Prince George's County Rain Check Grant Program

Request for Applications

Chesapeake Bay Trust

108 Severn Avenue, Annapolis, MD 21403

(410) 974 - 2941 ♦ www.cbtrust.org

Prince George's County Rain Check Grant Program

Rain Barrels | Cisterns | Urban Tree Canopy | Rain Gardens | Conservation Landscaping | Pavement Removal | Permeable Pavement | Green Roofs

Introduction and Program Goals

The Chesapeake Bay Trust (Trust) is a nonprofit, grant-making organization dedicated to improving the bays, streams, rivers, forests, parks, and other natural resources of our local systems, from the Chesapeake to the Coastal Bays to the Youghiogheny River. The Trust, supported in large part by Maryland's Chesapeake Bay License Plate, and partnerships with other regional funders, engages and empowers diverse groups to take actions that enrich natural resources and local communities of the Chesapeake Bay region. Since 1985, the Trust has awarded over $160 million in grants to municipalities, nonprofit organizations, schools, and public agencies throughout the Chesapeake Bay watershed.

The Trust is proud to partner with Prince George's County on its Rain Check Grant Program, providing nonprofit organizations the opportunity to receive pre-construction funds for installing approved stormwater management practices on residential property belonging to another entity. The goal of this program is to provide upfront costs for the residential property owner who may otherwise not be able to afford to participate in the Rain Check Rebate Program.

The Trust is committed to the advancement of diversity and inclusion in its award-making and environmental work. As a result, the Trust strongly encourages applications directly from underrepresented groups, and for projects that increase awareness and participation of communities that are traditionally underrepresented, such as communities of color. For a full description of the Trust's efforts to engage under-engaged groups, see our strategic plan at www.cbtrust.org/strategic-plan and https://cbtrust.org/diversity-inclusion/.

At A Glance

Program Summary: The Prince George's County Rain Check Grant Program offers pre-construction funds to eligible nonprofit organizations that implement eligible stormwater practices on residential property.

Deadline: Applications are accepted on a rolling basis.

Eligible Project Types: Rain barrels, cisterns, rain gardens, conservation landscaping, urban tree canopy, pavement removal, permeable pavement, and green roofs.

Eligible Project Locations: This program funds projects in Prince George's County, Maryland. Properties within the City of Bowie are not eligible for this program (see City's program). Properties within the Town of Cheverly, Town of University Park, and City of College Park, see the "Eligible Applicants, Property Types, and Project Locations" section for more information on tree planting projects.

Maximum Rebate Amounts: $6,000 for each residential property

Submit Your Application: Follow the instructions online at https://cbtrust.org/grants/prince-georges-county-rain-check-rebate/rain-check-for-nonprofit-organizations/.

Contact: Megan Andreasen, Senior Program Officer, 410-974-2941 ext. 133, rebate@cbtrust.org.

Eligible Applicants, Property Types, and Project Locations

Nonprofit organizations are eligible to apply for Rain Check pre-construction funds on residential sites owned by other entities. In order to qualify for the advanced funds, applicants must demonstrate their capacity to perform and complete the project pursuant to the Prince George's County Department of the Environment Rain Check Rebate Regulations. Nonprofit organizations approved to implement projects on sites owned by other entities are eligible to receive up to 80% of the funds in advance of project implementation. The remaining 20% will be paid upon the completion and final inspection and approval of the project.

Nonprofits installing practices on residential property within Prince George's County, Maryland, are eligible to participate with the following exceptions:

- The City of Bowie manages its stormwater program independently of the County. Therefore, properties within the City of Bowie are not eligible for this program.
- The Town of Cheverly, Town of University Park, and City of College Park offer their own tree rebate programs. Applicants from these municipalities will be directed to contact their Town or City's Department of Public Works to participate in their tree planting programs. If an applicant has capped out of their respective tree program or wishes to install a native tree species not covered by the municipal program, the applicant may participate in the Rain Check Rebate Program up to the limits established by the Prince County's Rain Check Rebate Program. Please note that documentation of participation in a municipal tree program will be required.

Please note: Only nonprofit organizations implementing projects on a residential property belonging to another entity are eligible for this program. Organizations should contact the Program Coordinator prior to applying, for submission requirements and program details.

Eligible Practices/Project Types and Criteria

Eight types of stormwater practices are eligible for rebates under the Rain Check Grant Program. These eight practices are defined on the following pages. The eight practices include: rain barrels, cisterns, rain gardens, conservation landscaping, urban tree canopy, pavement removal, permeable pavement, and green roofs. Each project must meet the practice's criteria and minimum project size requirements (Table 1) to qualify for a rebate. In addition, to learn about each practice including details about the eight stormwater practices to help decide what may work best for the property and what is allowable in the program, applicants should review the fact sheet and guidelines document for each practice which can be found at https://cbtrust.org/grants/prince-georges-county-rain-check-rebate/rain-check-for-nonprofit-organizations/. Knowing about the use of each practice and how to maintain them so they look beautiful and continue to function as designed is important; see Appendix A for details on operation and maintenance of the eight Rain Check Rebate practices.

Rain Barrels

Rain barrels (Figures 1, 2, and 3) are containers used to collect a portion of the rainwater that flows from your rooftop and store it for later use such as on your lawn and garden. Rain barrels are not for storing drinking water or water for use inside your home. By capturing water from downspouts that would otherwise discharge onto a paved surface, rain barrels can reduce the amount of runoff and pollutants reaching local streams.

For residential and housing cooperative properties, the rain barrel system must capture at least 50 gallons of rainwater.

Figure 1. A 55-gallon rain barrel installed at a residential property.

Figure 2. A 50-gallon rain barrel with a rain chain installed at a residential property.

Figure 3. Four 50-gallon rain barrels connected together and installed at a residential property.

Cisterns

A cistern (Figures 4 and 5) is a sealed tank used to collect rainwater that flows from your rooftop and stores it for non-potable, exterior uses, such as landscape irrigation and car washing. Generally larger than rain barrels, cisterns have capacities ranging from 100 gallons to several thousand gallons and can collect water from several downspouts from a single roof or from multiple roofs.

For residential properties, the cistern must capture at least 250 gallons of rainwater.

Figure 4. Four 305-gallon cisterns connected together and installed at a residential property.

Figure 5. A 250-gallon cistern installed at a nonprofit organization.

Rain Gardens

A rain garden (Figures 6 and 7) is a planted shallow depression that uses water-tolerant native plants and landscaping to treat stormwater flowing from downspouts or hard (impervious) surfaces, such as your driveway, patio, or sidewalk. Rain gardens allow water to slowly soak into the ground, reducing the amount of water that flows directly into nearby storm drains, creeks, or rivers. Rain gardens are an aesthetically attractive, low-tech, and inexpensive way for homeowners, communities, and businesses to help reduce stormwater pollution in local streams and rivers.

For residential properties, the rain garden must:

- be at least 100 square feet in size;
- be at least 10 feet away from all structures;
- be located downhill from the foundations of any structures;
- drain water away from your home and your neighbors' home;
- be at least 25 feet away from a septic field or a wellhead;

- be exposed to full or partial sun; and
- be in an area in which water can seep quickly enough into the soil so that it drains within 36 hours.

Figure 6. A 225 square foot rain garden installed at a residential property.

Figure 7. A 360 square foot rain garden installed at a residential property.

Conservation Landscaping

A conservation landscape (Figure 8) is a garden that improves water quality, promotes and preserves native species, and increases wildlife habitat. It can be a native flower garden, a mini urban meadow, a native vegetable garden, a pollinator garden or a rewilded forest patch which takes the place of large turf areas and existing hardscapes. Conservation landscaping means working with nature to create diverse landscapes that help protect clean air and water; enhance climate resilience; support pollinators and wildlife, all while providing a healthier and more aesthetically pleasing environment to residents and their neighbors.

There are three tracks of conservation landscaping:

- *Track 1*: Native Plant Landscape
  - Hard surfaces, invasive plants, eroding soil, or non-native turf grass are replaced with native plants.
  - This track will appeal to applicants who wish to use an entirely native plant palette in the context of traditional garden design.
  - Minimum size: 250 sq. ft.
- *Track 2*: Edible Conservation Landscaping
  - Hard surfaces, invasives, eroding soil, or non-native turf grass are replaced with a combination of native and edible plants (native edibles and non-native, non-invasive edibles)
  - This track will appeal to applicants who wish to create a garden that provides food resources in addition to habitat enhancement.
  - Minimum size: 250 sq. ft.
- *Track 3*: Reforestation and Meadow Creation
  - Hard surfaces, invasives, eroding soil, or non-native turf grass are reforested or converted to meadow.
  - This track will appeal to applicants who have the ability to steward a relatively large area and would like to manage it as a dynamic plant community rather than a static grouping of plants.
  - Due to the technical nature of Track 3, applicants or their contractors are required to attend a Prince George's County Department of the Environment (DoE) held training before planting or show professional training equivalency as approved by DoE.
  - Minimum size: 1,000 sq. ft.

For all property types, conservation landscaping must:

- be at least 250-1,000 square feet in size, depending on the track;

- be at least 10 feet away from all structures;
- be located downhill from the foundations of any structures;
- drain water away from your home and your neighbors' home;
- be at least 25 feet away from a septic field or a wellhead; and
- be exposed to full or partial sun

For specific requirements for each track including landscape restrictions, installation requirements, required native species, and plant density, please review the Conservation Landscaping Fact Sheet and Guidelines on the Trust's Rain Check Rebate website.

Figure 8. Conservation landscaping installed at a residential property.

Urban Tree Canopy

The canopy of a tree or group of trees is the area of leaves and branches that create shade under the tree(s). Like umbrellas, trees reduce the amount of sunlight and rain reaching the ground. Trees (Figures 9 and 10) in urban environments are particularly important for intercepting rainfall before it becomes stormwater runoff. Tree leaves, branches, and roots intercept falling rain, filter out pollutants, and absorb stormwater.

For residential properties, the following criteria must be met:

- New trees must be planted on private property (not in the public right-of-way);
- Trees must be planted between October 1 and May 1;
- Trees must be native species with the exception of ash (*Fraxinus* species), which is not recommended due to the spread of the invasive emerald ash borer, an insect that kills ash trees; and
- At the time of planting, trees must be at least 5 feet tall at least ½ inch caliper, and planted in a 5-gallon (or larger) container or balled and burlapped.

Figure 9. Six arborvitae (Thuja occidentalis) trees planted at a residential property.

Figure 10. A southern magnolia (Magnolia grandiflora) tree planted at a residential property.

Pavement Removal

Pavement removal (Figure 11) is the replacement of impervious surfaces (such as asphalt and concrete) with grass, native plants, or with permeable pavement and/or pavers. Instead of soaking into the soil (infiltrating) and replenishing groundwater, rainfall that lands on driveways, sidewalks, and other impervious surfaces rapidly accumulates in the form of runoff, which often contains pollutants (nutrients, sediment, chemicals, animal waste, trash, etc.). In urbanized areas, stormwater runoff typically enters the storm drain system (underground pipes that carry stormwater to streams) and ultimately, flows to the Chesapeake Bay. Large expanses of impervious area are also associated with increased stream bank erosion and decreased water quality.

For residential and housing cooperative properties, there is no minimum size requirement for pavement removal.

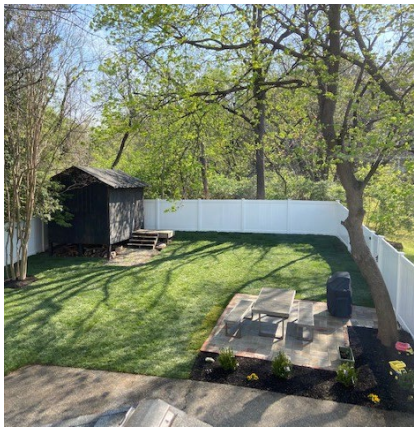



Figure 81. Before and after the removal of 661 square feet of pavement at a residential property.

Permeable Pavement

When rainwater falls on conventional pavement, such as concrete, it flows over this impervious surface as stormwater runoff. Permeable pavement (Figures 12-14) allows stormwater to slowly soak through the surface (infiltrate), reaching the soil and groundwater. When water infiltrates the soil, water quality is improved and stormwater pollution and stream bank erosion decrease. A variety of permeable pavement materials are available; however, gravel does not qualify as a permeable pavement for this program.

For residential and housing cooperative properties, there is no minimum size requirement for permeable pavement.

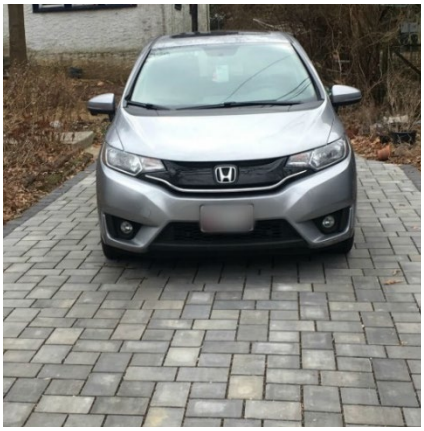


Figure 92. Pavement was removed and replaced with 360 square feet of interlocking permeable pavers at a residential property.

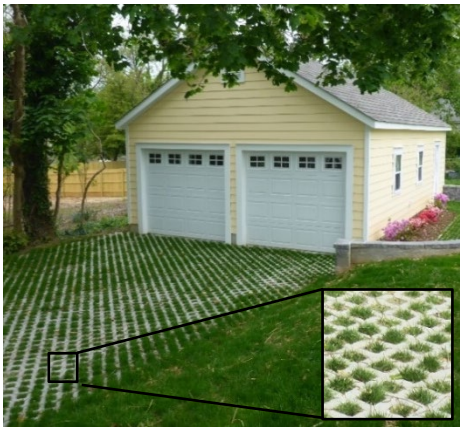


Figure 1310. Pavement was removed and replaced with 720 square feet of turfstone permeable pavers at a residential property.

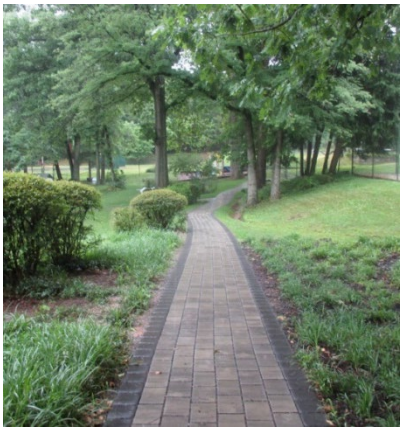


Figure 114. Pavement was removed and replaced with 725 square feet of interlocking permeable pavers at a commercial property.

Green Roof

A green roof (Figures 15 and 16) is a low-maintenance, vegetated roof system that stores rainwater in a lightweight, engineered soil medium. The stored water either evaporates from the roof top or is taken up by plants. As a result, compared to a conventional rooftop of the same area, much less water runs off of a green roof.

For residential properties, a minimum of a ¼ roof retrofit must be completed to qualify for a rebate. The green roof must replace an existing traditional roof area rather than expanding the original roof footprint. A structural load analysis report from a licensed structural engineer is required for approval.

Figure 125. A green roof at the University of Maryland. This is an example of a green roof. This project was not funded through this program. (Photo credit: University of Maryland. https://sustainability.umd.edu/campus/water)

Figure 16. A green roof at the Town of Forest Heights' municipal building. This is an example of a green roof. This project was not funded through this program.

Maximum Rain Check Request, Eligible Costs, and Ineligible Costs

Grant Allowable Costs

Each of the eight practices supported by the Rain Check Grant Program has its own allowance (Table 1). In addition, there is a total maximum grant amount for the lifetime of the property based on the property type for each property parcel. The maximum request per property is $6,000.

Only costs associated with the stormwater functions of a project are eligible. Related structural features of a project that do not directly play a role in the treatment of stormwater are not eligible (e.g., benches, decorative items such as boulders, walkways, bridges, and other similar items that do not support the stormwater function of the project).

Applicants are not eligible under this program if the project is part of the permit approval requirements for new building construction or renovations.

Maximum Grant Amounts per Property Type and per Practice for Each Property Type

Table 1. Maximum Rain Check Request, and Project Size Requirements for each Property Type		
Project Type	**Residential Properties**	
	Minimum Project Size	**Maximum Rebate Amount per Unit**
Rain Barrel	50 gallons	$2 per gallon stored
Cistern	250 gallons	$2 per gallon stored
Rain Garden	100 square feet	$10 per square foot
Conservation Landscaping	250-1,000 sq. ft., depending on Track	$5 per square foot
Urban Tree Canopy	Minimum tree height of 5 feet when planted	$150 per tree
Pavement Removal	None	$6 per square foot
Permeable Pavement	None	$12 per square feet
Green Roof	¼ total roof area	$10 per square foot
Maximum Request Amount Allowed per Property	**$6,000.00**	

*The request amount will be the maximum amount allowed under the Rain Check Program or the actual cost, whichever is lower.

Timeline

Projects must be completed within 12 months from the date that the application was submitted. Requests to extend project completion period are often allowed and will be reviewed on a case-by-case basis.

Deadline

Applications for the Rain Check Grant Program are accepted on an on-going basis (also called a "rolling program"). Funds are available on a first come, first served basis until funds are fully expended for the given fiscal year. Check our website at https://cbtrust.org/grants/prince-georges-county-rain-check-rebate/rain-check-for-nonprofit-organizations/ and sign up for our grantee newsletter at https://cbtrust.org/newsletters/ for the most up to date information about the status of this rolling program.

Application Process

Here are the steps that start with your project idea for one or more stormwater practices to be installed using the Rain Check Grant Program through the application process, including major milestones expected, and ending with the project completed. The steps are broken up for you by property type.

Step 1: The nonprofit organization (NPO) submits an application for each individual residential property request through the Trust's online grant system. To be eligible for pre-construction funds, applicants for all projects must submit one application per property ID number and be approved by the Trust prior to implementation. Complete applications must include the following supplemental documents:

a. Property owner Agreement signed by NPO and Property Owner
b. Itemized budget using the Trust's Rain Check Grant budget form

Step 2: The Trust's Program coordinator reviews the applications and contacts the NPO project lead to schedule a pre-installation site visit.

Step 3: Attend a pre-installation site visit.

Step 4: Upon review and pre-approval from the County and the Trust, NPO will receive a grant agreement from the Trust that includes the terms of the award. An application may be fully awarded, partially awarded (i.e., an ineligible budget amount is requested), or declined. The non-profit organization will receive up to 80% of the award in advance of project implementation.

Step 5: Prior to construction, the NPO must upload the signed grant agreement and submit any contingencies listed in the agreement by logging into the Chesapeake Bay Trust Online Grant System account accessed through the link https://www.GrantRequest.com/SID_1520 with the same username and password used when you applied.

Step 6: Apply for permits, if required. Most projects will not require permits. However, if a project on its owner or in conjunction with concurrent project on your property involves any of the following activities, a permit is likely required:

a. 5,000 square feet or more of ground is disturbed;
b. 100 cubic yards or more of earth moving occurs, or;
c. 12-inch change (+/-) in grade that alters drainage flow.

Step 7: Complete the project within 12 months and submit all receipts, invoices, and copies of final permit inspections (if applicable) by logging into the Chesapeake Bay Trust Online Grant System account accessed through the link https://www.GrantRequest.com/SID_1520 with the same username and password used when you applied. Final paperwork includes but is not limited to:

a. Accounting of expenditures using the Trust's Rain Check budget form;
b. Documentation of project expenses including receipts, and/or invoices showing payment or $0 balance, and/or invoices with proof of payment; and
c. Copies of final permit inspection (if applicable).

Step 8: Attend a post-installation site visit with the Trust to inspect the completed project.

Step 9: Receive the remaining 20% of the pre-construction rebate award.

Applications will be approved on a first-come, first-served basis.

Online Application

The Trust uses an online system for the application process and project management. Go to https://cbtrust.org/grants/prince-georges-county-rain-check-rebate/rain-check-for-nonprofit-organizations/ and click on "Get Started" to begin a new application. This will open a new window asking you to log in or create an account on our online system. If you have applied to the Chesapeake Bay Trust in the past, please use your existing username and password (if you have forgotten your password, click on 'forgot password' to reset your

password). If you have not applied to the Chesapeake Bay Trust before, click on “New Applicant” to set up an account.

At the start of the online application form, you will be asked to complete an eligibility review which is meant to assist you in determining if your project meets the requirements of this program. You will then be asked to provide the following information. Complete the application to the best of your ability.

1. Applicant and Property Information Tab
    - Organization name
    - Address and Phone Number
    - Organization Type
    - EIN Number
    - Organizational Capacity: Please briefly describe (2-3 sentences) the organization’s
    - Financial capacity and ability to perform the project.
    - Technical capacity – experience with design and construction (if proposing to design and/or contract in house) or contracting (if proposing to use a contractor)
    - Programmatic capacity – capacity to manage and supervise the project

**Please note, an Executive Officer and Project Lead must be identified for all proposals and must be different individuals. Both individuals must be staff or board members of the applicant nonprofit organization. Individuals from for-profit entities who are to be engaged in the project cannot serve in either role.

2. Executive Officer, Project Lead, and Requesting Organization:
    - Name
    - Title
    - Address
    - Phone
    - E-mail
3. Property Information:
    - Homeowner Name
    - Property Tax Account Number
    - Property Address
    - Property Type (must be residential for this program)
    - Lot size
    - Whether the property is part of a Homeowner’s Association (HOA)
4. Rain Check Project Information:
    - Amount of funding requested
    - Project Description: In a text box, you will be asked to provide a brief (3-4 sentences) summary of the project, including details such as type of project, location, and main objectives. You may copy and paste from a word processing document
    - Project Type (cistern, green roof, pavement removal, permeable pavement, rain barrel, rain garden, conservation landscaping, urban tree canopy)
    - Contractor to be Used for Design (you may list your organization but be sure to demonstrate in the capacity question above)
    - Contractor to be Used for Construction (you may list your organization but be sure to demonstrate in the capacity question above)
    - Project Goal (receive a rebate; solve a drainage problem; reduce stormwater runoff; reduce water usage; reduce watering costs; reduce maintenance; reduce energy costs; shading;

expanding existing tree canopy; aesthetics; learn about a new form of gardening; reduce paved area; create or enhance landscaping, garden or lawn; other)
    - Impervious Area Treated (sum of all practices)
    - Project Start and End Date
    - Describe the steps needed to complete the project
    - Maintenance Plan
5. Supporting Documents:
    - Photos of the site prior to implementation of the project
    - Project Design: Project designs are not required to submit the application, but completed designs will be required prior to release of funding and will be a contingency of the award.
    - Project permits: some projects will require permits. The applicant is responsible for acquiring all necessary permits with the Prince George's County Department of Permitting, Inspections and Enforcement (DPIE). While permits need not be in hand at the time of application, copies of permit approvals must be submitted before funding can be released and will, therefore, be a condition of the award.
    - Completed Property Owner Agreement Form - This form allows Prince George's County and Chesapeake Bay Trust to place promotional signage on the property for the Rain Check Rebate Program, take photographs of the property for possible publication, and conduct follow-up evaluations as needed.
    - <u>For Residential Property (within HOAs only)</u> - HOA Approval Letter
    - <u>For Vegetation Projects Only</u> – (rain garden, conservation landscaping, urban tree canopy, pavement removal projects that involve vegetation, and green roofs) - Detailed Planting Plan
    - <u>For permeable paver Projects</u> – contracting company name and contact information, type of permeable paver to be installed, design plan and/or detailed sketch that shows what stone/gravel will be used for the sub base, and the height of the sub base.
    - <u>For Green Roof Projects</u> – A professional engineer's stamped plan of the roof design
    - <u>For Nonprofit Applicants working on Third Party Property Only</u> - Approved Third Party Agreement

As described in the Application Submission Instructions, some projects will require permits. The applicant is responsible for acquiring all necessary permits with the Prince George's County Department of Permitting, Inspections and Enforcement (DPIE). While permits need not be in hand at the time of application for the rebate, the final inspection report from DPIE must be submitted before a rebate check can be issued and will, therefore, be a condition of the rebate award.

**** For the remainder of your application, complete only the sections that apply to your project***.

<u>Rain Barrel or Cistern Projects</u>

1) What size (gallons) rain barrel/cistern do you intend to purchase?
2) How many rain barrels/cisterns do you intend to have?

<u>Rain Garden/Conservation Landscaping Projects</u>

1) Rain garden/conservation landscaping length
2) Rain garden/conservation landscaping width

<u>Urban Tree Canopy Projects</u>

1) Please describe the following:
    a. Number of trees to be planted (At the time of planting, trees must be at least 5 feet tall; at least ½ caliper inch; and planted in a 5-gallon (or larger) container or balled and burlapped)
    b. Species of trees to be planted

<u>Pavement Removal and/or Permeable Pavement Projects</u>

1) If you intend to remove pavement:

a. What is the total area of the pavement to be removed and replaced with either vegetation or permeable pavers (in sq. ft., area = length x width)
b. With what do you intend to replace the pavement? (turf or lawn, native plants, rain garden, permeable pavement/pavers, other)

2) If you intend to install permeable pavement:
   a. What types of pavement/pavers do you intend to install? What is the make and manufacturer of the pavement/paver system?
   b. Will the system include stormwater storage? If so, how will the system discharge stored stormwater? (infiltration, underdrain, discharge to open area, tie into public storm drain system)

Green Roof Projects

*All green roof projects will require a stamped structural analysis of the roof system from an engineer. You will also need to obtain a permit from the County Department of Permits, Inspections, and Enforcement. Their website: https://www.princegeorgescountymd.gov/1024/Permitting-Inspections-and-Enforcement.

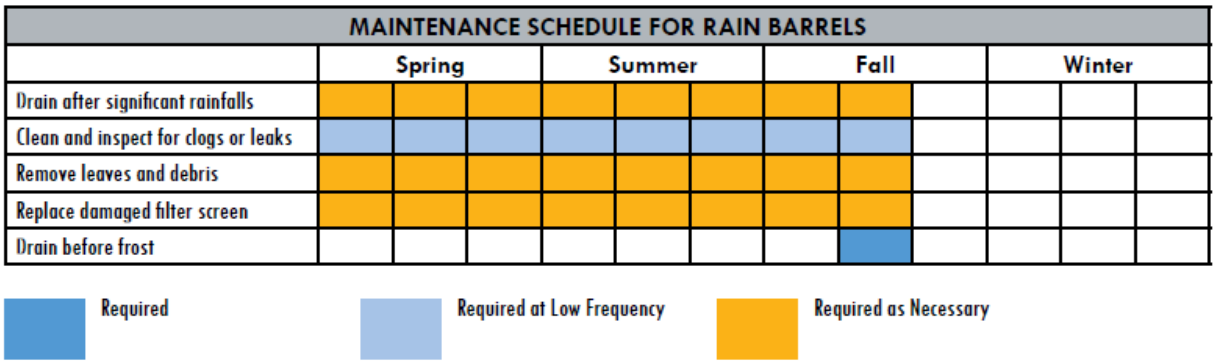
1) Please provide the following information:
   a. Intended planting depth (in inches)
   b. Total cubic feet of the project (planting depth x area of roof divided by 12)
2) What is the make and manufacturer of the green roof system and components, and what type of system do you intend to install? (integral, modular, plug, other)
   https://www.princegeorgescountymd.gov/1024/Permitting-Inspections-and-Enforcement.

Appendix A: Operations and Maintenance

Knowing about the use of each practice and how to maintain them so they look beautiful and continue to function as designed is important. This appendix details the operation and maintenance of the eight Rain Check stormwater practices. In addition, to learn about each practice including details about the eight stormwater practices to help decide what may work best for you as well as what steps are needed to attain a grant and what is allowable in the program, applicants should review the fact sheet and guidelines document for each practice which can be found at https://cbtrust.org/grants/prince-georges-county-rain-check-rebate/.

Rain Barrels

Rain barrels require periodic maintenance. Drain them after each significant rainfall from April to November. As a general rule, empty the rain barrel every five to seven days. Clean the rain barrel periodically and inspect it for clogs and leaks. If you suspect mosquitoes may be a problem, a fine mesh screen fitted on the lid of the rain barrel will prevent mosquitoes from gaining access and laying eggs. Remove leaves and other debris from the filter screen and ensure that it is not damaged and is securely fastened. Unless designed for freezing temperatures, the rain barrel should be disconnected and drained in the fall or winter, before the first frost, and stored upside-down in a protected location to avoid damage.

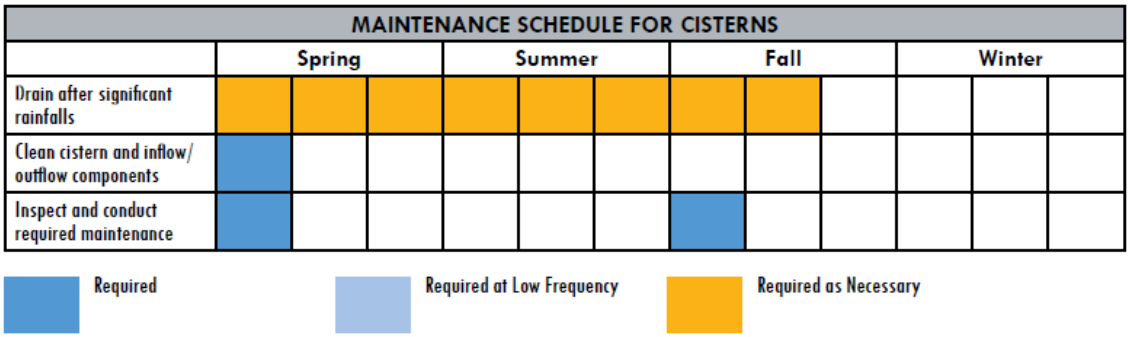


Cisterns

Cisterns require periodic maintenance. All cisterns should be designed with multiple access points to support pump maintenance, inspection, repair, and cleaning. Inspect your cistern and its associated components twice per year to ensure that

- downspouts are properly positioned, intact, and free of debris;
- filters and screens are intact and free of debris and sediment;
- tanks and covers are intact and not leaking;
- pumps are working properly;
- overflow outlets are clear and are directed away from building foundations; and
- spigots and hoses are functioning properly.

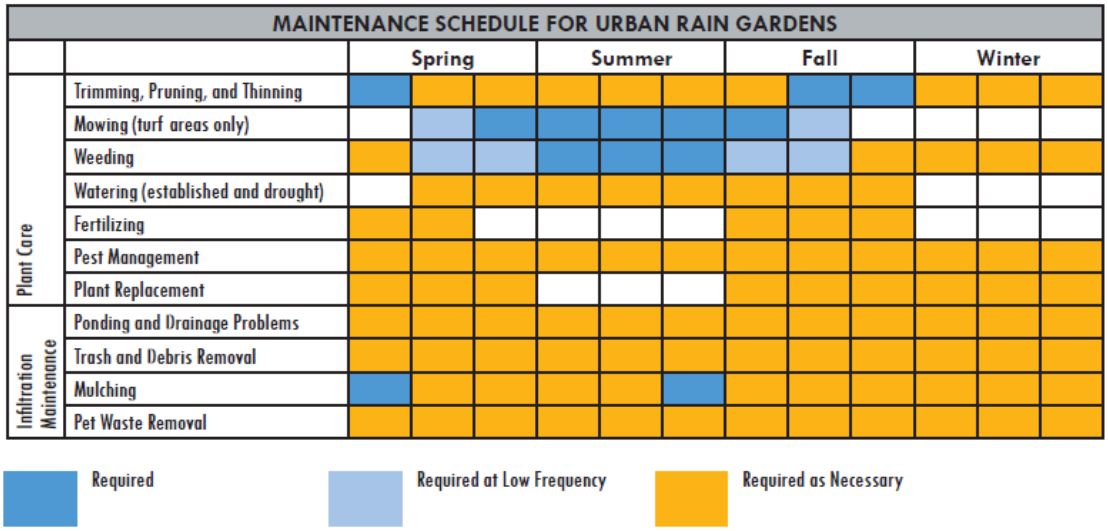
To maintain adequate storage, cisterns should be drained between significant rainstorms. Clean out the cistern and its inflow and outflow components as part of routine maintenance during dry parts of the year. Unless designed for placement below ground or for freezing temperatures, the cistern should be disconnected and drained in the fall or winter, before the first frost, to avoid damage.



Rain Gardens

Rain gardens require less maintenance compared to traditional gardens. Primary maintenance requirements involve weeding, repair, and replacement of components in the treatment area. The use of native plants reduces fertilizer, pesticide, water, and overall maintenance requirements. During the first growing season, the garden must be watered regularly during dry periods. However, if the soil is moist at a depth of 4 inches, and wilting plants recover at night, watering is not needed. Regularly remove any weeds, litter, sand, and sediment that enter the garden. Weeding should be accomplished routinely, at least monthly during the growing season. Rainwater entering a rain garden normally carries nutrients, so fertilization is normally not needed; however, if a soil test indicates very low soil fertility, an organic fertilizer may be applied. At least once a year, apply a new layer of double-shredded hardwood mulch, maintaining between 2 and 3 inches of cover. You may need to remove old mulch every year or two to maintain the appropriate depth for your rain garden to function properly. As with any garden, divide overcrowded plants in the spring or fall, and prune dead vegetation annually. Perennial plants can be cut back in the spring, when new growth starts, if desired for neatness, but it is not required for plant health. Plants can be pinched, pruned, sheared, or deadheaded during the growing season to encourage flowering, bushier growth, or fresh leaves. Diseased or damaged portions of plants should be pruned, as needed, and trees and shrubs can be pruned in the fall for shape or to increase fruit production.

Rain gardens are designed to have water standing for up to four hours. If this period is routinely exceeded, the garden may not be functioning properly. The surface blockage problem can often be corrected by removing the mulch layer and raking the surface. For blocked filter fabric, use lengths of small reinforcing bar (2'-3' #4 rebar) to puncture the fabric with holes every 1' on center. If the soils themselves are causing the problem, punch holes in the soil to increase aeration. In a worst-case scenario, the entire rain garden may need to be re-installed. Check where the water enters the garden to be sure it is not being clogged by soil, mulch, or debris; and remove obstructions, as needed. Pet waste should not be left to decay in rain gardens.



Conservation Landscaping

Conservation Landscaping does not require the same kind of maintenance as, for example, a manicured lawn or formal hedge. If plantings and site conditions are well-matched, maintenance should be minimal. Weeding will be required until young plants have filled-in the growing space. It is important to be aware of the invasive species that are likely to venture into your garden, and to be able to differentiate them from desired plants, especially when both are young or emerging from seed.

With the goal of preserving and encouraging pollinators in the garden, we strongly caution against preemptively using chemical herbicides and pesticides within your conservation landscape. Chemical herbicides and pesticides are known to have adverse secondary effects on soil invertebrates and pollinator insects. They can also decrease species abundance and soil organism diversity. Research and invest in non-toxic pest controls such as garlic spray, compost teas, and non-chemical control methods whenever possible. Integrate plant combinations that encourage at least 3 beneficial insects that control pests. If you must use chemical pesticides, spot treat only. If you are looking for reduced weeds, please refer to our plant spacing and density guides. It is important to reduce our dependence on chemical pesticides because they seep into our waterways and can also kill beloved pollinators!

Common garden tasks such as removing fallen leaves and cutting back flower stems are discouraged for conservation landscaping. Many native species, including amphibians, turtles, and fireflies, depend on fallen leaves and spent perennials as protection from the winter elements. The stems and roots of perennials provide winter shelter for beneficial insects, such as stem-nesting and ground-nesting bees. Flowers allowed to mature and produce seed provide winter forage for birds, and the stalks of perennials offer places to perch or hide. The stalks also provide a place for snow to settle, creating winter interest for your yard. Consider piling leaves and pruned branches within your new conservation landscape. These can function as shelters for overwintering bees and butterflies and are compostable materials that prepare these areas for spring.

Let grasses and perennials stand until late spring. Many pollinators remain in hibernation until temperatures are consistently warm for several weeks. When you do cut back stems, if you choose to do so, you can return these materials to your garden bed as mulch or use them to expand your conservation landscape area. Remaining lawn areas should be allowed to grow through March to encourage microbial growth and overall soil health. Additionally, leaving clippings on the lawn provides both water and nutrients to your lawn and clippings do not cause thatch.

Your new plantings will take time to develop roots and become established in their new locations. Supplemental water will be required during the first year of establishment, and during dry periods (if more than 3 weeks w/out rain) for the following two years.

MAINTENANCE SCHEDULE FOR CONSERVATION LANDSCAPING

Task	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1 - Monitoring			■	■	■	■	■	■	■	■	■	■
2 - Pruning (if needed)		▪	▪	▪								
3 - Watering				■	■	■	■	■	■	■	■	
4 - Weeding			▪	▪	▪	▪	▪	▪	▪	▪		
5 - Cut Back (perennials/grasses)				▪								
6 - Mulch / Compost				▪							▪	

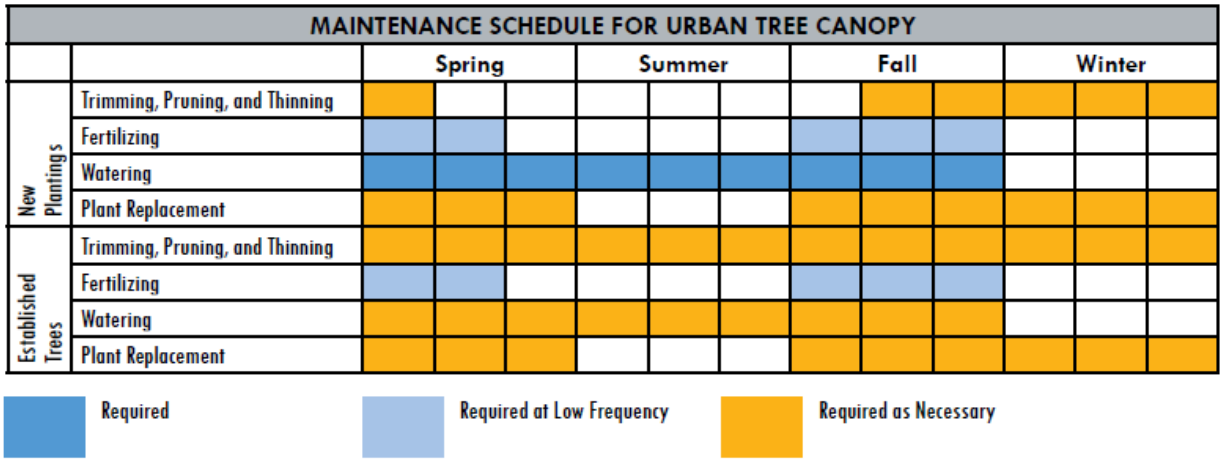
Required ■ Required as Necessary ▪

Urban Tree Canopy

Aside from watering, trees require minimal maintenance. As part of installation, newly planted trees should be watered and mulched. Continue watering your trees at a rate of 25 gallons per week throughout the growing season (April through September) during dry spells. You may want to use a slow-release watering bag to make

watering easier. If you are unsure when to water your trees, follow Casey Trees weekly watering recommendations from http://caseytrees.org/get-involved/water/. Each week they consult the previous week's precipitation and streamflow data to determine the condition—dry, normal or wet—and appropriate action to take. Watering recommendations are posted on their homepage and Facebook and Twitter accounts. To ensure long term success, this watering regime should continue throughout the first three growing seasons after installation. Mulching your tree seasonally—and even connecting the area around your tree with a nearby mulched area or planted bed—not only has a beautifying effect, but also provides your tree with a number of sustaining benefits. Be sure, however, to keep mulch and other debris from touching the trunk of the tree. Soil and mulch piled against the top of the root ball and the trunk can invite pests and rot the bark. Correctly applied mulch helps maintain the temperature of the soil, encourages retention of moisture in the root zone, provides important nutrients, and suppresses grass and weeds that can take water and nutrients from your tree. Mulching also creates a barrier that can protect your tree from damage by lawn maintenance machines.

Basic tree care practices such as watering and mulching can be properly done by anyone; however, some tree care is best left up to trained professionals. Examples include work that cannot be performed from the ground; work that cannot be performed with hand tools like pruners, loppers, and pole saws; and any work within 10 feet of any kind of overhead utility line. In addition, pruning or removing trees, especially large trees, can be dangerous work. This type of work should only be completed by those trained and equipped appropriately. Improper pruning can cause more harm than good by introducing disease, causing weak growth, making the tree more vulnerable to storms, and/or creating wounds that weaken or kill your tree.



Pavement Removal

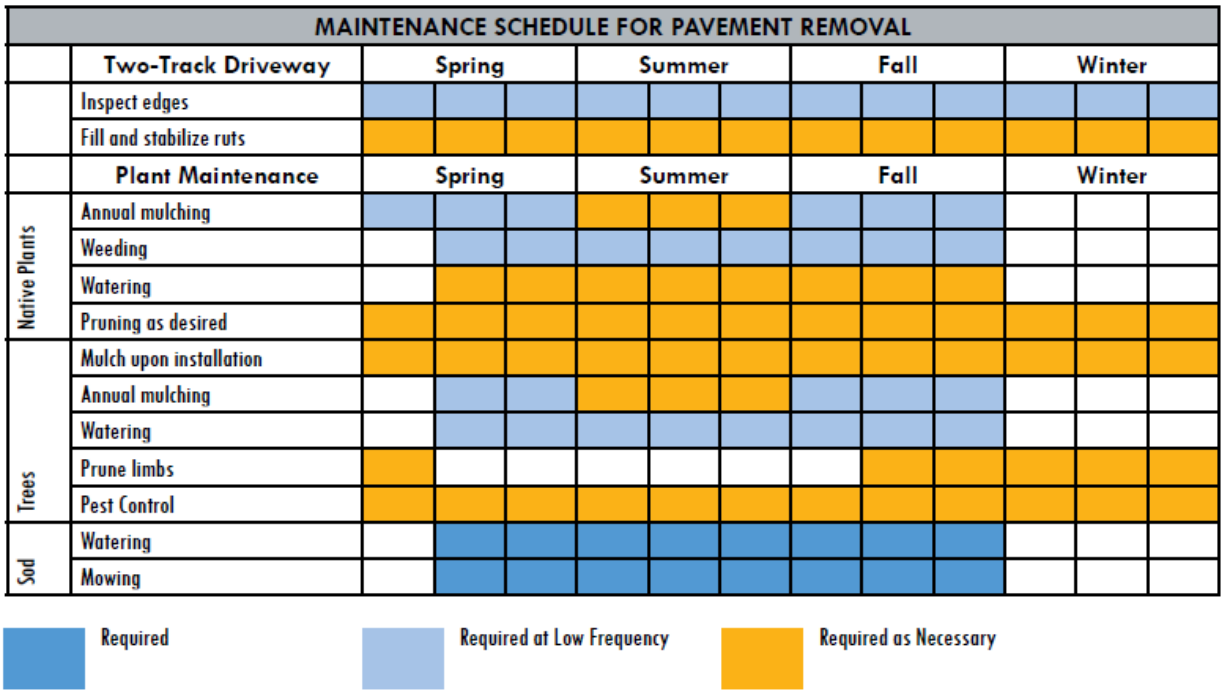
Depending on the size of the project, maintenance requirements will vary considerably, but are typically the same as for other types of landscaping projects. The use of native plants and trees are typically associated with lower maintenance costs. After a garden is established, the frequency and amount of watering will depend on the types of plants installed as well as local weather conditions. Regular activities, such as weeding are also recommended; the use of mulch can reduce the frequency and duration of weeding required. Approximately 2 to 3 inches of mulch should be added annually.

Compared with native vegetation, the maintenance requirements for sod are more frequent, especially during the summer months and growing season. Regular watering may be needed even after the turf becomes established; watering early in the morning or later in the evening is most efficient. Apply a steady stream of water to ensure adequate infiltration. If you observe runoff, stop watering as this means that the soil is saturated. When mowing, aim for a grass height of 2.5 to 3.5 inches during the summer and 2 inches during the autumn and spring. Cutting more than one third of a grass blade will hinder growth and accelerate the loss of soil moisture.

Maintaining a higher grass height (by raising the mower blade) will help reduce the frequency of mowing and provide for a more robust lawn.

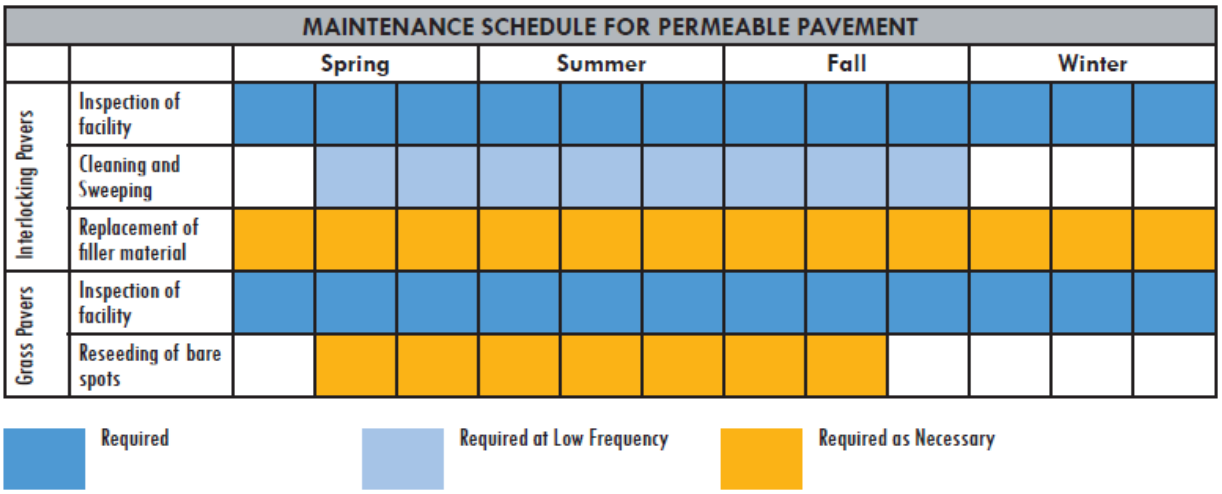
Although occasional maintenance will be required, the replacement of pavement with vegetation, whether sod, small trees, or native plants, will provide countless benefits to both the property owner and the local environment.

There are maintenance requirements for permeable pavement or pavers as well. Please see the Permeable Pavement Stormwater management guidelines for more information.



Permeable Pavement

As with any structural feature, permeable pavement requires maintenance to ensure that the system continues to function properly. The most common problem impacting permeable pavement is clogging, which occurs when sediment and other material obstructs pores, reducing infiltration. To help prevent these problems, keep landscaped areas well maintained and prevent soil from being transported onto the pavement. The most effective preventive maintenance for permeable pavement is yearly dry weather vacuum sweeping. Brooms, hoses, and pressure washers can compromise the system's integrity and should not be used for cleaning and clearing. For paving stones, periodically add joint materials (sand) to replace material that has been transported away. Inspect your permeable pavement each year to check for and repair cracking, splitting, or other damage to the pavement surface. Do not reseal or repave with impermeable materials. Grass pavers may require periodic reseeding to fill in bare spots. In winter, salt can be used in moderation to melt ice, but never use sand unless you have paving stones. Pervious concrete works well in cold climates as the rapid drainage of the surface reduces the occurrence of freezing puddles and black ice. Melting snow and ice infiltrates directly into the pavement, facilitating faster melting. Snowplows can catch the edge of grass pavers and some paving stones. Rollers should be attached to the bottom edge of a snowplow to prevent this problem.



Green Roof

Extensive green roofs, when properly installed, require relatively limited maintenance, but they are not maintenance-free. Green roofs require some attention during establishment and yearly maintenance thereafter. Intensive green roofs have irrigation needs and require more maintenance than extensive green roofs. Green roofs require irrigation during the 18-month to 2-year establishment phase, and as needed during drought conditions. Be sure to check gutters and downspouts annually and remove any accumulated sediment or debris. Check surface vegetation and remove undesirable weeds annually; plant replacement is best done in the spring and fall. Weeds and native grasses are carried to the roof by wind, birds, and insects and can compete with roof plants for sunlight, moisture, and nutrients; therefore, they should be weeded annually. Once a year, lightly apply a specially blended, organic, slow-release fertilizer to help keep your green roof functioning efficiently.