



# Grand River Rainscaping

An LGROW Program

Ottawa County Water Quality Forum  
November 19, 2018  
Fillmore Complex

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# Goals



# Grand River Rainscaping

An LGROW Program

- ❑ Treat stormwater naturally
- ❑ Encourage homeowners to manage stormwater
- ❑ Increase awareness
- ❑ Empower the people
- ❑ Help municipalities meet permit goals
- ❑ Increase Water Quality

**Grand River Rainscaping**  
An LGROW Program

**Treating Stormwater Naturally**

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**WHAT IS RAINSCAPING?** Rainscaping is a method of watershed restoration that promotes green infrastructure awareness and implementation among homeowners, landscapers, and contractors that highlights both the benefit of green infrastructure practices and the skills required for installation and maintenance.

**GREEN INFRASTRUCTURE**  
Green infrastructure is the practice of infiltrating stormwater by use of natural systems in order to reestablish a healthy water flow and improve water quality. These systems allow for the infiltration of stormwater before it is released into conventional storm sewer systems, protecting our lakes, rivers, and streams from harmful pollutants. These practices lead to vital community features such as public parks, forests, rivers, wetlands, and lakes. Using these natural systems to treat stormwater will result in cleaner water, improved air quality, healthy wildlife habitats, and safe recreation sites. Urban areas are beginning to face new state and federal regulations to clean up rivers and reduce stormwater runoff. With green infrastructures these communities can create comprehensive plans, determine new development areas, and redevelop other areas to improve their local communities.

**HOW CAN RAINSCAPING HELP YOU?**

- Make your yard a haven for bees and butterflies
- Make your community healthier and more livable
- Improve wet problem areas in your yard
- Meet regulatory and economic goals
- Reach cost-effective and sustainable green decisions
- Manage your natural resources more effectively
- Redesign urban landscapes for environmental health

**RAIN GARDENS**  
Rain gardens are filled with specifically selected native plants that absorb untreated stormwater with their deep root systems, preventing it from polluting our waterways.

**STREAMSIDE BUFFER/ RIPARIAN AREAS**  
Streamside buffers, or riparian areas, are made up of native plants that surround a river or waterway in order to control erosion, filter pollutants, protect fish, reduce flow, and provide suitable wildlife habitat.

**NATIVE PLANTS**  
Native landscaping utilizes indigenous plant species that attract pollinators and other beneficial insects. They have deep root systems which help infiltrate stormwater and require less water, fertilizer, and overall care, once established.

**TREES**  
Trees are increasingly recognized for their importance in managing runoff. Roots take up water and help create conditions in the soil that promote infiltration. Depending on the size and species, a single tree may store 100 gallons, or more, of stormwater.

**RAIN BARRELS**  
Rain barrels capture and store rainwater for future use. They can be bought or made from recycled drums of various sizes and connected directly to a downspout.

616-776-7605 | [info@LGROW.org](mailto:info@LGROW.org) | [www.LGROW.org/rainscaping](http://www.LGROW.org/rainscaping)

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**PHASE 1: Connect with Watershed Partners**

<p><b>STEP 1</b> Identify your watershed using the Watershed Address Finder: <a href="http://www.LGROW.org/watershedmap">www.LGROW.org/watershedmap</a></p>	<p><b>STEP 2</b> Contact the rainscaping partner identified for your Watershed</p>	<p><b>STEP 3</b> Schedule a meeting with the rainscaping partner to complete a site assessment on your property.</p>
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No suitable sites found? Email us at [info@lgrow.org](mailto:info@lgrow.org) for other actions you can take to reduce stormwater pollution.

**PHASE 2: Design and Install Practices**

<p><b>STEP 4</b> Select site suitable practices for your property to reduce of capture stormwater runoff</p>	<p><b>STEP 5</b> Complete design for site suitable green infrastructure using MS4 tool and manual</p>	<p><b>STEP 6</b> Select qualified contractor to complete installation according to design standards</p>
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**PHASE 3: Maintain and Enjoy!**

<p><b>STEP 7</b> Develop maintenance plan with rainscaping partner</p>	<p><b>STEP 8</b> Conduct maintenance according to maintenance plan</p>	<p><b>STEP 9</b> Work with rainscaping partner to promote your practice and share your story</p>
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**CONTACT US**  
Lower Grand River Organization of Watersheds  
Grand Valley Metro Council  
678 Front Ave., N.W. Suite 209, Grand Rapids, MI 49504  
616-776-7605 | [www.LGROW.org](http://www.LGROW.org)

Facebook: @LGROW.org

Twitter: @LGROW\_GVMC

Instagram: @LGROW\_org

This project is funded through National Fish and Wildlife Foundation & brought to you by LGROW Partner Civil Stewards, Trout Unlimited, WMEAC, & Native Plant Guild

# Partners



NFWF



**Grand River  
Rainscaping**  
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- City of Grand Rapids
- Friends of Indian Mill Creek
- Grand Valley Metropolitan Council (GVMC)
- Lower Grand River Organization of Watersheds (LGROW)
- Michigan Department of Environmental Quality (MDEQ)
- Native Plant Guild
- Plaster Creek Stewards
- Trout Unlimited
- West Michigan Environmental Action Council (WMEAC)



**Native Plant Guild**





# Phase 1: Connect



**Grand River Rainscaping**  
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- Find watershed
- Connect with partners
- Complete site assessment

[www.LGROW.org/watershedmap](http://www.LGROW.org/watershedmap)

## Site Assessment Request Form

- Name \_\_\_\_\_
- Address \_\_\_\_\_
- Watershed \_\_\_\_\_
- Phone \_\_\_\_\_
- E-mail \_\_\_\_\_
- Existing Green Infrastructure on Property  Yes  No  
If yes please explain \_\_\_\_\_
- Problem Areas/Wet Spots/Etc. \_\_\_\_\_
- Interested In (check all that apply)
  - Rain Barrel
  - Rain Garden
  - Tree(s)
  - Native Plants
  - Streamside Buffer



[www.LGROW.org](http://www.LGROW.org)  
[@LGROW.org](https://www.facebook.com/LGROW.org)  
[@LGROW\\_GVMC](https://twitter.com/LGROW_GVMC)  
[@LGROW\\_org](https://www.instagram.com/LGROW_org)

# Site Assess

- Recommendation
- Suitable practice
- Site Map
- Follow up

Site Map:



Nick.Sanchez@mi.nacdnet.net  
 Suitable Practices: Rain Garden  
 Native Plants  
 Rain Barrel

\*\*Before you dig, call Miss Dig

www.lgrow.org/



# Grand River scaping rogram

## Sites 1 & 2:



Plant a rain garden with mesic, shade to partial sun, native grasses, sedges, and wildflowers such as; **Wildflowers:** Round-lobed hepatica (*Hepatica americana*), Wild ginger (*Asarum canadense*), Zig-zag goldenrod (*Solidago flexicaulis*), Blue-stem goldenrod (*Solidago caesia*), Poke milkweed (*Asclepias exaltata*), Pale-leaved sunflower (*Helianthus strumosus*), Nodding wild onion (*Allium cernuum*), Swamp buttercup (*Ranunculus hispida*), and Foxglove beardtongue (*Penstemon digitalis*) **Grasses & Sedges:** Muskingum sedge (*Carex muskingumensis*), Wood sedge (*Carex rosea*), and Pennsylvania sedge (*Carex pennsylvanica*)






### Assessment Summary

**Sites 1 & 2:**  
 Plant a rain garden with mesic, shade to partial sun, native grasses, sedges, and wildflowers such as; **Wildflowers:** Round-lobed hepatica (*Hepatica americana*), Wild ginger (*Asarum canadense*), Zig-zag goldenrod (*Solidago flexicaulis*), Blue-stem goldenrod (*Solidago caesia*), Poke milkweed (*Asclepias exaltata*), Pale-leaved sunflower (*Helianthus strumosus*), Nodding wild onion (*Allium cernuum*), Swamp buttercup (*Ranunculus hispida*), and Foxglove beardtongue (*Penstemon digitalis*) **Grasses & Sedges:** Muskingum sedge (*Carex muskingumensis*), Wood sedge (*Carex rosea*), and Pennsylvania sedge (*Carex pennsylvanica*)



### Recommended Professionals:

  **Creekside Garden Center**  
 4015 Fruitridge Avenue NW  
 Grand Rapids, MI 49544

p 616.785.1177  
 e [creeksid@msn.com](mailto:creeksid@msn.com)  
[creeksidegardencenter.com](http://creeksidegardencenter.com)

   **Plaster Creek Stewards**  
 Calvin College, Grand Rapids, MI

[calvin.edu](http://calvin.edu)  
 e [plastercreekstewards@calvin.edu](mailto:plastercreekstewards@calvin.edu)

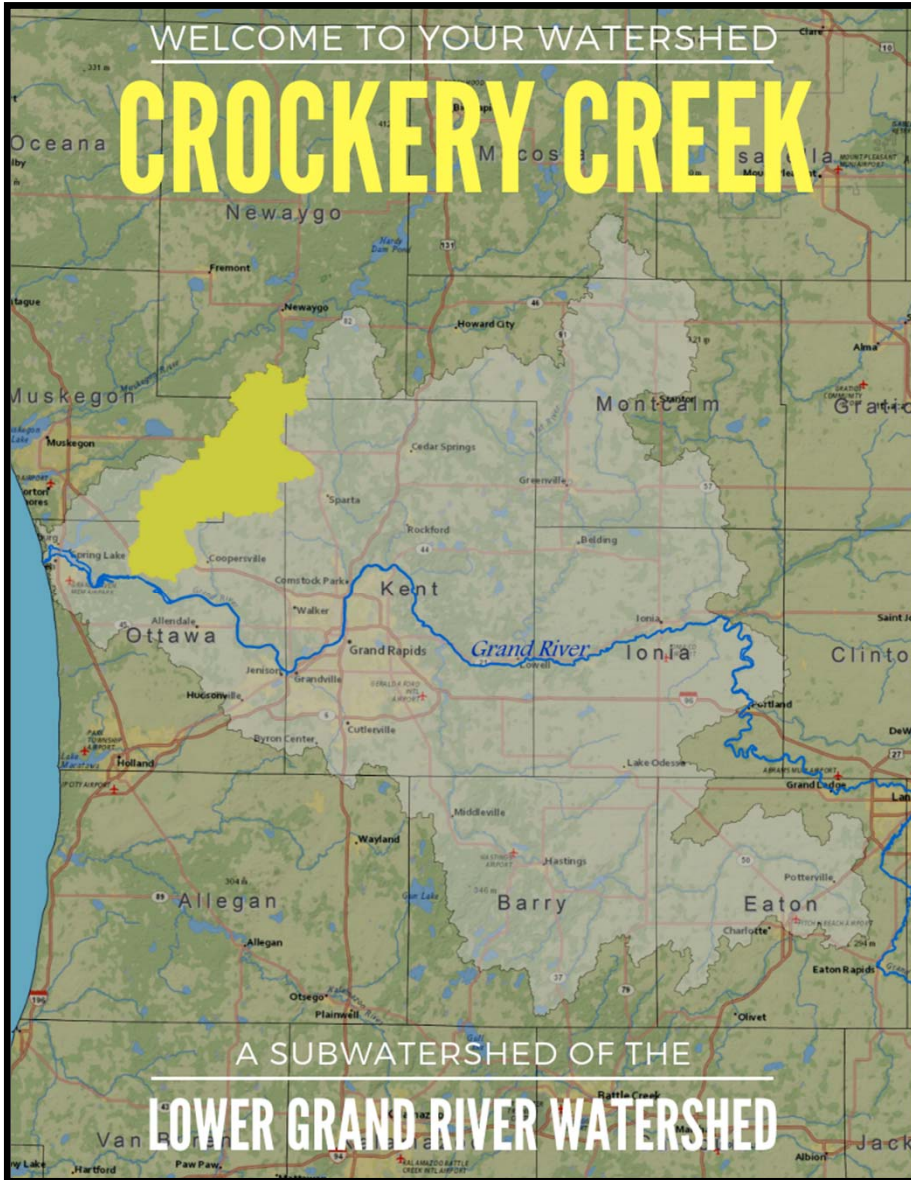
  **The Living Garden**  
 Ada, MI

p 616.308.8176  
 e [amy.heilman007@gmail.com](mailto:amy.heilman007@gmail.com)

### Key

 Grow  Design  Install  Maintain

For more information and professionals visit <http://nativeplantguild.com/design>



# Crockery Creek Watershed

Hydrologic Unit Code (HUC): 04050006-0601/2/3

Size: 102,318 acres

Land Use (% Total):

66% Agricultural

15% Forest Land

10% Wetlands

5% Urban

3% Open Land

1% Lakes

Trout Stream Miles: 29

TMDLs: E. Coli 2003

Pollutant Loadings:

Sediment - 850 tons per year

Phosphorus - 18,340 lbs per year

Nitrogen - 107,730 lbs per year

Priority Pollutant: Unstable Hydrology

Priority Sources & Causes:

Wetland loss: Drainage/filling for agriculture/development

Tiles and drainage networks: Agriculture land use practices

Filling of floodplains: Fill for agriculture development

## Pollution Solutions:

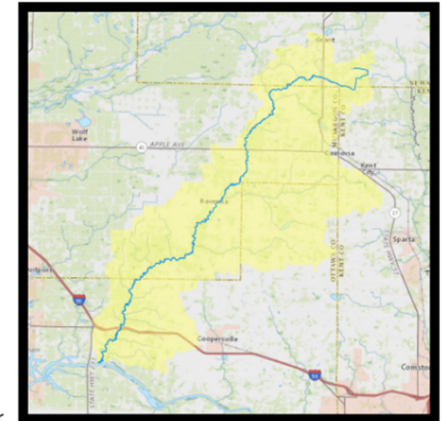
Only rain in storm drains, they lead directly to lakes, rivers, & streams

Pick up pet waste and dispose it in the trash

Wash your car on the grass or at a commercial car wash

Shovel first, salt second (or not at all)

Use Phosphorus-Free fertilizer and keep grass 3" long



## Watershed Group



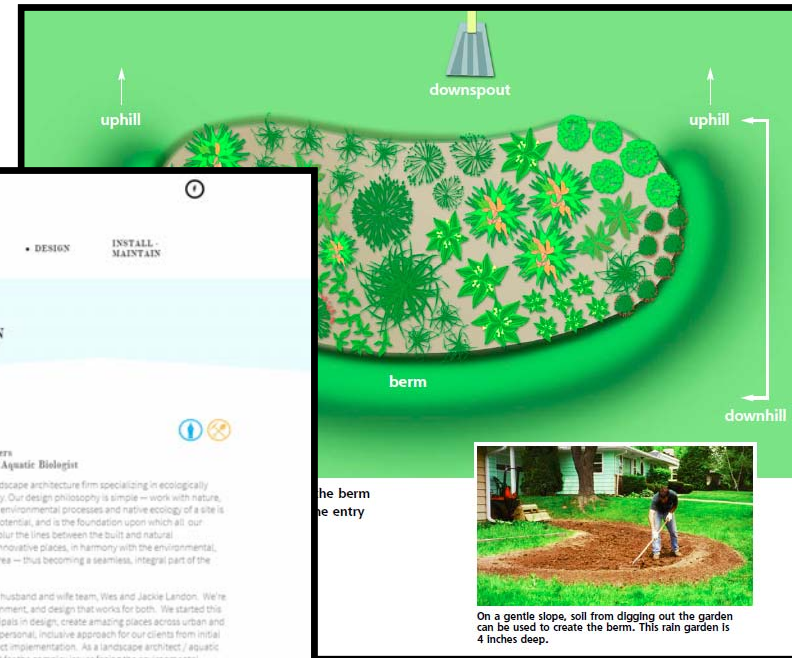
Learn more at  
[www.lgrow.org/lgrwmp](http://www.lgrow.org/lgrwmp)

# Phase 2: Design & Install



**Grand River  
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An LGROW Program

- Design practices
- Hire contractor
- Implement practices



**Native Plant Guild**

HOME GROW DESIGN INSTALL-MAINTAIN

**FOCUSED ON DESIGN**

**Native Edge, LLC**  
Wesley and Jackie Landon, Owners  
Licensed Landscape Architect & Aquatic Biologist

Native Edge, LLC is a full-service landscape architecture firm specializing in ecologically focused design fit for the 21st century. Our design philosophy is simple – work with nature, not against it. Mimicking the natural environmental processes and native ecology of a site is the first step in unlocking its truest potential, and is the foundation upon which all our projects are built. Our mission is to blur the lines between the built and natural environments, and create resilient, innovative places, in harmony with the environmental, social, and economic needs of the area – thus becoming a seamless, integral part of the greater landscape.

Native Edge was founded in 2016 by husband and wife team, Wes and Jackie Landon. We're passionate about people, the environment, and design that works for both. We started this business to fight for ecological principals in design, create amazing places across urban and natural environments, and deliver a personal, inclusive approach for our clients from initial concept development through project implementation. As a landscape architect / aquatic biologist team, we're uniquely suited for the complex issues facing the environmental spectrum of design and landscape architecture, and are excited to assist you with your project.

**Plaster Creek Stewards**  
Calvin College, Grand Rapids, MI

Plaster Creek Stewards is a collaboration of Calvin College faculty, staff, and students, community partners, and residents working to restore health and beauty to the Plaster Creek





# Demonstration Sites

Indian Mill Creek | Rogue River | Plaster Creek



West Catholic High School

West Catholic High School

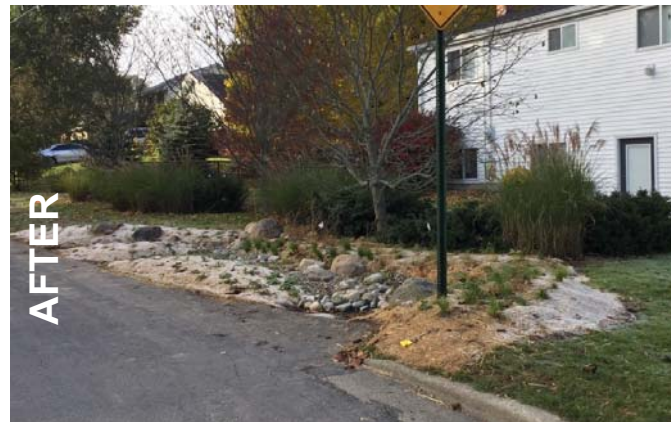
Blandford Nature Center

# Demonstration Sites



**Grand River  
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Indian Mill Creek | **Rogue River** | Plaster Creek



# Demonstration Sites



**Grand River  
Rainscaping**  
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Indian Mill Creek | Rogue River | **Plaster Creek**

**COMING SOON**

Spring  
2019

# Marketing and Outreach



**Grand River  
Rainscaping**  
An LGROW Program

- Door hangers, English/Spanish
- Yard signs
- Demo site signs
- Flyers
- Presentations
- Planting days
- Volunteer days
- Demonstration Site Maintenance days
- Workshops

This property has been improved by green infrastructure to treat stormwater naturally.

Request a **FREE** site assessment & learn more at [www.LGROW.org/rainscaping](http://www.LGROW.org/rainscaping)



Side 1: English



Side 2: Español

# Metrics to Date (11/14/2018)



**Grand River  
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**192** Volunteers 

**1,704** People Reached 



**2,760** Ft<sup>2</sup> Habitat Restored

# Phase 3: Maintain



- Develop maintenance plan
- Perform maintenance
- Promote and enjoy!



### Maintenance Guide

#### West Catholic High School Rain Garden

This guide has the basic information you will need to maintain the West Catholic High School rain garden along with how to care for its native plants. Keep in mind that plants may look different depending on the time of year. As you learn more about the rain garden, you can adjust how often maintenance tasks are completed. If you see excessive erosion in the bioswale, please report it to LGROW at 616-719-4992.

**Tools Needed**

- Gardening Gloves
- Hand Trowels
- Hand Rakes
- Rakes/Shovels
- Wheel Barrow
- Tarps
- Small Pruning Shears
- Yard Waste Bags
- Trash / Recycling Bags

**Maintenance**











Task	To Do	Disposal	Frequency
Weeding	Dig around roots of unwanted plants and make sure to remove all of the weed / roots	Yard Waste, Compost	Spring, Summer, Fall – once per season, and as needed
Native Plants	Prune dead plant material to promote growth	Yard Waste, Compost	All Year – As needed
Leaves	Rake out leaves to maintain water flow throughout the garden	Yard Waste, Compost	Summer – as needed Fall- monthly
Litter	Remove trash & waste	Landfill, Recycle	All Year – As needed
Sediment	Check inlets and outlets for sediment build up, remove with a shovel	Landfill, Yard Waste, Compost, Reuse	Spring, Summer, Fall – once per season, and as needed

**Resources**

The following links have detailed information on how to maximize the health and appearance of perennial plants through proper care techniques:

- <http://articles.extension.org/pages/13056/flowers-perennials%202vmPHU60>
- [http://www.extension.umn.edu/garden/landscaping/implemnet/pruning\\_perennials.html](http://www.extension.umn.edu/garden/landscaping/implemnet/pruning_perennials.html)
- <http://www.nativeplant.com/plants/search/input>

### Plants

<p><b>Wild Quinine</b> <i>Parthenium integrifolium</i></p>  <p>Bloom: late spring/early summer</p>	<p><b>Thimbleweed</b> <i>Anemone virginiana</i></p>  <p>Bloom: summer</p>	<p><b>Rattlesnake Master</b> <i>Eryngium yuccifolium</i></p>  <p>Bloom: late summer</p>
<p><b>Nodding Wild Onion</b> <i>Allium cernuum</i></p>  <p>Bloom: summer</p>	<p><b>Mountain mint</b> <i>Pycnanthemum virginianum</i></p>  <p>Bloom: summer</p>	<p><b>Fox sedge</b> <i>Carex vulpinoidea</i></p>  <p>Bloom: spring</p>
<p><b>Boneset</b> <i>Eupatorium perfoliatum</i></p>  <p>Bloom: late summer</p>	<p><b>Riddells Goldenrod</b> <i>Solidago riddellii</i></p>  <p>Bloom: fall</p>	<p><b>June Grass</b> <i>Sporobolus heterolepis</i></p>  <p>Bloom: late spring</p>
		<p><b>Prairie dropseed</b> <i>Sporobolus heterolepis</i></p>  <p>Bloom: summer</p>

# Training



**Grand River  
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## 6 Hour Course

- Green Infrastructure Design, Installation, & Maintenance
- Developed by Native Plant Guild and Plaster Creek Stewards
- Grand Rapids Community College
- Designed for homeowners, contractors, designers
  - First session January 2019
  - 40 registered

## 40 Hour Course

- National Green Infrastructure Certification Program
- Specific for West Michigan
- Department of Public Works
- Grand Rapids Community College
  - First session Spring 2019
  - 80 recruits in 2 years
  - Expand to other Community Colleges Regionally

# Rainscaping Program Promotional Video

- Erudite Visual Productions, LLC
- Five Part Video
  - ▣ Intro to Stormwater
  - ▣ Site Assessment Training
  - ▣ Site Design & Installation
  - ▣ Site Maintenance
  - ▣ “Share Your Story”





# What's Next?



**Grand River  
Rainscaping**  
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## Rainscaping Implementation

48 Site  
Assessments

Additional  
Funding

Planned  
Trainings



# Questions?



**Grand River  
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[www.LGROW.org/rainscaping](http://www.LGROW.org/rainscaping)