

Green Infrastructure Policy

The Northeast Ohio Regional Sewer District Green Infrastructure (GI) Policy is to pursue opportunities across our service area and advocate for strategic, cost-effective GI that protects, preserves, enhances, and restores the natural hydrologic function of our region's watersheds. The Sewer District designs, funds, builds, and maintains GI projects that promote smart stormwater solutions. This includes maximizing benefits provided by GI, by supporting opportunities to expand urban natural areas, enhance air quality, and improve quality of life in Northeast Ohio.

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

123,770,340

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

40,540,987

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

\$251,125,607

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

\$16,901,592 (GI Grants 2009-24) + \$55,038,388 (Appendix 3) + \$76,834,751 (WRRSP 2005-23) + \$102,350,876 (MCIP 2017-23) In addition, the Sewer District is seeking to maximize the benefits provided by GI, including opportunities to expand urban natural areas, enhance air quality, and improve quality of life in Northeast Ohio.

The Sewer District defines 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.



The Sewer District services 63 communities and almost one million people in a 363-square-mile tributary area.

The Sewer District implements GI through:



• Capital Improvement & Operation and Maintenance Program: Implement combined sewer overflow-control GI projects and invest in projects that enhance sewer capacity.



• GI Grant Program: Partner with government entities, non-profits, or businesses working in partnership with their communities to remove or detain stormwater from combined-sewer systems.



• Member Community Infrastructure Program: Assess and fund local sewer improvements that resolve water-quality and -quantity issues.





• Community Discharge Permit Program (Title III & IV): Use GI to reduce stress on sewer infrastructure and support permit compliance, by reviewing development plans and encouraging runoff reduction or stormwater

offloading.

• Regional Stormwater Management Program (Title V): Manage the regional stormwater system to implement and maintain GI and address flooding, erosion, and water quality concerns, including an incentive of stormwater fee credits.



Sewer District large-scale Green Infrastructure projects

The following are some highlights of GI achievements in 2021-24:

Green Infrastructure Grant Program: 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. Examples include:



The East 140th Street Consolidation & Relief Sewer Project



Upgrades at Karamu House include permeable pavers and trees

HOLY SPIRIT CATHOLIC CHURCH PLAZA 4341 East 131st Street, Cleveland

The project replaced concrete with 4,500 square feet of pervious pavers that function by serving as a reservoir for stormwater, promoting infiltration and releasing excess flow slowly into the combined sewer system via perforated subdrains.

Stormwater Capture: 140,184 gal./yr. Drainage Area: 0.07 acres Total Cost: \$386,000 Grant Award: \$250,000



Bio-infiltration gardens at Lakeview Cemetery

THE GREENING OF KARAMU HOUSE 2355 East 89th Street, Cleveland

The project includes the removal and replacement of 1,800 square feet of asphalt with permeable pavers, and the introduction of planted areas that include trees to reduce the heat island effect on the remaining asphalt. The GI features function by taking advantage of a 3-foot deep, highly pervious sand layer beneath the existing asphalt parking lot.

Stormwater Capture: 247,614 gal./yr. Drainage Area: 0.20 acres Total Cost: \$333,000 Grant Award: \$250,000



Holy Spirit's concrete parking lot replaced by pervious pavers

LAKEVIEW CEMETERY (Section 66)

Stormwater runoff is captured, treated, and infiltrated through a treatment train of permeable pavers and three bio-infiltration gardens. An underdrain system connects to bio-infiltration gardens, which promotes additional detention and infiltration during storm events.

Stormwater Capture: 268,240 gal./yr. Drainage Area: 1.86 acres Total Cost: \$181,437 Grant Award: \$181,437

INTRO GREEN INFRASTRUCTURE PROJECT Corner of West 25th Street and Lorain Avenue

A "treatment train" of stormwater control measures includes a green roof, underground infiltration basin, a pervious paver system for the main driveway, and street tree planters throughout the property.

Stormwater Capture: 1,937,565 gal./yr. Drainage Area: 2.5 acres Total Cost: \$1,700,344 Grant Award: \$200,000

Since the Grant Program's inception, the Sewer District has funded 92 projects for a total investment of \$15.9 million. GI Grant Program projects are expected to manage over 40.5 million gallons of stormwater per 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 waterquality 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. Since 2017, the Sewer District has funded 134 projects totaling \$102 million, which has leveraged an additional \$104 million in member-community sewer-infrastructure investments.



Restoration of the Brightwood Dam removal on Kellogg Creek



GI installation at INTRO (West 25th St. and Lorain Ave.)

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 \$77 million in restoration and conservation projects since 2005, preserved 8,076 acres of land including 3,360 acres of wetland, removed 10 dams, protected 47.4 miles of stream, and restored 6.6 miles of stream.

The Brightwood Lake dam removal and Kellogg Creek stream restoration project involves the removal of the 340'-long, 16' high earthen dam and associated 55'-long concrete spillway. Removal of the dam will allow for the restoration of 1,800 linear feet of the creek within the existing impoundment using floodplain excavation and natural channel design stream-restoration techniques. This project will result in re-establishment of a natural stream channel for the creek, improved functional capacity of the riparian corridor, improved water quality to downstream reaches of the creek, increased macroinvertebrate and fish habitat and restored salmonid habitat, and allow this reach of Kellogg Creek to meet full attainment of warm water habitat.

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