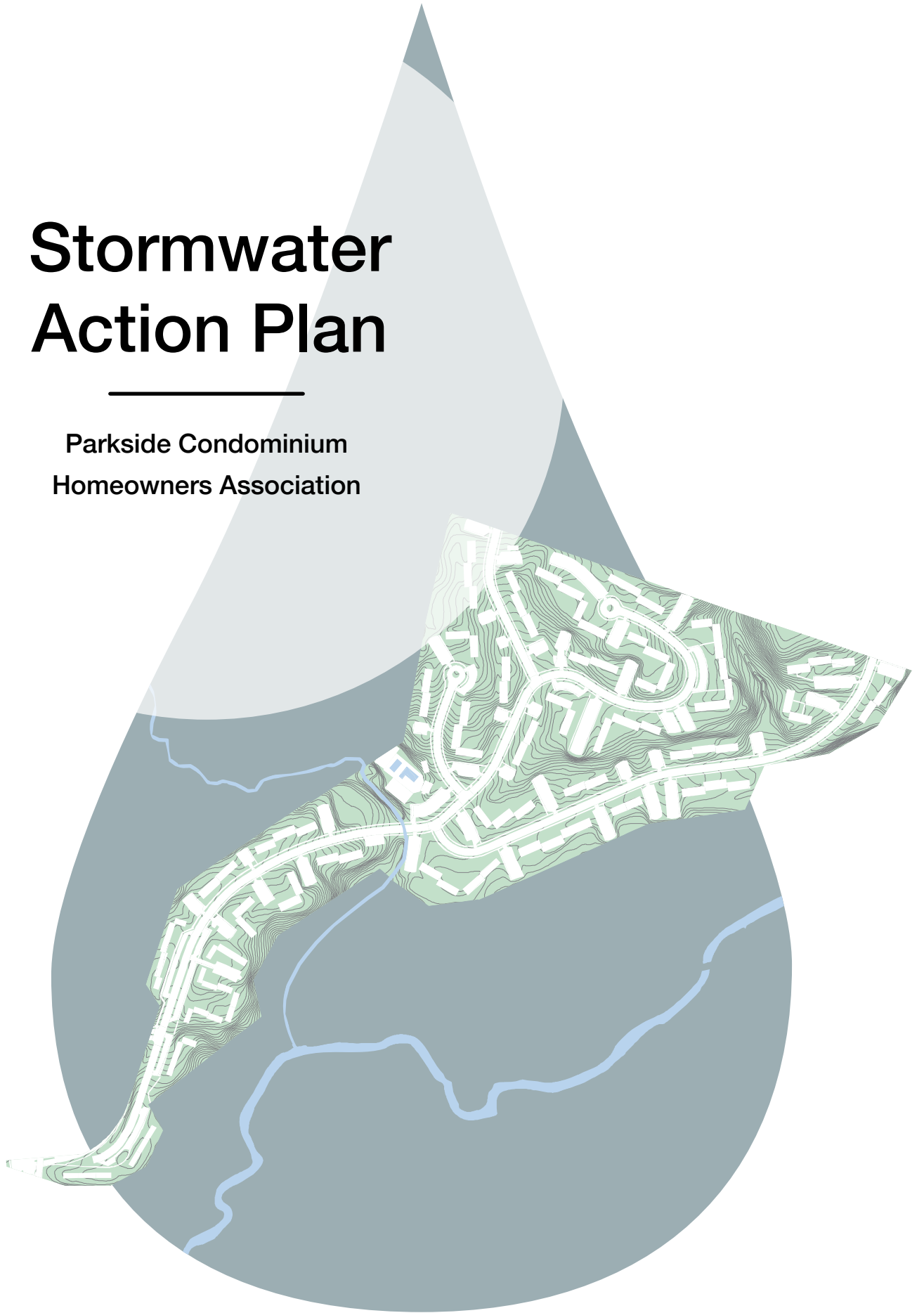


# Stormwater Action Plan

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Parkside Condominium  
Homeowners Association



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ENVIRONMENTAL  
FINANCE CENTER



# Preface

This document, prepared by the Environmental Finance Center (EFC) at the University of Maryland, is part of an outreach and education effort designed to increase awareness about the issue of stormwater pollution, increase the rate of participation by residents in Montgomery County programs, and to more fully engage the leadership and residents of County homeowners' and neighborhood associations in the implementation of watershed restoration activities in their communities.

The purpose of this document is to better equip Montgomery County homeowners to access available resources and implement meaningful and successful projects that support the County's stormwater permit requirements as well as the community's priorities.

This document is not meant to provide specific engineering solutions, but rather to provide a foundation for pursuing these solutions, if warranted, as well as community led solutions and initiatives.

On July 15, 2019, EFC staff met with a group of stakeholders and personnel from Parkside Condominium (Parkside) to discuss stormwater related issues in the community, to review a detailed map of the community and identify problem areas, and to learn about upcoming community projects. On July 25, 2019, EFC performed a comprehensive walking tour of the community during which staff conducted a visual assessment of on-the-ground conditions, inspected the issues identified during the stakeholder meeting, and identified potential locations for community stormwater projects. Photo documentation of issues and potential project areas were also obtained at this time. A third stakeholder meeting was held on August 14, 2019 to present the findings of the walking tour, answer additional questions, and outline the format of the action plan.

## Attendees:

### University of Maryland:

Mike Hunninghake, Environmental Finance Center/Sustainable Maryland, [mikeh75@umd.edu](mailto:mikeh75@umd.edu)

Michelle Kokolis, Environmental Finance Center, [mkokolis@umd.edu](mailto:mkokolis@umd.edu)

Amanda Rockler, Maryland Sea Grant Extension, [amanda.rockler@umd.edu](mailto:amanda.rockler@umd.edu)

Shayne Piltz, Environmental Finance Center, Program Assistant

### Parkside Condominium Homeowners Association Stakeholders and Employees:

Erica Anderson, Resident, [ericabanderson@yahoo.com](mailto:ericabanderson@yahoo.com)

Phil Buscher, Facilities Director, [PhilB@parksidecondo.org](mailto:PhilB@parksidecondo.org)

Adrienne Johnstone, Board President, [adrienne.johnstone@uspto.gov](mailto:adrienne.johnstone@uspto.gov)

Michelle Jolles, General Manager, [GeneralManager@parksidecondo.org](mailto:GeneralManager@parksidecondo.org)

Laura Mcintosh, Landscape & Grounds Committee Chair, [lnm.parkside@gmail.com](mailto:lnm.parkside@gmail.com)

Ron Outen, Parkside Village, [ron@ronouten.com](mailto:ron@ronouten.com)

Susan Pourian, Parkside GREEN Chair, [smpourian@gmail.com](mailto:smpourian@gmail.com)

Leslie Zeman, Resident, [zemanleslie@gmail.com](mailto:zemanleslie@gmail.com)

### Report Compilation:

Michelle Kokolis, Environmental Finance Center, [mkokolis@umd.edu](mailto:mkokolis@umd.edu)

### Graphics Production and Layout:

Shayne Piltz, Environmental Finance Center, Program Assistant

# Introduction

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Throughout the United States, including Montgomery County, the main policies that protect water quality are the Clean Water Act, Total Maximum Daily Loads (TMDL), and Municipal Separate Storm Sewer System (MS4) Permits, all of which are designed to prevent the violation of water quality standards. Established in 1972, the Clean Water Act established the basic structure for regulating water pollution. A TMDL is essentially a “pollution diet” in the sense that TMDLs set the maximum amount of a pollutant that can enter a waterbody. MS4 permits, which are federally mandated but issued by the state, are designed to reduce pollution that is coming specifically from the stormwater traveling through storm drains. Together, these policies protect both large and small water bodies, including the Chesapeake Bay, Potomac River, Rock Creek, and its tributaries. Parkside Condominium (Parkside) lies within the Rock Creek watershed.

Due to poor water quality, the US Environmental Protection Agency set TMDLs for the amounts of nitrogen, phosphorus, and sediment entering the Chesapeake Bay. Consequently, every state in the Bay watershed, including Maryland, is expected to do their part to reduce these pollutants and achieve load limitations. In addition to the Chesapeake Bay TMDL, many jurisdictions, including Montgomery County, also have MS4 permits to regulate stormwater pollution and local TMDLs to address local water quality impairments. In order to address water quality impairments and meet pollution reduction requirements, the County has developed Watershed Implementation Plans (WIP). A WIP serves as a roadmap for how a jurisdiction is going to achieve their water quality goals.

Montgomery County has developed WIPs for multiple watersheds in the County including Rock Creek<sup>1</sup> and the Anacostia River. These WIPs were developed in order to help the County meet the requirements set forth in the MS4 Permit issued by the Maryland Department of the Environment. In addition to providing a thorough overview of the existing conditions of the watersheds, the WIPs also include a list of practices and projects that will help the County meet its MS4 requirements. These lists include projects that support watershed restoration through runoff management and impervious cover treatment, as well as projects that support trash and litter management as mandated through the Anacostia River Trash Total Maximum Daily Load (TMDL) and the Potomac River Watershed Trash Treaty. Lastly, the WIPs recognize the importance of educating residents by identifying Outreach and Stewardship Strategies.

In February 2019, the County released the Rock Creek Watershed Assessment.<sup>2</sup> The watershed assessment provides an overview of existing conditions within the watershed and identifies potential restoration opportunities. The assessment also includes a more detailed evaluation of the Garrett Park Catchment, a portion of which falls within Parkside’s boundary (Appendix A).

Managing stormwater and achieving the required water quality improvements in Montgomery County is a major endeavor which requires significant investments. Green infrastructure implementation projects that will reduce flooding, and outreach programs that educate local stakeholders on the importance of stormwater management, are two strategies that can offer multiple co-benefits and

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1 [https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Watershed studies/Rock-creek-watershed-implementation-plan-11.pdf](https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Watershed%20studies/Rock-creek-watershed-implementation-plan-11.pdf)

2 <https://www.montgomerycountymd.gov/water/Resources/Files/stormwater/implementation-strategy/rock-creek-summary-2018.pdf>

enhanced return on investment. While Montgomery County has a longstanding commitment to protecting and enhancing the natural and built environments to ensure improved water quality, their ultimate goals cannot be accomplished without the increased participation of local communities such as Parkside, and the active participation of their leadership and residents.

In an effort to more broadly engage County citizens in these efforts, Montgomery County developed a Watershed Restoration and Outreach grant program. The program, which is managed by the Chesapeake Bay Trust, provides funds to local non-profits to help them carry out programming designed to educate citizens and implement projects on community property to reduce stormwater runoff, improve water quality, and expand the reach of County efforts.

The Environmental Finance Center (EFC) at the University of Maryland developed the *Sustainable Maryland Stormwater Outreach Campaign* with funding by the Chesapeake Bay Trust – Montgomery County Watershed Restoration and Outreach Grant Program. This outreach and education campaign was designed to increase awareness about the issue of stormwater pollution, increase the rate of participation by residents in County programs, and to more fully engage the leadership and residents of civic associations in the implementation of watershed restoration activities in their communities.

As part of this campaign, EFC worked with local homeowners' and neighborhood associations to develop stormwater-based community action plans. A community action plan is a participatory tool used to build the capacity of community members and empower them to take action. It helps residents identify areas of concern, specify what actions can be taken, define who will be responsible, and explore the resources available to help the community take action. The development of these action plans has been informed by County and community engagement and input.

It is important to note that while some priorities identified in the action plan will require Montgomery County to intervene, other actions may be led entirely by the community, and some will require cooperative effort from both the County and the local community. Beyond the context of the immediate issues and initiatives within any specific community, there may also be opportunities to work with neighboring communities on regional stormwater planning and coordination.

## About this Document

This action plan is not meant to provide prescriptive strategies or specific engineering solutions, but rather to provide a foundation for pursuing these solutions if warranted. It seeks to provide support for the outreach and behavior change activities that can be championed by the community itself, and to highlight when a community should be advocating for County intervention on larger infrastructure projects and deeper legislative issues. There are eight main parts to this action plan: Community Overview, Survey Results, Stormwater Issues (*Community Priority Areas*), Demonstration Project Opportunities, Maintenance Opportunities, Community and Green Team Opportunities (*Community Action Areas*), glossary, and lastly, a comprehensive appendix of resources. A brief description of each section is provided below.

**Community Overview** – This section provides a basic overview of the process EFC went through to gather the information compiled in the action plan. It also provides background information on the community including the community's history, location, local demographic information, and a summary of the surrounding built and natural environment.

**Survey Results** – Prior to the first stakeholder meeting, a survey to assess knowledge and opinions about stormwater was distributed electronically to Parkside residents. Over one hundred (100)

surveys were completed. This section contains a summary of the results. Information from the survey was factored into recommendations made in the action plan, particularly when considering recommendations for actions residents can take on their own as well as actions the Green Team can organize. The complete survey results are available in Appendix B.

**Stormwater Issues (Community Priority Areas)** – After reviewing the information from the stakeholder meeting, the walking tour, and the survey results, the issues identified were broken into two categories: *Community Priority Areas* and *Community Action Areas*. The topography of Parkside and the neighboring communities, combined with large amounts of impervious surface (parking lots, streets, etc.), has led to some significant erosion issues. These issues have been categorized as *Community Priority Areas*. Generally speaking, these issues are complex in nature and will require significant financial investment and outside assistance. In some cases, the problems will only be completely resolved if there is coordination with, and action by, neighboring communities. This section discusses several of the erosion issues that are considered the most problematic.

**Demonstration Project Opportunities** – This section outlines opportunities throughout the community to install stormwater demonstration projects in common areas, such as around the pool and clubhouse. These projects are the same as any other stormwater management project, they are just referred to as “demonstration projects” because of their location. Demonstration projects are typically installed in high visibility areas, include educational signage, and are often used as a way to teach others about stormwater management. Demonstration projects also provide good opportunities to partner with local watershed groups that can assist with seeking grant funding for project implementation.

**Maintenance Opportunities** – During the walking tour, EFC identified several simple maintenance changes that can potentially have noticeable impacts on stormwater flow and the associated issues. This section identifies those opportunities and provides suggestions for modifications that can be made to existing programs.

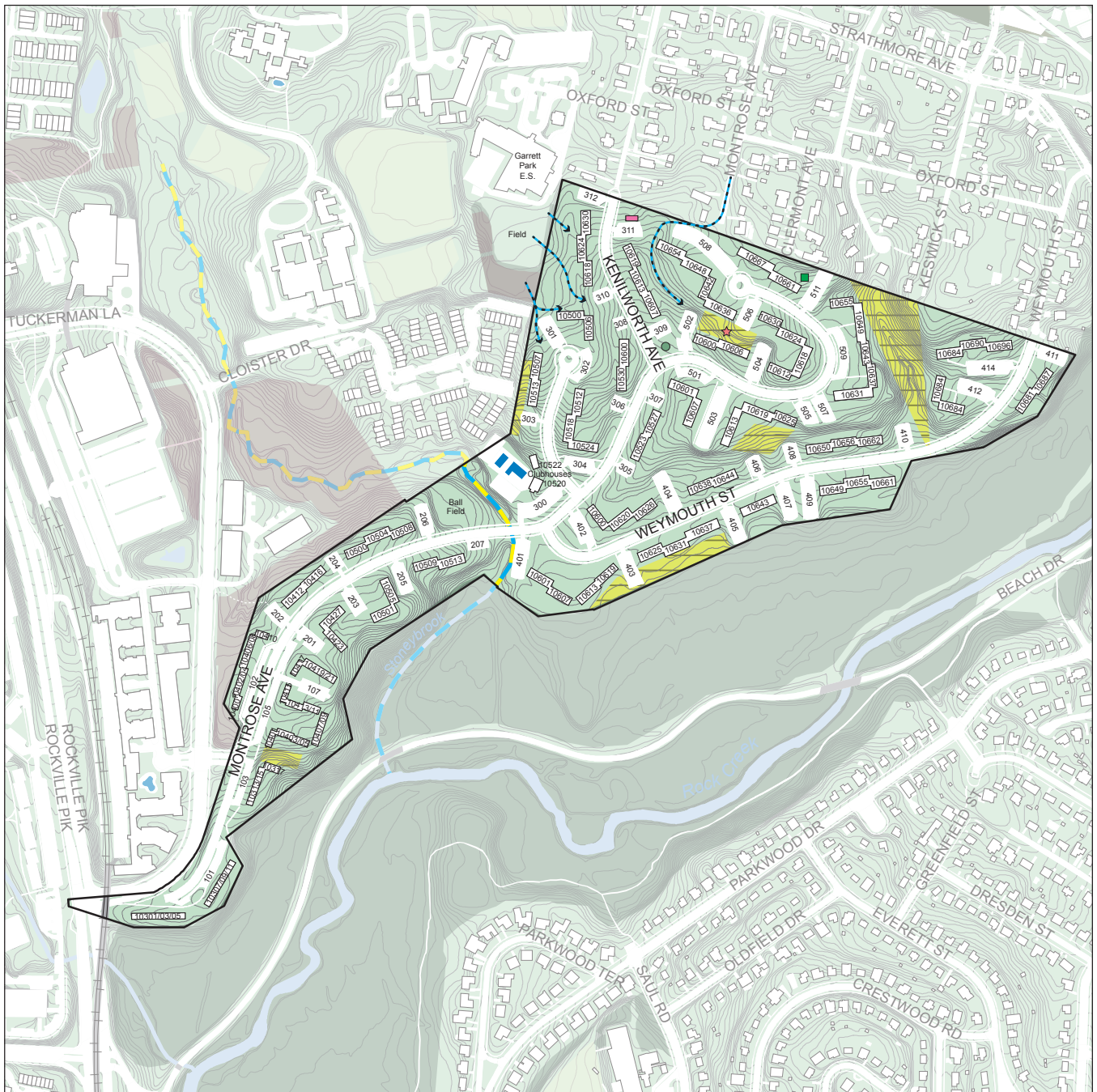
**Community and Green Team Opportunities (Community Action Areas)** – Through the survey results and conversations with the stakeholder group, EFC was able to identify key issues and topics the residents are interested in. These opportunities have been categorized as *Community Action Areas* because they can easily be pursued by residents on their own, in small groups, or organized by the Green Team for little or no funding. This section outlines these opportunities and provides suggestions for ways to kick-start some of these actions.

**Glossary** – The glossary is located immediately following the text of the document. Words and acronyms that are defined in the glossary will appear underlined in the text. If you are viewing the document electronically, you can click on the word and jump to the definition.

**Appendix** – The appendix contains the complete survey results, an outreach calendar, copies of County documents that are relevant to the community, and a comprehensive list of resources that includes websites, contact information for local watershed groups, information on County programs, volunteer opportunities, and funding sources. The appendix is designed to help the community navigate stormwater issues to implement meaningful and successful projects.



Figure 1 Stakeholders identify hot spots and areas of concern



**Identified Focus Areas**

- Flooding
- Erosion
- Stoneybrook Tributary Stream Restoration:*
- To be completed by M-NCPPC
- - - Suspended
- Forest Conservation Easement
- Community Garden
- Maintenance Shed
- ★ Save the Hill Project
- New landscape garden
- Waterbodies
- 2' Contours
- Parkside Boundary

0 250 500 Feet



**Figure 2** Map of Parkside stormwater concerns

# Community Overview

On July 15, 2019, EFC staff met with a group of stakeholders and employees from Parkside to discuss stormwater related issues in their community. Prior to this initial meeting, Parkside residents were asked to complete an online survey about stormwater. The survey was designed to assess residents' knowledge and opinions about stormwater and stormwater management. The results of the survey (Appendix B) helped to inform the direction of the initial stakeholder meeting as well as the recommendations made in this action plan. At the initial meeting, EFC reviewed highlights from the survey and then facilitated an interactive discussion about stormwater concerns within the community. Participating stakeholders reviewed a detailed aerial map of the community, identifying hot spots and areas of concern (Figure 1). Figure 2 shows the issues identified by the stakeholders. Parkside stakeholders also provided EFC with an overview of the community's structure, governing process, and pending projects. An image of the map from the meeting can be found in Appendix C.

On July 25, 2019, EFC conducted a comprehensive walking tour of the community, inspecting and photo-documenting the concerns raised during the initial stakeholder meeting. At this time, EFC also identified other potential project opportunities throughout the community. EFC reconvened with the stakeholder group on August 14, 2019 with the purpose of presenting the findings of the walking tour, answering additional questions about the community, and outlining the format of the action plan.

Parkside is located in the 20814 zip code. According to the most recent census data (the year of the data varies depending on the category), the median age in the area is 40.1 years old with an annual household income of \$120,632. The unemployment rate for the area is 2.2% with 1.5% of the population living below the poverty level. Demographic information for race and education levels within the zip code is seen in Figure 3.

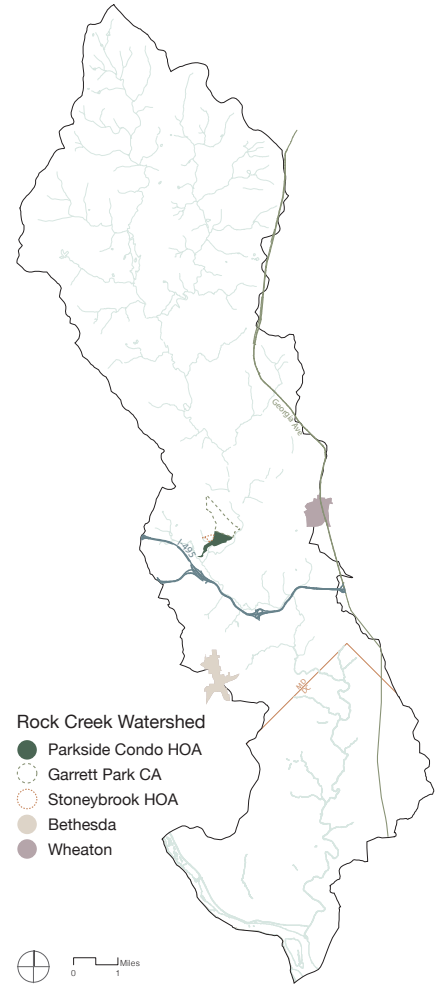


Figure 4 Location of Parkside within Rock Creek watershed

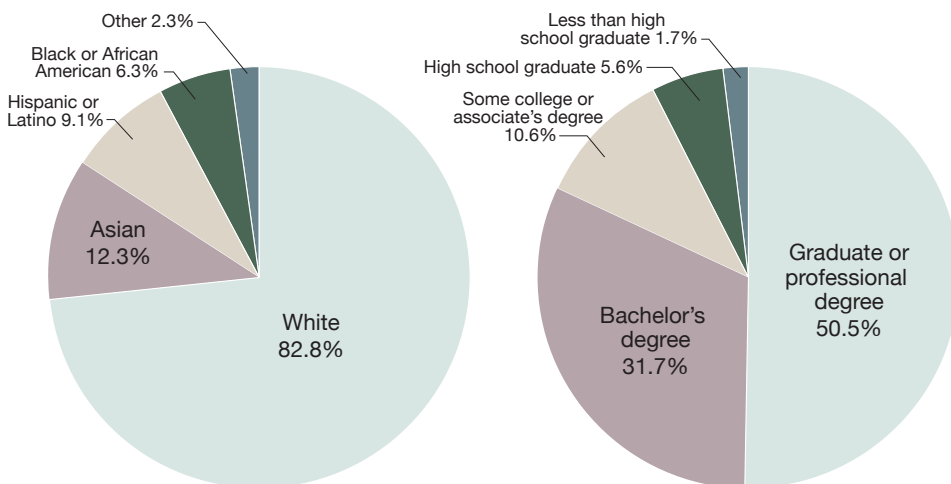


Figure 3 Parkside race and education demographics

Built between 1956 and 1966, Parkside was originally conceived as a rental community. It was converted to a condominium community in 1981 by Parkside Associates. As it exists today, Parkside is located on 69 acres and is comprised of 954 condominiums in 102 buildings. Rental units are estimated to comprise approximately 50% of the households.



Parkside is bound by Rock Creek Park to the east and south, and the Town of Garrett Park and Stoneybrook HOA to the north and west respectively (Figure 4). It is conveniently located near I-495, the Grosvenor-Strathmore Metro, and Strathmore Music Center. The community is served by Garrett Park Elementary School, Tilden Middle School, and Walter Johnson High School, all of which are located outside of the community. The Academy of the Holy Cross, an all-girls, Catholic high school, is located just outside of the community near Garrett Park Elementary School.

Parkside lies within the Rock Creek watershed and the main stem of Rock Creek flows through Rock Creek Park on the eastern side of the community. Stoneybrook Tributary flows from north to south across the property. The stream is daylight near the community's tennis courts, flows under Montrose Avenue, and daylights on the east side of the community where it flows into Rock Creek Park. Two stream restoration projects were planned for Stoneybrook Tributary (Appendix D). The first portion of the project lies within Rock Creek Park and is being conducted by the Maryland-National Capital Park and Planning Commission (M-NCPPC). This project is in the design/permitting phase and should go to construction in 2020. The second portion of the project, which stretches upstream from the end of the M-NCPPC project at the park boundary to Strathmore Avenue and was to be completed by Montgomery County, has been suspended indefinitely.

Parkside is a fairly isolated community (Figure 5). The entire eastern border of the community is parkland, there is only one road in and out, and there is no commercial property within the community. Because of its isolated nature, despite being closely located to a significant amount of commercial property and Rockville Pike, Parkside is not impacted by many of the issues that typically arise in suburban communities. It is quiet and there is no through-traffic, helping to prevent litter and illegal dumping from becoming pervasive issues. Because Parkside is a pet free community, and there is very little walking foot traffic from neighboring communities, pet waste management is not an issue. The biggest issues impacting Parkside are steep topography and significant amounts of impervious surface within the community itself, as well as within the neighboring communities. Parkside lies downslope from the Town Garrett Park and the Stoneybrook townhome community, exacerbating already problematic stormwater flow conditions.

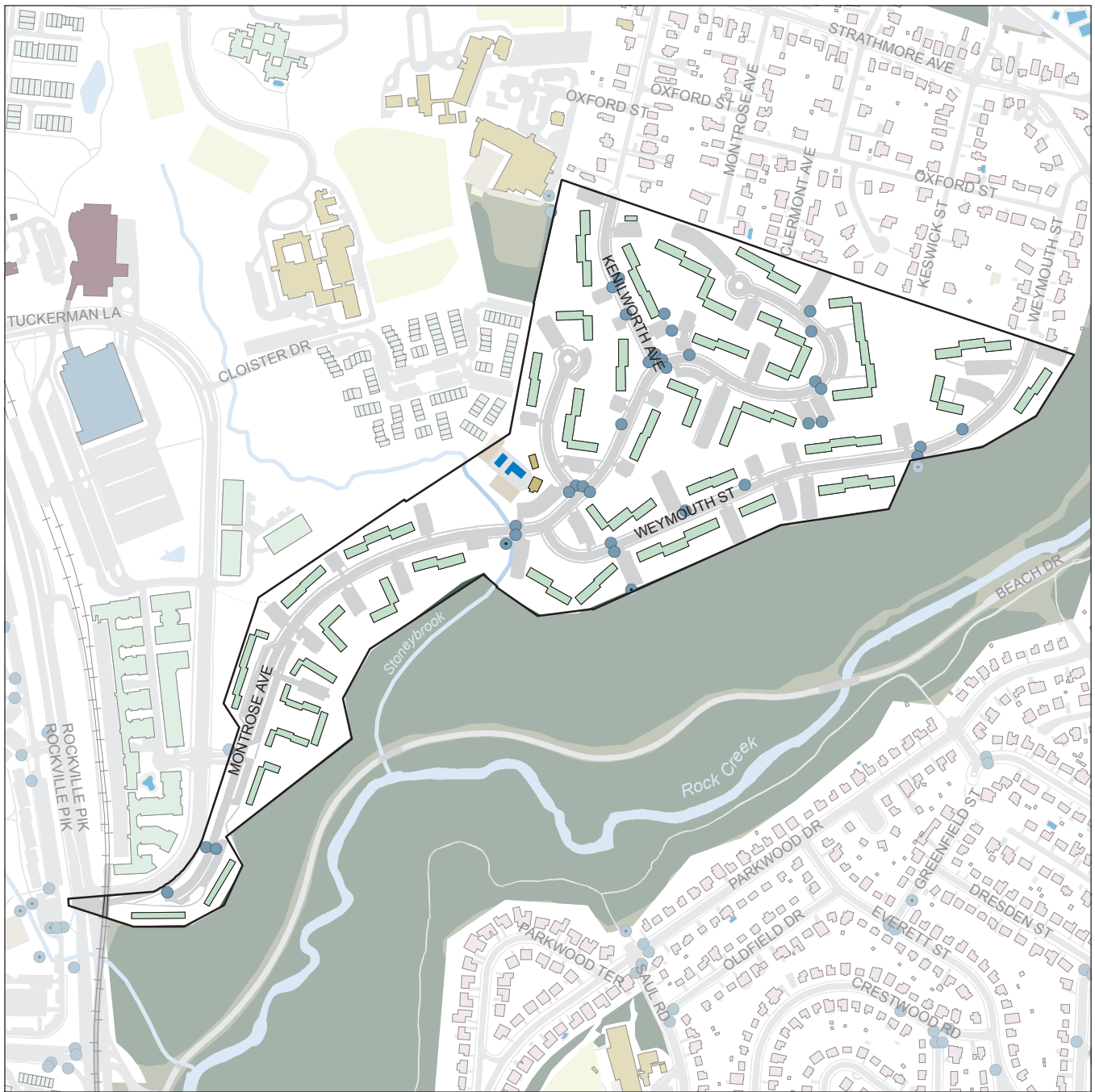
## Parkside Community Stormwater Survey

At the onset of this project, an electronic survey to assess residents' knowledge and opinions about stormwater was distributed via the unofficial Parkside Google Group, the Parkside Village Group, and the official Parkside Constant Contact list. The results of the survey are important because they provide insight into the community on a greater level than that provided by the stakeholder group. By nature, the stakeholder group is comprised of people that already have interest in, and a better knowledge base of, environmental issues. Having a more broad-based understanding of the community's knowledge and opinions allows EFC to make more informed recommendations, especially when it comes to actions involving community participation or buy-in.

The survey contained fifteen (15) questions about various aspects of stormwater including where stormwater comes from and its impacts on water quality, how people view their own role and impact in water quality issues, the types of environmental activities people participate in, and if stormwater is an issue within the Parkside community. The complete survey and results can be found in Appendix B. One hundred and four (104) people completed the survey. As expected, the results showed that knowledge and opinions about stormwater varied dramatically among the respondents.

### Highlights from the survey include the following:

- **33%** of the respondents have lived in Parkside for less than 5 years and **50%** for 10 years or less
- **82%** of the respondents own their homes
- **25%** said they pick up litter in the community
- **37%** said they do not believe their daily activities have a significant impact on water quality and **30%** were not sure if their actions impacted water quality
- **54%** of the respondents believe stormwater is an issue in the community
- **48%** of the respondents do not know what happens to water when it enters a storm drain and **10%** incorrectly believe that it goes to the waste water treatment plant
- Who respondents believe is the biggest polluter within the County was relatively evenly split among industry, agriculture, homeowners, development, and construction activities
- Reasons for concern about water quality were evenly split, with 3 people indicating that they were not concerned about water quality
- **30%** of the respondents said they had not seen or heard anything about water quality in the County over the past year
- Respondents had very little knowledge of, and few had participated in, any Montgomery County programs
- **44%** of respondents believe that promoting environmental lawn care and reducing the use of pesticides/herbicides would have the most benefit for the community. The second most popular answer was tree planting (26%)
- **22%** of respondents were interested in learning about environmentally friendly cleaning products. The second most popular answer was trash cleanups (18%), and 19% of the respondents were not interested in any of the suggested environmental activities.



**Features of the Built & Natural Environment**

- |                                  |                     |                   |
|----------------------------------|---------------------|-------------------|
| Strathmore Music Hall            | Athletic Court      | Waterbodies       |
| Institutional/Community Facility | Athletic Field      | Park              |
| Multi-Family                     | Swimming Pool       | Woodland          |
| Parking and Transportation       | Patio               | County Inlets     |
| Single Family Attached           | Non-Residential Pad | County Outlets    |
| Single Family Detached           | Impervious          | Parkside Boundary |

0 250 500 Feet



Figure 5 Parkside street and land use map

# Parkside Stormwater Issues: Community Priority Areas

As previously discussed, the topography and large amount of impervious surface in Parkside and the surrounding area create multiple stormwater challenges and issues. Many of the issues that were identified during the stakeholder meeting are similar in nature – erosion occurring on steeply sloped areas either between buildings or between buildings and the woods. Examples of such erosion include the area behind buildings 10507-10513 on Weymouth, behind 10649-10655 Montrose, and the area between the tennis court and the Stoneybrook community. This area is particularly challenging because of the property line and the fact that the water causing the problem is coming directly from Stoneybrook (Figure 6). The existing infrastructure (stairs, down spouts, underground utilities), steep topography, and expanse of these problem areas dictate a complex, engineered solution.

*Behind 10513 Weymouth:*



*Behind 10649 Montrose:*



*Behind tennis courts:*



**Figure 6** Examples of erosion

Unfortunately, these are not issues that Parkside will be able to completely resolve without outside assistance. However, there are some things the community can do to try and minimize erosion in these areas. Where possible, downspouts should be redirected away from eroding areas and into more heavily vegetated areas, such as the adjacent woodland. Installing landscaping fabric and re-seeding grass (such as what has already been done on Weymouth between buildings 10507-10513 and the woods) will also help minimize erosion.

Parkside management will need to enlist the assistance of an engineering firm to develop and implement long-term resolutions. Because there are multiple areas with the same issues and implementing long-term resolutions will be expensive, the recommendation is that management work with residents to do a thorough evaluation and ranking of these sites. This should be completed prior to engaging the assistance of a firm. This evaluation should include looking not only at the magnitude of the erosion, but also at the secondary impacts. For example, is the water flow entering buildings, is the erosion endangering trees, what are the potential impacts to utilities, and is the area in a high visibility/high use area, or is it out of site. Once the evaluation is complete, management should prioritize the sites, including the rationale for each ranking.

There are several important things to consider when engaging a consultant. First and foremost, seek bids from multiple firms and make sure that the firms under consideration have ample experience in stormwater management projects. It is perfectly acceptable to ask about their experience with issues similar to the ones in Parkside. It is also acceptable to request to see a portfolio, or to ask where local

projects are so that you can go and see their work first hand. Understanding the post-construction relationship, the type of follow-up the firm will provide, and how any post-construction issues will be handled is also very important. Lastly, in addition to making sure that they are presenting a competitive price for their work, it is also important for management to feel that the chosen contractor is someone that will listen to the community’s needs and that they can have a good working relationship with.

## Demonstration Project Opportunities

Demonstration projects are just like any other stormwater management project with the caveats that they are typically installed in high visibility areas, include educational signage, and are often used as a way to teach people about stormwater management. Demonstration projects are often installed to illustrate “treatment trains.” A “treatment train” is when a series of projects are coupled together to maximize benefit and show how projects can work together. Lastly, demonstration projects also provide good opportunities to partner with local watershed groups that can assist with project management and securing grant funding for project implementation.

There are multiple opportunities throughout the community to install demonstration projects. The best location for demonstration projects is the area surrounding the pool, tennis courts, and clubhouse. In addition to its high visibility, this area is ideal because of the number and variety of projects that

could be installed here. Figure 7 shows a map of the area and the potential project types. Projects that could be installed at this location include rainwater harvesting, replacing impermeable surfaces with permeable ones, conservation landscaping, and storm drain art. This location is also ideal for installing educational signage. Other potential locations for demonstration projects include the grassy area adjacent to 10507 Weymouth, the area adjacent to the top of Lot 301, the circular planting bed that is located in the road on Montrose near Building 10636, and on the rear of Building 10661 Montrose, adjacent to the community garden.



- Opportunities for storm drain art
- Opportunities for Conservation Landscaping
- Opportunity for rain water harvesting
- Opportunities for Permeable Pavers, Pervious Concrete, Porous Asphalt

The different types of projects and potential locations for installation are detailed below.

Figure 7 Opportunities for Parkside

## Rain Water Harvesting

Rain water harvesting is the use of rain barrels, cisterns, or other devices to capture and reuse water from rooftops. They come in a wide variety of shapes and sizes. In this case, because of the size of the buildings, cisterns would be the recommended option. Cisterns are large (typically 250 gallons or larger) sealed tanks that can be located above ground, partially buried, or below ground, and collect water from the downspouts on one or multiple roofs (Figure 8). The collected water is not potable, but can be used to do most things you would use metered water for, including watering plants. The most important questions to ask when considering installing rainwater harvesting devices is how much water can be captured and is there a use for the water? In order to function properly, devices must be emptied on a regular basis, ideally before the next rain. This is especially true of smaller devices.

Parkside has two locations that are ideal for the installation of cisterns. The first is on the clubhouse, as seen in Figure 7. In this case, the water could be used to water the plantings in the surrounding area. The other location is on the downspout of Building 10661 Montrose, Figure 9. The water captured in this cistern could be used to water the community garden. These two options came to the forefront because of the obvious ways that the water could be used. However, harvesting devices could be installed on most of the downspouts within the community, provided they are paired with a way to use the water.



Figure 8 Cistern



Figure 9 Community garden downspout

## Conservation Landscaping

Conservation landscaping is a garden that is designed to slow down the flow of water. Typically planted with native plant species, they improve water quality and provide habitat for native wildlife species, especially birds, butterflies, and other insects. To the average observer, they look just like any other flowerbed or garden (Figure 10).

As seen in Figure 7, there are several opportunities to install conservation landscaping at the clubhouse. The first option would involve converting the existing landscaping at the side of the clubhouse near the picnic table into conservation landscaping. This project could be done in tandem with installing a cistern on the clubhouse. The water from the cistern could be used to water the landscaping. The second opportunity is along the length of the tennis court, between the court and the concrete curb Figure 11. This project would provide an opportunity to remove the existing concrete and replace it with native plants. An alternative option would be to leave the concrete, install several cuts along the length of the curb, and replace the existing grass with native plants. Either option would increase infiltration and decrease the amount of runoff flowing down the slope and into the stream.

A second possible location for conservation landscaping is in the sunny clearing at the top of the hill adjacent to 10507 Weymouth (Figure 12). Installing a project in this location could help reduce the runoff impacting the area behind the buildings. Depending on the soil conditions in the area, this area could also be a good location for a rain garden (see below for a description of rain gardens).



Figure 10 Conservation landscape



Figure 11 Between tennis court and stream



Figure 12 Open space 10507 Weymouth

## Rain Gardens

Rain gardens look just like traditional flower gardens. The key difference between a rain garden and a traditional garden or a conservation landscape is that rain gardens are specifically designed to include a shallow depression. This depression allows them to briefly hold a small amount of water which slowly soaks into the ground (Figure 13). Rain gardens contain special soils that allow for better infiltration, are typically planted with native plants that have deep roots, and are mulched. This combination of soils, plants, and mulch allows rain water to soak into the ground more easily. The mulch also helps trap sediment and other pollutants that are picked up by rain water as it flows across the landscape. Rain gardens have the ability to capture, treat, and allow more water to soak back into the ground than traditional and conservation landscaping. A common misconception about rain gardens is that they provide a breeding ground for mosquitos. If properly designed and installed, the water in rain gardens will soak into the ground in approximately 24 hours, thus preventing them from providing mosquito habitat.

In addition to the location discussed above, the circular planter located on Montrose near Building 10636 may be another good location for a rain garden or conservation landscaping (Figure 14). The planting project could be combined with curb cuts that would allow water to enter the planting rather than just flowing around the area and continuing into storm drains. Whether this area is able to be converted will largely depend on whether or not there are utilities located in the island. It is likely that there are other suitable areas within the community for both conservation landscapes and rain gardens, however, these are the areas that immediately presented themselves during EFC's walking tour.

## Permeable Hardscapes (Pavers, Concrete, and Asphalt)

Permeable hardscapes (pavers, concrete, and asphalt) provide an alternative to traditional impermeable surfaces. Permeable surfaces allow water to infiltrate into the ground rather than causing it to pool or run across impermeable surfaces and they can dramatically decrease stormwater runoff and erosion. Permeable hardscapes can be used in heavy and light traffic areas including sidewalks, patios, and parking lots, and if installed properly, they stand up to traditional maintenance such as shoveling and snow plowing. Permeable hardscapes are more expensive to install and require different maintenance than traditional surfaces. For these reasons, they are typically recommended for areas where a new surface is being installed or an existing surface needs to be replaced.

The bike rack (Figure 15) and picnic table area (Figure 16) at the clubhouse are ideal locations to install permeable paver projects. The areas are small enough that the removal of the existing surfaces would not be cost prohibitive. Another option is the paved area adjacent to the top of Lot 301 (Figure 17). This area is currently used as a cut through to reach the school. There is an old bench in the area indicating that it was once used as a sitting area. Replacing the existing asphalt with a combination of permeable pavers and landscaping, combined with simple maintenance and pruning of the existing vegetation could create an inviting gathering spot while also decreasing runoff from this high spot on the property.



Figure 13 Rain garden



Figure 14 Circular bed on Montrose



Figure 15 Bike rack at clubhouse



Figure 16 Picnic table at clubhouse



Figure 17 Adjacent to lot 301

## Storm Drain Art

Many people do not realize that most storm drains connect directly to bodies of water. This is true of Parkside residents as well. Nearly half of the residents that completed the survey (Appendix B) stated that they did not know what happens to water when it enters a storm drain. Similar to the storm drain marking programs that use stencils or plaques, storm drain art is a mural that is painted on top of an inlet as a creative way to educate residents about the connection between storm drains and water quality (Figure 18). There are several good opportunities to install storm drain art in the community, including the drain in front of 10618 Montrose. Montgomery County runs a storm drain marking and a storm drain art program. Information on these programs is included in Appendix E.



Figure 18 Montgomery County storm drain art

## Maintenance Opportunities

There are several maintenance opportunities throughout the community that could aid in stormwater management and improve water quality in Stoneybrook Tributary. These include debris management, routine gutter maintenance, developing a salt management plan, and developing a tree succession plan.

### Debris Management

During the walking tour, EFC staff noted multiple occasions where debris (leaves, twigs, sediment, etc.) had accumulated down slope in the corners of parking lots, and along curbs. In some cases, this debris was impeding the path runoff would follow to get to a storm drain, resulting in a back-up of water into the road way or ponding. In other cases, the debris was redirecting stormwater, enabling it to cross over sidewalks, flow through the yard, and exacerbate existing erosion issues. An example of where this is happening is in the lower corner of Lot 311 (Figure 19). Routinely cleaning up debris from roads and parking lots will help to ensure that stormwater is flowing through the appropriate paths. Eliminating debris will also reduce breeding areas for mosquitos.

There is no set or recommended time frame for this maintenance as it will vary seasonally. Start by surveying the community to determine where the problem areas are. Once they have been cleaned up, monitor them monthly to determine how quickly the problem recurs. Problem areas should also be evaluated after large storm events.



Figure 19 Drain debris lot 311

### Gutter and Downspout Maintenance

When gutters are clogged, stormwater overflows out of them rather than draining through the downspouts. This can lead to foundation issues and additional erosion issues. It is also important that downspouts remain free of debris and that the ends on the ground are not blocked. Blocked downspouts can result in ponding or in water flowing back toward the foundation.

During the walking tour, gutters and downspouts throughout the community appeared to be in good, working condition, however, they were not thoroughly examined. A comment in the community survey indicated that there are some problem areas, including an issue with downspouts becoming buried as a result of lawn equipment running over them. In the case that discharge from a downspout is causing erosion or ponding, consider using a splash block or rock to redirect, slow down, or dissipate the flow.

If a routine gutter inspection schedule is not already in place, the recommendation is that gutters be



inspected a minimum of twice a year. This should happen in the fall, after leaf-fall, to ensure gutters are free of leaves and debris for the winter, and in the spring to ensure gutters are clean for spring rains. It is also important that the grounds crew be aware of downspouts and that any damage caused by mowing is reported and repaired in a timely fashion. An additional suggestion is to educate residents about the common gutter and downspout issues and to encourage them to report issues through the appropriate channels when they see them.

## Road and Sidewalk Salt Maintenance

Rock salt is one of the most efficient and cost effective deicers available. The amount of salt used to treat roads has skyrocketed from 0.16 tons/year in the 1940s to nearly 20 tons/year in 2017.<sup>3</sup> Much of the salt that is applied either washes directly into waterbodies, or is carried into our lakes, rivers, and streams when the snow and ice melts. Studies have suggested that as much as 70% of the salt applied to roads stays within the watershed, and it can take decades for that salt to be removed.<sup>4</sup> Given its common usage and the amount of time it remains in a waterbody, it is understandable why water quality issues resulting from the use of salt are common throughout the region. Salt poses threats to aquatic life, it leaches into the ground causing damage to plants, it impacts drinking water supplies, and it can infiltrate groundwater. In addition to the impacts on water quality, salt use is also detrimental to masonry, including sidewalks, and metal, including cars.

The impacts of salt can be minimized through proper use and storage. EFC's recommendation is to develop a salt management plan for the community. If a plan already exists, update it as necessary to include the most current information on proper application and storage. One of the most important things to remember is that like fertilizer, over-application does not yield improved results, it just adds to the amount of salt washing into our waterways. There are resources listed in Appendix E that can help you develop a salt management plan. If salt application is handled by an outside contractor, Parkside management should discuss the contractor's salt management plan with them. If it does not align with Parkside's wishes, ask them to modify their plan for the community.

## Tree Succession Plan

Having a healthy tree canopy provides a multitude of benefits to the community. In addition to the obvious benefits of aesthetic value and shade, trees also play an important role in air quality, they help manage stormwater and reduce erosion, and they provide important habitat and food for many animals.

Unlike many communities, Parkside's tree canopy is fairly well intact. However, the existing canopy is clearly aging and there is evidence of where large trees have either fallen or been cut down. Like many other communities, Parkside handles tree loss on a case-by-case basis, meaning that when a tree is lost, a decision about if and how to replace it is made. There is no long-term plan for how to deal with an aging canopy. EFC's recommendation is to develop a formal *Tree Succession Plan*. Trees need to be handled the same way any other public asset that would be subject to asset management planning would be treated. They must be inventoried, monitored, maintained, budgeted for, and replaced on a set schedule. This is the purpose of a Tree Succession Plan – to establish these protocols. While this may seem like a daunting task, especially when considering the fact that Parkside currently has a good canopy, proper planning and maintenance now will increase the longevity of the existing canopy and reduce costs in the long run. The recommended approach is to work with a professional to develop the plan. A trained forestry professional or arborist will be able to make the best recommendations, taking into consideration all the relevant criteria for long-term planning, including climate change.

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3 <https://ensia.com/features/road-salt/>

4 <https://mde.maryland.gov/programs/Marylander/Pages/roadSalt.aspx>

# Community Action Areas & Green Team Opportunities

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*Community Action Areas* are issues and opportunities that were discussed with the community or came to light in the community survey, but are currently maintained or not posing a significant problem. It is important to monitor these areas so that if an issue arises or escalates, appropriate action can be taken. In most cases, Community Action Areas are initiatives that could be undertaken and maintained by the community without major assistance from, or coordination with, the County or outside contractors.

The results of the community survey indicated that many residents are unaware of the impacts their daily activities have on water quality. The results also indicated that residents are choosing not to participate in, or are unaware of, local environmental volunteer opportunities. Community Action Areas provide excellent opportunities for community engagement and education, many of which could be led by the Green Team. A calendar of suggested outreach and education opportunities can be found in Appendix F. This calendar can be used as a guide for how and when to engage residents in some of the community's issues and action areas.

## General Stormwater Education

As shown in the results of the Community Stormwater Survey, while there are some members of the community that have a deeper understanding of stormwater and its impacts, many of the residents do not. Two thirds of the survey respondents either said that they did not think their daily activities had a significant impact on water quality or said that they did not know if their activities had an impact on water quality (Question 5), and over half of the residents surveyed do not know what happens to runoff when it enters the storm drain (Question 7). Likewise, residents are also lacking awareness about Montgomery County programs and volunteer opportunities (Questions 11 and 12). The good news is, based on the write-in portion of the survey, the community seems interested in learning more about stormwater and becoming more engaged in environmental activities.

EFC's recommendation is that the Green Team should focus on developing a campaign to educate the community about stormwater and engage them in environmental stewardship activities. The topics discussed in this section of the action plan all present good opportunities to educate and engage the community. The Green Team should start small by focusing on one or two opportunities or topics. Once a system is developed and there is a better understanding of how best to engage residents, consider expanding into a larger program. The County has a variety of materials available about these topics and others that can be used for educational purposes. There are also many educational and volunteer opportunities through local non-profit organizations, such as Audubon Naturalist Society. Should the decision be made to develop a large-scale program, there are funding opportunities available that could assist with the process. Information about educational resources, volunteer opportunities, partner organizations, and funding opportunities are available in Appendix E.

## Litter

Generally speaking, Parkside does not have a significant litter issue. Likewise, no one mentioned illegal dumping as a concern. This is most likely due to the isolated nature of the community. That said, 24% of the survey participants said that they felt the community would benefit from a litter reduction program (Question 13), and one resident specifically noted concern over litter having easy access to storm drains.

When asked about their participation in County litter programs, 30% said that they were unaware of County run litter cleanups, 61% said they were aware of the programs but did not participate, and only 8% said they have participated in a County litter cleanup (Question 12). On the other side of that equation, 25% said that they are already picking up litter in the community (Question 4).

Litter cleanups are one of the easiest and cheapest community engagement opportunities. Even though litter is not prevalent in Parkside, there is something to be said for showcasing a clean neighborhood. If people see that others care, they are more inclined to care themselves, and less inclined to litter. Community cleanups make great, family-friendly events. They can be held on any scale, provide opportunities for students and scouts to fulfil community service/student service learning hours, and are great opportunities to educate others about the impacts of trash.

Organizing community cleanups would be an easy activity for the Green Team to spearhead. Because Parkside does not have a significant trash issue, start small by organizing a cleanup around Earth Day and another in the fall. The areas in Parkside that are most likely to benefit from cleanups are the stream channels and surrounding woods. Consider coupling the cleanups with storm drain marking. Combining these activities provides an additional opportunity to educate residents about the connection between storm drains and water pollution.

There are several avenues that can be taken to get assistance with holding a cleanup. Montgomery County DEP and Montgomery Parks both have volunteer programs. ***If you want to hold a cleanup on County or park land, it is essential that you contact them first to get approval.*** Rock Creek Conservancy and the Alice Ferguson Foundation also have robust volunteer programs focusing on trash cleanups. All of these entities are available to assist with community cleanups and in most cases, supplies (bags, gloves, etc.) can be provided and arrangements can be made to have the bags collected free of charge. Contact information for cleanup partners is listed in Appendix E.

## Protecting and Labeling Storm Drains

Nearly 75% of the survey participants did not know that Montgomery County has a storm drain marking program (Question 12). Furthermore, nearly half of the survey participants indicated that they didn't know where stormwater went once it entered the storm drain (Question 7).

Storm drain labeling can be an effective educational tool, especially if paired with a cleanup event. Many people believe that storm drains go directly to the wastewater treatment plant and are not aware of the fact that storm drains often empty directly into bodies of water. Coupling a storm drain marking event with a cleanup provides additional opportunities to talk about the connections between storm drains and water pollution, including litter and lawn debris.

Montgomery County has a storm drain marking program as well as a storm drain art program. Storm drain marking uses stencils or plaques to indicate that a drain is connected directly to a local waterbody. Storm drain marking is a permitted activity. The County will provide storm drain markers for free, but the community/project leader must complete an online application. Storm drain art, which was previously discussed under the Demonstration Projects section of this document, involves painting murals on top of the drains. Storm drain art must also be approved by the County. See Appendix E for contact information.

It is also important to note that if a storm drain in your neighborhood is clogged with leaves or trash, the issue can, and should, be reported through 311. Dumping materials, such as oils, trash, and chemicals, into storm drains is considered illegal dumping. If you see this occurring, it should also be reported to the County.

## Street Sweeping

A Montgomery County contractor runs a street sweeper through the community once a year in the spring (typically in early April). Stakeholders did not identify problems with this program in general, but did note that the date is not well-publicized and that not everyone will move their car as requested.

As with most residential communities, better advance notice of the street sweeper's schedule and stronger penalties for not moving cars would improve the effectiveness of this program. Parkside should use its communication channels to educate residents about why street sweeping is important, reinforce the request for people to move their cars, and publicize the date street sweeping will occur. Because Parkside is an HOA with the ability to enforce its own parking regulations, management should investigate their ability to implement their own penalty for not moving cars on street sweeping day, much the same way someone would be penalized for parking without a permit. Information about street sweeping, including the schedule, is available on the MC DOT website. See Appendix E for the link.

## Leaf Pickup

Montgomery County conducts two leaf pickups in the fall. Parkside uses an outside contractor to make sure that leaves are collected and moved to a central location in order to facilitate County pickup. No major issues with leaf collection were noted by the stakeholder group or survey respondents. Parkside should use its communication channels to educate residents about why leaf collection is important, and to publicize both the dates when the contractor will be working on moving leaves as well as the County collection dates. If residents need to move their cars to facilitate these processes, that information should be communicated as well.

Parkside's maintenance staff may want to consider alternative uses for some of the leaves. One potential use may be as mulch for planted areas, potentially reducing the budget for purchasing mulch. Information about leaf collection, including the schedule, is available on the MC DOT website. Links to resources for alternative uses of leaves and the MC DOT website can be found in Appendix E.

## Invasive Species Management

Parkside residents have expressed significant interest in invasive plant species removal and management. In 2014, Parkside contracted Gracefully Green to conduct a Non-Native Invasive Species Audit of the community. The audit identified 28 non-native [invasive plant species](#) on the grounds. Locations of the plants were mapped out and the species were ranked according to the severity of infestation. The audit also recommended the best removal methods and proposed replacement species. The audit also noted that while Parkside has an existing mature tree canopy dominated by native species, the understory trees and shrubs, as well as groundcover species were lacking.

Managing invasive species is essential to maintaining a healthy tree canopy and understory. Invasive plants have the ability to thrive in a broader range of conditions. They tend to grow more quickly, giving them the ability to outcompete native species for sun, water, and space. Additionally, invasive vines grow around the trunks and branches of trees, damaging and in many cases, strangling and killing the tree. Native plants are better for the environment because they require less maintenance, watering, and fertilizing. Many native species, especially native grasses, have deeper root systems which do a better job of holding soil in place and preventing erosion. Native plants also provide essential habitat for native animals and insects, and are particularly important for pollinator species.

A small group of committed community members have been focusing on the area behind 10636 Montrose which is referred to as the "Community Native Hill Pilot Project." In the audit, the plants that were identified as high priority were the shrub Asian bush honeysuckle (*Lonicera maackii*), the groundcover species garlic mustard (*Alliaria petiolata*) and Japanese stiltgrass (*Microstegium vimineum*), and the vines porcelain berry (*Ampelopsis brevipedunculata*), oriental bittersweet

(*Celastrus orbiculatus*), English ivy (*Hedera helix*), Japanese honeysuckle (*Lonicera japonica*), and common periwinkle (*Vinca minor*). Progress in this area has been slow, largely due to deer browse on the new plantings.

EFC staff have reviewed the documents prepared by Gracefully Green and believe that the audit provides Parkside with valuable information and a solid plan for moving forward. Long-term management of invasive plants requires on-going attention and is often expensive. However, with determination and time, it is possible to eradicate invasives and transition back to a native plant community. Parkside should continue to use the documents provided by Gracefully Green as a guide for invasive species management. Residents should continue working on the Community Native Hill Pilot project, keeping these suggestions in mind:

- **Tackle English ivy first.** Although one of the most prevalent invasive species, English ivy is also one of the easiest to deal with, especially if it is arborized (growing on trees). It is an easy species to tackle because you do not actually remove it, you “girdle” it to kill it while it is still on the tree. In other words, you cut the ivy to separate the roots from the tree, but you leave it in place. Removing ivy from trees is not recommended because it often damages the bark and causes additional damage. To learn more about proper English ivy removal from trees visit the Arlington-Alexandria Tree Stewards website.<sup>5</sup>
- **Divide the area into smaller, manageable sections and tackle the area section by section.** This approach is especially effective with English ivy. Invasive plant management will not happen overnight, and it is easy to get discouraged. Having people focused on specific areas makes it easier to see progress. Seeing small victories will keep people motivated.
- **Do not remove invasive species from the ground without a plan for replacing them.** You must replant the open areas quickly to prevent colonization by other invasive species.
- **Make managing this area a priority for the Green Team and develop a plan to recruit other residents to help.** Once you have a larger number of people committed to the area, consider having small teams of people adopt specific areas to focus on.
- **Do not rule out the option of hiring a professional.** If there are large areas of invasives that need to be removed and replanted, the best option may be to pay someone to do it. This is especially true of areas dominated by species that are notoriously hard to eradicate, such as Japanese stiltgrass. Sometimes chemical treatment is the most effective option. A good place to look for a contractor to assist with invasive species management is on the Chesapeake Bay Landscape Professionals website. A link to their website can be found in Appendix E.

Lastly, residents that are interested in working on the invasive species management projects should attend Weed Warrior training. Weed Warriors is a training and certification program run by Montgomery County Parks for people that are interested in invasive species management. The program is specifically designed to train volunteers to remove invasive species in Montgomery County parks,

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5 <https://treestewards.org/take-ivy-off-trees/>

however, the techniques and information taught in the training are also applicable to the work that Parkside is trying to accomplish. Individuals that have undergone Weed Warrior training can then train more volunteers to work on the Community Native Hill Pilot Project as well as invasive species removal at other locations in the community.

## Tree Canopy

Parkside has a relatively intact tree canopy, however, the canopy is aging. As previously discussed, EFC recommends that management work with a professional to develop a Tree Succession Plan to guide them through the process of caring for and replacing trees. There are areas within the community that on the surface appear to be potentially good planting locations. However, as indicated by the stakeholder group and property management, several of those locations have underground issues that prevent them from being planted. The Tree Succession Plan will assess all potential planting areas and determine the best locations for new trees.

Until a Tree Succession Plan can be developed, residents can conduct a tree canopy analysis using the i-Tree Canopy tool. The i-Tree Canopy tool uses Google Maps aerial photography to conduct a canopy assessment within a defined area. It can also be used to estimate tree benefits. Parkside could use the information from i-Tree Canopy to develop a better understanding of the existing canopy and guide tree planting until the Tree Succession Plan can be developed. The information obtained through the i-Tree canopy assessment will also be useful to the contractor hired to develop the Tree Succession Plan.

For current tree needs, there are several County and State programs in place to assist with increasing tree canopy for little or no cost. Tree Montgomery provides and plants free trees on private property and the Montgomery County DOT tree program provides and plants free street trees. Marylanders Plant Trees is a program designed for individuals that want to purchase and plant their own tree. Through this program, individuals receive a coupon to purchase a tree at a discounted price from participating nurseries. Information about these programs can be found in Appendix E.

## Environmentally Friendly Cleaning Products

The Community Stormwater Survey asked respondents which environmental stewardship activities they were most interested in learning more about. The most commonly selected answer (22%) was environmentally friendly cleaning products (Question 14). Though not as direct as the connection between products used outside, there is a connection between cleaning products used in the home and water quality. A good way to think about it is that products that reduce risks to human health are most likely going to reduce risks to water quality as well. More specifically, in some areas, water from household drains travels through the same pipes and mixes with stormwater. This is called a Combined Sewer System (CSS). During heavy rains, the combined system can become overwhelmed, resulting into overflows. This means that stormwater from roofs and roads, combined with water from household drains, enters our rivers and streams. Though this is not the case in Parkside, it is a frequent occurrence in other portions of the Rock Creek watershed. Using “green” products at home means less chemicals entering the water, and in the case of combined systems, less chemicals in the overflow.

Environmentally friendly or “green” cleaning products are much more readily available than they used to be. Traditional cleaning products often contain hazardous chemicals that can impact both our health and the environment. In addition to containing fewer harmful chemicals, many “green” products also come in more environmentally friendly packaging. With so many options available, making the “right” choice can be confusing. One of the best tips is to look for products with the “Green Seal.”<sup>6</sup> Green Seal has developed standards for over 500 product categories including sanitary paper products, personal care and cosmetic products, household laundry products, and household cleaning products. If you don’t

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6 <https://www.green Seal.org/>

want to purchase products, there are plenty of resources on the internet that will instruct you on how to make your own cleaning products using ingredients such as tap water, baking soda, vinegar, and plant-based liquid soap. A list of websites to help guide you and tell you what to look for when picking environmentally friendly cleaning products is found in Appendix E.

## Advocacy

As residents and property owners, Parkside residents can take advantage of opportunities to advocate for federal, state, and local projects and initiatives they support. The best way to do this is to sign up to receive action alerts from one of several local, state, or Bay-wide organizations such as Audubon Naturalist Society or the Chesapeake Bay Foundation. Through these listservs, subscribers receive emails providing them with easy links and pre-written letters that can be used to reach out to elected officials in support of a variety of environmental initiatives that may be of interest. Residents can also reach out to elected officials and County Council to show support, or oppose, local initiatives and legislation, and when available, take advantage of opportunities to respond to calls for public comment. Informing residents of these opportunities and encouraging others to educate themselves and to take advantage of advocacy opportunities is excellent example of a Green Team project. Links to organizations with advocacy alerts and a link to identify your elected officials and council member are included in Appendix E. The list below provides some examples of ways that the residents of Parkside can become more engaged in advocacy opportunities they identify as important.

- **Stay informed on County watershed plans and take advantage of public comment periods.** Review and provide comments where appropriate. As a resident, it is your prerogative to let the County staff and elected officials know that individuals and the community as a whole supports green infrastructure and other stormwater management practices.
- **Let the Montgomery County Department of Environmental Protection (DEP), Montgomery Parks, and elected officials know that Parkside residents support the Stoneybrook Tributary stream restoration projects.**<sup>7</sup> The County portion of the project, a portion of which lies within Parkside, has been suspended, but the Parks portion of the project, which lies just outside the Parkside boundary, is moving forward. A map of this project can be found in Appendix D.
- **Take advantage of opportunities to let the County and elected officials know about issues within the community.** Encourage them to incorporate stormwater management practices into other road and sidewalk projects and show support for the Green Streets program. Information on how to identify your elected officials and council member is contained in Appendix E.
- **Document the stormwater management and environmental stewardship efforts taking place in Parkside.** This local-led effort and groundswell of community support relays to the County a level of commitment and initiative on the part of the community.
- **Connect to local, state, and Bay-wide advocacy organizations.**

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7 <https://www.montgomerycountymd.gov/water/restoration/stoneybrook.html>

# Rock Creek Watershed Assessment and Garrett Park Catchment Plan

Montgomery County released the Rock Creek Watershed Assessment in February 2019. The watershed assessment provides a detailed overview of the watershed, including existing conditions and land use, existing pollutant loads, and the existing impervious cover within the watershed. The assessment also identifies potential restoration opportunities. The appendix of the watershed assessment includes detailed assessments of select catchments, including the Garrett Park Catchment, which includes a large portion of Parkside within its boundary.

While there is important information available in the Rock Creek Watershed Assessment, it is quite lengthy and portions of it are very technical. The Garrett Park Catchment Plan is significantly shorter and easier to digest. The purpose of the catchment plans was to identify focus areas where multiple stormwater management projects could be installed to develop treatment trains in order to maximize the benefits. In all, the catchment plan identifies thirteen (13) good/fair project opportunities within the Parkside community. These projects include stream restoration, stormwater management facilities (SWM), and community environmental site design (ESD). Stormwater management facilities are large-scale projects designed to capture, redirect, and/or treat stormwater. Example projects include replacing impermeable surfaces with permeable ones and bioretention projects such as rain gardens. Community environmental site design projects serve the same purpose, but are designed on a smaller scale and intended to be installed on private property such as homes. In addition to replacing impermeable surfaces, ESD projects also include bioretention (rain gardens and conservation landscaping) and rain water harvesting (rain barrels and cisterns).

As previously discussed, many of the stormwater management issues in Parkside will not be resolved without additional work happening in the Town of Garrett Park. Several projects proposed in the catchment plan lie on the border between Parkside and Garrett Park and additional projects were identified within Garrett Park. It is imperative that Parkside residents and Management take advantage of opportunities to communicate their support for the projects identified in the catchment plan to the County. Knowing that there is community buy-in can make a huge difference to the County when considering projects. Management should also reach out to Garrett Park to discuss opportunities to partner on projects and show united support for County-led initiatives.



# Summary

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This action plan contains many recommendations for how Parkside can address stormwater issues within the community. A list highlighting those recommendations is located at the end of this summary. Specific details about the recommendations can be found throughout the various sections of the action plan. Parkside should also review the information presented in Montgomery County's Rock Creek Watershed Assessment and the Garrett Park Catchment Plan and look for opportunities to work with or support the County, or to join forces with other entities, on stormwater management practices.

Parkside has done a good job identifying issues and problem areas, and has already taken steps to begin acting on some of the issues. However, the community needs to figure out the best way to organize around those issues. The recommendations and resources provided in this action plan can be used to provide that roadmap. An important part of that process will be starting to think locally. In other words, thinking about what can be done on community property and as individual citizens, not just what can be done as a community.

The primary concerns identified through this process were the erosion issues that are prevalent throughout the community, situational flooding, and invasive species management. Other topics that were discussed, but not noted as significant issues, include storm drain protection and labeling, litter, street sweeping, leaf pickup, and tree canopy. Some of the recommendations made (trash cleanups, promoting street sweeping, contacting elected officials, etc.) can easily be undertaken without any assistance from partners. However, some of the recommendations (actions regarding large-scale erosion issues, some of the invasive plant species management, and flooding) will either require, or be easier with, some level of assistance from the County or other partner entity.

In particular, the large-scale erosion issues throughout the community will require the assistance of an engineering firm and contractor. Elimination of some of the erosion issues will only be possible if the communities that lie up-slope of Parkside also undertake stormwater management initiatives. Some of these activities could be undertaken by the communities themselves, while others will require County intervention. In the interim, there are some projects that Parkside can undertake to help reduce stormwater flow and minimize erosion. These actions include, but are not limited to, installing rain water harvesting where logical and feasible, installing conservation landscaping and rain gardens on community property, keeping parking lots and curb and gutter areas free of debris to allow stormwater to flow along the desired paths, and replacing impermeable surfaces with permeable ones.

Should the community decide to move forward with some of the more complex recommendations that do not require County interaction, such as developing installing demonstration projects around the clubhouse or installing cisterns on any buildings, Parkside should consider reaching out to Amanda Rockler at the Maryland Extension/Sea Grant office. Ms. Rockler was part of the EFC team that met with Parkside stakeholders and her organization has the capacity to help the community navigate the process and nuances of the more complex recommendations given in this document. Contact information for Ms. Rockler can be found in Appendix E.

Regardless of how Parkside decides to proceed from this point, it is paramount that residents talk to each other and continue to take ownership of the community. The best way to have an impact is to educate each other.

# Recommendations

1. Review the Rock Creek Watershed Assessment and Garrett Park Catchment Plan (Appendix A). These documents provide an overview of existing conditions within the watershed and identify potential restoration opportunities. This document will not only help residents better understand the pressures impacting local water quality, but it may also help identify County projects that the community will want to support.
2. Conduct a thorough survey of erosion and flooding issues within the community and use this survey to prioritize the order in which these issues are addressed.
3. Engage an engineering firm to develop professional recommendations that will address the large-scale erosion that is happening between buildings and between the buildings and wooded areas.
4. Reach out to the Town of Garrett Park to discuss the potential of collaborating on stormwater management projects, and supporting County stormwater initiatives, that will benefit both communities.
5. Consider installing demonstration projects around the clubhouse and at other select locations in the community.
6. Make sure that a gutter maintenance plan is in place, and where possible, redirect down spouts to heavily vegetated areas (such as the adjacent woodlands) to reduce erosion in problem areas.
7. Develop plans for debris management, gutter and downspout maintenance, and salt usage. If plans already exist, make sure that they are up to date with the most current information and recommendations.
8. Hire a professional forester or arborist to develop a Tree Succession Plan for the community.
9. Conduct a tree canopy assessment using i-Tree and develop a plan for increasing tree canopy in yards as well as through street trees.
10. Continue to use the Non-Native Invasive Species audit that was developed by Gracefully Green as a guide for invasive species management and continue working on the Community Native Hill Pilot Project.
11. Encourage residents that are interested in invasive species management to attend Weed Warrior training.
12. Use the Green Team to spearhead outreach and education opportunities throughout the community including trash cleanups, storm drain marking, and general education related to stormwater and its impacts.
13. Utilize the Outreach Plan (Appendix F) to schedule activities and educational posts throughout the year.
14. Utilize the Green Team and Parkside's communication channels to promote street sweeping and leaf collection dates. Reinforce the importance of participating in these programs and moving vehicles as requested.
15. Continue advocating for green infrastructure practices with County staff, elected officials, and council members.
16. Step up advocacy efforts by signing up to receive action alerts and taking advantage of opportunities to show support for green infrastructure and other stormwater management practices by reaching out to elected officials and council members.

# Glossary

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**Clean Water Act (CWA)** – The Clean Water Act is a U.S. federal law that regulates the discharge of pollutants into the nation’s surface waters, including lakes, rivers, streams, wetlands, and coastal areas. Passed in 1972 and amended in 1977 and 1987, the Clean Water Act was originally known as the Federal Water Pollution Control Act.

**Total Maximum Daily Load (TMDL)** – The maximum amount of a pollutant that can enter a body of water while still meeting water quality standards. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant.

**Municipal Separate Storm Sewer System (MS4) Permit** – MS4 permits are designed to reduce pollution that is coming specifically from the stormwater travelling through storm drains. They are federally mandated and issued by the state.

**Stormwater/Stormwater Runoff** – Water that originates from precipitation events, including rain and snow fall and ice melt. Stormwater runoff is stormwater that runs across surfaces, picking up pollutants such as nutrients from lawn care, contaminants from pet waste, and oil from cars and sediment, rather than soaking into the ground.

**Impairments** – Any contaminant that causes a body of water to not meet the set water quality standards. Impairments can include nutrients (nitrogen, phosphorus, etc.), chemicals (pesticides, herbicides, etc.), bacteria, trash, and other pollutants such as oil and gas.

**Watershed Implementation Plan (WIP)** – WIPs serve as a roadmap for how a jurisdiction is going to partner with federal and local governments to achieve and maintain water quality standards. They include detailed, specific steps each of the seven Bay watershed jurisdictions will take to meet the pollution reduction goals of the Chesapeake Bay Total Maximum Daily Load (TMDL) by 2025. These plans consider such things as ecological restoration and sustainability while allowing for greater transparency and accountability for improved performance.

**Runoff** – Any water, regardless of source, that flows over the land and into a water body. Runoff can be generated by many sources including rain fall, snow melt, and man.

**Impervious** – Impervious surfaces, also called impermeable surfaces, are hard surfaces that do not allow water to soak into the ground and increase runoff. They are often man-made, such as sidewalks, roads, and rooftops, but can also be naturally occurring, such as compacted soils.

**Green Infrastructure (GI)** – Green Infrastructure is a technique that treats stormwater at its source while providing environmental, social, and economic benefits. Many GI practices mimic the natural water cycle. Examples of GI practices include rain gardens, rain water harvesting, permeable pavers, and green roofs.

**Green Team** – A group of people representing a community that take responsibility for educating others about environmental issues and promote environmental stewardship by organizing events to educate and engage the community.

**Erosion** – The wearing-away of surfaces by wind or water. With regard to stormwater, the word erosion is most frequently referring to the wearing away, or loss of soil due to the flow of water.

**Treatment Train** – A treatment train is a combination of projects designed to lessen the impacts of stormwater by capturing, slowing, and removing pollutants from stormwater. An example of a treatment train would be capturing the water from a downspout with a rain barrel, using the water from the barrel to water a conservation landscape, and directing the overflow from the barrel to a permeable paver patio.

**Rainwater Harvesting** – Capturing and storing water from rooftops so that it can be re-used at a later date. The most common practices used for rain water harvesting are rain barrels and cisterns.

**Permeable** – Permeable or pervious surfaces allow water to infiltrate into the ground rather than causing it to pool or runoff. Permeable surfaces can dramatically reduce stormwater runoff and erosion.

**Conservation Landscaping** – A garden that is designed to slow down the flow of water. Slowing the flow gives plants the opportunity to take up more water and nutrients, and allows more water to soak into the ground. The mulch in the landscape also serves to trap sediments and other pollutants. All of these things result in improved water quality. Typically planted with native species, conservation landscaping also provides important habitat for native wildlife species, especially birds, butterflies, and other insects.

**Rain Barrel** – A device that is attached to a downspout in order to capture and store water from rooftops. Rain barrels are installed above ground and typically store between 50 and 150 gallons of water. Due to their smaller size, rain barrels are most frequently used for residential purposes.

**Cistern** – Similar to a rain barrel, cisterns are used to capture and store water from rooftops. The main difference between a cistern and a rain barrel is size. Cisterns typically store 250 gallons or more. They can be installed above or below ground and are most often used on larger buildings and can be appropriate for commercial settings.

**Potable** – Water that is safe to drink. The water harvested in barrels or cisterns is not potable.

**Native Plants** – A plant is considered native if it has occurred naturally in a specific region without human introduction. Native plants are better suited to the environments they are found in, meaning they typically require less watering and fertilizing. They have deep root systems that prevent soils from becoming compacted and take up water more efficiently and provide important habitat for native insects, birds, and other animals, especially pollinator species.

**Rain Garden** – A depressed area in a landscape that is designed to collect rainwater from a roof, driveway, or street and allow it to soak into the ground. Rain gardens are typically planted with native plants and can look just like any other traditional garden.

**Tree Succession Plan** – A plan that details the proper asset management of trees including inventory, monitoring, maintenance, and replacement. A tree succession plan will also take the budget associated with each of these tasks into consideration.

**Invasive Plant Species** – A non-native plant species that also causes environmental harm, economic harm, or is harmful to human health. A plant can be non-native but not be considered invasive. Invasive plants are problematic because they outcompete native species for water, nutrients, sunlight, and space, and they do not provide the same co-benefits for wildlife that native species do.

**Combined Sewer System (CSS)** – A sewer system in which wastewater from homes and businesses and stormwater share the same pipes. In a combined system, when there is too much water flowing in the pipes, such as after a large storm event, excess water overflows from the system. These overflows result in untreated wastewater and stormwater directly entering water bodies.

**Catchment Plan** – Another name for a watershed plan. The Garrett Park Catchment is approximately 29% impervious and largely residential. The catchment plan was created by Montgomery County DEP in order to identify focus areas where projects could be combined in order to maximize restoration efforts to enhance local water quality and ecosystems.

**Community Environmental Site Design (ESD)** – A stormwater management technique that takes the existing environmental conditions into consideration when choosing the project type and location.

**Bioretention** – A type of stormwater management project that uses a combination of plants, substrates (soil, sand, mulch, etc.), and ponding to capture stormwater and remove pollutants before the water is either discharged or soaks into the ground.

# Appendix A: Catchment Plan

# Garrett Park Catchment Plan

## Overview

Garrett Park catchment is a 452-acre area that drains to Rock Creek and is located in Montgomery County's Lower Rock Creek watershed. The catchment is approximately 29% (132 acres) impervious and is largely residential. Garrett Park is intersected by Knowles and Strathmore Avenues and a CSX railroad and is bordered on the east and south by Rock Creek Park.

Streams throughout the Rock Creek watershed, including within the Garrett Park catchment area, were assessed between 2016 and 2017. Based on stream conditions and other factors, described under "Priority for Assessment Factors" below, some catchments within the Rock Creek watershed were prioritized for further assessment of stormwater management opportunities. The intent of these assessments was to identify focus areas where multiple projects could be combined in order to maximize the benefits of restoration efforts, provide enhanced improvement in local water quality and ecosystems, and to protect the investments made in these projects.

## Priority for Assessment Factors – Garrett Park Catchment

- **1<sup>st</sup> or 2<sup>nd</sup> Order Stream:** Includes 1<sup>st</sup> and 2<sup>nd</sup> order streams, with piped portions as well.
- **Completed Stream Restoration:** Additional upland stormwater management would maximize the benefits of and help to protect the two already completed stream restoration projects:
  - M-NCPPC property in the middle of the catchment east of the CSX railroad tracks
  - Boiling Brook Stream Restoration on the northern end of the catchment
- **High Priority Stream:**
  - LRKT-201-ES-001 (GP-25) ranked high under the Erosion Severity Method and Erosion Amount/Percent Method
  - LRKT-101-RE-002 (GP-23, GP-24) ranked high under the Stream Corridor Assessment Method and the Erosion Severity Method
- **Synergy of Opportunities:** New opportunities were identified at Parkside Condos – some of these would help to protect and benefit the proposed Stoneybrook Stream Restoration west of this catchment. Additional opportunities in the Town of Garrett Park and Randolph Hills neighborhoods would help to protect the completed stream restoration projects.
- **Existing SWM Projects:** RainScapes projects have been installed, however little other existing stormwater management exists other than in the very northern part of the catchment.
- **Known Issues:** A stream erosion complaint along Ashley Dr north of the M-NCPPC project; erosion and flooding along the stream channel at the northern end of Rokeby Av; additionally, headcuts, inadequate buffer, and erosion were identified during stream assessment.
- **Public Interest:** The Town of Garrett Park, Parkside Condos (as well as the adjoining Stoneybrook HOA), and a streamside resident on Ashley Dr have all expressed concerns about erosion and flooding and have positively supported restoration efforts.
- **Biological Improvement:** 2012 Montgomery County biological monitoring had no data available for most of the catchment. The southwest corner of the catchment draining to Stoneybrook tributary had a 2012 biological ranking of fair.
- **Sector Plans:** North Bethesda Garrett Park Master Plan (1992)

## Characteristics

Of the 452-acre catchment, 392 acres were further assessed for stormwater management opportunities. Locations not assessed included areas excluded from Montgomery County’s Municipal Separate Storm Sewer System (MS4) Permit and some areas that already provide credited stormwater management treatment.

The Garrett Park catchment characteristics are summarized in the series of tables below. As depicted in Table 1 below, little existing stormwater quality treatment exists in the Garrett Park catchment and the majority of the impervious area is covered by the County MS4 Permit.

**Table 1: Garrett Park Catchment Impervious Cover Breakdown**

<b>Impervious Area (IA) Breakdown</b>	<b>Area (acres)</b>	<b>Area (%)</b>
Credited IA <sup>1</sup>	3.0	2.3
Uncredited IA <sup>2</sup>	129.0	97.7
MS4 Excluded IA <sup>3</sup>	2.1	1.6
MS4 Permit Area IA	129.9	98.4
<b>Total impervious area</b>	<b>132.0</b>	<b>100.0</b>

1: Credited impervious area (IA), includes the treated IA within the catchment draining to credited stormwater management practices.

2: Uncredited impervious area (IA), includes both the treated IA within the catchment draining to an uncredited stormwater management practice and untreated IA.

3: Area excluded from the MS4 Permit includes rural zoning, Maryland-National Capital Park and Planning Commission (M-NCPPC) lands, federal and state property, and federal and state roads.

The land uses in the Garrett Park catchment are shown in Table 2. Medium-density residential is the dominant land use in the catchment covering more than 60% of the catchment. This use is followed by forested areas at 16%.

**Table 2: Garrett Park Catchment Land Use**

<b>Maryland Department of Planning 2010 Land Cover / Land Use</b>	<b>Area (acres)</b>	<b>Area (%)</b>
Agricultural <sup>1</sup>	0.0	0.0
Forested <sup>2</sup>	74.4	16.5
Institutional <sup>3</sup>	3.8	0.8
High-Density Residential (>4 du/acre)	54.6	12.1
Medium-Density Residential (1-4 du/acre)	278.3	61.6
Low-Density Residential (<1 du/acre)	0.0	0.0
Industrial	37.6	8.3
Commercial	0.0	0.0
Bare Ground	0.0	0.0
Open Urban Land	3.2	0.7
Transportation	0.0	0.0
Water	0.0	0.0

du: dwelling unit

1: Orchards, Vineyards, Horticulture, Feeding Operations, Cropland, Pasture, and Agricultural Buildings land use

2: Deciduous Forests, Evergreen Forests, Mixed Forest, and Brush

3: Institutional land use (churches, schools, municipal buildings)

Landownership in the Garrett Park catchment primarily consists of private ownership followed by public ownership (e.g., road rights-of-way) and park property. The breakdown of landownership type is detailed in Table 3 below.

**Table 3: Garrett Park Catchment Landownership Type**

Ownership Type	Area (acres)	Area (%)
Private	352.1	78%
Public	47.9	11%
Parks	51.8	11%
HOA	0.3	0%
Other Jurisdictions	0.0	0%

### Summary of Opportunities

Garrett Park catchment was evaluated for stormwater management opportunities with an emphasis on providing treatment for uncredited impervious areas within the MS4 Permit area. A desktop and field verification were conducted for the following types of opportunities (See Appendix B for methodology):

- **Stream Restoration:** Streams were identified as good candidates for restoration when they were highly eroded or ecologically deteriorated. Restoration consists of techniques or methods to protect infrastructure and improve water quality by reducing stream bank erosion, minimizing down-cutting of stream beds, and restoring aquatic ecosystems. Some streams were not field-assessed for restoration. These include streams that were located along the mainstem of Rock Creek, already had draft stream restoration designs, already had completed stream restoration, or were located outside Montgomery County’s jurisdiction (e.g., SHA property).
- **Regenerative Stormwater Conveyance (RSC) and Outfall Stabilization:** Outfall areas and channel reaches with intermittent or ephemeral flows and significant erosion were identified as potential opportunities. RSC consists of a series of step pools and sand filters constructed to allow surface water to replenish the shallow groundwater. Outfall stabilization is typically implemented for a short distance from an outfall and uses techniques to minimize erosion in the outfall area.
- **Stormwater Management Facility:** Suitable specific locations with drainage areas of about an acre or more were identified for retrofit, or new individual or clustered facilities:
  - **New Stormwater Management Facility:** Locations where a stormwater management facility does not currently exist, but where there may be sufficient space for a facility and a drainage area of approximately one acre or greater.
  - **Retrofit Stormwater Management Facility:** Locations where there is an existing stormwater management facility, but the facility does not sufficiently treat runoff from its associated drainage area. Retrofit would consist of upgrades to improve water quality in the receiving stream.
- **Stormwater Management:** Neighborhoods and other areas were assessed for general suitability of introducing various types of stormwater management which mimic nature to capture and treat stormwater as close to the source as possible:
  - **Green Streets:** Rain gardens and other low-impact practices constructed within the public street right-of-way that reduce and filter stormwater runoff.
  - **RainScapes:** Low-impact design techniques such as raingardens, conservation landscaping, and permeable pavement that are voluntarily implemented by private property owners. Under this program, typically on single-family residential lots, the owner receives a rebate for a portion of the implementation costs from the County.



- **Community Environmental Site Design (ESD):** Low-impact stormwater management practices, that are constructed on private property with the approval of the property owner. These could include capital improvement projects, grant projects, or RainScapes projects on larger parcels.
- **Public Property Environmental Site Design (ESD):** Low-impact stormwater management practices, that are constructed on public property. These could include capital improvement projects, grant projects, or RainScapes projects on larger parcels.
- **Potential Green Streets Corridor:** County arterial and collector roads which may have opportunity for low-impact stormwater practices within the right-of-way and for which these practices should be prioritized during the design of roadway improvement projects.

Whenever possible, homogenous areas were delineated and identified using a unique identification code (i.e., GP-01, GP-02, etc.). Areas were delineated based on similar characteristics such as land use, density, slope, and potential for restoration opportunity implementation. Areas may be viable opportunities for multiple restoration types (e.g., green streets and RainScapes). A summary of each restoration area is provided in Table 4 and is depicted in Figure 3. Criteria for determining restoration potential can be found in Appendix A.

In general, Garrett Park catchment has limited/fair potential to support green streets, additional stream restoration, RSC or outfall stabilization, and new stormwater management opportunities (see Figures 1 and 2) to gain full treatment of the entire catchment. However, multiple property owners in the catchment have expressed strong interest in improving stormwater management on common area properties which have good restoration potential. **Three** streams were identified as restoration candidates and **two** channel stabilization opportunities are summarized in Table 5 below. **Fourteen** locations had potential for new stormwater management practices described in Table 6. **Five** sections of neighborhoods had potential for Green Streets or RainScapes opportunities and are listed in Tables 7 and 8. **Five** new community environmental site design opportunities were observed and are summarized in Table 9 below.



**Figure 1: Impervious removal and bioretention installation**



**Figure 2: Opportunity to remove impervious area in a cul-de-sac and replace with a bioswale/channel stabilization**

Table 4: Detailed Summary of Restoration Opportunities

Catchment Restoration ID <sup>1</sup>	In Credited Area (Yes, No, Partial) <sup>2</sup>	Type of Opportunity	Restoration Potential (Good, Fair, Limited) <sup>3</sup>	Details
GP-01	No	New Stormwater Management Facility	Fair	This parking area is adjacent to Weymouth St. within an area that includes townhomes. The parking requires repairs and has a gradual 5% slope and open space, making it a good location for a stormwater management practice. Most utilities in the area are within the roadway.
GP-02	No	New Stormwater Management Facility	Fair	The large parking lot in this area, adjacent to Weymouth St., could be repaved with permeable pavement. It is located within an area that includes townhomes.
GP-03	No	Community Environmental Site Design	Good	Parkside Condo Association - This area includes townhomes and garden apartments with large parking lots, many of which require repairs. Most utilities run under the roadways and would not create conflicts during parking lot retrofitting. Some of the parking lots have steep slopes and are not suitable for most retrofit opportunities. There are some open spaces with disconnected downspouts throughout this larger area, presenting possible new community environmental site design opportunities. The area bordering the Town of Garrett Park is a priority for addressing runoff concerns in the community. Southwest corner of property drains to Stoneybrook stream restoration area (draft designs prepared under Task Order WRE-12-10)
GP-04	No	New Stormwater Management Facility	Good	This area is at a closed off dead-end on Weymouth St. It is a good candidate for impervious area removal and a new stormwater management practice, which could capture flow from Weymouth St. A water line running through the area may present a conflict.
GP-05	No	New Stormwater Management Facility	Fair	This grassed median receives flow from the roadway and other adjacent impervious area. It is currently planted. A sewer line running through the median and adjacent roadway utilities may present conflicts.

Garrett Park Catchment Plan

Catchment Restoration ID <sup>1</sup>	In Credited Area (Yes, No, Partial) <sup>2</sup>	Type of Opportunity	Restoration Potential (Good, Fair, Limited) <sup>3</sup>	Details
GP-06	No	New Stormwater Management Facility	Good	This area is at a closed off dead-end on Kenilworth Ave. It is a good candidate for impervious area removal and a new stormwater management practice, which could capture flow from Kenilworth Ave. A water line and a sewer line run through the area, which present minor conflicts.
GP-07	No		Limited	Town of Garret Park - RainScapes outreach efforts have been ongoing in this neighborhood and interest in project installation continues. Most lots are relatively small with steep slopes and mature trees within yards and the right-of-way and some properties have driveways located below grade. There are a few potential opportunities for bioretention or other stormwater management facilities within cul-de-sacs; one of note is within the Shelley Ct cul-de-sac.
GP-08	No	RainScapes	Fair	Town of Garrett Park - RainScapes outreach efforts have been ongoing in this neighborhood, and interest in project installation continues. Many lots and right-of-way within this area contain mature trees. There are also several older driveways with lower grades that could present retrofit opportunities.
GP-09	No		Limited	Town of Garrett Park - RainScapes outreach efforts have been ongoing in this neighborhood, and interest in project installation continues. Most lots are relatively small with steep slopes and mature trees within yards and the right-of-way. Some properties have older driveways, but most are located on steep slopes so limited potential for repaving through the RainScapes program. The property at the southwest intersection of Waverly Av and the CSX railroad is owned by the Town of Garrett Park, a MS4 co-permittee.
GP-10	No	New Stormwater Management Facility	Fair	Kenilworth Ave. is blocked off from Rokeby Ave., with significant extra impervious area that presents an opportunity for both impervious area removal and a new stormwater management practice. Sanitary sewer lines run through the area, presenting a potential conflict.

Garrett Park Catchment Plan

Catchment Restoration ID <sup>1</sup>	In Credited Area (Yes, No, Partial) <sup>2</sup>	Type of Opportunity	Restoration Potential (Good, Fair, Limited) <sup>3</sup>	Details
GP-11	No	New Stormwater Management Facility	Good	Town of Garrett Park - RainScapes outreach efforts have been ongoing in this neighborhood, and interest in project installation continues. This dead-end area along Rokeby Ave. presents an opportunity for impervious removal and new stormwater management practice. Town of Garrett Park has expressed interest in partnership opportunities to improve stormwater management.
GP-12	No	RainScapes	Good	Town of Garrett Park - RainScapes outreach efforts have been ongoing in this neighborhood, and interest in project installation continues. Most lots in this area are relatively large with some mature trees. Lots have utilities running through them.
GP-13	No		Limited	Town of Garrett Park - RainScapes outreach efforts have been ongoing in this neighborhood, and interest in project installation continues. Most lots are open, however, many mature trees that present conflicts for opportunities. There are limited opportunities for permeable paver driveway retrofits.
GP-14	No	Community Environmental Site Design	Fair	This parking lot, adjacent to the Garrett Park train station, is in poor condition and has a low grade. A sewer line runs through parking spots immediately next to the tracks, but other spots within the parking lot could be replaced with permeable pavers.
GP-15	No	New Stormwater Management Facility	Good	Cul-de-sac on Troy Rd. presents opportunity for potential regrading of roadway towards new stormwater management practice within currently grassed median. A sewer line and water line running through the median could present conflicts.
GP-16	No	Green Streets	Good	This dead-end area of Schuylkill Rd. is an under-utilized side street with a few driveways extending from it that could be retrofit with a bump-out/new stormwater management practice combination. A gas line and a water line running through the roadway could present a conflict.

Catchment Restoration ID <sup>1</sup>	In Credited Area (Yes, No, Partial) <sup>2</sup>	Type of Opportunity	Restoration Potential (Good, Fair, Limited) <sup>3</sup>	Details
GP-17	No	Green Streets	Fair	This residential area has a wide right-of-way (approximately 6-8 feet) and small yards that are mostly low grades. About half of the driveways are below the grade of the roadway.
GP-18	No		Limited	About half of the right-of-way in this residential area is open, with the rest housing mature trees. Most lots have small front yards, many of which have driveways that are very steep or below the grade of the roadway.
GP-19	No	Community Environmental Site Design	Fair	This parking lot serves customers several commercial enterprises. The parking lot is in poor condition and has potentially excessive impervious cover. The need for the full extent of the existing parking spaces should be evaluated, as this area could present an opportunity for both impervious removal and a new stormwater management practice.
GP-20	Partial	Community Environmental Site Design	Good	This parking lot serves customers for several commercial enterprises. The parking lot is in poor condition and has potentially excessive impervious cover. The need for the full extents of the existing parking lot space should be evaluated, as this area could present an opportunity for both impervious removal and a new stormwater management practice.
GP-21	No	Community Environmental Site Design	Fair	These parking lots have extensive impervious cover but are dominated by steep slopes. In flatter areas, underground storage or permeable pavers could be used. The adjacent roadway presents an opportunity for a bump out and a new bioretention facility.
GP-22	No	Green Streets	Good	An opportunity for a bump out may exist, as Boiling Brook Parkway is fairly wide in this area.
GP-23 (LRKT-101-RE-002)	No	Stream Restoration	Good	Short, 150-foot-long stretch, piped underground connecting to previous. Outfall repair noted and erosion is high (85%). Access good.
GP-24 (LRKT-101-RE-003)	No	Stream Restoration	Good	550-foot-long continuation of previous with 20% erosion continued. Largely moves through forest condition, limiting access. Stream quality is poor, with some optimal qualities.

Catchment Restoration ID <sup>1</sup>	In Credited Area (Yes, No, Partial) <sup>2</sup>	Type of Opportunity	Restoration Potential (Good, Fair, Limited) <sup>3</sup>	Details
GP-25 (LRKT-201-RE-001)	No	Stream Restoration	Good	900-foot-long opportunity with about 20% piped under roadway. Outfall repair observed. Stream quality suboptimal but bank condition poor. Access is good.
GP-26 (LRKT-101-RC-001)	No	Regenerative Stormwater Conveyance (RSC)	Good	100-foot-long opportunity of moderate severity and easy correctability. Both headcutting and mature trees were observed. Access is good.
GP-27 (LRBM-RI-007a)	No		Limited	Potential location for bioretention area. Drainage area is approximately 0.52 acres with 43% impervious cover. Potential utility conflicts present.
GP-28 (LRBM-RI-007b)	No	New Stormwater Management Facility	Good	Paved area no longer in use. Drainage area is approximately 0.15 acres with 75% impervious cover. Potential utility conflicts present.
GP-29 (LRBM-RI-007c)	No		Limited	Potential location for bioretention area. Adjacent parking lot will need to be diverted to site. Underdrains for site may need to cross under roadway for outfall into storm drain system. Drainage area is 0.25 acres with 60% impervious cover. Potential utility conflicts present.
GP-30 (LRKT-RI-001a)	No	New Stormwater Management Facility	Good	Parkside Condos. Opportunity is for Bioswales with a drainage area of approximately 0.74 acres, with 22% impervious cover.
GP-31 (LRKT-RI-001b)	No	New Stormwater Management Facility	Fair	Parkside Condos. Opportunity is for Upland ESD with a drainage area of approximately 0.67 acres, with 45% impervious cover.
GP-32 (LRKT-RI-001c)	No	New Stormwater Management Facility	Fair	Parkside Condos. Opportunity is for Upland ESD with a drainage area of approximately 0.49 acres, with 27% impervious cover.
GP-33 (LRKT-RI-001d)	No	New Stormwater Management Facility	Fair	Parkside Condos. Opportunity is for Upland ESD with a drainage area of approximately 0.46 acres, with 88% impervious cover.
GP-34 (LRKT-RI-001e)	No	New Stormwater Management Facility	Fair	Parkside Condos. Opportunity is for Upland ESD with a drainage area of approximately 0.52 acres, with 34% impervious cover.
GP-35 (LRKT-RI-001f)	No		Limited	Parkside Condos. Opportunity is for Upland ESD with a drainage area of approximately 0.70 acres, with 66% impervious cover.
GP-36 (LRKT-RI-002a)	No		Limited	Randolph Buildings LTD Partnership. Opportunity is for Underground facility with a drainage area of approximately 4.99 acres, with 93% impervious cover.

Garrett Park Catchment Plan

Catchment Restoration ID <sup>1</sup>	In Credited Area (Yes, No, Partial) <sup>2</sup>	Type of Opportunity	Restoration Potential (Good, Fair, Limited) <sup>3</sup>	Details
GP-37 (LRKT-RI-002b)	No		Limited	Randolph Buildings LTD Partnership. Opportunity is for Upland ESD and impervious removal with a drainage area of approximately 1.5 acres, with 100% impervious cover.
GP-38	No	Outfall Stabilization	Good	A nearby outfall and channel, both of which are eroded, could be stabilized. Town of Garrett Park has expressed interest in partnership opportunities to minimize channel erosion. Property owners upstream have reported increased erosion.

1: Opportunities with the ID in the format of LRKT-RI-005 were identified as part of the 2016 Rock Creek watershed assessment field work. Opportunities with the ID in the format of GP-03 were identified as part of the 2018 Garrett Park catchment plan assessment.

2: “Yes” or “Partial” indicates the opportunity is in an area already receiving some MS4 credit or treatment.

3: Criteria for establishing restoration potential can be found in Appendix B.

The following series of tables are organized by the type of opportunity and provide estimated pollutant load reductions. Pollutant load reductions were calculated for opportunities rated as good and fair (i.e., not calculated for limited opportunities).

**Table 5: Garrett Park Stream Restoration, Regenerative Stormwater Conveyance (RSC), and Outfall Stabilization Opportunities**

Stream/RSC/ Outfall Stabilization ID <sup>1</sup>	Length (ft)	Pollutant Load Reduction			Planning-Level Construction Cost	Restoration Potential
		TSS (tons/yr)	TN (lbs/yr)	TP (lbs/yr)		
GP-23	156	0.3	31.2	1.7	\$121,800	Good
GP-24	544	1.0	108.9	6.0	\$424,600	Good
GP-25	910	1.6	182.0	10.0	\$709,600	Good
GP-26	100	0.2	20.0	1.1	\$78,000	Good
GP-38	500	0.9	100.0	5.5	\$390,000	Good

1: Refer to Table 4 for long-form IDs

Table 6: Garrett Park New Stormwater Management Facility Opportunities

New Stormwater Management ID	Estimated Drainage Area (ac)	Estimated Impervious Area (ac)	Pollutant Load Reduction			Planning-Level Construction Cost	Restoration Potential
			TSS (tons/yr)	TN (lbs/yr)	TP (lbs/yr)		
GP-01	0.4	0.2	0.1	3.3	0.5	\$89,400	Fair
GP-02	0.3	0.2	0.1	1.7	0.2	\$78,000	Fair
GP-04	2.9	0.6	0.4	22.3	2.1	\$124,000	Good
GP-05	1.5	0.8	0.3	10.9	1.5	\$158,500	Fair
GP-06	3.5	0.9	0.5	27.0	2.8	\$177,600	Good
GP-10	1.0	0.2	0.1	7.9	0.8	\$65,900	Fair
GP-11	5.5	1.4	0.9	43.1	4.5	\$277,500	Good
GP-15	2.1	0.8	0.4	16.5	1.9	\$156,800	Good
GP-28	0.2	0.1	0.0	0.2	0.0	\$56,200	Good
GP-30	0.7	0.2	0.1	5.1	0.5	\$69,900	Good
GP-31	0.7	0.3	0.1	5.4	0.7	\$107,300	Fair
GP-32	0.5	0.1	0.1	3.8	0.4	\$61,100	Fair
GP-33	0.5	0.4	0.2	3.9	0.7	\$136,700	Fair
GP-34	0.5	0.2	0.1	4.1	0.5	\$73,000	Fair

Table 7: Garrett Park Green Streets Opportunities

Area ID	Estimated Drainage Area (ac)	Estimated Impervious Area (ac)	Pollutant Load Reduction			Restoration Potential
			TSS (tons/yr)	TN (lbs/yr)	TP (lbs/yr)	
GP-16	1.7	0.5	0.0	0.6	0.1	Good
GP-17	43.2	14.1	0.5	16.6	1.8	Fair
GP-22	6.6	2.2	0.1	2.6	0.3	Good

Table 8: Garrett Park RainScapes Opportunities

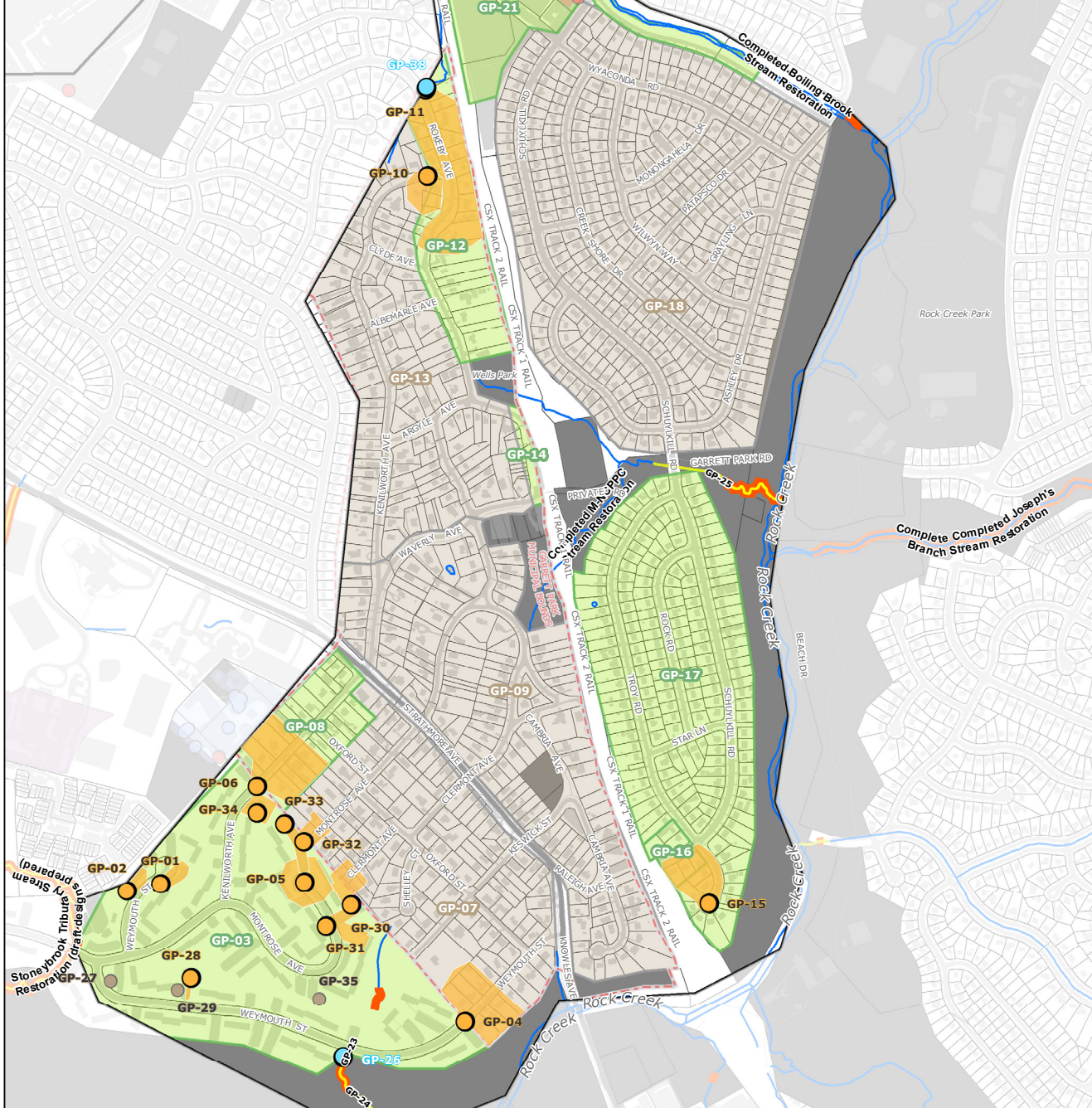
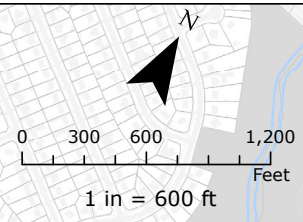
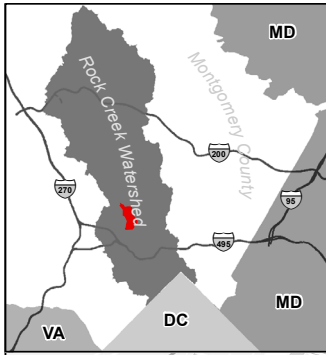
Area ID	Estimated Drainage Area (ac) <sup>1</sup>	Estimated Impervious Area (ac) <sup>1</sup>	Pollutant Load Reduction			Restoration Potential
			TSS (tons/yr) <sup>1</sup>	TN (lbs/yr) <sup>1</sup>	TP (lbs/yr) <sup>1</sup>	
GP-08	8.1	2.3	0.0 - 0.1	1.7 - 5.0	0.2 - 0.5	Fair
GP-12	12.4	2.7	0.1 - 0.2	2.5 - 10.0	0.2 - 0.8	Good

1: Range assumes implementation by 10 – 30% of properties with potential for RainScapes implementation

Table 9: Garrett Park Community Environmental Site Design Opportunities

Area ID	Estimated Drainage Area (ac)	Estimated Impervious Area (ac)	Pollutant Load Reduction			Planning -Level Construction Cost	Restoration Potential
			TSS (tons/yr)	TN (lbs/yr)	TP (lbs/yr)		
GP-03	53.4	18.7	2.3	48.8	9.8	\$1,571,300	Good
GP-14	1.0	0.3	0.0	0.6	0.1	\$53,100	Fair
GP-19	1.4	1.3	0.2	3.4	0.7	\$131,900	Fair
GP-20	18.2	15.8	2.0	41.2	8.2	\$1,331,700	Good
GP-21	10.2	9.1	0.9	14.7	2.8	\$772,500	Fair





# Rock Creek Watershed Garrett Park

**Catchment Assessment  
October 2018**



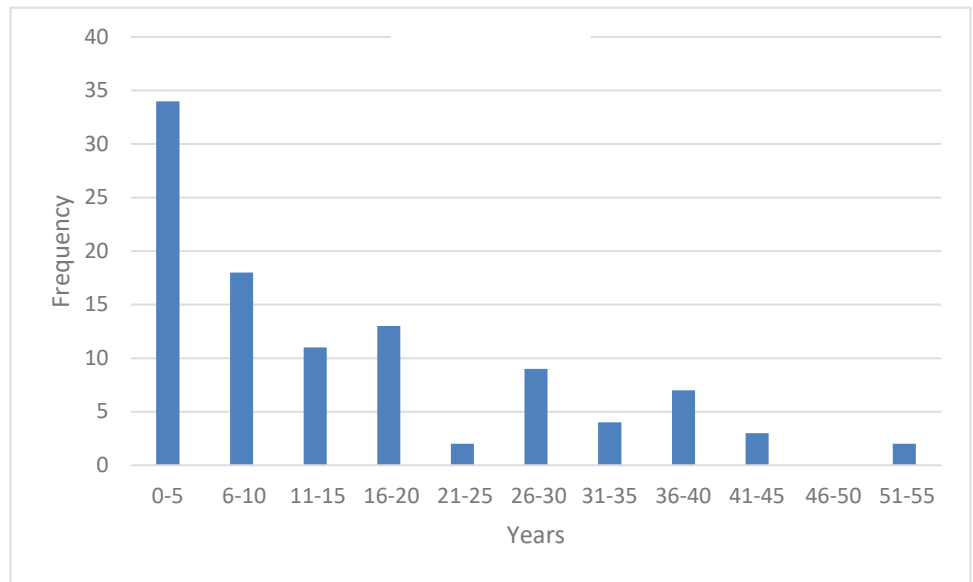
- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>Assessed for Stormwater Management</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Good/Fair Opportunity</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #D2B48C; border: 1px solid black; margin-right: 5px;"></span> Limited Opportunity</li> </ul>  | <ul style="list-style-type: none"> <li>Streams</li> <li><span style="display: inline-block; width: 15px; height: 2px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> Priority Streams for Restoration</li> <li><span style="display: inline-block; width: 15px; height: 2px; background-color: orange; border: 1px solid black; margin-right: 5px;"></span> Erosion Along Stream</li> <li><span style="display: inline-block; width: 15px; height: 1px; border-bottom: 1px solid black; margin-right: 5px;"></span> Catchment Boundary</li> <li><span style="display: inline-block; width: 15px; height: 1px; border-bottom: 1px solid gray; margin-right: 5px;"></span> Property Boundaries</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: gray; border: 1px solid black; margin-right: 5px;"></span> Impervious Area (2014)</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: black; border: 1px solid black; margin-right: 5px;"></span> MS4 Excluded Area (2009)</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #D3D3D3; border: 1px solid black; margin-right: 5px;"></span> Existing Stormwater Management Facility (2017)</li> </ul> |
| <ul style="list-style-type: none"> <li>Assessed for Stormwater Management Facility</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; background-color: #FFD700; margin-right: 5px;"></span> Good/Fair Opportunity</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; background-color: #A08060; margin-right: 5px;"></span> Limited Opportunity</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #FFD700; border: 1px solid black; margin-right: 5px;"></span> Good/Fair Opportunity Drainage Area</li> </ul> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; background-color: #ADD8E6; margin-right: 5px;"></span> Not Credited</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; background-color: #ADD8E6; margin-right: 5px;"></span> Credited</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #FFB6C1; border: 1px solid black; margin-right: 5px;"></span> Not Credited Drainage Area</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Credited Drainage Area</li> </ul>  |
| <ul style="list-style-type: none"> <li>Assessed for RSC or Outfall Stabilization</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; background-color: #ADD8E6; margin-right: 5px;"></span> Good/Fair Opportunity</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; background-color: #A08060; margin-right: 5px;"></span> Limited Opportunity</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px dashed black; margin-right: 5px;"></span> Potential Green Streets Corridor</li> </ul>     |   |

# Appendix B:

# Stormwater Survey

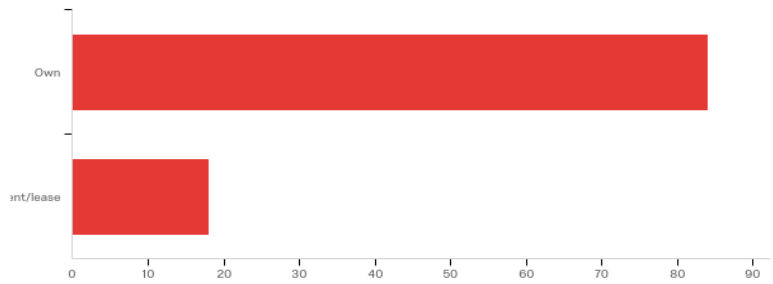
**Q1 - How long have you lived in the Parkside community?**

Years	Frequency
0-5	34
6-10	18
11-15	11
16-20	13
21-25	2
26-30	9
31-35	4
36-40	7
41-45	3
46-50	0
51-55	2



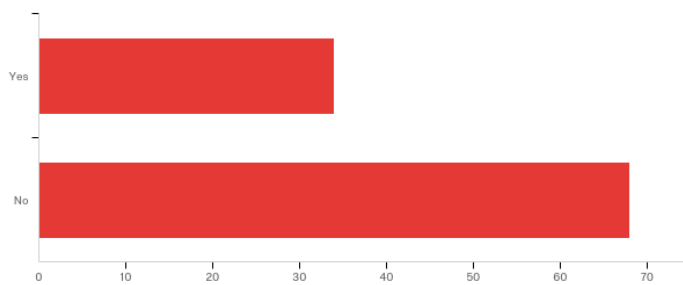
**Q2 - Do you own or rent/lease your home?**

#	Answer	%	Count
1	Own	82.35%	84
2	Rent/lease	17.65%	18
	Total	100%	102



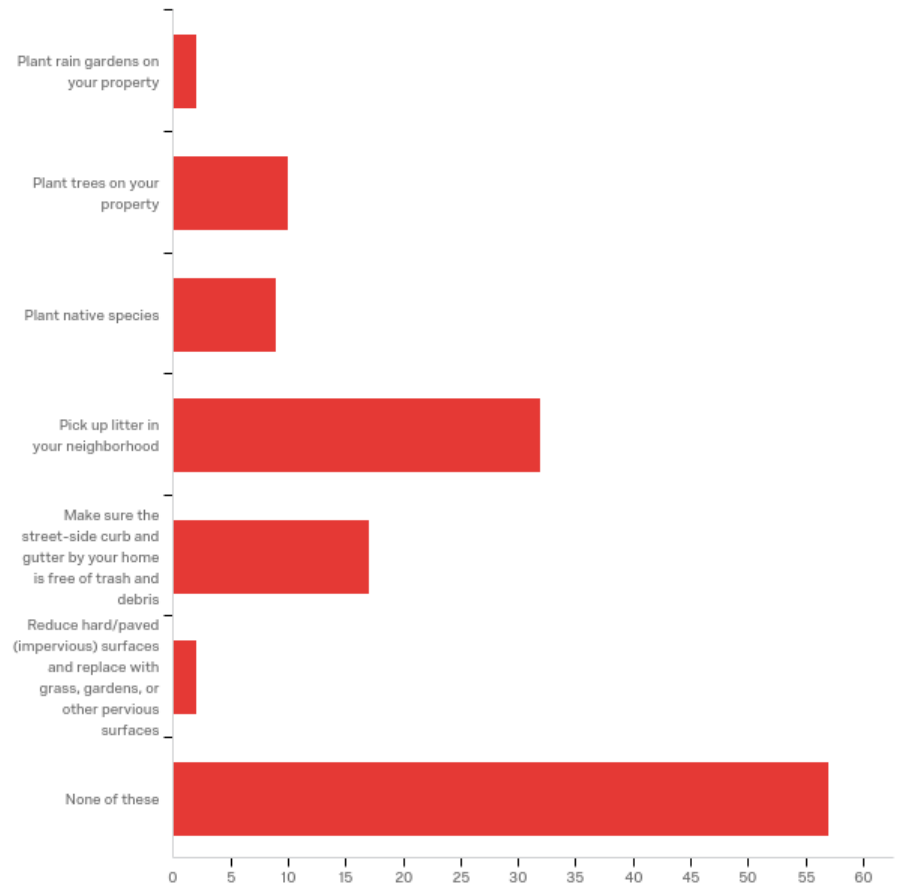
**Q3 - Do you have a lawn or yard?**

#	Answer	%	Count
1	Yes	33.33%	34
2	No	66.67%	68
	Total	100%	102



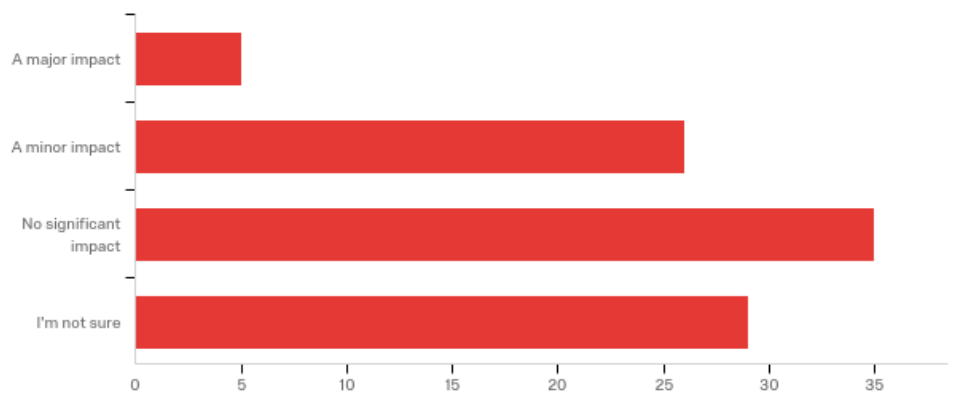
**Q4 - Does your household do any of the following? (Check all that apply)**

#	Answer	%	Count
1	Plant rain gardens on your property	1.55%	2
2	Plant trees on your property	7.75%	10
3	Plant native species	6.98%	9
4	Pick up litter in your neighborhood	24.81%	32
5	Make sure the street-side curb and gutter by your home is free of trash and debris	13.18%	17
6	Reduce hard/paved (impervious) surfaces and replace with grass, gardens, or other pervious surfaces	1.55%	2
7	None of these	44.19%	57
	<b>Total</b>	<b>100%</b>	<b>129</b>



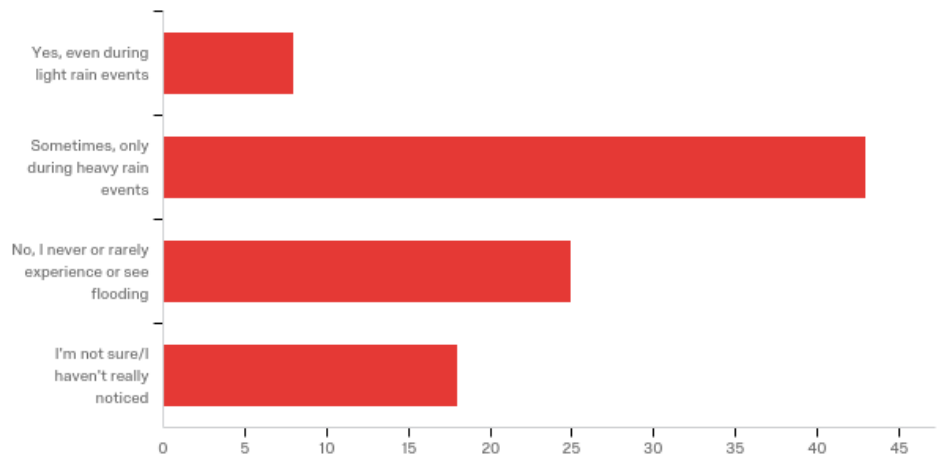
**Q5 - How much of a negative impact do you feel your own daily activities have on water quality?**

#	Answer	%	Count
1	A major impact	5.26%	5
2	A minor impact	27.37%	26
3	No significant impact	36.84%	35
4	I'm not sure	30.53%	29
	<b>Total</b>	<b>100%</b>	<b>95</b>



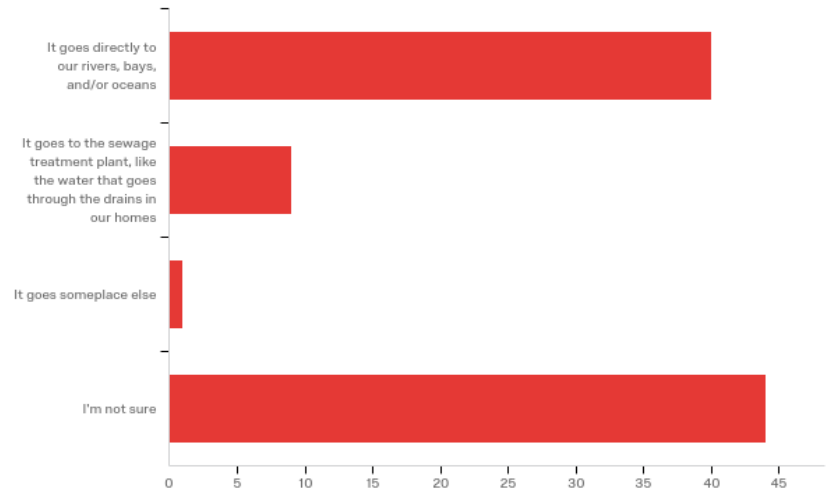
**Q6 - Do you think that stormwater runoff is a problem in your neighborhood?**

#	Answer	%	Count
1	Yes, even during light rain events	8.51%	8
2	Sometimes, only during heavy rain events	45.74%	43
3	No, I never or rarely experience or see flooding	26.60%	25
4	I'm not sure/I haven't really noticed	19.15%	18
	Total	100%	94



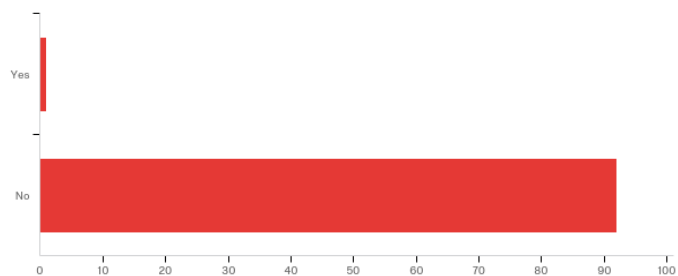
**Q7 - Which of the following best describes what happens to the water that goes into storm drains?**

#	Answer	%	Count
1	It goes directly to our rivers, bays, and/or oceans	41.67%	40
2	It goes to the sewage treatment plant, like the water that goes through the drains in our homes	10.42%	10
3	It goes someplace else	2.08%	2
4	I'm not sure	45.83%	44
	Total	100%	96

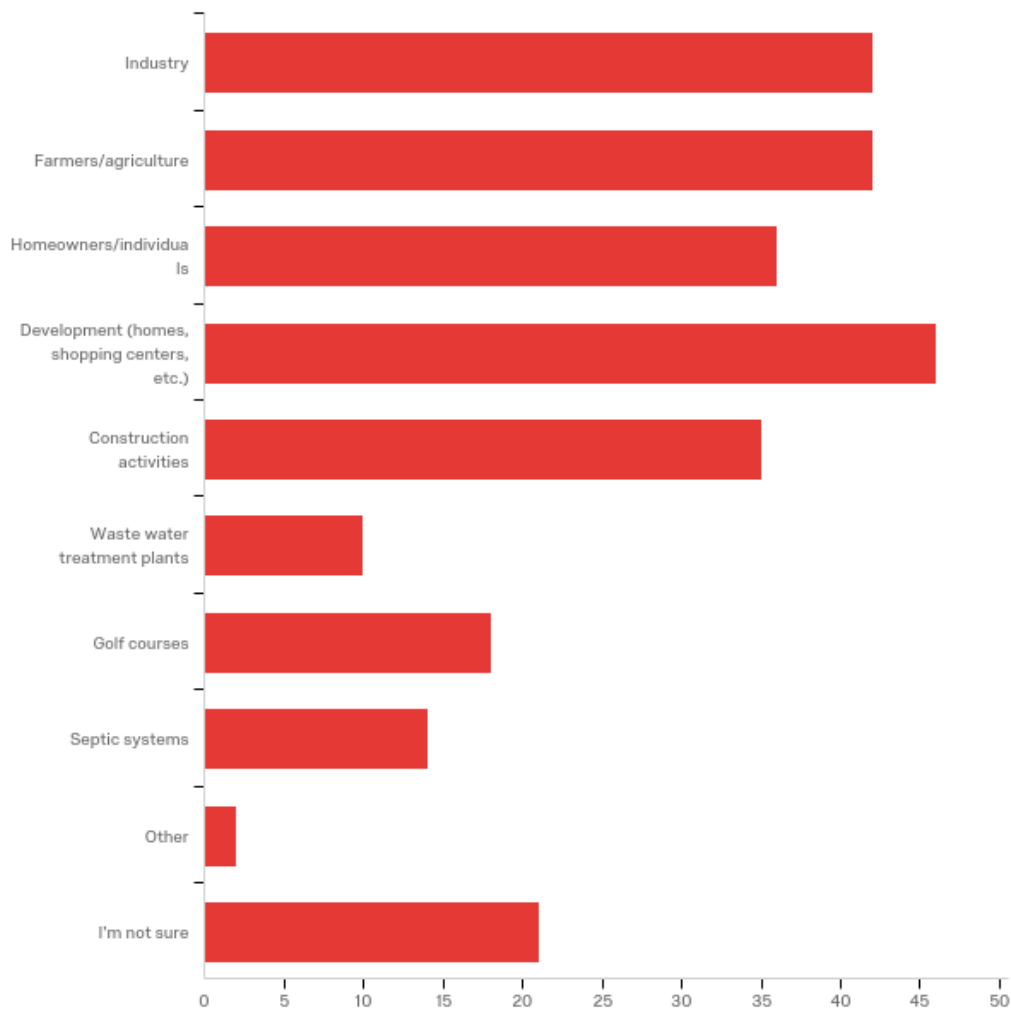


**Q8 - In the past year, have you seen anyone in your community dumping items into a storm drain?**

#	Answer	%	Count
1	Yes	1.08%	1
2	No	98.92%	92
	Total	100%	93

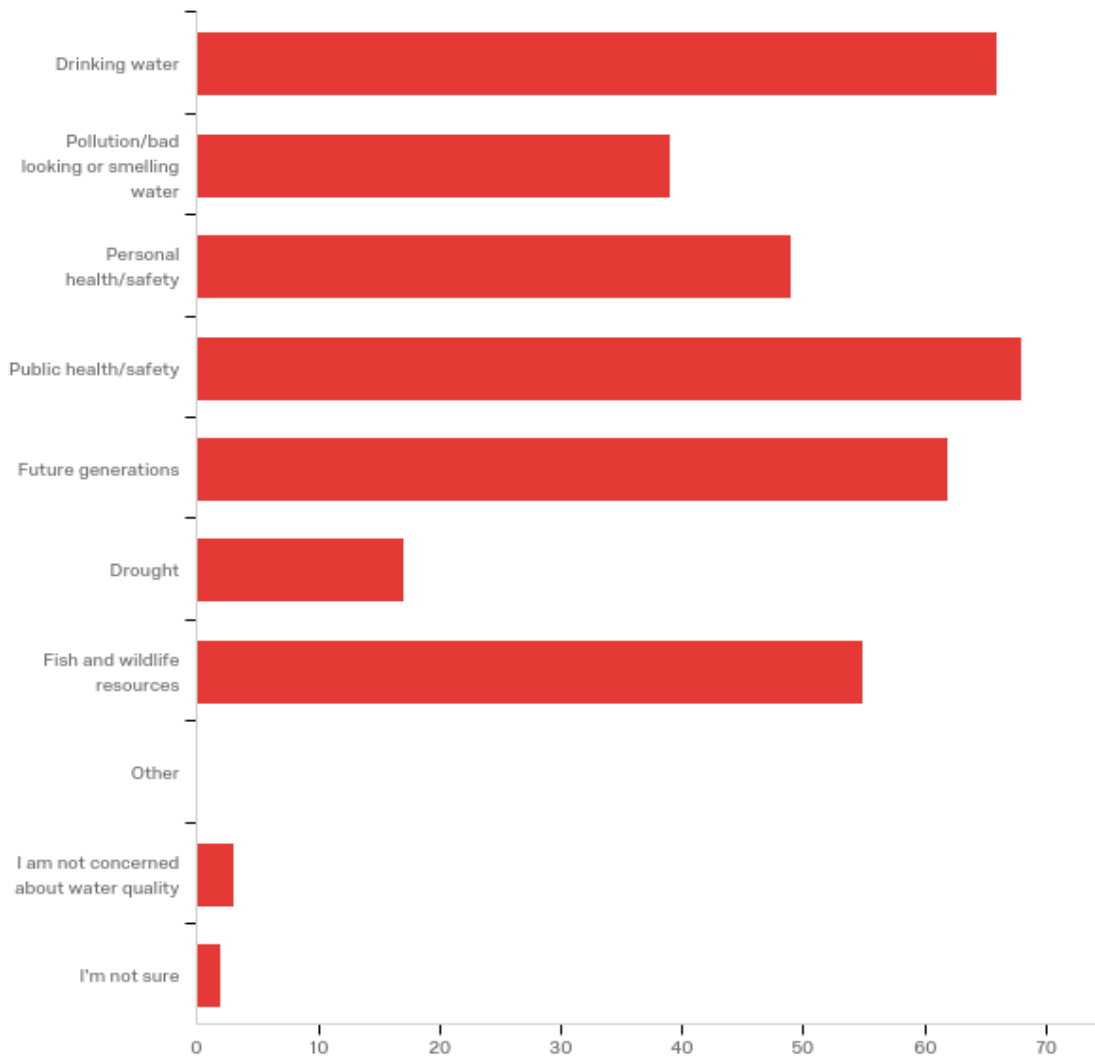


Q9 - Who do you think are the largest polluters of water in Montgomery County? (Check all that apply)



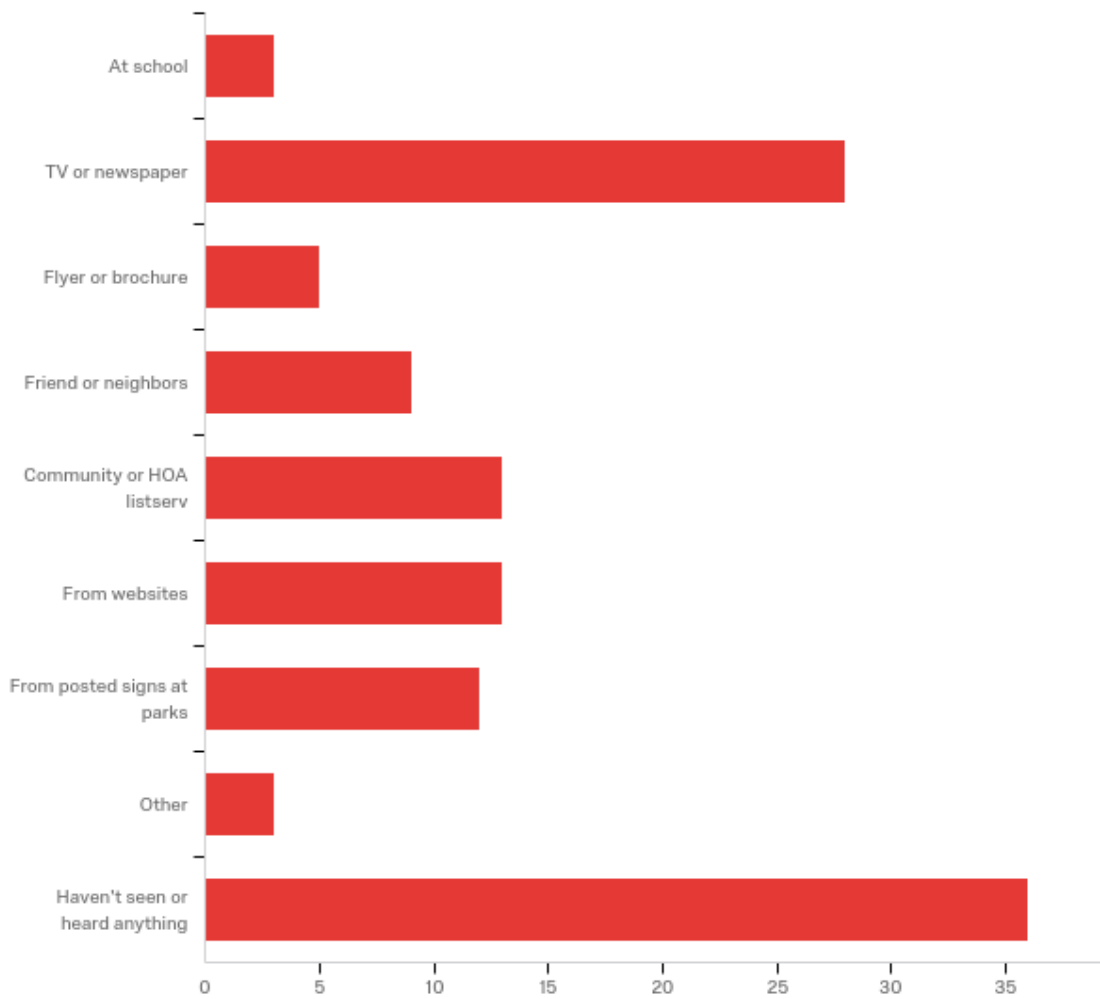
#	Answer	%	Count
1	Industry	15.79%	42
2	Farmers/agriculture	15.79%	42
3	Homeowners/individuals	13.53%	36
4	Development (homes, shopping centers, etc.)	17.29%	46
5	Construction activities	13.16%	35
6	Waste water treatment plants	3.76%	10
7	Golf courses	6.77%	18
8	Septic systems	5.26%	14
9	Other (Maybe landscaping companies? Mosquito spray prevention? (1); storm water (1))	0.75%	2
10	I'm not sure	7.89%	21
	Total	100%	266

Q10 - What are the main reasons you are concerned about water quality? (Check all that apply)



#	Answer	%	Count
1	Drinking water	18.28%	66
2	Pollution/bad looking or smelling water	10.80%	39
3	Personal health/safety	13.57%	49
4	Public health/safety	18.84%	68
5	Future generations	17.17%	62
6	Drought	4.71%	17
7	Fish and wildlife resources	15.24%	55
8	Other	0.00%	0
9	I am not concerned about water quality	0.83%	3
10	I'm not sure	0.55%	2
	<b>Total</b>	<b>100%</b>	<b>361</b>

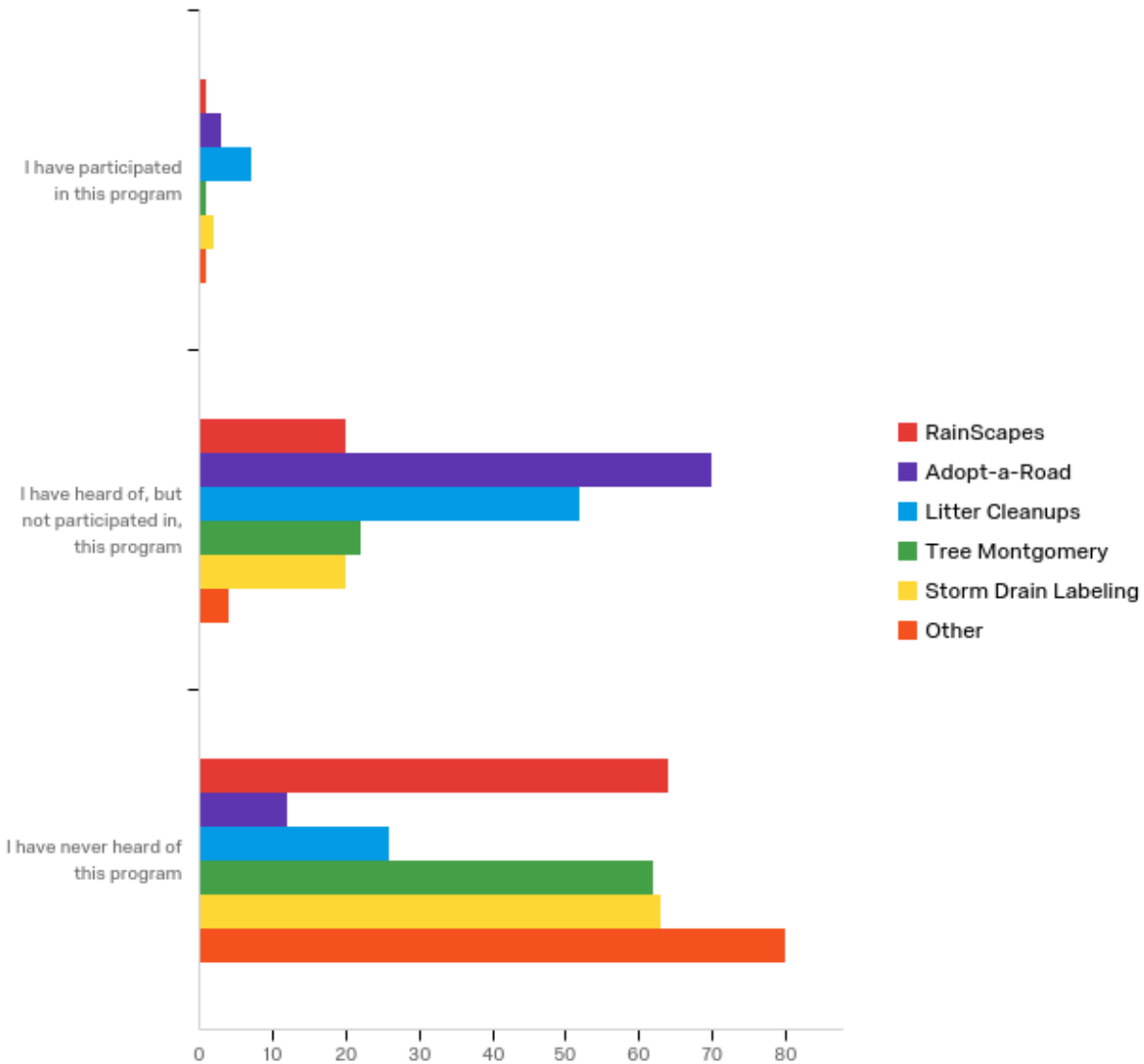
Q11 - Where have you seen or heard anything about stormwater runoff or water quality in Montgomery County over the past year? (check all that apply)



#	Answer	%	Count
1	At school	2.46%	3
2	TV or newspaper	22.95%	28
3	Flyer or brochure	4.10%	5
4	Friend or neighbors	7.38%	9
5	Community or HOA listserv	10.66%	13
6	From websites	10.66%	13
7	From posted signs at parks	9.84%	12
8	Other (Audubon Naturalist Society (2); I see all the trash that has collected in our drain in parking lot (1))	2.46%	3
9	Haven't seen or heard anything	29.51%	36
	Total	100%	122



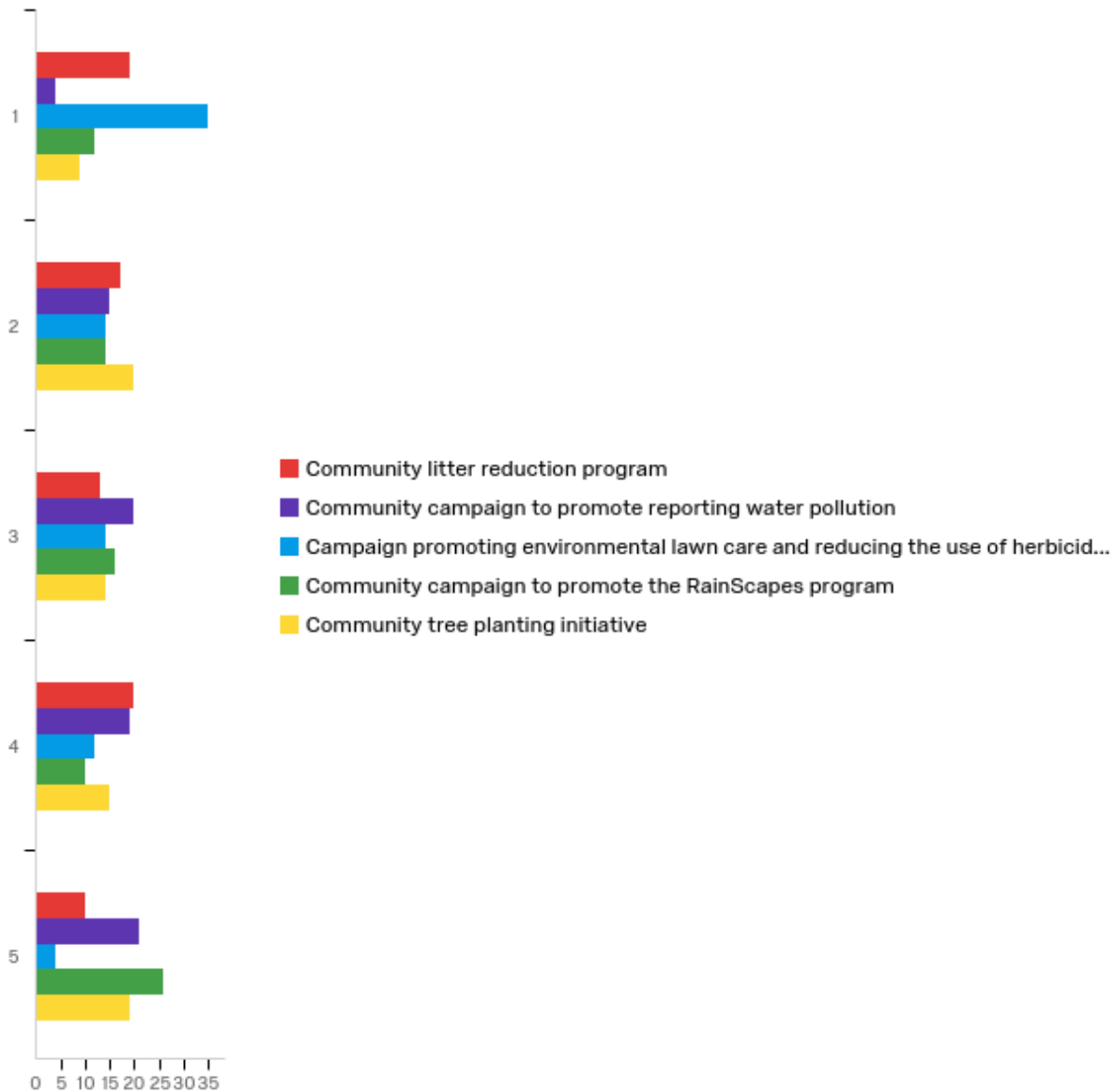
Q12 - What is your experience with following Montgomery County programs?



#	Question	I have participated in this program		I have heard of, but not participated in, this program		I have never heard of this program		Total
1	RainScapes	1.18%	1	23.53%	20	75.29%	64	85
2	Adopt-a-Road	3.53%	3	82.35%	70	14.12%	12	85
3	Litter Cleanups	8.24%	7	61.18%	52	30.59%	26	85
4	Tree Montgomery	1.18%	1	25.88%	22	72.94%	62	85
5	Storm Drain Labeling	2.35%	2	23.53%	20	74.12%	63	85
6	Other	1.18%	1	4.71%	4	94.12%	80	85

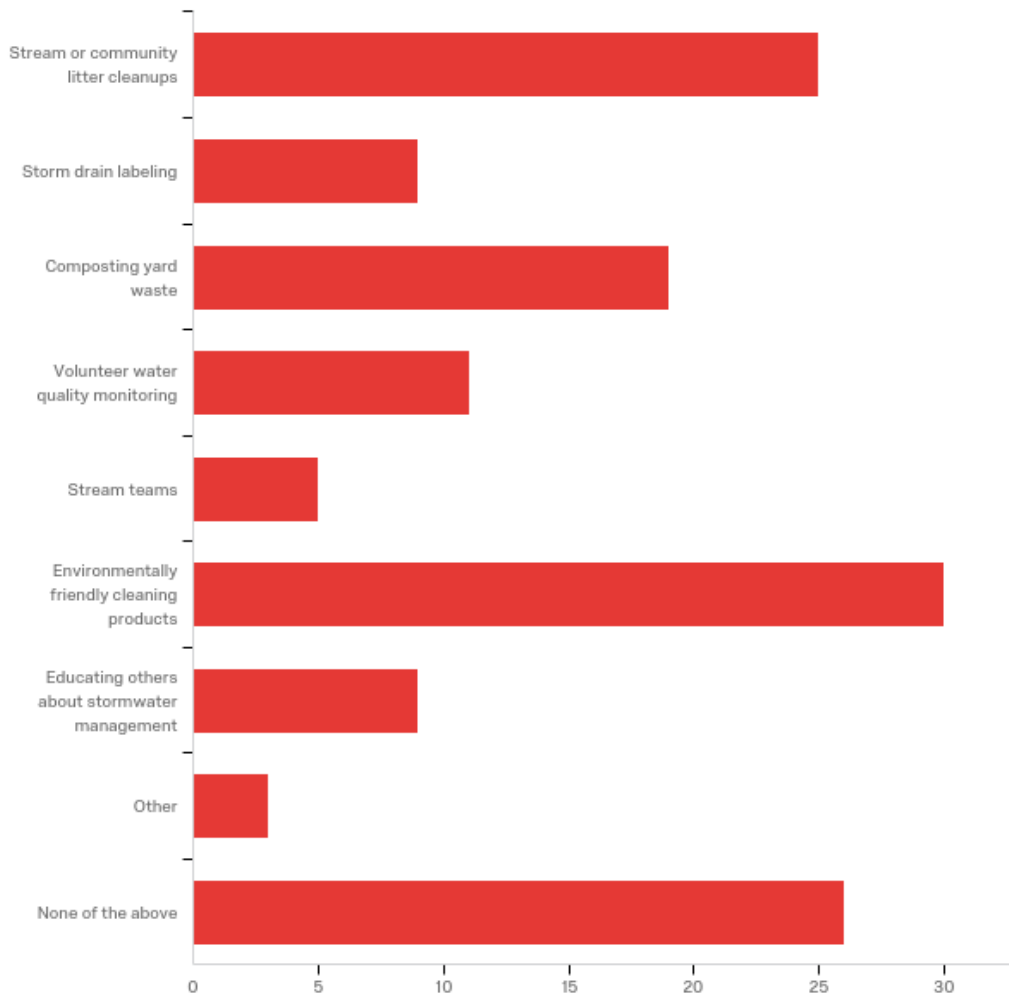
Q13 - Which of the programs/activities below do you think would have the most benefit if taken on by your community?

Please rank the options in order with 1 being the highest/most beneficial.



#	Question	1	2	3	4	5	Total					
1	Community litter reduction program	24.05%	19	21.52%	17	16.46%	13	25.32%	20	12.66%	10	79
2	Community campaign to promote reporting water pollution	5.06%	4	18.99%	15	25.32%	20	24.05%	19	26.58%	21	79
3	Campaign promoting environmental lawn care and reducing the use of herbicides / chemicals in the yard	44.30%	35	17.72%	14	17.72%	14	15.19%	12	5.06%	4	79
4	Community campaign to promote the RainScapes program	15.38%	12	17.95%	14	20.51%	16	12.82%	10	33.33%	26	78
5	Community tree planting initiative	11.69%	9	25.97%	20	18.18%	14	19.48%	15	24.68%	19	77

Q14 - Which, if any, of the following are you personally interested in participating in or learning more about? (Check all that apply)



#	Answer	%	Count
1	Stream or community litter cleanups	18.25%	25
2	Storm drain labeling	6.57%	9
9	Composting yard waste	13.87%	19
4	Volunteer water quality monitoring	8.03%	11
5	Stream teams	3.65%	5
10	Environmentally friendly cleaning products	21.90%	30
6	Educating others about stormwater management	6.57%	9
7	Other ( <i>reducing stream bank erosion (1); tree planting (1); Participate in stormwater reduction planning and implementation (1)</i> )	2.19%	3
8	None of the above	18.98%	26
	Total	100%	137

**Q15 - Do you have any other thoughts or concerns about stormwater management in your community?**

We can do a better job

---

retention pond intermediate cleaning

---

It certainly would help if there was more attention to detail to cleaning out gutters of all the building in Parkside. And then, making sure the gutter extensions remain debris free and not buried from lawn equipment running over them.

---

I'd like to know more

---

I would love to see the beautiful trees in Parkside properly pruned and maintained. Healthy trees work the hardest at preventing runoff and erosion.

---

Sidewalk towards southwest of building 10654 Montrose Avenue (downhill, between two parking lots) become unusable during moderate to strong rain. Typically a creek forms that flow over the concrete walkway; may need a pipe (or some kind of water pass) under concrete to allow water to flow from north-south direction. Thank you

---

It's a subject I know almost nothing about and have never had my attention directed to. Before answering any of your questions, I would have liked to have had certain basic information.

---

Thank you for what you do toward preserving our environment.

---

I am a fairly well educated person and not young and I have never given any thought to the topic. Now i am curious.

---

Areas were flooding or ponding occurs need to be identified and mitigated. I know that a knee high stream quickly forms along here (39.0313808, -77.0948128) during heavier rain events causing erosion.

---

With regards to drain & run-off clogging, I think our community can do a better job of keeping those lines of water transport open. When heavy rains hit, we see a lot of pooling in yards & overflowing drains.

---

We have an erosion problem.

---

Concerned about litter having easy access to storm drains.

---

Could use more education in this area

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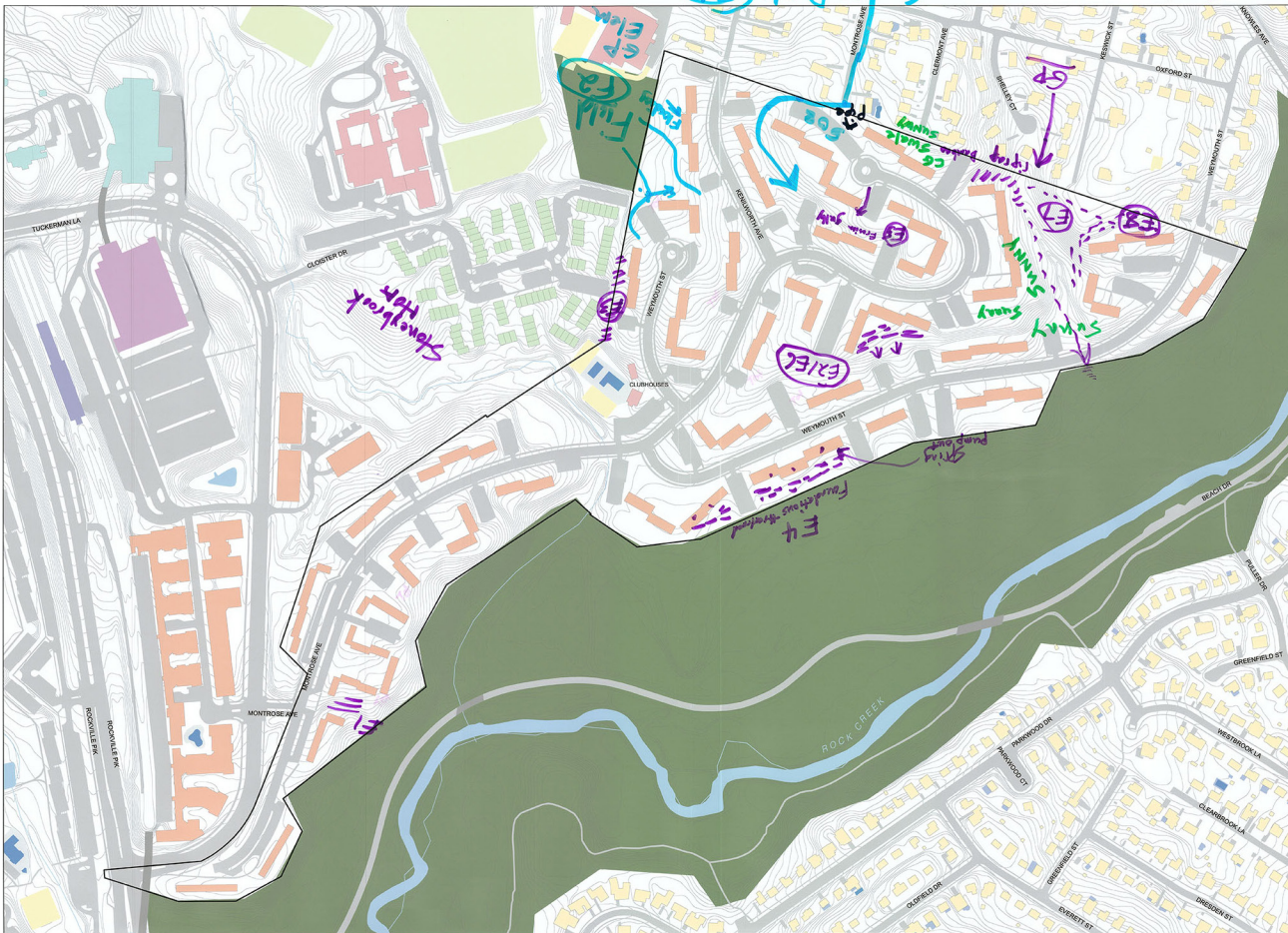
Concerned residents have from time to time asked the HOA Board of Directors to address stormwater issues, The Board and management staff do not have the expertise or capability to do that, and residents have not heretofore stepped up and offered to lead. I sense that the residents' message has now shifted from "the Board should do this" to "we the residents will do this, under Board supervision." There are numerous abatement opportunities here, at several scales from downspout to erosion gullies. We have identified many of them but have not yet set priorities among them based on relative technical feasibility, cost, and effectiveness.

# Appendix C:

# Stakeholder Map

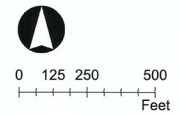
# Parkside Condo Association

- Erosion  
- Foundation  
- Flooding



## Features of the Built and Natural Environment

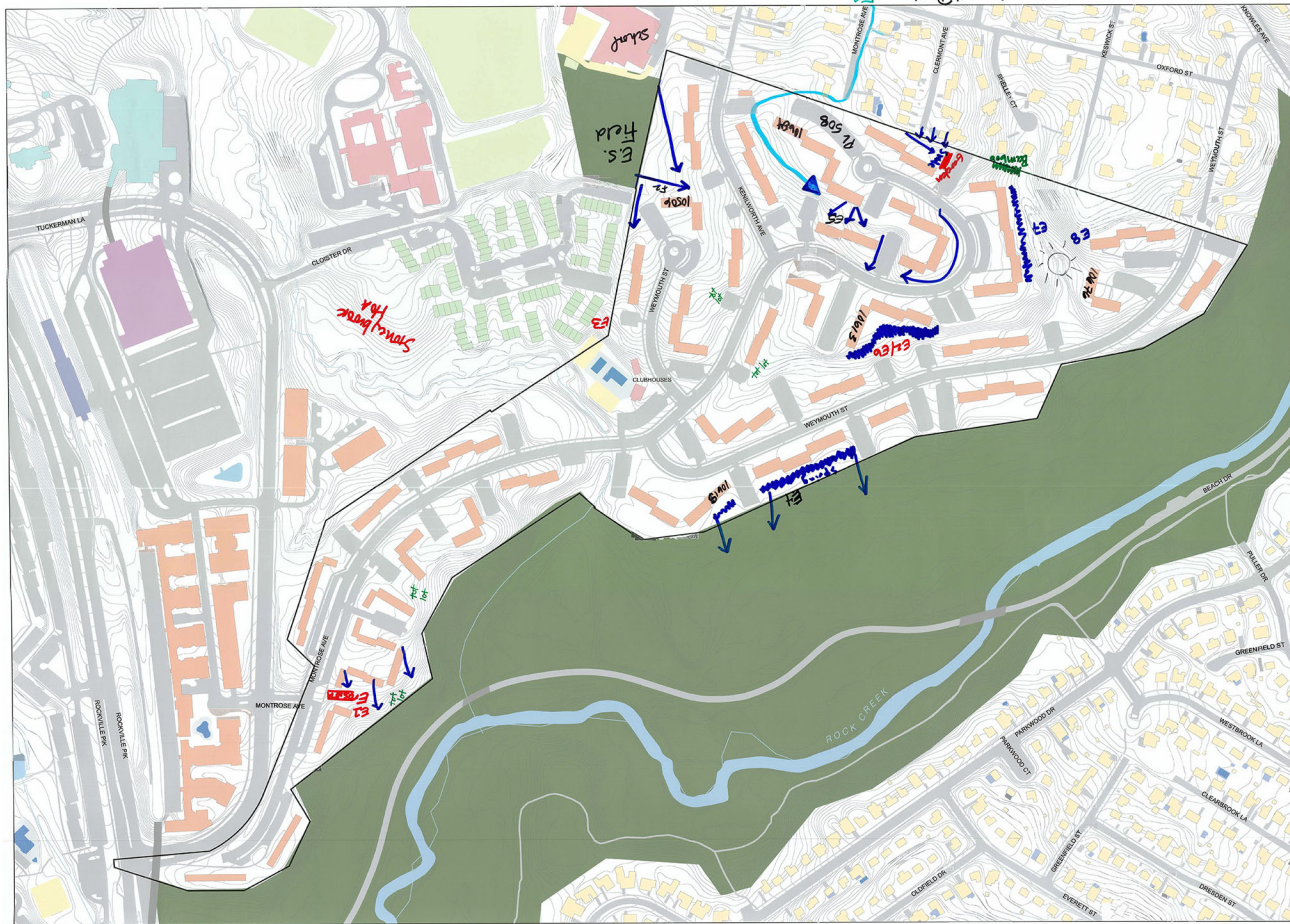
- Parkside Condo. Assn.
- Strathmore
- Institutional/Community Facility
- Multi-Family
- Parking and Transportation
- Single Family Attached
- Single Family Detached
- Vacant
- Athletic Court
- Athletic Field
- Swimming Pool
- Patio
- Non-Residential Pad
- Impervious
- Waterbodies
- Park
- 2' Contours



Map of 1/2 acre  
(mainly of house)

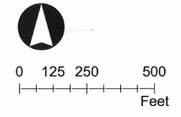
# Parkside Condo Association

Garage



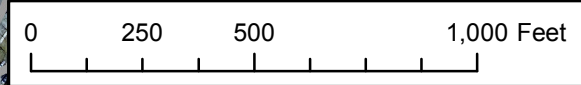
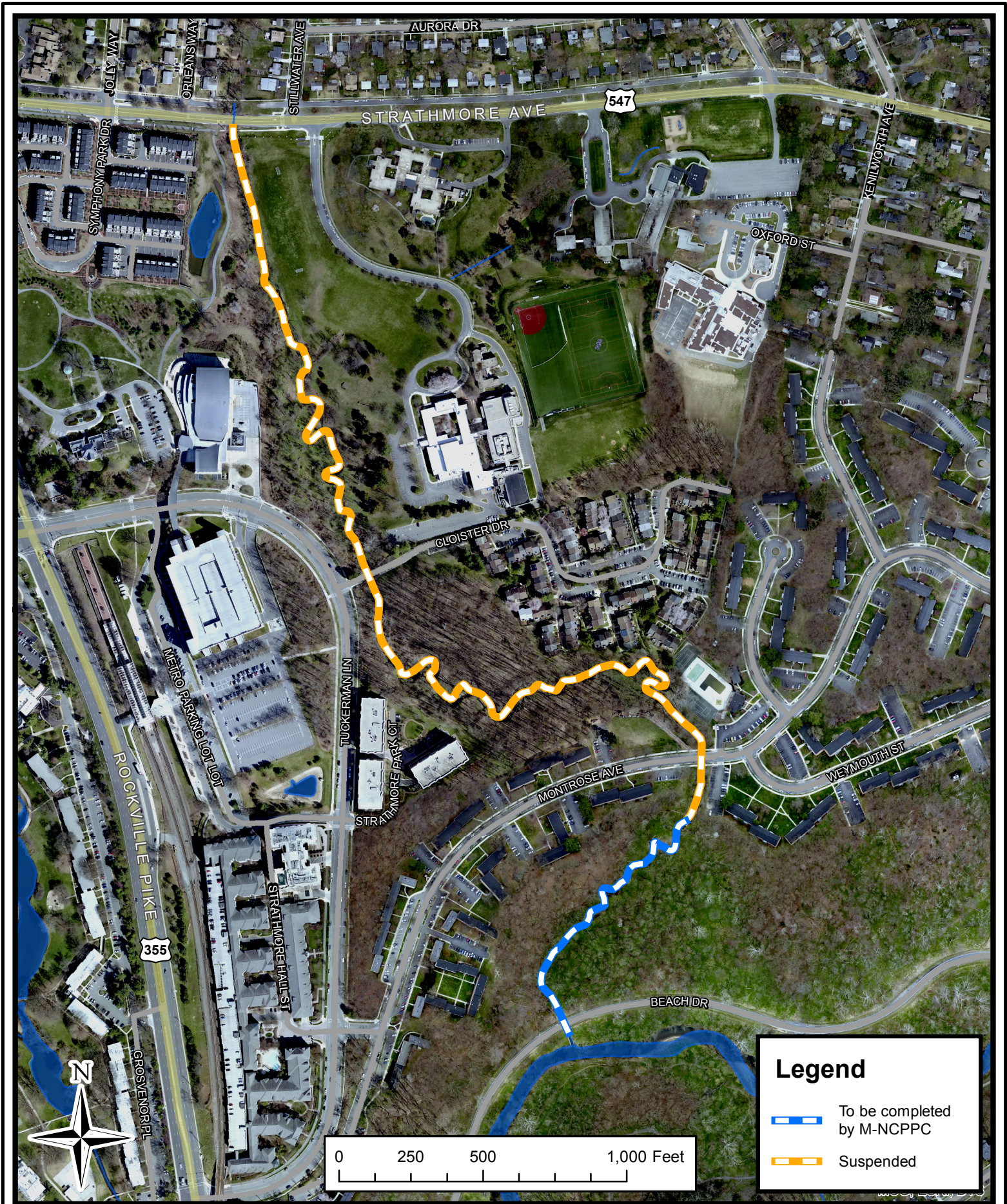
## Features of the Built and Natural Environment

- Parkside Condo. Assn.
- Strathmore
- Institutional/Community Facility
- Multi-Family
- Parking and Transportation
- Single Family Attached
- Single Family Detached
- Vacant
- Athletic Court
- Athletic Field
- Swimming Pool
- Patio
- Non-Residential Pad
- Impervious
- Waterbodies
- Park
- 2' Contours





# Appendix D:

# Stoneybrook Project



**Legend**

-  To be completed by M-NCPPC
-  Suspended



**Stoneybrook Tributary Stream Restoration**  
<https://www.montgomerycountymd.gov/water/restoration/stoneybrook.html>





# Appendix E: Resources

## Montgomery County's Stormwater and Restoration Programs

### Stormwater Management

General	<b>Stormwater Management</b> - Basic information on stormwater management, facility maintenance fact sheets, and links to more clean water programs.	<a href="https://www.montgomerycountymd.gov/water/stormwater/index.html">https://www.montgomerycountymd.gov/water/stormwater/index.html</a>
General	<b>County Implementation Strategy</b> - Details how the County will meet the MS4 Permit required watershed restoration goals and water quality standards. This webpage includes the county's public outreach workplan, watershed implementation plans, and watershed pre-assessment reviews.	<a href="https://www.montgomerycountymd.gov/water/stormwater/county-implementation-strategy.html">https://www.montgomerycountymd.gov/water/stormwater/county-implementation-strategy.html</a>
General	<b>Rock Creek Implementation Plan</b> - Details the County's plan for how they are going to meet their stormwater management and pollution reduction goals as required by the EPA and the Maryland Department of the Environment.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Watershed%20studies/Rock-creek-watershed-implementation-plan-11.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Watershed%20studies/Rock-creek-watershed-implementation-plan-11.pdf</a>
General	<b>Rock Creek Watershed Assessment</b> - This document summarizes the County's assessment of the Rock Creek watershed. It provides an overview of the existing conditions in the watershed and identifies restoration opportunities.	<a href="https://www.montgomerycountymd.gov/water/Resources/Files/stormwater/implementation-strategy/rock-creek-summary-2018.pdf">https://www.montgomerycountymd.gov/water/Resources/Files/stormwater/implementation-strategy/rock-creek-summary-2018.pdf</a>
General	<b>Rock Creek Watershed Assessment Appendix</b> - The appendix to the previously listed Watershed Assessment, this appendix provides more extensive information about specific catchments in within the Rock Creek Watershed, including Garrett Park (pages 54-65)	<a href="https://www.montgomerycountymd.gov/water/Resources/Files/stormwater/implementation-strategy/rock-creek-appendix-a.pdf">https://www.montgomerycountymd.gov/water/Resources/Files/stormwater/implementation-strategy/rock-creek-appendix-a.pdf</a>
General	<b>Stormwater Facility Maintenance Program</b> - The County is responsible for inspecting and ensuring maintenance of all public and private stormwater management facilities within Montgomery County. The Stormwater Facility Maintenance Program inspects stormwater facilities at least every three years in order to make sure the facilities are functioning. This page contains an interactive map of current stormwater facilities maintained by the county.	<a href="https://www.montgomerycountymd.gov/water/stormwater/maintenance.html">https://www.montgomerycountymd.gov/water/stormwater/maintenance.html</a>

### Stream Restoration

General	<b>Watershed Restoration</b> - Summary of restoration tools, watershed study process, and watershed restoration project process.	<a href="https://www.montgomerycountymd.gov/water/restoration/process.html">https://www.montgomerycountymd.gov/water/restoration/process.html</a>
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General	<b><u>Watershed study and restoration project selection</u></b> Describes the process by which the county selects restoration projects.	<a href="https://www.montgomerycountymd.gov/water/restoration/process.html">https://www.montgomerycountymd.gov/water/restoration/process.html</a>
General	<b><u>Stream Restoration</u></b> - Summary of stream restoration techniques including brush layering, coir logs, cross vane, and more.	<a href="https://www.montgomerycountymd.gov/water/restoration/streams.html">https://www.montgomerycountymd.gov/water/restoration/streams.html</a>
General	<b><u>Restoration monitoring</u></b> - summary of how and what the county monitors.	<a href="https://www.montgomerycountymd.gov/water/restoration/monitoring.html">https://www.montgomerycountymd.gov/water/restoration/monitoring.html</a>
Infographic	<b><u>Stream restoration brochure</u></b> - Infographic of stream restoration techniques.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/PostersPamphlets/Restoring_Montgomery_Countys_Streams.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/PostersPamphlets/Restoring_Montgomery_Countys_Streams.pdf</a>
Video	<b><u>Why restore local streams video</u></b> - Two-minute video on the importance of restoring local streams.	<a href="https://www.youtube.com/">https://www.youtube.com/</a>

## Green Streets

Guidance	<b><u>Green Streets</u></b> - Guidance and information on green streets practices, how to maintain them, and frequently asked questions.	<a href="https://www.montgomerycountymd.gov/water/restoration/green-streets.html">https://www.montgomerycountymd.gov/water/restoration/green-streets.html</a>
Guidance	<b><u>Green Streets in Your Neighborhood</u></b> - This guidance document describes the neighborhood experience of installing a green street. It explains the various aspects of a green street, how they benefit your community, and how they are maintained.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/brochures/GreenStreetsHandout.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/brochures/GreenStreetsHandout.pdf</a>
Photos	<b><u>Montgomery County Green Streets Flickr Album</u></b> - Picture album of Montgomery County green street projects.	<a href="https://www.flickr.com/photos/mocobio/sets/72157633663354666/">https://www.flickr.com/photos/mocobio/sets/72157633663354666/</a>
Video	<b><u>Did You Know 57: Green Streets Montgomery County</u></b> - YouTube Video at 5:14 they discuss how informational signage posted during green streets project helped keep residents informed of the ongoing stormwater management projects.	<a href="https://youtu.be/SgLOA5whL9A?t=314">https://youtu.be/SgLOA5whL9A?t=314</a>

## RainScapes Rebates

Rebate	<b><u>Montgomery County RainScapes Rebate Program</u></b> Comprehensive resources for the RainScapes program including manuals and guides, choosing a professional, plant lists, and additional resources. Multi-lingual resources are available (Amharic, Chinese, French, Korean and Spanish). Potential projects include canopy trees, conservation landscapes, green roofs, pavement removal, permeable pavement, rain barrels & cisterns, and rain gardens.	<a href="https://www.montgomerycountymd.gov/water/rainscapes/resources.html#manuals">https://www.montgomerycountymd.gov/water/rainscapes/resources.html#manuals</a>
Video	<b><u>Did You Know #53</u></b> - Montgomery County RainScapes Program- Seven-minute video introduction to the County's RainScapes program, what it is, and how to take advantage of the available resources.	<a href="https://www.youtube.com/">https://www.youtube.com/</a>

Rebate	<b><u>RainScapes Community Program</u></b> - RainScapes project resources designed for specific community stakeholders such as schools, congregations, pools, neighborhoods, and HOAs. Requirements for funding, project opportunities, and planning support.	<a href="https://www.montgomerycountymd.gov/water/rainscapes/communities.html">https://www.montgomerycountymd.gov/water/rainscapes/communities.html</a>
Video	<b><u>Sacred Waters: RainScapes and Congregations in Action</u></b> - Eight-minute video introduction for places of worship, how the County's RainScapes program can benefit them, and how to take advantage of the available resources.	<a href="https://www.youtube.com/watch?v=8pNAkd3PoI0">https://www.youtube.com/watch?v=8pNAkd3PoI0</a>
Guidance	<b><u>RainScapes Choosing a Professional</u></b> - Guidance on choosing the right professional to help develop a stormwater or watershed restoration project. Describes the different services offered by designer, architect, or contractor professionals and provides links to reputable resources.	<a href="https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/ChoosingAProfessional_01_18.pdf">https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/ChoosingAProfessional_01_18.pdf</a>
Contacts	<b><u>RainScapes Landscape Professionals List</u></b> - A list of landscape professional who have attended the RainScapes Landscape Professionals training series and the number of projects installed under the RainScapes Rebate program. This is not a County endorsement.	<a href="https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/Contractor_List.pdf">https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/Contractor_List.pdf</a>

## Stormwater Reduction Strategies

Guidance	<b><u>RainScapes Rain Barrels and Cisterns</u></b> - How to guide for installing a rain barrel or cistern including, what is the difference between rain barrel or cistern, what are the benefits, how to asses your property, developing a design and plan, and how to install them on your own.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/rainbarrelsCisterns.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/rainbarrelsCisterns.pdf</a>
Flyer	<b><u>Rain Barrels</u></b> - Basic flyer explaining rain barrels.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Rain-Barrel-sign.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Rain-Barrel-sign.pdf</a>
Guidance	<b><u>RainScapes Rain Gardens</u></b> - How to guide for installing a rain garden including, what is rain garden and what are the benefits, how to asses your property, developing a design and plan, and how to build and implement.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/rain-gardens.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/rain-gardens.pdf</a>
Flyer	<b><u>Bioretention Gardens</u></b> - Basic flyer explaining bioretention gardens.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Bioretention-sign.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Bioretention-sign.pdf</a>
Guidance	<b><u>Conservation Landscaping</u></b> - General information about conservation landscaping and a link to a more detailed fact sheet.	<a href="https://extension.umd.edu/watershed/conservation-landscaping">https://extension.umd.edu/watershed/conservation-landscaping</a>
Flyer	<b><u>Rain Gardens</u></b> - Basic flyer explaining rain gardens.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Rain-Garden-sign.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Rain-Garden-sign.pdf</a>
Guidance	<b><u>Rain Gardens</u></b> - General information about rain gardens and a video about installing them.	<a href="https://extension.umd.edu/watershed/rain-gardens">https://extension.umd.edu/watershed/rain-gardens</a>

Video	<b>RainScapes Rain Garden Video</b> - Nine-minute video describing what is rain garden, the benefits of installing one on your property, and a step-by-step process for getting started.	<a href="https://www.youtube.com/watch?v=eunRYZps67c">https://www.youtube.com/watch?v=eunRYZps67c</a>
Guidance	<b>RainScapes Dry Wells</b> - How to guide for installing a dry well including, what is a dry well and when is it appropriate to install one, how to asses your property, developing a design and plan, and questions to ask a contractor.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/drywells.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/drywells.pdf</a>
Guidance	<b>RainScapes Conservation Landscaping</b> - How to guide for conservation landscaping techniques, what is conservation landscaping and what are the benefits, how to asses your property, developing a design and plan, appropriate native plants, and questions to ask a contractor.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/</a>
Guidance	<b>RainScapes Pavement Removal</b> - How to guide for installing a green roofs including, what is a green roof and what are the benefits, how to asses your property, developing a design and plan, and questions to ask a contractor.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/pavementremoval.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/pavementremoval.pdf</a>
Guidance	<b>RainScapes Permeable Pavers</b> - How to guide for installing a permeable pavers including, what is permeable pavement and what are the benefits, how to asses your property, developing a design and plan, and how to build and implement.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/permpavers.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/permpavers.pdf</a>
Flyer	<b>Porous Pavement</b> - Basic flyer explaining porous pavement.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Porous-Pavement-sign.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Porous-Pavement-sign.pdf</a>
Flyer	<b>Wet Ponds</b> - Basic flyer explaining wet ponds.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Wet-Pond-sign.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Wet-Pond-sign.pdf</a>
Guidance	<b>RainScapes Green Roofs</b> - How to guide for installing a green roofs including, what is a green roof and what are the benefits, how to asses your property, developing a design and plan, and questions to ask a contractor.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/greenroofs.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/rainscapes/fact-sheets/greenroofs.pdf</a>
Flyer	<b>Green Roofs</b> - Basic flyer explaining green roofs.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Green-Roof-sign.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/stormwater/signs/Green-Roof-sign.pdf</a>

## Water Quality Improvement Strategies

### Storm Drain Marking

Program	<b>Montgomery County's Storm Drain Marking Program</b> - County's storm drain marking project request form.	<a href="https://www.montgomerycountymd.gov/water/volunteer/index.html#marking">https://www.montgomerycountymd.gov/water/volunteer/index.html#marking</a>
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Guidance	<b><u>Keep Your Storm Drain Clean</u></b> - Steps to keep residential storm drains clean, information on reporting illegal dumping, and an educational video on how stormwater destroys our streams.	<a href="https://mygreenmontgomery.org/project/keep-your-storm-drain-clean/">https://mygreenmontgomery.org/project/keep-your-storm-drain-clean/</a>
Guidance	<b><u>Storm Drain Art</u></b> - Information about the storm drain art program.	<a href="https://www.montgomerycountymd.gov/water/volunteer/index.html#art">https://www.montgomerycountymd.gov/water/volunteer/index.html#art</a>
Guidance / Contest	<b><u>Montgomery County Storm Drain Art Contest Info</u></b> - Information about the 2019 storm drain art contest.	<a href="https://mygreenmontgomery.org/art/">https://mygreenmontgomery.org/art/</a>
Photos	<b><u>Montgomery County Storm Drain Art Flickr Album</u></b> Picture album of Montgomery County storm drain art for inspiration.	<a href="https://www.flickr.com/photos/mocobio/albums/72157648949583875">https://www.flickr.com/photos/mocobio/albums/72157648949583875</a>
Program	<b><u>Storm Drain Stenciling</u></b> - Maryland Department of Natural Resources storm drain stenciling program and instructions.	<a href="https://dnr.maryland.gov/ccs/Pages/stormdrain.aspx">https://dnr.maryland.gov/ccs/Pages/stormdrain.aspx</a>
Guidance	<b><u>Stenciling Storm Drains</u></b> - Steps for developing a storm drain stenciling event including setting a budget, identifying locations, recruiting volunteers, and follow up. Includes additional resources and links to local programs.	<a href="https://www.potomacriver.org/resources/get-involved/water/storm-drains/">https://www.potomacriver.org/resources/get-involved/water/storm-drains/</a>

## Waste Management

Guidance	<b><u>Help Stop Water Pollution</u></b> - This webpage provides resources and guidance to help prevent water pollution and how to report pollution issues to the county. It discusses littering and illegal dumping, automobiles, septic systems, construction, and many other substances that contaminate our water ways.	<a href="https://www.montgomerycountymd.gov/water/streams/pollution.html">https://www.montgomerycountymd.gov/water/streams/pollution.html</a>
Guidance	<b><u>Household Hazardous Waste Program</u></b> - This webpage discusses how residents can dispose of and recycle common household hazardous waste such as pesticides, batteries, and syringes.	<a href="https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?tag=household-hazardous-waste&amp;key=224">https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?tag=household-hazardous-waste&amp;key=224</a>
Guidance	<b><u>How to recycle / dispose salt and sand</u></b> - Information on how residents can properly dispose of their snow salt and sand.	<a href="https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?material_key=67&amp;tag=salt-sand">https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?material_key=67&amp;tag=salt-sand</a>
Guidance	<b><u>How to recycle / dispose motor oil</u></b> - Information on how residents can properly dispose of their used motor oil.	<a href="https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?tag=motor-oil&amp;material_key=34">https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?tag=motor-oil&amp;material_key=34</a>
Guidance	<b><u>Hazardous Waste Management in Montgomery County</u></b> - A guide for businesses generating hazardous waste.	<a href="https://www.montgomerycountymd.gov/sws/resources/files/ecowise/ecowise_guide.pdf">https://www.montgomerycountymd.gov/sws/resources/files/ecowise/ecowise_guide.pdf</a>
Guidance	<b><u>Montgomery County Pesticide Law</u></b> - This website contains information about the County's Pesticide Law including what substances are banned and exemptions from the law.	<a href="https://montgomerycountymd.gov/lawns/law/">https://montgomerycountymd.gov/lawns/law/</a>

Guidance	<b><u>Montgomery Parks Integrated Pest Management Program and Pesticide Use</u></b> - This website discusses the county's pesticide use in Montgomery Parks and notifies residents when pesticides are used on public parks.	<a href="https://www.montgomeryparks.org/about/parks/pesticides/">https://www.montgomeryparks.org/about/parks/pesticides/</a>
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## Anti-Litter

Program	<b><u>Montgomery County DEP Contact Us</u></b> - This is the general link to report issues to Montgomery County regarding any type of litter, pollution, dumping, or noise violations. In addition to using this link, issues should also be reported via 311.	<a href="https://www.montgomerycountymd.gov/dep/contact.html">https://www.montgomerycountymd.gov/dep/contact.html</a>
Program	<b><u>Montgomery County Parks Customer Service</u></b> - This is the general link to report park issues including any type of litter, pollution, or dumping violations. In addition to using this link, issues should also be reported via 311.	<a href="https://www.montgomeryparks.org/services/report-a-problem/">https://www.montgomeryparks.org/services/report-a-problem/</a>
Guidance	<b><u>Anti-Littering Public Outreach and Stewardship Workplan</u></b> - This is the workplan for an anti-littering pilot at White Oak Neighborhood. This pilot work plan can serve as a model for developing an outreach campaign.	<a href="https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Countywide%20Implementation%20Strategy/White-Oak-Anti-litter-Factsheet.pdf">https://www.montgomerycountymd.gov/DEP/Resources/Files/ReportsandPublications/Water/Countywide%20Implementation%20Strategy/White-Oak-Anti-litter-Factsheet.pdf</a>
Program	<b><u>Adopt a Road</u></b> - This is a volunteer program that encourages residents to participate in a community activity by keeping roadsides litter free. This webpage describes the benefit of the Adopt a Road program, a program application, and available roads to adopt.	<a href="https://www.montgomerycountymd.gov/dot-dir/AdoptARoad/index.html">https://www.montgomerycountymd.gov/dot-dir/AdoptARoad/index.html</a>
Service	<b><u>Residential Street Sweeping</u></b> - This webpage describes the street sweeping program and provides an interactive map and schedule for upcoming services.	<a href="https://www.montgomerycountymd.gov/DOT-Highway/streetsweep/index.html">https://www.montgomerycountymd.gov/DOT-Highway/streetsweep/index.html</a>
Guidance	<b><u>Montgomery County Vacuum Leaf Collection Program</u></b> - This website provides guidance on how to properly manage leaf piles and hosts the County's Leaf Collection Schedule.	<a href="https://www.montgomerycountymd.gov/DOT-Highway/leaf/index.html">https://www.montgomerycountymd.gov/DOT-Highway/leaf/index.html</a>
Guidance	<b><u>Recycle Everything!</u></b> - Guidance and resources for recycling household products in Montgomery County.	<a href="https://mygreenmontgomery.org/project/recycle-everything/">https://mygreenmontgomery.org/project/recycle-everything/</a>
Guidance	<b><u>Residents and the Bag Law</u></b> - This webpage explains the 5 cent bag charge, provides strategies for keeping reusable bags clean, and answers other related questions.	<a href="https://www.montgomerycountymd.gov/bag/residents.html">https://www.montgomerycountymd.gov/bag/residents.html</a>
Guidance	<b><u>Yard Trim Disposal</u></b> - This website provides guidance on how to properly manage yard waste including trim leaves, grass, and brush piles.	<a href="https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?tag=yard-trim&amp;material_key=72">https://www2.montgomerycountymd.gov/DepHowDol/material.aspx?tag=yard-trim&amp;material_key=72</a>
Guidance	<b><u>Leaf Management</u></b> - These website provides information and links to additional sources with information about to use leaves in your yard if you don't want to rake them up for collection.	<a href="https://www.todayshomeowner.com/how-to-recycle-leaves-in-your-yard/">https://www.todayshomeowner.com/how-to-recycle-leaves-in-your-yard/</a>

Service	<b><u>Washington Suburban Sanitary Commission (WSSC)</u></b> - This website provides information about the dumping of fats, oils, and grease (FOGs) and has the contact information for WSSC's Customer Advocates. There are also educational resources available on the WSSC website.	<a href="https://www.wsscwater.com/education-and-recreation/community-outreach/outreach-in-your-community.html">https://www.wsscwater.com/education-and-recreation/community-outreach/outreach-in-your-community.html</a>
Program	<b><u>Trash Free Maryland</u></b> - This group works specifically on trash issues including styrofoam, plastic bags, straws, and the bottle bill. They also have a listserv that you can join to be alerted about advocacy opportunities.	<a href="https://trashfreemaryland.org/">https://trashfreemaryland.org/</a>
Events	<b><u>Trash Free Potomac Network</u></b> - Database for Potomac Watershed trash clean up events. Designed to foster connections between volunteers, organizations, businesses, and governments who are involved with solving the litter problem and to help promote local cleanup events.	<a href="http://trashnetwork.fergusonfoundation.org/map/">http://trashnetwork.fergusonfoundation.org/map/</a>

## Environmentally Friendly Cleaning Products

Guidance	<b><u>Green Seal</u></b> - This program generates standards and manages a certification program for environmentally friendly products. The website contains a searchable list of all the products they have certified, including a wide variety of cleaning products.	<a href="https://www.greenseal.org">https://www.greenseal.org</a>
Guidance	<b><u>Environmental Working Group</u></b> - EWG is a non-profit dedicated to protecting human health and the environment. Their website includes a wide variety of consumer guides and information about environmentally friendly products.	<a href="https://www.ewg.org/consumer-guides">https://www.ewg.org/consumer-guides</a>
Guidance	<b><u>Responsible Purchasing Network</u></b> - RPN is an international network of buyers that are dedicated to socially responsible and environmentally sustainable purchasing. Their website has a variety of purchasing guides, including cleaning products. The guides also include information about certification programs and the differences between them.	<a href="http://www.responsiblepurchasing.org/index.php#">http://www.responsiblepurchasing.org/index.php#</a>

## Trees & Native Plants

General	<b><u>Forest Conservation Program</u></b> - Montgomery County's Forest Conservation Law protects and maintains the urban forest cover. This explains who is subject to the law and provides detailed guidance on how to report forest conservation violations.	<a href="https://montgomeryplanning.org/planning/environment/forest-conservation-and-trees/">https://montgomeryplanning.org/planning/environment/forest-conservation-and-trees/</a>
Service	<b><u>Tree Concerns and Removal</u></b> - This page provides information on receiving a permit to remove trees, hiring a tree experts, and how to dispute neighbor disputes focused on trees.	<a href="https://www.montgomerycountymd.gov/green/trees/permits-and-concerns.html">https://www.montgomerycountymd.gov/green/trees/permits-and-concerns.html</a>
Service	<b><u>Highway Services</u></b> - Montgomery County Department of Transportation is responsible for any tree growing in a street right-of-way. Residents can request that the County plant a street tree, conduct an inspection, remove or maintain trees.	<a href="https://www.montgomerycountymd.gov/dot-highway/tree/index.html">https://www.montgomerycountymd.gov/dot-highway/tree/index.html</a>

Program	<b>Tree Montgomery</b> - A free shade tree program for County residents.	<a href="https://treemontgomery.org/">https://treemontgomery.org/</a>
Guidance	<b>Planting and Caring for Trees</b> - This page provides information on where to plant your tree, how to choose a tree, when to plant, and how to maintain trees.	<a href="https://www.montgomerycountymd.gov/green/trees/plant-a-tree.html">https://www.montgomerycountymd.gov/green/trees/plant-a-tree.html</a>
Guidance	<b>Tree Care Guide</b> - Guidance on how to properly fertilize, weed, water, mulch, and protect newly planted trees from deer grazing.	<a href="https://treemontgomery.org/care-guide/">https://treemontgomery.org/care-guide/</a>
Map	<b>Tree Map</b> - Map shows the location, species, and date of all trees planted through Tree Montgomery.	<a href="https://treemontgomery.org/tree-map/">https://treemontgomery.org/tree-map/</a>
Funding	<b>Shades of Green</b> - Montgomery County's Planning Department provides free trees and planting for qualifying property owners in specific urban areas.	<a href="https://montgomeryplanning.org/planning/environment/forest-conservation-and-trees/shades-of-green/">https://montgomeryplanning.org/planning/environment/forest-conservation-and-trees/shades-of-green/</a>
Funding	<b>Leaves for Neighborhoods</b> - Montgomery County Planning Department tree planting program to increase the county's tree canopy on residential properties. This program offers a \$40 coupon for purchasing and planting shade trees.	<a href="https://montgomeryplanning.org/planning/environment/forest-conservation-and-trees/leaves-for-neighborhoods/">https://montgomeryplanning.org/planning/environment/forest-conservation-and-trees/leaves-for-neighborhoods/</a>
Program	<b>Montgomery County Champion Trees</b> - The Montgomery County Forestry Board keeps track of and measures significant trees. Residents can nominate a Champion Tree to be considered.	<a href="https://www.montgomerycountymd.gov/green/trees/champion-trees.html">https://www.montgomerycountymd.gov/green/trees/champion-trees.html</a>
Funding	<b>Marylanders Plant Trees</b> - Citizens can receive \$25 off the purchase of a native tree at 86 participating nurseries across the State. It is funded through a settlement from a major power generator for Clean Air Act violations.	<a href="http://dnr.maryland.gov/forests/Pages/MarylandersPlantTrees/Introduction.aspx">http://dnr.maryland.gov/forests/Pages/MarylandersPlantTrees/Introduction.aspx</a>
Funding	<b>TREE-MENDOUS Maryland</b> - Provides trees at a reduced cost to be planted on public property.	<a href="http://dnr.maryland.gov/forests/Pages/treemendous/default.aspx">http://dnr.maryland.gov/forests/Pages/treemendous/default.aspx</a>
Guidance	<b>i-Tree Canopy</b> - This tool uses Google imagery to conduct a canopy assessment within a defined project area. It can also be used to estimate tree benefits.	<a href="https://canopy.itreetools.org/">https://canopy.itreetools.org/</a>
Funding	<b>Maryland Urban and Community Forestry Committee (MUCFC)</b> - Grants program- helps community groups fund tree planting and education projects statewide to enhance Maryland's urban forest.	<a href="http://dnr.maryland.gov/forests/Pages/programs/urban/mucfcgrant.aspx">http://dnr.maryland.gov/forests/Pages/programs/urban/mucfcgrant.aspx</a>
Guidance	<b>Recommended Native Plants for Maryland</b> - This website contains a list of recommended native plants for MD, including pictures and information about each plant	<a href="https://extension.umd.edu/hgic/topics/recommended-native-plants-maryland">https://extension.umd.edu/hgic/topics/recommended-native-plants-maryland</a>
Guidance	<b>Native Plant Center Database</b> - A searchable database for native plants. You can search based on region and habitat requirements.	<a href="http://www.nativeplantcenter.net/">http://www.nativeplantcenter.net/</a>
Guidance	<b>Native Plants for Wildlife Habitat and Conservation Landscaping</b> - A link to the U.S. Fish & Wildlife Service's native plant guide for the Chesapeake Region.	<a href="https://www.fws.gov/chesapeakebay/pdf/NativePlantsforWildlifeHabitatandConservationLandscaping.pdf">https://www.fws.gov/chesapeakebay/pdf/NativePlantsforWildlifeHabitatandConservationLandscaping.pdf</a>
Guidance	<b>Maryland Native Plant Society</b> - A link to the Society's homepage where you can find a variety of information about native plants.	<a href="https://mdflora.org/">https://mdflora.org/</a>



## Salt Management

Guidance	<b><u>Canadian Code of Practice</u></b> - Website that details Canada's code of practice for the environmental management of road salt	<a href="https://www.canada.ca/en/environment-climate-change/services/pollutants/road-salts/code-practice-environmental-management.html">https://www.canada.ca/en/environment-climate-change/services/pollutants/road-salts/code-practice-environmental-management.html</a>
Guidance	<b><u>Maryland Department of the Environment</u></b> - MDE's road salt main page contains basic information about salt use on roads, how to reduce useage at home, environmental impacts, and links to additional resources.	<a href="https://mde.maryland.gov/programs/Marylander/Pages/roadSalt.aspx">https://mde.maryland.gov/programs/Marylander/Pages/roadSalt.aspx</a>
Guidance	<b><u>Maryland DOT and SHA</u></b> - This is a link to Maryland's Statewide Salt Management Plan	<a href="https://www.roads.maryland.gov/oom/statewide_salt_management_plan.pdf">https://www.roads.maryland.gov/oom/statewide_salt_management_plan.pdf</a>

## Other Outreach and Education Opportunities

### Photo Contest

Guidance	<b><u>Berlin Stormwater Feasibility Study Appendices</u></b> Example of a stormwater community photo contest including promotional flyer, registration form, photograph release form, and submitted photos.	<a href="https://efc.umd.edu/assets/berlin_stormwater_feasibility_study_appendices.pdf">https://efc.umd.edu/assets/berlin_stormwater_feasibility_study_appendices.pdf</a>
Guidance	<b><u>Maryland Natural Resource Photo Contest</u></b> - Good example of how to set up a photo contest. The webpage provides a good breakdown of the rules, terms, and conditions.	<a href="http://dnr.maryland.gov/Pages/photocontest.aspx">http://dnr.maryland.gov/Pages/photocontest.aspx</a>

### Community Organizing

Contacts	<b><u>Federal, State, and County Elected Officials</u></b> Database of current elected officials can be used to advocate for development of policies that require long-term maintenance plans for public infrastructure and increased green infrastructure installations.	<a href="https://www.montgomerycountymd.gov/Elections/Information/electedofficials.html">https://www.montgomerycountymd.gov/Elections/Information/electedofficials.html</a>
Contacts	<b><u>County Council Member</u></b> - This website lists current Montgomery County Council members and an has an interactive map that will help you identify your council member.	<a href="https://www2.montgomerycountymd.gov/mccouncildistrict/">https://www2.montgomerycountymd.gov/mccouncildistrict/</a>
Guidance	<b><u>Maps for Community Organizing</u></b> - Toolbox for identifying, organizing, and sharing its collective voice with decision makers at the local and state levels.	<a href="https://hc-v6-static.s3.amazonaws.com/media/resources/tmp/Community_Organizing.pdf">https://hc-v6-static.s3.amazonaws.com/media/resources/tmp/Community_Organizing.pdf</a>
Guidance	<b><u>Community Engagement Toolkit: Organizing Your Community</u></b> - toolkit is designed for individuals and organizations implementing local community engagement campaigns. This resource is an example of community organizing around demand for energy services but the principles can be applied to stormwater.	<a href="https://powershift.org/sites/default/files/resources/1.31.2012_Organizing_Your_Community.pdf">https://powershift.org/sites/default/files/resources/1.31.2012_Organizing_Your_Community.pdf</a>

Program	<b>Sustainable Maryland</b> - A “one-stop-shopping” program helping municipalities choose a direction for their sustainability efforts, improve access to resources needed to implement action, measure their progress, and gain recognition for their accomplishments	<a href="http://sustainablemaryland.com/">http://sustainablemaryland.com/</a>
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## Training and Education

Education	<b>Municipal Online Stormwater Training Center</b> - online platform to provide stormwater education and training that includes tools, resources, and brief educational videos for the purpose of increasing awareness and empowering its stakeholders to take action toward effective stormwater management.	<a href="https://mostcenter.org/">https://mostcenter.org/</a>
Education	<b>Master Naturalist Training Courses</b> - University of Maryland Extension offers a variety of courses to engage citizens as stewards of nature. Master naturalists conduct field research, build and maintain natural areas, and lead nature walks and programs.	<a href="https://extension.umd.edu/masternaturalist/become-master-naturalist/training-courses-piedmont-region-scroll-down-full-listing">https://extension.umd.edu/masternaturalist/become-master-naturalist/training-courses-piedmont-region-scroll-down-full-listing</a>
Education	<b>Master Naturalist Training Courses</b> - Audubon Naturalist Society offers a Master Naturalist training program in partnership with the University of Maryland.	<a href="https://anshome.org/master-naturalist/">https://anshome.org/master-naturalist/</a>
Education	<b>Nature Classes and Field Trips</b> - The Maryland Audobon Society offers a number of educational opportunities	<a href="https://anshome.org/adults/">https://anshome.org/adults/</a>
Education / Engagement	<b>Montgomery Parks Weed Warriors</b> - This website contains information about invasive plant species in Montgomery County as well as information about how to become a certified Weed Warrior. There is also information about volunteer events for individuals that are already certified.	<a href="https://www.montgomeryparks.org/caring-for-our-parks/natural-spaces/weed-warriors/">https://www.montgomeryparks.org/caring-for-our-parks/natural-spaces/weed-warriors/</a>
Education / Engagement	<b>Arlington Alexandria Tree Stewards</b> - This website contains a variety of information and resources related to tree care and selection. It also includes information about how to properly remove Elnghish ivy from trees.	<a href="https://treestewards.org/">https://treestewards.org/</a>
Engagement	<b>Montgomery County’s Stream Stewards Program</b> Benefits of joining the Stream Stewards program, available volunteer opportunities, and Stream Stewards Informational Form.	<a href="https://www.montgomerycountymd.gov/water/volunteer/index.html#stewards">https://www.montgomerycountymd.gov/water/volunteer/index.html#stewards</a>
Engagement	<b>Alice Ferguson Foundation</b> - Offers education, stewardship, and advocacy opportunities to people interested in natural world, sustainable agriculture, and cultural heritage in their community.	<a href="http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/">http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/</a>

## Funding Opportunities\*\*\*

\*\*\*Please note that most of these opportunities will require a non-profit partner

<b>Chesapeake Bay Trust Montgomery County Watershed Restoration and Outreach Grants</b> - Up to \$100,000 with larger awards possible with prior approval from the Trust.	<a href="https://cbtrust.org/grants/montgomery-county-watershed-restoration-outreach/">https://cbtrust.org/grants/montgomery-county-watershed-restoration-outreach/</a>
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<b>Greater Washington Community Foundation Montgomery County</b> - The County's community foundation may be an opportunity for community-based project funding.	<a href="https://www.thecommunityfoundation.org/montgomery/">https://www.thecommunityfoundation.org/montgomery/</a>
<b>Green Streets, Green Jobs, Green Towns (G3)</b> - Up to \$15,000 for conceptual plans, up to \$30,000 for engineered designs, up to \$75,000 for implementation projects.	<a href="https://cbtrust.org/grants/green-streets-green-jobs-green-towns/">https://cbtrust.org/grants/green-streets-green-jobs-green-towns/</a>
<b>Innovative Nutrient and Sediment Reduction Grants</b> - Grants between \$200,000 and \$500,000 to collaborative and sustainable regional-scale partnerships and networks of practitioners with a shared focus on water quality restoration and protection in order to accelerate the implementation of water quality improvements.	<a href="https://www.nfwf.org/chesapeake/Pages/innovative-nutrient-and-sediment-reduction-grants.aspx">https://www.nfwf.org/chesapeake/Pages/innovative-nutrient-and-sediment-reduction-grants.aspx</a>
<b>Montgomery County RainScapes Rebate Program</b> Comprehensive resources for the RainScapes program including manuals and guides, choosing a professional, plant lists, and additional resources. Multi-lingual resources are available (Amharic, Chinese, French, Korean and Spanish). Potential projects include canopy trees, conservation landscapes, green roofs, pavement removal, permeable pavement, rain barrels & cisterns, and rain gardens.	<a href="https://www.montgomerycountymd.gov/water/rainscapes/resources.html#manuals">https://www.montgomerycountymd.gov/water/rainscapes/resources.html#manuals</a>
<b>Small Watershed Grants</b> - Grants between \$20,000 and \$200,000 for projects that result in improvements to local stream health and habitat, and/or the water quality of the Chesapeake Bay.	<a href="https://www.nfwf.org/chesapeake/Pages/small-watershed-grants.aspx">https://www.nfwf.org/chesapeake/Pages/small-watershed-grants.aspx</a>
<b>TD Green Streets Grant Program</b> - Grants up to \$20,000 for innovative local forestry projects in low- to moderate-income neighborhoods.	<a href="https://www.arborday.org/programs/tdgreenstreets/requirements.cfm">https://www.arborday.org/programs/tdgreenstreets/requirements.cfm</a>

## Organizations and Contacts

### Partnership Groups

Audubon Naturalist Society	<a href="https://anshome.org/">https://anshome.org/</a>	Eliza Cava Director of Conservation eliza.cava@anshome.org
Chesapeake Bay Foundation (CBF)	<a href="https://www.cbf.org/">https://www.cbf.org/</a>	
<b>Chesapeake Bay Landscape Professionals</b> - Contractors and designers that have been certified in skills related to designing, installing, and maintaining a variety of environmental projects. If you are looking for an engineer or contractor to assist with stormwater management projects, or if you are looking for someone to assist with invasive plant species issues, start your search on this website.	<a href="https://cblpro.org/">https://cblpro.org/</a>	
Design Green	<a href="https://www.designgreenllc.com/">https://www.designgreenllc.com/</a>	Rebecca Stack info@designgreenllc.com

Environmental Finance Center	<a href="https://efc.umd.edu/">https://efc.umd.edu/</a>	Michelle Kokolis Program Manager mkokolis@umd.edu
Alice Ferguson Foundation	<a href="http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/">http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/</a>	
Interfaith Partners for the Chesapeake	<a href="https://www.interfaithchesapeake.org/">https://www.interfaithchesapeake.org/</a>	Jodi Rose Executive Director jodi@interfaithchesapeake.org
<b><u>Low Impact Development Center</u></b> Non-profit organization that focuses on sustainable stormwater management solutions for urban and developing areas.	<a href="https://lowimpactdevelopment.org/">https://lowimpactdevelopment.org/</a>	Emily Clifton Senior Environmental Planner emily.clifton@me.com
Maryland Sea Grant	<a href="https://www.mdsg.umd.edu/topics/extension/our-services">https://www.mdsg.umd.edu/topics/extension/our-services</a>	Amanda Rockler Central Maryland Regional Watershed Restoration Specialist arockler@umd.edu
Rock Creek Conservancy	<a href="https://www.rockcreekconservancy.org/">https://www.rockcreekconservancy.org/</a>	Jeanne Braha Executive Director jbraha@rockcreekconservancy.org
Sustainable Maryland	<a href="http://sustainablemaryland.com/">http://sustainablemaryland.com/</a>	Mike Hunninghake Program Manager: Sustainable Maryland Mikeh75@umd.edu
<b><u>University of Maryland Extension Programs</u></b> - The grant writing assistance program offers advice, information, and resources to help ag service providers and others turn a bright idea into a fundable project.	<a href="http://extension.umd.edu/grants">http://extension.umd.edu/grants</a>	Amanda Rockler Central Maryland Regional Watershed Restoration Specialist arockler@umd.edu
<b><u>Backyard Buffers Program</u></b> - This program for small landowners who have a drainage ditch, stream, creek or river adjacent to their property may be eligible for a free “buffer in a bag” to help get homeowners started in buffering their streamside.	<a href="http://dnr.maryland.gov/forests/Pages/programs/Backyard-Buffer-Program.aspx">http://dnr.maryland.gov/forests/Pages/programs/Backyard-Buffer-Program.aspx</a>	Montgomery County James Eierdam 301-854-6060 james.eierdam@maryland.gov
<b><u>Maryland Urban and Community Forestry Committee (MUCFC)</u></b> Grants program- helps community groups fund tree planting and education projects statewide to enhance Maryland’s urban forest.	<a href="http://dnr.maryland.gov/forests/Pages/programs/urban/mucfcgrant.aspx">http://dnr.maryland.gov/forests/Pages/programs/urban/mucfcgrant.aspx</a>	Wanda MacLachlan MUCFC Grants Chair University of Maryland Extension 11975 Homewood Road Ellicott City, MD 21042 410-531-5973 wtm@umd.edu

## Policy Action Alerts

Audubon Naturalist Society	<a href="https://anshome.org/policy-and-advocacy/">https://anshome.org/policy-and-advocacy/</a>	
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Trash Free Maryland	<a href="https://trashfreemaryland.org/support-us/">https://trashfreemaryland.org/support-us/</a>	
Natural Resources Defense Council (NRDC)	<a href="https://www.nrdc.org/get-involved">https://www.nrdc.org/get-involved</a>	
Chesapeake Bay Foundation	<a href="http://www.cbf.org/take-action/">http://www.cbf.org/take-action/</a>	

## Training and Education

Audubon Naturalist Society Environmental Education Classes	<a href="https://anshome.org/adults/#">https://anshome.org/adults/#</a>	
Master Gardener Training – UMD Extension	<a href="https://extension.umd.edu/mg/locations/montgomery-county-master-gardeners">https://extension.umd.edu/mg/locations/montgomery-county-master-gardeners</a>	
Master Naturalist Training – Audubon Naturalist Society	<a href="https://anshome.org/master-naturalist/">https://anshome.org/master-naturalist/</a>	
Master Naturalist Training – UMD Extension	<a href="https://extension.umd.edu/masternaturalist/become-master-naturalist/training-courses-piedmont-region-scroll-down-full-listing">https://extension.umd.edu/masternaturalist/become-master-naturalist/training-courses-piedmont-region-scroll-down-full-listing</a>	

## Volunteer Opportunities

Audubon Naturalist Society	<a href="https://anshome.org/volunteer/">https://anshome.org/volunteer/</a>	
Montgomery County	<a href="https://www.montgomerycountymd.gov/water/volunteer/">https://www.montgomerycountymd.gov/water/volunteer/</a>	
Montgomery County Parks	<a href="https://www.montgomeryparks.org/support/volunteer/">https://www.montgomeryparks.org/support/volunteer/</a>	<b>301-495-2504</b>
Rock Creek Conservancy	<a href="https://www.rockcreekconservancy.org/get-involved/volunteer">https://www.rockcreekconservancy.org/get-involved/volunteer</a>	

# Appendix F:

# Outreach Calendar

## Parkside Stormwater Outreach & Education Plan

	January	February	March	April	May	June
<b>Website Promotion</b>	<ul style="list-style-type: none"> <li>Earth friendly cleaning products</li> </ul>		<ul style="list-style-type: none"> <li>Volunteer Opportunity: April Earth Day Cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Street sweeping reminder</li> <li>Earth Day cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Special Project: Volunteers needed for tree canopy mapping</li> </ul>
<b>Constant Contact Email</b>	<ul style="list-style-type: none"> <li>Earth friendly cleaning products</li> <li>Reminder: Christmas Tree Recycling</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: March invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: April Earth Day Cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Street sweeping reminder</li> <li>Earth Day cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Special Project: Volunteers needed for tree canopy mapping</li> </ul>
<b>Google Group Message</b>	<ul style="list-style-type: none"> <li>Earth friendly cleaning products</li> <li>Reminder: Christmas Tree Recycling</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: March invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: April Earth Day Cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Street sweeping reminder</li> <li>Earth Day cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Special Project: Volunteers needed for tree canopy mapping</li> </ul>
<b>Newsletter</b>	<ul style="list-style-type: none"> <li>Earth friendly cleaning products</li> <li>Reminder: Christmas Tree Recycling</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: March invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: April Earth Day Cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Street sweeping reminder</li> <li>Earth Day cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Special Project: Volunteers needed for tree canopy mapping</li> </ul>
<b>Special Events</b>	<ul style="list-style-type: none"> <li>Board Meeting</li> <li>Christmas Tree Recycling</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Invasive plant removal</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Earth Day cleanup</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Yard Sale</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Community Day: Table with brochures, etc.</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>
<b>Bulletin Board Posting</b>	<ul style="list-style-type: none"> <li>Reminder: Christmas Tree Recycling</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: March invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: April Earth Day Cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Street sweeping reminder</li> <li>Earth Day cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Community Day</li> </ul>

## Parkside Stormwater Outreach & Education Plan

	July	August	September	October	November	December
<b>Website Promotion</b>			<ul style="list-style-type: none"> <li>Storm drain labeling &amp; trash cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: November invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	
<b>Constant Contact Email</b>		<ul style="list-style-type: none"> <li>Volunteer Opportunity: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: November invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Christmas Tree Recycling</li> </ul>
<b>Google Group Message</b>		<ul style="list-style-type: none"> <li>Volunteer Opportunity: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: November invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Christmas Tree Recycling</li> </ul>
<b>Newsletter</b>		<ul style="list-style-type: none"> <li>Volunteer Opportunity: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Results from tree canopy mapping project</li> </ul>	<ul style="list-style-type: none"> <li>Highlights from the fall storm drain labeling &amp; trash cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Christmas Tree Recycling</li> </ul>
<b>Special Events</b>	<ul style="list-style-type: none"> <li>Tree canopy mapping project</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Fall storm drain labeling &amp; trash cleanup</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Yard Sale</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Invasive plant removal</li> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Board Meeting</li> <li>Green Team Meeting</li> </ul>
<b>Bulletin Board Posting</b>		<ul style="list-style-type: none"> <li>Volunteer Opportunity: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Fall storm drain labeling &amp; trash cleanup event</li> </ul>	<ul style="list-style-type: none"> <li>Volunteer Opportunity: November invasive plant removal</li> </ul>	<ul style="list-style-type: none"> <li>Household hazardous waste drop off at Shady Grove</li> </ul>	<ul style="list-style-type: none"> <li>Reminder: Christmas Tree Recycling</li> </ul>