RainScapes Resources

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Water harvesting resources


RainScapes
Environmentally-Friendly Landscapes for Healthy Watersheds

Rain Barrels and Cisterns

Why should I install a rain barrel or cistern?

What are they?

Rainwater Harvesting: Guidance for Homeowners

https://content.ces.ncsu.edu/rainwater-harvesting-guidance-for-homeowners

This module is also available in Amharic, Chinese, French, Korean and Spanish

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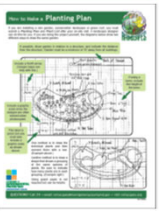
Rain Garden Resources



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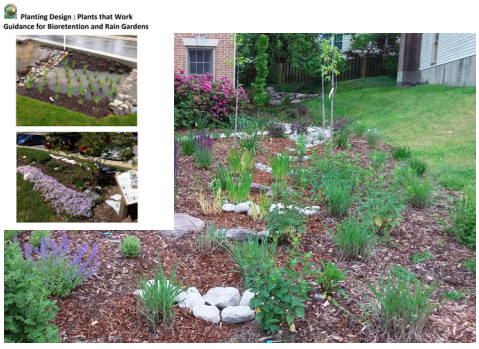
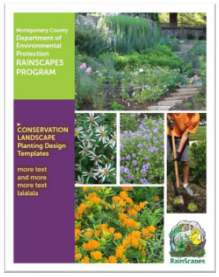
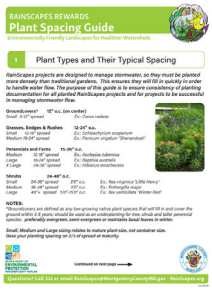
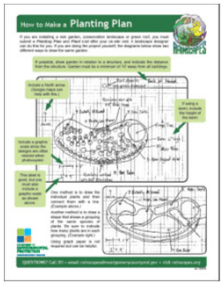
Conservation Landscaping Resources









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Rain Garden and Conservation Landscape Templates

Ease/confidence in success

- Plant combinations for each zone already figured out
- Plant quantities determined
- No previous design experience
- Multiple options
- Benefit from others' efforts

Limitations

- Site doesn't match footprint of template
- Template isn't the right size
- Template options don't fit desired style

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Green Roof Resources

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Permeable Pavement Resources

RainScapes

Environmentally-Friendly Landscapes for Healthy Watersheds

Permeable Pavers

Why should I choose permeable pavers for my hard surfaces?

Patios, sidewalks, and driveways are hard surfaces that prevent water from soaking into the ground. Various changes, or retrofits, can be applied to these hard surfaces to help prevent stormwater runoff and pollutants from entering our streams. An effective retrofit to reduce runoff from residential properties is the installation of permeable interlocking pavers.

Permeable pavers

- increase onsite infiltration and reduce runoff
- are easy to install
- can be an effective alternative

Permeable surfaces address important environmental issues and support sustainable living. They not only have a positive environmental impact, but can also be economical and function well with little or no maintenance.

What are permeable pavers?

Permeable interlocking pavers are connected blocks with materials such as stone or gravel that let water pass through, filling the gaps between the paving blocks. Replacement of traditional concrete or asphalt driveways with permeable interlocking pavers allows rainwater to naturally filter through the ground and reduces stormwater runoff.

Permeable interlocking concrete pavers provide a strong, solid surface. They can be installed on driveways, walkways, and patios and can also serve as attractive landscaping features, raising property values.

Patio retrofit

Sidewalk retrofit

Driveway retrofit

Permeable Pavers

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Pavement Removal Resources

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Environmentally-Friendly Landscapes for Healthy Watersheds

Pavement Removal

Why should I remove pavement from my property?

Replacing pavement with turf, native plants, or native trees can help prevent stormwater runoff and pollutants from entering our streams. This water that runs off can carry pollutants such as dirt, lawn care fertilizer and chemicals, pet waste and trash into our streams. Depending on how your yard is graded, the water flowing from these paved areas may be leaving your property and entering the stormdrain system or causing drainage concerns for a neighbor. By reducing the amount of rainwater leaving your property, you can help improve local streams by reducing stream channel erosion and water pollution. Reducing paved surfaces also supports sustainable living, and adds attractive landscaping to the area.

What are the benefits and incentives?

The RainScapes Rewards Rebate Program offers a rebate payment for converting a minimum of 100 square feet on property used for residential purposes and a minimum of 300 square feet for a commercial, institutional, or multi-family property. Your rebate amount will be calculated per square foot of pavement converted to turf. If the pavement is replaced with native plant species, your rebate will be calculated at a higher dollar amount per square foot. Visit rainscapes.org for additional rebate details.

Replacing pavement with natural vegetation offers many benefits to the community and the local environment, which include:

- Improved aesthetics with more green space
- Improved air quality
- Improved water quality
- Enhanced wildlife habitat
- Native species conservation
- Reduced stormwater runoff
- Reduced erosion

Pavement removal is a great way to help the environment, restore the natural water cycle, and protect your local streams and the Chesapeake Bay.

To apply for a RainScapes Rewards Pavement Removal Rebate, please visit www.rainscapes.org

Sidewalk pavement removal - recycled sidewalk into a stacked wall

Pavement Removal

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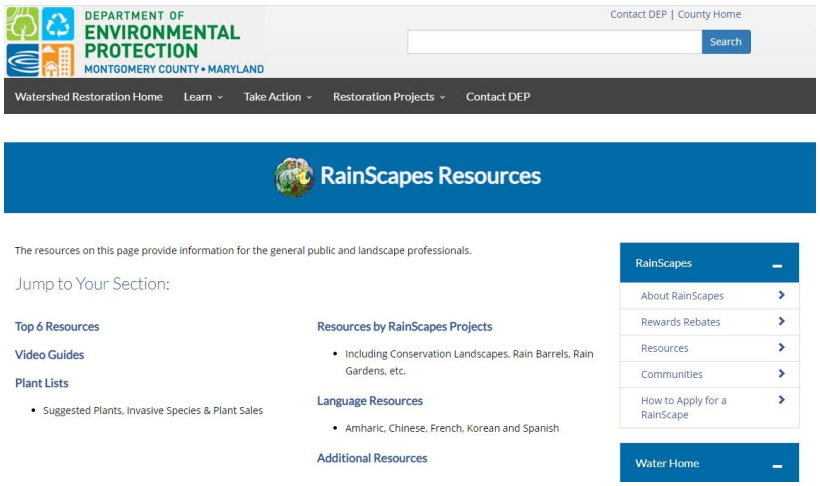
Visit our website at RainScapes.org
Or web search "RainScapes Resources"



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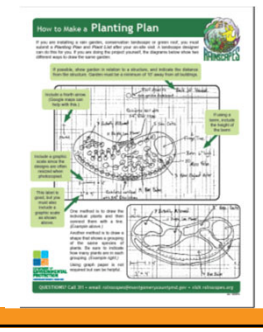

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Templates for Conservation Landscapes

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Plant List Tool

Use the DEP-provided spreadsheet

Built in calculator!

Easy to use!

https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/Blank%20Plant%20List%20and%20Plant%20Calculator.xlsx

Plant Calculator Instructions (Use blue cells only)	
1. Enter garden size in square feet in the user submitted data section	
2. Select "Yes" from dropdown to include understory trees/large shrubs	
3. Select "Yes" from dropdown to include medium/small shrubs.	
User Submitted Data	
Garden size (Square feet))	
Include Understory Trees/Large Shrubs?	
Include Medium/Small Shrubs?	
Plant Calculator	
Plant Type	**Minimum Recommendations for Plant Quantity**
Understory Trees/Large Shrubs	0
Medium/Small Shrubs	0
Large Perennials	0
Small Perennials/Groundcovers	0
Total:	**0**

Mulch and Compost Calculator Instructions (Use blue cells only)	
1. Enter garden size in square feet in the user submitted data section	
2. Enter desired thickness of compost in inches (number only, no symbols)	
3. Enter desired thickness of compost in inches (number only, no symbols)	
Mulch and Compost Calculator	
3" of mulch and 2" of compost is recommended	
Compost thickness (Inches)	**Mulch thickness (inches)**
2	3
2 Cubic foot Bags	2 Cubic foot Bags
0	0
3 Cubic foot Bags	3 Cubic foot Bags
0	0
Cubic Yards	Cubic Yards
0.0	0.0

This part is optional

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How the Tool Works

Scientific Name	Common Name	Container Size	Qty	Spacing
Clethra alnifolia 'Hummingbird White'	Sweet Pepper bush	3G	7	3'
Asclepias incarnata	Swamp Milkweed	4"	9	18"
Chelone lyonii 'Hot Lips'	Turtlehead	1G	9	18"
Iris versicolor Purple Flame	Blue Flag Iris	1G	5	18"
Monarda bradburiana	Bee Balm	1G	9	2'
Penstemon digitalis Husker Red	Beardtongue	1G	7	15"
Solidago sphacelata Golden Fleece	Goldenrod	1G	3	18"
Carex amphibola	Creek sedge	1 gal	34	15"
Panicum virgatum 'Cape Breeze'	Switch Grass	1 gal	5	2'
Magnolia virginiana	Sweetbay Magnolia Australis	15G	1	7'
Eupatorium	Joe pye weed	TP	2	2'

Non-Native (x)	Plant Type	Scientific Name	Common Name	Container Size	Qty	Spacing	Rec.Qty
	Shrub	Clethra alnifolia 'Hummingbird White'	Sweet Pepper bush	3G	7	4'	
	Herbaceous	Asclepias incarnata	Swamp Milkweed	4"	9	18"	
	Herbaceous	Chelone lyonii 'Hot Lips'	Turtlehead	1G	9	18"	
	Herbaceous	Iris versicolor Purple Flame	Blue Flag Iris	1G	5	18"	
	Herbaceous	Monarda bradburiana	Bee Balm	1G	9	2'	
	Herbaceous	Penstemon digitalis Husker Red	Beardtongue	1G	7	18"	
	Herbaceous	Solidago sphacelata Golden Fleece	Goldenrod	1G	3	2'	
	Herbaceous	Carex amphibola	Creek sedge	1 gal	34	18"	
	Herbaceous	Panicum virgatum 'Cape Breeze'	Switch Grass	1 gal	5	2'	
	Tree	Magnolia virginiana	Sweetbay Magnolia Australis	15G	1	7'	
	Herbaceous	Eupatorium	Joe pye weed	TP	2	2'	

Plant Spacing Calculations		% Native		% Plant Type	
Measured SF	360	% Native by Quantity	100%	Tree	9.78%
Calculated Coverage	368	% Native by Coverage	100%	Shrub	30%
Difference	-8			Herbaceous	60%
Plants to add	**-8**				
Plant spacing in inches	12				

https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/Blank%20Plant%20List%20and%20Plant%20Calculator.xlsx

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Plant Spacing Guidance

https://www.montgomerycountymd.gov/water/Resources/Files/rainscapes/RSPlantingSpacingGuidance.pdf

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Plant Lists

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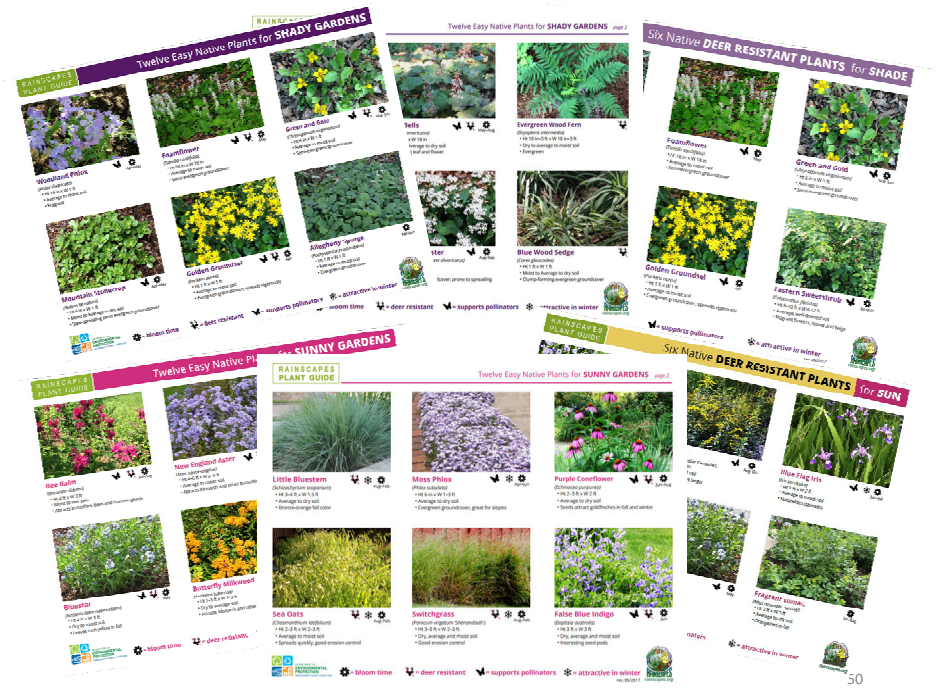

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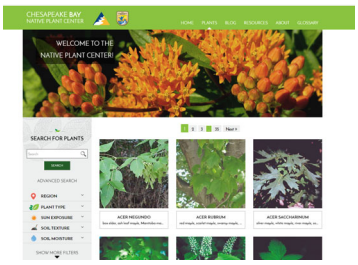
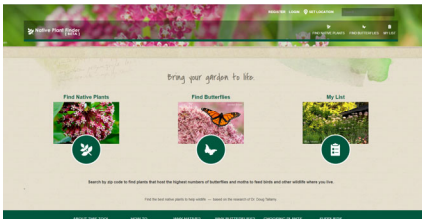
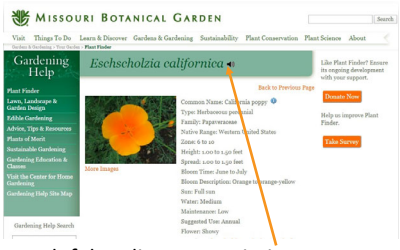


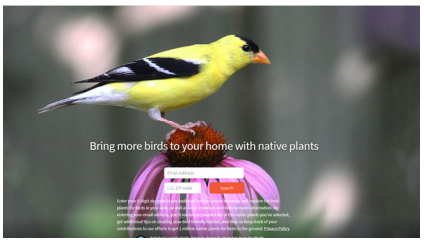
http://www.nativeplantcenter.net/plants/



https://www.nwf.org/nativeplantfinder/



Helpful audio pronunciation for Latin



https://www.audubon.org/native-plants

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Plant lists

Sample Plant List

Scientific name REQUIRED If you don't know it, ask us.

Common Name

Pot size is required.

Quantity and spacing are required so we can determine plant cover.

Scientific Name	Common Name	Pot Size	Quantity	Spacing
Chionanthus virginicus	Fringe tree	15 Gallons	1	N/A
Monarda didyma	Bee Balm	Quart	14	3' o.c.
Asclepias tuberosa	Butterfly Milkweed	Quart	7	18" o.c.
Phlox subulata	Moss Phlox	Quart	20	18" o.c.
Symphotrichum novae-angliae	New England Aster	1 Gallon	5	2' o.c.
Echinacea purpurea 'Kim's Knee High'	Purple Coneflower 'Kim's Knee High'	1 Gallon	11	18" o.c.
Chasmanthium latifolium	Sea oats	~~Seed~~	5	2' o.c.

Seed is not allowed.

If using a specific variety, please include the name so we can determine the plant's height and spread.

► Perennials are usually planted 12" - 18" o.c.
► Shrubs are usually planted 3' - 4' o.c.
o.c. (on center) is the distance from the center of one plant to the center of the next, which depends on the mature width of the plants.

- Planting densities and sizes meet requirements
- **Seek substitution approval** prior to installation.
- Separate practices need separate plant lists

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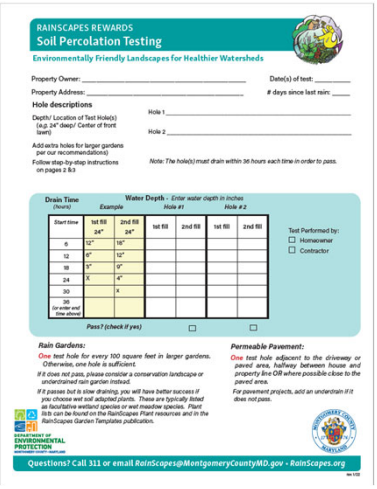
Perc Test


RAINSCAPES REWARDS
Soil Percolation Testing
Environmentally Friendly Landscapes for Healthier Watersheds

Property Owner: _____ Date(s) of test: _____
Property Address: _____ # days since last rain: ____

Hole descriptions
Depth/ Location of Test Hole(s) (e.g. 24" deep/ Center of front lawn)
Hole 1 _____
Hole 2 _____
Add extra holes for larger gardens per our recommendations)
Follow step-by-step instructions on pages 2 &3
Note: The hole(s) must drain within 96 hours each time in order to pass.

Drain Time (hours) — Water Depth - Enter water depth in inches

Start time	Example 1st fill 24"	Example 2nd fill 24"	Hole #1 1st fill	Hole #1 2nd fill	Hole #2 1st fill	Hole #2 2nd fill
6	12"	18"				
12	6"	12"				
18	3"	9"				
24	X	4"				
30		x				
36 (or enter end time above)						
Pass? (check if yes)			☐	☐	☐	☐

Test Performed by:
☐ Homeowner
☐ Contractor

Rain Gardens:
One test hole for every 100 square feet in larger gardens. Otherwise, one hole is sufficient.
If it does not pass, please consider a conservation landscape or underdrained rain garden instead.
If it passes but is slow draining, you will have better success if you choose wet soil adapted plants. These are typically listed as facultative wetland species or wet meadow species. Plant lists can be found on the RainScapes Plant resources and in the RainScapes Garden Templates publication.

Permeable Pavement:
One test hole adjacent to the driveway or paved area, halfway between house and property line OR where possible close to the paved area.
For pavement projects, add an underdrain if it does not pass.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Questions? Call 311 or email RainScapes@MontgomeryCountyMD.gov - RainScapes.org


RAINSCAPES REWARDS
How to Do a Perc Test (page 2 of 3)

1 Contact Miss Utility 48 hours in advance to mark underground utilities: missutility.net/maryland or 1-800-257-7777 or 811

2 The tools you will need are a digging bar, gloves and a post hole digger. The trash bag is for the soil you dig out of the hole.

3 Use the digging bar to break up the soil for removal with the post hole digger.

4 Using the post hole digger, remove the soil and place it on the trash bag.

Continued on next page

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Questions? Call 311 or email RainScapes@MontgomeryCountyMD.gov - RainScapes.org


RAINSCAPES REWARDS
How to Do a Perc Test (page 3 of 3)

5 Dig a hole that is 2 feet deep and 1 foot wide to the depth of excavation.*

6 Fill the hole to the top with water. Record the time.

7 Cover the hole for safety purposes.

8 Check the hole periodically. When it is empty, record the time. Calculate how long it took to drain.

9 If the first fill takes less than 96 hours to drain, repeat steps 6-8 in the same hole. Record the time for the second fill. If first or second fill takes longer than 96 hours to drain, then the perc test has failed, and a project such as a conservation landscape should be considered instead. After testing is completed, fill the hole with soil.

* If the excavation will be 3 feet, then a 3-foot deep hole is required.

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Questions? Call 311 or email RainScapes@MontgomeryCountyMD.gov - RainScapes.org

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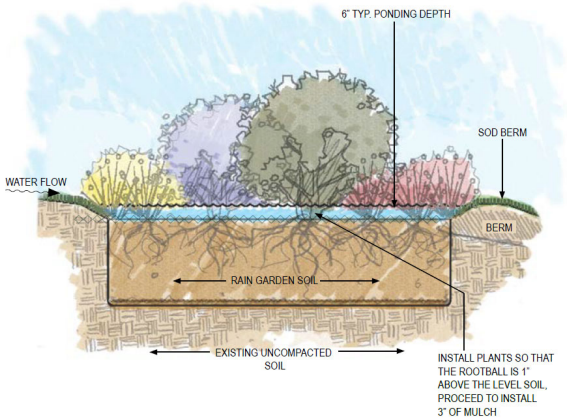
Rain Garden Details

- Water infiltrates into the soil aided by the roots.
- Overflows at least 10 feet over a vegetated surface.
- Inlet pipe above max ponding height.
- Directing downspouts through a vegetated swale is preferred.



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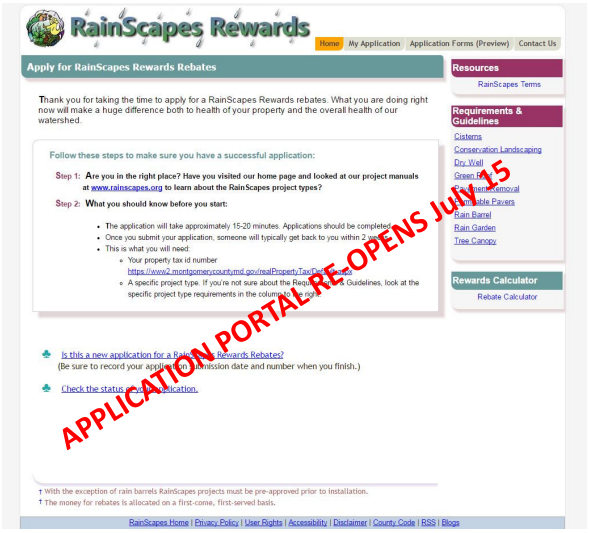

Windows of application

The schedule for accepting applications*:

July 15 – October 15th
February 1st – March 31st

**May be adjusted according to demand*

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1 Choose a project and apply

- Learn about types of projects at ***RainScapes.org***.
- Choose a project.
- Go to ***RainScapes.org*** and click **Apply Now!**

2 Get approval and install your project

- A RainScapes planner will contact you to schedule an **on-site visit**. *(Exception: Rain barrel applications do not require a preliminary site visit.)*
- During the site visit, your planner will help you determine whether the project that you chose is best suited for your property and will identify your next steps.

  NOTE: Before a rain garden, conservation landscape, or green roof can be approved, you must submit a scaled planting plan and plant list for staff review. (Download **HOW TO MAKE A PLANTING PLAN** from the Resources section of ***RainScapes.org***.)
- When your project is approved for the RainScapes Rewards Rebate program, RainScapes staff will email you a **Property Owner Agreement (POA)**. Click the link in the email to electronically sign the POA.
- Now you may install your project.

3 Finish and get a rebate

- When your project is complete, contact your RainScapes planner to schedule a **final inspection**.
- Submit copies of **project receipts** (via mail, email, or in person during your final inspection.)
- After passing the final inspection, you will receive a **rebate check** in 4-6 weeks.

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Project Approval Process

- Do not install a project until you have approval from your RainScapes planner. Proceeding without approval can void rebate eligibility for the property owner.
- Approval is for a specified area, plan and dollar amount; changes are program and budget dependent; **any change** should be agreed to prior to final submission.
- Provide a final plan or redline that reflects major, agreed-to changes that happened during the plan review process.

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Rebate Process Timeline- Plan 6 months ahead!

Process step	Time Frame	Required Documents
Application submittal	15 minutes	
Preliminary Inspection scheduling	Up to 2 months	
Site Assessment report sent	2 weeks after preliminary inspection	Report sent to applicant
Project design submission	within 3 months of receiving assessment report	Design, plant list or other based on requirements
Project Design Review	within 2 months of receiving documents	
Project Approval	within 1-2 weeks of succesful project design review	Project approval email sent to applicant. POA generated.
Installation	within 6 months of project approval	Installation photos
Request final inspection	within 3 months of installation	
Final Inspection scheduling	within 1 month of inspection request	After photos, updated plant list, **signed POA**
Rebate paid	8-12 weeks after final inspection	

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RainScapes :

RainScapes

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