

Implementing Green Infrastructure

Why choose green infrastructure?

- ◇ Nature is the most efficient means, and nature doesn't charge per use.
- ◇ It is cost effective: reduction of stormwater loads to wastewater treatment facilities means less money spent on treating that water.
- ◇ It helps enhance safety: green infrastructure aids in reducing the severity of flooding events.
- ◇ It can create wildlife habitat and contribute to community beautification.



The green roof atop SUNY ESF's Gateway Center. Green roofs also help combat the heat island effect in urban areas and help to insulate the building.

Contacts

Cayuga County Soil & Water Conservation District

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www.cayugaswcd.org

Tompkins County Soil & Water Conservation District

607-257-2340
www.tompkinscountyny.gov/swcd

Onondaga County Soil & Water Conservation District

315-457-0325
www.ocswcd.org

Owasco Lake Watershed Inspection and Protection Division

315-427-5188
315-209-9840
www.owascoinspection.org

Other green infrastructure projects you might consider investigating:

- ◇ Green roofs and blue roofs
- ◇ Bioswales
- ◇ Infiltration planters
- ◇ Downspout planters
- ◇ Dry wells
- ◇ Tree pits
- ◇ General improvement of vegetation on land



What is green infrastructure?

Green infrastructure is a method to naturally alleviate the pressure placed on traditional (gray) stormwater infrastructure during large rain events, which are set to increase in frequency in the future. It works by supporting infiltration of stormwater into the ground, rather than diverting it towards aging drains and pipes, and helps to prevent huge influxes of water at wastewater treatment facilities.

How Green Infrastructure Benefits Homeowners



An infiltration planter allows downspout water to slowly permeate into the ground, sidewalk.

- ◇ Can provide water for gardening or washing vehicles
- ◇ Tackles wet spots in your yard
- ◇ Adds natural beauty to your landscape
- ◇ Reduces water load on gray infrastructure
- ◇ Delays peak time and reduces severity of flooding events

How Green Infrastructure Benefits Water Quality

- ◇ Filters nutrients out of runoff before reaching waterways
- ◇ Slows water velocity, which reduces sediment migration
- ◇ Helps Combined Sewer Overflow (CSO) system engage less frequently

⇒ **What is a CSO?** In a CSO system, both sewage and rainwater mix and flow through the same sewers. When a wastewater treatment facility is backed up with too much input, excess mixture flows over a partial wall (weir) in the sewer, and is discharged directly into Owasco Lake without being treated. Today, some municipalities in the watershed have plans in progress to begin to rehabilitate and separate these systems.

Redirect Your Downspout

Two of many options to redirect your gutters away from stormwater infrastructure are:

Diversion into a rain garden

A rain garden is a garden designed in a depression in the landscape, containing native plants, many of which have deep-reaching roots. During a storm, the depression will detain the water into a pool, and the native plant life will aid the water in infiltrating into the ground, rather than



flowing across the surface into drains.

Volunteers planting a rain garden in Emerson Park, fall 2021.

Diversion into rainwater collection barrels

Harvesting rainwater in barrels involves directly connecting your downspout to collection barrels, which can then be used to water your garden, wash your car, or even just to infiltrate at a later date. It is referred to as gray water and is not potable. In New York State, it is fully legal to store and use rainwater without filing for additional rights.



A typical home collection system of daisy-chained barrels, which hold 200 gallons of rainwater.

Install Permeable Pavement

Underlying an area of permeable pavement is a reservoir, filled with crushed rock, which stores runoff and allows it to infiltrate into the soil over time, similar to a rain garden, except the function of the surface above is not impeded. These can be sidewalks, driveways, parking lots, or any other typically impervious surface which is deemed suitable. A few common types of permeable pavement are:



A visual demonstration of porous vs. impermeable asphalt.

- ◇ Pervious concrete
- ◇ Porous asphalt
- ◇ Permeable interlocking concrete pavers

Please note that maintenance of these surfaces includes regular vacuuming to reduce clogging of surface pores by sediment. Prior to installation, an engineer should be consulted in order to correctly prepare the site as well as aid in proper installation.

Alternatively, grass grid, made of mesh or pavers, can be used, which supports the grass root network and helps to keep it intact despite vehicle use atop it. Since this aids in infiltration by minimizing hard surfaces, no retention basin is needed.



An example of a grass grid mesh, which can also be used to hold gravel in place.