



GREEN STORMWATER INFRASTRUCTURE (GSI) CASE STUDY BEST MANAGEMENT PRACTICE (BMP) IN ACTION: RAIN GARDEN

Riverfront Park Rain Garden

BENEFITS

Rain gardens are shallow, planted depressions specifically designed to intercept and infiltrate stormwater. As stormwater enters the garden, it is held in void spaces within the soil and slowly allowed to infiltrate into the ground. Any transported pollutants are removed through biological uptake by plants and microbial activity within the soil. As a result, rain gardens typically address both stormwater quality and quantity.

The rain garden at Riverfront Park captures and treats stormwater runoff from surrounding impervious surfaces that would otherwise flow to the Otter Creek. It also serves as an attractive educational feature that enhances a highly popular outdoor space.



RIVERFRONT PARK'S RAIN GARDEN

PROJECT DESCRIPTION

Riverfront Park was created with the combined effort of the Town of Middlebury, the MarbleWorks Partnership, and LandWorks, a local landscape architecture firm. The park is situated along the Otter Creek just downstream from the falls. A portion of the lawn area heading down to the river was vegetated with native grasses and shrubs and sculpted to enhance slope stabilization and increase infiltration. A sizeable rain garden was installed in the upper portion of the park to capture stormwater runoff from the nearby parking lots and rooftops. The rain garden reduces the amount of surface runoff and pollutants reaching the Otter Creek.

FAST FACTS

LOCATION:

This rain garden is located at Riverfront Park, adjacent to Otter Creek Falls in Middlebury, Vermont.

COST:

The Riverfront Park rain garden cost roughly \$5,700.00. Some of the funding came from grants provided by the Otter Creek Natural Resources Conservation District, the Let it Rain program, and from public donations.

CONSTRUCTION:

The rain garden was constructed with volunteer labor. Planting occurred in 6 hours on one day. The entire park was constructed between May 2013 and July 2013.

DESIGN:

The Riverfront Park Project was designed by LandWorks. The design took a few years to finalize and began in Fall 2009. There were multiple plans and plant lists associated with the rain garden that account for around 40 hours of design work.

Case study prepared by the Vermont Green Infrastructure Initiative, a program of the Watershed Management Division of the VT Department of Environmental Conservation (http://watershedmanagement.vt.gov/stormwater/htm/sw_green_infrastructure.htm)



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DESIGN FEATURES

The installation of the rain garden was a major component of the Riverfront Park redesign project. The entire park measures 34,840 square feet and the rain garden makes up about 2,011 square feet of that. It is estimated that the constructed rain garden absorbs stormwater runoff from approximately 20,500 square feet of surrounding impervious surface area.

Native plants that are adapted to a range of moisture conditions were chosen for the vegetation. Interpretive signs were also created to educate the public about this beneficial installation. The rain garden provides visually pleasing vegetation, while also creating a beneficial, stormwater-focused park.



ANOTHER VIEW OF THE COMPLETED RAIN GARDEN

MAINTENANCE



THE RAIN GARDEN CAPTURING RUNOFF DURING ITS ESTABLISHMENT PERIOD

Maintenance of the rain garden and surrounding vegetation occurs a few times a year, and as needed due to weather or other issues. Bark mulch is scheduled to be replenished every one or two years to conserve moisture and limit weeds from growing. Most of the maintenance work is completed by volunteers, though occasionally a weeding team will be hired if the weeds get too out of hand.

A stormwater installation of this size requires due diligence and a strong adherence to a scheduled plan of maintenance. Maintenance allows the vegetation and rain garden to flourish and adequately absorb stormwater for future storms.

REFERENCES

"Middlebury Riverfront Park." LandWorks VT, 2014. Web. <<http://landworksvt.com/project/middlebury-riverfront/>>.

"Rain Garden Design Templates - What is a rain garden?." Low Impact Development Center, 2007. Web. <http://www.lowimpactdevelopment.org/raingarden_design/whatisaraingarden.htm>.



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