	No	Yes	None	No	Minor green benthic growth observed.
000218IO	SE Side Van Dorn Bridge	PL26	5/11/2023	No Flow – No Maintenance Required	No	No	None	No	
000219IO	NE Side of Van Dorn Bridge	PL26	5/11/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000220IO	Courtney Ave VA Paving	PL26	5/11/2023	Flow – No Maintenance Required	No	Yes	Unlikely	No	Minor green benthic growth observed. Sample slightly yellow. No parameters exceeded.
000221IO	500 Cameron Station Blvd	PL26	5/11/2023	Flow – No Maintenance Required	No	No	None	No	
000244IO	4001 Eisenhower Ave, South of Parking Lot	PL26	4/26/2023	No Flow – No Maintenance Required	No	No	None	No	
000247IO	Cameron Across from Townes at Cameron Park Entr	PL26	4/26/2023	Flow – No Maintenance Required	No	No	None	No	
000249IO	4001 Eisenhower Ave, South of	PL26	5/11/2023	Flow – No Maintenance Required	No	No	None	No	
000250IO	4001 Eisenhower Ave, South of	PL26	5/11/2023	No Flow – No Maintenance Required	No	No	None	No	
000259IO	Intersect of Eisenhower Ave & Bluestone Rd, SE of	PL26	4/26/2023	No Flow – No Maintenance Required	No	No	None	No	
000279IO	500 South Pickett St	PL26	5/11/2023	No Flow – No Maintenance Required	Yes	No	None	No	Minor benthic growth observed. Unable to sample due to barbed wire fence around outfall.
000414IO	3918 Bruce St, North of Parking Lot	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	
000415IO	3700 Commonwealth FMR Park, Behind 3917 Bruce St	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	
000417IO	511 Four Mile Run Rd, Behind ParkVue fka Portals	PL25	4/25/2023	Flow – No Maintenance Required	Yes	No	None	No	Flapgate present over outfall opening, but flow trickling out. No Parameters Exceeded
000418IO	511 Mt Vernon Ave	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	Flapgate present over outfall opening.
000419IO	601 Four Mile Run Rd, NE of Building	PL25	4/25/2023	Flow – No Maintenance Required	No	No	None	No	Sediment needs to be removed from outfall. Overgrown with plants and covered by chainlink mesh.
000420IO	601 Four Mile Run Rd, NW of Building	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	Flapgate present over outfall opening.
000423IO	19 Edison St, FMR Park	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	
000426IO	3700 Commonwealth Ave, FMR Park, Tributary	PL25	4/26/2023	No Flow – No Maintenance Required	No	No	None	No	Flapgater present over outfall opening. Partially submerged in water.
000431IO	19 Edison St, FMR Park	PL25	4/26/2023	Flow – No Maintenance Required	Yes	Yes	None	No	
000432IO	19 Edison St, FMR Park	PL25	4/26/2023	Flow – No Maintenance Required	Yes	Yes	None	No	
000454IO	1225 Martha Custis Dr, NE Corner of Parking Lot	PL25	4/25/2023	Not Located or Accessed	Yes	Yes	None	Yes	Elevated ammonia on 4/25 AND 4/26. Follow up on 5/16/2023 found that ammonia was within allowable range. No follow up needed following 5/16/2023 sampling
000456IO	801 Four Mile Run Rd, Behind Pool	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	Partially submerged in water.
000457IO	891 W. Glebe Rd, North of Parking Lot	PL25	4/25/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000458IO	891 W. Glebe Rd, NE Corner of Parking Lot	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	Cover present over outfall opening.
000459IO	891 W. Glebe Rd, NW Corner of Parking Lot	PL25	4/25/2023	Flow – No Maintenance Required	No	No	None	No	
000461IO	1200 W. Glebe Rd., NE Corner of Parking Lot	PL25	4/25/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000464IO	1225 Martha Custis Dr, NW corner of PL	PL25	4/25/2023	No Flow – No Maintenance Required	No	No	None	No	
000465IO	1225 Martha Custis Dr, North of Building	PL25	4/25/2023	No Flow – No Maintenance Required	No	Yes	None	No	Minor green benthic growth observed. No Parameters Exceeded
000507IO	South Side of Braddock, Timber Branch Piped	PL26	4/19/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000508IO	EAST SIDE OF WINGWALL FOR PIPED TIMBER BRANCH	PL26	4/19/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000510IO	W Timber Branch & Quincy St.	PL26	4/19/2023	Flow – No Maintenance Required	No	Yes	None	No	Minor green benthic growth on outfall. No parameters exceeded.
000511IO	808 W TIMBER BRANCH PKWY	PL26	4/19/2023	Flow – No Maintenance Required	Yes	Yes	None	No	Green benthic growth observed. No parameters Exceeded
000512IO	710 PARKWAY TR	PL26	4/19/2023	Flow – No Maintenance Required	Yes	No	None	No	No Parameters Exceeded
000513IO	718 W TIMBER BRANCH PKWY	PL26	4/19/2023	No Flow – No Maintenance Required	No	No	None	No	Minor outfall spalling observed.
000514IO	Timber Branch Dr & E Timber Branch Pkwy	PL26	4/19/2023	Flow – No Maintenance Required	Yes	No	None	No	
000516IO	Timber Branch Dr & E Timber Branch Pkwy	PL26	4/19/2023	Flow – No Maintenance Required	No	No	None	No	
000517IO	700 E Timber Branch Pkwy	PL26	4/19/2023	Not Located or Accessed	Yes	No	None	No	No Parameters Exceeded

FY2023 Outfall Inspections

Outfall ID	Outfall Location	HUC	DATE INSPECTED	FLOW DESCRIPTION	WERE FIELD PARAMETERS MEASURED	PHYSICAL INDICATORS	Illicit Discharge Characterization	Follow Up	Observations & Comments
000518IO	6229 OAKLEY PL	PL26	4/19/2023	No Flow – No Maintenance Required	No	No	None	No	
000521IO	690 W TIMBER BRANCH PKWY	PL26	4/19/2023	Flow – No Maintenance Required	Yes	Yes	None	No	No Parameters Exceeded
000522IO	801 E TIMBER BRANCH PKWY	PL26	4/19/2023	Flow – No Maintenance Required	Yes	Yes	None	No	Minor green benthic growth observed. No Parameters Exceeded
000528IO	490 W Timber Branch Pkwy	PL26	4/19/2023	No Flow – No Maintenance Required	No	No	None	No	
000535IO	E Timber Branch Pkwy and W. Alexandria Ave, East	PL26	4/19/2023	No Flow – No Maintenance Required	No	Yes	None	No	
000610IO	4000 Wheeler Ave	PL26	4/26/2026	Flow – No Maintenance Required	No	No	None	No	

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Case Number	Main Address	Case Type	Assigned To	Case Status	Open Date
FIR2019-00172	612 S PICKETT ST C	Fire Marshal Complaints		Closed - Resolved	7/2/2019
FIR2019-00173	5405 DUKE ST	Fire Marshal Complaints		Closed - Resolved	7/2/2019
FIR2019-00174	602 NOTABENE DR	Fire Marshal Complaints		Closed - Resolved	7/2/2019
FIR2019-00175	6101 EDSALL RD 303	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00176	5219 HOLMES RUN PKWY	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00177	5951 STEVENSON AVE E	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00178	5453 SHEFFIELD CT	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00179	5733 LEVERETT CT	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00180	5797 RAYBURN AVE	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00181	5802 SANGER AVE	Fire Marshal Complaints		Closed - Resolved	7/5/2019
FIR2019-00182	5611 DERBY CT	Fire Marshal Complaints		Closed - Resolved	7/5/2019

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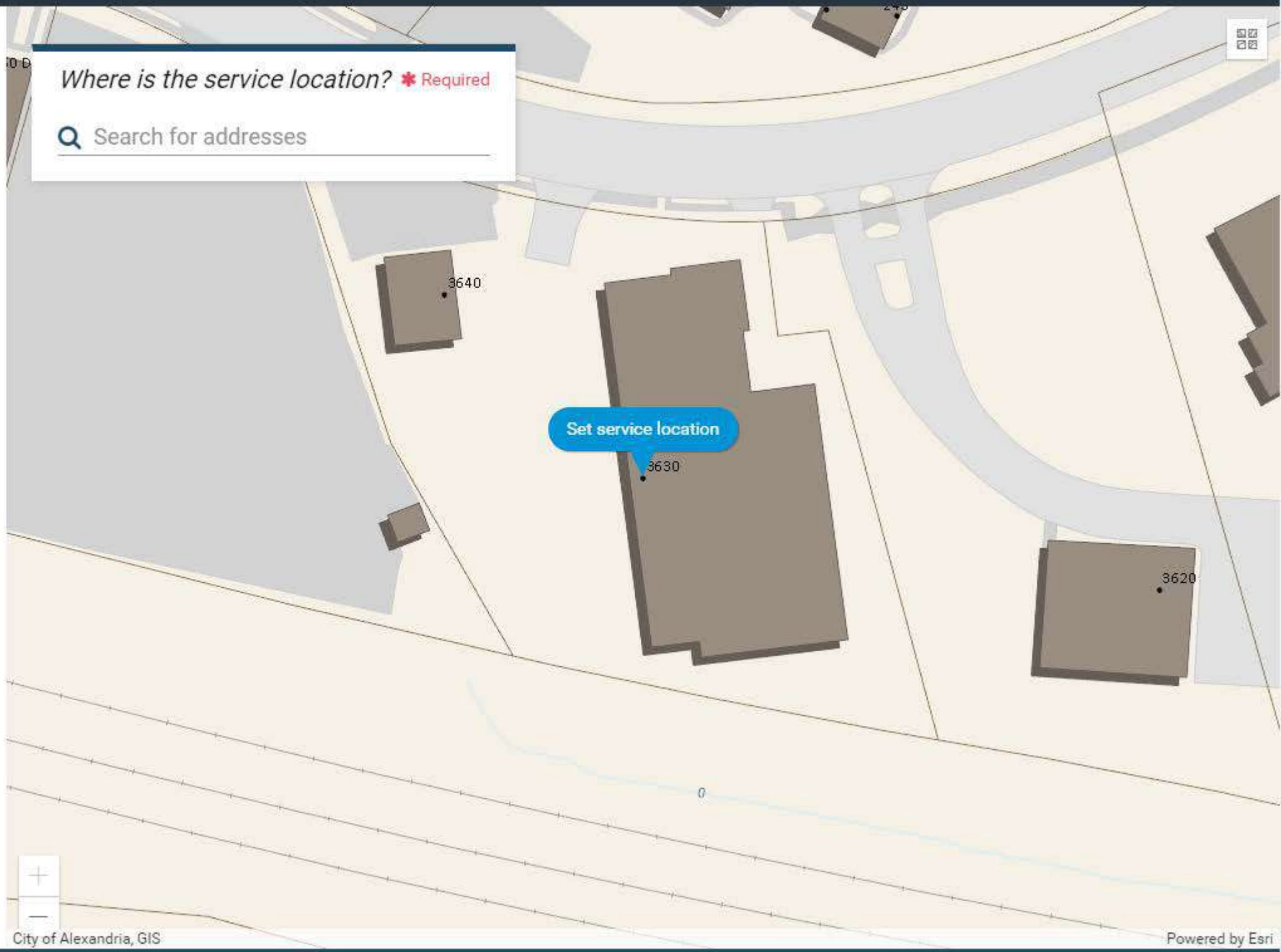

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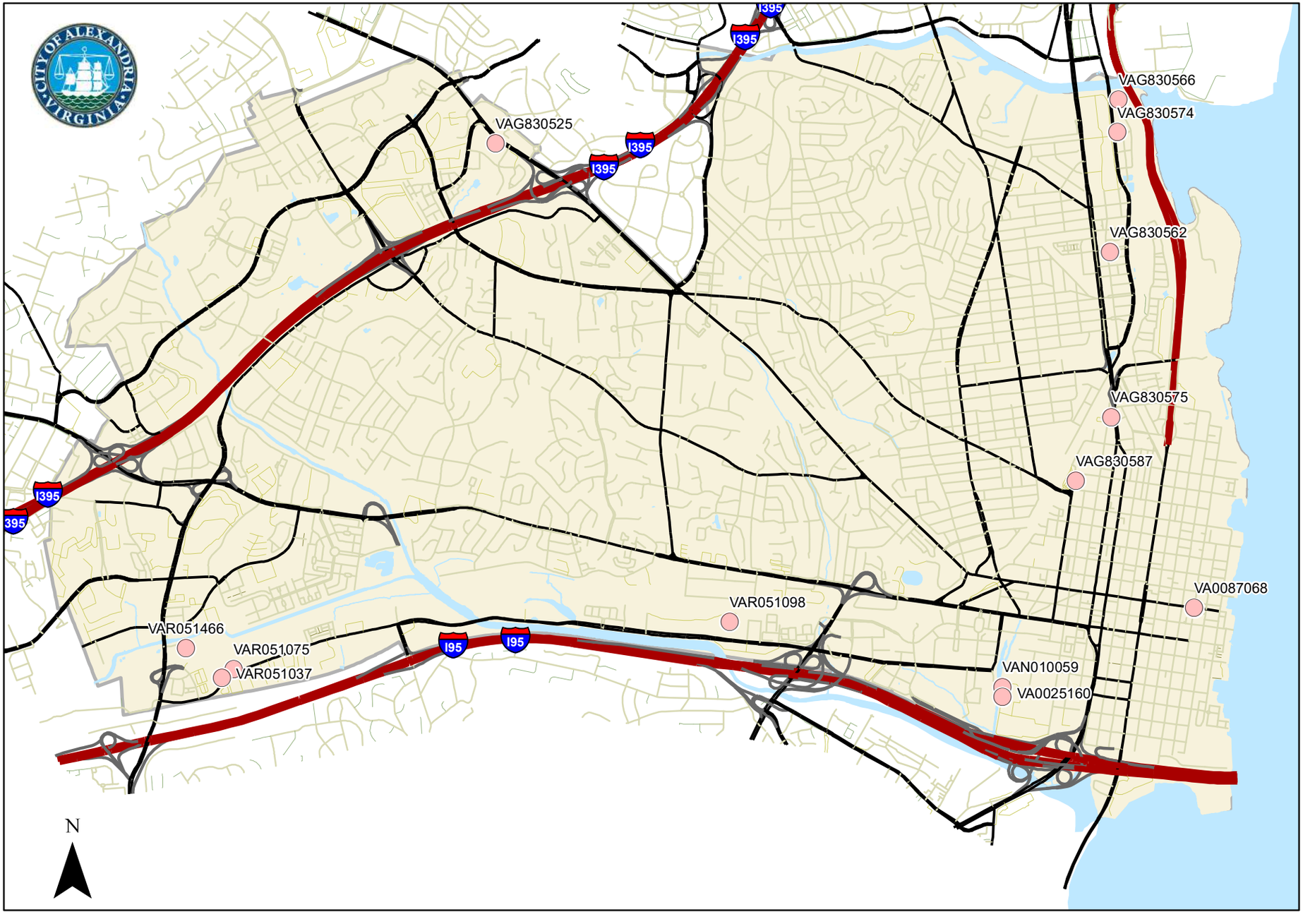
Sr	Date Initiated	Description	Priority	Category	Submit To	Dispatch To	Addr
206645	2020-09-24 11:19 AM	TRAFFIC SIGNS	3	TES_SIGNS	TRFSIGNS TOP TES,		4550 N PEGRAM ST
206645	2020-09-24 11:17 AM	TRAFFIC SIGNS	3	TES_SIGNS	TRFSIGNS TOP TES,		1235 N PICKETT ST
206642	2020-09-24 10:09 AM	SEWERS	2	TES_SEWERS	SEWERS PWS TES,		2 B FORREST ST
206640	2020-09-24 9:29 AM	LOW HANGING WIRE	1	TES_ROW	TES, GROUP LOW WIRE		326 E MASON AVE
206639	2020-09-24 9:17 AM	STREET CLEANING	3	TES_STCLEAN	STRTMAINT PWS TES		1600 IVANHOE CT
206638	2020-09-24 8:49 AM	PARKING METERS	2	TES_METERS	METERS TOP TES,		301 KING ST
206637	2020-09-24 8:35 AM	TREE REQUEST / PROBLEM	3	RPCA_TREES	RPCA, TREES		929 N LINDSAY PL
206636	2020-09-23 10:31 PM	TREE REQUEST / PROBLEM	3	RPCA_TREES	RPCA, TREES		922 SLATERS LN
206635	2020-09-23 8:53 PM	TREE REQUEST / PROBLEM	3	RPCA_TREES	RPCA, TREES		109 W MASONIC VIEW
206634	2020-09-23 6:27 PM	STREETS POTHOLES	2	TES_POTHOLES	STRPOTHOLE PWS TES,		220 CENTURY PL
206633	2020-09-23 5:33 PM	SEWERS	2	TES_SEWERS	SEWERS PWS TES,	Pelitteri, Gavin	707 E TIMBER BRANC
206629	2020-09-23 4:59 PM	STREET MAINTENANCE	2	TES_STMAINT	STRTMAINT PWS TES		809 CAMERON ST
206628	2020-09-23 4:33 PM	STREET CLEANING	3	TES_STCLEAN	STRTMAINT PWS TES		1218 W ABINGDON DI
206627	2020-09-23 4:17 PM	SEWERS	2	TES_SEWERS	SEWERS PWS TES,		24 E LINDEN ST
206625	2020-09-23 3:17 PM	TREE REQUEST / PROBLEM	3	RPCA_TREES	RPCA, TREES		901 SECOND ST
206624	2020-09-23 2:57 PM	TREE REQUEST / PROBLEM	3	RPCA_TREES	RPCA, TREES		611 S COLUMBUS ST
206623	2020-09-23 2:53 PM	TREE REQUEST / PROBLEM	3	RPCA_TREES	RPCA, TREES		611 S COLUMBUS ST

Appendix C

City of Alexandria Permitted Discharges MS4 Reporting Year 2022-2023



VPDES Permits PY 2022 – 2023

INDIVIDUAL PERMITS

Classification	Type	Facility Name	Permit No	Expiration Date	Location Address 1	Location City	Location State
Active	Individual Permits	Alexandria Renew Enterprises WWTP	VA0025160	6/30/2026	1500 Eisenhower Ave	Alexandria	VA
Active	Individual Permits	Alexandria Combined Sewer System	VA0087068	8/31/2023	Various locations	Alexandria	VA

GENERAL PERMITS

Classification	Type	Facility	Permit No	Expiration Date	Location Address 1	Location City	Location State
~~Active~~	~~Vehicle Wash and Laundry GP~~	~~Enterprise Rent A Car - Alexandria~~	~~VAG750124~~	~~10/15/2022~~	~~4213 Duke St~~	~~Alexandria~~	~~VA~~
Active	Stormwater Industrial GP	United Parcel Service - Alexandria	VAR051037	6/30/2024	5601 Eisenhower Ave	Alexandria	VA
Active	Stormwater Industrial GP	Covanta Alexandria Arlington Incorporated	VAR051075	6/30/2024	5301 Eisenhower Ave	Alexandria	VA
Active	Stormwater Industrial GP	WMATA - Alexandria Metro Rail Yard	VAR051098	6/30/2024	3101 Eisenhower Ave	Alexandria	VA
Active	Stormwater Industrial GP	Virginia Paving Company - Alexandria Plant	VAR051466	6/30/2024	5601 Courtney Ave	Alexandria	VA
Active	Nutrient Trading GP	Alexandria Renew Enterprises WWTP	VAN010059	12/31/2026	1500 Eisenhower Ave	Alexandria	VA
Active	Nutrient Trading GP	Virginia American Water Prince William - Aggregate	VAN010058	12/31/2026	2223 Duke St	Alexandria	VA
~~Active~~	~~Petroleum Discharge GP~~	~~Hoffman Town Centre Blocks 4 and 5~~	~~VAG830541~~	~~2/25/2023~~	~~2410 and 2460 Mill Rd~~	~~Alexandria~~	~~VA~~
~~Active~~	~~Petroleum Discharge GP~~	~~Potomac Yards Landbay H/I~~	~~VAG830562~~	~~2/25/2023~~	~~2551 Main Line Blvd~~	~~Alexandria~~	~~VA~~
Active	Petroleum Discharge GP	King Street Liberty	VAG830525	2/29/2028	4368 King St	Alexandria	VA
~~Active~~	~~Petroleum Discharge GP~~	~~Potomac Yards Land Bay F East Infrastructure~~	~~VAG830566~~	~~2/25/2023~~	~~3801 Potomac Ave~~	~~Alexandria~~	~~VA~~
~~Active~~	~~Petroleum Discharge GP~~	~~1300 King Street~~	~~VAG830565~~	~~2/25/2023~~	~~1300 King St~~	~~Alexandria~~	~~VA~~
Active	Petroleum Discharge GP	Braddock West - Alexandria	VAG830587	2/25/2028	727 N West St	Alexandria	VA

Strikethrough = No longer indicated in the permit table; Red font = New permits for 2022-2023

Source Information: https://www.deq.virginia.gov/permits/water/surface-waters-vpdes

Special Use Permit #2022-00049
7 King Street and 101, 105 and 107 North Union Street
Vola's Dockside Grill

Application	**General Data**	
Request: Public Hearing and consideration of a request for a Special Use Permit for (A) an expansion of the indoor dining area; (B) outdoor dining seats over 40; and (C) a temporary trailer (amending SUP #2017-00039)	**Planning Commission Hearing:**	September 6. 2022
	City Council Hearing:	September 17, 2022
Address: 7 King Street and 101, 105 and 107 North Union Street	**Zone:**	CD/Commercial Downtown, KR/ King Street urban retail and WPR/Waterfront Park and Recreation Zones
Applicant: ARP Waterfront, LLC	**Small Area Plan:**	Old Town Small Area Plan Waterfront Small Area Plan

Staff Recommendation: APPROVAL subject to compliance with all applicable codes and ordinances and the recommended permit conditions found in Section III of this report.
Staff Reviewer: Ann Horowitz, ann.horowitz@alexandriava.gov

CITY COUNCIL ACTION, SEPTEMBER 17, 2022: City Council approved the Planning Commission recommendation.

PLANNING COMMISSION ACTION, SEPTEMBER 6, 2022: On a motion by Vice Chair McMahon, seconded by Commissioner Lyle, the Planning Commission voted to recommend approval of the special use permit request, subject to all conditions, code requirements and ordinances and to the amendment of several ordinances. The motion carried on a vote of 6-0, with Commissioner Manor recusing himself.

Reason: The Planning Commission partially agreed with the staff analysis as it related to conditions and amended several as noted in the staff report.

Discussion:
Chair Macek explained that the amendments were intended to simplify conditions and ensure waterfront vibrancy where possible. The referencing of the noise ordinance in only one condition and having that standard apply to the inside of the Torpedo Factory Art Center, was one example.

Commissioner Lyle concurred with the chair's comments, adding that negative impacts would not be generated as residential uses are not nearby. She recommended accepting the staff amended conditions dated September 2 and as edited by Chair Macek.

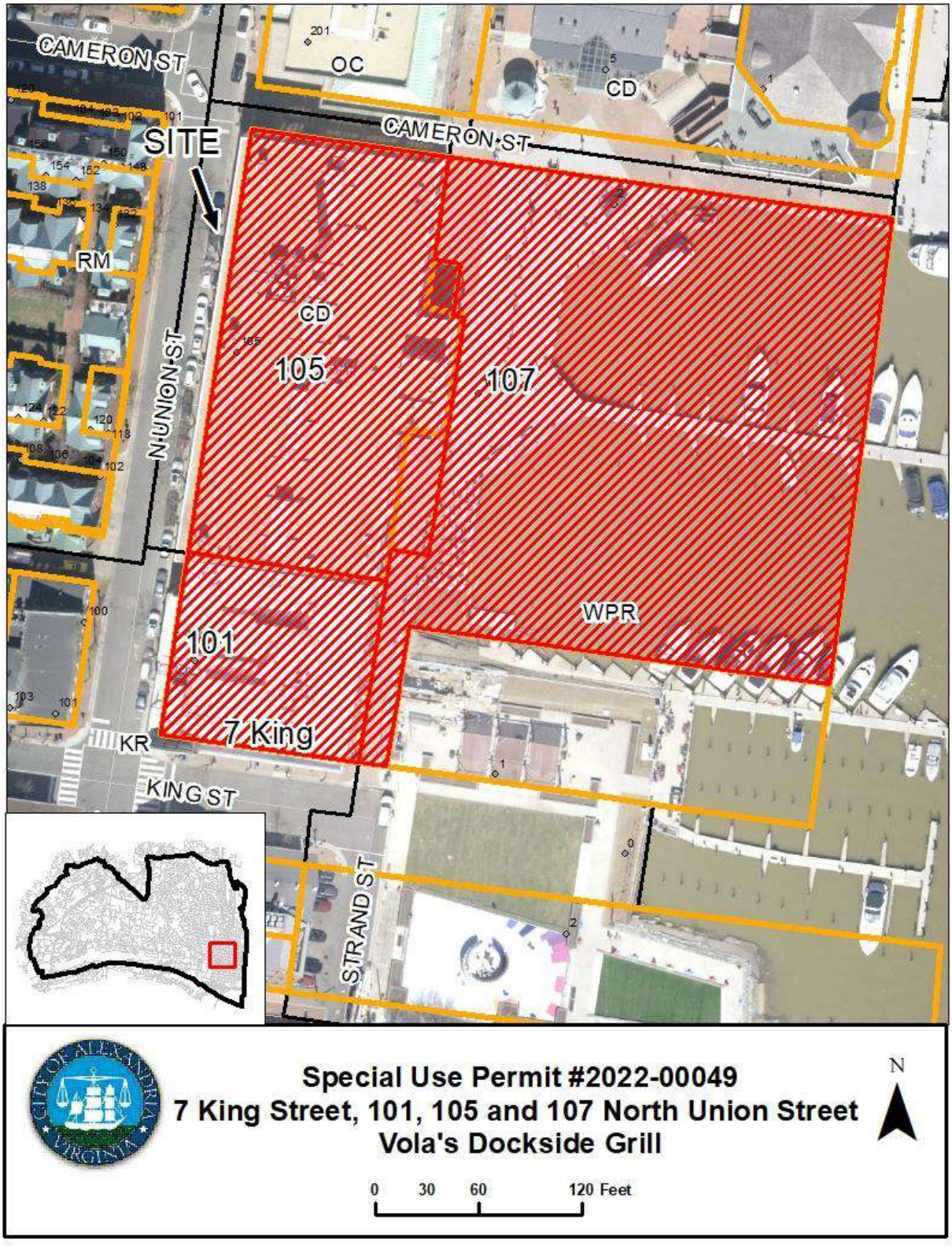
Commissioner Brown expressed support for the request and recognized that the expansion of Vola's was a welcome sign of post-pandemic business success.

Vice Chair McMahon observed that the amended conditions signify a way to improve condition sets and hoped to see this continue.

Speaker:

M. Catherine Puskar, applicant's attorney, spoke in support of the application and the related condition amendments.

PROJECT LOCATION MAP



I. REPORT SUMMARY

The applicant, ARP Waterfront, LLC requests to amend Special Use Permit (SUP) #2017-00039 for Vola's Dockside Grill and Hi-Tide Lounge, an existing restaurant with outdoor dining. The amendment request includes the addition of indoor dining at adjacent tenant spaces and to incorporate the outdoor dining and temporary trailer uses at the Riverside Taco site, formerly a food and crafts market use operating under SUP #2019-00118. Staff recommends approval of the applicant's request subject to the conditions outlined in this report.

SITE DESCRIPTION

The subject sites for the existing and proposed uses occupy four lots of record – 7 King Street and 101, 105 and 107 King Street. The restaurant's existing indoor dining and kitchen are located at 101 North Union Street and 7 King Street (parcel: 101 North Union Street) and the existing outdoor dining is located at 107 North Union Street. The parcel at 101 North Union Street has approximately 110 feet of frontage along King Street and 110 feet of frontage along North Union Street for a total parcel area of approximately 12,100 square feet and is developed with a three-story brick commercial building. The restaurant occupies the south side of the first floor with approximately 110 square feet of frontage along King Street and approximately 41 feet of frontage along North Union Street for an area of 4,530 square feet. The restaurant's outdoor dining area is located on the City Marina, referenced as the 107 North Union Street parcel. The parcel consists of the dock and pier area between the Potomac River and the Waterfront Plaza. The total parcel is approximately 65,000 square feet in area with approximately 300 feet of frontage along the Potomac River. The restaurant's existing dockside outdoor dining occupies 1,255 square feet of area along the southern portion of the City Marina land with approximately 61 feet of frontage along the Potomac River (Figure 1).

Figure 1: *Location and images of existing the Vola's Dockside Grill operations at 7 King Street and 101 North Union Street outlined in blue*

The proposed indoor and outdoor dining and temporary trailer that would be added to the Vola's SUP in this request are located at 101, 105 and 107 North Union Street. Two indoor dining areas would be located in two first floor tenant spaces at 101 North Union Street, occupying the north side of the building and separated by a public pedestrian breezeway from Vola's restaurant and the Hi-Tide Lounge. One tenant space is 150 square feet with 20 feet of frontage on North Union Street and 32 feet of frontage along the breezeway. The second tenant space is 98 square feet and fronts the breezeway on three sides for approximately 60 feet. The outdoor dining area containing

a trailer is located at 105 and 107 North Union Street on a 1,746 square foot area along the northeasternmost corner outside of the Torpedo Factory Arts Center. This City-owned area has been designated for private use through a long-term lease agreement with the City. The entire parcel at 105 North Union Street has approximately 245 feet of frontage on North Union Street, a depth of approximately 135 feet and a total lot area of 31,904 square feet. The 105 North Union Street parcel includes the three-story Torpedo Factory Arts Center (TFAC). A portion of the TFAC building shares a property line with Riverside Taco. (Figure 2)

Figure 2: *Location and images of proposed additions to Vola's Dockside Grill operations at 7 King Street and 101 North Union Street outlined in red*

The Torpedo Factory Art Center abuts the subject lots to the north and west and the City Marina and Potomac River are located to the east. A dense mix of restaurants, retail and office uses surround the lots to the west, north and south.

USE BACKGROUND

Vola's Dockside Grill at 7 King and 101 and 107 North Union Streets

The site where Vola's now occupies was first approved by City Council in May 2013 through SUP #2013-0009 for a 3,950 square foot, 150-seat restaurant and accessory market known as Waterfront Market. Of those 150 approved seats, 76 seats were located indoors, 54 seats were located outdoors on a portion of the Torpedo Factory and City Marina. To provide for dining on the City Marina, the Planning Commission approved a Section 9.06 (#2013-0002) request for use of a portion of the City Marina for outdoor dining. The City established a lease agreement for use of this space with the applicant at that time.

In March 2015, City Council approved an increase in restaurant seats through SUP #2014-0128 which allowed Waterfront Market to increase to 222 total seats and 4,530 square feet for the Hi-Tide Lounge (135 indoor seats, 67 outdoor City Marina land).

The Waterfront Market operated until the winter of 2015 when it briefly closed prior to the launch of a revised restaurant concept, renamed as Vola's Dockside Grill and Hi-Tide Lounge. Staff administratively approved SUP #2015-0132 in January 2016 which granted a change of ownership from Waterfront Market, LLC to Alexandria Restaurant Partners, LLC and a minor amendment to increase the hours of operation for indoor dining from 11 p.m. to 12 p.m., Sunday through Thursday. Most recently, City Council approved SUP #2017-0002 in March 2017 which approved a change of ownership from Alexandria Restaurant Partners, LLC, to ARP Waterfront, LLC, and an increase in dining, expanding the outdoor dockside dining from 67 to 114 outdoor seats. As part of the approval, the outdoor dining area increased to 1,225 square feet of City Marina land from the previously approved 883 square feet. Later, City Council approved SUP #2017-00039 in June 2017 to add 31 seats and indoor limited live entertainment.

A recent inspection found the restaurant and outdoor seating uses compliant with all SUP conditions.

Riverside Taco at 105 and 107 North Union Street

Several decades ago, a lease agreement was established with the City for the private commercial use of the area where Riverside Taco is located and the area below the Chart House to promote increased activity and entertainment opportunities in the plaza. For many years, individual vendors and the TFAC leased the area. Additionally, the City was permitted to host community events at this location.

City Council approved Special Use Permit #2018-0111 on February 23, 2019 for ARP Waterfront, LLC to operate the existing outdoor food and crafts market, featuring TFAC artists, with a food truck operating on private property, and outdoor dining seats for food truck patrons and the public.

City Council amended the SUP through SUP #2019-00118 to allow for amplified background music projected through outdoor speakers, which are not attached to the TFAC, and live acoustic unamplified music during the hours of operation except with RPCA special events approval.

As the use evolved, ARP Waterfront, LLC, operating both Vola's and Riverside Taco, found that the area north of the TFAC was better suited to accommodate Vola's growing demand for outdoor dining given the pandemic impacts after March 2020. In addition, it was difficult to consistently book artists to fulfill the outdoor market component of the business concept. To reflect the actual use of the Riverside Taco area, the applicant submitted this SUP application for an amendment to to Vola's SUP. SUP approval of this request would render the Riverside Taco SUP inactive.

The SUP inspection for compliance with existing conditions identified that all conditions were met with the exception Condition #15 for the placement of over six-foot light posts and umbrellas placed within 7'6" of the TFAC façade. The applicant immediately remedied the issue.

PROPOSAL

The applicant proposes to amend its SUP for Vola's Dockside Grill for an increase in a 5.5% increase in indoor seating area at two adjacent 101 North Union Street tenant spaces. The reprogramming of its Riverside Taco outdoor food and craft market use at 105 and 107 North Union Street accounts for the requested amendment to increase outdoor dining seats and for a temporary trailer, which will be used as a food service station.

Under other City permits, the applicant has the option to separately apply for outdoor dining seats on the sidewalk and in an on-street parklet s along the unit block of King Street.

A summary of existing and proposed aspects of the operation is:

Hours of operation:

Indoor dining	7 a.m. – 12 a.m., Sunday – Thursday
	7 a.m. – 1 a.m., Friday – Saturday
Outdoor dockside dining	7 a.m. – 11 p.m., daily
Outdoor trailer area dining	10 a.m. – 11 p.m., daily

Seats and square footage:

Location	seats	square footage
Indoor dining (existing)	127	4,530
Indoor dining (proposed)	**78**	**248**
Outdoor dockside dining (existing)	68	1,255
Outdoor trailer area dining (existing under SUP #2010-00118 and proposed for SUP amendment)	**90**	
	363 total seats	

Type of Service:
Table and carry-out

Alcohol Sales:
On-premises and off-premises

Delivery:
Third-party delivery service

Live Entertainment (existing):

Indoors	Limited live entertainment
Outdoor dockside:	None
Outdoor trailer area:	Unamplified acoustic limited live entertainment between the hours of 6 p.m. to 11 pm, Monday through Friday and until 11 p.m. on Saturdays, Sundays and holidays; amplified performances are permitted with RPCA permit; speakers may be used that are not attached to the building.

LEASE AGREEMENT

The applicant is required to maintain an active lease for use of the City's property at the City Marina for the outdoor dockside dining (Condition #30). City Council approved the most current lease on March 10, 2020. The annual lease is based on the market value of commercial floor space with an adjustment to reflect the outdoor location. Under the lease agreement, the City retains the land ownership and the applicant has permission to use the outdoor space under the terms and conditions of its SUP approval. The lease term is set for a period of three years and will expire on March 31, 2023. The applicant may request lease renewals for City Council consideration.

PARKING

The restaurant is located within the City's Central Business District (CBD) and Section 8-300 (B) of the City's Zoning Ordinance exempts the parking requirements for restaurants and outdoor dining in the CBD. As such, the restaurant is not required to provide any off-street parking.

ZONING/ MASTER PLAN DESIGNATION

Multiple zones apply to the restaurant, outdoor dining and temporary trailer operation areas. The restaurant's indoor dining use at 7 King and 101 North Union Street is in the KR zone; outdoor dockside dining at 107 North Union Street is in the WPR zone; and the outdoor dining in the temporary trailer area is in the CD and WPR zones. Although Section 11-511(A)(2)(b)(i) allows administrative SUP minor amendment approval for restaurants with an indoor seating expansion of up to 33 % of floor area, the added indoor dining request was incorporated with the SUP hearing review for outdoor dining seats exceeding 40 and for a temporary trailer, as required in Sections 11-513(M)(3) and Section 7-1101(C), respectively.

The subject lots are located within the Waterfront Small Area Plan and the Old Town Small Area Plan. The Waterfront Small Area Plan identifies the area as one that encourages a range of commercial uses and public events to support an active pedestrian experience. The Old Town Small Area Plan similarly designates the area for mixed-uses along the waterfront area.

The restaurant and outdoor dining uses are also located in the City's Old and Historic District. Any exterior work or signage will require review and approval by the Board of Architectural Review (BAR).

II. STAFF ANALYSIS

Staff recommends approval of the applicant's SUP amendment request to add indoor dining seats at 101 North Union Street and to wrap in the Riverside Taco operation into Vola's Dockside Grill with the addition of 90 outdoor seats and the use of a temporary trailer for two years with the option to extend for one year (Condition #47). Together, the applicant's two businesses have contributed to the vitality of the City Marina since 2018 and the request to combine them under one SUP with added indoor seats not only maintains this momentum but also would be heightened with the addition of conditions to include periodic Torpedo Factory Arts Center public events programming and public seating in the temporary trailer outdoor dining area when the restaurant is not in operation.

Conditions from the previous Vola's Dockside Grill 2017 SUP appear as the first 36 conditions. Relevant conditions are carried forward from the Riverside Taco's SUP #2018-00111 and SUP #2019-00118 and are included after Condition #37. Many conditions for Vola's Dockside Grill have been amended or deleted to reflect present-day condition language and requirements for restaurants, which resulted from text amendments approved in September 2020 to "right-size" business regulations with actual impacts. For example, the number of indoor seats is no longer determined in the SUP but by the statewide uniform building code as noted in Condition #2 and hours of indoor dining operation are left to the discretion of the business operator, as detailed in Condition #6. The loading zone area has been amended in Condition #3 given a recent Traffic and Parking Board ruling to add a loading zone on the 100 block of North Union Street, a location more convenient to Vola's than Fayette Alley. Reference to the lease agreement update, that City Council approved on March 10, 2020, for use of the waterfront dock until March 31, 2023 is noted in Condition 30.

Generally, the added conditions that appear anew in this SUP report ensure the year-round, active use and maintenance of the outdoor dining in the trailer area and limit impacts on the City's Torpedo Factory Art Center. This dining area is located in a visually prominent area, where a significant number of pedestrians stroll along one of the most popular stretches of the waterfront between Founders Park and the Waterfront King Street Park. Increased seating for the public would be available in the City Marina when the restaurant's outdoor dining in the trailer area is not operating and it shall be kept in good order, as noted in Conditions #44c and #44f. As some wear and tear has resulted from the tables and chairs scraping against the Torpedo Factory's historic building materials along the east elevation, staff recommends that the applicant repair the damaged areas in consultation with the City's Historic Preservation staff (Condition #46) and the dining furniture shall be set three feet from the façade to prevent new damage (Condition #44e). To augment the activation of the area with publicly accessible programming in this prominent location, staff recommends that the applicant allow the City to use the area for up to 10 public events free of charge, as outlined in Condition #40. Lastly, the applicant has volunteered to manage

and maintain the public bathrooms next to Blackwall Hitch in a similar fashion to the arrangement it upholds with the City at Robinson Terminal South, outlined in Condition #39.

Subject to the conditions in Section III of this report, staff recommends approval of the Special Use Permit Request.

III. RECOMMENDED CONDITIONS

Staff recommends ***approval*** subject to compliance with all applicable codes and ordinances and the following conditions:

1. The Special Use Permit shall be granted to the applicant only or to any corporation in which the applicant has a controlling interest. (P&Z) (SUP #2014-0128)

2. The maximum number of seats at the restaurant shall be determined by the statewide building code and applicable lease agreements. (PC)

3. Loading and unloading may only occur in loading zone designated areas. Supply deliveries, loading, and unloading activities shall not occur between the hours of 11 p.m. and 7 a.m. (PC)

4. Trash and garbage shall be stored inside or in sealed containers maintained in the Torpedo Factory Office Building (201 N. Union St)/Food Court Complex loading and unloading dock area off Thompsons Alley or in the City dumpster located across Union Street. The trash shall be sealed appropriately and stored in the contained dumpster which do not allow odors to escape and shall be stored inside or in closed containers which do not allow invasion by animals. No trash or debris shall be allowed to accumulate outside of those containers. Outdoor containers shall be maintained to the satisfaction of the Directors of P&Z and T&ES, including replacing damaged lids and repairing/replacing damaged dumpsters. The applicant shall not use City trash receptacles in the City Marina for trash disposal. (P&Z) (T&ES) (RPCA)

5. The applicant shall post the hours of operation at the entrance of the business. (P&Z) (SUP #2013-0009)

6. For indoor dining areas, all patrons must leave one hour after the closing time. (P&Z)

7. The hours of operation for all outdoor seats shall be limited to between 7 a.m. and 11 p.m., 7 days a week. The outdoor dining areas shall be closed and cleared of all customers by 11 p.m. The outdoor seating areas shall not include signage on umbrellas. (PC)

8. Duplicate condition deleted by staff and replaced with condition #31.

9. Restaurant-managed delivery vehicles must be provided with dedicated off-street parking spaces for each delivery vehicle. (P&Z)

10. On and off-premises alcohol sales may be sold consistent with a Virginia ABC license. (P&Z)

11. Condition deleted by staff.

12. The use must comply with the City's noise ordinance. The applicant may install loudspeakers at 7 King Street and 101 North Union Street. (PC)

13. The applicant shall conduct employee training sessions on an ongoing basis, including as part of any employee orientation, to discuss all SUP provisions and requirements, and on how to prevent underage sales of alcohol. (P&Z) (SUP #2013-0009)

14. Condition deleted. (SUP #2013-0009)

15. Condition deleted by Planning Commission.

16. Condition deleted by staff.

17. Kitchen equipment, including floor mats, shall not be cleaned outside, nor shall any cooking residue be washed into the streets, alleys or storm sewers. (T&ES) (SUP #2015-0132)

18. All waste products including but not limited to organic compounds (solvents) and cleaners, shall be disposed of in accordance with all local, state and federal ordinances or regulations. (T&ES) (SUP #2017-0002)

19. The applicant shall control cooking odors, smoke and any other air pollution from operations at the site and prevent them from leaving the property or becoming a nuisance to neighboring properties, as determined by the Department of Transportation & Environmental Services. (T&ES) (P&Z) (SUP #2017-0002)

20. Litter on the site and on public rights-of-way and spaces adjacent to or within 75 feet of the premises shall be monitored and picked up at least twice during the day and at the close of the business, and more often if necessary, to prevent an unsightly or unsanitary accumulation, on each day that the business is in operation. (T&ES) (SUP #2013-0009)

21. Condition deleted by staff.

22. No food, beverages, or other material shall be stored outside and in all outdoor dining areas. (P&Z)

23. The Director of Planning and Zoning shall review the special use permit after it has been operational for one year, and shall docket the matter for consideration by the Planning Commission and City Council if (a) there have been documented violations of the permit conditions which were not corrected immediately, constitute repeat violations or which

create a direct and immediate adverse zoning impact on the surrounding community; (b) the Director has received a request from any person to docket the permit for review as the result of a complaint that rises to the level of a violation of the permit conditions, or (c) the Director has determined that there are problems with the operation of the use and that new or revised conditions are needed. (P&Z)

24. Condition deleted by Planning Commission and added to condition 38. (PC)

25. The applicant shall encourage their employees to use public transportation to travel to and from work. The business shall contact Go Alex at goalex@alexandriava.gov for information on establishing an employee transportation benefits program. (T&ES) (SUP #2017-0002)

26. The applicant shall provide information about alternative forms of transportation to access the site, including but not limited to printed and electronic business promotional material, posting on the business website, and other similar methods. Contact Go Alex at goalex@alexandriava.gov for more information about available resources. (T&ES) (SUP #2017-0002)

27. Exterior power washing of the building shall not be completed using any kind of detergents. (T&ES) (SUP #2017-0002)

28. Chemicals, detergents or cleaners stored outside the building shall be kept inside the building. (T&ES)

29. Used cooking grease drums/containers should be stored outside of the RPA if practicable. Lids must always remain closed on waste grease drums/containers and spills cleaned up by mopping or dry methods that do not produce a discharge to the gutter, storm or combined inlets. (T&ES)

30. The applicant shall adhere to all conditions of the lease agreement with the City as approved by City Council on March 10, 2020, or any future leases for use of the area bordering the waterfront for outdoor dining that might be granted by the City Council to the applicant. (P&Z)

31. No admission or cover fee shall be charged for limited live entertainment in the dining areas. Any advertising of the entertainment shall reflect the subordinate nature of the entertainment to the principal function of the restaurant as an eating establishment by featuring the food service as well as the entertainment. (PC)

32. Excluding the existing screening of windows in the Hi-Tide Lounge, all other windows shall remain transparent. The placement or construction of items that block the visibility through windows of the interior of the commercial space from the street and sidewalk, including but not limited to walls, window film, storage cabinets, carts, shelving, boxes, coat racks, storage bins, and closets, shall be prohibited. This is not intended to prevent

retailers from displaying their goods in display cases that are oriented towards the street frontage. (P&Z) (SUP #2017-00039)

33. Condition deleted by staff.

34. The applicant shall encourage patrons to park off-street through the provision of information about nearby garages and availability, and alternative modes of transportation on advertising and on the restaurant's website. Where applicable, the applicant shall provide a map of nearby garages. (PC)

35. Condition deleted by staff.

36. Condition deleted by staff.

37. The outdoor dining areas shall be cleaned and washed at the close of each business day that they are in use. (P&Z) (SUP #2018-0111)

38. The applicant shall require its employees who drive to use off-street parking. The applicant shall contact the T&ES parking planner at 703.746.4025 for information about applying to participate in the Discount Parking Program for Employees of Old Town Businesses (or other similar program if one is created) that offers discounted parking at select City parking facilities on evenings and weekends. (PC)

39. The applicant shall manage and maintain the public bathrooms adjacent to Blackwall Hitch. The public restrooms will operate from 9 a.m. to 11 p.m. seven (7) days per week all year long, including holidays and when outdoor dining is not in use by the applicant. The applicant will inspect and clean restrooms on an interval of at least every three (3) hours each day. The applicant shall provide the City with the name of the organization responsible for providing restroom service for fabrication and posting by the City at the public restrooms. The applicant shall be responsible for all maintenance of the restrooms to ensure continuous operations and availability to the public. Maintenance is to be performed within one (1) business day and/or consistent with Health Code regulations. (RPCA).

40. The applicant shall allow the City to use the outdoor area near the temporary trailer free of charge up to five (5) days per year on a Thursday, Friday, or Saturday and up to five (5) days per year on a Sunday, Monday, Tuesday, or Wednesday, unless otherwise mutually agreed upon, for public events. The applicant shall be responsible for removal of the furniture and/or ropes prior to the event and replacement of the same after the event at no charge to the City. The applicant shall be responsible for removal of the lights and/or planters prior to the event and replacement of the same after the event, subject to reimbursement of the cost of such removal by the City to the applicant. All users shall be responsible for compliance with all conditions of the SUP. Such use and any required removal of furniture, ropes, lights, and/or planters, shall be scheduled with at least 90 days written notice or within a time frame mutually agreed in writing between the City and the applicant. (PC)

41. The applicant shall not use outdoor generators. (P&Z) (RPCA) (SUP #2018-0111)

42. The applicant shall ensure that the patron queue line shall be along the eastern edge of the brick patio area and does not extend into the public right of way or impedes entrance to The Torpedo Factory Art Center. (P&Z) (RPCA) (SUP #2018-0111)

43. The applicant shall maintain a minimum clearance of 13 feet between the north entrance of the Torpedo Factory Art Center and the outdoor dining area. (T&ES) (P&Z) (RPCA) (SUP #2018-0111)

44. In the outdoor dining area with the temporary trailer:

    a. (PC)

    b. Umbrellas and other objects or structures higher than six feet shall be located 7'6" from the façade of the Torpedo Factory Art Center building. No structures or object shall exceed 10 feet in height in the outdoor dining area containing the trailer. Should the existing Airstream trailer be replaced with a new trailer taller than six feet, it shall be placed 7'6" from the façade of the Torpedo Factory Art Center building and shall not exceed 10 feet (P&Z) (RPCA) (SUP #2018-0111)

    c. Seating in the outdoor dining area with the temporary trailer shall be available for public seating when the restaurant and/or outdoor dining area is not in operation to include off season. Public seating shall be available when the outdoor dining is not being used and shall be signed to communicate public access. (P&Z) (RPCA)

    d. Install signs, consistent with City standards, in and adjacent to the dining area to (1) indicate the location of patron bathrooms behind Blackwall Hitch and (2) the restaurant dining hours. (RPCA)

    e. Tables and chairs shall be placed a minimum of three feet from the façade of the Torpedo Factory Art Center to prevent damage. (PC)

    f. The area shall be cleaned, maintained and kept orderly at all times, including when the area is not in use and in the off season. (P&Z) (RPCA)

    g. (PC)

45. Sound systems, speakers, or any corresponding equipment cannot be attached to the Torpedo Factory Art Center. (PC)

46. The applicant shall ensure that any marks on the Torpedo Factory Art Center façade that result from outdoor dining furnishings are removed in a timely manner. (PC)

47. The temporary trailer is permitted for two years until September 16, 2024 with an opportunity to increase the term for an additional three years through administrative SUP

approval. (PC)

STAFF: Tony LaColla, AICP, Division Chief, Land Use Services
Ann Horowitz, Principal Planner

Staff Note: In accordance with section 11-506(c) of the zoning ordinance, construction or operation shall be commenced and diligently and substantially pursued within 18 months of the date of granting of a special use permit by City Council or the special use permit shall become void.

IV. CITY DEPARTMENT COMMENTS

Legend: C - code requirement R - recommendation S - suggestion F - finding

Transportation & Environmental Services:

F-1 The existing conditions from SUP2015-00132 and SUP2018-00111 shall apply.

F-2 The property is located in the RPA, however, no changes to impervious surfaces or land use, as it pertains to water quality, are proposed with this SUP. No objections at this time.

R-1 AMENDED CONDITION: Chemicals, detergents, cleaners and used oil shall be stored securely inside the building. (T&ES)

R-2 AMENDED CONDITION: Used cooking grease drums/containers should be stored outside of the RPA if practicable. Lids must always remain closed on waste grease drums/containers and spills cleaned up by mopping or dry methods that do not produce a discharge to the gutter, storm or combined inlets. (T&ES)

Code Enforcement:

C-1 Per 2018 Virginia Construction Code Table 403.1, for a restaurant, one water closet could serve 75 occupants and per 2018 Virginia Existing Building Code Sec. 809.1, the number of occupants using existing plumbing fixtures could be increased by max 20% . As indicated on plans there are four existing water closets, which can serve max. 360 occupants. Therefore, if the number of proposed seats exceeds 360 additional plumbing fixtures are required.

C-2 In accordance with 2018 Virginia Existing Building Code a building permit is required for a space with a change of occupancy.

Fire:

No comments or concerns

Health:
No comments received

Recreation, Parks and Cultural Activities

R-1 Retain relevant conditions from SUP-2019-00118

R-2 The applicant shall allow the City to use the outdoor area near the temporary trailer free of charge up to five (5) days per year on a Thursday, Friday, or Saturday and up to five (5) days per year on a Sunday, Monday, Tuesday, or Wednesday, unless otherwise mutually agreed upon, for public events. The applicant shall be responsible for removal of furniture, lights, planters and stanchions prior to the event at no charge to the City. All users shall be responsible for compliance with all conditions of the SUP. Such use shall be scheduled with at least 90 days written notice or within a time frame mutually agreed in writing between the City and the applicant. (RPCA)

R-3 Umbrellas and other objects or structures higher than six feet shall be located 7'6" from the façade of the Torpedo Factory Art Center building. No structures or object shall exceed 10 feet in height in the outdoor dining area containing the trailer. Should the existing Airstream trailer be replaced with a new trailer taller than six feet, it shall be placed 7'6" from the façade of the Torpedo Factory Art Center building and shall not exceed 10 feet (RPCA)

R-4 Seating in the outdoor dining area with the temporary trailer shall be available for public seating when the restaurant and/or outdoor dining area is not in operation to include off season. Public seating shall be available when the outdoor dining is not being used and shall be signed to communicate public access. (P&Z) (RPCA)

R-5 Install signs, consistent with City standards, in and adjacent to the dining area to (1) indicate the location of patron bathrooms behind Blackwall Hitch and (2) the restaurant dining hours. (RPCA)

R-6 Tables and chairs shall be placed a minimum of three feet from the façade of the Torpedo Factory Art Center to prevent damage. (RPCA)

R-7 The area shall be cleaned, maintained and kept orderly at all times, including when the area is not in use and in the off season. (RPCA)

R-8 The applicant shall repair the walls facing the waterfront at the south and north side of the TFAC where tables and chairs have damaged the façade. (RPCA)

R-9 The applicant shall manage and maintain the public bathrooms adjacent to Blackwall Hitch. The public restrooms will operate from 9 a.m. to 11 p.m. seven (7) days per week all year long, including holidays and when outdoor dining is not in use by the applicant. The applicant will inspect and clean restrooms on an interval of at least every three (3) hours each day. The applicant shall provide the City with the name of the organization

responsible for providing restroom maintenance service for fabrication and posting by the City at the public restrooms. The applicant shall be responsible for all maintenance of the restrooms to ensure continuous operations and availability to the public. Maintenance is to be performed within one (1) business day and/or consistent with Health Code regulations. (RPCA).

R-10 The applicant shall pay TFAC $1500 a year for electrical use and rental of the closet that contains the electrical connections. (RPCA)

Police Department:
No comments received

General VPDES Permit for
Small Municipal Separate Storm Sewer Systems
Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix D (*Hyperlink*)
Minimum Control Measure #4, Construction Site Stormwater Runoff Control

1. E&SC Ordinance; *Alexandria, Virginia - Code of Ordinances, TITLE 5 - Transportation and Environmental Services, CHAPTER 4 - Erosion and Sediment Control*

General VPDES Permit for Small Municipal Separate Storm Sewer Systems Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix E (*Hyperlinks are Provided for Some Materials*)
Minimum Control Measure #5, Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands

1. Local VSMP Authority Approval Letter, 2014
2. Environmental Management Ordinance
3. Public Stormwater Facility BMP Inspections
4. Private Stormwater Facility BMP Inspections
5. Stormwater Management Facilities Installed this Permit Year
6. City Stormwater BMP Location Map
7. Stormwater BMP Maintenance Agreement example
8. Letter to owners of Single-Family Lot BMPs
9. Sample Single-Family Educational Materials for Single-Lot BMPs
10. Development Forms Webpage
11. Oronoco Remediation Update

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

December 22, 2014

Rashad M. Young, City Manager
City of Alexandria
301 King Street, Room 3500
Alexandria, Virginia 22314

Dear Mr. Young:

In accordance with §62.1-44.15:27 G of the Virginia Stormwater Management Act (Act), Department of Environmental Quality (DEQ) has completed the review of the City of Alexandria's final Virginia Stormwater Management Program (VSMP) application package submitted on November 4, 2014. Based on this review, DEQ has determined that the City of Alexandria's VSMP is consistent with the Act, the VSMP regulation and the General VPDES Permit for Discharges of Stormwater from Construction Activities.

In light of this determination, DEQ approves the City of Alexandria's VSMP and the City is authorized to operate a VSMP as of July 1, 2014. Please note that this approval is based on the content of the application package. Any changes made to the documents in the package after the approval date, including changes to the adopted ordinance, may necessitate DEQ evaluation as part of its compliance review of your approved VSMP.

Thank you for your cooperation in developing a VSMP. We look forward to continuing to assist the City with the implementation of its VSMP.

Sincerely,

David K. Paylor

cc: Melanie Davenport, Director, Water Division
Frederick Cunningham, Director, Office of Water Permits
Joan Salvati, Manager, Local Government Stormwater Programs

BMP_ID	VA SW Clearinghouse BMP Categories	BMP_Address	Ownership	Inspection Performed	Inspection Result
1989-0011 SIT 01	Underground Detention	2900 Business Center Dr.	TES	12/9/2022	Operational (Well-maintained)
1995-0012 01	D.C. Sand Filter	1108 Jefferson St.	TES	12/12/2022	Routine Maintenance Required
1995-0012 02	Underground Detention	1108 Jefferson St.	TES	1/11/2023	Operational (Well-maintained)
1996-0019 01	Regional Wet Pond	4800 Brenman Park Dr.	Regional Agreement	3/27/2023	Operational (Well-maintained)
1996-0019 02	Manufactured Treatment Device - Hydrodynamic	4800 Brenman Park Dr.	TES	11/3/2022	Operational (Well-maintained)
1996-0024 01	Bioretention 1	450 Andrews Ln.	TES	4/13/2023	Operational (Well-maintained)
1997-0025 01	Bioretention 1	5005 Duke St.	TES	4/18/2023	Operational (Well-maintained)
1997-0025 02	Bioretention 1	5005 Duke St.	TES	4/18/2023	Operational (Well-maintained)
1997-0025 03	Bioretention 1	5005 Duke St.	TES	3/29/2023	Operational (Well-maintained)
1997-0025 04	Bioretention 1	5005 Duke St.	TES	3/28/2023	Operational (Well-maintained)
1997-0025 05	Bioretention 1	5005 Duke St.	TES	3/28/2023	Operational (Well-maintained)
1997-0025 06	Bioretention 1	5005 Duke St.	TES	4/18/2023	Operational (Well-maintained)
1997-0039 01	Manufactured Treatment Device - Hydrodynamic	900 Second St.	TES	12/9/2022	Operational (Well-maintained)
1998-0009 01	Manufactured Treatment Device - Hydrodynamic	5650 Sanger Ave.	TES	12/19/2022	Operational (Well-maintained)
1998-0011 01	Delaware Sand Filter	3130 Business Center Dr.	TES	10/28/2022	Routine Maintenance Required
1998-0016 02	Extended Detention Pond 1	2009 Braddock Ct.	TES	1/11/2023	Routine Maintenance Required
2001-0014-A 01	Regional Wet Pond	2901 N. Hampton Dr.	Regional Agreement	3/22/2023	Routine Maintenance Required
2002-0005 01	Manufactured Treatment Device - Filtering	5750 Sanger Ave.	TES	12/19/2022	Operational (Well-maintained)
2002-0005 02	Manufactured Treatment Device - Hydrodynamic	5750 Sanger Ave.	TES	12/9/2022	Operational (Well-maintained)
2002-0007 01	Austin Sand Filter	4251 Eisenhower Ave.	TES	4/13/2023	Operational (Well-maintained)
2002-0016 01	Manufactured Treatment Device - Hydrodynamic	2001 Mill Rd.	TES	3/17/2023	Operational (Well-maintained)
2002-0016 02	Tree Box Filters	2001 Mill Rd.	TES	9/28/2022	Operational (Well-maintained)
2002-0016 03	Tree Box Filters	2001 Mill Rd.	TES	9/28/2022	Operational (Well-maintained)
2002-0016 04	Tree Box Filters	2001 Mill Rd.	TES	9/29/2022	Operational (Well-maintained)
2002-0016 05	Tree Box Filters	2001 Mill Rd.	TES	9/28/2022	Operational (Well-maintained)
2002-0016 06	Tree Box Filters	2001 Mill Rd.	TES	9/30/2022	Operational (Well-maintained)
2002-0016 07	Tree Box Filters	2001 Mill Rd.	TES	9/28/2022	Operational (Well-maintained)
2002-0016 08	Tree Box Filters	2001 Mill Rd.	TES	10/1/2022	Operational (Well-maintained)
2002-0024 01	Alexandria Compound Sand Filter	1605 Cameron St.	TES	12/29/2022	Routine Maintenance Required
2002-0037 01	Grass Channel	3704 Mt. Vernon Ave.	TES	1/25/2023	Operational (Well-maintained)
2002-0070 SUP 01	Bioretention 1	3540 Wheeler Ave.	TES	3/23/2023	Operational (Well-maintained)
2003-0016 01	Manufactured Treatment Device - Filtering	2501 Mt. Vernon Ave.	TES	11/9/2022	Operational (Well-maintained)
2003-0016 02	Vegetated Roof 1	2501 Mt. Vernon Ave.	General Services	3/28/2023	Routine Maintenance Required
2003-0027 01	Regional Wet Pond	4001 Eisenhower Ave.	Regional Agreement	3/17/2023	Routine Maintenance Required
2005-0022 01	Manufactured Treatment Device - Filtering	901 Wythe St.	TES	12/27/2022	Operational (Well-maintained)
2005-0022 02	Manufactured Treatment Device - Filtering	901 Wythe St.	TES	12/27/2022	Operational (Well-maintained)
2005-0022 03	Urban Bioretention	901 Wythe St.	General Services	3/27/2023	Routine Maintenance Required
2005-0022 04	Vegetated Roof 1	901 Wythe St.	General Services	3/27/2023	Routine Maintenance Required
2005-0810 BLD 01	Vegetated Roof 1	4480 King St.	General Services	3/29/2023	Operational (Well-maintained)
2006-0025 01	Extended Detention Pond 1	3130 Business Center Dr.	TES	1/4/2023	Routine Maintenance Required
2006-0025 02	Flow Thru Planter Box	3000 Business Center Dr.	General Services	4/19/2023	Routine Maintenance Required
2006-0025 03	Flow Thru Planter Box	3000 Business Center Dr.	General Services	4/19/2023	Routine Maintenance Required
2006-0025 04	Flow Thru Planter Box	3000 Business Center Dr.	General Services	4/19/2023	Routine Maintenance Required
2006-0101 01	Tree Box Filtetrs	4801 Duke St.	TES	11/3/2022	Operational (Well-maintained)
2006-0101 02	Tree Box Filtetrs	4801 Duke St.	TES	11/3/2022	Routine Maintenance Required
2006-0101 03	Tree Box Filtetrs	4801 Duke St.	TES	11/3/2022	Operational (Well-maintained)

BMP_ID	VA SW Clearinghouse BMP Categories	BMP_Address	Ownership	Inspection Performed	Inspection Result
2007-0014 01	Manufactured Treatment Device - Filtering	2700 Witter Dr.	TES	10/21/2022	Routine Maintenance Required
2007-0014 02	Manufactured Treatment Device - Filtering	2700 Witter Dr.	TES	4/21/2023	Routine Maintenance Required
2007-0016 PLT 01	Manufactured Treatment Device - Filtering	4421 W. Braddock Rd.	TES	11/10/2022	Operational (Well-maintained)
2007-0037 01	Sheetflow to Vegetated Filter or Conserved Open Space 1	3534 Wheeler Ave.	TES	1/11/2023	Operational (Well-maintained)
2007-0037 02	Bioretention 1	3534 Wheeler Ave.	TES	4/21/2023	Routine Maintenance Required
2007-0037 03	Bioretention 1	3534 Wheeler Ave.	TES	4/21/2023	Routine Maintenance Required
2007-0037 04	Bioretention 1	3534 Wheeler Ave.	TES	4/21/2023	Routine Maintenance Required
2007-0037 05	Bioretention 1	3534 Wheeler Ave.	TES	4/21/2023	Routine Maintenance Required
2007-0037 06	Bioretention 1	3534 Wheeler Ave.	TES	4/21/2023	Routine Maintenance Required
2007-0037 07	Rainwater Harvesting	3534 Wheeler Ave.	General Services	4/21/2023	Operational (Well-maintained)
2007-0101 01	Tree Box Filters	3554 Valley Dr.	TES	4/19/2023	Routine Maintenance Required
2007-0101 02	Tree Box Filters	3500 Valley Dr.	TES	9/13/2022	Operational (Well-maintained)
2008-0005 01 BR	Bioretention	561 E. Monroe Ave. Potomac yard dog park	TES	2/16/2023	Operational (Well-maintained)
2008-0012 01	Manufactured Treatment Device - Hydrodynamic	133 S. Quaker Ln.	TES	12/16/2022	Operational (Well-maintained)
2008-0012 02	Manufactured Treatment Device - Hydrodynamic	133 S. Quaker Ln.	TES	12/16/2022	Operational (Well-maintained)
2008-0012 03	Manufactured Treatment Device - Hydrodynamic	133 S. Quaker Ln.	TES	12/16/2022	Operational (Well-maintained)
2008-0012 05	CMP under ground detentoin BMP	133 S. Quaker Ln.	TES	1/11/2023	Operational (Well-maintained)
2008-0018 PLT 01	Manufactured Treatment Device - Filtering	5261 Eisenhower Ave.	TES	3/23/2023	Operational (Well-maintained)
2008-0101 01	Tree Box Filters	4550 N. Pegram St.	TES	2/27/2023	Operational (Well-maintained)
2008-0101 02	Tree Box Filters	4550 N. Pegram St.	TES	9/13/2022	Operational (Well-maintained)
2008-0102 01	Manufactured Treatment Device - Hydrodynamic	2601 Cameron Mills Rd.	TES	12/9/2022	Operational (Well-maintained)
2009-0013 01	Sheetflow to Vegetated Filter or Conserved Open Space 1	1001 S. Washington St.	RCPA	1/10/2023	Operational (Well-maintained)
2009-0101 01	Vegetated Roof 1	301 King St.	General Services	1/26/2023	Operational (Well-maintained)
2009-0101 02	Vegetated Roof 1	301 King St.	General Services	1/26/2023	Operational (Well-maintained)
2010-0005 GRD 01	Sheetflow to Vegetated Filter or Conserved Open Space 1	3315 Landover St.	TES	11/10/2022	Operational (Well-maintained)
2010-0005 GRD 02	Sheetflow to Vegetated Filter or Conserved Open Space 1	3315 Landover St.	TES	11/10/2022	Operational (Well-maintained)
2010-0018 GRD 01	Bioretention 1	1&7 E. Del Ray Ave.	TES	3/23/2023	Operational (Well-maintained)
2011-0008 01	Tree Box Filters	3000 Business Center Dr.	TES	10/18/2022	Operational (Well-maintained)
2011-0008 02	Tree Box Filters	3000 Business Center Dr.	TES	10/18/2022	Operational (Well-maintained)
2011-0033 01	Manufactured Treatment Device - Filtering	5261 Eisenhower Ave.	TES	1/4/2023	Operational (Well-maintained)
2011-0033 02	Manufactured Treatment Device - Filtering	5261 Eisenhower Ave.	TES	1/4/2023	Operational (Well-maintained)
2011-0033 03	Manufactured Treatment Device - Hydrodynamic	5261 Eisenhower Ave.	TES	1/4/2023	Operational (Well-maintained)
2011-0033 04	CMP	5261 Eisenhower Ave.	TES	1/4/2023	Operational (Well-maintained)
2012-0013 01 GRD	Tree Box Filters	2209 Ivor Lane	TES	3/8/2023	Operational (Well-maintained)
2012-0101 01	Tree Box Filters	101 Cedar St.	TES	3/17/2023	Operational (Well-maintained)
2012-0102 01	BaySeparator™ Stormwater Treatment System	Intersection of Seminary Rd. & N. Beauregard St.	TES	12/27/2022	Operational (Well-maintained)
2012-0102 02	BaySeparator™ Stormwater Treatment System	Intersection of Seminary Rd. & Mark Center Ave.	TES	12/27/2022	Operational (Well-maintained)
2012-0102 03	BaySeparator™ Stormwater Treatment System	Intersection of Seminary Rd. & Mark Center Ave.	TES	12/27/2022	Operational (Well-maintained)
2012-0103 01	Manufactured Treatment Device - Filtering	4609 Seminary Rd.	TES	2/6/2023	Routine Maintenance Required
2012-0103 02	Manufactured Treatment Device - Filtering	4609 Seminary Rd.	TES	2/6/2023	Operational (Well-maintained)
2012-0103 03	Rainwater Harvesting	4609 Seminary Rd.	Fire/General Services	2/6/2023	Operational (Well-maintained)
2012-0103 04	Rainwater Harvesting	4609 Seminary Rd.	Fire/General Services	2/6/2023	Routine Maintenance Required
2012-0103 05	Rainwater Harvesting	4609 Seminary Rd.	Fire/General Services	2/6/2023	Operational (Well-maintained)
2012-0121 01	Bioretention 1	4109 Mt Vernon Ave	TES	3/31/2023	Operational (Well-maintained)
2012-0121 02	Bioretention 1	4109 Mt. Vernon Ave	TES	3/30/2023	Operational (Well-maintained)
2012-0383 PRJ 01	Bioretention 1	1001 Jefferson St.	TES	12/12/2022	Operational (Well-maintained)

BMP_ID	VA SW Clearinghouse BMP Categories	BMP_Address	Ownership	Inspection Performed	Inspection Result
2012-0383 PRJ 02	Sheetflow to Vegetated Filter or Conserved Open Space 1	1001 Jefferson St.	TES	12/12/2022	Operational (Well-maintained)
2013-0101 01 DPI	Tree Box Filters	800 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 02 DPI	Tree Box Filters	800 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 03 DPI	Tree Box Filters	800 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 04 DPI	Tree Box Filters	800 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 05 DPI	Tree Box Filters	800 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 06 DPI	Tree Box Filters	800 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 07 DPI	Tree Box Filters	801 Block of S. Washington St	TES	1/5/2023	Operational (Well-maintained)
2013-0101 08 DPI	Tree Box Filters	800 Block of S. Washington St	TES	3/23/2023	Operational (Well-maintained)
2014-0101 01	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2014-0101 02	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2014-0101 03	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2014-0101 04	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2014-0101 05	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2014-0101 06	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2014-0101 07	Tree Box Filters	Jefferson Davis Highway Rapid Bus Transit	TES	12/13/2022	Operational (Well-maintained)
2015-0011 07 GRD	Bioretention	Naomi L. Brooks Elementary School	TES	1/25/2023	Operational (Well-maintained)
2016-0010 01	Sand Filter	2801 Cameron Mill Rd	TES	2/21/2023	Operational (Well-maintained)
2016-0010 02	Bioretention	2801 Cameron Mill Rd	TES	2/21/2023	Operational (Well-maintained)
2016-0010 03	Flow Thru Planter Box	2801 Cameron Mill Rd	Fire/General Services	2/21/2023	Routine Maintenance Required
2016-0101 01 DPI	Permeable Pavement	Commonwealth Avenue Sidewalk	TES	1/5/2023	Routine Maintenance Required
2016-0102 01 DPI	Bioretention 1	I-395 and Duke Street	TES	3/28/2023	Operational (Well-maintained)

FY2023 Private BMP Inspections

BMP ID	BMP Type	Address	Date of Inspection	Result	Maintenance Completion	Corrective Action Certification	Notice of Noncompliance Certification
1990-0034 01	Wet Pond 1	5400 Roanoke Ave.	5/17/2023	Not Needed			
1993-0003 01	Filtering Practice 1	101 Madison St.	5/15/2023	Not Needed			
1993-0009 01	Filtering Practice 1	1400 Argall Pl.	5/15/2023	Maintenance Required			
1994-0006 01	Infiltration 1	420 E. Monroe Ave.	5/15/2023	Maintenance Required			
1994-0006 02	Extended Detention Pond 1	420 E. Monroe Ave.	5/15/2023	Maintenance Required			
1994-0006 03	Manufactured Treatment Device - Hydrodynamic	420 E. Monroe Ave.	5/15/2023	Maintenance Required			
1994-0022 01	Filtering Practice 1	142 Sanborn Pl.	5/22/2023	Not Needed			
1996-0001 01	Filtering Practice 1	1800 Duke St.	5/15/2023	Maintenance Required			
1996-0005 01	Filtering Practice 1	2681 Mill Rd.	5/17/2023	Maintenance Required			
1996-0005 02	Filtering Practice 1	2681 Mill Rd.	5/17/2023	Maintenance Required			
1996-0023 01	Filtering Practice 1	1701-1705 N. Beauregard St.	5/17/2023	Maintenance Required			
1998-0017 01	Manufactured Treatment Device - Hydrodynamic	216-228 W. Windsor Ave.	5/17/2023	Maintenance Required			
1998-0033 01	Wet Pond 1	3700 Jefferson Davis Hwy.	5/17/2023	Maintenance Required			
1999-0061 01	Filtering Practice 1	330 John Carlyle St.	5/5/2023	Maintenance Required			
2000-0022 01	Manufactured Treatment Device - Hydrodynamic	504 N. Quaker Ln.	5/17/2023	Maintenance Required	6/13/2023		
2000-0024 01	Filtering Practice 1	777 S. Union St.	6/9/2023	Maintenance Required			
2000-0028 01	Filtering Practice 1	200 Stovall St.	5/12/2023	Not Needed			
2000-0028 02	Filtering Practice 1	2380 Mill Rd.	5/12/2023	Not Needed			
2000-0028 03	Manufactured Treatment Device - Hydrodynamic	2380 Mill Rd.	5/12/2023	Maintenance Required	5/15/2023		
2000-0028 04	Manufactured Treatment Device - Hydrodynamic	2380 Mill Rd.	5/12/2023	Not Needed			
2000-0046 01	Manufactured Treatment Device - Filtering	530 S. St. Asaph St.	8/1/2022	Maintenance Required	8/1/2022		
2003-0019 01	Manufactured Treatment Device - Filtering	525 N. Fayette St.	5/18/2023	Maintenance Required	8/1/2023		
2003-0019 02	Vegetated Roof 1	525 N. Fayette St.	5/18/2023	Maintenance Required	8/1/2023		
2003-0037 01	Manufactured Treatment Device - Hydrodynamic	5205 Polk Ave.	5/18/2023	Maintenance Required	8/24/2023		
2004-0005 01	Manufactured Treatment Device - Hydrodynamic	1418 Janney's Ln.	6/9/2023	Maintenance Required			
2004-0005 02	Manufactured Treatment Device - Hydrodynamic	605 N. Quaker Ln.	6/9/2023	Not Needed			
2005-0013 01	Manufactured Treatment Device - Filtering	601 Holland Ln.	5/19/2023	Maintenance Required			
2005-0013 02	Manufactured Treatment Device - Filtering	601 Holland Ln.	5/19/2023	Not Needed			
2005-0013 03	Manufactured Treatment Device - Filtering	601 Holland Ln.	5/19/2023	Not Needed			
2005-0038 01	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/31/2023	Not Needed			
2005-0038 02	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/31/2023	Not Needed			

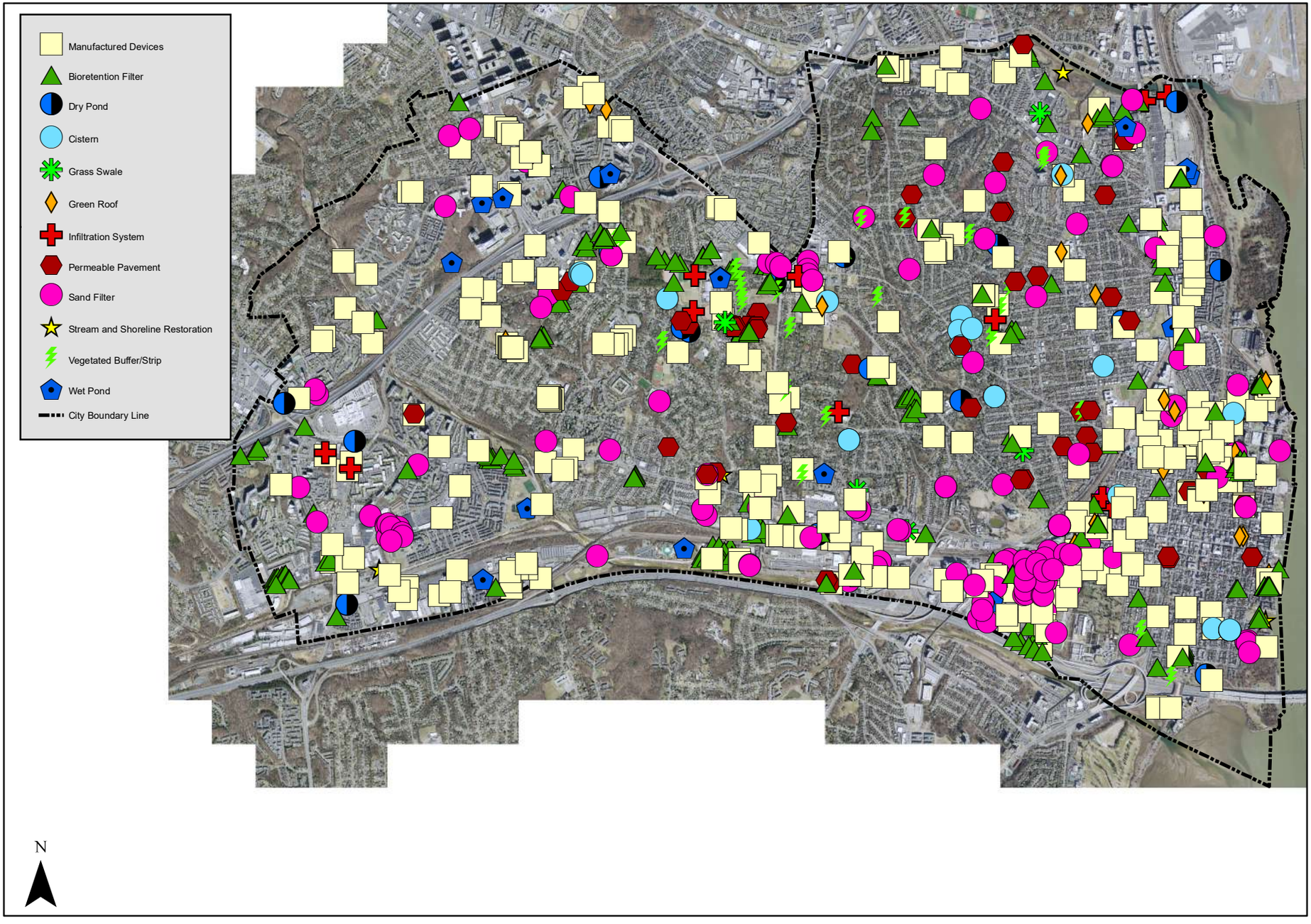
FY2023 Private BMP Inspections

BMP ID	BMP Type	Address	Date of Inspection	Result	Maintenance Completion	Corrective Action Certification	Notice of Noncompliance Certification
2005-0038 03	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/31/2023	Not Needed			
2005-0038 04	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/31/2023	Not Needed			
2005-0038 05	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/31/2023	Not Needed			
2005-0038 06	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/31/2023	Maintenance Required	8/23/2023		
2005-0038 07	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	5/11/2023	Maintenance Required	5/11/2023		
2005-0038 08	Manufactured Treatment Device - Hydrodynamic	2501 Potomac Ave.	6/22/2023	Not Needed			
2006-0030 01	Manufactured Treatment Device - Hydrodynamic	891 W. Glebe Rd.	5/19/2023	Maintenance Required			
2006-0031 01	Manufactured Treatment Device - Filtering	3909 & 3939 Old Dominion Blvd.	5/19/2023	Maintenance Required			
2006-0031 02	Manufactured Treatment Device - Filtering	3909 & 3939 Old Dominion Blvd.	5/19/2023	Maintenance Required			
2006-0031 03	Manufactured Treatment Device - Filtering	3909 & 3939 Old Dominion Blvd.	5/19/2023	Maintenance Required			
2006-0031 04	Manufactured Treatment Device - Filtering	3909 & 3939 Old Dominion Blvd.	5/19/2023	Maintenance Required			
2006-0036 01	Manufactured Treatment Device - Hydrodynamic	1600 King St.	5/19/2023	Not Needed			
2006-0036 PLT 01	Manufactured Treatment Device - Hydrodynamic	511 S. Van Dorn St.	5/24/2023	Maintenance Required	8/22/2023		
2007-0003 PLT 01	Bioretention 1	801 Commonwealth Ave.	5/19/2023	Maintenance Required			
2007-0003 PLT 02	Manufactured Treatment Device - Hydrodynamic	801 Commonwealth Ave.	5/19/2023	Maintenance Required			
2007-0030 01	Filtering Practice 1	3512 Old Dominion Blvd.	5/19/2023	Maintenance Required	8/16/2023		
2008-0008 01	Manufactured Treatment Device - Hydrodynamic	621 N. Payne St.	6/9/2023	Maintenance Required			
2008-0008 02	Manufactured Treatment Device - Hydrodynamic	621 N. Payne St.	6/9/2023	Not Needed			
2008-0008 03	Manufactured Treatment Device - Hydrodynamic	621 N. Payne St.	6/9/2023	Maintenance Required			
2011-0002 01	Manufactured Treatment Device - Hydrodynamic	1225 First St.	6/28/2023	Not Needed			
2011-0002 02	Vegetated Roof 1	1225 First St.	6/28/2023	Not Needed			
2011-0022 01	Manufactured Treatment Device - Filtering	998 N. Alfred St.	6/9/2023	Maintenance Required			
2012-0011 01	Infiltration 1	1501 Cameron St.	5/31/2023	Not Needed			
2012-0011 02	Bioretention 1	1501 Cameron St.	5/31/2023	Maintenance Required			
2012-0011 03	Bioretention 1	1501 Cameron St.	5/31/2023	Not Needed			
2012-0011 04	Rainwater Harvesting	1501 Cameron St.	5/31/2023	Not Needed			
2012-0011 05	Manufactured Treatment Device - Hydrodynamic	1501 Cameron St.	5/31/2023	Maintenance Required			
2012-0011 06	Manufactured Treatment Device - Hydrodynamic	1501 Cameron St.	5/31/2023	Not Needed			
2012-0034 01	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Maintenance Required			
2012-0034 02	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Maintenance Required			
2012-0034 03	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Maintenance Required			

FY2023 Private BMP Inspections

BMP ID	BMP Type	Address	Date of Inspection	Result	Maintenance Completion	Corrective Action Certification	Notice of Noncompliance Certification
2012-0034 04	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Maintenance Required			
2012-0034 05	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Not Needed			
2012-0034 06	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Not Needed			
2012-0034 07	Urban Bioretention	2601 Cameron Mills Rd.	5/24/2023	Maintenance Required			
2013-0007 01	Filtering Practice 1	1199 S Washington St	6/8/2023	Not Needed			
2013-0007 02	Filtering Practice 1	1199 S Washington St	6/8/2023	Not Needed			
2013-0007 03	Filtering Practice 1	1199 S Washington St	6/8/2023	Not Needed			
2013-0016 02	Manufactured Treatment Device - Hydrodynamic	509 & 517 N. Saint Asaph; 511 Oronoco	6/8/2023	Not Needed			
2013-0021 01	Permeable Pavement 1	206 South Patrick Street	6/8/2023	Not Needed			
2013-0021 02	Permeable Pavement 1	206 South Patrick Street	6/8/2023	Not Needed			
2014-0008 01	Manufactured Treatment Device - Hydrodynamic	1323 Wilkes Street	6/8/2023	Not Needed			
2014-0046 01	Bioretention 2	4580 Duke St	5/24/2023	Not Needed			
2014-0046 02	Bioretention 2	4580 Duke St	5/24/2023	Not Needed			
2014-0046 03	Manufactured Treatment Device - Filtering	4580 Duke St	5/24/2023	Not Needed			
2014-0046 04	Manufactured Treatment Device - Filtering	4580 Duke St	5/24/2023	Not Needed			
2015-0002 02	Manufactured Treatment Device - Hydrodynamic	3640 Wheeler Ave	6/8/2023	Maintenance Required			

City of Alexandria Stormwater BMP Locations MS4 Reporting Year 2022-2023



FY2023 Stormwater Management Facilities Installed this Permit Year

BMP_ID	VA SW Clearinghouse BMP Categories	BMP_Address	TOT_AREA_TREATED	IMP_AREA_TREATED	Perv_Area_Treated	Date Installed	DischargingWaterbody	Owner_Name	Maintenance Agreement	TP_REM	TN_REM	TSS_REM
2017-0025 01	Urban Bioretention	1201 N Royal Street	0.042	0.04	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.05	0.4	23.46
2017-0025 02	Urban Bioretention	1201 N Royal Street	0.022	0.02	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.02	0.2	9.384
2017-0025 03	Urban Bioretention	1201 N Royal Street	0.024	0.022	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.22	14.076
2017-0025 04	Urban Bioretention	1201 N Royal Street	0.026	0.024	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.24	14.076
2017-0025 05	Urban Bioretention	1201 N Royal Street	0.026	0.024	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.24	14.076
2017-0025 06	Urban Bioretention	1201 N Royal Street	0.028	0.023	0.005	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.24	14.076
2017-0025 07	Urban Bioretention	1201 N Royal Street	0.036	0.034	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.04	0.34	18.768
2017-0025 08	Urban Bioretention	1201 N Royal Street	0.024	0.022	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.24	14.076
2017-0025 09	Urban Bioretention	1201 N Royal Street	0.023	0.021	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.23	14.076
2017-0025 10	Urban Bioretention	1201 N Royal Street	0.024	0.022	0.002	7/28/2022	Potomac River	City of Alexandria	MOU	0.03	0.24	14.076
2017-0025 11	Urban Bioretention	1201 N Royal Street	0.023	0.02	0.003	7/28/2022	Potomac River	City of Alexandria	MOU	0.02	0.21	9.384
2017-0025 12	Urban Bioretention	1201 N Royal Street	0.032	0.029	0.003	7/28/2022	Potomac River	City of Alexandria	MOU	0.04	0.3	18.768
2017-0025 13	Urban Bioretention	1201 N Royal Street	0.022	0.019	0.003	7/28/2022	Potomac River	City of Alexandria	MOU	0.02	0.2	9.384
2017-0025 14	Manufactured Treatment Device - Hydrodynamic	1201 N Royal Street	0.58	0.58	0	7/28/2022	Potomac River	1201 N. Royal, LLC	Yes	0.25	0	117.3
2017-0025 15	Vegetated Roof 1	1201 N Royal Street	0.065	0.065	0	7/28/2022	Potomac River	1201 N. Royal, LLC	Yes	0.06	0.45	28.152
2017-0025 16	Vegetated Roof 2	1201 N Royal Street	0.05	0.05	0	7/28/2022	Potomac River	1201 N. Royal, LLC	Yes	0.06	0.46	28.152
2018-0021 01	Bioretention 2	1300 West Braddock Rd	1.5384	1.101	0.4374	12/15/2022	Timber Branch	Alexandria Presbyterian Church	Yes	1.45	0	680.34
2018-0021 02	Manufactured Treatment Device - Hydrodynamic	1300 West Braddock Rd	1.5384	1.101	0.4374	12/15/2022	Timber Branch	Alexandria Presbyterian Church	Yes	0.24	0	112.608
2018-0021 03	Permeable Pavement 2	1300 West Braddock Rd	0.0944	0.0944	0	12/15/2022	Timber Branch	Alexandria Presbyterian Church	Yes	0.17	1.13	79.764
2021-0006 01	Bioretention 2	205 Duncan Ave	0.015	0.01	0.005	6/13/2023	Hooff's Run	Duncan Ave, LLC	Yes	0.025	0.11	11.73
2021-0006 02	Bioretention 2	205 Duncan Ave	0.015	0.01	0.005	6/13/2023	Hooff's Run	Duncan Ave, LLC	Yes	0.025	0.11	11.73
2021-0006 03	Bioretention 2	205 Duncan Ave	0.015	0.01	0.005	6/13/2023	Hooff's Run	Duncan Ave, LLC	Yes	0.025	0.11	11.73
2021-0006 04	Bioretention 2	205 Duncan Ave	0.015	0.01	0.005	6/13/2023	Hooff's Run	Duncan Ave, LLC	Yes	0.025	0.11	11.73
2021-0006 05	Permeable Pavement 1	205 Duncan Ave	0.0781	0.065	0.0131	6/13/2023	Hooff's Run	Duncan Ave, LLC	Yes	0.09	0.59	42.228
SIT97-0025	Bioretention 1	5005 Duke St	0.619	0.353	0.266	10/25/2022	Holmes Run	City of Alexandria	MOU	0.5	4.17	234.6

STORMWATER MANAGEMENT / BMP FACILITIES OPERATION AND MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this 29 day of March 2021, by and between, Protestant Episcopal High School hereinafter called the "Landowner", and the City of Alexandria, Virginia (the "City");

WITNESSTH:

WHEREAS, the Landowner is the owner of certain real property described as tax map # 031.01, block # 01, parcel(s) # 01 as acquired by deed in the land records of the City of Alexandria, Virginia, Deed book 759 Page # 114 (Instrument #_____,) hereinafter called the "Property".

WHEREAS, the Landowner is proceeding to build on and develop the property; and

WHEREAS, Episcopal High School Dormitories and Health and Wellness Center, 2019-0026, hereinafter called the "Plan", which is expressly made a part hereof, as approved or to be approved by the City, provides for detention and/or on-site treatment of stormwater within the confines of the property; and

WHEREAS, the City and the Landowner, its successors and assigns agree that the health, safety and welfare of the residents of the City of Alexandria, Virginia, require that on-site stormwater management/Best Management Practices (BMP) facilities be constructed and maintained on the property; and

WHEREAS, the City requires that on-site stormwater management/BMP facilities as shown on the Plan be constructed and adequately maintained by the Landowner, its successors and assigns.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The on-site stormwater management/BMP facilities shall be constructed by the Landowner, its successors and assigns, in accordance with the plans and specifications identified in the plans.

2. The Landowner, its successors and assigns, shall maintain the stormwater management/BMP facilities in good working conditions, acceptable to the City, so that they are performing their design functions.

3. The Landowner, its successors and assigns, hereby grant permission to the City, its authorized agents and employees, to enter upon the property and to inspect the stormwater management/BMP facilities whenever the City deems necessary. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the entire facility including, berms, inlet and outlet structures, vegetation, infiltration media, pond areas, access roads, etc. When deficiencies are noted, the City shall notify the Landowner, its successors or assigns, and provide information about the inspection findings and evaluations.

4. The Landowner shall develop and attach to this "STORMWATER MANAGEMENT / BMP FACILITIES OPERATION AND MAINTENANCE AGREEMENT" a "BMP MAINTENANCE SCHEDULE AND GUIDELINE" that has been reviewed and approved by the City or its designee. This BMP Maintenance Schedule and Guideline shall describe the maintenance practices to be performed for the facilities and include a maintenance schedule for implementation of these practices.

5. In the event the Landowner, its successors and assigns, fail to maintain the stormwater management/BMP facilities in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps it deems necessary to maintain said stormwater management/BMP facilities and to charge the costs of the repairs to the Landowner, its successors and assigns. This provision shall not be construed to allow the City of Alexandria to erect any structure of a permanent nature on the land of the Landowner, outside of an easement belonging to the City. It is expressly understood and agreed that the City is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the City.

6. The Landowner, its successors and assigns, will perform maintenance in accordance with the maintenance schedule and guidelines for the stormwater management/BMP facilities, including sediment removal, as outlined on the approved plans and the following specific requirements:

Maintenance of the following Best Management Practice(s):

One (1) Level 2 Bioretention Facility
One (1) Level 1 Bioretnetion Facility
One (1) Hydrodynamic Facility

shall conform to the requirements contained in the Virginia Stormwater BMP Clearinghouse, the attached maintenance schedule and guidelines, and/or specific maintenance requirements established by the BMP manufacturer as approved by the Director of Transportation and Environmental Services (T&ES) prior to the release of the Final Site Plan. Specific manufacturer maintenance requirements for proprietary BMPs will be submitted to the City of Alexandria, T&ES.

7. In the event the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials and the like on account of the Landowner's or its successors' and assigns' failure to perform such work, the Landowner, its successors and assigns, shall reimburse the City, upon demand, within 30 days of receipt thereof for all costs incurred by the City hereunder. If not paid within such 30-day period, the City shall have a lien against the property in the amount of such costs, plus interest at the Judgment Rate, and may enforce it in the same manner a lien for real property taxes may be enforced.

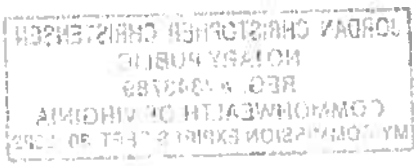
8. The Landowner, its successors and assigns, shall indemnify and hold harmless the City and its agents and employees for any and all damages, accidents, casualties, occurrences or claims which might arise or be asserted against the City for the construction, presence, existence or maintenance of the stormwater management/BMP facilities by the Landowner, its successors and assigns.

9. In the event a claim is asserted against the City, its agents or employees, the City shall promptly notify the Landowners, their successors and assigns, and they shall defend, at their own expense, any suit based on such claim. If any judgment or claim against the City, its agents or employees shall be allowed, the Landowner, its successors and assigns shall pay all costs and expenses in connection therewith.

10. The Landowner, its successors and assigns, hereby grants permission to the city, its authorized agents, employees, guests, and consultants to enter upon the property to install, operate and maintain equipment to monitor the flow characteristics and pollutant content of the influent and effluent, and at intermediate points in the facility. The Landowner further agrees to design and construct the facility to provide access for monitoring as outlined in the Virginia Stormwater BMP Clearinghouse and/or in the manufacturer's manual for the BMP.

11. The Landowner, its successors and assigns, hereby grants permission to the City, its authorized agents, employees and guests to enter upon the property whenever the City deems necessary, with a ten day advance notice, to conduct tours of the stormwater management/BMP facilities. The purpose of such tours is to expand the base of knowledge in the stormwater management/BMP field amongst planners, engineers, scientists and other interested parties.

12. This Agreement shall be recorded among the land records of the City of Alexandria, Virginia, and shall constitute a covenant running with the land/or equitable servitude, and shall be binding on the Landowner, its administrators, executors, assigns, heirs and other successors in interest.



WITNESS the following signatures and seals:

W. H. deButts, III
Landowner Signature

W. H. deButts, III
Print or Type Name

Chief Financial Officer
Title

ATTEST:

_____

COMMONWEALTH OF Virginia

CITY OF Alexandria

I, Jordan C. Christensen, a Notary Public in and for the City and Commonwealth aforesaid, whose commission expires on the 30 day of September, 2022, do hereby certify that William H. deButts III, whose name(s) is/are signed to the foregoing Agreement bearing date of the 29 day of March, 2021, has acknowledged the same before me in my said City and State.

GIVEN UNDER MY HAND THIS 29 day of March, 2021.

NOTARY PUBLIC

JORDAN CHRISTOPHER CHRISTENSEN
NOTARY PUBLIC
REG. #7343789
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES SEPT. 30, 2022

12/02/2022

Dear Facility Owner:

Your property contains a stormwater Best Management Practice (BMP) that functions to treat stormwater runoff and improve the quality of the water in and around the City of Alexandria. This letter serves as an annual reminder that routine inspection and maintenance is an essential part of the ownership of any BMP. Regular maintenance ensures that BMPs do not generate additional pollutants, become nuisances, or pose safety issues, and that they function properly. When maintenance problems do exist, they are most often less costly to correct when they are caught early. BMP maintenance is not only an integral part of BMP ownership, but is also a requirement of the City's local stormwater program. City ordinance {13-109(G)} states that all stormwater BMPs must be adequately maintained by their owners to ensure that the BMPs function as designed.

Examples of stormwater BMPs include rain barrels, bioretention filters, sand filters, and permeable pavement, to name a few. These BMPs improve the quality of stormwater runoff from a developed site by reducing pollutants such as sediment, oil, litter, and excess nutrients that may enter our streams and waterways, such as Four Mile Run, Holmes Run, the Potomac River and Chesapeake Bay.

In October 2018, City Council adopted a Credit Policy that provides opportunities for all property owners to lower their fees by implementing select practices that reduce stormwater runoff or improve stormwater quality. Each year you maintain the BMP on your property in functioning condition, you are then eligible for a reduction from your annual Stormwater Utility Fee for a combination of practices. Credits include:

- Rain barrels
- Cisterns
- Rain gardens, flow thru planter boxes, bioretention filters, sand filters, infiltration systems
- Permeable pavement
- Green roof
- and more!

The annual credit application window opens December 1st through February 15th. Visit www.alexandriava.gov/Stormwater to learn more about the City's credit policies and how to apply.

Please contact me at 703-746-4071 or by email at *Gavin.pellitteri@alexandriava.gov* if you have any questions regarding your BMP. Your time and cooperation are greatly appreciated and working together will help to achieve our goal of protecting our streams, the Potomac River, and the Chesapeake Bay.

Sincerely,

Gavin Pellitteri
Water Quality Compliance Specialist

Rain Barrel
BMP Fact Sheet

DID YOU KNOW…polluted stormwater runoff is the number one cause of water pollution in Northern Virginia? That's right; the very same rain that runs over streets, yards, and parking lots can send chemicals, dirt, and trash down the storm drains and into our local water bodies like the Potomac River and Chesapeake Bay!

Did you know your property is designed to improve water quality? Your property has a Best Management Practice (BMP) onsite that is used to treat stormwater runoff before it enters our local waterways.

What is a BMP? Stormwater runoff is water that flows over land, through drainage systems, and into our local waterways during and after rain storms or snow melts. Untreated stormwater can carry excess nutrients, sediment, and other contaminants into our waters. BMPs are structural practices that treat, store, or infiltrate runoff onsite before it can affect water bodies downstream. BMPs include structures such as ponds, sand filters, and bioretention areas to name a few. The use of stormwater BMPs helps to manage stormwater and to protect our City's lands and streams from erosion, flooding, and pollutants. When BMPs are maintained and function properly, they can help to improve water quality. When BMPs fail or cease to function, they can actually make water quality worse!

Example Rainwater Harvesting

Rain Barrels

Rain barrels intercept and store rainfall for future use. Rain barrels typically consist of a gutter system and storage tank that can be located on a land surface or underground. Water in the storage tank can be used for non-potable uses such as irrigation or exterior washing.

Maintenance of your BMP is a VITAL to keep it functioning properly and it is required by City Ordinance!

Common maintenance issues associated with rainwater harvesting:

- Leaves and debris in gutters and downspouts
- Clogging of screens
- Not using the stored water resulting in the rain barrel being unable to store additional runoff during storms

A BMP maintenance guideline is included with this document. Performing these routine maintenance tasks helps to ensure the function and performance of your BMP.

If you have any questions regarding your inspection and maintenance responsibilities, please call the City of Alexandria, Virginia Department of Transportation and Environmental Services, Stormwater and Sanitary Infrastructure Division at 703.746.4071.

Rain Barrel Maintenance Guidelines

Routine Maintenance Guidelines

Rain barrels must be inspected to ensure they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove leaves and debris from gutters and downspouts	Semi-annually
Remove any algae growth	Semi-annually
Inspect and clean prescreening devices and first flush diverters	Quarterly
Inspect and clean storage tank lids	Annually
Inspect and repair any clogging	Annually
Inspect and repair mosquito screens	Annually
Inspect tank and remove sediment build up	Every 3 years
Clear overhanging vegetation and trees over roof	Every 3 years
Replace damaged or defective system components	As needed

Permeable Pavement
BMP Fact Sheet

DID YOU KNOW…polluted stormwater runoff is the number one cause of water pollution in Northern Virginia? That's right; the very same rain that runs over streets, yards, and parking lots can send chemicals, dirt, and trash down the storm drains and into our local water bodies like the Potomac River and Chesapeake Bay!

Did you know your property is designed to improve water quality? Your property has a Best Management Practice (BMP) onsite that is used to treat stormwater runoff before it enters our local waterways.

What is a BMP? Stormwater runoff is water that flows over land, through drainage systems, and into our local waterways during and after rain storms or snow melts. Untreated stormwater can carry excess nutrients, sediment, and other contaminants into our waters. BMPs are structural practices that treat, store, or infiltrate runoff onsite before it can affect water bodies downstream. BMPs include structures such as ponds, sand filters, and bioretention areas to name a few. The use of stormwater BMPs helps to manage stormwater and to protect our City's lands and streams from erosion, flooding, and pollutants. When BMPs are maintained and function properly, they can help to improve water quality. When BMPs fail or cease to function, they can actually make water quality worse!

Example Permeable Pavement

Permeable Pavement

Permeable pavement is an alternative type of paving that allows stormwater to filter through voids to a stone reservoir. Water is temporarily stored in the reservoir and may be infiltrated into the ground. Permeable pavement can consist of pervious concrete, porous asphalt, or interlocking pavers. Permeable pavement works to reduce the amount of runoff and to remove nutrients during rain events.

Maintenance of your BMP is a VITAL to keep it functioning properly and it is required by City Ordinance!

Common maintenance issues associated with permeable pavement:

- Clogging of the pavement
- Organic debris and sediment accumulation on the pavement
- Structural cracking or breaking

A BMP maintenance guideline is included with this document. Performing these routine maintenance tasks helps to ensure the function and performance of your BMP.

If If you have any questions regarding your inspection and maintenance responsibilities, please call the City of Alexandria, Virginia Department of Transportation and Environmental Services, Stormwater and Sanitary Infrastructure Division at 703.746.4071.

Permeable Pavement Maintenance Schedule and Guidelines

Routine Maintenance Guidelines

Permeable pavement must be inspected to ensure that it operates in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Inspect for and remove excess sediment	Annually
Inspect facility for clogging and repair any clogging and improper drainage	Annually
Inspect for and repair any structural damage	Annually
Inspect for repair any clogged or damaged inlets and outlets	Annually

Bioretention
BMP Fact Sheet

DID YOU KNOW…polluted stormwater runoff is the number one cause of water pollution in Northern Virginia? That's right; the very same rain that runs over streets, yards, and parking lots can send chemicals, dirt, and trash down storm the drains and into our local water bodies like the Potomac River and Chesapeake Bay!

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Example Bioretention

Bioretention

A bioretention area is a shallow landscaped depression that captures runoff. During rain events, water ponds six to twelve inches above the bottom of the depression, then filters through special media installed underground called the filter bed. A typical bioretention area consists of a filter bed, landscaping, a mulch or turf layer, an underdrain, and an outlet. Bioretention areas remove pollutants through filtration, biological uptake, and microbial activity.

Maintenance of your BMP is a VITAL to keep it functioning properly and it is required by City Ordinance!

Common maintenance issues associated with bioretention areas:

- Loss of plants
- Trash and debris accumulation
- Sediment accumulation
- Mulch layer less than 3 inches deep or over 3 years old
- Clogging
- Erosion

A BMP maintenance guideline is included with this document. Performing these routine maintenance tasks helps to ensure the function and performance of your BMP.

If you have any questions regarding your inspection and maintenance responsibilities, please call the City of Alexandria, Virginia Department of Transportation and Environmental Services, Stormwater and Sanitary Infrastructure Division at 703.746.4071.

Bioretention Area Maintenance Schedule and Guidelines

First Year Maintenance Guidelines

Successful establishment of bioretention areas requires that the following tasks be undertaken in the first year following installation:

- Initial inspections. For the first 6 months following construction, the bioretention area should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.
- Spot reseeding. Inspect for bare or eroding areas in the contributing drainage area or around the bioretention area, and make sure they are immediately stabilized with grass cover.
- Watering. Watering is needed once a week during the first 2 months, and then as needed during first growing season (April-October), depending on rainfall.
- Remove and replace dead plants.

Routine Maintenance Guidelines

Bioretention areas must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	**Frequency**
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Inspect for and remove excess sediment	Annually
Mow grass filter strips and bioretention turf cover	At least four times per year
Weed and rake mulch	Twice during the growing season
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Remulch to maintain a three inch layer	Annually
Prune trees and shrubs	Annually
Inspect for clogging or ponding water in the filter bed	Annually
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed
Remove sediment in pretreatment cells and inflows	Every 2-3 years
Replace the mulch layer	Every 3 years

City of Alexandria, VA

Department of Transportation and Environmental Services

Oronoco Street MS4 Outfall Update

July 2022 through June 2023

Virginia Remediation Program (VRP) Site Number: 00241

The City of Alexandria (City) operated a manufacturing gas plant near the corner of North Lee and Oronoco Streets for a portion of time from 1851 to 1946, with the other owner of the site being Washington Gas. This plant produced a coal-derived gas for residents and businesses in the City. The production of manufactured gas produced coal tar wastes, some of which remain at the former site today. When the site redeveloped in the 1970s into commercial townhomes, some efforts were made to remediate the site at that time. However, after the development of the site, coal tar began migrating from the site and found its way into the surrounding soils and groundwater which led to intrusion into the storm sewer located on Oronoco Street, leading to discharges of coal tar into the Potomac River (River). The City subsequently entered the site into the VRP in 2000.

To date, several corrective actions have taken place to mitigate coal tar discharges into the River:

- Installation and operation of the floating oil containment boom around the outfall discharge area with additional oil absorbent booms installed and replaced periodically on the interior to collect contaminants.
- The ongoing operation a free product removal system that includes recovery wells installed in the source area. The removal of free product from the subsurface makes future remedial efforts more efficient.
- The successful completion of relining the Oronoco Street storm sewer in 2007 between Lee and Union Streets and in 2014 from Union Street to the outfall. The relining reduced the amount of oily substances infiltrating into the pipe and subsequently reduced the amount of impacted material being discharged to the Potomac River.
- In 2013, the City installed a groundwater treatment system beneath Oronoco Street. The system treats dissolved phase groundwater. After nearly ten years of operation, quarterly groundwater monitoring of wells located downgradient from the system continue to indicate that the system is functioning properly.
- With VDEQ approval, the City began planning additional remedial actions to address the contaminated sediments located below the Oronoco Street storm sewer outfall to the Potomac River. In 2015, VDEQ approved the City's Remedial Action Plan (RAP) to dredge and cap the residual coal tar-impacted sediments within the Potomac River. The bulk of affected sediments were removed, and a reactive cap was installed over the remaining sediments to eliminate future seepage of coal tar into the river and cut off potential exposure pathways to human and ecological populations. The dredge and cap project was completed in April 2018.
- In September 2019, the City cleaned and repaired a stormwater pipe in the 100 block of Oronoco Street to clear the residual coal tar from the pipeline floor and grout it.

- Five new coal tar recovery wells were installed along Oronoco Street in April 2021. The installation of these wells significantly increased the amount of coal tar recovery around and beneath the stormwater pipe. Coal tar is typically recovered twice a month with the amount of coal tar recovery ranging from 2-20 gallons per visit.

The City continues its remedial activities related to mitigation of coal tar infiltration into and discharges from the stormwater pipe located at the end of Oronoco Street. A summary of these activities between July 2022 and June 2023 is discussed below:

- The groundwater treatment system installed in 2013 continues to perform well. Site visits are conducted twice per month with shutdowns only occurring as part of conducting routine onsite maintenance. Inspections of the permeable reactive media have shown that the media are in "like new" condition.
- The City continues to operate and maintain the boom system to prevent any potential sources of coal tar from discharging from the immediate area into the Potomac River.
- Inspection of the stormwater pipe in June 2022 showed a crack in the transition of where the pipe has been lined using CIPP (cured in place pipe) and where the pipe was sprayed with shotcrete. There were also some small coal tar deposits observed downstream of this crack. Repair of the crack were completed in October of 2022 and subsequent inspection in December of 2022 showed no new discharge of coal tar into the pipe. For the existing coal tar that entered through the crack, absorbent sweeps have been placed in the pipe to reduce the potential for any residual coal tar from exiting the outfall. Site visits are made on a weekly basis and the sweeps are replaced as needed.
- Twice per year the City submits an operations report that summarizes site remediation operations.

For the upcoming year, several additional actions are planned to assist in removing coal tar from the site and further protect contaminants from entering the pipe. In late summer/early fall 2023, an in-well heating pilot test will be conducted with the aim of retrieving additional coal tar from below the surface by heating the groundwater. If successful, additional in-well heating tests may be conducted. Within 30 days following this test, a new TarGOST survey will be performed to determine the extent and depth of the remaining coal tar from the site. This will help determine where future recovery wells should be placed as recovery drops off from the current wells.

Design has also started on a new cured in place pipe liner system to be installed in the stormwater pipe which help to prevent any cracks to develop in the future. Lining will be installed starting at North Union Street and will continue upstream (to the west) past the extents of where coal tar is located around the pipe. The lining work is anticipated to be completed no later than March 31, 2025.

General VPDES Permit for
Small Municipal Separate Storm Sewer Systems
Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix F (*Hyperlinks are Provided for Some Materials*)
Minimum Control Measure #6, Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee within the MS4 Service Area

1. Staff Training Documentation
2. Internal T&ES Monday Mix with Information about IDDE
3. City's Webpage for Alex311

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2 + GH Training @ Fleet

Date: 5-2-2023

Trainer: GP + JL **Format:** In person

Name	Department	Signature
Dennis Jones SR	Fleet	
Diego Cuevas	Fleet	Diego Cuevas
Jairo Mejia	Fleet	
Matthew Pitts JR	fleet	
Tim Trout	Fleet	
VON Livingston SR	Fleet	
Hussam Zaarkashi	Fleet	
Bryan Anderson	Fleet	
Nilson Coreas	" "	
William M Jones	" "	
SEAN Robert Robinson	SAMS	
Brand Madison	Fleet	
Thomas Cotter	Fleet	
Darryl Sylek	Fleet	
Christopher Bedwell	FLEET	

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2+GH

Date: 10.22.2023

Trainer: GP + JL **Format:** In Person

Name	Department	Signature
Matt Wise	DGS	
Archie Robinson	DGS	
Alex Maldonado	DGS	
Esther Kim	DGS	
Don Manthey	DGS	
FRANCESCO DILIGHES	DGS	

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2+GH

Date: 6.22.23

Trainer: JLT GP **Format:** In person

Name	Department	Signature
GRANT ROGERS	DGS	
Kendrick Bailey	DGS	
Harrison Parton	DGS	
David Kaiser	DGS	

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2 / GH / IDDE

Date: 5/3/2023

Trainer: GP & JL **Format:** In Person

Name	Department	Signature
Terrell Joyner	TES	
Derek Clayton	T&ES	
Terry Stanley	T&ES	
Jose Olivera	T&ES	
Blake Fells	TES	
Raymond Monk	T&S	
Marlon Scraper	TES	
Carl Long	TES	
Steve Waller	TES	
Dante Parker	TES	
Steve Kowalik	TES	
Jerome Greene	TES	
Tarik Van Horn	TES	
Dontae Sheppard	TES	

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2 GH / IDDE

Date: 5/31/2023

Trainer: GPT JL **Format:** In Person

Name	Department	Signature
Clarence Jackson	TES	
Jose Gil	TES	
Olufemi Ors-olanipekun	TES	
Mary Alice Winston		
Philip Pugh	TES	

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2 & GH / IDDE

Date: 5/8/23

Trainer: GPT DL **Format:** In Person

Name	Department	Signature
Bill Benson IV	TES	
Karen Giuseppe	TES	
Tony Van Horn	TES	
Frederick Bell	TES	
Charles Lagerbo	TES	
John Taylor	"	

FY2023 MS4 P2GH Training Sign In Sheet

Title: P2+GH / IDDE

Date: 5/31/23

Trainer: GP+ JL **Format:** In Person

Name	Department	Signature
Harold Shaw	T&ES	Harold Shaw
Tim Dalton	T&ES	
Michael Harrison	TES	Michael Harmon
Joe Thompson	T&ES	
ANDREW SMITH	T&ES	
Gregory Dunn Jr.	T&ES	
ARTHUR BYRD	T&ES	
Daniel Sori	TES	
Chantel Jamar	TES	
Jerrod Woodson	TES	
Keiona Carter	TES	
Cheryl Williams	TES	
JuQuan Daniels	Tes	

From: Alexander Frias
To: Jessica Lassetter
Subject: Re: MS4 Training
Date: Monday, May 1, 2023 2:53:18 PM

Hi Jessica,

We have all completed the video. The names are:

1. Alexander Frias
2. Eric Easterlin
3. Clifton Hampton

Thanks,
Alex

From: Jessica Lassetter <jessica.lassetter@alexandriava.gov>
Sent: Monday, May 1, 2023 11:40 AM
To: Alexander Frias <Alexander.Frias@alexandriava.gov>
Subject: MS4 Training

Good morning! Could you please share this 30-min video with staff before the end of June and email a list of participants who watched it.

https://zoom.us/rec/play/8jmBfQ1hQMGPCTmxzCE7aS3F5bLxjGYQwvaK-sog9IXJars_stON46lSdX7GDgK4SLPD9-xRdZMx7U-B.DY7Ssb2TbVdvFZ84?autoplay=true&startTime=1639672477000

Thank you!
Jessica

Jessica E. B. Lassetter, MNR
Senior Environmental Specialist
City of Alexandria, Virginia
Transportation & Environmental Services
Office Phone Number (703.746.4127)
Cell Phone Number (703.915.5695)
alexandriava.gov

From: Matt Wise
To: Jessica Lassetter
Subject: RE: P2GH Training
Date: Friday, June 30, 2023 8:27:11 PM

Hi Jessica,

Below are the DGS staff that let me know they completed the training:

Juan Alverenga
Dwayne Smith
Nemo Lemuis
Mudassar Nasir
Jason Hitt
Erick Oreggo
Jay Williams
Frank Delimba
Charles Jackson
Asif Kamal

Thanks for everything!!!

Matt

From: Jessica Lassetter <jessica.lassetter@alexandriava.gov>
Sent: Thursday, June 22, 2023 4:14 PM
To: Matt Wise <David.Wise@alexandriava.gov>
Subject: P2GH Training

Hi Matt – We were missing about half of the people for the training this afternoon. Could you make sure they review the 30 minute video and sign off on a form that indicates they reviewed it for our files for the State? It needs to be done by COB 6.30.2023.

Thank you,
Jessica

Transportation & Environmental Services – City of Alexandria, VA

Safety Incentive Roster and Lesson Plan

DIVISION NAME	RESOURCE RECOVERY	PRESENTATION DATE	MAY 01, 2023

	PRESENTER NAMES	PRESENTER SIGNATURE	TOPICS PRESENTED
1	Davis McCoy	Davis J. McC	1. Open Enrollment-5/8-26/23 2. Work'n Well Expo-5/11 3. Baseball Night 4. Welcome – M. Yarbough and A. Hall! 5. MS4 Stormwater Training – Zoom sent to your phones
2	Angela Lynch	Angela Lynch	
3	Christopher Chubbs		

EMPLOYEE	SIGNATURE
ARNOLD, MARK	DSP
BANKS, WILLIE	Willie BANKS
BENTON, DAMIAN (T)	
BRIGGS, LEWIS	DSP
BROWN, DEMETRIUS (T)	
CHUBBS, CHRISTOPHER	
CLARK, KENNY	
CLARK, MARCUS	
CLEMMONS, TOREY L.	
COBB, DONNELL	
COLES, JANNETTE	
COLES, RYAN	
DARRING, SCOTT	Scott D. Darring Sr.
FIELDS, JESSIE	
HARPER, BROCK	
HARRIS, MAURICE	
HALL, ANTOINE	

Transportation & Environmental Services – City of Alexandria, VA

Safety Incentive Roster and Lesson Plan

HAWKINS, MARCUS (T)	
HAWKINS, MICHAEL	
JOHNSON, JAMES	
JOHNSON, MARK	DSP
KIRBY, PATRICK	
KYLE, TYRONE	
LEMON, EDWARD	
LYNCH, ANGELA	
MCCOY, DAVIS	
MURCHISON, DESIRE (T)	
NICHOLSON, ROBERT	
PETERSON, GREGORY	
PITTS, RODNEY	
PRICE, DARYL	
REDFEARN, JESSIE	
ROYALS, DEONTA (T)	
SANFORD, KENNETH	
SARAVIA, CHRIS (T)	
TALBERT, GREGORY	
TIMMONS, MARVIN	
WALLACE, KATHERINE	
WALLACE, KENDALL	
WATKINS, THOMAS	
WILLIAMS, DWIGHT	
WILLIAMS, JERRELL	

Transportation & Environmental Services – City of Alexandria, VA

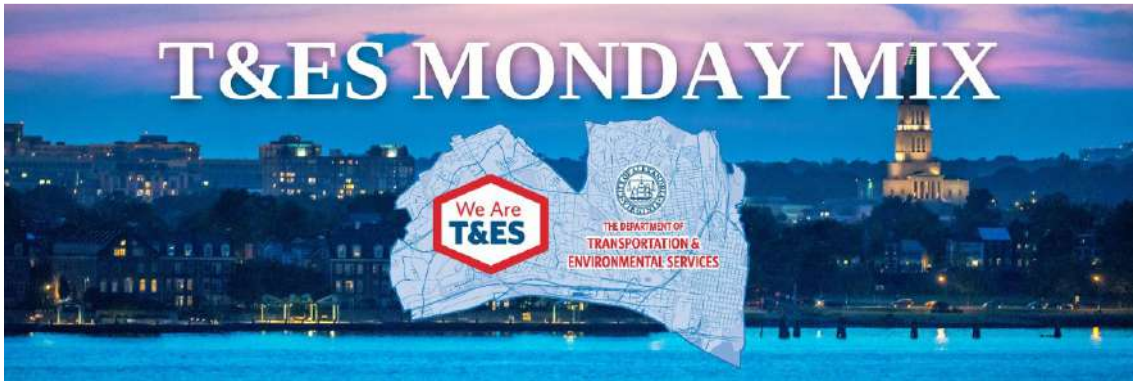
Safety Incentive Roster and Lesson Plan

Page _____ of _____

WILLIAMS, THURSTON	
WILSON, DAVID	
WOOD, DONTE	
YARBOUGH, MARCUS	

Jessica Lassetter

From: Tarrence Moorer
Sent: Tuesday, May 30, 2023 11:34 AM
Subject: T&ES Monday Mix, May 30, 2023



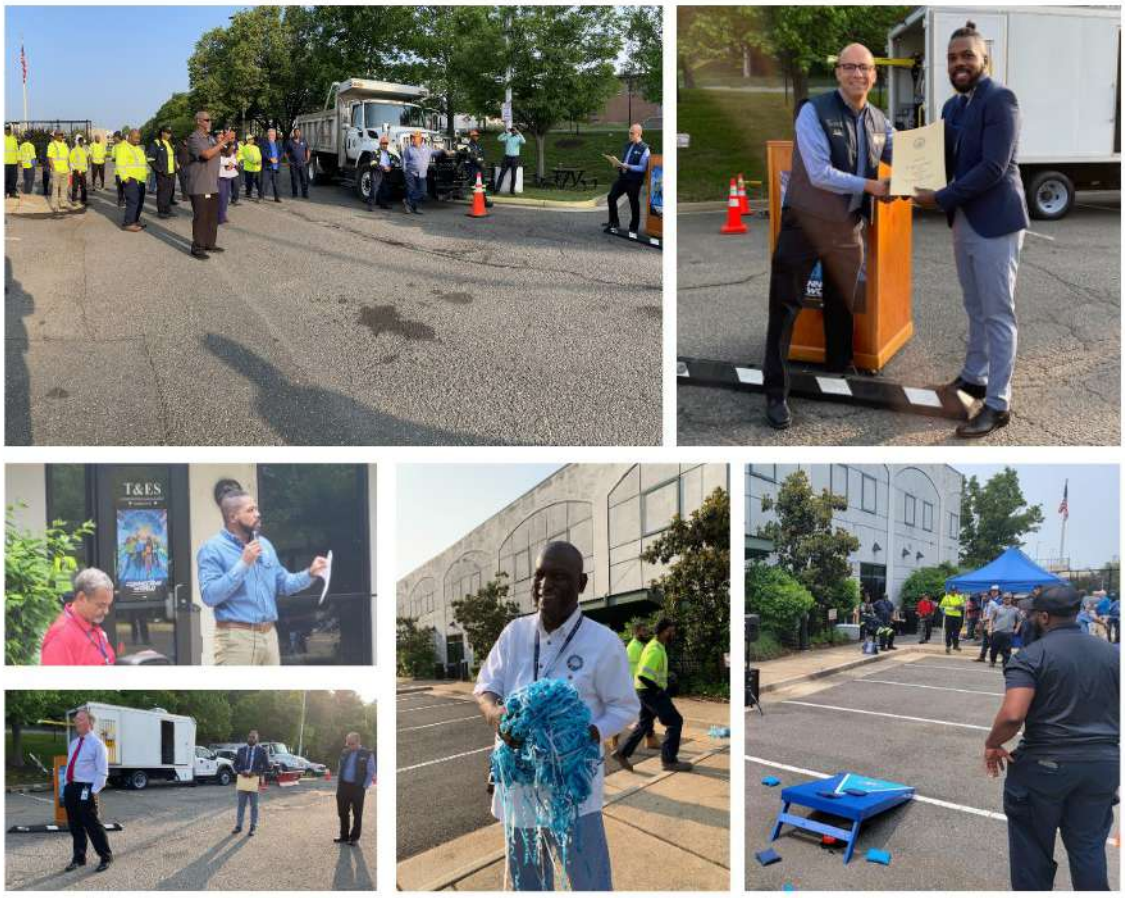
T&ES Celebrates National Public Works Week

Thanks to everyone who participated in the T&ES National Public Works Week events! We kicked things off with a Monday morning event, where both City Manager Jim Parajon and Mayor Justin Wilson visited BCD for a reading of Alexandria's National Public Works Week proclamation. And on

Tuesday, we celebrated with a luncheon featuring good food, ice cream, cornhole, and tons of other fun activities, and ended with a confetti toss! It is wonderful to be able to use NPWW as an opportunity to celebrate our accomplishments, hard work, and service to the City of Alexandria.

Below is the note below that the City Manager sent to all City of Alexandria employees in observance of NPWW and in recognition of all of the hard work that we do. Thank you for your work!

Email to all City staff from City Manager Jim Parajon: *It is with great admiration that I acknowledge these individuals who play an integral role in ensuring the seamless operation of the City's infrastructure. Let us make a concerted effort to appreciate their relentless work in keeping our City running smoothly and efficiently. Whether it's maintaining our drivable streets, ensuring prompt trash collection, or facilitating the uninterrupted flow of water, their dedication to making Alexandria clean, safe, and eco-friendly is truly commendable. Take a moment as you see them in their daily work to say, "Hello and thank you!"*



Doors Open: Grand Opening of the Potomac Yard-VT Metro

There's a new stop on Metro's Blue and Yellow lines: The Potomac Yard-VT Metrorail Station opened for business on Friday, May 19!

The Potomac Yard-VT Metrorail project was a huge undertaking involving the City of Alexandria, WMATA, and many other partners and stakeholders. Thank you to all of the T&ES staff who have worked to help make the station a reality! Read some of the coverage of the grand opening below and for help incorporating the new station into your commute, see the City's news release about trip planning.

- Now open, Metro celebrates first day of service at Potomac Yard-VT Station
- New Potomac Yard-VT Metrorail station celebrates Grand Opening
- Potomac Yard-VT Metro Station in Alexandria Open for Business

- Long-awaited Potomac Yard Metro opens station in Alexandria

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Welcome Sara Brandt-Vorel!

Please welcome Sara Brandt-Vorel, the new Transportation Capital Project Manager in the Transportation Engineering Division! Sara is no stranger to the City. She worked with the Planning and Zoning group for seven years, where she acted as the City lead in a number of development cases, including high-profile projects such as North Potomac Yard and Oakville Triangle. Most recently, she worked as a Development Project Manager in the private sector, where she oversaw complex development projects in Virginia, Maryland, and D.C. In her new role, she will be managing capital projects that focus on enhancing pedestrian and bicycle facilities, as well as assisting with the Vision Zero initiative.

One fun fact about Sara: her birthday falls on Earth Day and, growing up, Sara so much appreciated former Vice President Al Gore's support and promotion of Earth Day that she sent him an invitation to her birthday party so they could celebrate together. Unfortunately, he did not attend, but he sent a nice letter that Sara still cherishes.

If you get a chance, please stop by BCD and welcome Sara back to the City!

You Can Help Prevent Stormwater Pollution

The City operates under a Municipal Separate Storm Sewer System (MS4) general permit. This permit authorizes the discharge of stormwater into our local streams and waterways. However, pollution can easily enter our storm sewers through the storm drain inlets found throughout the City. The T&ES Stormwater Management Division uses many tools to help reduce and prevent stormwater pollution. One tool is internal staff training on ways to spot and report stormwater pollution you may come across during your workday. **We encourage all T&ES staff to watch this 2-minute** video **on illicit discharges**. We also encourage all staff to report any discharge entering the storm sewer system or irregular colors or oil sheens in our local waterways. You may report to Alex311 and/or call the Stormwater Management Division at 703.746.6499. Call 911 if you suspect the substance is potentially hazardous material. Thank you for helping to prevent stormwater pollution!

General VPDES Permit for
Small Municipal Separate Storm Sewer Systems
Permit No. VAR040057

Year 5 Annual Report
July 1, 2022 – June 30, 2023
City of Alexandria, Virginia

Appendix G (*Hyperlinks*)
TMDL Special Conditions

1. Phase 2 Chesapeake Bay TMDL Action Plan
2. Bacteria TMDL Action Plan, Updated April 2022
3. Tidal Potomac PCB TMDL Action Plan
4. VA DEQ Letter of Acceptance for Bacteria and PCB TMDL Action Plan Updates