Northern Virginia Regional Commission

Coastal Resources Technical Assistance Program & Resiliency Focal Area

Annual Report

October 1, 2023 – September 30, 2024

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Prepared by:

Northern Virginia Regional Commission

www.novaregion.org

The Voice of Northern Virginia

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Cover Photo: View of the Potomac River in Arlington, VA by Rebecca Murphy, NVRC

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Executive Summary

The Virginia Coastal Zone Management Program (Virginia CZM)'s Technical Assistance (TA) grant program and Resilience Focal Area (RFA) strategies have allowed Northern Virginia Regional Commission (NVRC) to support and advance critical coastal resources management planning and projects in Northern Virginia since 1992. The Coastal Resources Management Program at NVRC includes coordination of regional programs that advance the Virginia CZM's interests in coastal resource management, public outreach, education and training events, environmental impact and permit reviews, and other technical assistance activities around coastal issues and priorities relevant to Northern Virginia localities. This report describes NVRC's activities and outcomes from the FY23 TA grant program as well as the RFA strategy.

NVRC produced the following products as a part of its FY23 programming:

FY23 TA Program:

Product #1: Annual Report – Northern Virginia Coastal Resources Technical Assistance Program Outcomes

Product #2: Regional Stormwater Education Campaign

Product #3: Benefits Accrued from Prior CZM Grants

FY23 Resiliency Focal Area:

Product #4: Regional & Local Resilience Planning

Introduction

Northern Virginia Regional Commission (NVRC)'s Coastal Resources Management Program has provided coordination of coastal resources planning and projects amongst local jurisdictions as well as state and federal entities for over twenty years. Primary objectives of NVRC's coastal program in Northern Virginia include; promote the sustainable use of coastal resources, provide technical assistance to local governments and non-governmental organizations on emerging issues facing the coast such as marine debris, water quality and coastal hazard planning; improve local capacity to protect, manage and restore coastal ecosystems; improve public access to the coast; and serve as a forum for information exchange, training, and coordination of planning among stakeholders in the region.

Through its partnership with the Virginia Coastal Zone Management Program (Virginia CZM) , NVRC has advanced a range of new and ongoing coastal resources management efforts through technical and planning assistance to Northern Virginia localities. NVRC has also continued to build upon Virginia CZM's Resiliency Focal Area (RFA) to ensure long-term capacity for community resilience through coordination of local resiliency planning and programming. For FY23, Virginia CZM awarded $34,500 to NVRC through its Technical Assistance (TA) grant program to continue its Coastal Resources Management Program as well as $30,000 as a part of the RFA strategy between October 1, 2023 and September 30, 2024. This report provides outcomes of NVRC's activities for this grant period for both the TA program and the RFA.

Technical Assistance Program

Product #1: Program Outcomes

Through Virginia CZM's TA program, NVRC serves as a technical resource for Northern Virginia localities on coastal resource management issues and activities, including education and outreach, data and mapping, local projects, and regulatory processes. To support education and outreach, NVRC provides workshops and training events throughout the year to cover topics of local and/or regional interest that promote a range of coastal-related projects, practices, and/or policies.

NVRC also engages in local, regional, and state level workgroups and meetings of relevance to Northern Virginia's coastal resource planning and programming. This includes participation in the Virginia Coastal Policy Team (CPT) with semi-annual meetings as well as quarterly coastal planning district commission (PDC) meetings. NVRC staff also take part in regular meetings for the Potomac Watershed Roundtable, Fairfax Trees Community of Practice, Northern Virginia Salt Management Strategy Workgroup, and Virginia Community Rating System (CRS) Workgroup. These meetings help NVRC to not only promote important projects and resources from Northern Virginia, but to also gain new information, tools, and best practices from other regions of the Commonwealth.

NVRC also reviews and responds to Environmental Assessment/Environmental Impact Statement (EA/EIS) requests as a part of the intergovernmental review process. NVRC staff responded to 5 EIS/EA requests over the fiscal year.

1.1 Meetings

NVRC coordinated, took part in, or provided general technical assistance for the following meetings in FY23:

Coastal PDC Meetings (Quarterly):

Date	Meeting Outcomes
11/30/23	Presentations from the Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERR-VA) on the CBNERRVA habitat restoration inventory and Capital Trees on Richmond's Low Line. Discussions also focused on ongoing funding opportunities through the Bipartisan Infrastructure Law (BIL), Inflation Reduction Act (IRA), and other Virginia CZM sources.
5/23/24	Review of stakeholder engagement opportunities and upcoming (fall 2024) Section 309 Needs Assessments & Strategy Development, including priority coastal issues. Virginia Tech also shared the results and new tools from a recent agriculture study.
8/6/24	The University of Virginia presented on their draft "Proactive Planning for Resilience: Protocols for Community-Led Climate Adaptation in Virginia" web tool. Virginia CZM staff provided updates on funding and upcoming Section 309 stakeholder meetings for fall/winter 2024. Friends of the Lower Appomattox River also shared an overview of their recent programming and projects in the region.

Virginia Coastal Policy Team (CPT) Meetings:

Date	Meeting Outcomes
1/30/24	Review of FY24 306 and 309 funding and scopes of work. CPT members provided other project updates, including resilience focal area programming, the Virginia Department of Conservation & Recreation (DCR)'s Office of Resilience Planning work, and other initiatives for the coming year.
7/11/24	A special meeting to review submitted proposals for the FY25 BIL Climate Ready Coasts funding and to allow CPT members to ask questions before scoring.

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9/30/24	Review of application statuses and other updates on several ongoing funding opportunities, including BIL, IRA, and the U.S. Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG). The team also reviewed the FY24 budget and shared updates on Plant Nova Natives and other conservation programming taking place across the state.

Other Meetings:

Date	Group/Meeting
10/6/23	Potomac Watershed Roundtable
10/31/23	Northern Virginia Salt Management Strategy Outreach Meeting
11/30/23	VA CRS Workgroup
12/21/23	Living Shoreline Design Work Group
1/4/24	Northern Virginia Salt Management Strategy Outreach Meeting
1/11/24	Northern Virginia Clean Water Partners
1/12/24	Potomac Watershed Roundtable
1/31/24	VA CRS Workgroup
2/13/24	Northern Virginia Salt Management Strategy Outreach Meeting
3/7/24	Fairfax Trees Community of Practice
3/21/24	Northern Virginia Salt Management Strategy Outreach Meeting
3/27/24	VA CRS Workgroup
4/5/24	Potomac Watershed Roundtable
4/24/24	Northern Virginia Clean Water Partners
5/29/24	VA CRS Workgroup
7/12/24	Potomac Watershed Roundtable
7/31/24	VA CRS Workgroup
8/23/24	HRPDC Coastal Resiliency Working Group
9/23/24	Northern Virginia Clean Water Partners

1.2 Training Events

NVRC held four training events that focused on improving knowledge and collaboration around topics of regional interest, including residential stormwater management landscaping, watershed restoration, green infrastructure planning in urban spaces, and sustainable development through transatlantic partnerships.

1.2.1 NOVA Rain Garden Workshop

2/10/2024 **|** 74 Participants **|** Issue: (D) Coastal Hazards

NVRC partnered with Arlington County and Northern Virginia Soil and Water Conservation District to host a hybrid (virtual and in-person) rain garden workshop for the public. The partners presented ways to design, construct, and maintain a rain garden for residential properties that can absorb rainwater, improve wildlife habitat, and support the health of local waterways and drinking water supplies. The virtual recording and presentation slides can be found here: https://novaregion.org/1581/2024-Rain-Garden-Workshop.

1.2.2 Local-Level Climate Resiliency Plans and Nature-Based Solutions

4/18/2024 **|** 54 Participants **|** Issue: E) Coastal Dependent Uses and Community Development/Coastal Water Quality

Jamie Chan of The Nature Conservancy shared ways that her organization's work in Germany is leading a climate resiliency transformation in urban regions of the country through programs rounded in nature-based solutions. She also discussed potential applications in Northern Virginia with attendees, such as the installation of green walls and "climate oases". The virtual recording and presentation slides can be found here: https://novaregion.org/1577/Webinar-Series-2024

1.2.3 Sustainably Revitalizing Degraded Watersheds

6/24/24 **|** 23 Participants **|** Issue: (C) Coastal Habitat/Marine Debris Stewardship

Members of the organization, Neckarinsel, presented on how creative design, integrated planning, and local collaboration are helping to restore the Neckar River watershed in Stuttgart, Germany. This event highlighted a unique urban planning experiment that is underway to revitalize the watershed, and outcomes from the project suggest a sustainable pathway and model for recovery and the renewal of other U.S. watersheds, especially in Northern Virginia. The virtual recording and presentation slides can be found here: https://novaregion.org/1577/Webinar-Series-2024

1.2.4 How Northern Virginia's Ties to Europe Boost the Local Economy and Environment

6/26/24 **|** 46 Participants **|** Issue: (E) Coastal Dependent Uses and Community Development/Coastal Water Quality

This webinar focused on the potential of adaptive reuse and sustainable development in Northern Virginia, with a particular emphasis on international collaboration. This included a discussion on the role of local universities, innovation clusters, and interconnectedness of investment between the U.S. and Europe to inspire enhanced environmental projects. The virtual recording and presentation slides can be found here: https://novaregion.org/1549/Webinars

Product #2: Regional Stormwater Education Campaign (Special Project)

The Northern Virginia Clean Water Partners (NVCWP) is composed of a group of local governments, drinking water and sanitation authorities, schools, 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. Membership is voluntary and each partner makes an annual contribution to support the program. By working together, the partners are able to leverage their funds to develop and implement a range of bilingual education and outreach strategies throughout Northern Virginia.

Since the NVCWP was developed in 2003, over 20 partners now participate in the program and meet on a bi-annual basis to collaborate on new social marketing strategies, develop the annual stormwater survey, and coordinate on other priority topics that support and advance the campaign. Meetings during FY23 were held on 1/11/24, 4/24/24, and 9/23/24.

As a part of their education and outreach strategies, the partners conduct an annual Regional Stormwater Education Campaign using a combination of social media platforms, local engagement activities, television and radio advertisements, educational material distribution, and the Only Rain website (https://www.onlyrain.org/) to promote positive stormwater-related knowledge and behaviors. The annual campaign also helps to satisfy MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

In 2024, the NVCWP continued to focus on a number of high priority pollution issues, including nutrients, illicit discharge, salt, and bacteria. Target audiences for these issues are comprised of pet owners, winter salt applicators, home mechanics, and residents with a lawn or garden. The 2024 campaign also updated the NVCWP's outreach and engagement programming through several new social marketing tools, including:

- Enhanced website features
- New social media content, including "Wednesday Water Tips"
- A new campaign video
- New forms of paid advertising

Throughout the campaign year, the NVCWP ran tv advertisements on 45 English and Spanish language networks for a total of 12,354 ads aired and 1,034,052 impressions, or views. The partners also utilized multiple social media platforms, including Instagram, Facebook, and Twitter/X, to reach the campaign's target audiences. The partners created Facebook and Twitter/X

accounts as a part of their 2020 campaign strategy, then adding Instagram in 2022. In 2024, the NVCWP's Facebook page gained 64 followers and made 276 posts, which resulted in 624 post engagements and 188 post link clicks. The Twitter/X account received 28 new followers and had 262 tweets, 1,093 tweet engagements, and 91 link clicks. Further, the Instagram account added 69 followers and created 231 posts. In July 2023, the NVCWP also added a Threads account, which gained 65 followers and shared 101 posts over the year.

In addition to the Regional Stormwater Education Campaign, the partners conduct an annual online survey of 500 Northern Virginia residents to better understand changes in regional stormwater-related knowledge and behaviors over time. Results help the partners to assess their campaign's effectiveness and better direct education and outreach strategies in the future. In 2024, the survey asked specific questions regarding Northern Virginia residents' knowledge and behaviors around relevant stormwater management and pollution issues, such as pet waste, lawn and garden care, and automobile care, as well as campaign advertising and messaging impacts. As a new survey topic, respondents were also asked questions to measure attitudes and behaviors related to snow and ice maintenance, including the frequency and timing of deicer (e.g., road salt) and abrasive (e.g., sand) application.

Findings from the annual survey highlighted consistent awareness and positive receptions to the NVCWP over the past several years, as well as new insights on ways that the campaign can more effectively target certain audiences to reduce stormwater pollution behaviors. A complete report of survey findings and the 2024 annual summary are included in Appendices B and C. Both documents can also be viewed on the Only Rain website: https://www.onlyrain.org/annual-summaries.

Product #3: Benefits Accrued from Prior CZM Grants

The Virginia CZM TA program has been critical to the development and success of several programs, partnerships, and projects for NVRC since 1992, including the NVCWP. Established in 2003, the NVCWP is composed of local jurisdictions, regional drinking water and sanitation authorities, schools, and businesses that work together to address regional stormwater pollution and source water protection issues through targeted education and outreach initiatives. The primary goals of the program include to:

- Identify high priority water quality issues for the region
- Identify target audience(s) for outreach
- Educate the region's residents on simple ways to reduce pollution around their homes
- Monitor changes in behavior through surveys and other data collection techniques
- Pilot new cost-effective opportunities for public outreach and education

With Virginia CZM TA funding, NVRC oversees program coordination and administration to secure leveraged funds from partners for a Regional Stormwater Education Campaign. For more than a decade, this campaign has employed various communication methods—including social media, television ads, local outreach activities, printed materials, and the Only Rain website—to promote awareness and improve behaviors related to stormwater issues. Each year, partners aim to

introduce new strategies to enhance engagement with their target audiences, exploring updated social media platforms, outreach materials, and additional educational resources.

The partners are also able to assess the effectiveness of the campaign through an annual knowledge and behavior survey of 500 Northern Virginia residents. Results from the survey help to direct future education and outreach efforts and track larger trends in stormwater-related actions over time. A summary of the 2024 survey and campaign, as well as reports from prior campaign years, can be viewed on the Partners' Only Rain Website: https://www.onlyrain.org/annual-summaries. Full results from the 2024 survey as well as the campaign summary are included in the Appendices.

Over 20 partners now participate in the program and meet on a semi-annual basis to collaborate on campaign development and ways to enhance their ongoing pollution-reduction efforts. The 2024 Stormwater Education Campaign continued to build off of prior years with a budget of $110,000 to conduct a range of outreach and education activities. Notably, the Partners have been able to leverage $1,612,225 in funds for the program since 2007.

Resiliency Focal Area Outcomes

Product #4: Regional and Local Resilience Planning

4.1 Regional Resilience Coordination

NVRC staff coordinate with local, regional, and state stakeholders to advance resiliency-related planning and projects across Northern Virginia. Through Virginia CZM's RFA, NVRC has been able to further support and expand its stakeholder network as well as continue to address new and ongoing resilience needs and priorities across the region.

In 2021, NVRC formally established the NOVA Flood Mitigation and Resilience Workgroup as a way for regional stakeholders to collaborate on and prioritize resilience strategies relating to flooding and associated hazards with participation from local stormwater engineers, public works staff, outreach and education staff, and planners. A number of other local, regional, and state-level stakeholders and Virginia PDC staff take part in the workgroup to share projects, best practices, and other relevant information for the region as well. See below for topics and outcomes from the workgroup's quarterly meetings in FY23:

Date	Flood Mitigation and Resiliency Workgroup Meeting Outcomes
12/5/23	USGS hydrologist Aaron Porter presented findings from NVRC's study on historic hydrologic changes in the Four Mile Run watershed. NVRC also discussed the results of its regional rain gage audit and led education and outreach brainstorming for 2024.

3/21/24	DCR provided a demonstration of their updated Coastal Resilience Web Explorer Tool, and Wetlands Watch shared information and updates on the National Flood Insurance Program and CRS. The group also discussed the Chesapeake Bay Preservation Area amendments, including proposed resiliency draft guidance, and updates on the development of the regional flood education and outreach framework.
7/11/24	Jeremy Geiger of the National Weather Service presented updated data, tools, and other projects from the NOAA National Weather Prediction Service. NVRC staff also provided updates on their regional rain gauge monitoring platform and shared the draft NOVA Flood Education and Outreach Framework.
9/24/24	Staff from the City of Virginia Beach presented on their new Virginia Beach Recurrent Flooding Indicator Map and the group discussed the potential application of a similar platform for Northern Virginia localities. The group also discussed programming for the 2025 Flood Awareness Week, upcoming grant opportunities, and results and next steps following completion of the NOVA Flood Education and Outreach Framework.

4.2 State-Level Resilience Support

NVRC staff have continued to contribute to the development of the Virginia Coastal Resilience Master Plan (VCRMP) Phase II, which is expected to be completed in December 2024. Through the RFA, NVRC took part in the VCRMP's Technical Advisory Committee (TAC) as well as the Research, Data, and Innovation Subcommittee with attendance at the following meetings:

Date	Meeting Type
10/17/23	Research, Data, and Innovation Subcommittee Meeting
12/15/23	TAC Meeting
1/23/24	Research, Data, and Innovation Subcommittee Meeting
3/13/24	TAC Meeting
5/24/24	Research, Data, and Innovation Subcommittee Meeting
6/18/24	TAC Meeting
8/15/24	Research, Data, and Innovation Subcommittee Meeting
9/18/24	TAC Meeting

4.3 Public Outreach and Education

The NOVA Flood Mitigation and Resilience Workgroup identified expanded public outreach and education as a regional priority to increase knowledge and community action around flood hazards. Current flood education activities in the region emanate from individual jurisdictions and are usually driven by their own ordinances and regulatory requirements. As such, NVRC developed the NOVA Flood Education and Outreach Framework to support the development of consolidated messaging and outreach tools for future public engagement efforts in Northern Virginia. By utilizing consistent language delivered by a regional authority, NVRC looks to foster greater credibility, decrease confusion, and provide support to its member jurisdictions looking to advance flood resilience in their community.

Components of the framework were determined based on information and feedback from Northern Virginia jurisdictions and other regional resiliency stakeholders between December 2023 and September 2024. During the development and draft phases of the framework, NVRC engaged representatives from local jurisdictions to understand each locality's current flood education and outreach strategies and priorities, as well as to identify gaps in flood-related messaging and content at the local and regional scale. NVRC also received input and feedback on the framework's goals and content during the quarterly NOVA Flood Mitigation and Resilience Workgroup meetings.

The final document includes an overview of flood hazards in Northern Virginia, including key issues and impacts to address at the regional scale, followed by an outline of audience types that can be targeted with tailored messaging and engagement activities. After a review of each audience, the document highlights the primary topics and goals that the framework aims to accomplish through specific strategies and methods for future outreach and education programming. These components were used to determine the next steps for implementation, including mechanisms to assess the framework's short and long-term effectiveness.

A PDF of the full NOVA Flood Education and Outreach Framework, including its methodology and next steps for implementation, are included in Appendix A.

Appendices
Appendix A: NOVA Flood Education and Outreach Framework

View NOVA Flood Education and Outreach Framework online:

https://www.novaregion.org/DocumentCenter/View/14405/NOVA-Flood-Education-and-Outreach-Framework

Appendix B: Annual Stormwater Survey Results

Northern Virginia Resident Stormwater Knowledge and Behavior Study

Summary Report of Findings

August 9 2024

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Northern Virginia Regional Commission

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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 May and June of 2024 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 2024 FINDINGS

2.2. Participant Characteristics

The final dataset includes surveys of 500 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 women (50.0%) and men (49.6%), with 0.4% identifying as non-binary or gender non-conforming. All participants were above 21 years of age. The most common age groups were between ages 35 and 44 (22.8%) and ages 25 to 34 (21.2%). Ages 75 and older were the least common, at 7.2% of participants. White respondents make up over 50% of the sample and African American or Black respondents comprised just over one-quarter of the sample.

The locality with the most survey respondents is Fairfax County (not Fairfax City, Herndon, or Vienna) at 17.6% followed by Loudoun County (not Leesburg) at 13.2% with Falls Church (2.4%)

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 $124,999.

About three-fourths of the sample have lived in their residence between 1 and 9 years, while 22.2% have lived in their current residence for 10 to 19 years and 25.8% have for 20 or more years. A majority of participants (62.2%) own their residence. Most participants also have a lawn or garden in their home (80.2%) and a majority also own or lease a vehicle (86.0%). Slightly less than half of participants (42.8%) own at least one dog.

Almost all participants report that English is their primary language (90.6%); the remaining 9.4% of respondents report a variety of languages as their primary language. The survey was administered in English only, and therefore all respondents are fluent in English.

Respondents report working in a wide variety of occupations, though the largest occupation category reported is "retired".

Table 1. Survey participant demographic characteristics.

Demographic	Subcategory	Percentage
Gender	Female	50.0%
	Male	49.6%
	Non-binary/non-conforming	0.4%
Age	21 to 24	8.4%
	25 to 34	21.2%
	35 to 44	22.8%
	45 to 54	14.8%
	55 to 64	13.8%
	65 to 74	11.8%
	75 or older	7.2%
Residence Type	Owned	62.2%
	Rented	35.0%
	Military housing	0.6%

Demographic	Subcategory	Percentage
	Transitional housing	0.4%
	Other	1.8%
Locality	Alexandria	13.0%
	Arlington	11.8%
	Fairfax County, but not one of the cities/towns listed	17.6%
	Fairfax County: Fairfax City	9.8%
	Fairfax County: Herndon	4.0%
	Fairfax County: Vienna	3.2%
	Falls Church	2.4%
	Loudoun County, but not Leesburg	13.2%
	Loudoun County: Leesburg	5.6%
	Prince William County, but not one of the cities/towns listed	8.8%
	Prince William County: Dumfries	4.4%
	Prince William County: Manassas	5.0%
	Prince William County: Manassas Park	1.2%
Occupation	Accommodation/hospitality and food services	0.8%
	Administrative	3.6%
	Agriculture, forestry, fishing and hunting, and mining	1.6%
	Arts, entertainment, and recreation	1.4%
	Construction	4.0%
	Currently unemployed	8.4%
	Educational services	3.8%
	Finance and insurance	5.4%

Demographic	Subcategory	Percentage
	Health care and/or social assistance	5.0%
	Information or information technology	7.6%
	Manufacturing	3.0%
	Other - Write In (Required)	6.4%
	Other services	6.8%
	Professional and/or scientific	4.4%
	Public administration	2.2%
	Real estate and/or rental and leasing	1.8%
	Retail trade	8.2%
	Retired	17.0%
	Student only (no other occupation)	3.4%
	Transportation and warehousing	1.6%
	Utilities	1.2%
	Waste management services	0.4%
	Wholesale trade	2.0%
Income	Less than $35,000	12.6%
	$35,000 to $49,999	11.2%
	$50,000 to $74,999	13.0%
	$75,000 to $99,999	21.2%
	$100,000 to $124,999	14.2%
	$125,000 to $149,999	9.0%
	$150,000 to $174,999	4.4%
	$175,000 to $199,999	5.4%
	$200,000 or greater	9.0%
Race	African American/Black	25.0%
	American Indian/Native Alaskan	2.0%

Demographic	Subcategory	Percentage
	Asian	16.0%
	Hispanic/Latino	10.4%
	Native Hawaiian/Pacific Islander	0.2%
	White/Caucasian	52.2%
	Other - Write In	1.4%
Language	Amharic or Somali	0.2%
	Arabic	0.6%
	Chinese	0.8%
	English	90.6%
	Korean	1.4%
	Other - Write In (Required)	1.2%
	Spanish	3.4%
	Tagalog (including Filipino)	0.6%
	Urdu	0.2%
	Vietnamese	1.0%
Residence Years	Less than 1 year	7.2%
	1 to 3 years	21.8%
	4 to 9 years	23.0%
	10 to 19 years	22.2%
	20 or more years	25.8%
Lawn or Garden at Residence	Yes	80.2%
	No	19.4%
Own or Lease a Vehicle	Yes	86.0%
	No	13.2%
Dog Ownership	Yes	42.8%
	No	56.6%

Behaviors and Behavioral Drivers

Lawn/Garden Fertilization

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

Figure 1. Most of those surveyed (80.2%) report having a lawn or garden, no matter how small. Of those with a lawn or garden, 65.8% report using a lawn care service at least once per year and almost all (93.0%) 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 (11.1%) fertilize only when a soil test indicates the grass needs fertilizer, and 15.2% never fertilize their lawn or garden.

Lawn and garden fertilization behaviors generally did not differ between demographic subgroups, with the exception that home owners more frequently report being familiar with their lawn care than do renters.

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

Demographic	Sub-category	Familiar with Lawn/ Garden Care	Lawn Care Service Used 1+ times a Year	Frequency of Lawn Fertilization					
				1x per year	2x per year	3x per year	4x per year	Only per soil test	Never
	All Respondents	93.0%	65.8%	22.9%	30.8%	9.7%	10.3%	11.1%	15.2%
Gender	Male	95.3%	64.2%	24.9%	28.0%	8.8%	9.8%	11.9%	16.6%
	Female	90.8%	68.0%	20.4%	34.7%	10.9%	10.9%	10.2%	12.9%
Age	21 to 24	87.5%	59.4%	20.8%	33.3%	12.5%	4.2%	16.7%	12.5%
	25 to 34	89.9%	77.2%	19.7%	34.8%	13.6%	12.1%	12.1%	7.6%
	35 to 44	93.9%	75.5%	16.7%	30.0%	14.4%	17.8%	11.1%	10.0%

Demographic	Sub-category	Familiar with Lawn/ Garden Care	Lawn Care Service Used 1+ times a Year	Frequency of Lawn Fertilization					
				1x per year	2x per year	3x per year	4x per year	Only per soil test	Never
	45 to 54	95.4%	65.6%	39.3%	25.0%	3.6%	7.1%	12.5%	12.5%
	55 to 64	92.0%	41.2%	20.5%	38.5%	2.6%	5.1%	5.1%	28.2%
	65 to 74	97.9%	58.3%	26.1%	26.1%	6.5%	4.3%	8.7%	28.3%
	75 or older	92.6%	65.4%	15.0%	30.0%	10.0%	10.0%	15.0%	20.0%
Locality	Alexandria	85.0%	72.5%	24.1%	31.0%	6.9%	13.8%	10.3%	13.8%
	Arlington	86.0%	72.7%	31.4%	22.9%	8.6%	20.0%	2.9%	14.3%
	Fairfax - Inclusive	92.1%	64.5%	24.8%	28.7%	10.1%	7.0%	12.4%	17.1%
	Prince William - Inclusive	98.8%	57.8%	23.3%	31.5%	5.5%	8.2%	15.1%	16.4%
	Leesburg/Loudon	96.3%	69.6%	14.7%	37.3%	14.7%	12.0%	9.3%	12.0%
Ethnicity	Not Hispanic/Latino	92.3%	66.1%	23.6%	30.1%	9.7%	10.0%	11.3%	15.2%
	Hispanic/Latino	**	63.2%	15.6%	37.5%	9.4%	12.5%	9.4%	15.6%
Years of Residence	Less than 1 year	83.3%	55.6%	30.8%	30.8%	7.7%	23.1%	**	7.7%
	1 to 3 years	94.5%	54.2%	27.0%	31.7%	6.3%	6.3%	11.1%	17.5%
	4 to 9 years	87.4%	77.0%	15.9%	33.3%	10.1%	11.6%	15.9%	13.0%
	10 to 19 years	92.9%	71.4%	21.4%	27.4%	15.5%	11.9%	13.1%	10.7%
	20 or more years	97.6%	61.8%	25.0%	31.3%	7.1%	8.9%	8.0%	19.6%
Home Ownership	Owned	95.9%	68.5%	21.1%	31.3%	10.6%	11.3%	10.2%	15.5%
	Rented	86.9%	59.6%	27.1%	28.6%	7.1%	7.1%	15.7%	14.3%
Household Income	Less than $35,000	90.7%	47.6%	21.2%	30.3%	6.1%	9.1%	12.1%	21.2%
	$35,000 to $49,999	88.6%	60.0%	25.0%	29.2%	**	8.3%	25.0%	12.5%

Demographic	Sub-category	Familiar with Lawn/ Garden Care	Lawn Care Service Used 1+ times a Year	Frequency of Lawn Fertilization					
				1x per year	2x per year	3x per year	4x per year	Only per soil test	Never
	$50,000 to $74,999	93.5%	50.0%	40.0%	20.0%	2.5%	2.5%	15.0%	20.0%
	$75,000 to $99,999	93.5%	71.7%	23.8%	32.5%	6.3%	11.3%	8.8%	17.5%
	$100,000 to $124,999	93.2%	74.1%	22.2%	27.8%	16.7%	11.1%	11.1%	11.1%
	$125,000 to $149,999	92.9%	76.2%	22.2%	27.8%	16.7%	8.3%	11.1%	13.9%
	$150,000 to $174,999	**	73.7%	5.0%	50.0%	5.0%	10.0%	15.0%	15.0%
	$175,000 to $199,999	95.8%	70.8%	4.3%	34.8%	30.4%	21.7%	8.7%	**
	$200,000 or greater	92.3%	65.0%	25.8%	35.5%	6.5%	12.9%	**	19.4%

Red font indicates significant differences within a demographic subgroup.

** Insufficient data for between-group comparison.
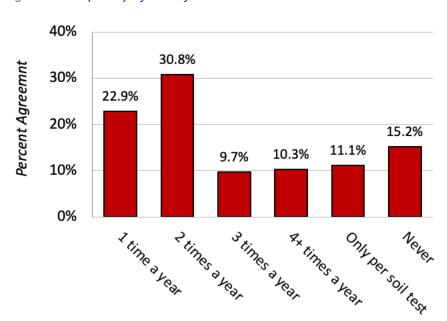
*Figure 1. **Frequency of lawn fertilization.***

Reported frequency of lawn fertilization from 2016-2024 can be seen in Table 3. Respondents in 2020 and 2021 reported fertilizing their lawn *once per year* at higher rates than 2024 respondents. Additionally, respondents in 2020 reported lower rates of fertilizing *two* times per year than 2024 respondents. In 2022, the frequency of fertilizing per a soil test was less than in 2024 and from 2016-2019 the frequency of respondents never fertilizing their lawn was greater than in 2024.

Table 3. Lawn fertilization frequency across years.

Frequency of Lawn Fertilization	Year of Survey								
	2016	2017	2018	2019	2020	2021	2022	2023	2024
1 time	33.6%	31.0%	28.4%	26.4%	37.8%	38.3%	34.3%	19.3%	22.9%
2 times	22.0%	24.8%	23.9%	24.8%	17.7%	20.3%	24.1%	27.1%	30.8%
3 times	3.6%	3.8%	8.3%	6.4%	9.2%	6.2%	7.3%	17.3%	9.7%
4+ times	5.8%	6.2%	6.8%	7.2%	8.4%	8.6%	7.7%	12.0%	10.3%
Per soil test	*	*	6.1%	6.0%	4.8%	4.5%	3.5%	10.5%	11.1%
Never	35.0%	34.3%	26.5%	29.2%	22.1%	22.1%	23.1%	13.8%	15.2%

* Red font indicates that the value significantly differs from the current 2024 value.

Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 2. Lawn fertilization frequency across years.

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 35.6% providing this response. The next most common response (32.2%) is leaving the grass
on their lawn/garden, while 21.3% of respondents bag it and put it in the regular trash. Finally,
10.9% report putting their grass in a compost pile or bin. Older age groups had higher rates of
leaving their grass clippings on the lawn, as did people from Fairfax.
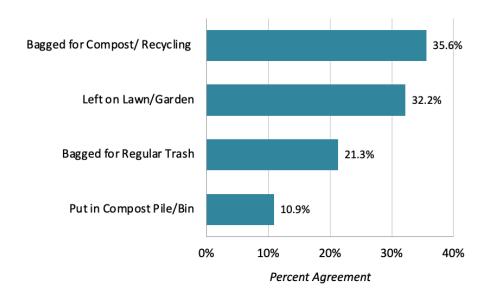
Table 4. Disposal of grass clippings by demographic group.

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
	All Respondents	**21.3%**	**35.6%**	**32.2%**	**10.9%**
Gender	Male	20.3%	33.2%	34.8%	11.8%
	Female	22.7%	39.0%	28.4%	9.9%
Age	21 to 24	31.8%	27.3%	27.3%	13.6%
	25 to 34	36.4%	27.3%	18.2%	18.2%
	35 to 44	25.9%	42.4%	21.2%	10.6%
	45 to 54	14.3%	41.1%	33.9%	10.7%
	55 to 64	10.5%	34.2%	55.3%	0.0%
	65 to 74	7.7%	41.0%	38.5%	12.8%
	75 or older	8.7%	21.7%	65.2%	4.3%
Locality	Alexandria	32.1%	32.1%	17.9%	17.9%
	Arlington	18.2%	54.5%	12.1%	15.2%
	Fairfax - Inclusive	16.0%	33.6%	42.0%	8.4%
	Prince William - Inclusive	29.5%	29.5%	33.3%	7.7%
	Leesburg/Loudon	18.3%	38.0%	29.6%	14.1%

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
Ethnicity	Not Hispanic/Latino	20.3%	35.9%	32.5%	11.2%
	Hispanic/Latino	29.4%	32.4%	29.4%	8.8%
Years of Residence	Less than 1 year	25.0%	25.0%	33.3%	16.7%
	1 to 3 years	25.0%	31.7%	31.7%	11.7%
	4 to 9 years	22.4%	35.8%	25.4%	16.4%
	10 to 19 years	31.7%	31.7%	28.0%	8.5%
	20 or more years	10.2%	41.7%	39.8%	8.3%
Home Ownership	Owned	19.4%	36.4%	34.4%	9.9%
	Rented	27.1%	34.3%	22.9%	15.7%
Household Income	Less than $35,000	29.0%	25.8%	38.7%	6.5%
	$35,000 to $49,999	28.0%	32.0%	36.0%	4.0%
	$50,000 to $74,999	13.9%	33.3%	41.7%	11.1%
	$75,000 to $99,999	20.3%	30.4%	36.7%	12.7%
	$100,000 to $124,999	22.0%	40.0%	20.0%	18.0%
	$125,000 to $149,999	24.3%	48.6%	16.2%	10.8%
	$150,000 to $174,999	13.3%	40.0%	33.3%	13.3%
	$175,000 to $199,999	27.3%	40.9%	22.7%	9.1%
	$200,000 or greater	14.7%	35.3%	44.1%	5.9%

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

Figure 3. Disposal of grass clippings.

As can be seen in Table 5, respondents in 2018 and 2019 reported leaving grass clippings on their lawn or garden at higher rates than do 2024 respondents. Otherwise, there were no significant differences between this year's survey responses to this question and previous years.

Table 5. Disposal of grass clippings across years.

Grass clipping disposal	Year of Survey								
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bagged for regular trash	*	*	14.5%	17.0%	23.3%	24.6%	27.3%	25.4%	21.3%
Bagged for compost/recycling pick up	*	*	32.8%	26.4%	26.7%	32.3%	32.0%	34.1%	35.6%
Left on the lawn/garden	*	*	45.7%	48.1%	43.8%	33.7%	33.1%	30.8%	32.2%
Put in a compost pile/bin	5.8%	6.2%	7.0%	8.5%	6.3%	9.5%	7.6%	9.7%	10.9%

* Red font indicates that the value significantly differs from the current 2024 value.

Asterisks (*) indicate that the question did not appear in the survey that year.
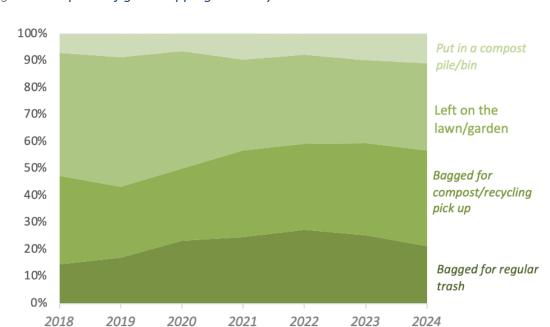
Figure 4. *Disposal of grass clippings across years.*

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", or "They are swept or blown into the storm drain". Of those with a lawn or garden, 65.5% report sweeping or blowing them back into their lawn, while 18.1% report sweeping or blowing them into the storm drain, as can be seen in Table 6 and Figure 5. Lastly, 16.5% report leaving their grass clippings in the street. Men report higher rates of leaving their grass clippings in the street, at 20.9% compared to 10.2% of women.

Table 6. *Handling of grass clippings in street by demographic group.*
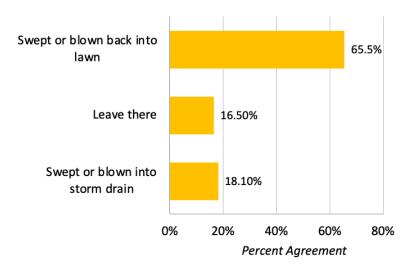
Demographic	Sub-category	Grass Clippings on Street Handling		
		Leave There	Swept or Blown Back into the Lawn	Swept or Blown into Storm Drain
	All Respondents	**16.5%**	**65.5%**	**18.1%**
Gender	Male	20.9%	62.8%	16.3%

Demographic	Sub-category	Grass Clippings on Street Handling		
		Leave There	Swept or Blown Back into the Lawn	Swept or Blown into Storm Drain
	Female	10.2%	69.3%	20.4%
Age	21 to 24	18.2%	45.5%	36.4%
	25 to 34	12.9%	61.3%	25.8%
	35 to 44	17.2%	62.1%	20.7%
	45 to 54	15.4%	76.9%	7.7%
	55 to 64	22.9%	65.7%	11.4%
	65 to 74	14.3%	71.4%	14.3%
	75 or older	17.6%	76.5%	5.9%
Locality	Alexandria	21.4%	60.7%	17.9%
	Arlington	0.0%[2]	75.8%	24.2%
	Fairfax - Inclusive	17.4%	65.2%	17.4%
	Prince William - Inclusive	17.6%	66.2%	16.2%
	Leesburg/Loudon	19.7%	62.1%	18.2%
Ethnicity	Not Hispanic/Latino	17.2%	65.2%	17.6%
	Hispanic/Latino	9.7%	67.7%	22.6%
Years of Residence	Less than 1 year	7.7%	76.9%	15.4%
	1 to 3 years	12.3%	64.9%	22.8%
	4 to 9 years	12.3%	63.1%	24.6%
	10 to 19 years	22.5%	63.8%	13.8%
	20 or more years	17.9%	67.4%	14.7%
Home Ownership	Owned	19.1%	64.4%	16.5%
	Rented	7.4%	69.1%	23.5%
Household Income	Less than $35,000	12.0%	68.0%	20.0%
	$35,000 to $49,999	14.8%	59.3%	25.9%

Demographic	Sub-category	Grass Clippings on Street Handling		
		Leave There	Swept or Blown Back into the Lawn	Swept or Blown into Storm Drain
	$50,000 to $74,999	11.4%	68.6%	20.0%
	$75,000 to $99,999	18.4%	60.5%	21.1%
	$100,000 to $124,999	16.7%	58.3%	25.0%
	$125,000 to $149,999	3.1%	90.6%	6.3%
	$150,000 to $174,999	29.4%	58.8%	11.8%
	$175,000 to $199,999	22.7%	63.6%	13.6%
	$200,000 or greater	25.0%	67.9%	7.1%

Red font indicates significant differences within a demographic subgroup.

Figure 5. *Handling of grass clippings in the street.*

Survey respondents in 2018-2021 reported lower rates of sweeping or blowing grass clippings from the street into the storm drain than 2024 respondents. Otherwise, as shown in Table 7, there

were no significant differences between previous years response rates when compared to 2024 survey response rates regarding handling of grass clippings in the street.
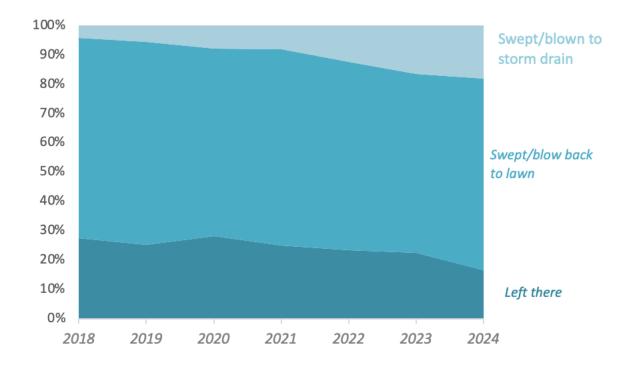
Table 7. Handling of grass clippings in the street across years.

Grass clippings in street	Year of Survey								
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Left there	*	*	27.5%	25.3%	28.3%	25.1%	23.4%	22.6%	16.5%
Swept/blow back to lawn	*	*	68.4%	69.3%	63.9%	67.0%	64.2%	60.9%	65.5%
Swept/blown to storm drain	*	*	4.1%	5.3%	7.8%	7.9%	12.4%	16.6%	18.1%

* Red font indicates that the value significantly differs from the current 2024 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.

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". These respondents were also asked how often they picked up after their dog(s) in their yard, where the response options ranged from "Daily" to "Never". The responses are summarized in Table 8 and displayed in Figure 7. Of all respondents, 43.1% report having one or more dog(s) in their household for which they are at least partially responsible. Most dog owners (87.1%) report they always or usually pick up after their dog(s) on walks. Most also report picking up after their dog(s) in the yard on a daily basis (58.9%) and fewer report picking up after their dog(s) on a weekly basis (23.9%).

Generally, younger people reported owning dogs at a higher rate than older people. People aged 25 to 34 reported owning dogs at the highest rate (55.2%).
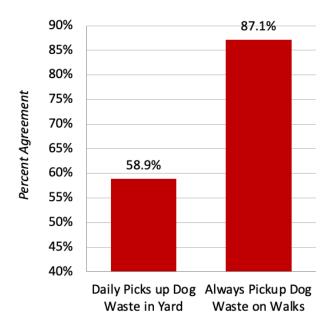
Table 8. Frequency of picking up dog waste by demographic group.

Demographic	Sub-category	Own a Dog	Always Pickup Dog Waste on Walks	Daily Picks up Dog Waste in Yard	Weekly Picks up Dog Waste in Yard
	All Respondents	**43.1%**	**87.1%**	**58.9%**	**23.9%**
Gender	Male	42.9%	83.7%	56.4%	26.6%
	Female	43.5%	90.6%	61.6%	20.9%
Age	21 to 24	46.3%	89.5%	58.8%	11.8%
	25 to 34	55.2%	79.3%	50.0%	36.0%
	35 to 44	51.3%	84.5%	61.2%	28.6%
	45 to 54	50.0%	94.4%	81.3%	3.1%
	55 to 64	36.2%	91.3%	47.1%	35.3%
	65 to 74	22.0%	100.0%	54.5%	18.2%
	75 or older	11.1%	100.0%	25.0%	0.0%
Locality	Alexandria	34.4%	86.4%	62.5%	25.0%
	Arlington	39.0%	78.3%	63.6%	22.7%

Demographic	Sub-category	Own a Dog	Always Pickup Dog Waste on Walks	Daily Picks up Dog Waste in Yard	Weekly Picks up Dog Waste in Yard
	Fairfax - Inclusive	41.8%	89.5%	61.9%	20.6%
	Prince William - Inclusive	47.4%	93.3%	56.4%	23.1%
	Leesburg/Loudon	49.5%	81.8%	52.5%	30.0%
Ethnicity	Not Hispanic/Latino	42.0%	88.0%	57.9%	25.8%
	Hispanic/Latino	51.9%	81.5%	66.7%	9.5%
Years of Residence	Less than 1 year	25.0%	77.8%	50.0%	25.0%
	1 to 3 years	38.0%	95.1%	58.1%	29.0%
	4 to 9 years	44.7%	86.0%	45.2%	28.6%
	10 to 19 years	57.3%	82.5%	62.7%	23.5%
	20 or more years	38.8%	89.4%	68.8%	16.7%
Home Ownership	Owned	50.5%	87.6%	60.4%	24.5%
	Rented	29.3%	90.2%	58.3%	19.4%
Household Income	Less than $35,000	30.2%	94.4%	66.7%	13.3%
	$35,000 to $49,999	29.1%	87.5%	38.5%	30.8%
	$50,000 to $74,999	39.1%	92.0%	68.8%	18.8%
	$75,000 to $99,999	48.1%	80.0%	57.8%	24.4%
	$100,000 to $124,999	46.5%	87.9%	50.0%	36.7%
	$125,000 to $149,999	54.5%	87.5%	76.2%	14.3%
	$150,000 to $174,999	45.5%	90.0%	57.1%	14.3%
	$175,000 to $199,999	48.1%	75.0%	38.5%	30.8%
	$200,000 or greater	51.1%	95.5%	70.0%	20.0%

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

Figure 7.Frequency of picking up dog waste.

Rates of respondents reporting they "always" or "usually" pick up after their dog(s) on walks and pick after their dog(s) in the yard "daily" from 2016-2024 can be seen below in Table 9. From 2017-2022, reported rates of picking up from the yard daily were lower than in 2024. While "daily" is the most common response regarding frequency of picking in the yard in 2023 and 2024, "weekly" was the most common response in 2017-2022.

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

Year of Survey									
Survey Question Response	2016	2017	2018	2019	2020	2021	2022	2023	2024
"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%	87.1%
Picks up after dog in yard daily	44.6%	13.3%	12.2%	16.0%	8.3%	8.7%	9.9%	61.5%	59.9%

* *Red font indicates that the value significantly differs from the current 2024 value.*

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

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", or "Other reason". In response to this question, 22.4% of dog owners report their most important reason being that it causes water pollution. Additionally, 18.6% report their most important reason being that it is required by city or county ordinances and 18.0% report doing so because it is what good neighbors do. Finally, 16.1% report doing so because it is gross, 14.9% don't want to step in it, and 5.0% do so because of the odor. Hispanic/Latino respondents report higher rates of picking up dog waste because of a city/county ordinance.

Table 10. Most important reason for picking up dog waste by demographic group.
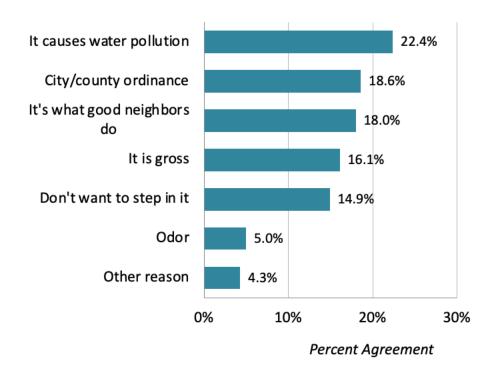
Demographic	Sub-category	Reason for Picking Up Dog Waste						
		City/county ordinance	Don't want to step in it	It causes water pollution	It is gross	It's what good neighbors do	Odor	Other reason
	All Respondents	18.6%	14.9%	22.4%	16.1%	18.0%	5.0%	4.3%
Gender	Male	21.2%	16.5%	23.5%	15.3%	18.8%	3.5%	1.2%
	Female	15.8%	13.2%	21.1%	17.1%	17.1%	6.6%	7.9%
Age	21 to 24	0.0%	21.4%	14.3%	42.9%	21.4%	0.0%	0.0%
	25 to 34	20.8%	14.6%	20.8%	16.7%	10.4%	12.5%	2.1%
	35 to 44	29.8%	12.8%	21.3%	10.6%	21.3%	2.1%	2.1%
	45 to 54	10.3%	17.2%	27.6%	13.8%	20.7%	3.4%	6.9%
	55 to 64	7.7%	7.7%	30.8%	15.4%	23.1%	0.0%	15.4%
	65 to 74	12.5%	25.0%	25.0%	12.5%	12.5%	0.0%	12.5%
	75 or older	50.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%
Locality	Alexandria	33.3%	13.3%	13.3%	13.3%	13.3%	6.7%	6.7%
	Arlington	31.8%	4.5%	45.5%	9.1%	9.1%	0.0%	0.0%
	Fairfax - Inclusive	15.5%	20.7%	17.2%	17.2%	22.4%	3.4%	3.4%
	Prince William - Inclusive	18.8%	21.9%	18.8%	18.8%	15.6%	**	6.3%
	Leesburg/Loudon	8.8%	5.9%	23.5%	17.6%	20.6%	14.7%	5.9%
Ethnicity	Not Hispanic/Latino	16.3%	14.9%	23.4%	15.6%	18.4%	5.7%	5.0%
	Hispanic/Latino	35.0%	15.0%	15.0%	20.0%	15.0%	0.0%	**
Years of Residence	Less than 1 year	14.3%	28.6%	28.6%	14.3%	0.0%	0.0%	14.3%
	1 to 3 years	14.3%	28.6%	21.4%	14.3%	17.9%	3.6%	**
	4 to 9 years	24.3%	13.5%	16.2%	18.9%	18.9%	5.4%	2.7%
	10 to 19 years	22.9%	8.3%	18.8%	14.6%	27.1%	4.2%	2.1%

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
	20 or more years	12.2%	12.2%	31.7%	17.1%	9.8%	7.3%	9.8%
Home Ownership	Owned	18.4%	13.6%	22.4%	17.6%	19.2%	4.8%	4.0%
	Rented	15.6%	21.9%	25.0%	12.5%	9.4%	6.3%	6.3%
Household Income	Less than $35,000	7.7%	30.8%	23.1%	15.4%	23.1%	0.0%	**
	$35,000 to $49,999	27.3%	18.2%	36.4%	18.2%	0.0%	0.0%	0.0%
	$50,000 to $74,999	35.7%	14.3%	14.3%	14.3%	14.3%	7.1%	0.0%
	$75,000 to $99,999	20.5%	12.8%	15.4%	23.1%	12.8%	7.7%	7.7%
	$100,000 to $124,999	14.3%	10.7%	35.7%	10.7%	21.4%	7.1%	0.0%
	$125,000 to $149,999	25.0%	0.0%	20.0%	20.0%	15.0%	5.0%	10.0%
	$150,000 to $174,999	**	42.9%	0.0%	28.6%	14.3%	14.3%	**
	$175,000 to $199,999	40.0%	10.0%	20.0%	0.0%	30.0%	**	**
	$200,000 or greater	**	21.1%	26.3%	10.5%	31.6%	**	10.5%

* Red font indicates significant differences within a demographic subgroup.

** Insufficient data for between-group comparison.

Figure 9. Reason for picking up dog waste.

Below, in Table 11, survey responses from 2016-2024 regarding reasons for picking up dog waste can be seen. In 2016, fewer respondents reported their reason for picking up dog waste as a city or county ordinance, compared to 2024 respondents. Survey respondents in 2020 reported lower rates of picking up dog waste because it causes water pollution, compared to 2024 respondents. Finally, respondents to this survey question in the years 2016, 2017, 2019, and 2020 reported higher rates of picking up dog waste because it's what good neighbors do, compared to 2024 respondents.
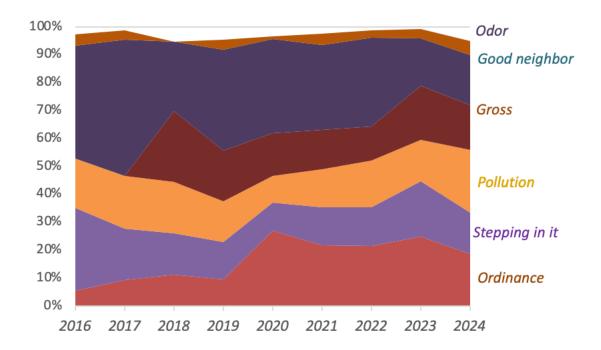
Table 11. Reason for picking up dog waste across years.

	Year of Survey								
Reason	2016	2017	2018	2019	2020	2021	2022	2023	2024
City/county ordinance	5.5%	9.2%	11.1%	9.4%	27.0%	21.6%	21.4%	24.9%	18.6%
Don't want to step in it	29.5%	18.4%	15.0%	13.5%	10.1%	13.7%	13.9%	19.8%	14.9%
It causes water pollution	17.8%	19.1%	18.3%	14.6%	9.6%	13.7%	16.8%	14.8%	22.4%
It is gross	*	*	25.5%	18.1%	15.2%	14.1%	12.2%	19.4%	16.1%
It's what good neighbors do	40.4%	48.7%	24.8%	36.3%	33.7%	30.3%	31.9%	16.9%	18.0%
Odor	4.1%	3.3%	*	3.5%	1.1%	4.1%	2.5%	3.4%	5.0%
Other reason	2.7%	1.3%	5.2%	4.7%	3.4%	2.5%	1.3%	0.8%	4.3%

* Red font indicates that the value significantly differs from the current 2024 value.

Asterisks (*) indicate that the question did not appear in the survey that year.

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

Behaviors Related to Vehicles

Respondents were next 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 (86.7%) 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 while Leesburg/Loudon had the highest rates. People who own their home have higher rates of owning or leasing a vehicle and rates of vehicle ownership tended to increase with higher household incomes.

Disposing of Motor Oil

Those who own or lease a personal vehicle were then asked 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 (59.8%) report taking their vehicle to a garage or oil changing service when the oil needs to be changed. Additionally, 23.5% report taking the old motor oil to a gas station or hazmat facility, 7.0% store it in their garage, 5.6% put it in the trash, 1.6% dump it in the gutter or storm drain, 1.2% dump it on the ground, and no respondents report dumping it down the sink.

Men reported using a gas station or hazmat facility at higher rates than women. Older respondents reported higher rates of using an oil change service, as did Hispanic/Latino respondents and renters. Hispanic/Latino respondents also reported higher rates of putting their motor oil in the trash. Finally, home owners reported higher rates of using a gas station or hazmat facility.

Table 12. Vehicle possession and motor oil disposal by demographic group.
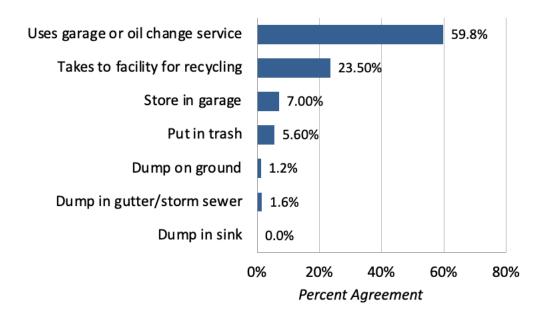
Demographic	Sub-category	Own or Lease Vehicle	Motor Oil Disposal						
		Yes, own/ lease vehicle	Uses a Garage or Oil Change Service	Gas Station or Hazmat Facility	Store in Garage	Put in the Trash	Dump in Gutter or Storm Sewer	Dump in Sink	Dump on Ground
	All Respondents	**86.7%**	**59.8%**	**23.5%**	**7.0%**	**5.6%**	**1.6%**	**0.0%**	**1.2%**
Gender	Male	87.1%	56.0%	28.2%	6.0%	6.0%	0.5%	1.4%	1.9%
	Female	87.0%	63.6%	18.7%	7.9%	5.1%	2.8%	0.9%	0.9%
Age	21 to 24	85.4%	51.4%	31.4%	8.6%	5.7%	2.9%	0.0%	0.0%
	25 to 34	89.5%	47.9%	26.6%	10.6%	10.6%	2.1%	1.1%	1.1%
	35 to 44	88.5%	40.0%	28.0%	15.0%	11.0%	3.0%	3.0%	0.0%
	45 to 54	83.8%	71.0%	22.6%	1.6%	1.6%	0.0%	0.0%	3.2%
	55 to 64	88.4%	70.5%	27.9%	1.6%	0.0%	0.0%	0.0%	0.0%
	65 to 74	83.1%	87.8%	8.2%	0.0%	0.0%	2.0%	2.0%	0.0%
	75 or older	82.9%	82.8%	6.9%	0.0%	0.0%	0.0%	0.0%	10.3%
Locality	Alexandria	80.0%	71.2%	15.4%	3.8%	9.6%	0.0%	0.0%	0.0%
	Arlington	78.0%	50.0%	28.3%	10.9%	8.7%	0.0%	0.0%	2.2%
	Fairfax - Inclusive	89.1%	64.4%	22.1%	6.1%	4.9%	1.8%	0.0%	0.6%
	Prince William - Inclusive	84.5%	56.1%	24.4%	4.9%	4.9%	2.4%	4.9%	2.4%
	Leesburg/Loudon	94.6%	52.9%	27.6%	10.3%	3.4%	2.3%	1.1%	2.3%
Ethnicity	Not Hispanic/Latino	86.9%	61.4%	22.8%	6.5%	4.7%	1.8%	1.3%	1.6%
	Hispanic/Latino	84.6%	45.5%	29.5%	11.4%	13.6%	**	**	**
Years of Residence	Less than 1 year	75.0%	70.4%	7.4%	11.1%	7.4%	3.7%	0.0%	0.0%
	1 to 3 years	83.5%	67.0%	22.0%	4.4%	3.3%	2.2%	1.1%	0.0%
	4 to 9 years	85.8%	57.7%	21.6%	8.2%	7.2%	3.1%	1.0%	1.0%

Demographic	Sub-category	Own or Lease Vehicle	Motor Oil Disposal						
		Yes, own/ lease vehicle	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
	10 to 19 years	90.0%	43.4%	27.3%	13.1%	9.1%	0.0%	3.0%	4.0%
	20 or more years	90.6%	67.2%	26.7%	1.7%	2.6%	0.9%	0.0%	0.9%
Home Ownership	Owned	94.5%	55.7%	27.1%	7.2%	5.5%	1.7%	1.0%	1.7%
	Rented	74.7%	67.7%	16.9%	6.9%	4.6%	1.5%	1.5%	0.8%
Household Income	Less than $35,000	60.3%	60.5%	26.3%	0.0%	2.6%	5.3%	2.6%	2.6%
	$35,000 to $49,999	76.4%	57.1%	23.8%	7.1%	7.1%	2.4%	0.0%	2.4%
	$50,000 to $74,999	95.3%	67.2%	19.7%	6.6%	4.9%	0.0%	0.0%	1.6%
	$75,000 to $99,999	89.6%	63.2%	17.9%	9.5%	7.4%	1.1%	1.1%	0.0%
	$100,000 to $124,999	90.0%	50.8%	28.6%	7.9%	4.8%	3.2%	1.6%	3.2%
	$125,000 to $149,999	91.1%	56.1%	22.0%	14.6%	4.9%	2.4%	**	**
	$150,000 to $174,999	95.5%	66.7%	14.3%	4.8%	14.3%	**	**	**
	$175,000 to $199,999	96.2%	56.0%	28.0%	4.0%	4.0%	**	8.0%	0.0%
	$200,000 or greater	97.8%	59.1%	34.1%	2.3%	2.3%	**	**	2.3%

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

** *Insufficient data for between-group comparison.*

Figure 11. *Motor oil handling behaviors.*
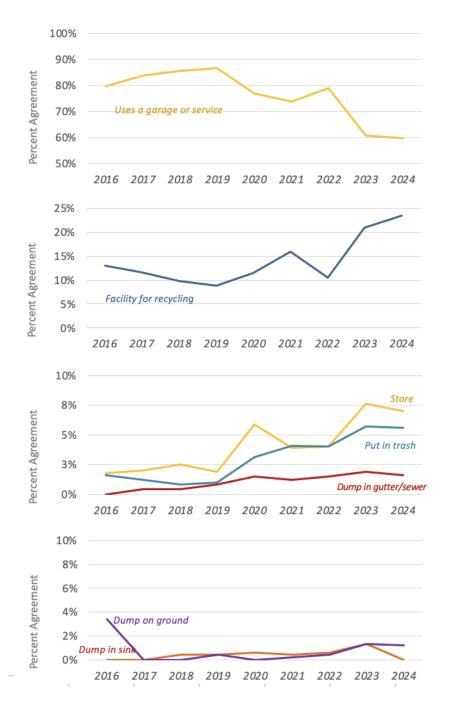
Reported motor oil handling behaviors from years 2016-2024 can be seen below in Table 13. First, reported use of using a garage or oil change service were higher from years 2016-2022 than in 2024. Survey respondents from years 2016-2020 along with 2022 report less frequent use of recycling facilities than 2024 respondents. Additionally, respondents in 2016-2021 reported less frequent oil storage, and respondents in 2016-2019 reported putting their motor oil in the trash less frequently than 2024 respondents.

Table 13. Motor oil handling behaviors across years.

Motor oil disposal	2016	2017	2018	2019	2020	2021	2022	2023	2024
Year of Survey									
Uses a Garage or Oil Change Service	79.8%	83.7%	85.7%	86.5%	76.8%	73.7%	78.9%	60.7%	59.8%
Facility for Recycling	13.0%	11.6%	9.8%	8.8%	11.5%	16.0%	10.5%	21.0%	23.5%
Store	1.8%	2.0%	2.5%	1.9%	5.9%	3.9%	4.0%	7.6%	7.0%
Put in the Trash	1.6%	1.2%	0.8%	1.0%	3.1%	4.1%	4.0%	5.7%	5.6%
Dump in Gutter/Sewer	0.0%	0.4%	0.4%	0.8%	1.5%	1.2%	1.5%	1.9%	1.6%
Dump in Sink	0.0%	0.0%	0.4%	0.4%	0.6%	0.4%	0.6%	1.3%	0.0%
Dump on Ground	3.4%	0.0%	0.0%	0.4%	0.0%	0.2%	0.4%	1.3%	1.2%

* Red font indicates that the value significantly differs from the current 2024 value.

Figure 12. *Motor oil handling behaviors across years.*

Vehicle Washing

Participants who reported owning or leasing a vehicle were also asked about their vehicle washing behaviors. 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, 37.4% said they wash their car/truck at home, as shown in Table 14 and Figure 13. Homeowners report washing their vehicle at home at higher rates than renters.

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 Enviro-Friendly Detergent	Wash Car using only Water (No Soap)	Wash Car at Commercial Location	Have not Washed Car in Past Year
	All Respondents	**37.4%**	**52.7%**	**51.6%**	**21.6%**	**64.0%**	**7.2%**
Gender	Male	41.5%	46.1%	51.0%	26.7%	66.5%	6.0%
	Female	33.6%	60.7%	52.4%	15.5%	62.0%	8.4%
Age	21 to 24	40.5%	75.0%	37.5%	29.4%	69.0%	4.8%
	25 to 34	43.4%	58.7%	65.2%	22.7%	72.6%	11.3%
	35 to 44	45.6%	61.5%	53.8%	28.8%	65.8%	3.5%
	45 to 54	43.2%	59.4%	43.8%	12.5%	56.8%	6.8%
	55 to 64	24.6%	17.6%	41.2%	11.8%	60.9%	10.1%
	65 to 74	28.8%	29.4%	52.9%	11.8%	54.2%	5.1%
	75 or older	16.7%	**	33.3%	33.3%	63.9%	8.3%
Locality	Alexandria	33.8%	45.5%	54.5%	36.4%	61.5%	10.8%
	Arlington	40.7%	66.7%	75.0%	9.1%	64.4%	5.1%
	Fairfax - Inclusive	36.8%	50.0%	36.8%	20.6%	61.1%	10.8%
	Prince William - Inclusive	33.0%	37.5%	40.6%	28.1%	67.0%	2.1%
	Leesburg/Loudon	43.6%	65.0%	70.0%	17.1%	68.1%	4.3%
Ethnicity	Not Hispanic/Latino	38.2%	51.2%	52.9%	21.9%	63.2%	7.1%
	Hispanic/Latino	30.8%	68.8%	37.5%	18.8%	71.2%	7.7%

Demographic	Sub-category	Wash Car at Home	Wash Car in Grass, Gravel, or Dirt	Wash Car using Enviro-Friendly Detergent	Wash Car using only Water (No Soap)	Wash Car at Commercial Location	Have not Washed Car in Past Year
Years of Residence	Less than 1 year	19.4%	42.9%	42.9%	14.3%	52.8%	8.3%
	1 to 3 years	31.2%	44.1%	32.4%	15.2%	67.0%	5.5%
	4 to 9 years	38.3%	46.5%	60.5%	27.9%	60.0%	8.7%
	10 to 19 years	44.1%	65.3%	57.1%	30.6%	70.3%	5.4%
	20 or more years	41.1%	52.8%	52.8%	13.2%	62.8%	8.5%
Home Ownership	Owned	45.0%	54.0%	54.0%	21.0%	70.1%	7.7%
	Rented	25.1%	50.0%	45.5%	25.0%	54.3%	6.9%
Household Income	Less than $35,000	28.6%	50.0%	44.4%	16.7%	36.5%	3.2%
	$35,000 to $49,999	17.9%	60.0%	50.0%	30.0%	58.9%	5.4%
	$50,000 to $74,999	38.5%	58.3%	37.5%	29.2%	64.6%	7.7%
	$75,000 to $99,999	41.5%	40.9%	43.2%	20.9%	74.5%	5.7%
	$100,000 to $124,999	47.9%	50.0%	55.9%	14.7%	62.0%	14.1%
	$125,000 to $149,999	51.1%	52.2%	82.6%	21.7%	71.1%	4.4%
	$150,000 to $174,999	40.9%	66.7%	55.6%	22.2%	68.2%	4.5%
	$175,000 to $199,999	33.3%	88.9%	66.7%	44.4%	74.1%	11.1%
	$200,000 or greater	33.3%	53.3%	40.0%	13.3%	71.1%	8.9%

Red font indicates significant differences within a demographic subgroup.

** Insufficient data for between-group comparison.

Figure 13. Vehicle washing locations.
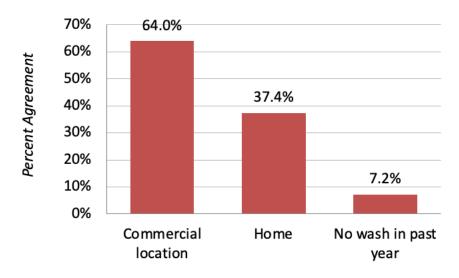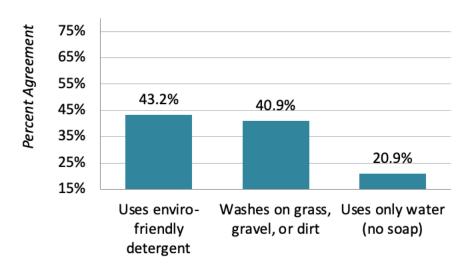
Figure 14. Desirable behaviors associated with vehicle washing.
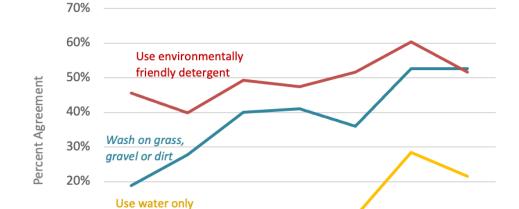
Below, Table 15 displays reported rates of vehicle washing behaviors from 2018-2024. Notably, reported rates of washing vehicles on grass, gravel or dirt were lower in 2018, 2019 and 2022 than in 2024. Additionally, reported use of only water to wash vehicles was lower in years 2018-2022 than in 2024.

Table 15. Vehicle washing behaviors across years.

Year of Survey							
Vehicle washing behavior	2018	2019	2020	2021	2022	2023	2024
Wash on grass, gravel or dirt	18.8%	27.7%	40.1%	41.0%	36.0%	52.6%	52.7%
Use environmentally friendly detergent	45.6%	39.9%	49.2%	47.5%	51.7%	60.3%	51.6%
Use water only	10.7%	10.1%	9.6%	8.0%	10.0%	28.5%	21.6%

Red font indicates that the value significantly differs from the current 2024 value.

Figure 15. *Vehicle washing behaviors across years.*

Those who reported washing their vehicle at home were asked about their water quality-related 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, 52.7% report washing it on the grass, gravel, or dirt (Table 14 and Figure 14). Additionally, 51.6% report using environmentally friendly

detergent. Respondents from Fairfax reported using environmentally friendly detergent at lower rates than respondents in other areas. Finally, 21.6% report only using water. A majority, 64.0%, report washing their vehicle at a commercial car wash. Home owners report washing their vehicle at commercial locations at higher rates than renters.

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 27.3%, was 3-4 times per year. Next, 23.5% report washing their vehicle at home 1-2 times per year, and 19.8% do so 5-6 times per year. Less commonly, 13.9% of those who wash their personal vehicle at home report doing so 7-12 times per year, 12.8% report doing so 12+ times per year, and 2.7% do so less than once per year. Hispanic participants reported washing vehicles 3-4 times per year at a lower rate than non-Latinos, 14.0% compared to 28.1% respectively. There are otherwise no demographic trends among frequency of home car washing.

Table 16. Frequency of car washing at home by demographic group.
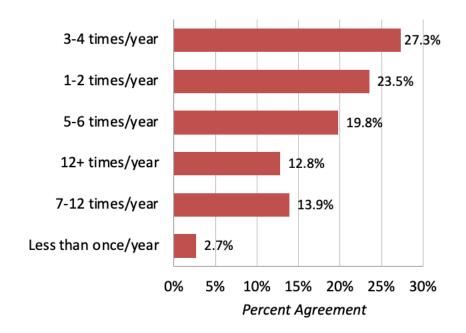
Demographic	Sub-category	Frequency of Car Washing at Home					
		Less than once a year	1-2 times per year	3-4 times per year	5-6 times per year	7-12 times per year	12+ times per year
	All Respondents	**2.7%**	**23.5%**	**27.3%**	**19.8%**	**13.9%**	**12.8%**
Gender	Male	4.0%	21.4%	24.6%	20.6%	13.3%	16.1%
	Female	4.2%	25.7%	29.9%	16.2%	11.4%	12.6%
Age	21 to 24	6.1%	31.8%	28.8%	10.6%	10.6%	12.1%
	25 to 34	2.7%	20.0%	23.6%	20.0%	14.5%	19.1%
	35 to 44	4.9%	14.8%	19.7%	26.2%	14.8%	19.7%
	45 to 54	5.9%	29.4%	33.3%	13.7%	11.8%	5.9%
	55 to 64	3.3%	23.3%	33.3%	13.3%	13.3%	13.3%
	65 to 74	0.0%	30.0%	43.3%	13.3%	6.7%	6.7%
	75 or older	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%

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
Locality	Alexandria	5.4%	23.2%	21.4%	10.7%	16.1%	23.2%
	Arlington	4.8%	21.4%	33.3%	19.0%	4.8%	16.7%
	Fairfax - Inclusive	4.7%	27.6%	22.4%	18.8%	11.8%	14.7%
	Prince William - Inclusive	3.9%	24.7%	32.5%	14.3%	11.7%	13.0%
	Leesburg/Loudon	1.4%	11.1%	30.6%	29.2%	18.1%	9.7%
Ethnicity	Not Hispanic/Latino	4.0%	23.5%	28.1%	18.2%	12.8%	13.4%
	Hispanic/Latino	4.7%	18.6%	14.0%	23.3%	11.6%	27.9%
Years of Residence	Less than 1 year	13.0%	21.7%	21.7%	4.3%	26.1%	13.0%
	1 to 3 years	4.1%	27.8%	26.8%	13.4%	9.3%	18.6%
	4 to 9 years	2.8%	23.9%	26.6%	16.5%	11.0%	19.3%
	10 to 19 years	4.2%	17.7%	24.0%	27.1%	18.8%	8.3%
	20 or more years	3.3%	22.8%	30.4%	21.7%	8.7%	13.0%
Home Ownership	Owned	3.7%	22.6%	26.9%	22.3%	11.3%	13.3%
	Rented	4.6%	24.8%	26.6%	7.3%	16.5%	20.2%
Household Income	Less than $35,000	6.3%	37.5%	28.1%	3.1%	15.6%	9.4%
	$35,000 to $49,999	3.1%	25.0%	25.0%	9.4%	18.8%	18.8%
	$50,000 to $74,999	4.3%	25.7%	14.3%	22.9%	17.1%	15.7%
	$75,000 to $99,999	2.3%	24.1%	19.5%	18.4%	16.1%	19.5%
	$100,000 to $124,999	5.2%	13.8%	43.1%	19.0%	8.6%	10.3%
	$125,000 to $149,999	3.6%	27.3%	29.1%	23.6%	3.6%	12.7%

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
	$150,000 to $174,999	3.8%	7.7%	38.5%	19.2%	11.5%	19.2%
	$175,000 to $199,999	10.5%	21.1%	21.1%	26.3%	15.8%	5.3%
	$200,000 or greater	2.6%	21.1%	31.6%	21.1%	7.9%	15.8%

Red font indicates significant differences within a demographic subgroup.

Figure 16. *Frequency of car washing at home.*

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, 25.0% report having one, 70.4% report being familiar with them, and 38.2% are interested in getting one. Regarding rain gardens, 21.6% have one, 43.8% are familiar with them and 33.3% are interested in getting one. Finally, when asked about their familiarity with conservation landscaping, 28.6% report having it, 50.8% report being familiar with it and 33.3% report being interested in installing it.

Table 17. Familiarity with 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 Cons. Landscape	Familiar with Cons. Landscape	Want Cons. Landscape
	All Respondents	**25.0%**	**70.4%**	**38.2%**	**21.6%**	**43.8%**	**33.3%**	**28.6%**	**50.8%**	**33.3%**
Gender	Male	22.6%	74.6%	42.3%	22.5%	48.5%	36.8%	33.1%	56.8%	34.6%
	Female	27.5%	66.0%	34.6%	20.9%	39.1%	30.2%	24.4%	45.1%	32.0%
Age	21 to 24	17.1%	48.7%	52.6%	17.5%	46.3%	30.8%	32.5%	51.2%	31.6%
	25 to 34	39.8%	62.1%	37.1%	32.3%	53.0%	40.4%	34.6%	49.5%	36.9%
	35 to 44	40.2%	70.9%	43.9%	35.1%	53.1%	37.6%	36.6%	58.0%	38.9%
	45 to 54	24.7%	75.7%	40.3%	16.9%	44.4%	32.9%	27.8%	55.6%	38.0%

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 Cons. Landscape	Familiar with Cons. Landscape	Want Cons. Landscape
	55 to 64	10.4%	79.7%	36.9%	7.5%	30.9%	33.8%	14.9%	37.3%	30.8%
	65 to 74	5.4%	74.1%	28.6%	12.3%	32.7%	23.6%	25.0%	51.9%	25.5%
	75 or older	**	82.4%	21.2%	3.1%	24.2%	15.2%	12.5%	45.5%	14.7%
Locality	Alexandria	12.3%	65.6%	39.1%	15.9%	50.0%	34.4%	12.3%	46.9%	32.8%
	Arlington	42.1%	80.4%	29.8%	33.3%	52.7%	29.1%	32.1%	52.7%	37.7%
	Fairfax - Inclusive	16.8%	64.0%	42.0%	16.4%	39.1%	31.6%	27.0%	49.2%	30.9%
	Prince William - Inclusive	21.1%	70.2%	40.0%	15.6%	37.9%	31.3%	22.9%	41.5%	38.7%
	Leesburg/ Loudon	44.3%	80.2%	33.3%	35.6%	49.5%	40.7%	47.7%	65.6%	30.2%
Ethnicity	Not Hispanic/Latino	24.6%	71.7%	37.3%	22.3%	43.3%	32.1%	29.9%	50.3%	32.2%
	Hispanic/Latino	28.6%	59.2%	46.8%	14.9%	48.0%	43.8%	16.7%	54.9%	43.5%
Years of Residence	Less than 1 year	13.9%	54.3%	45.7%	8.8%	37.1%	37.1%	14.7%	40.0%	44.1%
	1 to 3 years	13.0%	62.3%	42.1%	13.6%	39.0%	33.3%	19.6%	40.2%	38.1%
	4 to 9 years	24.1%	67.3%	46.7%	20.7%	45.9%	38.3%	19.6%	56.8%	34.6%
	10 to 19 years	34.6%	73.8%	45.8%	26.4%	46.3%	39.6%	41.5%	54.2%	38.3%
	20 or more years	31.4%	81.6%	18.3%	28.5%	45.5%	22.1%	37.1%	54.9%	20.7%
Home Ownership	Owned	32.8%	75.7%	36.9%	26.8%	47.2%	33.2%	35.9%	57.2%	33.7%
	Rented	11.0%	62.0%	40.1%	10.8%	37.1%	33.9%	15.9%	40.1%	32.9%
Household Income	Less than $35,000	14.5%	54.8%	36.1%	9.8%	36.1%	29.5%	16.1%	40.3%	30.0%

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 Cons. Landscape	Familiar with Cons. Landscape	Want Cons. Landscape
	$35,000 to $49,999	16.7%	67.9%	44.2%	15.1%	38.2%	35.3%	16.4%	37.7%	30.8%
	$50,000 to $74,999	16.1%	65.0%	38.1%	17.7%	36.1%	27.4%	23.8%	46.8%	27.9%
	$75,000 to $99,999	26.0%	68.0%	43.7%	19.6%	38.2%	33.3%	25.5%	45.6%	37.5%
	$100,000 to $124,999	36.2%	63.8%	38.6%	33.3%	52.9%	45.6%	38.2%	64.7%	42.9%
	$125,000 to $149,999	38.6%	81.8%	30.2%	35.6%	53.3%	25.0%	40.0%	62.2%	25.0%
	$150,000 to $174,999	33.3%	90.5%	30.0%	23.8%	57.1%	35.0%	52.4%	66.7%	21.1%
	$175,000 to $199,999	42.3%	85.2%	31.8%	40.0%	72.0%	36.4%	45.8%	73.1%	45.5%
	$200,000 or greater	14.3%	88.6%	35.7%	11.9%	38.6%	31.0%	27.9%	45.2%	31.0%

Red font indicates significant differences within a demographic subgroup.

** Insufficient data for between-group comparison*

There were no significant differences in response rates regarding home water conservation methods from 2023 to 2024. These can be seen below in Table 18.
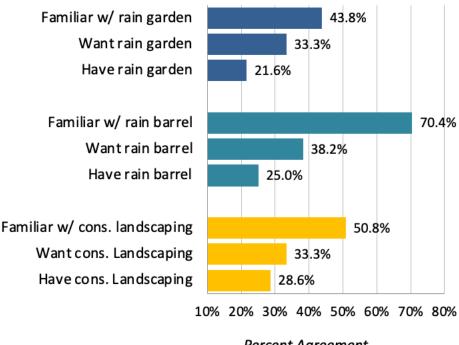
Table 18. Familiarity with home water conservation methods across years.

Survey Question Response	Year of Survey						
	2018	2019	2020	2021	2022	2023	2024
Have Rain Barrel	*	*	*	*	*	27.7%	25.0%
Familiar Rain Barrel	*	*	*	*	*	70.7%	70.4%
Want Rain Barrel	*	*	*	*	*	44.9%	38.2%
Have Rain Garden	*	*	*	*	*	25.5%	21.6%
Familiar Rain Garden	*	*	*	*	*	50.5%	43.8%
Want Rain Garden	*	*	*	*	*	41.6%	33.3%
Have Conservation Landscaping	*	*	*	*	*	37.1%	28.6%
Familiar Conservation Landscaping	*	*	*	*	*	59.1%	50.8%
Want Conservation Landscaping	*	*	*	*	*	42.0%	33.3%

* Red font indicates that the value significantly differs from the current 2024 value. There are no significant differences from the 2024 value in this table.

* Question did not appear on survey.

Figure 17. *Familiarity with home water conservation methods.*

Men show greater familiarity with rain barrels and conservation landscaping as well as higher rates of currently having conservation landscaping, as shown in Table 17. Respondents aged 35 to 44 report the greatest frequency of having a rain barrel and having a rain garden. Leesburg/Loudon residents reported the highest frequency of having a rain barrel, a rain garden, and conservation landscaping, compared to other localities. Additionally, they also exhibit the highest rates of being familiar with conservation landscaping. Respondents who have lived in their homes for longer periods of time tended to report having rain barrels and conservation landscaping at higher rates than those who have lived in their residences for shorter periods of times. They also reported higher rates of being familiar with rain barrels. Home owners reported higher rates of having rain barrels, rain gardens, and conservation landscaping than renters. They also reported higher rates of familiarity with rain barrels and conservation landscaping. Finally, people with higher household incomes tended to report higher rates of familiarity with rain barrels.

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 19 and displayed in Figure 18. When asked about their familiarity with water quality activities, 25.9%

report being aware of a water quality activity in the past 12 months. Respondents in Arlington reported the highest rates of awareness, as did home owners. Of those who were aware of an event in the past 12 months, 53.5% report participating in the event. Men reported higher rates of participation compared to women. People who have lived in their residence for only 1 to 3 years reported the lowest rates of participation.
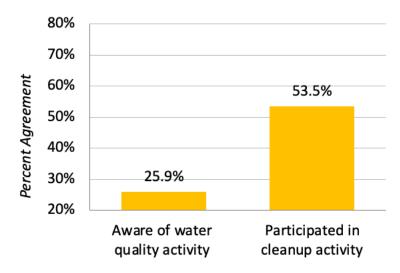
Table 19. Cleanup engagement behaviors by demographic group.

Demographic	Sub-category	Aware of Water Quality Activity in Last 12 Months	Participated in Cleanup Activity in Last 12 Months
	All Respondents	**25.9%**	**53.5%**
Gender	Male	27.0%	62.7%
	Female	24.9%	43.5%
Age	21 to 24	19.0%	62.5%
	25 to 34	36.8%	61.5%
	35 to 44	35.4%	65.0%
	45 to 54	18.9%	42.9%
	55 to 64	15.9%	45.5%
	65 to 74	15.3%	22.2%
	75 or older	22.2%	12.5%
Locality	Alexandria	21.5%	35.7%
	Arlington	40.7%	58.3%
	Fairfax - Inclusive	23.8%	38.6%
	Prince William - Inclusive	19.6%	68.4%
	Leesburg/Loudon	30.1%	71.4%
Ethnicity	Not Hispanic/Latino	26.0%	52.6%
	Hispanic/Latino	25.0%	61.5%
Years of Residence	Less than 1 year	19.4%	42.9%
	1 to 3 years	18.3%	25.0%
	4 to 9 years	26.1%	70.0%
	10 to 19 years	33.6%	59.5%

Demographic	Sub-category	Aware of Water Quality Activity in Last 12 Months	Participated in Cleanup Activity in Last 12 Months
	20 or more years	27.1%	51.4%
Home Ownership	Owned	30.6%	56.8%
	Rented	17.1%	46.7%
Household Income	Less than $35,000	23.8%	26.7%
	$35,000 to $49,999	19.6%	63.6%
	$50,000 to $74,999	10.8%	57.1%
	$75,000 to $99,999	29.2%	45.2%
	$100,000 to $124,999	39.4%	50.0%
	$125,000 to $149,999	35.6%	81.3%
	$150,000 to $174,999	27.3%	33.3%
	$175,000 to $199,999	34.6%	77.8%
	$200,000 or greater	13.3%	66.7%

Red font indicates significant differences within a demographic subgroup.

Figure 18. *Cleanup activity engagement.*

Response rates regarding cleanup engagement behaviors from years 2018-2024 can be seen below in Table 20. Respondents in 2018 and 2019 reported lower rates of participating in activities than 2024 respondents. Otherwise, there were no significant differences in previous years responses when compared to 2024.

Table 20. Cleanup engagement behaviors across years.

Survey Question Response	Year of Survey						
	2018	2019	2020	2021	2022	2023	2024
Heard about activities	24.6%	21.0%	25.2%	30.4%	24.4%	33.2%	25.9%
Participated in activities	26.0%	29.5%	60.3%	53.9%	59.8%	68.5%	53.5%

* Red font indicates that the value significantly differs from the current 2024 value. There are no significant differences from the 2024 value in this table.

Roadway Materials

Four new questions were added to the 2024 survey instrument to measure residents' behaviors and perceptions related to roadway materials for icy conditions. The new questions are:

- **During snowy and icy conditions, how often (if at all) do you (or a family member) apply deicer (e.g., salt) at your residence?** [*always or most of the time, frequently, sometimes, occasionally, rarely, never, don't know*]
- [skipped if the "rarely" or "never" was given in the previous question] **Do you (or a family member) typically apply deicer (e.g., salt) at your residence before, during, or after a winter storm event?** [Select all that apply: Before, During. After Depends / varies too much to say, Other, Don't know]
- **During snowy and icy conditions, how often (if at all) do you (or a family member) apply an abrasive for traction (e.g., sand) at your residence? [**always or most of the time, frequently, sometimes, occasionally, rarely, never, don't know]
- **In general, how would you rate the impact (if any) on each of the following from using salt for winter storm events?** [5-point scale from "very positive" to "ery negative", and "don't know/not sure"]: Tap/Drinking water, local waterways, emergency vehicle safety, motorist safety, pedestrian safety, economic and civic activity.

Respondents varied in frequency of applying deicer at their residences, with about one third reporting "always or frequently", one-third reporting "Sometimes or occasionally" and one third

reporting "rarely or never". Deicer use varies by location, with fewer respondents in Arlington and Leesburg/Loudon reporting the use of deicer "always or frequently".

Table 21. Frequency of applying a deicer at one's residence, by demographic group.

Demographic	Sub-category	Always or frequently	Sometimes or Occasionally	Rarely or never
	All Respondents	33.7%	37.2%	29.2%
Gender	Male	31.6%	38.9%	29.5%
	Female	35.7%	35.7%	28.6%
Age	21 to 24	45.0%	27.5%	27.5%
	25 to 34	46.6%	41.7%	11.7%
	35 to 44	34.9%	47.7%	17.4%
	45 to 54	31.5%	38.4%	30.1%
	55 to 64	20.3%	31.9%	47.8%
	65 to 74	20.3%	27.1%	52.5%
	75 or older	32.4%	26.5%	41.2%
Locality	Alexandria	34.9%	33.3%	31.7%
	Arlington	19.6%	44.6%	35.7%
	Fairfax - Inclusive	33.3%	38.3%	28.3%
	Prince William - Inclusive	46.3%	26.3%	27.4%
	Leesburg/Loudon	29.0%	44.1%	26.9%
Ethnicity	Not Hispanic/Latino	33.0%	37.1%	30.0%
	Hispanic/Latino	40.0%	38.0%	22.0%
Years of Residence	Less than 1 year	44.1%	38.2%	17.6%
	1 to 3 years	38.5%	29.8%	31.7%
	4 to 9 years	34.2%	39.6%	26.1%
	10 to 19 years	38.5%	38.5%	22.9%
	20 or more years	22.5%	39.5%	38.0%
Home Ownership	Owned	30.8%	39.3%	29.9%

Demographic	Sub-category	Always or frequently	Sometimes or Occasionally	Rarely or never
	Rented	38.9%	33.5%	27.5%
Household Income	Less than $35,000	43.1%	29.3%	27.6%
	$35,000 to $49,999	45.3%	26.4%	28.3%
	$50,000 to $74,999	32.3%	52.3%	15.4%
	$75,000 to $99,999	32.7%	34.6%	32.7%
	$100,000 to $124,999	22.9%	47.1%	30.0%
	$125,000 to $149,999	40.0%	35.6%	24.4%
	$150,000 to $174,999	14.3%	47.6%	38.1%
	$175,000 to $199,999	29.6%	33.3%	37.0%
	$200,000 or greater	34.1%	27.3%	38.6%

* Red font indicates significant differences within a demographic subgroup. Because the frequency categories are correlated (i.e., the sum to 100%), statistical tests were only run for the "Always or frequently" category.

Responses also varied in terms of when a deicer is used, if used at all. Among those reporting deicer use, approximately one third used them before and after a storm. Fewer (21.8%) use deicers during a storm, and 15.4% responded that it depends on the circumstances/it varies. Older adults are less likely than younger adults to use deicer before and during a storm. Further, fewer low-income respondents use deicer before or during a storm compared to middle- and middle-to-higher income respondents; however, the highest income respondents also report less frequent use before and during storms, relative to middle- and middle-to-higher income respondents.

Table 22. When respondents apply deicers, by demographic group.

Demographic	Sub-category	Before Storm	During Storm	After Storm	Depends
	All Respondents	31.2%	21.8%	31.6%	15.4%
Gender	Male	33.9%	23.8%	34.7%	13.7%
	Female	28.4%	20.0%	28.8%	17.2%
Age	21 to 24	45.2%	16.7%	28.6%	14.3%
	25 to 34	34.9%	30.2%	38.7%	20.8%
	35 to 44	33.3%	26.3%	40.4%	16.7%
	45 to 54	41.9%	32.4%	28.4%	13.5%
	55 to 64	17.4%	15.9%	20.3%	14.5%
	65 to 74	18.6%	1.7%	23.7%	15.3%
	75 or older	22.2%	11.1%	27.8%	2.8%
Locality	Alexandria	29.2%	20.0%	29.2%	20.0%
	Arlington	25.4%	25.4%	27.1%	11.9%
	Fairfax - Inclusive	33.0%	19.5%	28.6%	14.6%
	Prince William - Inclusive	41.2%	18.6%	34.0%	14.4%
	Leesburg/Loudon	22.3%	28.7%	39.4%	17.0%
Ethnicity	Not Hispanic/Latino	29.9%	21.4%	30.1%	16.3%
	Hispanic/Latino	42.3%	25.0%	44.2%	7.7%
Years of Residence	Less than 1 year	25.0%	19.4%	22.2%	27.8%
	1 to 3 years	33.9%	14.7%	25.7%	13.8%
	4 to 9 years	36.5%	23.5%	27.0%	18.3%
	10 to 19 years	36.0%	31.5%	44.1%	13.5%
	20 or more years	21.7%	18.6%	32.6%	12.4%
	Owned	29.3%	24.8%	35.7%	14.5%

Demographic	Sub-category	Before Storm	During Storm	After Storm	Depends
Home Ownership	Rented	35.4%	17.1%	23.4%	17.1%
Household Income	Less than $35,000	23.8%	17.5%	19.0%	15.9%
	$35,000 to $49,999	41.1%	5.4%	25.0%	16.1%
	$50,000 to $74,999	41.5%	24.6%	49.2%	10.8%
	$75,000 to $99,999	25.5%	19.8%	35.8%	17.0%
	$100,000 to $124,999	26.8%	32.4%	35.2%	16.9%
	$125,000 to $149,999	44.4%	24.4%	35.6%	8.9%
	$150,000 to $174,999	27.3%	22.7%	22.7%	13.6%
	$175,000 to $199,999	29.6%	33.3%	29.6%	18.5%
	$200,000 or greater	24.4%	22.2%	17.8%	20.0%

Red font indicates significant differences within a demographic subgroup.

The use of roadway abrasives is less common than salt use: 17.2% or respondents use abrasives "always or frequently", and slightly more than half use them "rarely or never". Older adults report using abrasives "always or frequently" less commonly than younger adults.

Table 23. Frequency of applying an abrasive at one's residence, by demographic group.

Demographic	Sub-category	Always or frequently	Sometimes or Occasionally	Rarely or never
	All Respondents	**17.2%**	**27.7%**	**55.1%**
Gender	Male	19.4%	27.0%	53.6%
	Female	14.7%	28.1%	57.1%
Age	21 to 24	18.4%	15.8%	65.8%
	25 to 34	24.7%	42.3%	33.0%
	35 to 44	28.7%	32.4%	38.9%
	45 to 54	10.3%	27.9%	61.8%
	55 to 64	10.3%	17.6%	72.1%
	65 to 74	5.2%	19.0%	75.9%
	75 or older	6.1%	18.2%	75.8%
Locality	Alexandria	18.0%	21.3%	60.7%
	Arlington	17.3%	30.8%	51.9%
	Fairfax - Inclusive	14.7%	27.1%	58.2%
	Prince William - Inclusive	26.6%	13.8%	59.6%
	Leesburg/Loudon	11.8%	45.2%	43.0%
Ethnicity	Not Hispanic/Latino	17.3%	26.8%	55.8%
	Hispanic/Latino	16.3%	34.7%	49.0%
Years of Residence	Less than 1 year	18.2%	18.2%	63.6%
	1 to 3 years	15.8%	20.0%	64.2%
	4 to 9 years	19.4%	29.6%	50.9%
	10 to 19 years	24.3%	32.7%	43.0%
	20 or more years	10.2%	29.9%	59.8%
Home Ownership	Owned	18.4%	29.5%	52.1%
	Rented	14.5%	23.7%	61.8%
Household Income	Less than $35,000	18.9%	22.6%	58.5%

Demographic	Sub-category	Always or frequently	Sometimes or Occasionally	Rarely or never
	$35,000 to $49,999	18.8%	27.1%	54.2%
	$50,000 to $74,999	11.1%	28.6%	60.3%
	$75,000 to $99,999	15.7%	30.4%	53.9%
	$100,000 to $124,999	17.4%	34.8%	47.8%
	$125,000 to $149,999	25.6%	30.2%	44.2%
	$150,000 to $174,999	9.1%	27.3%	63.6%
	$175,000 to $199,999	29.6%	18.5%	51.9%
	$200,000 or greater	14.0%	18.6%	67.4%

* Red font indicates significant differences within a demographic subgroup. Because the frequency categories are correlated (i.e., the sum to 100%), statistical tests were only run for the "Always or frequently" category.

Finally, respondents were asked about their perceptions, positive and negative, of the impact of roadway salt use on varies factors. The majority of respondents feel that roadway salt use has a positive impact on emergency vehicle safety (61.8%), motorist safety (65.1%), and pedestrian safety (68.8%), as see in Table 24. Less than one third view the impact on tap/drinking water (31.1%) and local waterways as positive (30.5%). Perceptions of the positive impact of salt use on tap water and local waterways varied by age and by tenure in one's residence.

Table 24. Perceived impact of roadway salting as "very positive" or "somewhat positive", by demographic group.

Demographic	Sub-category	Tap water	Local water-ways	Emerg. vehicles	Motorist safety	Ped. safety	Eco. and civic act.
	All Respondents	**31.1%**	**30.5%**	**61.8%**	**65.1%**	**68.8%**	**45.5%**
Gender	Male	31.4%	32.4%	63.9%	66.5%	69.6%	49.5%
	Female	31.0%	28.8%	59.9%	63.9%	68.2%	41.5%

Demographic	Sub-category	Tap water	Local water-ways	Emerg. vehicles	Motorist safety	Ped. safety	Eco. and civic act.
Age	21 to 24	29.3%	28.1%	58.1%	53.1%	59.4%	28.1%
	25 to 34	53.4%	51.7%	73.6%	69.0%	72.1%	52.9%
	35 to 44	44.7%	42.6%	67.6%	65.0%	66.3%	56.4%
	45 to 54	23.0%	20.6%	64.7%	72.1%	80.9%	52.9%
	55 to 64	13.0%	17.7%	53.2%	62.3%	72.6%	37.7%
	65 to 74	10.2%	13.7%	47.1%	64.7%	60.8%	39.2%
	75 or older	11.4%	9.1%	50.0%	58.8%	57.6%	18.2%
Locality	Alexandria	25.0%	25.5%	57.9%	68.4%	66.7%	55.4%
	Arlington	39.7%	40.7%	74.5%	69.1%	70.9%	56.4%
	Fairfax - Inclusive	28.1%	25.0%	62.7%	63.9%	66.7%	38.0%
	Prince William - Inclusive	30.2%	26.3%	53.2%	64.6%	73.8%	48.1%
	Leesburg/Loudon	37.0%	41.4%	62.8%	63.2%	68.2%	43.5%
Ethnicity	Not Hispanic/Latino	29.7%	29.9%	61.3%	64.9%	69.2%	45.2%
	Hispanic/Latino	44.0%	35.7%	67.5%	67.5%	65.0%	48.7%
Years of Residence	Less than 1 year	28.6%	40.0%	51.6%	51.6%	54.8%	45.2%
	1 to 3 years	32.4%	23.9%	63.0%	66.3%	73.1%	43.0%
	4 to 9 years	33.9%	35.0%	62.2%	70.0%	71.4%	45.9%
	10 to 19 years	38.7%	40.4%	67.7%	70.1%	73.7%	58.2%
	20 or more years	21.7%	20.9%	58.3%	59.3%	62.5%	36.3%
Home Ownership	Owned	33.8%	31.8%	64.1%	66.2%	70.5%	44.5%
	Rented	25.9%	27.5%	57.2%	64.2%	65.8%	46.4%
Household Income	Less than $35,000	27.9%	24.0%	46.0%	52.0%	54.9%	32.0%
	$35,000 to $49,999	20.4%	28.0%	56.0%	64.0%	69.4%	50.0%

Demographic	Sub-category	Tap water	Local water-ways	Emerg. vehicles	Motorist safety	Ped. safety	Eco. and civic act.
	$50,000 to $74,999	35.9%	29.6%	61.1%	72.7%	76.4%	56.4%
	$75,000 to $99,999	34.0%	35.6%	63.3%	66.3%	66.7%	43.3%
	$100,000 to $124,999	36.6%	31.7%	69.8%	64.5%	73.0%	46.8%
	$125,000 to $149,999	37.8%	40.9%	75.0%	74.4%	69.8%	53.5%
	$150,000 to $174,999	31.8%	22.2%	64.7%	64.7%	76.5%	52.9%
	$175,000 to $199,999	44.4%	44.0%	80.0%	80.0%	69.6%	62.5%
	$200,000 or greater	11.1%	14.3%	47.6%	52.4%	69.0%	23.8%

* Red font indicates significant differences within a demographic subgroup.

Respondents more frequently perceive the impact of salting on local waterways as negative, as seen in Table 25. Additionally, older adults more frequently perceive the impact of salt as on tap water and local waterways as negative, compared to other age groups.

Table 25. Perceived impact of roadway salting as "very negative" or "somewhat negative", by demographic group.

Demographic	Sub-category	Tap water	Local water-ways	Emerg. vehicles	Motorist safety	Ped. safety	Eco. and civic act.
	All Respondents	**33.1%**	**41.3%**	**10.6%**	**12.2%**	**9.5%**	**10.2%**
Gender	Male	32.2%	41.1%	10.2%	10.7%	7.9%	9.3%
	Female	33.5%	40.9%	10.6%	13.4%	10.6%	10.6%
Age	21 to 24	19.5%	40.6%	6.5%	18.8%	18.8%	15.6%
	25 to 34	16.5%	21.3%	8.0%	12.6%	8.1%	6.9%
	35 to 44	26.3%	24.8%	11.8%	16.0%	11.9%	10.9%

Demographic	Sub-category	Tap water	Local water-ways	Emerg. vehicles	Motorist safety	Ped. safety	Eco. and civic act.
	45 to 54	40.5%	47.1%	8.8%	7.4%	5.9%	8.8%
	55 to 64	39.1%	59.7%	12.9%	11.5%	6.5%	11.5%
	65 to 74	59.3%	62.7%	15.7%	7.8%	9.8%	11.8%
	75 or older	48.6%	66.7%	8.8%	11.8%	9.1%	9.1%
Locality	Alexandria	32.8%	40.0%	10.5%	8.8%	10.5%	12.5%
	Arlington	36.2%	37.0%	5.5%	9.1%	10.9%	7.3%
	Fairfax - Inclusive	33.5%	47.5%	10.8%	12.3%	9.0%	8.9%
	Prince William - Inclusive	32.3%	45.0%	16.5%	13.9%	8.8%	13.9%
	Leesburg/Loudon	31.5%	29.9%	8.1%	14.9%	9.4%	9.4%
Ethnicity	Not Hispanic/Latino	33.9%	42.6%	10.9%	13.0%	9.7%	10.9%
	Hispanic/Latino	26.0%	28.6%	7.5%	5.0%	7.5%	2.6%
Years of Residence	Less than 1 year	22.9%	33.3%	16.1%	22.6%	16.1%	16.1%
	1 to 3 years	26.9%	42.4%	9.8%	12.0%	7.5%	8.6%
	4 to 9 years	33.9%	36.0%	13.3%	15.0%	12.2%	9.2%
	10 to 19 years	28.8%	36.4%	7.1%	6.2%	8.1%	9.2%
	20 or more years	44.2%	51.3%	10.4%	12.4%	8.0%	11.5%
Home Ownership	Owned	34.7%	42.7%	9.9%	12.1%	9.2%	11.0%
	Rented	30.6%	39.9%	12.5%	12.6%	10.5%	9.3%
Household Income	Less than $35,000	34.4%	48.0%	20.0%	22.0%	17.6%	20.0%
	$35,000 to $49,999	29.6%	34.0%	6.0%	10.0%	6.1%	4.0%
	$50,000 to $74,999	23.4%	25.9%	7.4%	7.3%	5.5%	3.6%
	$75,000 to $99,999	33.0%	40.0%	10.0%	12.4%	12.2%	11.1%

Demographic	Sub-category	Tap water	Local water-ways	Emerg. vehicles	Motorist safety	Ped. safety	Eco. and civic act.
	$100,000 to $124,999	28.2%	33.3%	9.5%	8.1%	7.9%	11.3%
	$125,000 to $149,999	35.6%	38.6%	11.4%	9.3%	7.0%	7.0%
	$150,000 to $174,999	50.0%	66.7%	11.8%	17.6%	11.8%	17.6%
	$175,000 to $199,999	29.6%	32.0%	4.0%	12.0%	4.3%	8.3%
	$200,000 or greater	48.9%	73.8%	14.3%	16.7%	9.5%	11.9%

Knowledge

Awareness of "Watersheds" and Household Hazardous Waste Disposal

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.

Next, participants were asked where they believe stormwater goes, given the option "a wastewater treatment facility", "the Potomac River or Chesapeake Bay", "All of the above", "None of the above", and "Other".

Of all respondents, 71.3% report that they are familiar with the term "watershed", as can be seen in Table 26 and Figure 19. Men are more likely to be familiar with the term (78.5%) compared to women (64.6%). Otherwise, there are no strong demographic trends amongst respondents.

Table 26. Awareness of watersheds and knowledge of stormwater drainage by demographic group.

Demographic	Sub-category	Know term "watershed"	WW Treat-ment	Potom. or Chespk.	All above	None	Other	Know HHW Droo-off
				Stormwater goes…				
	All Respondents	**71.3%**	**20.2%**	**31.5%**	**40.9%**	**7.0%**	**0.4%**	**60.1%**
Gender	Male	78.5%	20.2%	33.1%	41.9%	4.8%	**	64.5%
	Female	64.6%	20.1%	30.1%	39.8%	9.2%	0.8%	56.2%
Age	21 to 24	75.0%	19.0%	35.7%	40.5%	4.8%	**	40.5%
	25 to 34	67.9%	27.4%	27.4%	37.7%	7.5%	**	60.4%
	35 to 44	71.4%	19.3%	28.1%	44.7%	7.9%	**	61.9%
	45 to 54	76.7%	25.7%	23.0%	50.0%	1.4%	**	62.2%
	55 to 64	66.2%	15.9%	31.9%	40.6%	11.6%	**	65.2%
	65 to 74	66.1%	13.8%	39.7%	36.2%	8.6%	1.7%	54.2%
	75 or older	83.3%	11.1%	52.8%	27.8%	5.6%	2.8%	72.2%
Locality	Alexandria	65.1%	18.5%	35.4%	36.9%	7.7%	1.5%	49.2%
	Arlington	82.8%	15.3%	32.2%	47.5%	5.1%	**	69.5%
	Fairfax - Inclusive	70.7%	22.3%	27.7%	44.0%	6.0%	**	58.7%
	Prince William - Inclusive	74.2%	22.7%	34.0%	35.1%	8.2%	**	58.8%
	Leesburg/Loudon	66.3%	18.1%	33.0%	39.4%	8.5%	1.1%	66.0%
Ethnicity	Not Hispanic/Latino	72.9%	19.7%	31.3%	41.6%	6.9%	0.4%	60.2%
	Hispanic/Latino	57.7%	25.0%	32.7%	34.6%	7.7%	**	59.6%
Years of Residence	Less than 1 year	69.4%	22.2%	36.1%	36.1%	5.6%	**	20.0%
	1 to 3 years	63.9%	22.9%	35.8%	33.0%	7.3%	0.9%	48.6%
	4 to 9 years	75.0%	20.0%	25.2%	47.0%	7.0%	0.9%	64.3%
	10 to 19 years	71.6%	22.5%	29.7%	41.4%	6.3%	**	64.0%
	20 or more years	74.4%	15.6%	33.6%	43.0%	7.8%	**	73.6%

Demographic	Sub-category	Know term "waters hed"	WW Treat-ment	Potom. or Chespk.	All above	None	Other	Know HHW Droo-off
				Stormwater goes…				
Home Ownership	Owned	77.7%	21.3%	32.9%	41.3%	4.5%	**	71.0%
	Rented	60.8%	18.3%	28.0%	42.9%	10.3%	0.6%	41.7%
Household Income	Less than $35,000	54.8%	17.5%	25.4%	44.4%	11.1%	1.6%	32.3%
	$35,000 to $49,999	68.5%	23.2%	23.2%	44.6%	8.9%	**	46.4%
	$50,000 to $74,999	55.4%	15.6%	39.1%	40.6%	4.7%	**	63.1%
	$75,000 to $99,999	77.4%	29.2%	33.0%	32.1%	5.7%	**	58.5%
	$100,000 to $124,999	75.4%	15.5%	32.4%	46.5%	5.6%	**	69.0%
	$125,000 to $149,999	84.4%	13.3%	33.3%	51.1%	2.2%	**	73.3%
	$150,000 to $174,999	77.3%	31.8%	40.9%	18.2%	9.1%	**	77.3%
	$175,000 to $199,999	88.5%	22.2%	22.2%	33.3%	22.2%	**	70.4%
	$200,000 or greater	73.3%	13.3%	33.3%	48.9%	2.2%	2.2%	73.3%

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

** *Insufficient data for between-group comparison.*

As seen in Table 26, 61.1% of respondents report believing it goes to a wastewater treatment facility (the sum of "wastewater treatment facility", 20.2% and "all of the above", 40.9%) and 72.3% report believing it goes into the Chesapeake Bay or Potomac River (the sum of "the Potomac River or Chesapeake Bay", 31.5% and "all of the above", 40.9%). Finally, 7.0% report believing it does not go to any of the listed locations and 0.4% report believing it goes to another place. There are no demographic trends. There is a significant increase, however, in the percentage of respondents who believe that stormwater goes to a wastewater treatment facility and either the Potomac River or Chesapeake Bay, as seen in the table below across years.

Figure 19. *Knowledge of watersheds and HHW.*
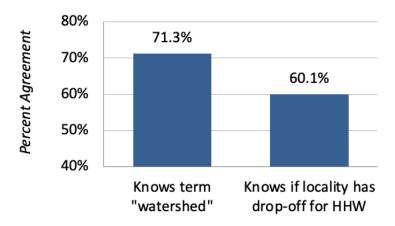
Figure 20. *Stormwater destination beliefs.*
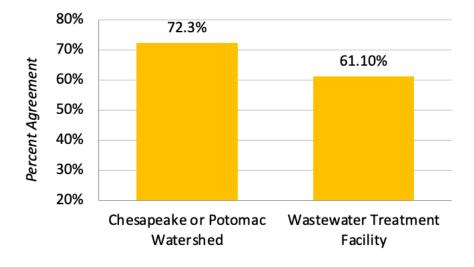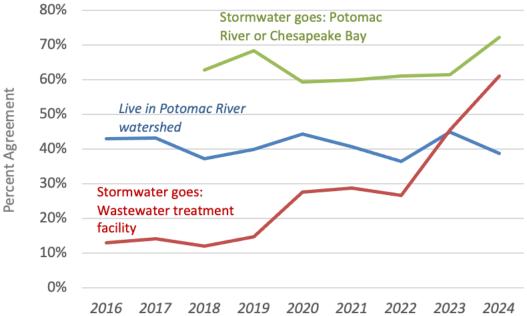
Table 27. Stormwater destination beliefs across years.

Year of Survey									
Survey Questions Response	2016	2017	2018	2019	2020	2021	2022	2023	2024
"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%	38.9%
"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%	45.6%	61.1%
"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%	72.3%

* Red font indicates that the value significantly differs from the current 2024 value.

Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 21. Storm water destination beliefs across years.

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"; refer to Table 26. When asked about HHW 60.1% of respondents report knowing if their locality has a specific drop off location for it, which can be seen in Table 26 and Figure 19.

There were no significant differences in reports of being aware of an HHW drop-off facility in 2024 when compared to responses from surveys in 2018-2023. These rates can be seen below in Table 28.

Table 28. Awareness of HHW across years.
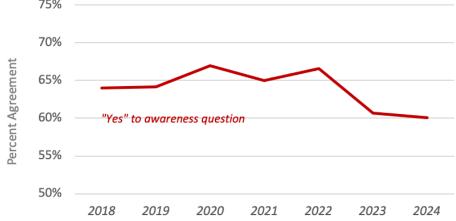
Year of Survey									
Survey Question Response	2016	2017	2018	2019	2020	2021	2022	2023	2024
"Yes" to awareness question	*	*	64.0%	64.2%	67.0%	65.0%	66.6%	60.7%	60.1%

* Red font indicates that the value significantly differs from the current 2024 value.

Asterisks (*) indicate that the question did not appear in the survey that year.

Figure 22. **Awareness of HHW across years.**

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?

For reference, a map of the Chesapeake Bay watershed and the Potomac River watershed can be seen below in Figure 24. As can be seen in Table 29 and Figure 23, 27.1% report that they live in the Chesapeake Bay watershed, 38.9% report that they live in the Potomac River watershed, and 7.5%

report that they live in another watershed that was not listed in the survey. Men report higher rates of living in the Chesapeake Bay watershed or another watershed. Leesburg/Loudon residents reported the Potomac River watershed as their local watershed at higher rates than residents of other localities. People who have lived in their residence for 10 to 19 years report the highest rates of living in the Chesapeake Bay watershed. Generally, people with higher incomes reported living in both the Chesapeake Bay watershed and Potomac River watershed at higher rates than those with lower incomes.
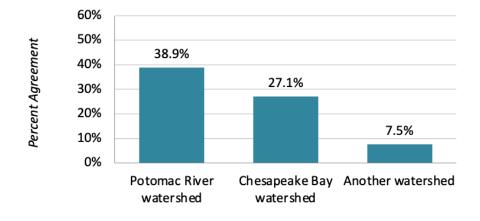
Table 29. Identifying the local watershed by demographic.

Demographic	Sub-category	Chesapeake Bay watershed	Potomac River watershed	Another watershed
	All Respondents	**27.1%**	**38.9%**	**7.5%**
Gender	Male	37.0%	43.3%	11.9%
	Female	17.8%	34.9%	3.4%
Age	21 to 24	34.2%	36.8%	5.7%
	25 to 34	23.5%	33.3%	11.1%
	35 to 44	33.9%	41.2%	11.5%
	45 to 54	23.6%	40.8%	5.6%
	55 to 64	22.7%	35.3%	4.5%
	65 to 74	28.6%	45.3%	2.1%
	75 or older	21.2%	42.9%	3.1%
Locality	Alexandria	29.7%	33.3%	4.8%
	Arlington	35.7%	36.2%	3.8%
	Fairfax - Inclusive	28.5%	34.5%	6.5%
	Prince William - Inclusive	22.8%	37.0%	14.1%
	Leesburg/Loudon	21.6%	54.9%	6.4%
Ethnicity	Not Hispanic/Latino	27.5%	38.7%	7.3%
	Hispanic/Latino	23.9%	40.4%	9.5%
Years of Residence	Less than 1 year	22.9%	31.4%	5.9%
	1 to 3 years	16.7%	35.6%	4.0%

Demographic	Sub-category	Chesapeake Bay watershed	Potomac River watershed	Another watershed
	4 to 9 years	25.9%	38.4%	10.5%
	10 to 19 years	42.2%	36.5%	10.9%
	20 or more years	24.8%	46.0%	5.2%
Home Ownership	Owned	33.9%	40.4%	8.9%
	Rented	15.0%	35.5%	4.3%
Household Income	Less than $35,000	11.7%	24.1%	3.5%
	$35,000 to $49,999	12.7%	31.5%	3.8%
	$50,000 to $74,999	19.4%	37.5%	3.4%
	$75,000 to $99,999	33.0%	39.6%	8.2%
	$100,000 to $124,999	25.7%	36.2%	7.4%
	$125,000 to $149,999	31.0%	37.2%	9.8%
	$150,000 to $174,999	45.5%	66.7%	15.8%
	$175,000 to $199,999	60.0%	63.0%	20.0%
	$200,000 or greater	34.9%	45.5%	9.5%

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

Figure 23. *Local watershed identification.*
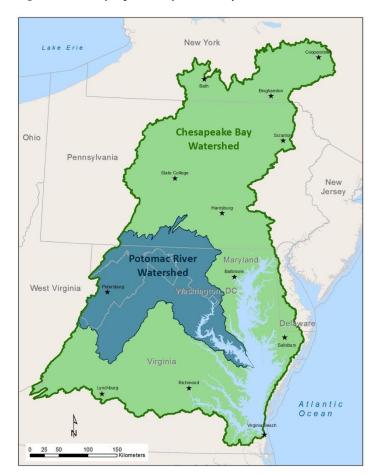
Figure 24. Map of Chesapeake Bay and Potomac River watersheds.[1]

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 30 and displayed in Figure 26. When asked about the provided images, 80.8% report that yes, they would consider the images to be a potential source of water pollution. There were no demographic trends.

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[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/

Reporting Pollution and 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 30 and Figure 25.

Table 30. Water pollution knowledge and behaviors by demographic group.

Demographic	Sub-category	ID Water Pollution	Know Who to Contact	Would Call Officials
	All Respondents	**80.8%**	**49.0%**	**66.6%**
Gender	Male	81.8%	54.0%	68.3%
	Female	80.0%	44.4%	65.1%

Demographic	Sub-category	ID Water Pollution	Know Who to Contact	Would Call Officials
	All Respondents	**80.8%**	**49.0%**	**66.6%**
Age	21 to 24	85.4%	45.2%	52.4%
	25 to 34	81.1%	53.8%	65.7%
	35 to 44	83.3%	53.5%	67.3%
	45 to 54	86.3%	48.6%	68.9%
	55 to 64	73.5%	46.4%	60.9%
	65 to 74	76.8%	42.4%	71.2%
	75 or older	75.0%	41.7%	82.9%
Locality	Alexandria	79.0%	38.5%	66.2%
	Arlington	89.7%	57.6%	71.2%
	Fairfax - Inclusive	79.8%	46.5%	61.7%
	Prince William - Inclusive	79.4%	51.5%	75.3%
	Leesburg/Loudon	79.8%	53.2%	64.5%
Ethnicity	Not Hispanic/Latino	80.5%	48.4%	65.4%
	Hispanic/Latino	82.7%	53.8%	76.9%
Years of Residence	Less than 1 year	80.0%	38.9%	69.4%
	1 to 3 years	81.7%	37.6%	62.4%
	4 to 9 years	86.7%	55.7%	68.7%
	10 to 19 years	83.5%	53.2%	70.9%
	20 or more years	72.7%	51.9%	63.8%
Home Ownership	Owned	79.6%	54.7%	69.3%
	Rented	83.1%	37.7%	60.0%
Household Income	Less than $35,000	77.8%	41.3%	71.4%
	$35,000 to $49,999	71.4%	39.3%	62.5%
	$50,000 to $74,999	68.8%	52.3%	56.9%

Demographic	Sub-category	ID Water Pollution	Know Who to Contact	Would Call Officials
	All Respondents	**80.8%**	**49.0%**	**66.6%**
	$75,000 to $99,999	81.7%	46.2%	62.9%
	$100,000 to $124,999	84.3%	59.2%	77.1%
	$125,000 to $149,999	90.9%	62.2%	71.1%
	$150,000 to $174,999	90.9%	40.9%	63.6%
	$175,000 to $199,999	96.3%	66.7%	76.9%
	$200,000 or greater	81.8%	37.8%	62.2%

* Red font indicates significant differences within a demographic subgroup

When asked about who to contact for reporting potential water pollution, 49.0% report knowing who to contact. Men (54.0%) reported higher rates of knowing who to contact in the case of suspected water pollution than women (44.4%). Of all respondents, 66.6% report that they would contact someone to report a potential source of water pollution. There were no demographic trends in responses to these questions.

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. These results are summarized in Table 31 and displayed in Figure 26. 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, 25.3% report their reason for not calling being that they'd prefer not to communicate with officials or authorities. Additionally, 21.7% report being too busy, 20.5% report it being none of their business, and 16.3% report that it is not their responsibility. Men reported their reason being that it's not their responsibility at higher rates than women, at 23.1% and 10.3% respectively.
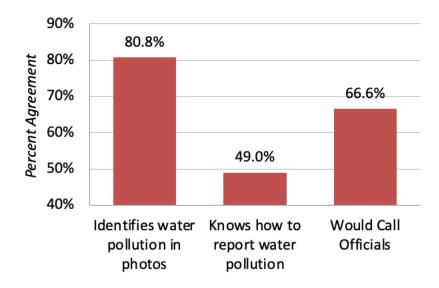
Table 31. Barriers to reporting pollution by demographic group.

Demographic	Sub-category	Too Busy	Not my Responsibility	None of my Business	Don't Want to Communicate with Authorities	Other
	All Respondents	**21.7%**	**16.3%**	**20.5%**	**25.3%**	**16.3%**
Gender	Male	20.5%	23.1%	25.6%	19.2%	11.5%
	Female	23.0%	10.3%	16.1%	29.9%	20.7%
Age	21 to 24	35.0%	30.0%	5.0%	30.0%	0.0%[2]
	25 to 34	27.8%	11.1%	19.4%	30.6%	11.1%
	35 to 44	27.0%	16.2%	29.7%	18.9%	8.1%
	45 to 54	17.4%	8.7%	26.1%	13.0%	34.8%
	55 to 64	18.5%	11.1%	7.4%	33.3%	29.6%
	65 to 74	0.0%[2]	29.4%	29.4%	23.5%	17.6%
	75 or older	0.0%[2]	16.7%	33.3%	33.3%	16.7%
Locality	Alexandria	9.1%	27.3%	18.2%	36.4%	9.1%
	Arlington	35.3%	11.8%	17.6%	29.4%	5.9%
	Fairfax - Inclusive	18.6%	14.3%	21.4%	22.9%	22.9%
	Prince William - Inclusive	20.8%	8.3%	20.8%	29.2%	20.8%
	Leesburg/Loudon	30.3%	21.2%	21.2%	18.2%	9.1%
Ethnicity	Not Hispanic/Latino	21.4%	15.6%	22.1%	24.7%	16.2%
	Hispanic/Latino	25.0%	25.0%	0.0%[2]	33.3%	16.7%
Years of Residence	Less than 1 year	18.2%	9.1%	27.3%	36.4%	9.1%
	1 to 3 years	26.8%	14.6%	12.2%	29.3%	17.1%
	4 to 9 years	19.4%	16.7%	22.2%	33.3%	8.3%
	10 to 19 years	28.1%	15.6%	18.8%	18.8%	18.8%
	20 or more years	15.2%	19.6%	26.1%	17.4%	21.7%
Home Ownership	Owned	25.3%	21.1%	21.1%	17.9%	14.7%
	Rented	17.1%	8.6%	20.0%	35.7%	18.6%
Household Income	Less than $35,000	16.7%	11.1%	16.7%	38.9%	16.7%
	$35,000 to $49,999	28.6%	23.8%	4.8%	38.1%	4.8%

Demographic	Sub-category	Too Busy	Not my Responsibility	None of my Business	Don't Want to Communicate with Authorities	Other
	$50,000 to $74,999	10.7%	17.9%	17.9%	35.7%	17.9%
	$75,000 to $99,999	23.1%	15.4%	30.8%	25.6%	5.1%
	$100,000 to $124,999	12.5%	18.8%	31.3%	6.3%	31.3%
	$125,000 to $149,999	23.1%	15.4%	15.4%	23.1%	23.1%
	$150,000 to $174,999	25.0%	25.0%	25.0%	12.5%	12.5%
	$175,000 to $199,999	33.3%	0.0%[2]	50.0%	0.0%[2]	16.7%
	$200,000 or greater	35.3%	11.8%	5.9%	11.8%	35.3%

Red font indicates significant differences within a demographic subgroup.

Figure 25. *Water pollution identification and knowledge.*
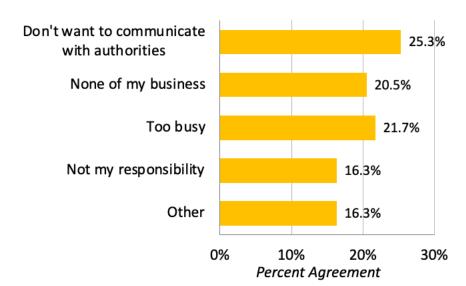
Figure 26. Barriers to reporting water pollution.

Response rates regarding water pollution knowledge from years 2018-2024 can be seen below in Table 32 and Figure 27. Notably, reports of definitely knowing or thinking they know who to contact about water pollution were higher in years 2021 and 2022 than in 2024. Additionally, respondents to surveys in 2018-2022 exhibit lower rates of indicating that they would "definitely" or "probably" report potential water pollution, compared to 2024 respondents.

Table 32. Water pollution knowledge across years.

Survey Questions Response	Year of Survey						
	2018	2019	2020	2021	2022	2023	2024
"Yes", would consider pictures water pollution	78.0%	75.2%	79.6%	80.4%	80.8%	72.4%	80.8%
"Definitely" or "think" I know who to contact about water pollution	51.6%	42.0%	52.6%	59.2%	58.8%	56.5%	49.0%
"Definitely" or "probably" would contact about water pollution	41.6%	38.0%	44.0%	53.4%	52.4%	63.4%	66.6%

* Red font indicates that the value significantly differs from the current 2024 value.
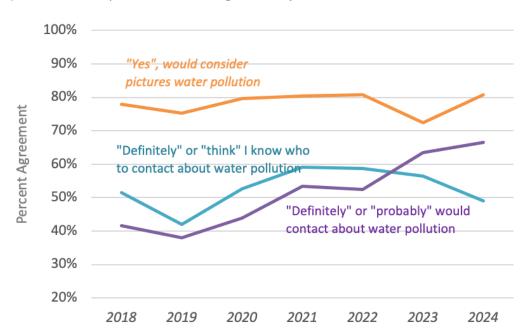
Figure 27. *Water pollution knowledge across years.*

Response rates of primary reasons for not calling to report water pollution in 2023 and 2024 can be seen below in Table 33. There were no significant differences in response rates between 2023 and 2024.

Table 33. Barriers to reporting water pollution across years.

Survey Questions Response	Year of Survey						
	2018	2019	2020	2021	2022	2023	2024
Too busy	*	*	*	*	*	17.6%	21.7%
Not my responsibility	*	*	*	*	*	17.6%	16.3%
None of my business	*	*	*	*	*	23.1%	20.5%
Prefer not to communicate with officials or authorities	*	*	*	*	*	31.5%	25.3%
Other	*	*	*	*	*	10.2%	16.3%

Red font indicates that the value significantly differs from the current 2024 value.

Asterisks (*) indicate that the question did not appear in the survey that year.

Campaign Perceptions
Campaign Awareness

Survey participants were asked questions to better understand their level of awareness of water pollution campaigns; their responses are below in Table 34 and Figure 29. Respondents were provided with the logo depicted in Figure 28 and asked if they had seen the logo before. Of respondents, 54.2% report having previously seen the provided logo. Men reported having seen the logo at higher rates than women, at 61.1% compared to 47.1%. Generally, reported recognition of the logo decreases

Figure 28. Logo for the 'Only Rain Down the Drain' Campaign.

as age increases. Finally, residents of Arlington report having seen the logo at higher rates than residents of other localities at 70.7%. Residents of Prince William reported having seen the logo at lower rates than residents of other localities at 38.5%.

Table 34. Percentage of respondents who have seen campaigns by demographic group.

Demographic	Sub-category	Seen the Logo Previously	Seen Water Pollution Reduction Campaign
	All Respondents	**54.2%**	**27.8%**
Gender	Male	61.1%	35.9%
	Female	47.1%	20.0%
Age	21 to 24	73.8%	26.2%
	25 to 34	56.2%	35.8%
	35 to 44	56.4%	43.9%
	45 to 54	64.9%	20.3%
	55 to 64	41.2%	13.0%

Demographic	Sub-category	Seen the Logo Previously	Seen Water Pollution Reduction Campaign
	65 to 74	39.7%	18.6%
	75 or older	44.4%	13.9%
Locality	Alexandria	54.7%	26.2%
	Arlington	70.7%	40.7%
	Fairfax - Inclusive	58.2%	23.2%
	Prince William - Inclusive	38.5%	23.7%
	Leesburg/Loudon	51.6%	34.0%
Ethnicity	Not Hispanic/Latino	53.8%	28.1%
	Hispanic/Latino	57.1%	25.0%
Years of Residence	Less than 1 year	48.5%	16.7%
	1 to 3 years	47.2%	22.0%
	4 to 9 years	59.6%	28.7%
	10 to 19 years	59.6%	37.8%
	20 or more years	51.9%	26.4%
Home Ownership	Owned	55.9%	33.4%
	Rented	52.0%	19.4%
Household Income	Less than $35,000	50.0%	22.2%
	$35,000 to $49,999	57.1%	17.9%
	$50,000 to $74,999	49.2%	18.5%
	$75,000 to $99,999	43.4%	26.4%
	$100,000 to $124,999	68.6%	38.0%
	$125,000 to $149,999	55.6%	42.2%
	$150,000 to $174,999	66.7%	36.4%
	$175,000 to $199,999	57.7%	48.1%
	$200,000 or greater	56.8%	17.8%

* *Red font* indicates significant differences within a demographic subgroup.
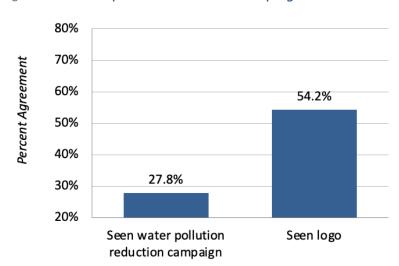
Figure 29. *Water pollution reduction campaign awareness.*

Reported recognition of the provided logo from years 2016-2024 can be seen below in Table 35. Reported familiarity with the campaign from years 2018-2024 can also be seen in this table. In 2022, reported recognition of the logo were significantly higher than in 2024. Otherwise, there were no significant differences in response rates between previous years and 2024.
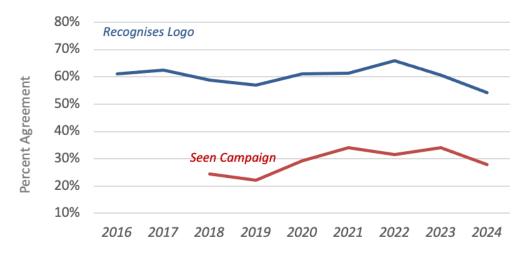
Table 35. Logo and campaign recognition across years.

Survey Question Response	Year of Survey								
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Recognizes Logo	61.2%	62.4%	58.8%	57.0%	61.0%	61.4%	65.8%	60.7%	54.2%
Seen Campaign	*	*	24.4%	22.2%	29.2%	34.0%	31.6%	34.1%	27.8%

Red font indicates that the value significantly differs from the current 2024 value.

Asterisk (*) indicates that the survey question did not appear that year.

Figure 30. Logo and campaign recognition across years.

Additionally, as described previously, 25.9% 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 27.8% of respondents reporting yes, they have seen or received this kind of information. Men reported higher rates of seeing or receiving this information at higher rates than women, at 35.9% compared to 20.0%. Generally, reports of seeing or receiving this information decreased with age. Finally, owners reported seeing or receiving this information at a rate of 33.4% compared to 19.4% of renters, as can be seen in Table 34.

Survey participants were shown both the "Only Rain Down the Drain" and "Pollution Solutions" advertisements in a random order and asked questions about recognition and perceptions of both. 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.

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, 19.2% of respondents report having seen the ad previously, as can be seen in Table 36 and Figure 31. 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, 83.3% report understanding the information in the ad, 78.8% report believing that the ad is relevant, 80.1% report trusting the information in the ad, 83.7% report thinking the information in the ad is important, 70.5% report believing the ad is persuasive, and 71.9% think the ad is effective. The ad perception results for both ads are shown in Figure 32.

Table 36. Perceptions of 'Only Rain Down the Drain' (ORDD) advertisement by demographics.
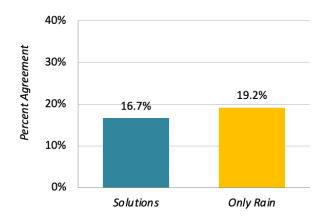
Demographic	Sub-category	Recog.	Underst.	Relevnt.	Trust	Import.	Persuas.	Effect.
	All Respondents	**19.2%**	**83.3%**	**78.8%**	**80.1%**	**83.7%**	**70.5%**	**71.9%**
Gender	Male	19.6%	83.4%	79.6%	82.3%	83.9%	70.5%	70.8%
	Female	19.0%	83.0%	78.2%	77.8%	83.3%	70.8%	73.3%
Age	21 to 24	24.3%	86.5%	80.6%	88.2%	84.8%	76.5%	73.5%
	25 to 34	27.7%	78.2%	75.5%	74.5%	80.6%	64.9%	70.2%
	35 to 44	26.2%	79.2%	81.0%	80.6%	79.6%	67.3%	71.2%

Demographic	Sub-category	Recog.	Underst.	Relevnt.	Trust	Import.	Persuas.	Effect.
	45 to 54	18.2%	85.1%	85.2%	82.0%	86.9%	72.1%	73.8%
	55 to 64	6.2%	92.3%	74.6%	79.0%	87.1%	75.4%	74.2%
	65 to 74	10.3%	81.0%	78.4%	82.4%	86.3%	78.4%	74.0%
	75 or older	8.8%	90.9%	75.8%	81.8%	87.5%	66.7%	66.7%
Locality	Alexandria	21.7%	80.0%	74.5%	76.4%	81.5%	68.5%	69.1%
	Arlington	20.0%	78.2%	84.6%	82.4%	76.9%	67.3%	65.4%
	Fairfax - Inclusive	20.0%	84.6%	79.2%	84.3%	86.7%	71.1%	70.3%
	Prince William - Inclusive	18.9%	84.1%	73.8%	73.2%	84.0%	69.5%	74.4%
	Leesburg/Loudon	15.9%	85.4%	82.1%	79.8%	82.9%	73.8%	78.6%
Ethnicity	Not Hispanic/Latino	19.1%	83.7%	77.6%	79.7%	83.1%	69.4%	70.8%
	Hispanic/Latino	20.4%	79.6%	89.1%	84.1%	88.6%	81.4%	81.8%
Years of Residence	Less than 1 year	20.6%	76.5%	68.8%	90.3%	86.7%	74.2%	80.6%
	1 to 3 years	13.3%	81.6%	83.3%	83.0%	86.4%	70.8%	75.3%
	4 to 9 years	20.0%	84.8%	77.2%	75.8%	80.8%	66.3%	67.7%
	10 to 19 years	26.9%	83.7%	77.2%	79.2%	83.0%	73.3%	70.3%
	20 or more years	16.5%	84.9%	80.7%	79.8%	83.9%	70.6%	72.0%
Home Ownership	Owned	19.9%	84.7%	81.0%	81.3%	83.9%	71.9%	72.5%
	Rented	16.8%	80.8%	75.4%	76.4%	82.1%	67.9%	70.2%
Household Income	Less than $35,000	19.0%	77.2%	70.0%	72.9%	81.6%	63.3%	65.3%
	$35,000 to $49,999	21.2%	78.4%	68.8%	83.3%	78.7%	68.8%	77.1%
	$50,000 to $74,999	21.2%	78.8%	72.5%	78.4%	78.4%	64.7%	66.7%
	$75,000 to $99,999	13.7%	84.3%	81.4%	78.9%	81.7%	76.8%	72.3%
	$100,000 to $124,999	18.8%	78.6%	80.9%	79.1%	84.8%	76.1%	80.6%

Demographic	Sub-category	Recog.	Underst.	Relevnt.	Trust	Import.	Persuas.	Effect.
	$125,000 to $149,999	33.3%	90.5%	87.8%	87.8%	90.2%	68.3%	78.0%
	$150,000 to $174,999	9.1%	90.9%	75.0%	80.0%	80.0%	65.0%	60.0%
	$175,000 to $199,999	22.2%	92.6%	92.3%	88.5%	92.3%	73.1%	69.2%
	$200,000 or greater	18.2%	90.9%	83.3%	78.6%	90.5%	68.3%	66.7%

* Red font indicates significant differences within a demographic subgroup.

Figure 31. *Recognition of 'Only Rain Down the Drain' and 'Pollution Solution's advertisements.*
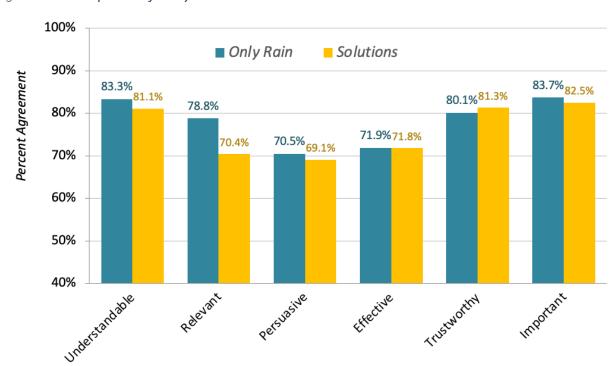
Rates of reported recognition of the ad "Only Rain Down the Drain" from 2016 to 2024 can be seen below in Table 39. Notably, respondents to the 2021 survey reported higher rates of recognition when compared to 2024. Additionally, in Table 38, rates of reported perception of the ad in 2023 and 2024 can be seen. In 2023, the rate of seeing the ad as relevant were lower than in 2024. Otherwise, there were no significant differences in response rates regarding this ad.

Table 37. Recognition of 'Only Rain Down the Drain' across years.

Year of Survey									
Response to Survey Question	2016	2017	2018	2019	2020	2021	2022	2023	2024
Recognize "Only Rain"	15.6%	23.6%	14.8%	15.4%	22.0%	29.0%	27.8%	23.3%	19.2%

Table 38. Perceptions of 'Only Rain Down the Drain' across years.

	Year of Survey	
Response to Survey Question	2023	2024
Understand	79.4%	83.3%
Relevant	70.7%	78.8%
Trust	78.9%	80.1%
Important	84.2%	83.7%
Persuasive	68.5%	70.5%
Effective	73.0%	71.9%

Pollution Solutions

Participants were shown the ad "Pollution Solutions" 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 'Pollution Solutions' ad, 16.7% of respondents report having seen the ad previously, as shown in Table 39 and Figure 31. Generally, older people reported having seen the ad previously at lower rates. 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, 81.1% of respondents report understanding the ad, 70.4% report believing the ad is relevant, 81.3% report trusting the information in the ad, 82.5% report thinking the information in the ad is important, 69.1% report believing the ad is persuasive and 71.8% report thinking the ad is effective. The results of both ads are shown in Figure 32.

Because this campaign is new is 2024, there is recognition or perceptions data from previous years.

Table 39. Perceptions of 'Pollution Solutions' advertisement by demographic group.

	Sub-category	Recog.	Underst.	Relevnt.	Trust	Import.	Persuas.	Effect.
	All Respondents	**16.7%**	**81.1%**	**70.4%**	**81.3%**	**82.5%**	**69.1%**	**71.8%**
Gender	Male	18.5%	80.9%	73.2%	82.0%	85.7%	71.3%	74.1%
	Female	15.0%	81.6%	67.9%	80.9%	79.5%	67.1%	69.7%
Age	21 to 24	18.9%	83.8%	65.7%	87.9%	90.9%	72.7%	71.9%
	25 to 34	23.8%	71.6%	67.0%	78.1%	73.2%	64.3%	64.3%
	35 to 44	25.9%	83.2%	67.6%	80.0%	79.0%	68.6%	72.4%
	45 to 54	18.6%	77.1%	76.9%	78.1%	84.4%	67.2%	74.6%
	55 to 64	6.0%	90.9%	76.9%	79.7%	87.5%	67.2%	73.4%
	65 to 74	5.3%	82.5%	76.5%	90.0%	90.0%	84.0%	80.0%
	75 or older	**	87.9%	59.4%	84.4%	87.5%	66.7%	71.9%
Locality	Alexandria	16.4%	73.8%	68.4%	71.9%	73.2%	63.2%	70.2%
	Arlington	23.6%	81.8%	78.4%	76.9%	80.8%	72.5%	70.6%
	Fairfax - Inclusive	16.4%	84.1%	73.7%	85.8%	86.5%	66.9%	71.0%
	Prince William - Inclusive	15.4%	81.3%	59.8%	77.1%	78.3%	72.3%	72.3%
	Leesburg/Loudon	14.4%	79.8%	71.4%	85.5%	85.7%	72.6%	75.0%
Ethnicity	Not Hispanic/Latino	16.5%	81.6%	71.3%	81.4%	82.5%	68.8%	71.9%
	Hispanic/Latino	18.4%	77.6%	63.0%	80.4%	82.6%	71.7%	71.7%
Years of Residence	Less than 1 year	18.8%	78.8%	54.8%	77.4%	80.6%	67.7%	60.0%
	1 to 3 years	8.9%	74.3%	72.3%	77.4%	76.3%	64.5%	73.1%
	4 to 9 years	21.7%	84.8%	75.0%	86.6%	85.9%	70.7%	71.7%
	10 to 19 years	25.0%	82.2%	73.5%	80.4%	82.2%	67.6%	72.5%
	20 or more years	11.0%	83.3%	66.7%	81.8%	85.1%	73.1%	73.3%
Home Ownership	Owned	19.1%	84.2%	72.0%	84.5%	86.7%	73.2%	75.4%
	Rented	11.7%	75.3%	68.2%	75.0%	74.3%	62.2%	66.0%

	Sub-category	Recog.	Underst.	Relevnt.	Trust	Import.	Persuas.	Effect.
Household Income	Less than $35,000	12.1%	69.0%	61.2%	70.8%	70.8%	64.6%	68.8%
	$35,000 to $49,999	15.1%	83.0%	63.3%	77.6%	76.0%	64.0%	63.3%
	$50,000 to $74,999	15.5%	75.9%	62.5%	80.4%	76.8%	55.4%	69.6%
	$75,000 to $99,999	16.8%	81.2%	70.7%	82.1%	82.3%	70.5%	72.6%
	$100,000 to $124,999	21.7%	81.2%	64.7%	80.9%	85.1%	76.5%	73.5%
	$125,000 to $149,999	30.2%	85.7%	90.7%	86.0%	90.7%	78.6%	86.0%
	$150,000 to $174,999	9.5%	81.0%	70.0%	84.2%	89.5%	78.9%	78.9%
	$175,000 to $199,999	14.8%	92.3%	84.0%	92.0%	88.0%	76.0%	68.0%
	$200,000 or greater	9.1%	90.9%	80.5%	85.4%	92.7%	65.9%	68.3%

* Red font indicates significant differences within a demographic subgroup.

** Insufficient data for comparison to other subgroups.

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.

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 40 and Figure 33. 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, 82.9% report understanding more about pet waste, 70.3% report wanting to pick up pet waste more often despite not having made any changes yet, 73.3% report now picking pet waste up more often and 84.9% report already doing what is recommended. Non-Hispanic/Latino respondents report understanding more about pet waste at higher rates than Hispanic/Latino respondents, at 85.3% compared to 60.0%.

Table 40. 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 to Pick Up More	More Pick-up Now	Pet Waste Already
	All Respondents	**82.9%**	**70.3%**	**73.3%**	**84.9%**
Gender	Male	87.3%	72.0%	80.0%	88.0%
	Female	78.0%	68.3%	65.0%	81.4%
Age	21 to 24	**	71.4%	83.3%	83.3%
	25 to 34	78.1%	81.5%	71.4%	80.6%
	35 to 44	78.4%	75.0%	66.7%	81.8%
	45 to 54	92.9%	50.0%	92.9%	92.9%
	55 to 64	71.4%	25.0%	50.0%	**
	65 to 74	**	100.0%	**	**
	75 or older	**	50.0%	0.0%	100.0%
Locality	Alexandria	81.3%	91.7%	76.9%	84.6%
	Arlington	80.0%	40.0%	78.6%	86.7%
	Fairfax - Inclusive	87.5%	75.0%	71.9%	84.8%
	Prince William - Inclusive	81.3%	80.0%	85.7%	78.6%

Demographic	Sub-category	Understands Pet Waste	Want to Pick Up More	More Pick-up Now	Pet Waste Already
	Leesburg/Loudon	77.8%	64.7%	58.8%	88.9%
Ethnicity	Not Hispanic/Latino	85.3%	69.5%	76.8%	86.9%
	Hispanic/Latino	60.0%	77.8%	37.5%	66.7%
Years of Residence	Less than 1 year	77.8%	**	50.0%	83.3%
	1 to 3 years	75.0%	70.0%	80.0%	90.9%
	4 to 9 years	86.2%	75.0%	60.9%	72.0%
	10 to 19 years	84.8%	80.0%	80.6%	84.4%
	20 or more years	81.8%	40.0%	83.3%	**
Home Ownership	Owned	82.4%	66.2%	75.4%	87.7%
	Rented	80.8%	77.8%	76.2%	83.3%
Household Income	Less than $35,000	84.6%	91.7%	53.8%	81.8%
	$35,000 to $49,999	83.3%	87.5%	88.9%	83.3%
	$50,000 to $74,999	70.0%	62.5%	33.3%	55.6%
	$75,000 to $99,999	73.7%	60.0%	85.7%	71.4%
	$100,000 to $124,999	85.0%	57.9%	68.4%	94.7%
	$125,000 to $149,999	85.7%	61.5%	85.7%	**
	$150,000 to $174,999	**	66.7%	**	50.0%
	$175,000 to $199,999	**	83.3%	66.7%	**
	$200,000 or greater	87.5%	85.7%	83.3%	**

Red font indicates significant differences within a demographic subgroup.

** *Insufficient data for between-group comparison.*
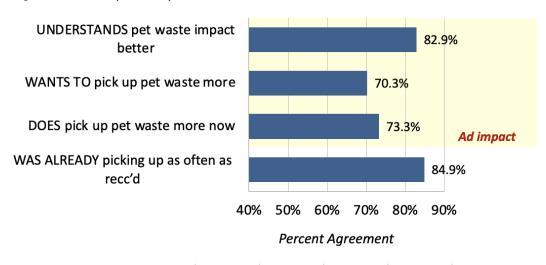
Figure 33. *Ad impact on pet waste behaviors.*

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, 81.6% report understanding more about the impact of fertilizer on water quality, 78.2% report wanted to fertilize fewer times despite not making any changes yet, 81.6% report now fertilizing less frequently and 78.1% report that they were already doing what is recommended as can be seen in Table 41 and Figure 34.

Table 41. *Ad impact on fertilizing behavior by demographic group of those who had seen the advertisement prior to completing the survey.*
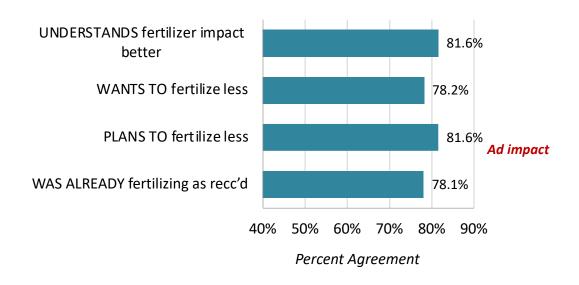
Demographic	Sub-category	Understand Fertilizer	Want to Fertilizer Less	Fertilizes Less Now	Was Fertilizing Less Already
	All Respondents	**81.6%**	**78.2%**	**81.6%**	**78.1%**
Gender	Male	83.0%	85.1%	78.3%	77.4%

Demographic	Sub-category	Understand Fertilizer	Want to Fertilizer Less	Fertilizes Less Now	Was Fertilizing Less Already
	Female	80.0%	70.0%	85.4%	79.1%
Age	21 to 24	**	66.7%	83.3%	83.3%
	25 to 34	93.8%	75.9%	82.1%	71.0%
	35 to 44	69.7%	75.0%	78.1%	85.7%
	45 to 54	85.7%	92.3%	92.3%	78.6%
	55 to 64	50.0%	75.0%	50.0%	80.0%
	65 to 74	**	**	**	75.0%
	75 or older	66.7%	100.0%	100.0%	0.0%
Locality	Alexandria	80.0%	90.9%	76.9%	84.6%
	Arlington	60.0%	76.9%	75.0%	93.3%
	Fairfax - Inclusive	82.9%	74.2%	83.9%	72.2%
	Prince William - Inclusive	86.7%	85.7%	92.3%	80.0%
	Leesburg/Loudon	94.4%	72.2%	77.8%	70.6%
Ethnicity	Not Hispanic/Latino	80.7%	78.2%	82.1%	79.1%
	Hispanic/Latino	90.0%	77.8%	77.8%	70.0%
Years of Residence	Less than 1 year	85.7%	83.3%	83.3%	85.7%
	1 to 3 years	83.3%	80.0%	**	83.3%
	4 to 9 years	88.5%	70.8%	70.8%	72.0%
	10 to 19 years	78.1%	80.0%	83.9%	80.6%
	20 or more years	76.2%	82.4%	81.3%	76.2%
Home Ownership	Owned	79.7%	75.0%	77.8%	76.8%
	Rented	88.0%	89.5%	90.0%	79.2%
Household Income	Less than $35,000	**	**	81.8%	81.8%
	$35,000 to $49,999	90.9%	80.0%	81.8%	66.7%
	$50,000 to $74,999	90.0%	77.8%	66.7%	77.8%

Demographic	Sub-category	Understand Fertilizer	Want to Fertilizer Less	Fertilizes Less Now	Was Fertilizing Less Already
	$75,000 to $99,999	62.5%	50.0%	91.7%	66.7%
	$100,000 to $124,999	73.7%	66.7%	83.3%	84.2%
	$125,000 to $149,999	78.6%	84.6%	84.6%	85.7%
	$150,000 to $174,999	66.7%	66.7%	33.3%	**
	$175,000 to $199,999	**	**	80.0%	66.7%
	$200,000 or greater	85.7%	**	**	85.7%

* Red font indicates significant differences within a demographic subgroup.

** Insufficient data for between-group comparison.

*Figure 34. **Ad impact on fertilization behaviors.***

Impact of advertisements on motor oil disposal

Finally, 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, 87.8% report understanding more about the impact of motor oil on water quality, 73.3% report wanting to dispose of motor oil properly despite not making any changes yet, 80.9% report now properly disposing of motor oil and 87.8% of respondents were already doing what is recommended as shown in Table 42 and Figure 35. Respondents who have lived in their residence for 20 or more years report the lowest rates of wanting to dispose of motor oil properly despite not making any changes yet compared to respondents who have lived in their residences for fewer years.

Table 42. 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	Wants to Dispose Properly	Now Disposes Properly	Was Already Disposing Properly
	All Respondents	**87.8%**	**73.3%**	**80.9%**	**87.8%**
Gender	Male	88.9%	72.3%	80.0%	90.6%
	Female	86.4%	74.4%	82.1%	84.4%
Age	21 to 24	100.0%	83.3%	83.3%	100.0%
	25 to 34	86.7%	73.1%	85.7%	80.6%
	35 to 44	83.3%	82.9%	65.6%	86.1%
	45 to 54	92.9%	50.0%	92.3%	92.3%
	55 to 64	80.0%	33.3%	100.0%	100.0%
	65 to 74	100.0%	100.0%	100.0%	100.0%
	75 or older	100.0%	100.0%	100.0%	100.0%
Locality	Alexandria	92.9%	84.6%	93.3%	93.3%
	Arlington	92.9%	41.7%	66.7%	93.3%
	Fairfax - Inclusive	83.8%	72.4%	80.0%	88.2%

Demographic	Sub-category	MO Understand	Wants to Dispose Properly	Now Disposes Properly	Was Already Disposing Properly
	Prince William - Inclusive	93.8%	80.0%	86.7%	87.5%
	Leesburg/Loudon	82.4%	82.4%	76.5%	77.8%
Ethnicity	Not Hispanic/Latino	89.8%	74.0%	82.5%	89.8%
	Hispanic/Latino	70.0%	66.7%	66.7%	70.0%
Years of Residence	Less than 1 year	100.0%	100.0%	66.7%	75.0%
	1 to 3 years	90.9%	66.7%	90.0%	100.0%
	4 to 9 years	95.8%	72.7%	66.7%	76.9%
	10 to 19 years	82.4%	87.9%	86.7%	91.2%
	20 or more years	81.8%	44.4%	89.5%	94.7%
Home Ownership	Owned	84.7%	71.2%	78.8%	87.1%
	Rented	95.5%	76.5%	85.7%	91.7%
Household Income	Less than $35,000	90.9%	80.0%	80.0%	83.3%
	$35,000 to $49,999	100.0%	77.8%	90.9%	100.0%
	$50,000 to $74,999	88.9%	85.7%	75.0%	70.0%
	$75,000 to $99,999	82.4%	71.4%	70.6%	83.3%
	$100,000 to $124,999	88.9%	52.9%	93.8%	89.5%
	$125,000 to $149,999	78.6%	71.4%	85.7%	100.0%
	$150,000 to $174,999	66.7%	100.0%	33.3%	66.7%
	$175,000 to $199,999	100.0%	83.3%	50.0%	80.0%
	$200,000 or greater	87.5%	83.3%	100.0%	100.0%

Red font indicates significant differences within a demographic subgroup.
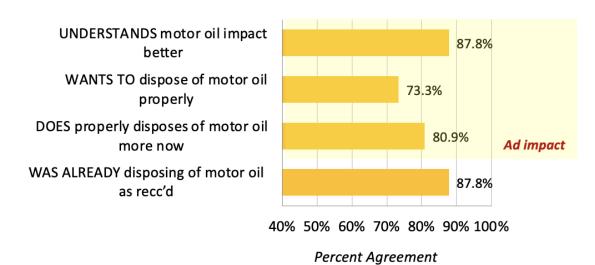
Figure 35. **Ad impact on motor oil behaviors.**

- Impact of ads across years

Reported impact of the ads on behaviors regarding pet waste, fertilizer, and motor oil in 2023 and 2024 can be seen below in Table 43. There were no significant differences between 2023 and 2024.

Table 43. Ad impact across years.

	Survey Questions Response	Year of Survey	
		2023	2024
Pet Waste	Understands	85.5%	82.9%
	Wants to change	77.6%	70.3%
	Has picked up more	76.6%	73.3%
	Was already picking up	83.0%	84.9%
Fertilizer	Understands	85.0%	81.6%
	Wants to change	74.7%	78.2%
	Plans on fertilizing less	76.3%	81.6%
	Was already fertilizing less	71.4%	78.1%
Motor Oil	Understands	84.4%	87.8%
	Wants to change	75.7%	73.3%
	Now disposes of motor oil properly	79.3%	80.9%
	Was already disposing properly	82.0%	87.8%

Red font indicates that the value significantly differs from the current 2024 value.

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 44 and Figure 36 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

Approximately one-third, 33.3%, indicate they are familiar with NVCWP. In addition, 71.2% of participants reported they trust information from NVCWP. Next, 69.7% of participants reported believing that they share values about water quality with NVCWP. Finally, 66.8% of respondents stated that they would contact NVCWP if they had questions about water with consistent results across subgroup demographics. Men report the greatest familiarity with NVCWP, at 39.4% compared to 27.4% among women. Generally, reported familiarity with NVCWP decreased as age increased.

Table 44. Perceptions of the campaign sponsor, NVCWP, by demographic group.
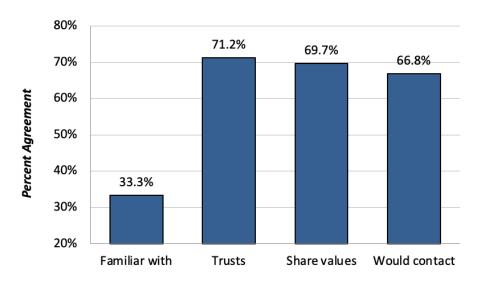
Demographic	Sub-category	Familiar with NVCWP	Trusts NVCWP	Share Values with NVCWP	Would Contact NVCWP
		Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree
	All Respondents	**33.3%**	**71.2%**	**69.7%**	**66.8%**
Gender	Male	39.4%	74.8%	73.5%	71.3%
	Female	27.4%	67.9%	66.1%	62.6%
Age	21 to 24	42.9%	76.9%	71.1%	60.5%
	25 to 34	41.9%	71.7%	68.4%	67.7%
	35 to 44	39.8%	70.5%	66.7%	70.8%

Demographic	Sub-category	Familiar with NVCWP	Trusts NVCWP	Share Values with NVCWP	Would Contact NVCWP
		Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree
	45 to 54	36.5%	72.1%	70.6%	70.6%
	55 to 64	17.6%	67.2%	69.2%	58.5%
	65 to 74	15.5%	73.6%	73.6%	69.2%
	75 or older	27.8%	67.6%	74.3%	62.9%
Locality	Alexandria	35.4%	69.8%	67.7%	61.9%
	Arlington	37.9%	74.5%	72.7%	70.9%
	Fairfax - Inclusive	27.6%	75.4%	70.3%	65.5%
	Prince William - Inclusive	29.2%	60.2%	63.6%	64.0%
	Leesburg/Loudon	44.6%	72.7%	73.9%	73.0%
Ethnicity	Not Hispanic/Latino	33.0%	71.4%	68.8%	65.4%
	Hispanic/Latino	35.3%	69.4%	77.1%	79.2%
Years of Residence	Less than 1 year	27.8%	64.7%	70.6%	61.8%
	1 to 3 years	23.9%	69.3%	65.0%	67.3%
	4 to 9 years	38.9%	71.0%	73.1%	71.3%
	10 to 19 years	41.8%	81.0%	75.5%	71.0%
	20 or more years	30.5%	66.4%	65.0%	60.0%
Home Ownership	Owned	36.0%	74.5%	72.6%	69.4%
	Rented	28.2%	66.0%	65.0%	61.5%
Household Income	Less than $35,000	27.0%	70.9%	67.9%	62.5%
	$35,000 to $49,999	34.5%	68.6%	55.1%	58.8%
	$50,000 to $74,999	37.5%	66.7%	68.9%	63.9%
	$75,000 to $99,999	25.5%	66.3%	67.3%	64.4%
	$100,000 to $124,999	40.0%	76.1%	80.6%	76.1%
	$125,000 to $149,999	44.4%	84.4%	82.2%	84.4%

Demographic	Sub-category	Familiar with NVCWP	Trusts NVCWP	Share Values with NVCWP	Would Contact NVCWP
		Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree	Agree or Strongly Agree
	$150,000 to $174,999	27.3%	85.7%	71.4%	71.4%
	$175,000 to $199,999	63.0%	76.0%	66.7%	72.0%
	$200,000 or greater	15.9%	61.4%	65.9%	53.5%

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

Figure 36. **Perceptions of NVCWP.**

Changes in perceptions of NVCWP across between 2023 and 2024 are shown in the table below. Familiarity with the organization decreased from 2023, from 42.2% to 33.3%. Trust, sentiment of shared values with NVCWP, and reported likelihood to contact NVCWP if needed remained the same.

Table 45. Perceptions of NVCWP across years.

	Survey Year	
	2023	2024
Familiar with NVCWP	42.2%	33.3%

	Survey Year	
	2023	2024
Trusts NVCWP	73.5%	71.2%
Share Values with NVCWP	74.5%	69.7%
Would Contact NVCWP	70.9%	66.8%

* Red font indicates that the value significantly differs from the current 2024 value.

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 46 and Figure 37, 40.8% of participants report using Verizon as their TV service provider, 9.0 % report using Comcast, 11.8% report using Cox and 15.6% report using Xfinity. Additionally, 15.8 % report not having cable, 2.0% report not watching TV, 0.2% report using some other service not listed, and 4.8% of respondents report not knowing which TV service provider they use.

Women reported using Xfinity at a higher rate than men, at 19.2% compared to 12.1%. Reported Verizon use is highest amongst Leesburg/Loudon, Arlington, and Fairfax residents. Additionally, reported Cox use is higher in Fairfax and Alexandria. Reported use of Verizon as a TV service provider also tends to increases with age. Additionally, home owners reported using Verizon at a higher rate (48.9%) compared to renters (27.4%). Younger people report using Xfinity as a TV service provider at higher rates than older people. Renters also report using Xfinity at a rate of 24.6% compared to 10.0% of owners. Finally, renters report not having cable TV at higher rates than home owners, at 22.3% and 12.5% respectively.

Table 46. TV service providers among respondents by demographic group.
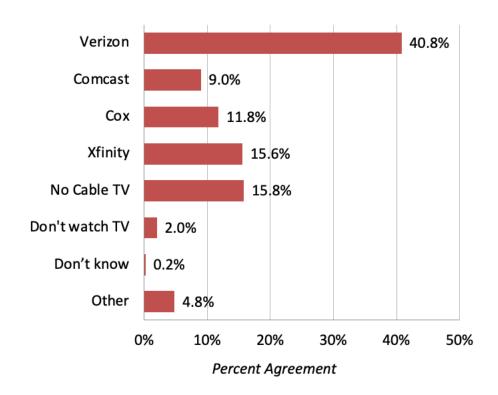
Demographic	Sub-category	TV Service Provider							
		Verizon	Com-cast	Cox	Xfinity	No Cable TV	Don't watch TV	Don't know	Other
	All Respondents	**40.8%**	**9.0%**	**11.8%**	**15.6%**	**15.8%**	**2.0%**	**0.2%**	**4.8%**

Demographic	Sub-category	TV Service Provider							
		Verizon	Com-cast	Cox	Xfinity	No Cable TV	Don't watch TV	Don't know	Other
Gender	Male	44.4%	7.7%	12.9%	12.1%	16.5%	1.2%	0.4%	4.8%
	Female	37.2%	10.4%	10.8%	19.2%	14.8%	2.8%	0.0%	4.8%
Age	21 to 24	42.9%	11.9%	16.7%	14.3%	11.9%	2.4%	0.0%	0.0%
	25 to 34	42.5%	6.6%	9.4%	19.8%	17.0%	1.9%	0.0%	2.8%
	35 to 44	43.0%	14.0%	13.2%	11.4%	14.0%	3.5%	0.0%	0.9%
	45 to 54	36.5%	10.8%	10.8%	14.9%	23.0%	0.0%	1.4%	2.7%
	55 to 64	36.2%	5.8%	5.8%	15.9%	15.9%	4.3%	0.0%	15.9%
	65 to 74	44.1%	0.0%	13.6%	15.3%	15.3%	0.0%	0.0%	11.9%
	75 or older	38.9%	13.9%	19.4%	19.4%	8.3%	0.0%	0.0%	0.0%
Locality	Alexandria	24.6%	15.4%	15.4%	24.6%	10.8%	1.5%	0.0%	7.7%
	Arlington	45.8%	11.9%	6.8%	23.7%	10.2%	0.0%	0.0%	1.7%
	Fairfax - Inclusive	42.7%	5.4%	20.5%	3.8%	21.6%	3.2%	0.5%	2.2%
	Prince William - Inclusive	36.1%	10.3%	1.0%	28.9%	13.4%	2.1%	0.0%	8.2%
	Leesburg/Loudon	50.0%	8.5%	6.4%	13.8%	13.8%	1.1%	0.0%	6.4%
Ethnicity	Not Hispanic/Latino	41.1%	8.9%	11.6%	15.8%	15.4%	1.8%	0.2%	5.1%
	Hispanic/Latino	38.5%	9.6%	13.5%	13.5%	19.2%	3.8%	0.0%	1.9%
Years of Residence	Less than 1 year	13.9%	2.8%	16.7%	30.6%	25.0%	8.3%	0.0%	2.8%
	1 to 3 years	36.7%	5.5%	6.4%	22.9%	21.1%	2.8%	0.0%	4.6%
	4 to 9 years	44.3%	13.0%	13.9%	14.8%	12.2%	0.0%	0.0%	1.7%
	10 to 19 years	45.0%	9.9%	10.8%	7.2%	18.0%	1.8%	0.9%	6.3%
	20 or more years	45.0%	9.3%	14.0%	13.2%	10.1%	1.6%	0.0%	7.0%
Home Ownership	Owned	48.9%	10.0%	12.2%	10.0%	12.5%	1.0%	0.3%	5.1%
	Rented	27.4%	7.4%	10.9%	24.6%	22.3%	2.9%	0.0%	4.6%

Demographic	Sub-category	TV Service Provider							
		Verizon	Com-cast	Cox	Xfinity	No Cable TV	Don't watch TV	Don't know	Other
Household Income	Less than $35,000	25.4%	9.5%	15.9%	17.5%	23.8%	4.8%	0.0%	3.2%
	$35,000 to $49,999	30.4%	8.9%	8.9%	25.0%	17.9%	3.6%	0.0%	5.4%
	$50,000 to $74,999	44.6%	7.7%	9.2%	10.8%	18.5%	3.1%	0.0%	6.2%
	$75,000 to $99,999	42.5%	7.5%	13.2%	21.7%	10.4%	0.9%	0.9%	2.8%
	$100,000 to $124,999	45.1%	14.1%	9.9%	14.1%	12.7%	0.0%	0.0%	4.2%
	$125,000 to $149,999	42.2%	4.4%	20.0%	11.1%	15.6%	0.0%	0.0%	6.7%
	$150,000 to $174,999	59.1%	4.5%	22.7%	4.5%	4.5%	4.5%	0.0%	0.0%
	$175,000 to $199,999	55.6%	14.8%	3.7%	7.4%	14.8%	3.7%	0.0%	0.0%
	$200,000 or greater	40.0%	8.9%	4.4%	11.1%	22.2%	0.0%	0.0%	13.3%

Red font indicates significant differences within a demographic subgroup.

Figure 37. TV service providers.

TV channel options provided in the survey were "HLN TV", "Oxygen", "Toon", "ENT", "Animal Planet", "CNN", "ESPN", "History", "National Geographic", "Lifetime", "The CW", "Home and Garden", and "None of the above". When asked which TV channels they watched (see Table 47 and Figure 38), 45.8% of respondents report watching CNN, 40.6% report watching ESPN, 36.8% report watching National Geographic, 27.2% report watching Animal Planet, 21.8% report watching Lifetime and 21.0% report watching Home and Garden. Additionally, 17.0% report not watching any of the listed channels, 13.4% reporting watching The CW, 9.8% report watching Oxygen, 7.0% report watching HLN TV, 6.0% report watching Toon and 3.8% report watching ENT.

Men report watching CNN, ESPN, History Channel, and National Geographic at higher rates than women. Younger people tend to report watching Animal Planet at higher rates than older people. Residents of Leesburg/Loudon report watching CNN at higher rates than residents of other localities. Additionally, Prince William residents report watching Lifetime at the highest rates and Arlington residents report watching Home and Garden at the highest rates.

Table 47. TV channels that respondents report watching by demographic group.

Demographic	Sub-category	TV Channels Watched												
		HLN	Oxygen	Toon	ENT	AP	CNN	ESPN	History	National Geographic	Lifetime	CW	HG	None
	All Respondents	**7.0%**	**9.8%**	**6.0%**	**3.8%**	**27.2%**	**45.8%**	**40.6%**	**32.0%**	**36.8%**	**21.8%**	**13.4%**	**21.0%**	**17.0%**
Gender	Male	8.1%	7.3%	6.9%	4.0%	26.6%	50.4%	51.2%	39.1%	41.9%	19.4%	14.5%	20.6%	15.3%
	Female	6.0%	12.4%	5.2%	3.6%	28.0%	41.6%	30.0%	25.2%	32.0%	24.4%	12.4%	21.6%	18.4%
Age	21 to 24	2.4%	4.8%	11.9%	7.1%	23.8%	40.5%	45.2%	19.0%	33.3%	9.5%	9.5%	11.9%	21.4%
	25 to 34	7.5%	14.2%	7.5%	5.7%	38.7%	49.1%	46.2%	26.4%	42.5%	23.6%	10.4%	27.4%	13.2%
	35 to 44	12.3%	8.8%	6.1%	6.1%	30.7%	50.0%	43.9%	27.2%	36.0%	22.8%	14.9%	21.9%	14.9%
	45 to 54	9.5%	12.2%	12.2%	2.7%	33.8%	41.9%	44.6%	39.2%	35.1%	21.6%	21.6%	23.0%	18.9%
	55 to 64	2.9%	5.8%	0.0%	1.4%	18.8%	49.3%	34.8%	34.8%	31.9%	24.6%	11.6%	14.5%	20.3%
	65 to 74	3.4%	11.9%	1.7%	0.0%	11.9%	39.0%	32.2%	42.4%	35.6%	23.7%	10.2%	23.7%	13.6%
	75 or older	2.8%	5.6%	0.0%	0.0%	13.9%	41.7%	25.0%	41.7%	41.7%	19.4%	13.9%	13.9%	25.0%
Locality	Alexandria	4.6%	9.2%	4.6%	4.6%	30.8%	53.8%	50.8%	27.7%	40.0%	20.0%	9.2%	24.6%	15.4%
	Arlington	13.6%	10.2%	10.2%	0.0%	32.2%	47.5%	39.0%	35.6%	44.1%	18.6%	11.9%	30.5%	15.3%
	Fairfax - Inclusive	4.3%	7.0%	4.3%	3.8%	24.9%	41.1%	38.9%	33.0%	34.6%	20.5%	13.0%	14.1%	23.8%

Demographic	Sub-category	TV Channels Watched												
		HLN	Oxygen	Toon	ENT	AP	CNN	ESPN	History	National Geographic	Lifetime	CW	HG	None
	Prince William - Inclusive	9.3%	17.5%	8.2%	6.2%	24.7%	36.1%	38.1%	26.8%	32.0%	34.0%	17.5%	18.6%	14.4%
	Leesburg/Loudon	7.4%	7.4%	5.3%	3.2%	28.7%	58.5%	40.4%	36.2%	39.4%	14.9%	13.8%	28.7%	8.5%
Ethnicity	Not Hispanic/Latino	7.4%	9.8%	5.8%	3.8%	27.5%	46.0%	40.4%	32.8%	36.2%	21.7%	14.1%	21.4%	17.2%
	Hispanic/Latino	3.8%	9.6%	7.7%	3.8%	25.0%	44.2%	42.3%	25.0%	42.3%	23.1%	7.7%	17.3%	15.4%
Years of Residence	Less than 1 year	11.1%	11.1%	11.1%	2.8%	30.6%	30.6%	38.9%	27.8%	36.1%	16.7%	2.8%	11.1%	27.8%
	1 to 3 years	1.8%	13.8%	6.4%	0.9%	21.1%	41.3%	41.3%	27.5%	31.2%	18.3%	7.3%	14.7%	20.2%
	4 to 9 years	5.2%	9.6%	7.0%	6.1%	31.3%	49.6%	43.5%	34.8%	35.7%	22.6%	15.7%	19.1%	13.0%
	10 to 19 years	9.0%	7.2%	5.4%	4.5%	29.7%	47.7%	35.1%	33.3%	40.5%	23.4%	17.1%	27.0%	18.0%
	20 or more years	10.1%	8.5%	3.9%	3.9%	25.6%	48.8%	42.6%	33.3%	39.5%	24.0%	16.3%	25.6%	14.0%
Home Ownership	Owned	8.4%	8.7%	5.1%	4.5%	28.9%	50.5%	43.7%	33.4%	41.5%	21.5%	14.8%	23.8%	14.8%
	Rented	5.1%	12.0%	8.0%	2.3%	25.7%	40.0%	38.3%	31.4%	29.7%	22.3%	10.9%	17.1%	19.4%
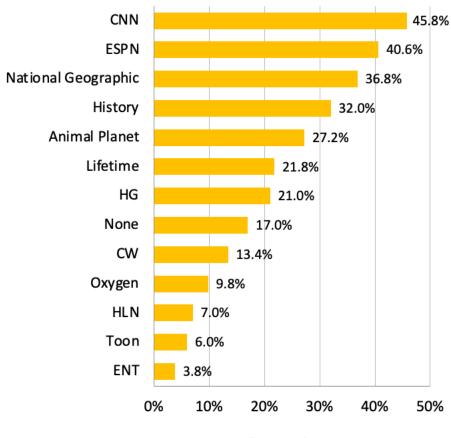
Demographic	Sub-category	TV Channels Watched												
		HLN	Oxygen	Toon	ENT	AP	CNN	ESPN	History	National Geographic	Lifetime	CW	HG	None
Household Income	Less than $35,000	7.9%	19.0%	11.1%	6.3%	27.0%	42.9%	30.2%	31.7%	34.9%	27.0%	14.3%	15.9%	23.8%
	$35,000 to $49,999	0.0%	5.4%	5.4%	0.0%	23.2%	30.4%	35.7%	25.0%	25.0%	17.9%	10.7%	16.1%	21.4%
	$50,000 to $74,999	4.6%	9.2%	6.2%	3.1%	20.0%	36.9%	41.5%	20.0%	26.2%	21.5%	12.3%	13.8%	20.0%
	$75,000 to $99,999	6.6%	12.3%	3.8%	2.8%	33.0%	48.1%	38.7%	31.1%	37.7%	20.8%	9.4%	22.6%	15.1%
	$100,000 to $124,999	11.3%	11.3%	7.0%	4.2%	31.0%	56.3%	42.3%	28.2%	40.8%	18.3%	16.9%	21.1%	9.9%
	$125,000 to $149,999	11.1%	2.2%	2.2%	0.0%	28.9%	40.0%	44.4%	42.2%	60.0%	33.3%	22.2%	24.4%	13.3%
	$150,000 to $174,999	9.1%	4.5%	0.0%	0.0%	27.3%	45.5%	50.0%	40.9%	54.5%	9.1%	9.1%	22.7%	13.6%
	$175,000 to $199,999	7.4%	7.4%	7.4%	14.8%	29.6%	55.6%	40.7%	51.9%	25.9%	22.2%	22.2%	40.7%	18.5%
	$200,000 or greater	6.7%	6.7%	8.9%	6.7%	20.0%	60.0%	53.3%	40.0%	35.6%	22.2%	8.9%	24.4%	17.8%

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

Figure 38. TV channels watched.

2024 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]

Demograph hics	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	Occupation	S6	What is your occupation/sector of work? [RETAIN ORDER, DO NOT RANDOMIZE] a. Student only (no other occupation) b. Retired c. Currently unemployed d. Agriculture, forestry, fishing and hunting, and mining e. Construction f. Manufacturing g. Wholesale trade h. Retail trade i. Transportation and warehousing j. Utilities k. Information or information technology l. Finance and insurance, m. Real estate and/or rental and leasing n. Professional and/or scientific o. Administrative p. Waste management services q. Educational services r. Health care and/or social assistance s. Arts, entertainment, and recreation t. Accommodation/hospitality and food services u. Public administration v. Other services w. Other: _____
Demographics	HH Income	S7	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	S8	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	Language	S9	What is the main language spoken in your home? a. English b. Spanish c. Chinese d. Vietnamese e. Arabic f. Korean g. Tagalog (including Filipino) h. Urdu i. Amharic or Somali j. French (including Cajun) k. Persian (including Farsi, Dari) l. 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 <u>AFTER</u> 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.
Demographics	Reside within watershed	Q8	Do you live in the…. |	YES	NO	Don't Know
Chesapeake Bay watershed?			
Potomac River watershed?			
Another watershed not listed?				
Perceptions	Storm water final destination	Q9	"Stormwater" is rainwater that flows into the street, along the gutter and into the storm drain. To the best of your knowledge, where does stormwater go? A wastewater treatment facility Potomac River and Chesapeake Bay All of the above None of the above Other: _____

Behavior	Dog walk cleanup frequency	Q10	[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
Behavior	Dog yard clean up frequency	Q11	[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

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 grass clippings from your lawn 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
Knowledge	Rain barrel familiarity	Q16	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?

	YES	NO
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.		

Knowledge	Rain garden familiarity	Q17	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?

	YES	NO
I have a rain garden.		
I am familiar with rain gardens.		
I don't have a rain garden but I'm interested in installing one.		

Knowledge	Conservation landscaping familiarity	Q18	**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?

	YES	NO
I have conservation landscaping in my yard.		
I am familiar with conservation landscaping.		
I don't have conservation landscaping but I'm interested in installing it.		

Behavior	Vehicle oil handling	Q19	[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: _____ [please specify]
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.
Behavior	Wash vehicle at home	Q21	[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]

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Behavior	Wash vehicle at home frequency	Q22	[IF Q21 = 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
Behavior	Wash vehicle method	Q23	[IF Q21 = At my/someone else's home] When you wash your car/truck at home, which of the following apply?

	YES	NO	NOT SURE
I wash it on the grass, gravel or dirt			
I use environmentally friendly detergent			
I use water only (no soap or detergent)			

Knowledge	Pollution identification	Q24	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
Knowledge	Pollution reporting knowledge	Q25	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	Q26	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	Q27	[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	Salt/abrasive	Q28	During snowy and icy conditions, how often (if at all) do you (or a family member) apply **deicer** (e.g., salt) at your residence?
			    Always or most of the time
			    Frequently
			    Sometimes
			    Occasionally
			    Rarely
			    Never
			    Don't know

Behavior	Salt/abrasive	Q29	[SKIP IF Q28 = "RARELY" OR "NEVER"]
			
			Do you (or a family member) typically apply deicer (e.g., salt) at your residence before, during, or after a winter storm event?
			(Select all that apply.)
			
			    Before
			    During
			    After
			    Depends / varies too much to say
			    Other:_____ [please specify]
			
			    Don't know

Behavior	Salt/abrasive	Q30	During snowy and icy conditions, how often (if at all) do you (or a family member) apply **an abrasive for traction** (e.g., sand) at your residence?
			
			    Always or most of the time
			    Frequently
			    Sometimes
			    Occasionally
			    Rarely
			    Never
			    Don't know

Perception	Salt/abrasive	Q31	In general, how would you rate the impact (if any) on each of the following from using salt for winter storm events? That is, for each item, please indicate if you feel that applying salt for winter storm events has a very positive, somewhat positive, somewhat negative, very negative, or little or no impact on that item. [RANDOMIZE]

	Very positive	Some-what positive	No or little impact	Some-what negative	Very negative	Don't know/ not sure
Tap/Drinking water						
Local waterways						
Emergency vehicle safety						
Motorist safety						
Pedestrian safety						
Economic and civic activity						

Sources	TV service provider	Q32	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
Sources	TV channels	Q33	White of the following channels, if any, do you watch? [RANDOMIZE ALL BUT LAST] HLN TV Oxygen Toon ENT Animal Planet CNN ESPN History National Geographic Lifetime CW Home and Garden None of the above

Knowledge	Clean up activity awareness in past 12 months	Q34	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	Q35	[IF Q34 = 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!", "Pollution Solutions""]
Awareness	Ad familiarity	Q36	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

Perception	Ad perceptions	Q37	[IF Q36 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.

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly Agree
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.					

Instruction			Please watch the video below, then we'll ask you a couple questions about it.

[VIDEO ORDER COUNTERBALANCED: "Only Rain Down the Drain!", "Pollution Solutions"]

Awareness	Ad familiarity	Q38	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
Perception	Ad perceptions	Q39	[IF Q38 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.

Q39 table:

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly Agree
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.					

Behavior	Ad impact	Q40	[IF Q38 = YES OR Q36 = 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.)

	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			

[PAGE BREAK. KEEP QUESTION AND RESPONSE LABELS ON SCREEN

	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.			

[PAGE BREAK. KEEP QUESTION AND RESPONSE LABELS ON SCREEN.]

			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	Q41	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	Q42	Have you seen the logo below before? [MEDIA: SHOW SURVEYIMAGE_LOGO] Yes No Cannot see image

Perceptions	Sponsor awareness and perceptions	Q43	[DISPLAY TEXT ON SEPARATE PAGE.]

[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).

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly Agree
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.					

[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.

Appendix C: Northern Virginia Clean Water Partners 2024 Summary of Results

View the Northern Virginia Clean Water Partners' Annual Summary of Results online:

https://www.onlyrain.org/_files/ugd/200411_aed8a812bb9e4ac2a47e6cfb6cfdcd1e.pdf