

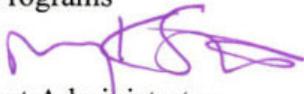


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

APR 20 2011

MEMORANDUM

SUBJECT: Protecting Water Quality with Green Infrastructure in EPA Water Permitting and Enforcement Programs

FROM: Nancy Stoner   
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Office of Enforcement and Compliance Assurance (OECA)

TO: EPA Regional Administrators, OW & OECA Office & Division Directors

The United States Environmental Protection Agency (EPA) strongly encourages and supports the use of green infrastructure approaches to manage wet weather through infiltration, evapotranspiration, and rainwater harvesting. As stated in previous memoranda,<sup>1</sup> EPA recognizes that green infrastructure can be a cost-effective, flexible, and environmentally-sound approach to reduce stormwater runoff and sewer overflows and to meet Clean Water Act (CWA) requirements. Green infrastructure also provides a variety of community benefits including economic savings, green jobs, neighborhood enhancements and sustainable communities. The benefits of green infrastructure are particularly enhanced in urban and suburban areas where green space is limited and environmental damage may be more extensive. The Office of Water (OW) and the Office of Enforcement and Compliance Assurance (OECA) are committed to working with interested communities and water resource managers to successfully incorporate green infrastructure into National Pollutant Discharge Elimination System (NPDES) permits, as well as remedies designed to address non-compliance with the CWA, to better manage both stormwater runoff and sewer overflows.

Given the multiple benefits associated with green infrastructure, EPA encourages the use of green approaches to stormwater runoff and sewer overflow management to the maximum extent possible. Green practices reduce stormwater runoff, preventing it from entering combined and separate sanitary sewer systems and reducing the volume and occurrence of overflows.

<sup>1</sup> "Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and other Water Programs" signed by Benjamin Grumbles, Assistant Administrator, Office of Water, on March 5, 2007, and "Use of Green Infrastructure in NPDES Permits and Enforcement" signed by Linda Boornazian, Director, Water Permits Division and Mark Pollins, Director, Water Enforcement Division, on August 16, 2007.

Green practices also lower the amount of untreated stormwater discharging to surface waters. Green infrastructure provides additional green spaces and recreational opportunities, enhanced ecosystem services, improved air quality, increased property values, energy savings, economic development, reduced urban heat island effects, and job creation opportunities. In addition, green infrastructure can serve as both a climate change mitigation and adaptation strategy, through increased carbon sequestration from plants and soils, and flexibility in adjusting to potential changes in precipitation patterns. As a result of these benefits, communities around the country are increasingly incorporating green designs into wet weather controls through both NPDES permits and water enforcement agreements.

Tremendous progress has been made in recent years on models and technical approaches to assist communities with green infrastructure planning, making it easier for communities to demonstrate that green infrastructure solutions meet CWA requirements. CWA NPDES permits and enforcement agreements that incorporate green or gray infrastructure solutions require enforceable performance criteria, implementation schedules, monitoring plans and protocols, progress tracking and reporting, and operation and maintenance requirements. Regardless of the technology used, EPA looks for a demonstration of sound modeling and technical approaches as well as planning for overall wet weather control approaches to satisfy regulatory requirements. EPA will continue to increase its efforts to help interested communities ensure that green infrastructure meets CWA requirements as well as community goals and encourages communities to consider green infrastructure in all wet weather control plans.

In November 2010, EPA Deputy Administrator Bob Perciasepe formed a cross-agency green infrastructure Steering Committee and Work Group comprised of representatives of each region and every Assistant Administrator's office to further encourage and support the implementation of green infrastructure solutions. As part of this effort, EPA will continue to work with other federal agencies, state and local governments, tribes, municipalities, and the private sector to identify opportunities and provide technical assistance to communities implementing green approaches to control wet weather. EPA will also provide additional tools to encourage states and communities to leverage green infrastructure opportunities within other innovative environmental projects.

We encourage you and your staff to contact OW's Green Infrastructure Coordinator, Chris Kloss at [kloss.christopher@epa.gov](mailto:kloss.christopher@epa.gov) and OECA's Green Infrastructure Coordinator, Mahri Monson at [monson.mahri@epa.gov](mailto:monson.mahri@epa.gov) with questions, comments and information on green infrastructure in permitting and enforcement. Attachment A to this memorandum contains some recent examples of successful incorporation of green infrastructure into NPDES permits and enforcement actions. Attachment B lists the green infrastructure regional liaisons for both the water and the enforcement programs.

Cc: Regional Permit and Enforcement Liaisons

Attachments

## Attachment A

### Recent Examples of Green Infrastructure in Permits and Enforcement Actions

#### **Stormwater Permitting Approaches with Green Infrastructure**

**California** - Since May 2009, California Regional Water Quality Control Boards have adopted nine Phase I MS4 permits requiring that new development and redevelopment projects retain the 85<sup>th</sup> percentile storm event via infiltration, evapotranspiration, and rainwater harvest and reuse by utilizing green infrastructure practices. Within the individual permits, there are provisions that allow for off-site mitigation or payment of fees if retention and biofiltration are not technically feasible on site.

**Charles River Watershed, MA** - The draft Residual Designated Discharge General Permit has been developed and noticed for the communities of Milford, Bellingham and Franklin, Massachusetts. The draft permit proposes stormwater control requirements to reduce phosphorus loading for properties with two or more acres of impervious area and the use of infiltration/recharge practices to achieve the required phosphorus load reduction for a property if it is determined that such practices are technically feasible.

**Massachusetts** - EPA's draft small MS4 general permit for Massachusetts encourages the use of practices which capture (infiltrate, evapotranspire, and/or harvest and reuse rainwater) the 90<sup>th</sup> percentile storm event (1 inch storm). The draft permit also requires municipalities to examine existing guidelines and policies for their ability to support green infrastructure options in new development and redevelopment, identify impediments, and determine what changes need to be made.

**Santa Monica, CA** - In July 2010, the City updated its Urban Runoff Pollution Ordinance to require that new development and redevelopment projects infiltrate, store for non-potable use, or evapotranspire the first ¾ inch of a storm, or pay an Urban Runoff Reduction fee that the City then uses for larger scale stormwater control projects. The ordinance promotes the use of green infrastructure for meeting the stormwater retention requirements.

**Washington, DC** - The District's draft MS4 permit includes a development retention standard of 1.2 and 1.7 inches for non-federal and federal properties, respectively, along with numeric targets for green roofs (350,000 square feet over the permit cycle on District properties) and tree canopy (4,150 trees per year and 13,500 by 2014). The draft DC MS4 permit built off of a supplement to the previous permit that identified numeric targets for tree canopy, LID projects (17 by August 2009), rain gardens (50 by December 2009), rain barrels (125 by December 2009), and downspout disconnection (200 by December 2009).

#### **Enforcement Actions with Green Infrastructure**

**Cincinnati, OH** - Cincinnati's 2004 consent decree (CD) to control sewer overflows was amended in 2010, providing opportunities to incorporate green infrastructure solutions by

substituting “green for grey” on a project by project basis. The city is currently evaluating potential green infrastructure projects and has a three year study and detailed design period to examine green solutions in the Lick Run Watershed, in Mill Creek Valley on the west side of Cincinnati. One promising project in the Lick Run drainage area, a corridor that includes an environmental justice community, would remove storm water flows from the combined sewer system and create a new above-ground drainage feature with surrounding park land. Cincinnati will be meeting with EPA throughout 2011 to discuss green infrastructure plans, and proposals for “green for grey” substitutions are likely to be submitted in 2012.

***Cleveland, OH*** - The 2010 Cleveland, OH, CD requires that green infrastructure be used to capture 44 million gallons of combined sewer overflow discharge in order to clean up Cleveland’s waters. The city agreed to spend at least \$42 million on green infrastructure and will conduct a feasibility study to develop a green infrastructure plan to meet the 44 million gallon reduction requirement. The agreement allows Cleveland to submit plans for additional green infrastructure controls, based on the results of initial projects. The city will target the majority of its green infrastructure projects in low-income and minority concentrated neighborhoods, where there is an abundance of vacant land that can be utilized at a relatively low cost. The residents of Cleveland will benefit from reduction of sewer overflows and their associated health hazards, increased green space and recreational opportunities, increased property values and job opportunities.

***Kansas City, MO*** - EPA and Kansas City, Missouri signed a consent decree in May 2010 which requires the city to use green infrastructure to help control and eliminate sewer overflows. Kansas City will initially implement a green infrastructure plan to control wet weather flows in a 744-acre environmental justice neighborhood, with the option to expand green infrastructure programs throughout the city to help keep sewer overflows from polluting the community’s water. Green infrastructure technologies to be implemented include catch basin retrofits in road and street rights-of-way, curb extension swales, street trees, permeable pavement, green roofs and stormwater planters. Thanks to this agreement, the citizens of Kansas City will benefit from improvements in water quality, air quality, and new green spaces throughout the city.

***Louisville, KY*** - Through an agreement with EPA filed in 2005 and amended in 2009, Louisville, Kentucky is using green infrastructure to help solve the city’s sewer overflow problems. Louisville has committed to constructing 19 initial green infrastructure demonstration projects including green roofs, green streets, urban reforestation, and other green elements to keep polluted runoff from entering their waters. After a six-year study period to monitor demonstration projects, the sewer department may propose additional green infrastructure controls. Louisville’s sewer department has already distributed hundreds of rain barrels to residents throughout the city, providing citizens the opportunity to participate in cleaning up their waters. The community at large will continue to benefit from ongoing installment of rain gardens, permeable parking lots, and other green amenities throughout Louisville.

Attachment B

Regional Green Infrastructure Liaisons

<b>Region</b>	<b>Water Program Green Infrastructure Liaisons</b>	<b>Enforcement and Compliance Green Infrastructure Liaisons</b>
<b>1</b>	Johanna Hunter	Joy Hilton Jeff Kopf
<b>2</b>	Jeff Gratz	Murray Lantner
<b>3</b>	Dominique Lueckenhoff	Allison Graham
<b>4</b>	MaryAnn Gerber Darryl Williams	Araceli Bonilla
<b>5</b>	Bob Newport	Jonathan Moody
<b>6</b>	Brent Larsen Suzanna Perea	Diana McDonald
<b>7</b>	Kerry Herndon Mandy Whitsitt	Jodi Bruno
<b>8</b>	Stacey Eriksen	David Gwisdalla
<b>9</b>	John Kemmerer	Michelle Moustakas
<b>10</b>	Krista Mendelman	Rob Grandinetti