

DEMO RAIN GARDEN

Hancock County, Illinois

PURDUE EXTENSION
**RAINSCAPING
 EDUCATION
 PROGRAM**

Background Information

In the fall of 2022 University of Illinois Extension partnered with Historic Nauvoo to present the Purdue Rainscaping program. Prior to the course, horticultural staff for Historic Nauvoo worked with Illinois Extension to identify suitable locations to install a rain garden. The site selected features two linear sections along a roadway at the intersection of Hyde and Hotchkiss street. (Fig. 1)

The existing conditions of the site was a graveled ditch. In an effort to soften the landscape, encourage more infiltration of stormwater, and high visibility the team decided this was an ideal location for a rain garden.



Fig. 1 - Proposed rain garden locations along two streets in Historic Nauvoo.

Water flow comes from the adjacent street flowing north to south, through a connecting culvert at the intersection and then east to west. These rain gardens function more like a bioswale, conveying water while slowing it down and allowing for more infiltration with increased friction from plant material.

The Historic Nauvoo horticulturist worked closely with Illinois Extension in the planning, design, preparation, and installation of the rain garden.

Historic Nauvoo has an estimated 100,000 visitors each year. This location is prime for educational efforts of how green infrastructure can serve to reduce the impact of flooding.

Illinois Extension received a grant from the Extension Disaster Education Network (EDEN) for green infrastructure projects to support the purchase of plants and mulch.



Fig. 2 - Existing conditions along Hyde St. looking North.



Fig. 3 - Existing conditions along Hotchkiss St. looking West.

Demo Rain Garden: Hancock County, Illinois

Garden Design: Plantings and Information

Plant Scientific Name	Common Name	Number Used
<i>Juncus effusus</i>	Common rush	288
<i>Iris virginica</i>	Blue flag iris	256
<i>Stachys officinalis</i> 'Pink Cotton Candy'	Pink Cotton Candy betony	50
<i>Carex vulpinoidea</i>	Fox Sedge	144
<i>Carex hystericina</i>	Porcupine Sedge	80
<i>Sporobolus heterolepis</i>	Prairie dropseed	20
<i>Vernonia lettermannii</i> 'Iron Butterfly'	Iron Butterfly Ironweed	21
<i>Asclepias incarnata</i>	Swamp milkweed	25
<i>Pycnanthemum virginianum</i>	Mountain mint	16

Total budget = \$4,150

The EDEN grant paid for mulch, plants, participant registration, and class materials. The Hancock County Rainscaping series was free to participants. The class met its maximum enrollment of 25, and even had extra friends and family of registered participants interested in taking the class.

Fig. 4 - Rainscaping participants line up for a photo after installation of the rain garden.



Fig. 5 - Plant plugs go in using trowels and bulb augers. Blue flag iris and common rush set the stage for the other plants seasonal color and structure.



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Garden Design: Design

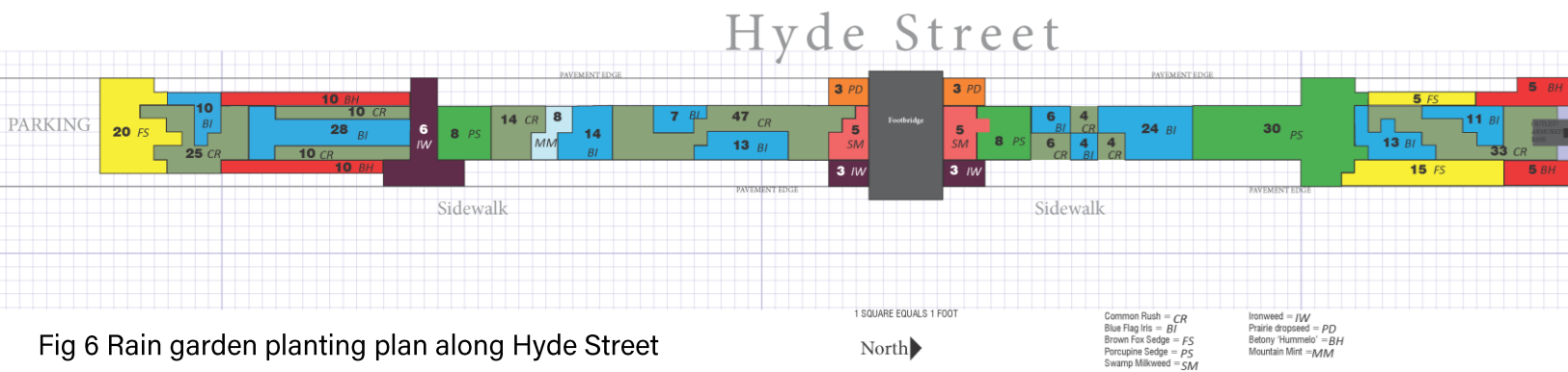


Fig 6 Rain garden planting plan along Hyde Street

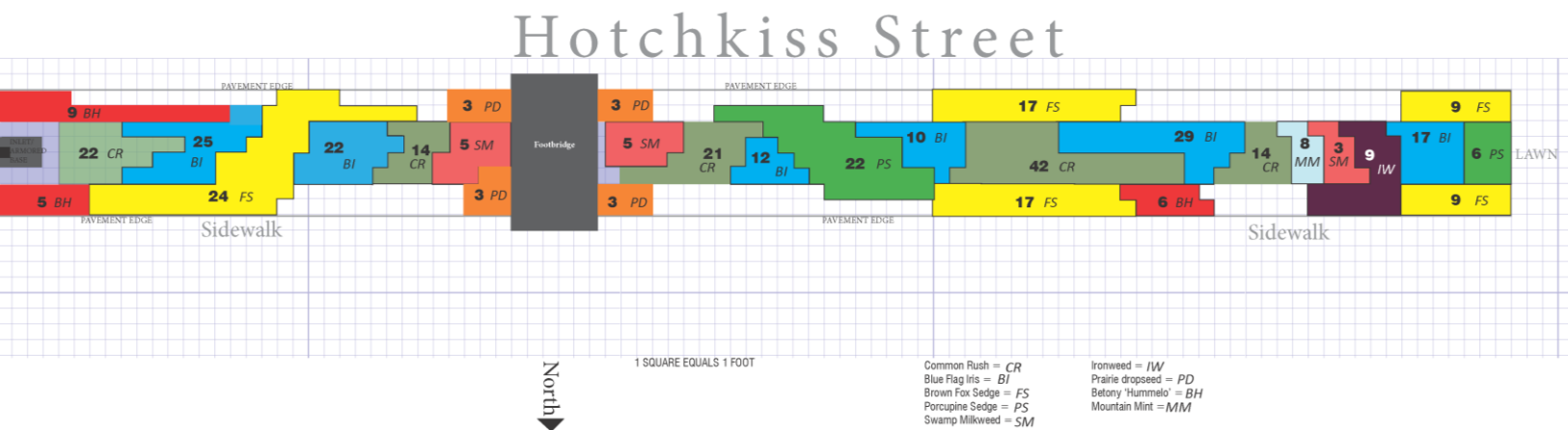


Fig. 7 - Rain garden planting plan along Hotchkiss Street.

Demo Rain Garden: Hancock County, Illinois

Maintenance Plan: Establishment Period

- A boon to this rain garden project are the horticulturist staff and volunteers at Historic Nauvoo. Locating a Rainscaping project in rural Hancock County proved difficult. Prior proposed sites had no budget, staff, or volunteers for maintenance of a garden. Historic Nauvoo has a built-in horticultural expertise and volunteer force to aid in short- and long-term maintenance of the rain gardens.
 - Mulch applied during installation insulates the soil, minimizing water loss and protecting plant roots.
 - Horticultural staff and volunteers will monitor and irrigate plants and remove weeds as needed the first year.

Maintenance Plan: General Maintenance

- Historic Nauvoo staff may alter rain garden planting plan depending on the establishment of the initial planting.
 - The design also incorporated blank spots in the planting plan for the horticulturalist to incorporate seasonal annuals or perennials well-suited to the site.
- Fertilizer
 - Monitor plants for nutrient deficiencies. Fertilize as needed.
- Water
 - Monitor plants for water stress. Identify if it is related to drought or overwatering. If problems persist, consider alternate plant material.
- Weeds
 - During the first few establishment years, weeding should take place every month as needed. Over time, the plants will fill in and weed pressure will lessen.
 - Weeding will be provided by Historic Nauvoo volunteers.
- Mulch
 - Recommended mulch is arborist woodchips at a 2 to 4-inch depth. Woodchips allow for better water infiltration and air exchange with the soil. If mulch movement is a problem, switch to double-shredded wood mulch.

Demo Rain Garden: Hancock County, Illinois

Maintenance Plan: Seasonal

Year-round

Keep culvert clear, clean out under the foot bridges, and garden clean of garbage
Control weeds.

Spring

Prune dead vegetation and plants that have grown too large.

Weed the garden and add mulch if needed.

Remove excess sediment (i.e. leaves, sticks, debris) that may have collected over winter.

Plant new plants and replace plants that may have died over winter.

Summer

Remove weeds (i.e. crabgrass, dandelions etc.).

Water one- and two-year-old plants during dry periods (based on whether National Weather service declares drought; if no rain for one week).

Monitor slope around edge of garden for erosion.

Fall

Do not remove (too many) leaves that may have fallen into the garden – leaves will provide compost material for following spring growth; layer of leaves is fine but mounds of leaves are not.

Remove weeds and diseased plants.

If Fall is dry, water until soil freezes.

Winter

Cut back rain garden to clean up for spring if desired.

Check to make sure garden is clean of garbage, leaves, etc. every few weeks.

Demo Rain Garden: Hancock County, Illinois

Resource Contact

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About the Purdue Rainscaping Education Program

The Purdue Rainscaping Education Program offers state-wide training for Purdue Master Gardeners, conservation agencies and organizations, stormwater professionals, and landscape companies and consultants.

The two day workshop sessions cover an introduction to rainscaping and rain gardens with specific modules for rain garden site selection, plant selection and garden design, installation, maintenance, and community engagement.

Workshops include hands-on activities, interactive discussions, and field trips to community rainscaping projects. Participants also gain experience through creation of a demonstration rain garden with community partners in a public space.

