



Cincinnati is one of several cities that have recently built green infrastructure measures into CSO consent decrees.

Consent Decrees that Include Green Infrastructure Provisions

This supplement supports Factsheet 2 in the Green Infrastructure Permitting and Enforcement Series: Combined Sewer Overflows

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Integrating Green Infrastructure Concepts into Permitting, Enforcement, and Water Quality Standards Actions

This supplement is a companion to the U.S. EPA Green Infrastructure Permitting and Enforcement Series (http://water.epa.gov/infrastructure/greeninfrastructure/gi_regulatory.cfm#permittingseries).

This series describes how EPA and state permitting and enforcement professionals can incorporate green infrastructure practices and approaches into National Pollutant Discharge Elimination System (NPDES) wet weather programs, including stormwater permits, Total Maximum Daily Loads (TMDLs), combined sewer overflow (CSO) long-term control plans (LTCPs), and enforcement actions. This series builds upon EPA's continued investment in green infrastructure and low impact development. Existing EPA authority, guidance, and agreements enable EPA Regions and state agencies to work with permittees to include green infrastructure measures as part of control programs.

For additional resources on green infrastructure, go to the EPA Green Infrastructure Web page: <http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>.

Key green infrastructure guidance issued to date can be found at: http://water.epa.gov/infrastructure/greeninfrastructure/gi_policy.cfm.



Permeable pavements such as these interlocking concrete pavers allow stormwater to pass through the surface into a storage layer below.

Introduction

When an entity has failed to comply with federal environmental laws, states and/or the EPA may initiate an enforcement action. Enforcement actions are taken for two main reasons: first, to compel the individual, company, or organization to return to compliance; and second, to deter others from committing similar violations in the future. Enforcement can be civil, administrative, or criminal. In civil enforcement settlements, there are generally two components of relief: injunctive relief, which requires actions that will be taken to bring the defendant back into compliance; and monetary penalties, which account for any economic benefit the entity experienced as a result of delayed compliance. Monetary penalties are also calculated with gravity factors associated with violations and environmental harms, and help to both level the playing field and deter future noncompliance. Administrative settlements require measures to bring an entity back into compliance and can include penalties. Some enforcement actions are resolved by the entry of a consent decree, which is a negotiated settlement between the enforcing agency and the permittee. The consent decree can include several of the enforcement actions described above.

Green infrastructure measures can be built into a consent decree in terms of actions to be carried out and levels of control to be achieved using green infrastructure as provisions that would be part of the injunctive relief. This document lists examples of existing consent decrees that include green infrastructure provisions along with links to the full documents. This list is not all-inclusive.



City of Dallas

Date of Entry by the Court: May 10, 2006

Plaintiffs: United States of America, State of Texas

Penalties: \$800,000

Injunctive Relief: \$1.5 million

Types of Green Infrastructure Used: Construction of two wetlands

Consent Decree: <http://www.epa.gov/compliance/resources/decrees/civil/cwa/dallas-cd.pdf>

Infrastructure Projects Overview: The first wetland the City will construct will be a 60-acre or larger area along the Trinity River downstream of Sylvan Avenue, in the vicinity of the Pavaho pump station. Currently the City pumps stormwater directly from the sump to the Trinity River. This project will use the stormwater to water a wetland that will provide urban green space and filter impurities out of the stormwater before it reaches the Trinity. The second wetland will be a small wetland along Cedar Creek near the Dallas Zoo. This wetland will be the last in a series of treatment steps designed to treat runoff from a portion of the Dallas Zoo. The system will be designed so that water emerging from the wetland can be returned to the Zoo for use in drip irrigation. As with the wetland along the Trinity River, a detailed design plan must be approved by the EPA before work begins.

For more information, visit: <http://www.wheredoesitgo.com>

The District of Columbia Water and Sewer Authority and the District of Columbia

Date of Entry by the Court: June 25, 2003

Plaintiffs: United States of America and Anacostia Watershed Society

Penalties: \$250,000

Injunctive Relief: \$150 million

Types of Green Infrastructure Used: Rain gardens, vegetated swales, green roofs

Consent Decree: <http://www.epa.gov/compliance/resources/decrees/civil/cwa/dcwasa-cd.pdf>

Infrastructure Projects Overview: As part of this settlement, the District of Columbia Water and Sewer Authority (WASA) installed rain gardens, vegetated swales, and other forms of green infrastructure at strategic locations throughout the city. In addition, WASA coordinated with the Chesapeake Bay Foundation to design, build, and monitor a \$300,000 green roof project in the Anacostia River watershed. One of the primary goals of the project is to demonstrate the effectiveness of green roofs in reducing the amount of polluted stormwater runoff that enters the city's combined sewer system.

For more information, visit: <http://www.cbf.org/>



Washington Suburban Sanitary Commission, Maryland

Date of Entry by the Court: July 26, 2005

Plaintiffs: United States of America, State of Maryland, Anacostia Watershed Society, Audubon Naturalist Society of the Central Atlantic States, Inc., Friends of Sligo Creek, and Natural Resources Defense Council

Penalties: \$1.1 million

Injunctive Relief: \$200 million

Types of Green Infrastructure Used: Conservation easements, riparian buffers, downspout disconnections

Consent Decree: <http://www.epa.gov/compliance/resources/decrees/civil/cwa/wssc072605-cd.pdf>

Infrastructure Project Overview: As part of this settlement, the Washington Suburban Sanitary Commission (WSSC) spent \$4.4 million on the purchase of conservation easements and riparian buffer habitat situated along the banks of the Tridelphia and Rocky Gorge Reservoirs. Both of these waterbodies serve as sources of public drinking water, and the land was purchased to preserve and enhance water quality in both reservoirs. In addition, WSSC assisted residents of Montgomery County and Prince George's County, Maryland with the disconnection of stormwater drains that were carrying excess runoff into the local sewer system. These drains were contributing to sewer overflows and backups within the system during storm events.

For more information, visit: <http://www.wsscwater.com/home/>

Rain gardens absorb rainwater runoff from sidewalks and streets, diverting flow from the sewer system.

Metropolitan Sewer District of Greater Cincinnati

Date of Entry by the Court: On July 28, 2009, the Department of Justice lodged with the United States District Court for the Southern District of Ohio a proposed First Amendment to the Interim Partial Consent Decree on Sanitary Sewer Overflows and Consent Decree on Combined Sewer Overflows, Wastewater Treatment Plants and Implementation of Capacity Assurance Program Plan (the “Global Decree”), which were entered by the Court on June 9, 2009.

Plaintiffs: United States, State of Ohio, ORSANCO

Penalties: \$1.2 million

Injunctive Relief: The consent decrees require implementation of grey infrastructure projects to achieve significantly higher levels of treatment and control of wet weather flows. The first phase of work is estimated to cost \$1.145 billion (2006 dollars) and must be completed by December 31, 2018. The Wet Weather Improvement Plan and the Consent Decree set forth the projects that must be completed in subsequent phases and the process for establishing the remainder of the schedule, which must be as expeditious as practicable.

Types of Green Infrastructure Used: To be determined

Consent Decree: <http://www.epa.gov/compliance/resources/decrees/civil/cwa/hamilton-cd2.pdf>

Infrastructure Projects Overview: The consent decree provides that the MSDGC can identify planned grey infrastructure projects which it wishes to modify by adding or substituting green infrastructure, where such modifications lead to more cost-effective solutions. Substitutions of green infrastructure measures for planned grey infrastructure control measures must be approved by EPA and the State.

Louisville and Jefferson County Metropolitan Sewer District

Date of Entry by the Court: Original Consent Decree August 12, 2005. Amended Consent Decree April 15, 2009.

Plaintiffs: United States and Commonwealth of Kentucky’s Environmental and Public Protection Cabinet

Penalties: Initial penalty \$1 million. Additional penalty \$230,000 plus \$400,000 in required Supplemental Environmental Projects.

Injunctive Relief: Louisville and Jefferson County Metropolitan Sewer District (MSD) is implementing combined sewer overflow (CSO) and sewer system overflows (SSO) control measures at an estimated cost of \$843 million over 20 years.

Types of Green Infrastructure Used: Permeable pavements, green streets, rain gardens, vegetated swales, green roofs

2009 Amended Consent Decree: <http://msdprojectwin.org/About-Us/Federal-Consent-Decree.aspx>

Infrastructure Projects Overview: As part of this settlement, MSD is implementing an Integrated Overflow Abatement Program to control CSOs and SSOs that includes a variety of green infrastructure approaches. MSD will implement pilot and demonstration projects for green infrastructure controls during a six-year study period starting in 2009 at an estimated cost of \$40 million. As of the time of publication of this document, Louisville already had over 100 green infrastructure projects in place, and studies are underway to monitor and evaluate the performance and benefits of the green infrastructure control measures. MSD will use the results of these studies to identify opportunities for expanded green infrastructure controls throughout the combined sewer system. MSD is also evaluating the best approach for implementing storm water management credits to reduce sewer rates for individuals that construct their own green infrastructure projects.

For more information, visit: <http://msdprojectwin.org/>

Kansas City, Missouri

Date of Lodging by the Court: May 18, 2010

Plaintiffs: United States of America

Penalties: \$600,000

Injunctive Relief: Kansas City will implement CSO and SSO control measures at an estimated cost of \$2.5 billion over 25 years.

Types of Green Infrastructure Used: Rain gardens, vegetated swales, permeable pavement, green roofs, and other site-scale practices.

Consent Decree: <http://epa.gov/compliance/resources/decrees/civil/cwa/cityofkansascity-cd.pdf>

Infrastructure Projects Overview: The consent decree provides that Kansas City will use green infrastructure in its implementation of overflow control measures. The City will initiate a pilot project to implement green infrastructure technologies to control wet weather flows throughout a 100-acre basin served by the City's POTW. The City will use the results of the pilot project to develop a plan for implementing green infrastructure projects across at least a 744-acre basin served by the City's POTW. The City may then develop and submit to EPA for approval a green infrastructure project proposal for its entire combined sewer system to achieve its overflow reductions.



Succulent plants are a common choice for rain gardens because they are drought-tolerant but can absorb water quickly during rain storms.

Northeast Ohio Regional Sewer District

Date of Lodging by the Court: On December 22, 2010, a proposed consent decree in United States and the State of Ohio v. Northeast Ohio Regional Sewer District (NEORS D) was lodged with the United States District Court for the Northern District of Ohio. Note this consent decree has been lodged but not yet entered as of the time of issuance of this factsheet.

Plaintiffs: United States and State of Ohio

Penalties: \$1.2 million plus Federal and State SEPs

Injunctive Relief: Under the proposed consent decree, NEORS D will be required to implement injunctive measures, including the construction of seven deep underground tunnel systems, to reduce its CSO discharges. Projects to be completed include treatment plant expansions. The total cost for controlling wet weather flows is estimated to be approximately \$3 billion.

Types of Green Infrastructure Used: To be determined

Infrastructure Projects Overview: NEORS D will invest \$42 million in green infrastructure that will further reduce its CSO discharge by 44 million gallons, beyond the level of control defined for the planned grey infrastructure projects. The consent decree also allows NEORS D the opportunity to propose additional green infrastructure projects that would fully or partially substitute for planned grey infrastructure control measures.

For more information, visit: <http://www.neorsd.org/projectcleanlake.php>



Rainwater can be collected from the roofs of homes and buildings in many types of collection systems, and then used for other purposes. Here, a large cistern collects water from the roof of a building.



Green Infrastructure Permitting and Enforcement Series

This series on integrating green infrastructure concepts into permitting, enforcement, and water quality standards actions contains six factsheets plus four supplemental materials that can be found at http://water.epa.gov/infrastructure/greeninfrastructure/gi_regulatory.cfm#permittingseries.

Factsheets

1. Potential Challenges and Accountability Considerations
2. Combined Sewer Overflows
3. Sanitary Sewer Overflows
4. Stormwater
5. Total Maximum Daily Loads
6. Water Quality Standards

Supplemental Materials

1. Consent Decrees that Include Green Infrastructure Provisions
2. Consent Decree Language Addressing Green for Grey Substitutions
3. Green Infrastructure Models and Calculators
4. Green Infrastructure in Total Maximum Daily Loads (TMDLs)



For additional resources on green infrastructure, go to the EPA Green Infrastructure Web page: <http://www.epa.gov/greeninfrastructure/>.