Kayakers at Mason Neck State Park
Photo Credit: Park Rx America

Northern Virginia Regional Commission
Coastal Resources
Technical Assistance Program & Resiliency Focal Area

October 1, 2020 – December 31, 2021
NOAA Grant # NA20NOS4190207
Fiscal Year 2020, Task 46

Northern Virginia Regional Commission
www.novaregion.org

The Voice of Northern Virginia

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In Grant Year 2020 (October 1, 2020 – September 30, 2021 for Task 46), the Northern Virginia Coastal Resources Technical Assistance Program was funded in part by the Virginia Coastal Zone Management Program at the Department of Environmental Quality, through Grant NA20NOS4190207 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended. The grant period for this task was extended until December 31, 2021.

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Executive Summary

This report was produced, in part, through financial assistance from the Virginia Coastal Zone Management Program (CZM), Virginia Department of Environmental Quality through Grant No. NA20NOS4190207 from the National Oceanic and Atmospheric Administration (NOAA). This report describes the technical assistance program conducted by the Northern Virginia Regional Commission (NVRC) through its Coastal Resources Management Program. The Coastal Resources Program at NVRC includes; coordination of regional programs that advance Virginia CZMP's interests in coastal resource management, public outreach, education and training, environmental impact and permit reviews, and technical assistance on coastal issues relevant to Northern Virginia localities. The report also includes documentation of CZM-funded efforts by NVRC to address resilience needs as part of Year 1 of CZM's FY20-22 Resiliency Focal Area. This report fulfills the product requirements set forth in the FY 2020 Virginia Coastal Zone Management Program Grant, Task 46 (NOAA Grant # NA20NOS4190207).

1 Introduction

The Northern Virginia Regional Commission's (NVRC) Regional Coastal Resources Program has been fostering an effective partnership among federal, state, and local governments in the region for over twenty years. Through its partnership with the Virginia Coastal Zone Management Program (CZM), NVRC has been conducting research on ongoing and new or emerging coastal issues affecting the region and providing technical and planning assistance to Northern Virginia localities on these issues since 1992.

CZM awarded the NVRC a technical assistance grant of $34,500 on October 1, 2020 to continue its Regional Coastal Resources Management Program through September 30, 2021. Additionally, $30,000 was awarded under the same task as part of a three-year Focal Area (FY20-22) to build coastal resilience the region. The objectives of the 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. The first part of this report documents the outcomes of the technical assistance grant in FY20.

The second part of this report documents the outcomes of tasks that NVRC performed during FY20 Resiliency Focal Area strategy to improve the long-term capacity for community resilience planning and support local, regional, and state efforts to develop and implement new projects and policies.

2 Outcomes of Northern Virginia's Coastal Resources Technical Assistance Program (Product #1)

The Technical Assistance grant from CZM allows NVRC's Coastal Resources Management Program to conduct public outreach and education on coastal issues, coordinate regional programs that advance CZM's interests in coastal resource management and serve as a point of technical information exchange for local planning involving coastal issues. The Technical Assistance grant also allows NVRC to support CZM through serving as a member of the Virginia Coastal Policy Team (CPT), participation in the quarterly Coastal Planning District Commission (PDC) meetings, semi-annual CPT meetings, a Coastal Partners Workshop, and other regional initiatives that involve coastal issues. These meetings help to identify appropriate special projects and technical studies that would benefit the region as well as ensuring that local efforts may take advantage of or leverage other related initiatives taking place throughout the coastal zone of Virginia. The Technical Assistance grant also allows NVRC to complete permit reviews such as the proposed Town of Hamilton – Sewer Improvements Project submitted on February 24, 2021. Other outcomes of the FY 20 grant include participation in working groups and teams to coordinate and exchange ideas on topics that are relevant to the coastal zone. These meetings include:

2.1 Coastal (PDC) Planning Meetings

- NVRC hosted one virtual Coastal PDC meeting on **December 18, 2020**.
  Outcome: discussion of ways in which the resiliency initiatives being undertaken by the PDC's intersect with the statewide Virginia Coastal Resilience Master Plan (VCRMP).
- NVRC attended a virtual Coastal PDC meeting hosted by Plan RVA on **March 30, 2021**.
  Outcome: received training on the new CZM enforceable policies.
- NVRC attended virtually a hybrid Coastal PDC meeting hosted by Accomack-Northampton PDC (ANPDC) on **June 4, 2021**.
  Outcome: discussion of how the new CRMP and existing CZM resilience project databases should be combined and updated, updates from all PDC's, new guidance for the Community Flood Preparedness Fund (CFPF), and topics for the November 2021 Coastal Partners Workshop.

2.2 CPT Meetings

- NVRC attended an in-person CPT meeting hosted by CZM at DEQ's Central Office in Richmond on **January 28, 2021**
  Outcome: Virginia Tribal representatives asked natural and cultural resource conservation questions of state agencies and PDC's, CZM gave updates on FY20 Section 309 Strategies, FY20 Focal Area projects, and upcoming FY21 Section 309 projects. Discussed CRMP progress, CZM resilience project database, and a Resilience Academy training course to be held by the Virginia Coastal Policy Center (VCPC).
- NVRC attended a virtual CPT meeting hosted by CZM/DEQ on **September 16, 2021**

Outcomes: CZM gave updates on FY20 Section 309 Strategies, FY20 Focal Area projects, and upcoming FY21 Section 309 projects. Themes for November 2021 Coastal Partners Workshop also explored. VMRC gave a presentation on new Tidal Wetlands Guidance and the VCPC Resilience Academy was also discussed.

2.3 Trainings

1. **The Role of Insurance in Risk Reduction and Infrastructure Resilience**
   Investing in resilience planning to protect our communities and infrastructure involves taking action to understand and reduce risk. Insurance is one way to transfer the risk from an unavoidable extreme weather event.
   October 6, 2020
   90 Participants Issue D) Coastal Hazards

2. **"Ecological-Oriented Resiliency Lessons From the Netherlands"**
   As our region's local governments develop resiliency plans, they stand to benefit by drawing lessons from the Netherlands – widely recognized as a global pioneer in the planning and implementation of large- and small-scale holistic climate resiliency policies and projects.
   February 19, 2021
   27 Participants Issue C) Coastal Habitat/Marine Debris Stewardship

3. **"Understanding the Role of Bond Rating Agencies and Climate Resiliency Planning in Northern Virginia"**
   As local governments plan to address the effects of climate change, they must also take into consideration the growing and evolving roles of debt rating agencies in the arena of climate risk management.
   March 19, 2021
   18 Participants Issue D) Coastal Hazards

4. **"Sustainable Single-Use Plastics Waste Management & the Marine Environment: A Transatlantic Perspective from Kiel, Germany"**
   A discussion with Ms. Tatjana Allers, City of Kiel, to discuss the city's leadership in zero waste and experiences with extended producer responsibility as it relates to the single-use plastics waste mitigation and discharge into the marine environment.
   September 2, 2021
   36 participants Issue C) Coastal Habitat/Marine Debris Stewardship

5. **"Microplastics Research: View Between the Chesapeake and the Baltic"**
   The Chesapeake Bay is home to 516 wastewater treatment plants whose pollution, stemming from microplastics, is causing both short- and long-term damage to the delicate ecosystems within the Mid-Atlantic coastal region, as well as the humans who live there. The Baltic Sea region is experiencing a similar set of challenges. To tackle this, the Leibniz Institute for Baltic Sea Research has spearheaded an initiative to improve scientists'

understanding of the ecological impact of microplastic accumulation and meso and microplastic pollution in the waters.

September 21, 2021

29 participants Issue C) Coastal Habitat/Marine Debris Stewardship

Recordings of these trainings can be found here:
https://www.novaregion.org/1469/Webinar-Series-2020
https://www.novaregion.org/1483/Webinar-Series-2021

2.4 Special Project Report: Northern Virginia Clean Water Partners Regional Stormwater Education Campaign (Product #2)

Polluted stormwater runoff is the number one cause of poor water quality in streams and rivers in Northern Virginia. To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners program aims to educate the public about the impact of stormwater runoff on water quality and change human behaviors in our cities and neighborhoods through Regional Stormwater Education Campaign.

The Northern Virginia Clean Water Partners is comprised of a multi-disciplined group of local governments, drinking water and sanitation authorities, and individual businesses working together to address the common issues surrounding pollution prevention, stormwater management, and source water protection. "Only Rain Down the Storm Drain" is the motto of the partnership.

The Regional Stormwater Education Campaign was initiated in 2003 to assist localities in leveraging funds to achieve common goals regarding stormwater education and outreach and promote consistent messages. NVRC held several meetings with the Partners to discuss and determine the high priority water quality issues for the region. Regional water quality impairments were the primary criteria used to determine the issues. The high priority water quality issues identified by the Partners were bacteria, nutrients, salt, litter, and motor oil/chemical contaminants. These issues became the focus of the education and outreach campaign for 2020-2021. The 2020-2021 outreach campaign helped to satisfy Municipal Separate Storm Sewer System (MS4) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

Sixteen local jurisdiction members contributed financial and in-kind resources to the program in FY2020, for a total budget of $109,000. The Partners met twice during the grant period to foster dialogue among the partners as well as to plan and implement campaign activities.

In FY2020, educational ads featuring messages on the importance of proper pet waste disposal, over fertilization of lawns and gardens, and proper disposal of motor oil were distributed to the public via social media, television, print, internet advertising and the Only Rain Down the Storm Drain website. In addition to the educational advertisements, public outreach events hosted throughout the Northern Virginia region also raised awareness and encouraged positive behavior

change in residents. The educational ads featured the well-known national symbol of non-point source pollution; the rubber ducky.

From July 2020 through June 2021, the advertisements aired on 24 English language cable TV networks, and five Spanish language networks a total of 5156 times. The networks were selected based upon research that shows they have the highest 'reach' to the target audiences.

These Premium Digital TV ads delivered 771,115 household impressions.

As a new strategy in 2020, the Partners contracted with a digital communications firm to develop and implement a social media campaign on Facebook and Twitter. The results so far have shown that these platforms are an effective way to engage with the target audiences.

- Since July 1, 2020, the Facebook page has gathered an additional 271 page likes and 275 fans.
- During this time there were 244 published posts, 46,875 post engagements, and 41,050 post clicks
- Facebook outreach campaigns reached 1,360,699 individuals and led to 23,820 clicks through to the website.
- Since July 1, 2020 the Clean Water Partners Twitter page has gained: 81,066 impressions, 1220 total engagements, 105 post link clicks, and 77 followers.
- We have tweeted 398 times leading to: 198 retweets and 199 likes.

The Northern Virginia Clean Water Partners website www.onlyrain.org was updated with new information and SEO capabilities. The site received 9662 unique visits during the year. These activities helped to fulfill the outreach and education requirements of the jurisdictions' MS4 permits including requirement for each permittee to identify three high priority issues, determine the target audience for each high priority issue, and reach 20% of the target audience for each high priority issue.

An online survey of 500 Northern Virginia residents was conducted by a market research firm to determine the effectiveness of the ads, reveal any changes in behavior, and aid in directing the future efforts of the campaign. Nearly a one third (29%) of respondents recalled seeing the ad on TV, Facebook, or Twitter after watching the video clip in the survey which is a statistically significant increase from 2020. This indicates that using social media to conduct outreach is an effective way to reach residents and had a positive impact on the recall rate. Responses to the survey suggest that public support remains strong for local government programs that improve the quality of water in local and regional streams and rivers and the Chesapeake Bay however the transient demographics of the Northern Virginia region indicate that there continues to be a need to educate residents about stormwater pollution and how they can reduce their impact. Complete survey results are included as Appendix B.

NVRC staff prepared a summary of the results from the Only Rain campaign and distributed it to the Partners in September 2021. This report is included as Appendix A.

2.5 Benefits Accrued from Prior CZM Grants (Product #3)

The Technical Assistance grant from CZM has served as a foundation for the Northern Virginia Clean Water Partners project.

To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners aims to change human behaviors in our cities and neighborhoods through a public awareness and education campaign. The partnership is comprised of a multi-disciplinary group of local governments, drinking water and sanitation authorities, and individual businesses working together to address the common issues surrounding pollution prevention, stormwater management, and source water protection. "Only Rain Down the Storm Drain" is the motto of the partnership. By participating in the program, local jurisdictions have an unprecedented opportunity to pool local outreach dollars to collectively target pollution-causing behaviors for greater impact at less cost and effort. In addition to multi-media outreach, the strategy provides for community engagement and the production of educational materials that can be customized and used by each locality again and again. The primary goal of the partnership is to bring awareness of the impact stormwater has on waterbodies in Northern Virginia and to reduce stormwater-related pollution from entering local waterways. To meet this goal, the Partners work together to:

- 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; and
- Pilot new cost-effective opportunities for public outreach and education.

Members include stormwater program managers, MS4 Permit managers, communication directors, public information officers, water quality compliance specialists, and environmental planners. Membership is voluntary. However, the partnership provides a cost-effective means to meet mandatory state and federal stormwater requirements. By working together, the partners are able to leverage their available funds to develop and place bi-lingual products with common messages and themes, thereby extending their individual reach.

The Annual Regional Stormwater Education Campaign was initiated in 2003 to assist localities in leveraging funds to achieve common goals regarding stormwater education and outreach and promote consistent messages for fertilizer and pesticide use, pet waste disposal, and motor oil recycling. The 2020-21 campaign built on prior efforts and was able to leverage matching dollars. For more information visit www.onlyrain.org. Funds Leveraged since 2007: $1,389,225

3 Focal Area Deliverables

3.1 Regional Coordination for Resilience Planning (Product #4)

NVRC staff serve on the Infrastructure Advisory Group for the Fairfax County Climate Adaptation and Resiliency Plan and help to share relevant information about the VCRMP and other state level initiatives. NVRC staff participated in two Advisory Group meetings during the reporting period

(April 30 and Sept. 24, 2021). NVRC Staff also developed the NOVA Flood Mitigation and Resiliency Workgroup and hosted a meeting on October 29, 2021.

3.2 Coastal Resilience Database Entries (Product #5)

NVRC staff worked with local officials in Northern Virginia to identify resilience projects and populate the VCRMP database. Projects that were entered into the database include living shorelines and studies to identify sites for conservation throughout the region that could allow for buffering of stream corridors, transition of habitats inland as sea levels rise, and avoidance of shoreline development in vulnerable areas. NVRC staff is also participating in a coastal study being led by the US Army Corps of Engineers that has identified several preliminary projects that will improve community resiliency in of vulnerable areas of the region.

3.3 Virginia Coastal Resilience Master Plan Development (Product #6)

NVRC staff assisted with the development of the VCRMP by participating in the Technical Advisory Committee (TAC) and two subcommittees. Throughout this grant period NVRC took part in four meetings related to the TAC and subcommittees. NVRC also collaborated with the VCRMP planners to host a design charette ad public meeting.

3.4 Identification of Local Needs (Product #7)

NVRC staff met periodically throughout the grant period with locality and regional military installation stormwater planners and engineers to discuss challenges related to flooding from extreme precipitation and identify ways in which the region could address these challenges. It was determined that a unified network of precipitation monitoring stations deployed across the region could help track the occurrence of these events. In addition, if the monitoring data could be incorporated into a single database it could provide better opportunities for coordination of response. As a result of the FY20 grant from CZM, NVRC partnered with the Virginia Department of Emergency Management (VDEM) to develop a scope of work to set up a central database for the data. The scope of work was submitted for funding under the Virginia CFPF. NVRC was recently awarded the funding and plans to complete the work in 2022. NVRC staff also convened the Northern Virginia military bases of Quantico, Fort Belvoir, and Joint Base Myer Henderson Hall to discuss resilience challenges and opportunities related to off-base vulnerabilities that can affect on-base mission readiness.

Appendix A

Northern Virginia Clean Water Partners Summary of Regional Stormwater Education Campaign

Photo: Burke Lake Park in Fairfax, VA
Source: Fairfax County Park Authority

Northern Virginia Clean Water Partners Annual Summary of Results July 1, 2020 – June 30, 2021

www.onlyrain.org

Polluted stormwater runoff is the number one cause of poor water quality in streams and rivers in Northern Virginia. When it rains and snows, the water runs off streets, driveways, yards and parking lots and mixes with pesticides, grass clippings, fertilizer, bacteria, road salt, and oil. All this pollution enters the storm drains on the street and is discharged directly to a stream. The runoff is not filtered or sent to a wastewater treatment facility.

To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners came together to change peoples' behavior through a public education campaign.

About the Partnership

The Northern Virginia Clean Water Partners is composed of 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.

To meet these goals, the Partners work together to:

- Identify high priority water quality issues for the region.
- Identify the 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; and
- Pilot new cost-effective opportunities for public outreach and education.

Membership is voluntary and each member makes an annual contribution to fund the program. By working together, the partners can leverage their funds to develop and place bilingual educational products with common messages and themes, thereby extending the campaign's reach.

Only Rain Down the Storm Drain is the motto of the partnership. The 2021 campaign helped to satisfy MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

For more information visit www.onlyrain.org

2021 Campaign Overview and Accomplishments

In 2021, the Northern Virginia Clean Water Partners selected the following high priority water quality issues to focus on for the Campaign:

- bacteria,
- nutrients,
- salt, and
- illicit discharge (i.e., motor oil, pesticides, and hhw).

The Partners identified the target audiences for these issues as pet owners, homeowners with a lawn or garden, home mechanics and do-it-yourselfers, and members of the public who apply winter salt. The campaign used television, print, internet advertising, Facebook, Twitter, and the Only Rain Down the Storm Drain website to distribute messages linked to specific stormwater issues, such as proper pet waste disposal, responsible fertilizer use on lawns and gardens, and proper disposal of detergents, paints, stains, and auto fluids.

In addition to the multi-media campaign, partners participated in local events to raise awareness and encourage positive behavior change in residents. The social media posts, television and internet ads featured the well-known national symbol of non-point source pollution, the rubber ducky.

771,115	Premium digital TV impressions* (cable network ads)
1,641,042	Total social media impressions (Facebook and Twitter)
48,095	Engagements with social media posts (Facebook and Twitter)
9,662	Visits to the www.onlyrain.org website
3,000	Storm drain labels distributed throughout the region
500	Survey Responses

**Impressions are the number of times an ad appeared on a single television or computer screen.*

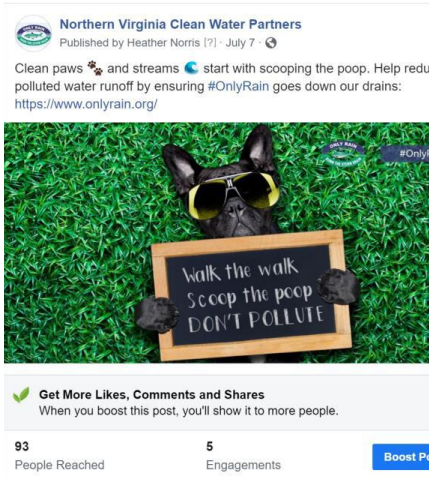
Throughout the campaign year, the Partners made the following efforts to educate the public and promote awareness of impacts of stormwater pollution:

- From July 2020 through June 2021, aired four Public Service Announcements (2 in English and 2 in Spanish) on 44
- English language cable TV networks, and four Spanish language networks a total of 5,156 times. The ads featured messages on the importance of picking up pet waste and general household stormwater pollution reduction measures.

As a new strategy in 2020, the Partners contracted with a digital communications firm to develop and implement a social media campaign on Facebook and Twitter. The results so far have shown that these platforms are an

effective way to engage with the target audiences.

- Since July 1, 2020, the Facebook page has gathered an additional 271 page likes and 275 fans.
- During this time there were 244 published posts, 46,875 post engagements, and 41,050 post clicks
- Facebook outreach campaigns reached 1,360,699 individuals and led to 23,820 clicks through to the website.



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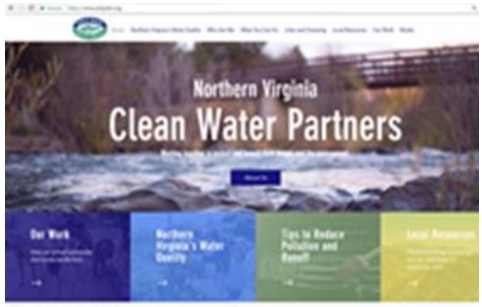
- Since July 1, 2020 the Clean Water Partners Twitter page has gained: 81,066 impressions, 1220 total engagements, 105 post link clicks, and 77 followers.
- We have tweeted 398 times leading to: 198 retweets and 199 likes.
- Continued to update and maintain the Northern Virginia Clean Water Partners website.



Stormwater Survey Results

The Partners conducted an online survey of 500 Northern Virginia residents to understand the general awareness of stormwater runoff, determine the effectiveness of the ads, aid in directing the future efforts of the campaign, and to reveal any changes in behavior.

General Awareness Findings:

Nearly half (47%) of respondents either don't know where storm water ends up or believes that it goes to a wastewater treatment plant. This indicates that there is a need to educate residents that stormwater drains are directly connected to local waterways.

Close to one third (29%) of respondents recalled seeing the ad on TV, Facebook, or Twitter after watching the video clip in the survey which is a statistically significant increase from 2020. This indicates that using social media to conduct outreach is an effective way to reach residents. Of those who recalled seeing the ads, 42 percent state they already take action to protect clean water, 46 percent state they now pick up their pet waste more often, 19 percent state that they now properly dispose of motor oil, and 32 percent state they plan to fertilize fewer times per year.

When shown the Only Rain Down the Storm Drain logo, 61 percent of the respondents recognized it compared to 54 percent in 2013. This increase indicates that **awareness of the logo has increased over time.**

Regardless of whether respondents have seen the ads or logo, 34 percent reported they had received information about reducing water pollution in the past 12 months. **The 2021 result**

was significantly higher than in 2018 (24%) and 2019 (22%). Even though more than half of respondents feel at least somewhat confident that they would know where to report potential water pollution, only 53 percent would report water pollution if they saw it. Interestingly, 8 percent of respondents from Prince William County indicated they "definitely would not" report potential water pollution. This suggests **there is a need for education on what pollution may look like and encourage residents to report it if they see something.**

The majority (65%) of respondents indicated that they were aware their locality has a specific place to drop off household hazardous waste.

Understanding Behaviors

In addition to capturing responses to questions regarding the effectiveness of the campaign, the survey gathered information on the current behaviors and attitudes of Northern Virginia residents as they relate to pet waste management, lawn care, and motor oil disposal. Responses to these questions support the development of future messages and targeted promotion.

Interestingly, dog ownership increased significantly (14 percent) in the region since the COVID-19 pandemic began. **During this time, the percent of respondents reporting that they pick up dog waste on walks decreased by 12 percent.** This suggests that there is ample opportunity to do outreach to new pet owners about picking up waste.

The most important reason dog owners are motivated to pick up their pet's waste is because "It's what good neighbors do". The number of respondents choosing "It causes water pollution" as the main reason has fluctuated and was the fourth most common reason in 2021.

77% of lawn and garden owners fertilize their lawns at least once per year no matter what. **Among those who fertilize once a year, 19 percent fertilize in the spring and only six percent fertilize in the fall.** This suggests that there is room to educate residents of Northern Virginia that fertilizing in the fall is better for local waterways.

Among those who fertilize their lawn, only four percent of respondents indicated that they fertilize based on results of a soil test. Slightly less than one-third (29%) in 2021 leave their grass clippings on their lawn, while half (49%) bag their grass clippings for disposal indicating the need for education on "greener" lawn care practices.

After reading a description of a rain barrel, rain garden, and conservation landscaping, respondents were asked if they had implemented these features at their home or had heard about them. **In a significant increase over 2020 (6%), eleven percent reported having a rain barrel, while five percent reported having a rain garden, and twelve percent reported having conservation landscapes in their yard.**

Additionally, the percentage of respondents that reported never hearing of all three practices has decreased and the percentage of respondents interested in getting them has increased since 2020. This implies that general awareness and interest of these practices is increasing. T**here is a significant opportunity to continue to promote these practices to homeowners and build awareness of how they can reduce stormwater runoff.**

Consistent with past years, most respondents take their vehicle to a service station for oil changes (71%) or take used oil to a gas station or hazmat facility for recycling (15%). **However, approximately ten percent of Northern Virginians reported storing used motor oil in their garage, placing it in the trash or dumping it down the storm drain, sink or on the ground.**

Overall, the 2021 campaign demonstrated that using a multi-media approach that includes

traditional cable TV, streaming TV, website, and social media platforms will reach a large portion of the population of Northern Virginia.
To keep moving the needle towards building a culture of water quality stewardship, there is a need to combine public outreach with community based social marketing tools.

The FY22 campaign will be utilizing additional tools such as: 1) an interactive on-line pledge to adopt a new clean water behavior, 2) new "made for social media" psa's for target audiences, 3) an e-newsletter, and 4) a Clean Water Facebook Group for people to interact with each other.

All the tools mentioned above will continue to shape a robust behavior change campaign that keeps pace with the ever-evolving ways that the people of Northern Virginia consume information.

NORTHERN VIRGINIA 2021
WATER QUALITY SURVEY

Although the entirety of the Northern Virginia region is in the Potomac River watershed, many Northern Virginians are underinformed about actions they can take to reduce pollution in stormwater runoff.

Where do you believe stormwater goes?

60% of NoVA residents think it eventually ends up in the Potomac River or Chesapeake Bay

AND

Around 40% of NoVA residents either don't know where it goes or believe **it goes to a wastewater treatment plant.**

59%

of Northern Virginians feel at least somewhat confident that they would know where to **report potential water pollution.**

BUT ONLY 53% are likely to report water pollution if they saw it.

About four in ten residents of Northern Virginia feel they are most **prevented from taking action** to protect clean water because they **DON'T KNOW WHAT TO DO.**

1/3

About of NoVA residents have seen or received **information about reducing water pollution** in the past 12 months.

Although improperly disposed pet waste is a major source of bacteria in stormwater,

ONLY 14%

of dog owners in Northern Virginia believe **water pollution** is the most important reason to pick up after your pet.

77% of lawn owners in Northern Virginia **fertilize** their lawn at least once a year.

ONLY 6% fertilize once in the Fall,

even though fertilizing **once a year in the fall** is better for local waterways.

71% of car/truck owners take their vehicle to a mechanic for oil changes

15% take used oil to a gas station or hazmat facility for disposal

10% store used oil in their garage, put it in the trash or dump it down the storm drain, sink or on the ground.

About 1/3 of NoVA residents are **unaware** of whether their locality has a specific place to drop off

HOUSEHOLD HAZARDOUS WASTE

One in five Northern Virginians

ARE INTERESTED IN GETTING A RAIN BARREL.

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Only Rain Down the Drain

www.onlyrain.org

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2021 Northern Virginia Clean Water Partners

Fairfax County | Arlington County | Loudoun County | Fairfax Water | City of Alexandria | City of Fairfax | City of Falls Church | City of Manassas | Town of Leesburg | Town of Dumfries | Prince William County | Northern Virginia Regional Commission | George Mason University | Virginia Coastal Zone Management Program | Fairfax County Public Schools | Prince William County Public Schools | Northern Virginia Soil and Water Conservation District

Virginia Coastal Zone MANAGEMENT PROGRAM

nvrc Northern Virginia Regional Commission

Summary prepared by NVRC on behalf of the Partners

August, 2021

Appendix B:

Regional Stormwater Education Campaign
Survey Results

Northern Virginia Regional Commission

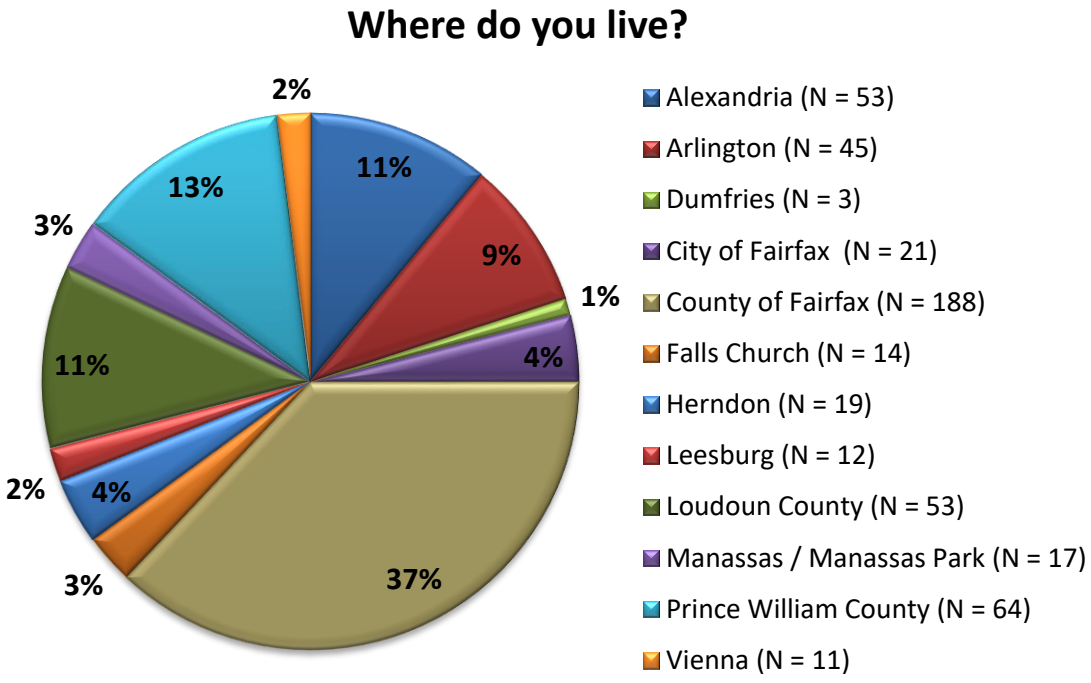
2021 Only Rain NVRC Survey

Summary Report of Findings

Study Methodology & Respondent Characteristics

The Northern Virginia Regional Commission (NVRC) hired Amplitude Research, Inc. to conduct a survey of residents of northern Virginia to measure beliefs and attitudes related to pollution of the Potomac River and Chesapeake Bay.

Amplitude Research administered the study online in late June and July of 2021. In the end, 500 surveys were completed by web panelists who live in one of the areas of Virginia shown in the chart below. (In the legend, "N =" indicates the number of respondents in each city, county, or town.)

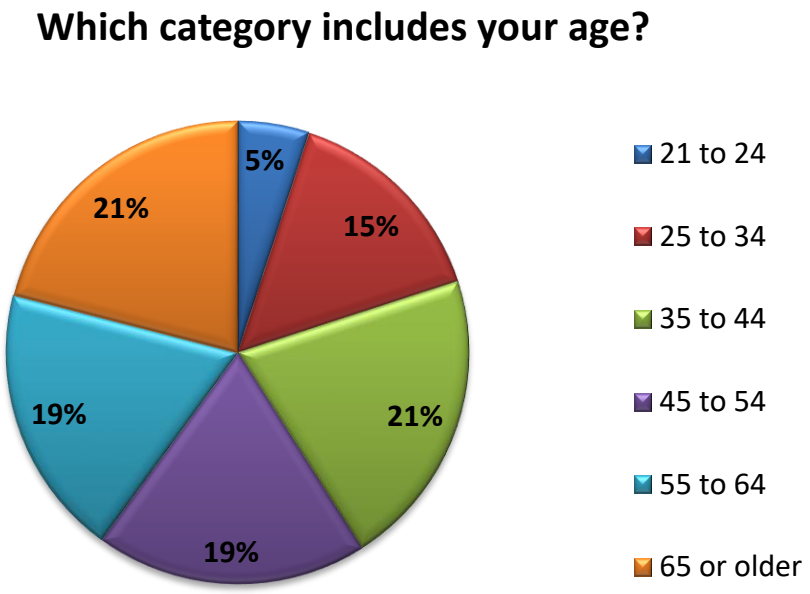


Later in this report, the results for some of the questions are "broken out" by area, in addition to presenting the results for the total sample. However, the specific areas listed above were grouped together into larger areas so that each larger area used for analysis had a reasonable number of respondents.

Residents from Leesburg and Loudoun County were combined into a single category labeled "**Leesburg / Loudoun**," since the town of Leesburg lies within Loudoun County. The City of Fairfax, Falls Church, Herndon, and Vienna were combined with Fairfax County to create the category "**Fairfax Inclusive**," since these cities and towns lie within the Fairfax County area. Although the City of Fairfax and City of Falls Church are distinct areas, their location falls within the larger area circumscribed by Fairfax County. Prince William County was added in 2021 (while Stafford County was removed). Given the proximity of Dumfries, Manassas, and Manassas Park, these were combined with Prince William County to get the category "**Prince William Inclusive**."

Alexandria and **Arlington** each had a sufficient number of respondents so that each of these areas can be examined separately.

The minimum age to participate in the survey was 21. As shown in the chart below, each age group was well represented in the survey. Although a small proportion were age 21 to 24, this category has fewer years than the other categories shown. For analysis purposes later in this report, the categories "21 to 24" and "25 to 34" were combined into the broader category of "21 to 34."



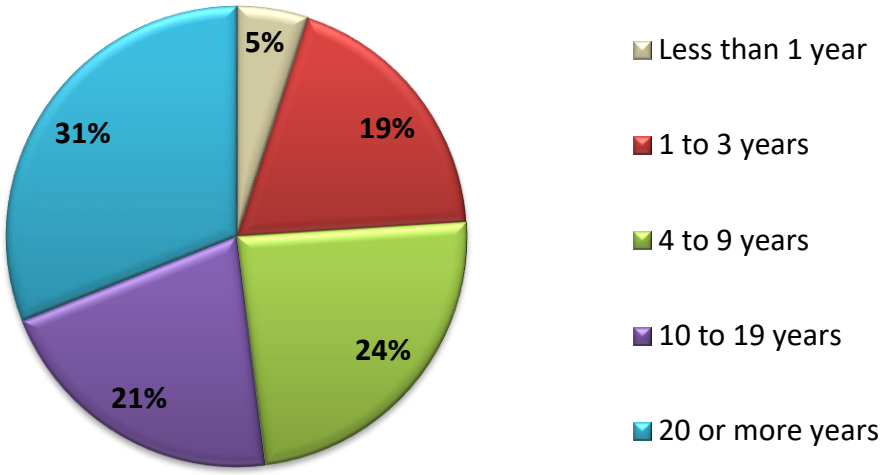
The survey respondents were split between males (51%) and females (49%), while slightly more than three-fourths (79%) indicated that they own their residence, and 21% reported renting.

The chart on the next page shows how long respondents have lived in their current residence.

A survey was conducted in each year between 2011 and 2020 that included many of the same or similar questions, targeted a similar geographic area (except the addition of Prince William County and removal of Stafford County this year), and had a similar demographic mix as in this 2021 study. Later in this report, comparisons between years are shown where appropriate. Initially, the title used for the study was "NVRC Resident Survey." Starting in 2013, the study title was changed to "Only Rain NVRC Survey," since a new question was added about awareness of the "Only Rain" logo. A number of new questions were added to the 2018 survey and were kept in the 2019 and 2020 surveys. For this reason, many parts of this report have comparisons between just 2018, 2019, and 2020.

Although some questions have been asked for 11 years (i.e., 2011 through 2021), results in this report are shown for a maximum of 10 years for better readability. Having more than ten years in a chart can get cumbersome for the reader, as the bars and number font size get too small.

For how many years have you lived in your current residence?



Sampling Variability

While examining the survey findings, it is helpful to keep in mind that the results are based on a sample and are therefore subject to sampling variability, often referred to as "sampling error." The degree of uncertainty for an estimate (e.g., a particular percentage from the survey) arising from sampling variability is represented through the use of a margin of error. A sampling margin of error at the "95% confidence level" can be interpreted as providing a 95% probability that the interval created by the estimate plus and minus the margin of error contains the true value. (The "true" value would be known only if everyone in the target market was surveyed rather than just a sample.) In addition to sampling variability, results may be subject to various sources of non-sampling error (e.g., non-response bias, respondent misinterpretation of question wording, etc.). The degree of non-sampling error is not represented by the sampling margin of error and is usually unknown.

For a "sample size" of 500 survey respondents, the "maximum" margin of sampling error for percentages from the survey is +/- 4.4 percentage points at the 95% confidence level. Here, "maximum" refers to the margin of error being highest for proportions from the survey near 50%, while the margin of error declines as percentages get further from 50%. For example, given the same sample size of 500 respondents, a result from the survey near 10% or 90% would have a margin of sampling error of +/- 2.6 percentage points.

The margin of sampling error increases as the sample size decreases. Thus, when a question is asked of only a subset of the total sample, the associated margin of sampling error is larger than that quoted above. Also, even if a question is asked of all respondents, when examining results for a particular subgroup, the margin of sampling error depends on the number of respondents in that subgroup. For example, the "maximum" margin of sampling error would be +/- 9.8 percentage points at the "95% confidence level" when based on a subgroup of 100 survey respondents. In some parts of this report, results are shown for subgroups that include a fairly small number of respondents, and caution is recommended when thinking about these findings.

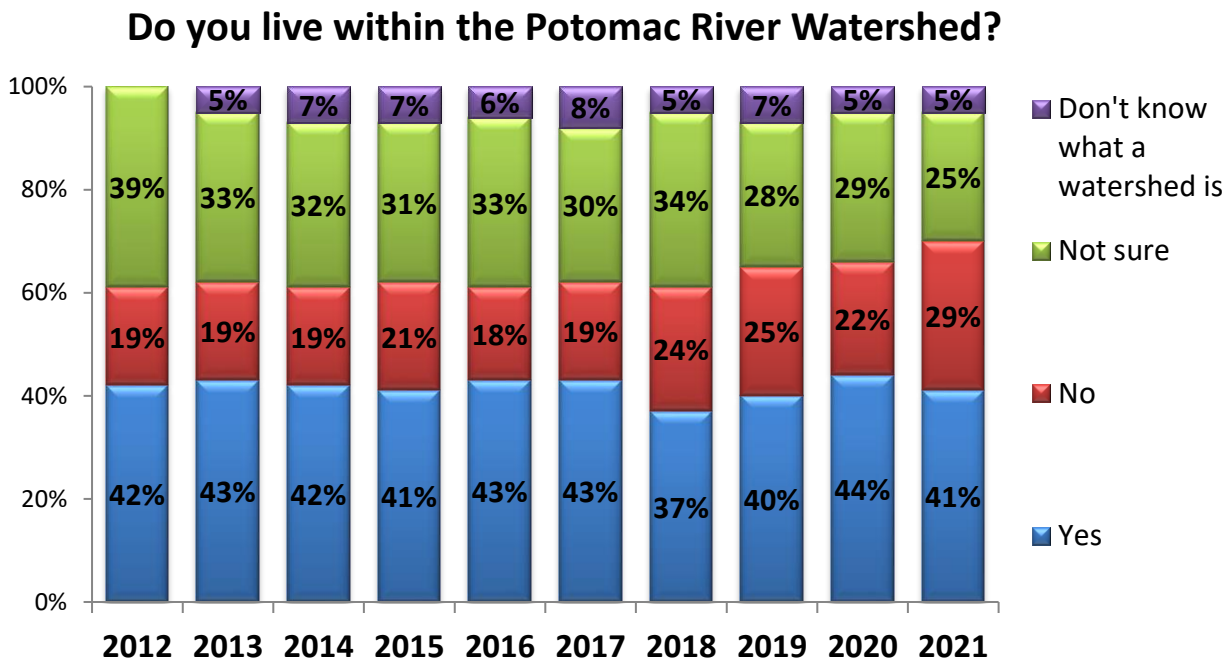
This suggests that results for different subgroups can be considered "similar" when the differences are small (i.e., small enough to be within the range of sampling error).

Results from different years can be considered similar when differences between the years are small. If the difference between two years is referred to as "statistically significant," this essentially means that the difference in the survey results is large enough to be highly confident (i.e., at the "95% confidence level") that there has been a real change. That is, a "statistically significant" difference in the survey results from one year to the next is larger than what would usually be expected from sampling error alone.

In this report, when a result from 2021 is described as "significantly" higher (or lower) than the result from a previous year, this means that the difference between these years is "statistically significant." Also, when one subgroup is described as "more likely" (or "less likely") than another subgroup to answer in a particular way, this is based on a statistically significant difference.

Potomac River Watershed

- Early in the survey, respondents were asked if they lived within the "Potomac River Watershed." As shown in the chart below, approximately four-in-ten (41%) in 2021 believed that they did in fact live within the Potomac River Watershed. This 2021 result (41%) did not differ significantly from 2020 (44%).



- When breaking the results out by area, as shown in the table below, the proportion answering "Yes" was lowest in the Prince William Inclusive area, but the differences between areas were not statistically significant.

Live Within Potomac River Watershed	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	43%	38%	45%	35%	33%
No	34%	15%	27%	43%	28%
Not sure	19%	40%	23%	17%	32%
Don't know what a watershed is	4%	7%	5%	5%	7%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

- As shown in the next table, the proportion believing that they live within the Potomac River Watershed increased with the time lived in their current residence.

Live Within Potomac River Watershed	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Yes	26%	38%	43%	53%
No	33%	38%	32%	16%
Not sure	34%	18%	20%	27%
Don't know what a watershed is	7%	6%	5%	4%
N = number of respondents	*119*	*119*	*108*	*154*

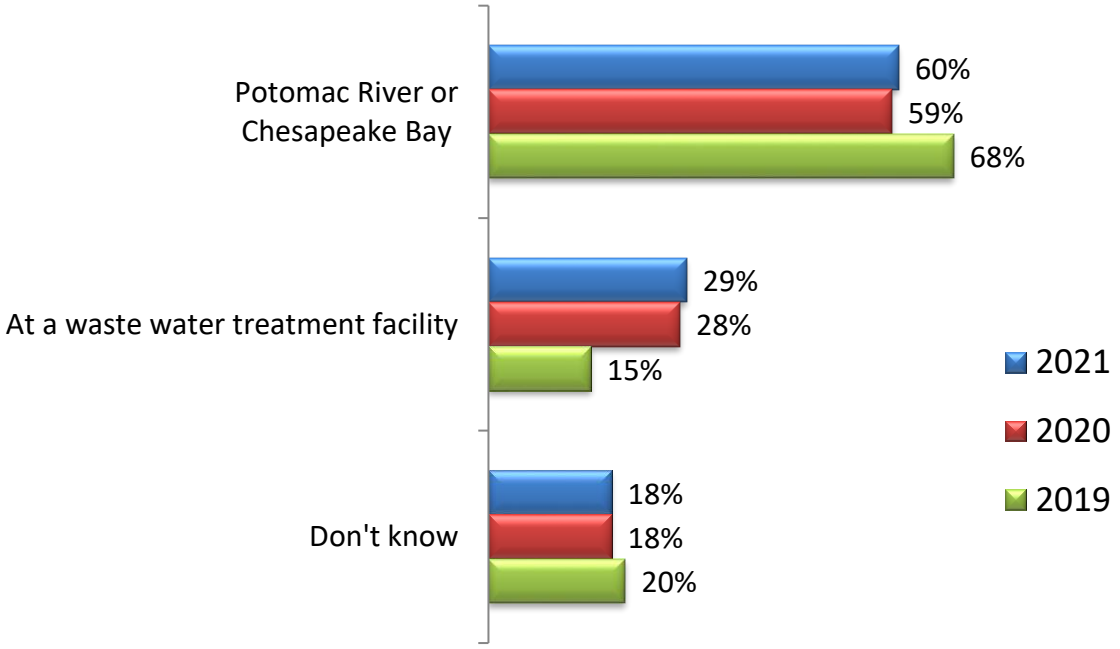
- The proportion believing that they live within the Potomac River Watershed also increased with age.

Live Within Potomac River Watershed	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Yes	33%	36%	39%	42%	53%
No	42%	39%	28%	24%	11%
Not sure	20%	19%	27%	30%	31%
Don't know what a watershed is	5%	6%	6%	4%	5%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

- When examining the results by other subgroups, males were more likely than females, and homeowners were more likely than renters to believe that they live within the Potomac River Watershed.

Live Within Potomac River Watershed	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Yes	51%	30%	46%	23%	33%
No	27%	30%	29%	30%	22%
Not sure	20%	31%	22%	36%	36%
Don't know what a watershed is	2%	9%	3%	11%	9%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

"Storm water" runoff is rain or other water that flows into the street, along the gutter and into the storm drain. To the best of your knowledge, where do you believe storm water eventually ends up?



- More than half (60%) in 2021, similar to 2020 (59%), felt that storm water runoff eventually ends up in the Potomac River or Chesapeake Bay, but this was significantly lower than in 2019 (68%). The results are shown for three years only because of a change to the questionnaire in 2019.

- Results by various subgroups are shown on the next page. For example, the proportion selecting Potomac River or Chesapeake Bay was significantly higher among respondents who have lived in their residence for 20 or more years and among those age 55 or older.

Believed Destination of Storm Water	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Potomac River or Chesapeake Bay	57%	67%	62%	51%	60%
At a waste water treatment facility	36%	31%	29%	31%	20%
Don't know	19%	9%	17%	25%	23%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Believed Destination of Storm Water	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Potomac River or Chesapeake Bay	58%	55%	54%	69%
At a waste water treatment facility	31%	28%	32%	25%
Don't know	18%	24%	21%	12%
N = number of respondents	*119*	*119*	*108*	*154*

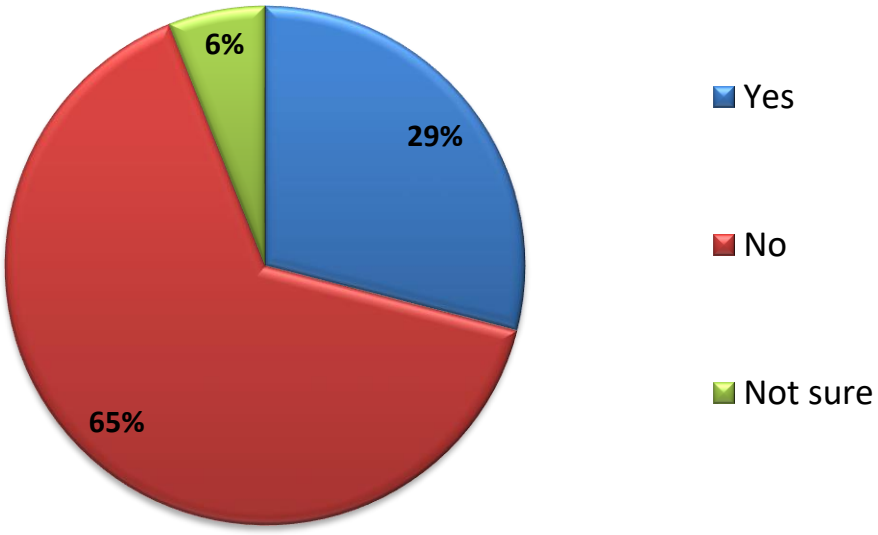
Believed Destination of Storm Water	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Potomac River or Chesapeake Bay	58%	55%	53%	68%	66%
At a waste water treatment facility	28%	45%	37%	20%	13%
Don't know	21%	15%	16%	16%	23%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Believed Destination of Storm Water	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic**
Potomac River or Chesapeake Bay	60%	60%	61%	56%	50%
At a waste water treatment facility	33%	24%	31%	20%	33%
Don't know	15%	22%	15%	29%	22%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

Advertising / Information About Reducing Water Pollution

- In 2020 a new video of an advertisement featuring "rubber duckies" was presented in the survey, and respondents were asked if they had seen it on TV. The same video was shown again in the 2021 survey. As shown below, 29% recalled the video in 2021. This can be compared to 22% in 2020 (not shown in chart). The difference between the 2021 and 2020 result was large enough to be significant.

Please watch the video below. Before this survey, had you seen this ad, or a similar one on TV, Facebook, or Twitter about reducing water pollution?



- The proportion recalling the ad by area ranged from 24% to 37%. As shown on the next page, those age 34 to 45, males, and homeowners were more likely than others to recall the ad.

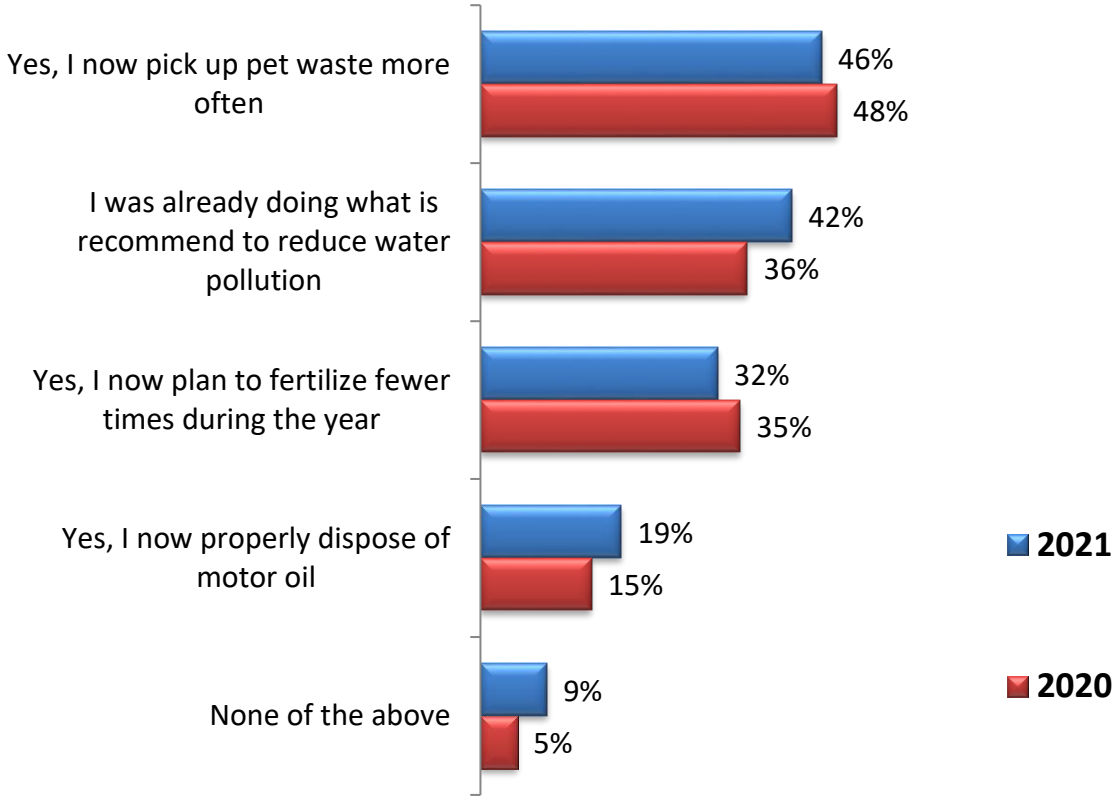
Saw TV Ads on Reducing Water Pollution	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	34%	29%	28%	37%	24%
No	53%	69%	65%	58%	74%
Not sure	13%	2%	7%	5%	2%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Saw TV Ads on Reducing Water Pollution	Have Lived in Current Residence < 4 Years	4 to 9 Years	10 to 19 Years	20 or More Years
Yes	27%	29%	34%	27%
No	67%	63%	62%	66%
Not sure	6%	8%	4%	7%
N = number of respondents	*119*	*119*	*108*	*154*

Saw TV Ads on Reducing Water Pollution	Age 21 to 34	35 to 44	45 to 54	55 to 64	65 +
Yes	31%	43%	29%	20%	20%
No	61%	52%	63%	76%	74%
Not sure	8%	5%	8%	4%	6%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

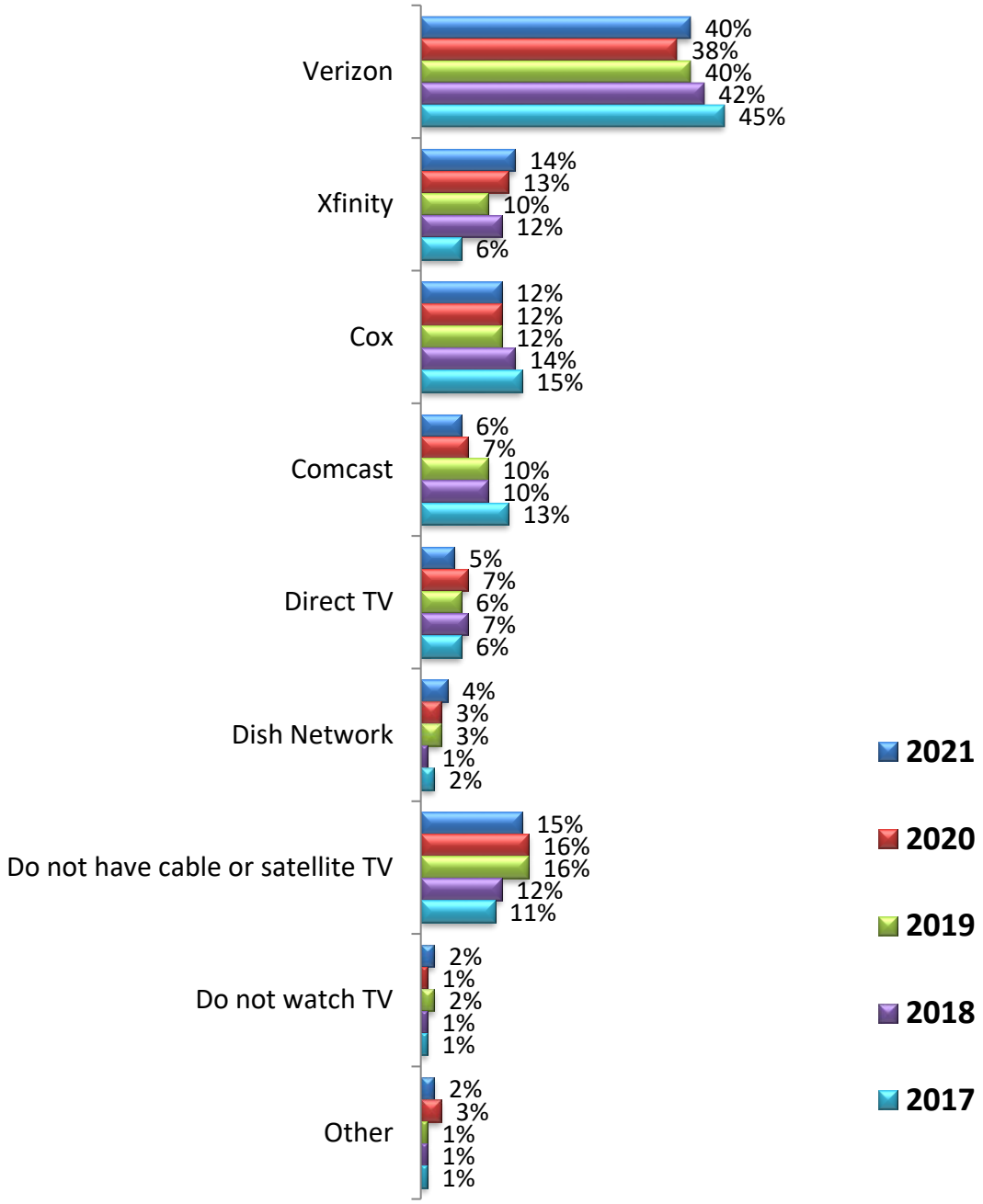
Saw TV Ads on Reducing Water Pollution	Male	Female	Homeowners	Renters	Hispanic Respondents
Yes	37%	21%	31%	20%	28%
No	56%	74%	62%	74%	55%
Not sure	7%	5%	7%	6%	17%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

Did seeing the ad(s) about reducing water pollution make you change any of your behaviors related to fertilizing less often and/or reducing water pollution?



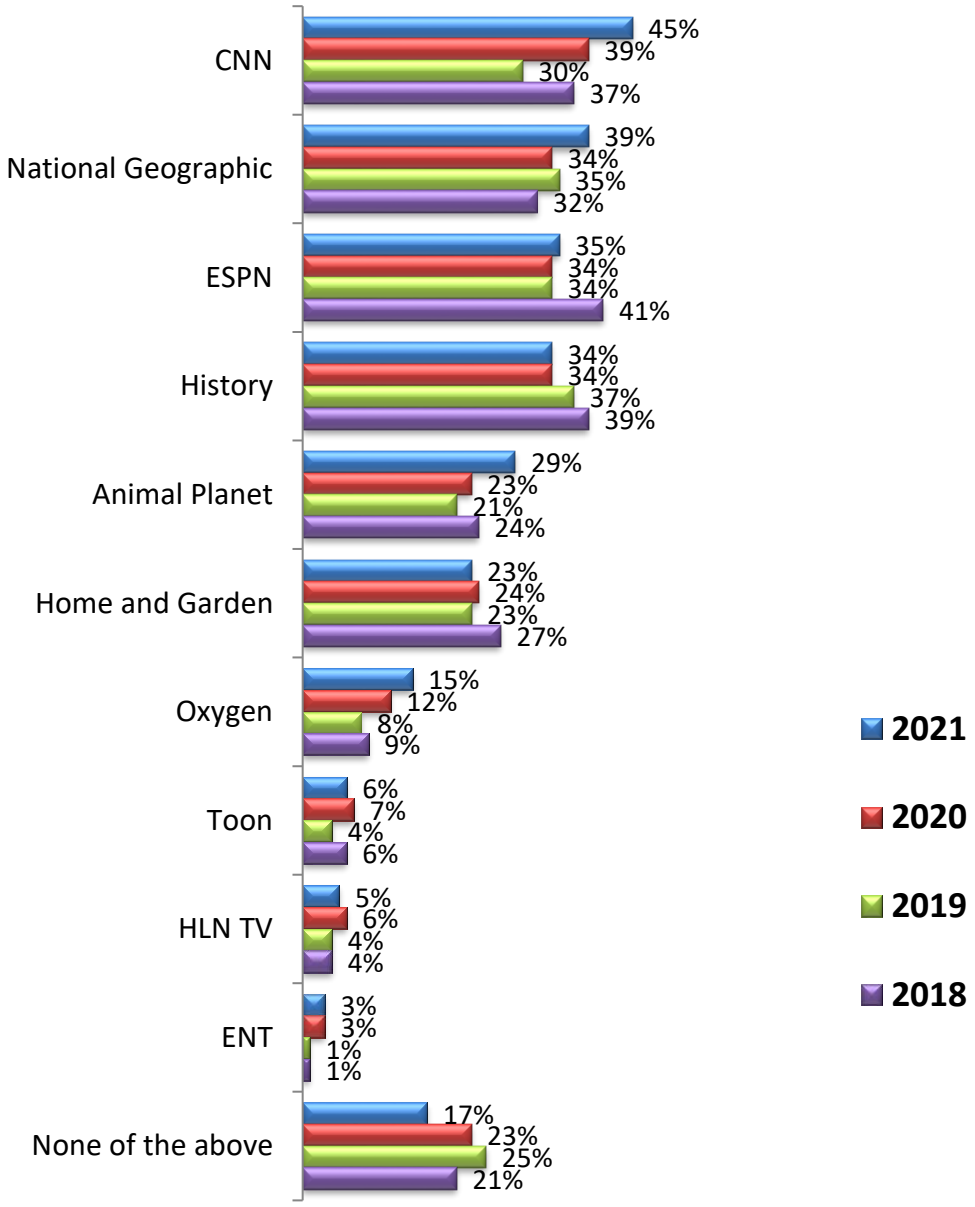
- Those who recalled the advertising where asked the question above, and noticeable proportions reported changing their behavior related to pet waste and fertilizing less often.

What TV service provider do you use?



- Verizon was selected most often (by 40% in 2021) as their TV service provider.
- One reason for asking the question above was to determine if recall of the advertising differed by TV provider. Based on a separate analysis (not shown in chart), when looking at the providers with at least 30 respondents using the provider, the proportion recalling the ad was 37% among Cox users, 34% among Xfinity users, 29% among Verizon users, and 29% among Comcast users.

Which of the following channels, if any, do you watch?

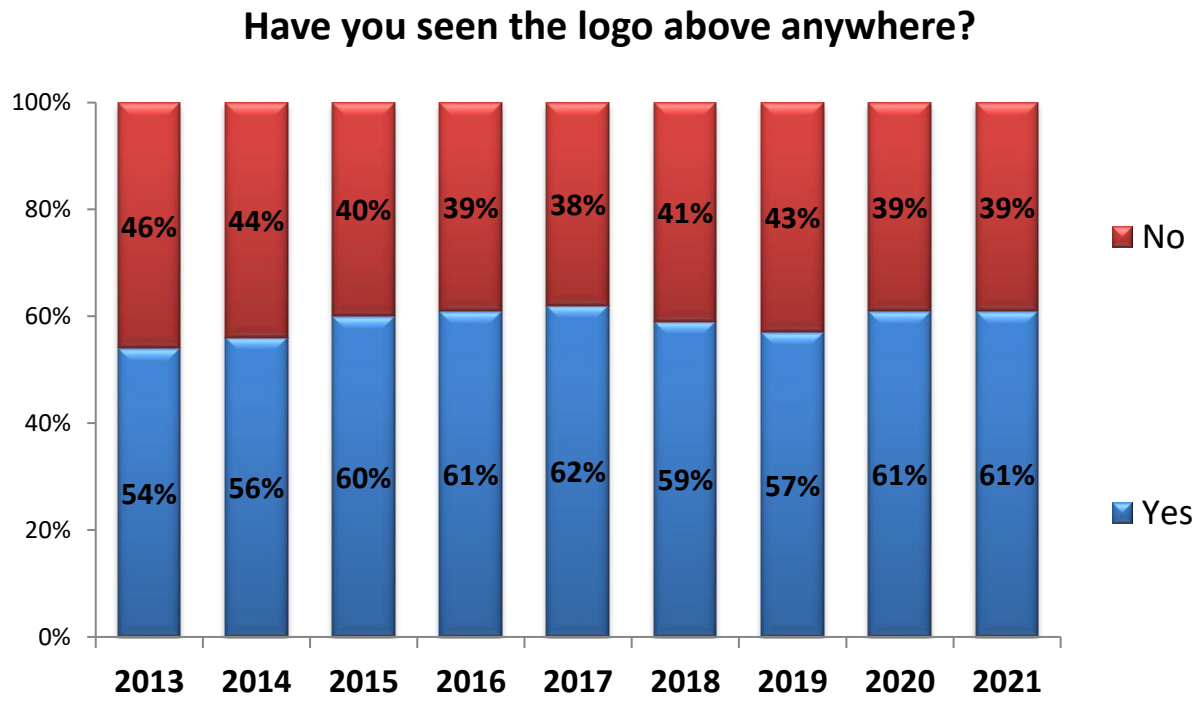


- Of the channels covered in the survey, CNN had the highest proportion reporting that they watch the channel in 2021 (45%), followed by National Geographic (39%).

- One reason for including the question above was to determine if recall of the advertising differed by channels watched. Based on a separate analysis (not shown in chart), viewers of the following channels (which had at least 30 respondents watching the channel) were significantly more likely than others to recall the advertising that was shown in the survey: Oxygen (47% of viewers recalled the ad), Home & Garden (41%), CNN (39%), and Animal Planet (39%). In contrast, among those who did not watch any of the channels above, only 8% recalled the ad.

- The logo below was shown to all respondents regardless of whether they had seen advertising or not, and more than half of the total sample recognized the logo each year since 2013. The 2021

result (61%) was slightly below the peak result in 2017 (62%), but the 2021 result was significantly higher than in 2013 (54%).



- Awareness was significantly lower in the Prince William Inclusive area. At the same time, those age 35 to 44, males, and homeowners were more likely than others to recall the logo.

Have Seen Logo	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	53%	76%	68%	62%	39%
No	47%	24%	32%	38%	61%

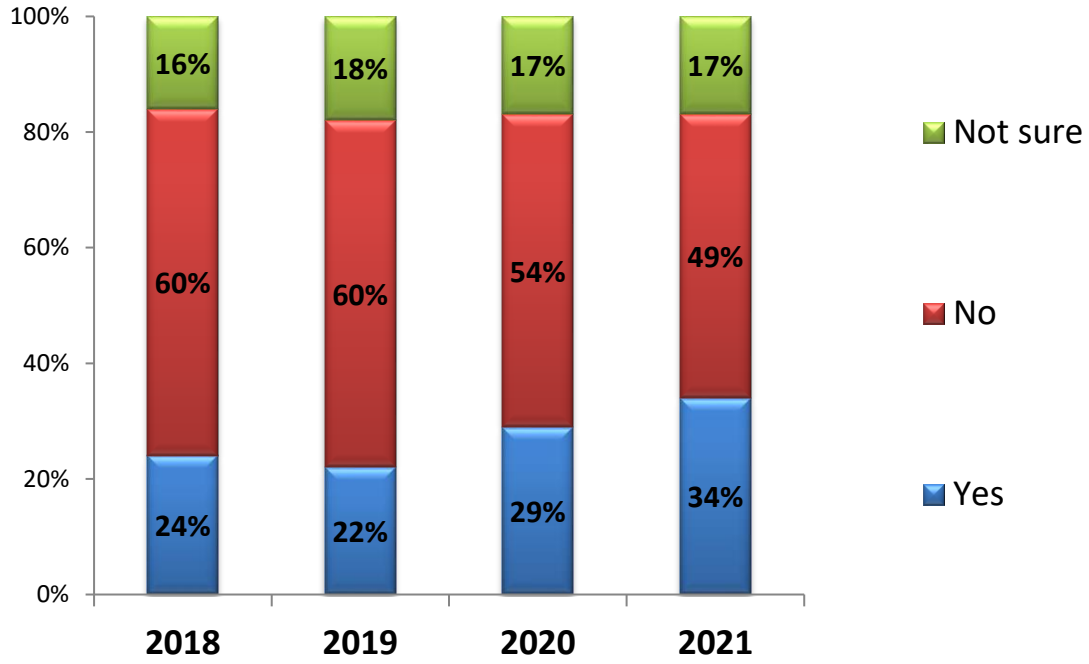
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Have Seen Logo	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Yes	61%	57%	69%	59%
No	39%	43%	31%	41%
N = number of respondents	*119*	*119*	*108*	*154*

Have Seen Logo	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Yes	63%	71%	65%	58%	50%
No	37%	29%	35%	42%	50%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Have Seen Logo	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Yes	68%	55%	64%	51%	56%
No	32%	45%	36%	49%	44%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

Regardless of whether you have seen that specific ad or logo, have you seen or received information about reducing water pollution from any source in the past 12 months?



- Slightly more than one-third (34%) in 2021 reported that they have seen or received information about reducing water pollution in the past 12 months. The 2021 result was significantly higher than in 2018 and 2019.
- The proportion who received this information was significantly lower in the Prince William Inclusive area.

Received Info. About Reducing Water Pollution	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	51%	42%	31%	45%	20%
No	36%	38%	52%	41%	60%
Not sure	13%	20%	17%	14%	20%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

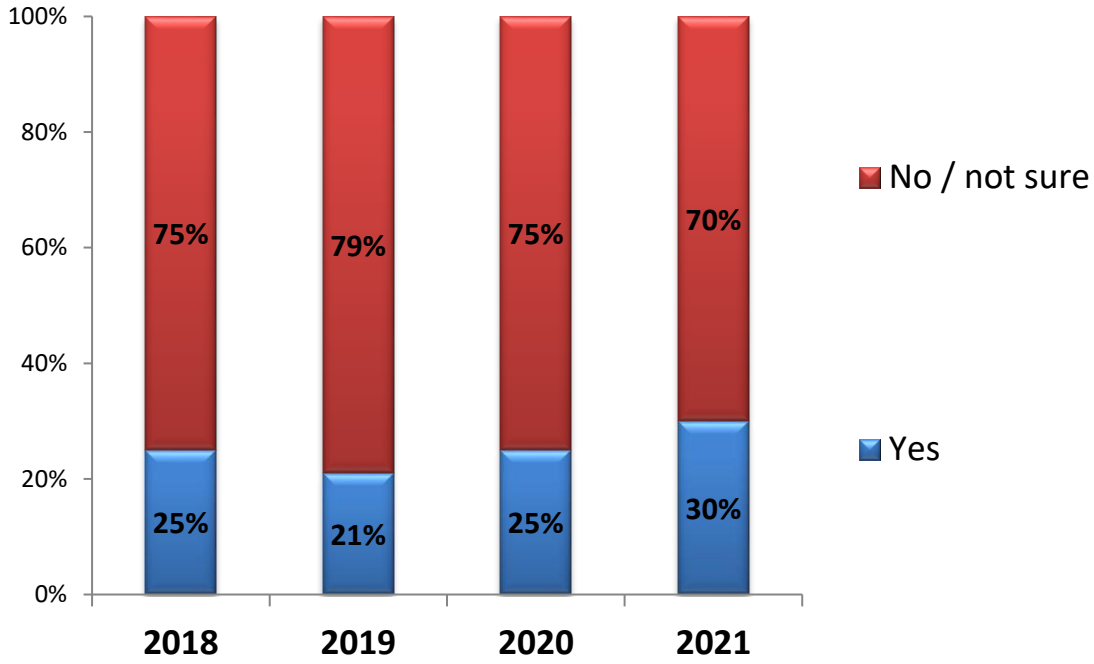
Received Info. About Reducing Water Pollution	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Yes	29%	42%	36%	30%
No	54%	46%	47%	49%
Not sure	17%	12%	17%	21%
N = number of respondents	*119*	*119*	*108*	*154*

Received Info. About Reducing Water Pollution	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Yes	39%	55%	35%	16%	23%
No	50%	39%	49%	58%	51%
Not sure	11%	6%	16%	26%	26%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Received Info. About Reducing Water Pollution	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Yes	44%	24%	38%	20%	42%
No	41%	57%	44%	66%	42%
Not sure	15%	19%	18%	14%	16%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

- Males, homeowners, and those age 35 to 44 were more likely than others to report receiving this information.

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.?



- More than one-fourth (30%) in 2021 reported hearing about opportunities to participate in a water quality activity in the past 12 months. This was significantly higher than in 2019, but the difference between 2021 vs. 2018 and 2020 was not large enough to be statistically significant.

- By subgroup, those living in Alexandria or Arlington, those who have lived in their residence 4 to 9 years, those under age 45, and males were more likely than others to hear about these opportunities.

Heard of Water Quality Activities Past 12 Months	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	43%	42%	26%	34%	25%
No / not sure	57%	58%	74%	66%	75%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Heard of Water Quality Activities Past 12 Months	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Yes	29%	39%	26%	28%
No / not sure	71%	61%	74%	72%
N = number of respondents	*119*	*119*	*108*	*154*

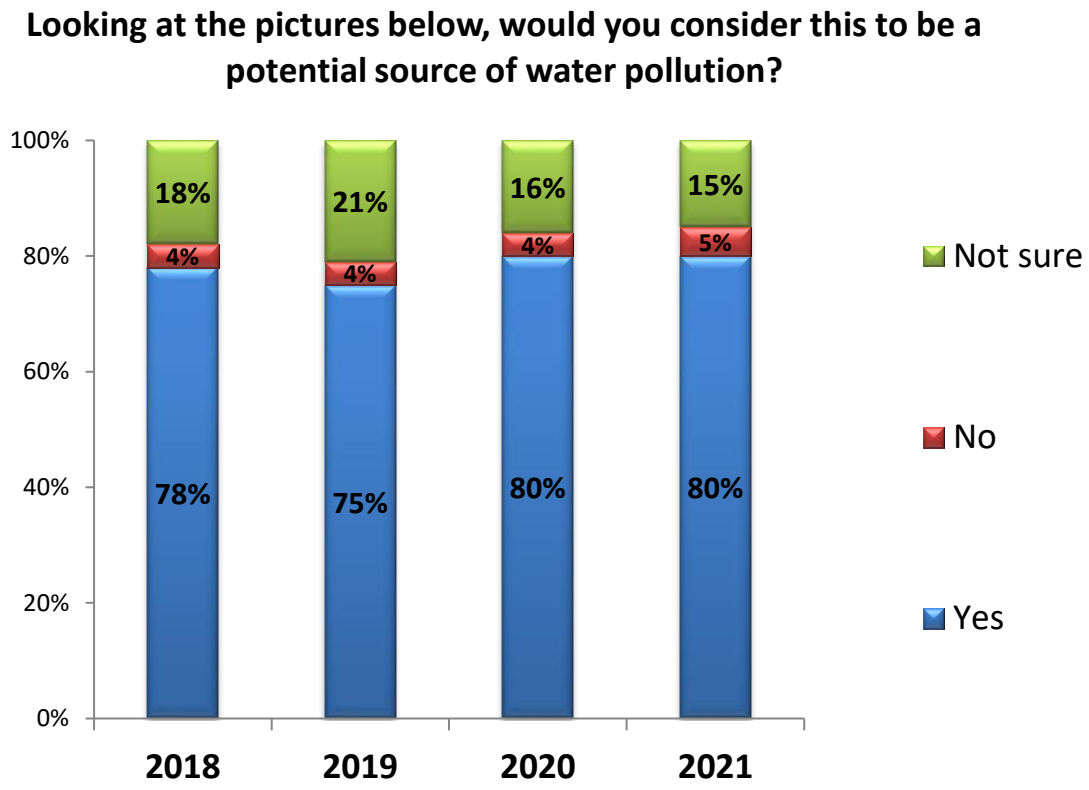
Heard of Water Quality Activities Past 12 Months	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Yes	40%	46%	33%	13%	18%
No / not sure	60%	54%	67%	87%	82%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Heard of Water Quality Activities Past 12 Months	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Yes	37%	23%	32%	25%	44%
No / not sure	63%	77%	68%	75%	56%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

- In a separate question asked only of those who answered "Yes" to the question on the previous page, 54% indicted that they *participated* in a water quality activity. Since this 54% applies to the 30% who answered "Yes" to the question on the previous page, it turns out that 16% (= 54% x 30%) of the total sample reported both hearing about *and* participating in a water quality activity in the past 12 months. The corresponding result was 15% in 2020.

Potential Water Pollution Source

- Two pictures were shown to the survey respondents starting in 2018, and they were asked the question below. (The images used can be found in the questionnaire in the Appendix.)



- Eight-in-ten (80%) in 2021 felt that the pictures showed a potential source of water pollution. As shown in the table below and the tables on the next page, the proportion feeling this way was high in all of the subgroups examined. However, homeowners were more likely than renters to answer "Yes" to this question.

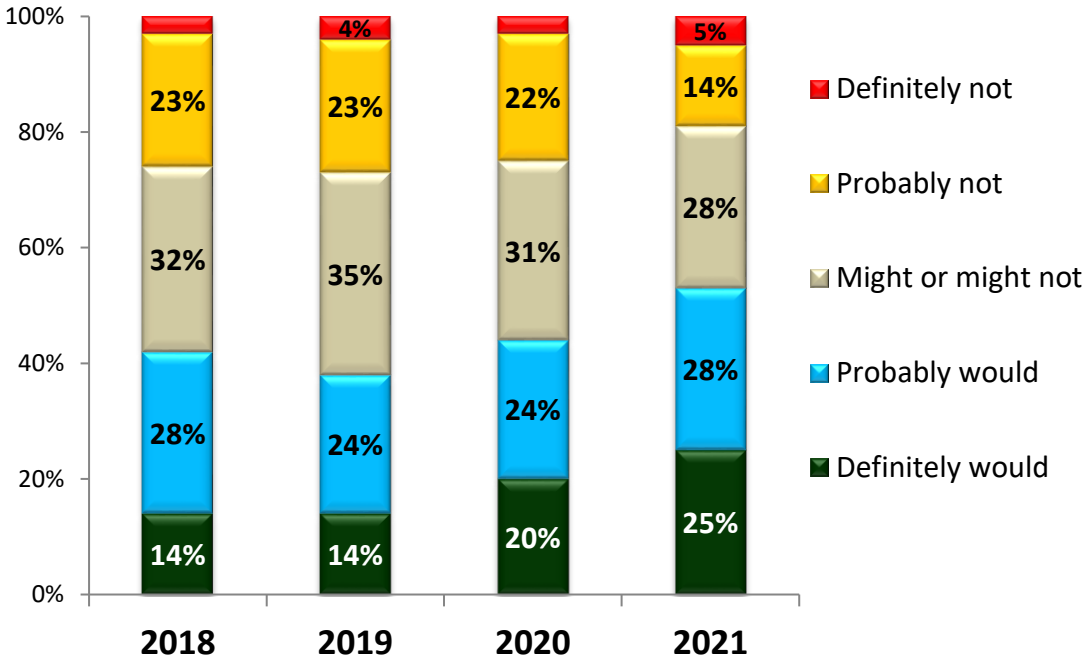
Consider it Potential Source of Water Pollution	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	85%	86%	79%	85%	76%
No	4%	7%	3%	6%	8%
Not sure	11%	7%	18%	9%	16%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Consider it Potential Source of Water Pollution	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Yes	78%	77%	85%	82%
No	7%	8%	2%	2%
Not sure	15%	15%	13%	16%
N = number of respondents	*119*	*119*	*108*	*154*

Consider it Potential Source of Water Pollution	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Yes	75%	81%	84%	85%	77%
No	9%	6%	3%	1%	4%
Not sure	16%	13%	13%	14%	19%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Consider it Potential Source of Water Pollution	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Yes	82%	78%	83%	70%	72%
No	4%	6%	4%	8%	14%
Not sure	14%	16%	13%	22%	14%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

What is the likelihood that you would call county or town officials to report potential pollution so they could investigate the cause?



- One-fourth (25%) felt that they "Definitely would" report potential pollution to county or town officials, and this was significantly higher than the results in 2019 and 2018.

- Those age 35 to 44 and males were more likely than others to rate "Definitely would." Also, a significantly higher proportion from Alexandria, compared to Prince William Inclusive, rated "Definitely would."

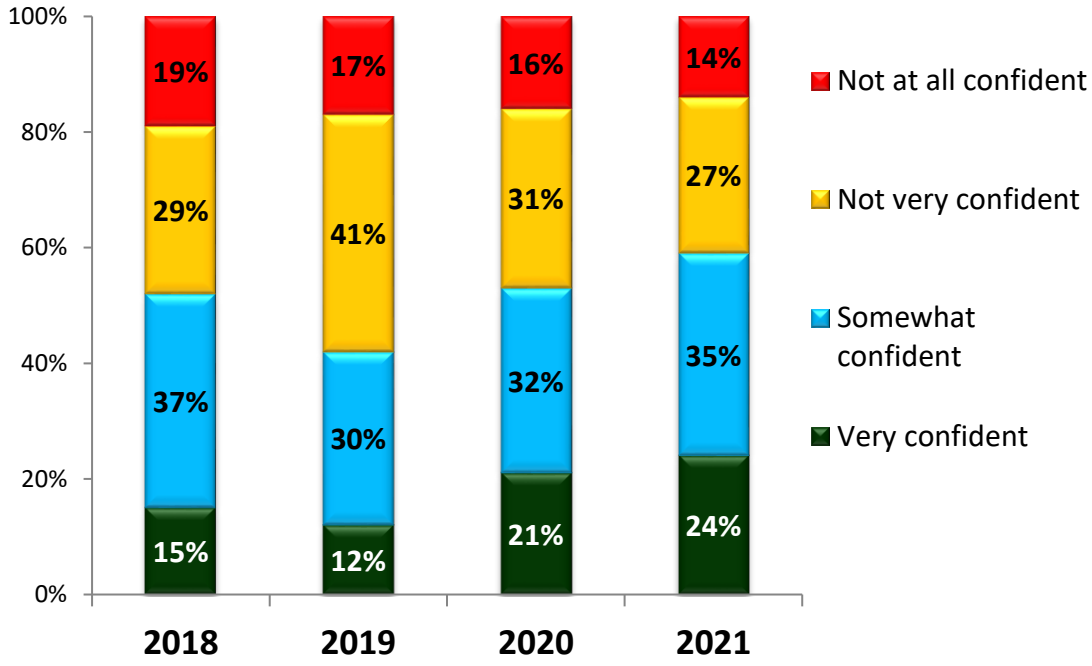
Likelihood Report Potential Pollution	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Definitely would	40%	24%	23%	29%	20%
Probably would	23%	25%	26%	35%	34%
Might or might not	26%	27%	31%	25%	24%
Probably would	11%	20%	16%	5%	14%
Definitely not	0%	4%	4%	6%	8%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Likelihood Report Potential Pollution	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Definitely would	18%	30%	28%	25%
Probably would	29%	32%	28%	25%
Might or might not	27%	23%	32%	30%
Probably would	21%	11%	10%	14%
Definitely not	5%	4%	2%	6%
N = number of respondents	*119*	*119*	*108*	*154*

Likelihood Report Potential Pollution	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Definitely would	22%	39%	32%	18%	15%
Probably would	41%	28%	18%	24%	28%
Might or might not	18%	22%	29%	35%	37%
Probably would	13%	8%	15%	22%	14%
Definitely not	6%	3%	6%	1%	6%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Likelihood Report Potential Pollution	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Definitely would	32%	19%	27%	21%	28%
Probably would	29%	27%	28%	29%	36%
Might or might not	23%	33%	29%	25%	28%
Probably would	12%	16%	13%	17%	0%
Definitely not	4%	5%	3%	8%	8%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

How confident are you that you would know where to report potential water pollution?



- Nearly one-fourth (24%) in 2021 were "Very confident" that they would know where to report potential water pollution. This 2021 result was significantly higher than in 2018 and 2019.

- Those age 35 to 44, males, and homeowners were more likely than others to rate "Very confident." Also, a significantly higher proportion from Alexandria, compared to Prince William Inclusive, rated "Very confident."

Confidence Know Where to Report	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Very confident	40%	20%	23%	29%	18%
Somewhat confident	30%	42%	32%	42%	37%
Not very confident	21%	18%	30%	26%	26%
Not at all confident	9%	20%	15%	3%	19%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

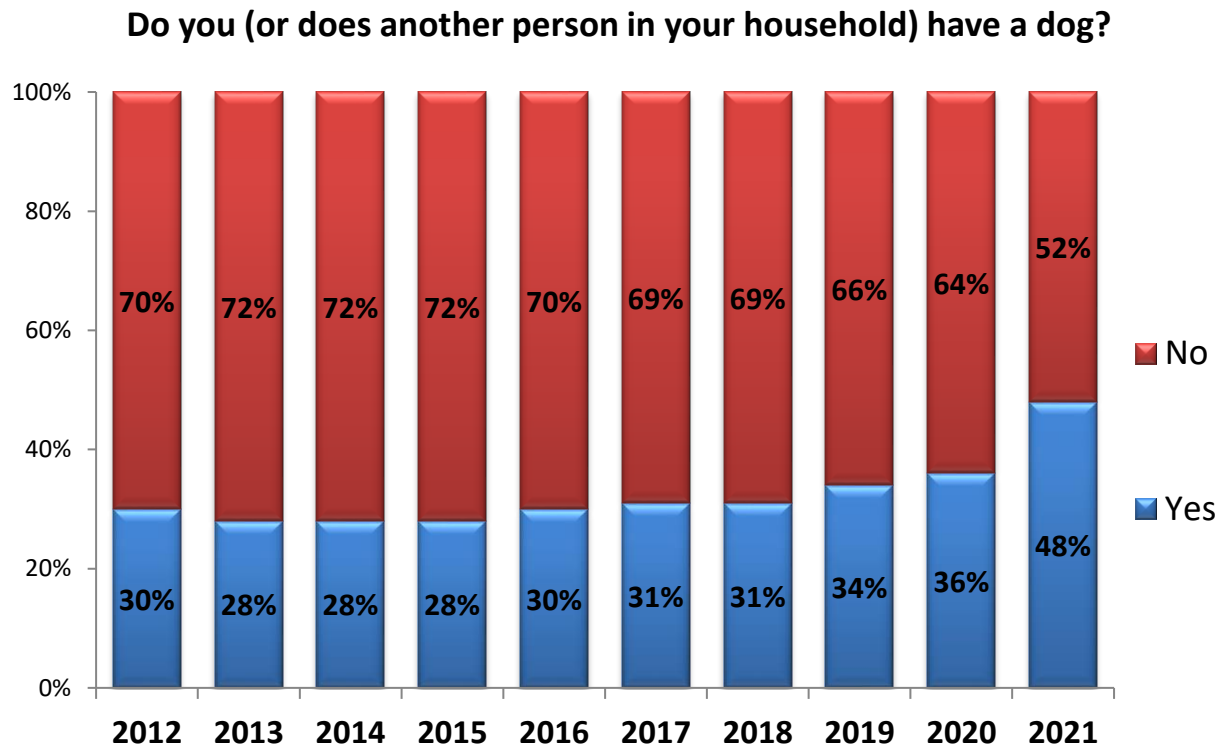
Confidence Know Where to Report	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Very confident	20%	27%	29%	22%
Somewhat confident	35%	31%	36%	38%
Not very confident	25%	25%	28%	28%
Not at all confident	20%	17%	7%	12%
N = number of respondents	*119*	*119*	*108*	*154*

Confidence Know Where to Report	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Very confident	29%	36%	25%	12%	16%
Somewhat confident	31%	36%	28%	39%	41%
Not very confident	22%	21%	29%	37%	27%
Not at all confident	18%	7%	18%	12%	16%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Confidence Know Where to Report	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Very confident	32%	16%	26%	16%	28%
Somewhat confident	39%	31%	36%	32%	36%
Not very confident	20%	34%	27%	27%	22%
Not at all confident	9%	19%	11%	25%	14%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

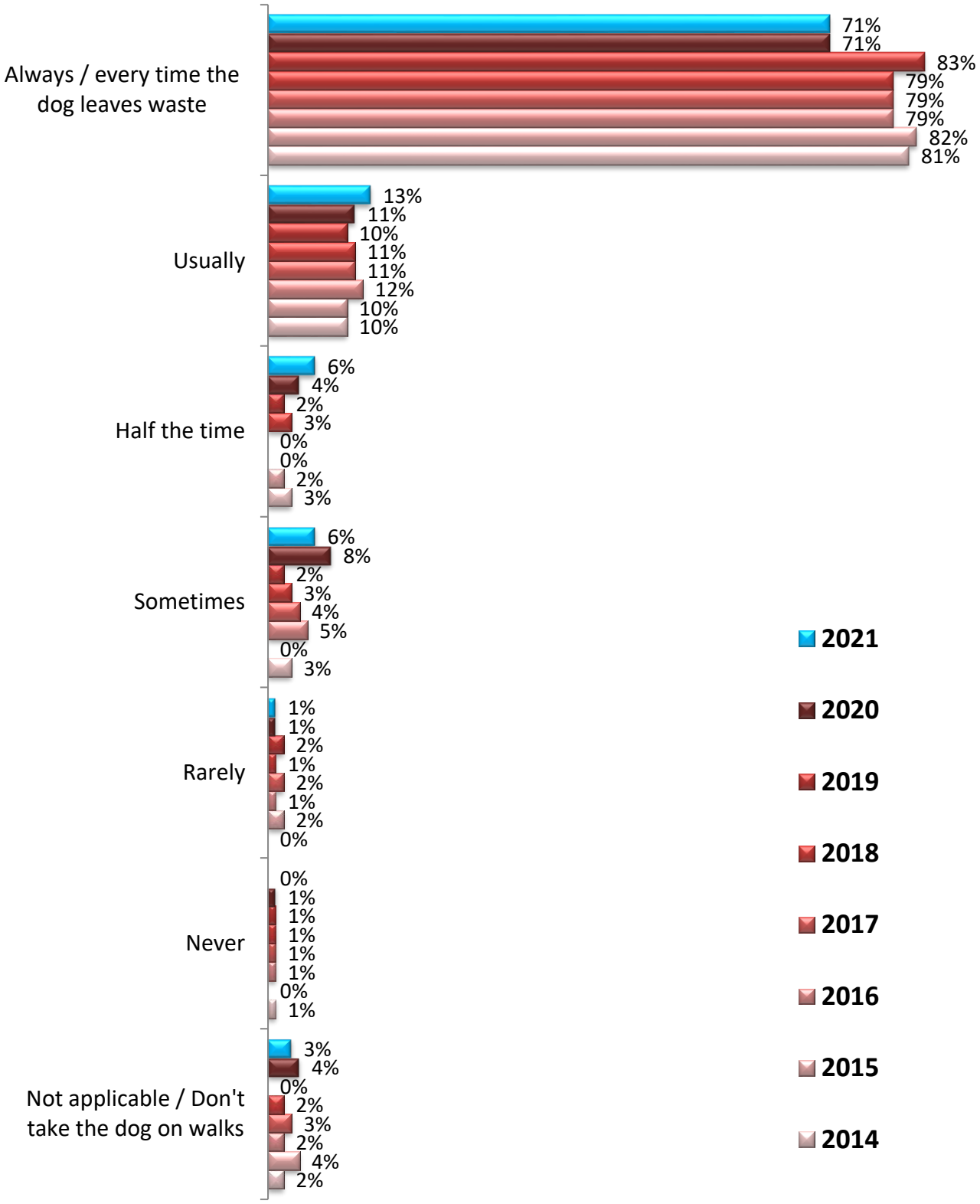
Behavior Among Dog Owners

- Nearly half (48%) in 2021 indicated that they have a dog (or someone else in their household has a dog), and this result was significantly higher than in previous years.

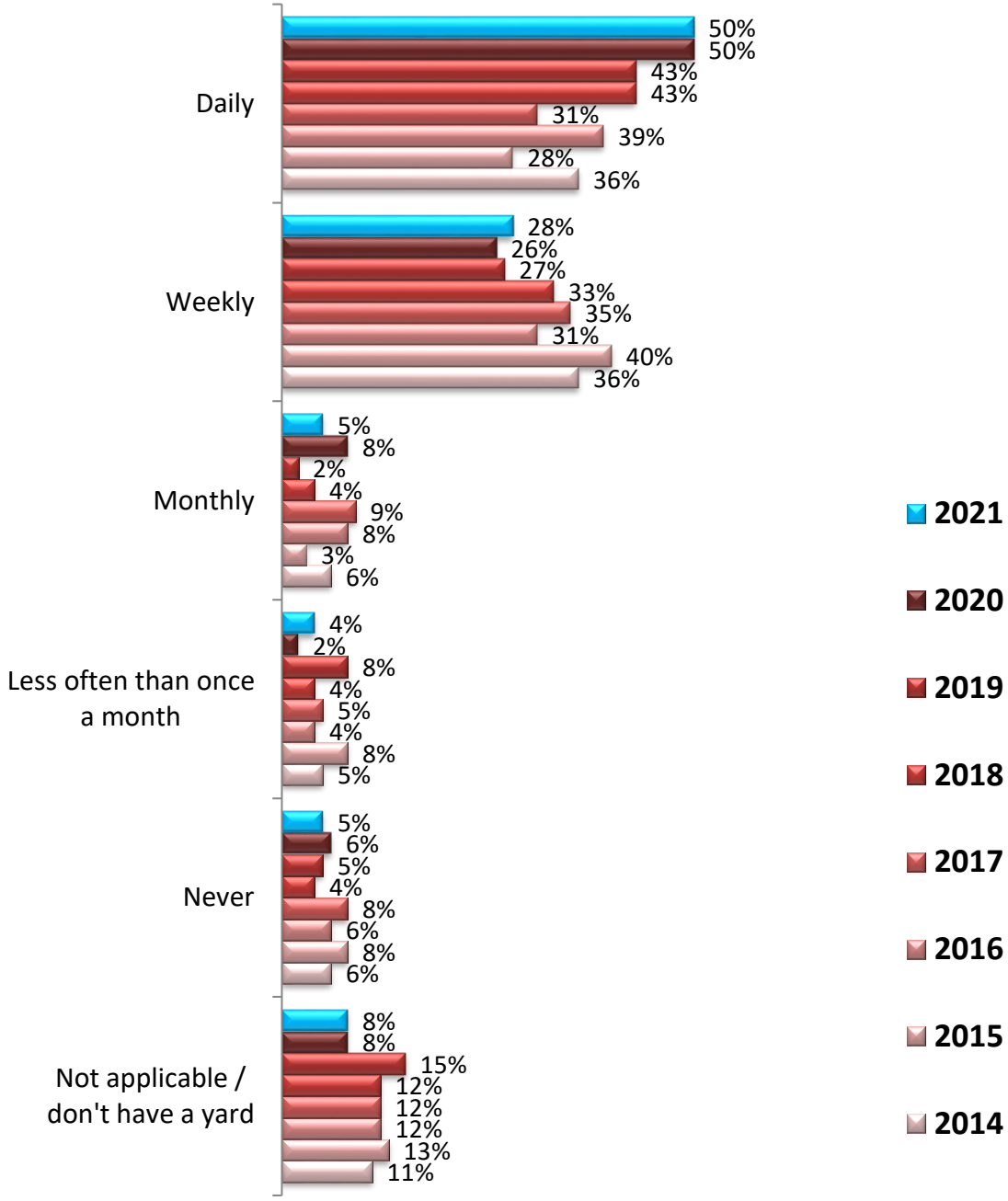


- On the following pages, results are shown for questions about how often dog owners pick up after their dogs and what motivates them to do so. For example, more than two-thirds (71%) in 2021 – similar to 2020, but not as high as in previous years – indicated that they *always* pick up after their dog(s) when taking the dog(s) for a walk.

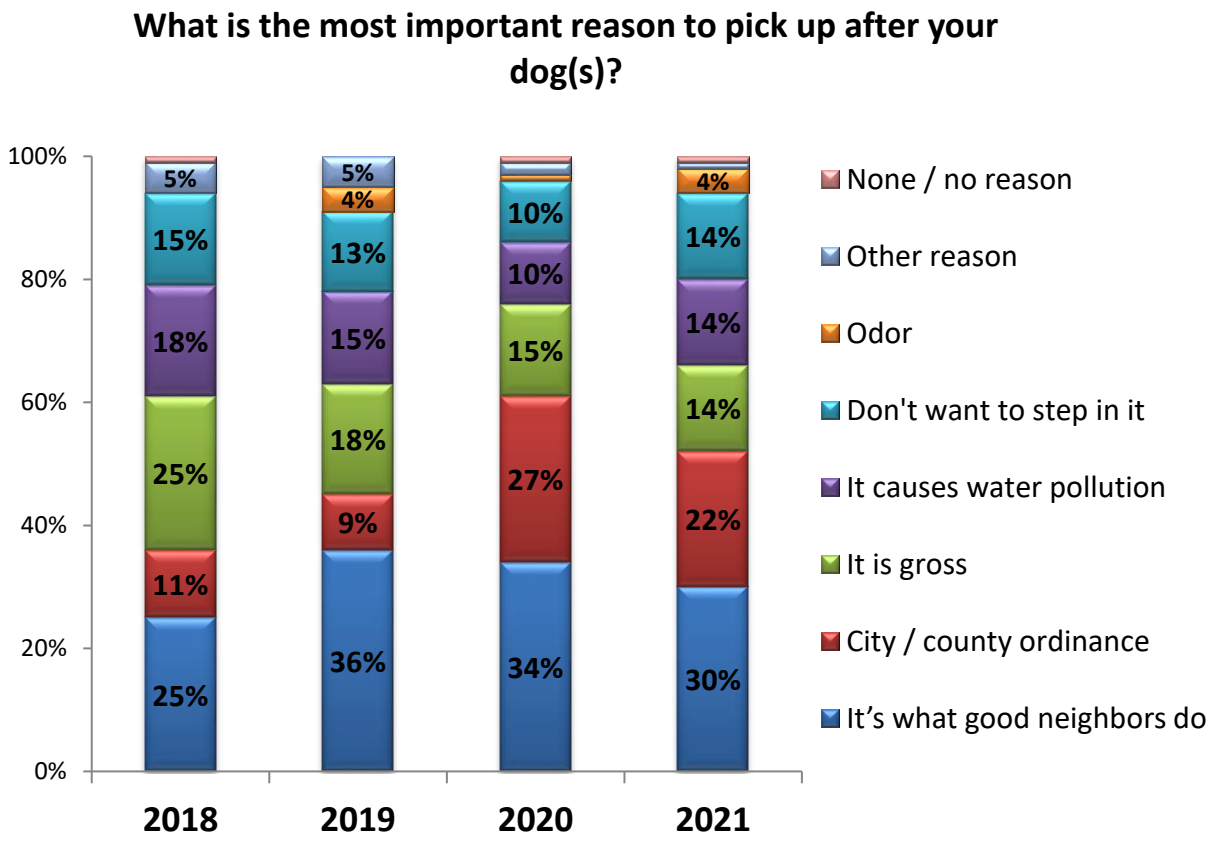
When taking your dog(s) for a walk, how often do you pick up after your dog(s)?



How often do you (or does someone else from your household) remove dog waste from your yard?



- In their own yard, the majority removed pet waste daily or weekly.
- There was some fluctuation from year to year in the proportions reporting daily and weekly removal of dog waste from their yard, but recall that this question was asked only of dog owners, and the sample size of dog owners is lower than the total sample size, while the margin of error is higher for a lower sample size.

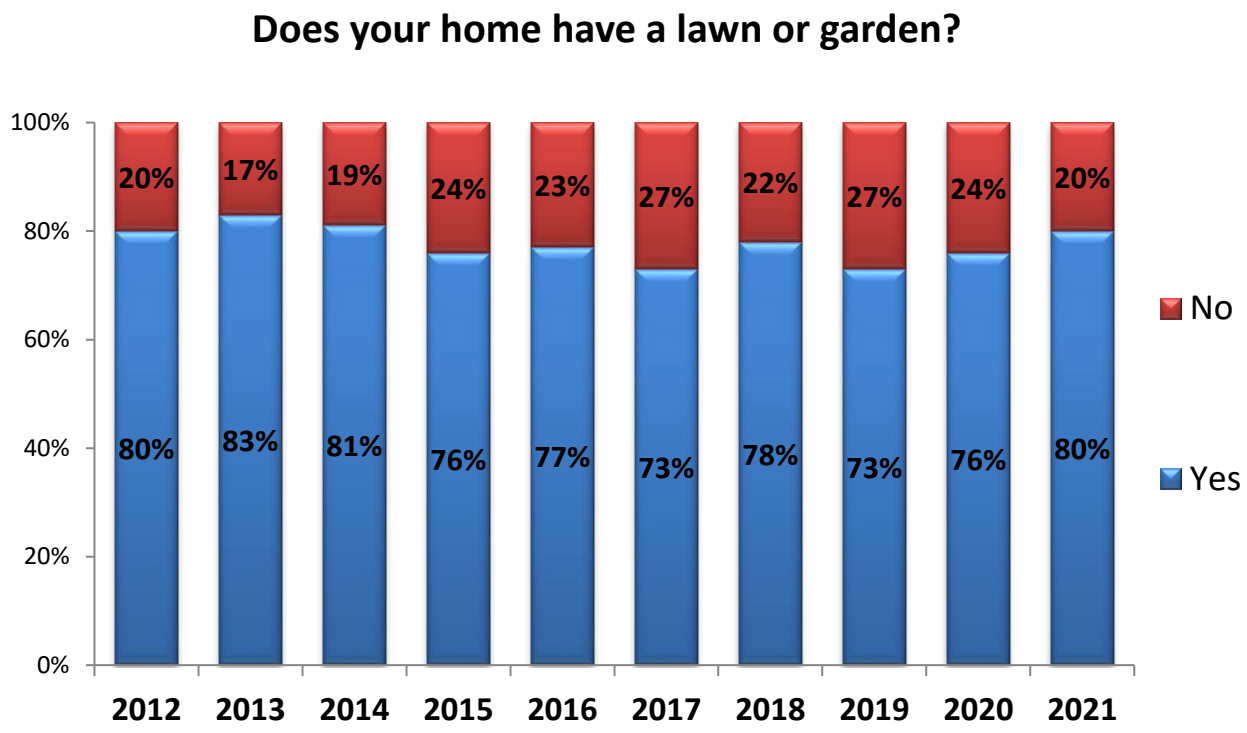


- When asked about the "Most important reason" for picking up after their dog(s), the highest proportion (30%) in 2021 selected "It's what good neighbors do."

- Compared to 2018 and 2019, a significantly higher proportion in 2021 and 2020 selected city / county ordinance as their most important reason to pick up after their dog(s).

Behavior Related to Lawns & Gardens

- Eight-in-ten (80%) in 2021 indicated that their current home has a lawn or garden. This result was the not the highest and also not the lowest over the past ten years.

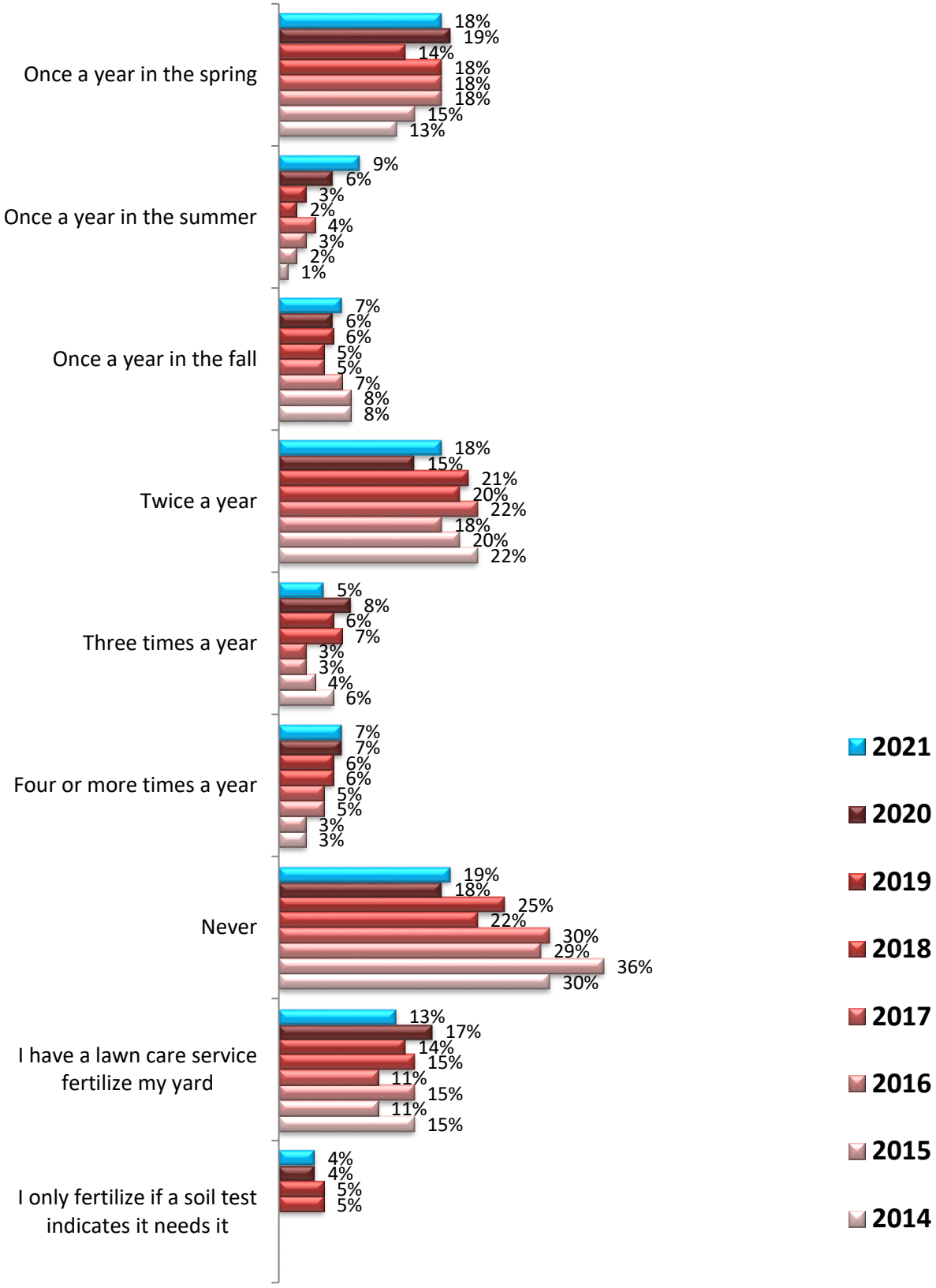


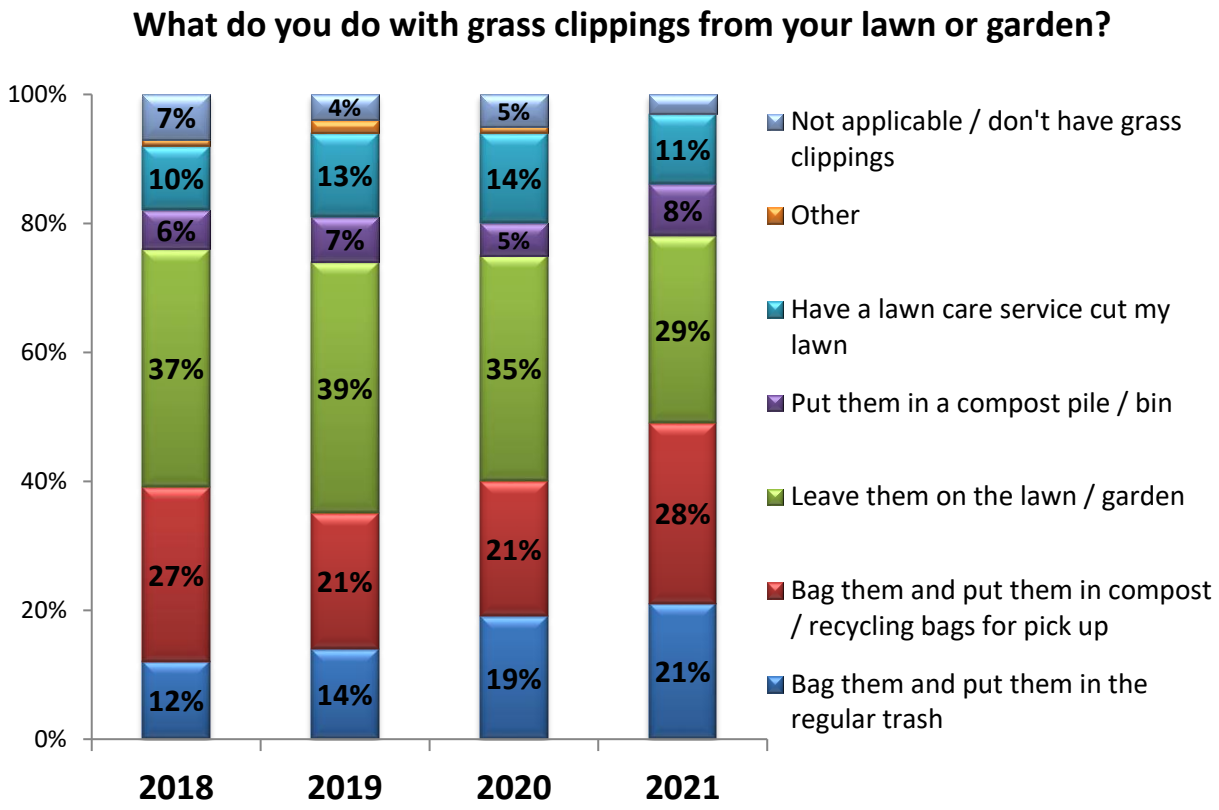
- In a separate question, of the respondents who have a lawn or garden, slightly more than eight-in-ten (83%) in 2021 identified themselves as the primary person taking care of the lawn or garden or as being familiar with the practices used for the garden or lawn. Several questions about lawns and gardens were then asked only of these respondents.

- As shown on the next page, the most common response when asked how frequently they fertilize was "Never" (19%), "Once a year in the spring" (18%), and "Twice a year."

- The option "I only fertilize if a soil test indicates the grass needs fertilizer" was first introduced in the 2018 survey.

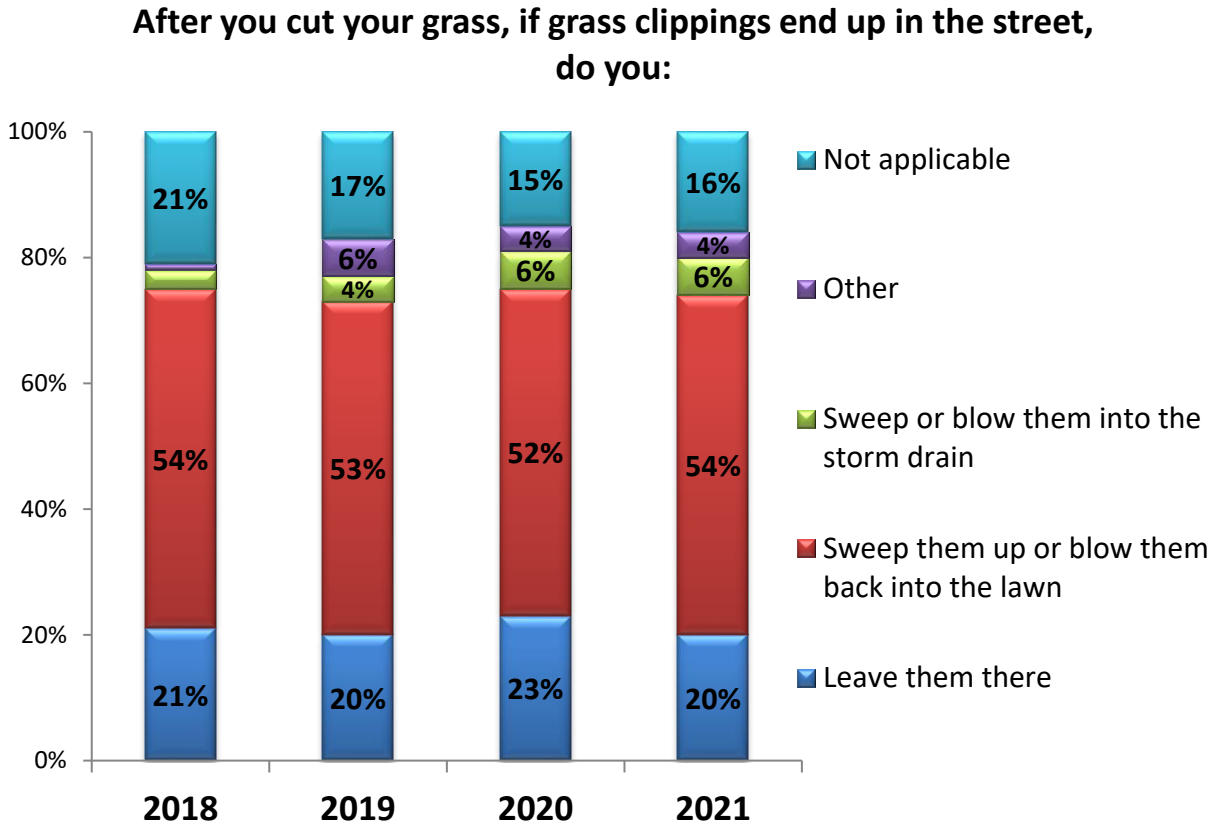
Which of the following best describes how often you fertilize your lawn?





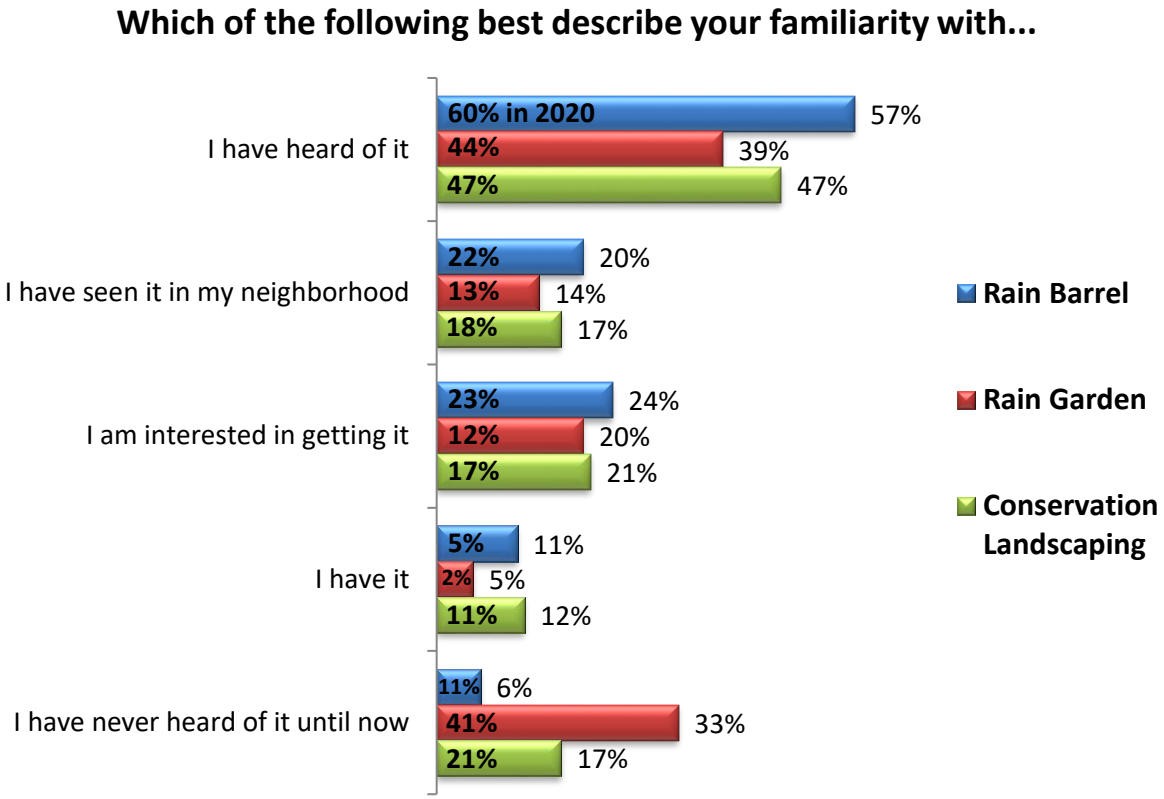
- Less than one-third (29%) in 2021 leave their grass clippings on their lawn / garden, while a similar proportion (28%) bag grass clippings from their lawn / garden and put them in compost / recycling bags for pick up.

- Approximately one-in-five (21%) bag their grass clippings and put them in the regular trash, and this result was significantly higher than in 2019 and 2018.



- More than half (54%) in 2021 sweep them up or blow them back into the lawn if they have grass clippings end up in the street, and this result was similar to the corresponding results in previous years.

- Some (16%) in 2021 felt this question was not applicable to them. This is higher than the proportion selecting "Not applicable" for the question on the previous page, but there is more than one reason that the question above may not be applicable. One reason is that they might not have grass clippings. Another reason is that they might not have grass clippings end up in the street.



- After reading a description of a rain barrel, rain garden, and conservation landscaping, respondents were asked which of the categories in the chart above applied to them. For example, 11% in 2021 reported having a rain barrel, while 5% reported having a rain garden, and 12% reported having conservation landscapes in their yard. Note that the numbers at the end of the bars show 2021 results, while 2020 results are shown to the left and inside the bar. This format was used to allow side-by-side comparisons between rain barrel, rain garden, and conservation landscaping, as well as allowing year-to-year comparisons.

- Those who indicated having the item typically did not also select "I have heard of it." For a few cases in which a respondent selected both "I have heard of it" and "I have it," the data was "cleaned" so that the respondent did not have "I have heard of it" selected. This means that these two response options do not overlap in the results shown above. In other words, the first response option in the chart above means that they do not have one but they have heard of it.

- As a technical note, in place of "it" that shows in the chart, the survey showed rain barrel, rain garden, or conservation landscaping (in three different questions). The reason for rewording the response options for the chart was to facilitate comparisons between the three items.

Behavior Related to Automobiles

- When asked about changing the oil in their car or truck, a strong majority each year reported that they use an oil change service, while 15% in 2021 reported taking old motor oil to a gas station or hazmat facility for recycling. A small number of respondents selected other response options. Because the number selecting some response options was very small, the results are shown in the tables below, with the frequency (number of respondents selecting each response) and the percentage.

2021: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	355	71.0%
Take the old motor oil to a gas station or hazmat facility for recycling	77	15.4%
Store it in my garage	19	3.8%
Put it in the trash	20	4.0%
Dump it in the gutter or down the storm sewer	6	1.2%
Dump it down the sink	2	.4%
I dump it on the ground	1	.2%
Other	2	.4%
Don't own a car or truck	18	3.6%
Total	500	100.0%

2020: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	367	73.4%
Take the old motor oil to a gas station or hazmat facility for recycling	55	11.0%
Store it in my garage	28	5.6%
Put it in the trash	15	3.0%
Dump it in the gutter or down the storm sewer	7	1.4%
Dump it down the sink	3	.6%
Other	3	.6%
Don't own a car or truck	22	4.4%
Total	500	100.0%

2020: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	367	73.4%
Take the old motor oil to a gas station or hazmat facility for recycling	55	11.0%
Store it in my garage	28	5.6%
Put it in the trash	15	3.0%
Dump it in the gutter or down the storm sewer	7	1.4%
Dump it down the sink	3	.6%
Other	3	.6%
Don't own a car or truck	22	4.4%
Total	500	100.0%

2019: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	415	83.0%
Take the old motor oil to a gas station or hazmat facility for recycling	42	8.4%
Store it in my garage	9	1.8%
Put it in the trash	5	1.0%
Dump it in the gutter or down the storm sewer	4	.8%
Dump it down the sink	2	.4%
Dump it on the ground	2	.4%
Other	1	.2%
Don't own a car or truck	20	4.0%
Total	500	100.0%

2018: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	412	82.4%
Take the old motor oil to a gas station or hazmat facility for recycling	47	9.4%
Store it in my garage	12	2.4%
Put it in the trash	4	.8%
Dump it in the gutter or down the storm sewer	2	.4%
Dump it down the sink	2	.4%
Other	2	.4%
Don't own a car or truck	19	3.8%
Total	500	100.0%

2017: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	410	82.0%
Take the old motor oil to a gas station or hazmat facility for recycling	57	11.4%
Store it in my garage	10	2.0%
Put it in the trash	6	1.2%
Dump it in the gutter or down the storm sewer	2	.4%
Other	5	1.0%
Don't own a car or truck	10	2.0%
Total	500	100.0%

2016: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	399	79.8%
Take the old motor oil to a gas station or hazmat facility for recycling	65	13.0%
Store it in my garage	9	1.8%
Put it in the trash	8	1.6%
Other	2	0.4%
Don't own a car or truck	17	3.4%
Total	500	100.0%

2015: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	426	85.2%
Take the old motor oil to a gas station or hazmat facility for recycling	54	10.8%
Store it in my garage	4	0.8%
Put it in the trash	3	0.6%
Don't own a car or truck	13	2.6%
Total	500	100.0%

2014: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	426	85.2%
Take the old motor oil to a gas station or hazmat facility for recycling	50	10.0%
Put it in the trash	5	1.0%
Store it in my garage	4	0.8%
Other	1	0.2%
Don't own a car or truck	14	2.8%
Total	500	100.0%

2013: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	427	85.4%
Take the old motor oil to a gas station or hazmat facility for recycling	57	11.4%
Put it in the trash	3	0.6%
Dump it in the gutter or down the storm sewer	2	0.4%
Store it in my garage	1	0.2%
Don't own a car or truck	10	2.0%
Total	500	100.0%

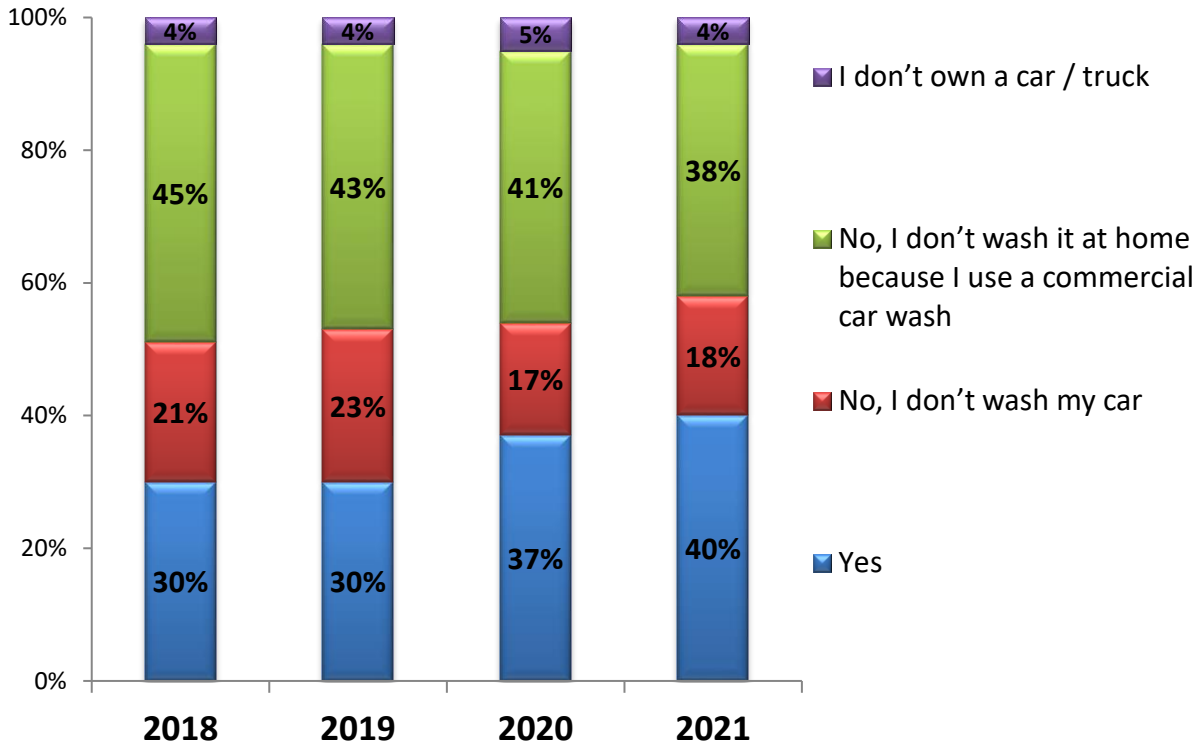
2012: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	426	85.2%
Take the old motor oil to a gas station or hazmat facility for recycling	49	9.8%
Store it in my garage	3	0.6%
Put it in the trash	2	0.4%
Other	2	0.4%
Don't own a car or truck	18	3.6%
Total	500	100.0%

2011: When you need to change the oil in your car or truck, what do you do with the old motor oil?

	Frequency	*Percent*
I don't change the oil myself / I take it to a garage / oil change service	413	82.6%
Take the old motor oil to a gas station or hazmat facility for recycling	60	12.0%
Put it in the trash	2	0.4%
Other	2	0.4%
Don't own a car or truck	23	4.6%
Total	500	100.0%

Do you wash your car / truck at home?



- Four-in-ten (40%) in 2021 reported washing their car / truck *at home*. This was similar to 2020 but significantly higher than in 2019 and 2018.

- When examining the results by subgroups, males and homeowners were more likely than others to report washing their vehicle at home. Also, the proportion washing their vehicle at home declined with age, and the proportion was relatively low among Arlington residents.

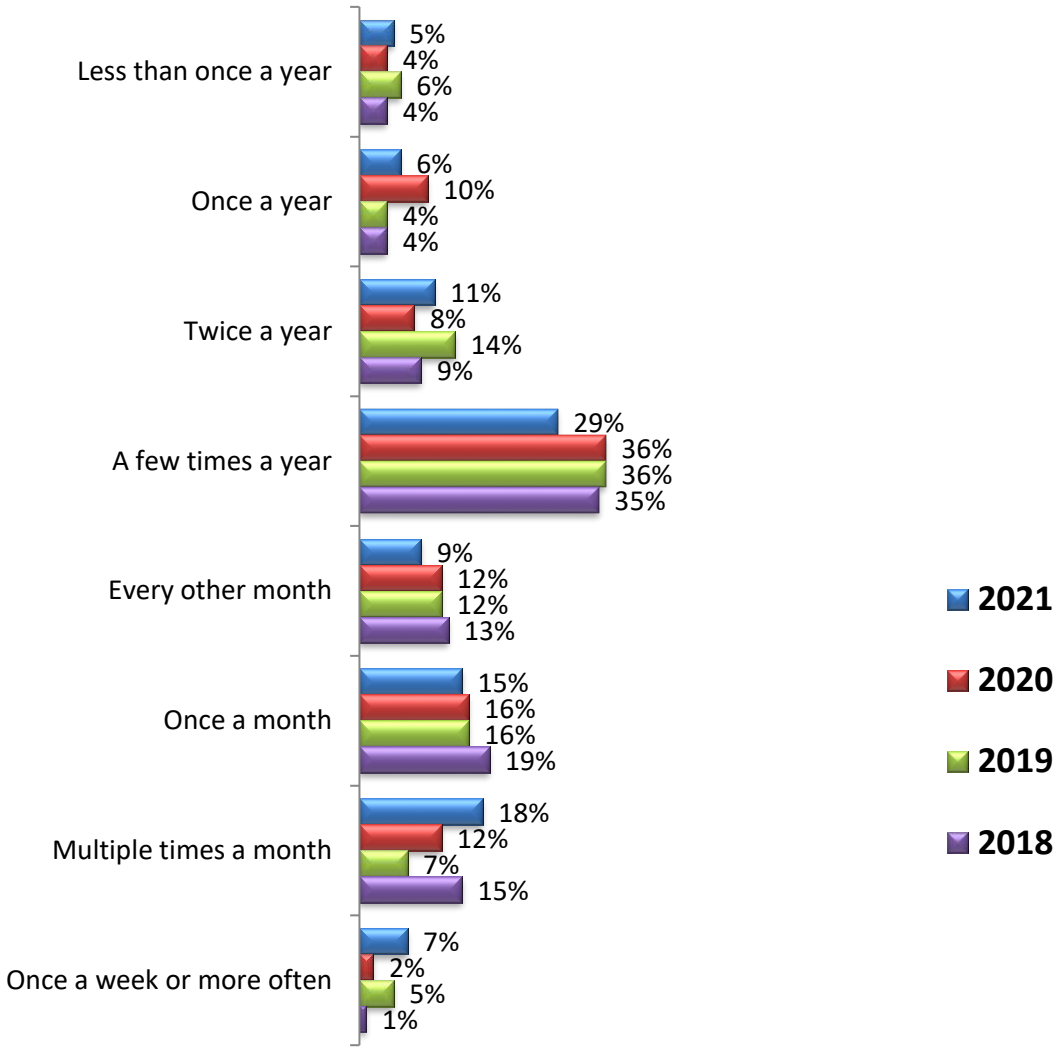
Wash Car / Truck At Home	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	49%	24%	37%	54%	42%
No, don't wash it	13%	18%	22%	11%	14%
No, use car wash	30%	51%	38%	34%	40%
Don't own a car / truck	8%	7%	3%	1%	4%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

Wash Car / Truck At Home	Have Lived in Current Residence < 4 Years	4 to 9 Years	10 to 19 Years	20 or More Years
Yes	38%	38%	49%	37%
No, don't wash it	18%	22%	13%	18%
No, use car wash	41%	36%	34%	42%
Don't own a car / truck	3%	4%	4%	3%
N = number of respondents	*119*	*119*	*108*	*154*

Wash Car / Truck At Home	Age 21 to 34	35 to 44	45 to 54	55 to 64	65 +
Yes	61%	50%	41%	24%	23%
No, don't wash it	14%	17%	19%	24%	16%
No, use car wash	24%	29%	36%	48%	56%
Don't own a car / truck	1%	4%	4%	4%	5%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

Wash Car / Truck At Home	Male	Female	Homeowners	Renters	Hispanic Respondents
Yes	48%	32%	44%	27%	42%
No, don't wash it	17%	19%	16%	23%	17%
No, use car wash	33%	44%	38%	41%	33%
Don't own a car / truck	2%	5%	2%	9%	8%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

How often do you wash your car / truck at home?



- Among those who wash their car / truck at home, the most common frequency of doing so was a few times a year (29% in 2021).

- For a separate question about what applied when washing their car / truck at home, the results are shown below.

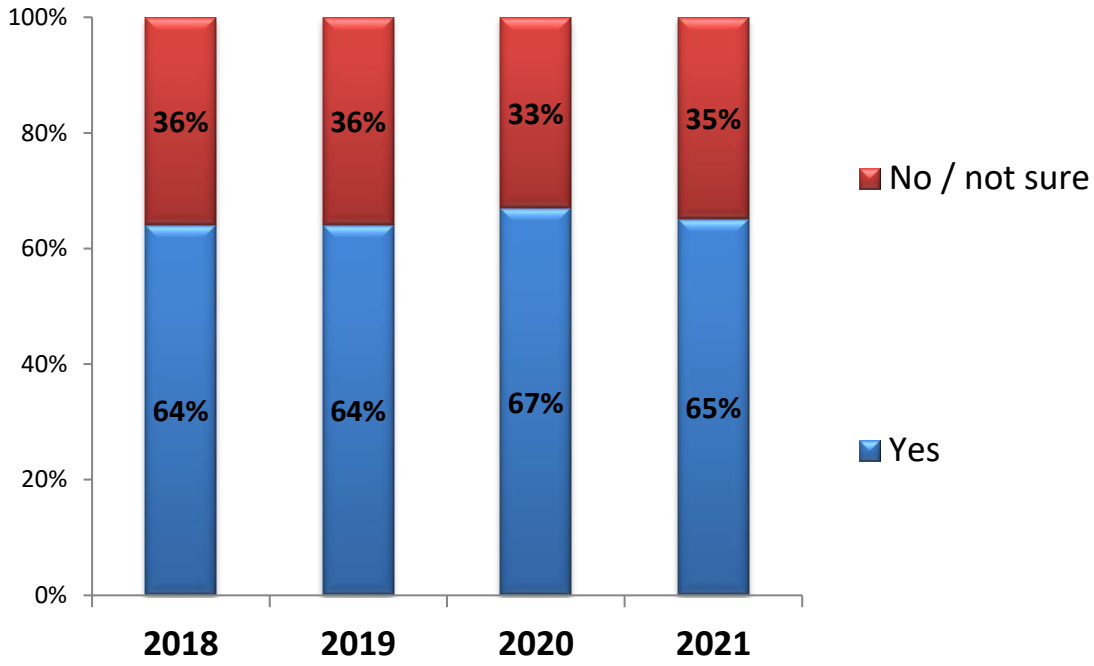
    - 48% in 2021 selected "I used environmentally friendly detergent." (49% in 2020)

    - 41% selected "I try to wash on the grass or other surface that absorbs water." (40% in 2020)

    - 8% selected "I don't use any detergent – use water only." (10% in 2020)

➢ 20% selected none of the above. (17% in 2020)

Are you aware of whether your locality has a specific place for residents to drop off household hazardous waste (HHW)?



- Nearly two-thirds (65%) in 2021 indicated that they were aware of whether their locality has a specific place to drop off household hazardous waste.

- As shown in the table below, this was true for the majority in each area. However, awareness was significantly higher among those living in their current residence 20 or more years, and among those age 35 or older, males, and homeowners.

HHW Awareness	**Alexandria**	**Arlington**	**Fairfax Inclusive**	**Leesburg / Loudoun**	**Prince William Inclusive**
Yes	64%	69%	64%	63%	68%
No / not sure	36%	31%	36%	37%	32%
N = number of respondents	*53*	*45*	*253*	*65*	*84*

HHW Awareness	**Have Lived in Current Residence < 4 Years**	**4 to 9 Years**	**10 to 19 Years**	**20 or More Years**
Yes	55%	64%	62%	76%
No / not sure	45%	36%	38%	24%
N = number of respondents	*119*	*119*	*108*	*154*

HHW Awareness	**Age 21 to 34**	**35 to 44**	**45 to 54**	**55 to 64**	**65 +**
Yes	48%	64%	71%	68%	74%
No / not sure	52%	36%	29%	32%	26%
N = number of respondents	*100*	*108*	*94*	*95*	*103*

HHW Awareness	**Male**	**Female**	**Homeowners**	**Renters**	**Hispanic Respondents**
Yes	70%	60%	68%	52%	53%
No / not sure	30%	40%	32%	48%	47%
N = number of respondents	*254*	*246*	*395*	*105*	*36*

Appendix: Questionnaire

2021 Only Rain NVRC Survey

INTRODUCTION:
Welcome, and thank you for participating in this important research survey.

S1. Are you:

- Male
- Female

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

S3. Which of the following best describes your residence?

- I own my home
- I rent my home
- Neither **[END SURVEY]**

S4. Do you live in the state of Virginia?

- Yes
- No **[END SURVEY]**

S5. Which of the following best describes where you live (county or city or town)?

- o Alexandria
- o Arlington
- o Dumfries
- o Fairfax (city of)
- o Fairfax (county of)
- o Falls Church
- o Herndon
- o Leesburg
- o Loudoun County
- o Stafford County
- o Vienna
- o None of the above **[END SURVEY]**

S6. Which of the following describes your ethnicity? (Please select all that apply)

- ☐ African American / Black
- ☐ American Indian / Alaska Native
- ☐ Asian
- ☐ Hispanic / Latino
- ☐ Native Hawaiian / Pacific Islander
- ☐ White / Caucasian
- ☐ Other: _____

Q1. For 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

Q2. Do you live within the Potomac River Watershed?

- Yes
- No
- Not Sure
- I do not know what a "watershed" is

Q3. "Storm water" is rain or other water that flows into the street, along the gutter and into the storm drain. To the best of your knowledge, where do you believe storm water eventually ends up?

- □ At a waste water treatment facility
- □ Potomac River or Chesapeake Bay
- □ Don't know
- □ Other:_____

Q4. Do you (or does another person in your household) have a dog?

- Yes **[CONTINUE WITH Q5]**
- No **[SKIP TO Q8]**

Q5. When taking your dog(s) for a walk, how often do you pick up after your dog(s)?

- Always / every time the dog leaves waste
- Usually
- Half the time
- Sometimes
- Rarely
- Never
- Not applicable / I don't take the dog(s) on walks

Q6. How often do you (or does someone else from your household) remove dog waste from your yard?

- Daily
- Weekly
- Monthly
- Less often than once a month
- Never
- Not applicable / don't have a yard

[SKIP OVER Q7 IF NEVER OR NOT APPLICABLE IN BOTH Q5 and Q6]
Q7. 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

Q8. Does your home have a lawn or garden?

- Yes **[CONTINUE WITH Q9]**
- No **[SKIP TO Q16]**

Q9. Are you the primary person who takes care of the lawn or garden, or are you familiar with the practices used for your garden or lawn?

- Yes **[CONTINUE WITH Q10]**
- No **[SKIP TO Q16]**

Q10. What do you do with grass clippings from your lawn or garden?

- Bag them and put them in the regular trash
- Bag them and put them in compost / recycling bags for pick up
- Leave them on the lawn / garden
- Put them in a compost pile / bin
- Have a lawn care service cut my lawn
- Other
- Not applicable / don't have grass clippings

Q11. After you cut your grass, if grass clippings end up in the street, do you:

- Leave then there
- Sweep them up or blow them back into the lawn
- Sweep or blow them into the storm drain
- Not applicable / don't have grass clippings
- Other: _____

Q12. Which of the following best describes how often you fertilize your lawn?

- Once a year in the spring
- Once a year in the summer
- Once a year in the fall
- Twice a year
- Three times a year
- Four or more times a year
- Never
- I have a lawn care service fertilize my yard
- I only fertilize if a soil test indicates the grass needs fertilizer

Q13. 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 best describe your level of familiarity with rain barrels? [Allow multi-select]

- □ I have heard of rain barrels
- □ I have seen rain barrels in my neighborhood
- □ I am interested in getting a rain barrel
- □ I have a rain barrel
- □ I have never heard of a rain barrel until now.

Q14. A rain garden is a bowl shaped garden area where runoff can collect and soak into the ground. Which of the following best describe your level of familiarity with rain gardens? [Allow multi-select]

- □ I have heard of rain gardens
- □ I have seen rain gardens in my neighborhood
- □ I am interested in installing a rain garden in my yard
- □ I have a rain garden
- □ I have never heard of a rain garden until now.

Q15. Conservation landscaping is replacing an area of lawn or bare soil in your yard with native plants. Which of the following best describe your level of familiarity with conservation landscaping? [Allow multi-select]

- □ I have heard of conservation landscaping
- □ I have seen conservation landscaping in my neighborhood
- □ I am interested in installing conservation landscaping in my yard
- □ I have conservation landscapes in my yard
- □ I have never heard of conservation landscaping until now.

Q16. When you need to change the oil in your car or truck, what do you do with the old motor oil?

- o I don't change the oil myself / I take it to a garage / oil change service
- o Take the old motor oil to a gas station or hazmat facility for recycling
- o Store it in my garage
- o Put it in the trash
- o Dump it in the gutter or down the storm sewer
- o Dump it down the sink
- o I dump it on the ground
- o I don't own a car or truck
- o Other: _____

Q17. Are you aware of whether 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.

- o Yes
- o No / not sure

Q18. Do you wash your car / truck <u>at home</u>?

- Yes
- No, I don't wash my car
- No, I don't wash it at home because I use a commercial car wash
- I don't own a car

Q19. [If yes to Q18] How often do you wash your car / truck at home?

- Less than once a year
- Once a year
- Twice a year
- A few times a year
- Every other month
- Once a month
- Multiple times a month
- Once a week or more often

Q20. [If yes to Q18] When you wash your car / truck <u>at home</u>, which of the following apply?

- □ I try to wash on the grass or other surface that absorbs water
- □ I use environmentally friendly detergent
- □ I don't use any detergent – use water only
- □ None of the above

Q21. Looking at the pictures below, would you consider this to be a potential source of water pollution?

- Yes
- No
- Not sure

Q22. What is the likelihood that you would call county or town officials to report potential pollution so they could investigate the cause?

- Definitely would
- Probably would
- Might or might not
- Probably not
- Definitely not

Q23. How confident are you that you would know where to report potential water pollution?

- o Very confident
- o Somewhat confident
- o Not very confident
- o Not at all confident

Q24. What TV service provider do you use? [RANDOMIZE]

- o Verizon
- o Comcast
- o Cox
- o Direct TV
- o Dish Network
- o Xfinity
- o Do not have cable TV
- o Do not watch TV
- o Other: _____

Q25. Which of the following channels, if any, do you watch? [RANDOMIZE]

- ☐ HLN TV
- ☐ Oxygen
- ☐ Toon
- ☐ ENT
- ☐ Animal Planet
- ☐ CNN
- ☐ ESPN
- ☐ History
- ☐ National Geographic
- ☐ Home and Garden
- ☐ None of the above

Q26. 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.?

- o Yes
- o No / not sure

Q27. [IF YES IN Q26] 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.?

- o Yes
- o No

Q28. Please watch the video below. Before this survey, had you seen this ad, or a similar one on TV, Facebook, or Twitter about reducing water pollution?

- o Yes **[CONTINUE WITH Q29]**
- o No **[SKIP TO Q30]**
- o Not sure **[SKIP TO Q30]**

Q29. Did seeing the ad(s) about reducing water pollution make you change any of your behaviors related to fertilizing less often and/or reducing water pollution?
(Select all that apply)

- □ Yes, I now pick up pet waste more often
- □ Yes, I now plan to fertilize fewer times during the year
- □ Yes, I now properly dispose of motor oil
- □ I was already doing what is recommend to reduce water pollution
- □ None of the above applies to me

Q30. Have you seen the logo above anywhere? (Show Only Rain logo)

- Yes
- No

Q31. Regardless of whether you have seen that specific ad or logo, have you seen or received information about reducing water pollution from any source in the past 12 months?

- Yes
- No
- Not sure