

Green Infrastructure Policy

The Northeast Ohio Regional Sewer District recognizes that Green Infrastructure plays an important role in stormwater management, water quality, and improving the quality of life in the communities we serve.

We design, fund, build, and maintain Green Infrastructure projects that promote smart stormwater solutions. We developed and are implementing a policy to pursue opportunities across our service area and advocate for strategic, cost-effective Green Infrastructure that protects, preserves, enhances, and restores the natural hydrologic function of our region's watersheds.



The Sewer District services 62 communities and more than one million people in a 350-square-mile tributary area.

In addition, we are seeking to maximize co-benefits provided by Green Infrastructure, including opportunities to expand urban natural areas, enhance air quality, and improve quality of life in Northeast Ohio.

We define Green Infrastructure as:

stormwater source control measures that store, filter, infiltrate, harvest, and reuse or evapotranspirate stormwater to increase resiliency of infrastructure by reducing stress on wet-weather drainage and collection systems, which increase co-benefits in support of healthy environments and strong communities.

118,600,000

Total gallons of stormwater managed by Sewer District-implemented GI projects

16,361,797

Projected gallons per year of stormwater controlled through Sewer District-funded GI projects

\$118,560,417

Total dollars spent on Sewer Districtimplemented or -funded GI projects:

\$4,590,302 (GI Grants 2009-16) + \$55,038,388 (Appendix 3) + \$52,092,700 (WRRSP 2005-17) + \$6,839,027 (MCIP) We implement Green Infrastructure through:

 Capital Improvement & Operation and Maintenance Program: Implement



Intenance Program: Implement combined sewer overflow-control Green Infrastructure projects and invest in projects that enhance sewer capacity.

- Green Infrastructure Grants Program: Partner with communities to remove or detain stormwater from separate- or combined-sewer systems.
- Member Community Infrastructure **Program:** Assess and fund local sewer improvements that resolve waterquality and -quantity issues.
- Water Resources Restoration Sponsorship Program: Work with partners to sponsor projects that protect and improve water quality through preservation and restoration of ecosystems.
- Community Discharge Permit Program (Title III & IV): Use Green Infrastructure to reduce stress on sewer infrastructure and support permit compliance, by reviewing development plans and encouraging runoff reduction or stormwater offloading.





Sewer District large-scale Green Infrastructure projects

The following are some highlights of Green Infrastructure achievements in 2016 and 2017:

Capital Improvement & Operation and Maintenance Program: CSO Control through Green Infrastructure



The Project Clean Lake definition of Green Infrastructure is "the range of stormwater control measures that use plant/soil systems, permeable pavement, or stormwater harvest and reuse, to store, infiltrate, or evapotranspirate stormwater and reduce flows

to the combined sewer system."

In addition to helping reduce the amount of *combined* sewer overflow (CSO) entering Lake Erie, Green Infrastructure can provide sustainable, visually attractive features in neighborhoods. Over eight years, we will invest an estimated \$55 million in projects to reduce CSO.



Fleet Avenue Green Infrastructure collects stormwater and lets it soak into existing soils underground.



Urban Agriculture outdoor classroom



BUCKEYE ROAD

Scheduled to start construction 2017, this project includes several Green Infrastructure features as well as public art designed by local artists and implemented through a partnership between the Sewer District, LAND Studio, and the Buckeye Shaker Square Development Cooperation, with funding from the Saint Luke's Foundation and National Endowment for the Arts.

Green Infrastructure Grants: Source Control of Stormwater



The District recognizes the importance of partnering on Green Infrastructure and has developed a grant opportunity to support projects in the combined sewer area to provide source control of stormwater.



Buckeye Road features stormwater detention basins ...



... and a plaza area that includes public art.

Examples include:

FLEET AVENUE

This Complete and Green Streets project is a partnership with the City of Cleveland. We contributed to the design and construction of the project's green features, which will control 4.8 million gallons of stormwater in a typical year, resulting in a 500,000-gallon reduction of CSO each year.

URBAN AGRICULTURE INNOVATION ZONE

This project (completed in 2017 in partnership with the City of Cleveland and Burton, Bell, Carr Community Development Corporation) includes an outdoor classroom for community events and education programs. Green Infrastructure features will control 12.4 million gallons of stormwater in a typical year, resulting in a 1.6-milliongallon reduction in CSO.



Green Infrastructure at the Western Reserve Historical Society features permeable pavers.

Since the grant program's inception, the Sewer District has funded 65 projects for a total investment of \$4.5 million. Green Infrastructure Grants projects are expected to manage over 16.3 million gallons of stormwater per year.

The next round of grant funding is expected to open in 2017 for the 2018 program year.

Member Community Infrastructure Program (MCIP): Addressing local water quality issues

The MCIP is a funding program provided by the Sewer District to help its member communities address



water-quality and -quantity issues associated with sewer infrastructure that adversely impact human health and the environment. The MCIP provides annual funding to these communities for sewer repair and rehabilitation.

The Sewer District funded 12 projects to begin in 2017, totaling \$6.8 million.



Fresh plantings at the restoration of Euclid Creek in Acacia Reservation

Water Resource Restoration Sponsor Program

(WRRSP): Implementing Green Infrastructure Policy through Restoration and Protection

The WRRSP was created by the Ohio EPA to help



counter the loss of ecological function and biological diversity of Ohio's water resources.

The Sewer District is able to reduce its interest payments on state loans, and instead fund nonprofit groups to

restore and preserve natural areas that impact stormwater and water quality in our service area.

Through the WRRSP, the District has sponsored \$52 million in restoration and conservation projects since 2005, preserved 5,343 acres of land including 1,879 acres of wetland, removed 7 dams, protected 31.5 miles of stream, and restored 4.8 miles of stream.

The most recent Sewer District-sponsored project is a Cleveland Metroparks project in Acacia Reservation. The project will restore natural stream channel to Euclid Creek and a tributary, reconnect the floodplain and create wetlands next to the creek, and install regenerative swales designed to capture, treat, and slowly convey stormwater runoff to Euclid Creek.