

---

**REGULATORY DEVELOPMENTS**

---

**EPA AND ENVIRONMENTAL ORGANIZATIONS RELEASE GREEN INFRASTRUCTURE ACTION STRATEGY FACILITATING MAINSTREAM ADOPTION OF GREEN INFRASTRUCTURE**

In January 2008, the Partners for Green Infrastructure—a group of five organizations and the U.S. Environmental Protection Agency (EPA)—released a green infrastructure action strategy. The “Managing Wet Weather with Green Infrastructure Action Strategy” sets forth a comprehensive plan to promote the use of green infrastructure as a means of improving water quality. Green infrastructure contributes to water quality protection by reducing wet weather combined sewer overflows and limiting the volume of untreated runoff delivered to surface waters, and some believe it is a key element in reducing the cost of compliance for municipalities whose collection systems are impacted by storm water. The action strategy presents an ambitious agenda, and its success depends upon the concerted and sustained efforts of the partners and other parties. One critical variable will be the ability of the partners to translate the strategy’s broadly outlined goals into executable programs—a feat that will necessitate addressing many details not fleshed out in the January 2008 document.

**Background**

The action strategy is the product of a collaborative effort among American Rivers, the Association of State and Interstate Water Pollution Control Administrators, the National Association of Clean Water Agencies, the Natural Resources Defense Council, the Low Impact Development Center, and the U.S. Environmental Protection Agency (EPA). The strategy continues efforts by the individual organizations and builds upon an EPA commitment to green infrastructure first expressed in a March 5, 2007 memorandum from EPA Assistant Administrator Benjamin Grumbles.

**‘Green Infrastructure’ Defined**

As its title suggests, the action strategy focuses on mitigating the water quality impacts of wet weather flows. To start, the document defines green infrastructure generally as:

systems and practices that use or mimic natural processes to infiltrate, evapotranspire . . . , or reuse stormwater or runoff on the site where it is generated.

Many technologies and management approaches fall within this definition, including green roofs, tree boxes, rain gardens, vegetated swales and median strips, pocket wetlands, infiltration planters, porous and permeable pavements, reforestation/revegetation, protection of riparian buffers and floodplains, and decentralized water harvesting such as the use of rain barrels and cisterns.

While the definition of green infrastructure is focused on management techniques that control the water, the benefits conferred by green infrastructure are more far reaching. In addition to cleaner water, groundwater and base flow recharge, and water conservation, the action strategy lists improved air quality, reduced urban temperatures, increased energy efficiency, carbon sequestration, adaptation benefits for climate change, aesthetics, and reduced capital costs among green infrastructure’s benefits.

**Tasks and Objectives**

To obtain these benefits through the widespread adoption of green infrastructure, the action strategy outlines tasks and objectives in seven major areas: research, outreach and communications, tools, Clean Water Act regulatory support, economic viability and funding, demonstrations and recognition, and partnerships. The Green Infrastructure Partners have identified a lead individual and partners responsible for completing each research task, along with the task’s priority and timeframe for completion.

**Research Goal**

Through its “research” goal, the action strategy aims to increase the quantitative data on performance and effectiveness of green infrastructure management practices. To meet this goal, the action strategy calls

for developing and implementing research programs to quantify the benefits of green infrastructure. Once completed, this research will be available to support regulators' decisions to accept green infrastructure practices as solutions in the CSO, SSO and TMDL programs.

## Outreach and Communication

The "outreach and communication" goal promotes information sharing among potential implementers of green infrastructure. The action strategy seeks to ensure potential implementers have the financial, technical, and administrative information necessary to transition to green infrastructure approaches. Specific tasks in this area include the development of a web-based green infrastructure resource center and promotion of green infrastructure on the agendas of conferences and meetings.

## Tools

The "tools" objective concerns developing resources to facilitate the adoption of green infrastructure. Within this area, the action strategy proposes several primary tasks. First, the partners will establish models and protocols to quantify the volume of discharge and pollutants related to the adoption of green infrastructure. Next, they will develop a guidebook for municipalities, which would include aids for decision making, master-planning, site planning and design review specifications, operation and maintenance, model codes and ordinances, incentives and funding, and tracking and evaluation protocols. Finally, the action strategy proposes developing design standards and drawings and developing model bid specifications for green infrastructure.

## CWA Regulatory Support

Within the "Clean Water Act regulatory support" area, the action strategy seeks to clarify how green infrastructure can meet the requirements of existing regulatory programs. On August 16, 2007, Assistant Administrator Grumbles released a memorandum that explains the role of green infrastructure as a control for combined sewer overflows (CSOs), stormwater, and other discharges. Beyond this, the action strategy intends to develop model permit language for municipal stormwater permits, a guidebook for state and regional National Pollution Discharge Elimina-

tion System (NPDES) permits, and a "green" CSO long term control plan. These are the products that will establish EPA's tolerance of non-traditional green infrastructure techniques as solutions in what historically have been very traditional command-and-control regulatory programs.

## Economic Viability and Funding

Within the "economic viability and funding" area, the action strategy seeks to document and quantify the multiple benefits of using green infrastructure and to ease the financial burden on municipalities that seek to implement green infrastructure practices. Toward these ends, the action strategy seeks to develop protocols for making cost evaluations of green infrastructure, document useful incentives and financing mechanisms; and identify existing grant and loan programs available to fund green infrastructure projects.

## Demonstrations and Recognition

Similar to the communications goal area, the "demonstrations and recognition" objective seeks to increase information sharing among implementers and to help familiarize potential green infrastructure adopters with successful practices. The action strategy proposes using existing project and new pilot programs to carefully design studies outlined in the action strategy—including, for example, documenting costs, quantifying benefits, developing models, and gathering performance data. Here, the action strategy proposes to develop a catalog of green infrastructure case studies, expand and make publicly available the Casey Trees Washington, D.C. green build-out model, and recognize innovative green infrastructure through awards programs.

## Partnerships

Finally, within the "partnerships" area, the Green Infrastructure Partners seek to expand the partnership to gain widespread acceptance of green infrastructure. To meet this goal, the action strategy intends to work with large retailers to develop an agreement on implementing green infrastructure at retail and warehousing locations, encourage the federal government to adopt a leadership role in green infrastructure implementation by example, to further develop training and certification programs for green infrastructure installers, and to expand the partnership.

## Analysis

As a framework, the action strategy succeeds in identifying a number of very worthwhile goals across sectors. The action strategy's work plan is expansive and contains little detail, however, and it is in that detail where the devil will reside.

Importantly, the action strategy is not intended to be static; rather, the action strategy is described as a "living document" that will be regularly updated. The partners seek "input from anyone or any organization with ideas, energy or resources to develop specific tasks." This open approach not only gives all stakeholders an opportunity to ensure that the action strategy is relevant to their needs and interests, but it also may help the partners achieve the ambitious goals laid out in the strategy. Put another way, the partners' laudable openness is an opportunity not to be missed by anyone interested in maximizing the benefits of green infrastructure.

The partners are in the process of developing a formal coordination framework that will be inclusive of all parties who wish to participate in the action strategy's implementation. A steering committee and a EPA green infrastructure coordinator, who will track efforts and facilitate ongoing activity, will lead implementation and communication efforts. In addition, the steering committee has committed to convening on a regular basis to discuss projects, progress, and needs.

Once the action strategy's tasks are under way, it will be critical to track its success. Appropriately, the partners identify a number of milestones to mark whether green infrastructure "is attaining status as a mainstream approach to managing wet weather." They include:

the inclusion of provisions that facilitate or require green infrastructure in "notable" numbers of enforceable municipal separate storm sewer system (MS4) permits, injunctive relief portions of enforcement settlements, and long-term control plans; the establishment and evaluation of annual goals for incorporating green infrastructure in EPA's MS4 and CSO permit-

ting and enforcement programs; the adoption of green infrastructure as a "key component" of critical water infrastructure upgrades in increasing numbers of communities, demonstrated by project implementation and the adoption of progressive ordinances; the increased implementation of green infrastructure technologies (measured, e.g., in acres of pervious pavement, square feet of green roofs, etc.); evidence of positive technology performance and water quality improvements; and the incorporation of green infrastructure as a component of an increasing number of state revolving fund applications.

The steering committee plans to track information related to these milestones and to refine measures of success as data become available.

## Conclusion and Implications

The action strategy builds upon and adds to ever-widening interest in green infrastructure as a means to achieving clean water and other environmental goals. As noted here, EPA's Office of Water has released two memoranda in the past year expressing its support for the incorporation of green infrastructure in both voluntary and regulatory frameworks. More recently, the National Association of Clean Water Agencies and the Conservation Fund signed a memorandum of understanding to develop and implement a national training course on green infrastructure and clean water. At their 2006 conference in Las Vegas, the U.S. Conference of mayors passed a policy resolution promoting green infrastructure. Finally, and most concretely, in November 2007 the District of Columbia and EPA's Water Protection Division signed an agreement that modifies the District of Columbia's Stormwater Management Plan and adopts a green infrastructure program to help mitigate storm water related pollution.

As evidenced by these events, many parties will likely take interest in the development of green infrastructure approaches. The partners' openness to input from diverse stakeholders will remain important as the action strategy moves from the conceptual to the tangible. (R. Davis/J. Abdella)

Reprinted with permission from the *Eastern Water Law & Policy Reporter*, Copyright © 2008, Argent Communications Group. All rights reserved. Further copying—print or electronic—requires additional written consent: P.O. Box 1425, Foresthill, CA 95631; E-mail: reprints@argentco.com.