

Stakeholder Statement of Support for Green Infrastructure

Purpose

To bring together organizations that recognize the benefits of using green infrastructure in mitigating overflows from combined and separate sewers and reducing stormwater pollution and to encourage the use of green infrastructure by cities and wastewater treatment plants as a prominent component of their Combined and Separate Sewer Overflow (CSO & SSO) and municipal stormwater (MS4) programs.

Goals

Green infrastructure can be both a cost effective and an environmentally preferable approach to reduce stormwater and other excess flows entering combined or separate sewer systems in combination with, or in lieu of, centralized hard infrastructure solutions. The undersigned organizations support:

- Use of green infrastructure by cities and utilities where it is an effective and feasible means of reducing stormwater pollution and sewer overflows;
- Development of models to quantify stormwater detention, retention, and filtration potential of green infrastructure to better identify opportunities to successfully use green infrastructure in CSO, SSO, MS4 and nonpoint source programs;
- Monitoring to verify the amount of CSO, SSO, and stormwater discharge reduction that cities obtain through using green infrastructure;
- Measurement of economic and environmental benefits realized from the use of green infrastructure in sewer systems and quantification of its life-cycle costs;
- Increased federal, state, and local funding for green infrastructure initiatives;
- Elimination of barriers to the incorporation of green infrastructure in stormwater and sewer system programs;
- Development and funding of a plan to identify research needs to further green infrastructure;
- Preparation of guidance documents to assist cities and wastewater treatment plants in developing green infrastructure initiatives in their CSO, SSO, and MS4 programs; and
- Development of model provisions to incorporate green infrastructure into CSO and MS4 permits; SSO capacity, management, operations, and maintenance plans; and consent decrees and other enforcement vehicles.

Background

Many communities in the United States are looking for ways to reduce overflows from sewer systems and stormwater discharges. Overflows occur when combined sewage and stormwater pipes overflow due to rainfall or other wet weather events. In the late 20th century, most cities that attempted to reduce sewer overflows did so by separating combined sewers, expanding treatment capacity or storage within the sewer system, or by replacing broken or decaying pipes. More recently, a number of cities and utilities have recognized that sewer overflows can also be reduced effectively by diverting stormwater from the sewer system and directing it to areas where it can be infiltrated, evapotranspired or re-used. These approaches are often referred to as “green infrastructure” because soil and vegetation are used instead of, or in addition to, pipes, pumps, storage tunnels, and other “hard infrastructure” that is traditionally used to store and treat the combined sewage and stormwater. Green infrastructure can also be used to reduce stormwater discharges and help to restore the natural hydrology, water quality and habitat of urban and suburban watersheds.

Green Infrastructure Benefits

Green infrastructure approaches currently in use include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, reforestation, and protection and enhancement of riparian buffers and floodplains. Green infrastructure can be used almost anywhere where soil and vegetation can be worked into the urban or suburban landscape. Green infrastructure is most effective when supplemented with other decentralized storage and infiltration approaches, such as the use of permeable pavement and rain barrels and cisterns to capture and re-use rainfall for watering plants or flushing toilets. These approaches can be used to keep rainwater out of the sewer system so that it does not contribute to a sewer overflow and also to reduce the amount of untreated stormwater discharging to surface waters. Green infrastructure also allows stormwater to be absorbed and cleansed by soil and vegetation and either re-used or allowed to flow back into groundwater or surface water resources.

Green infrastructure has a number of other environmental and economic benefits in addition to reducing the volume of sewer overflows and stormwater discharges.

- *Cleaner Water* – Vegetation and green space reduce the amount of stormwater runoff and, in combined systems, the volume of combined sewer overflows.
- *Enhanced Water Supplies* – Most green infiltration approaches involve allowing stormwater to percolate through the soil where it recharges the groundwater and the base flow for streams, thus ensuring adequate water supplies for humans and more stable aquatic ecosystems.
- *Cleaner Air* – Trees and vegetation improve air quality by filtering many airborne pollutants and can help reduce the amount of respiratory illness.
- *Reduced Urban Temperatures* – Summer city temperatures can average 10°F higher than nearby suburban temperatures. High temperatures are linked to higher ground

level ozone concentrations. Vegetation creates shade, reduces the amount of heat absorbing materials and emits water vapor – all of which cool hot air.

- *Increased Energy Efficiency* – Green space helps lower ambient temperatures and, when incorporated on and around buildings, helps shade and insulate buildings from wide temperature swings, decreasing the energy needed for heating and cooling.
- *Community Benefits* – Trees and plants improve urban aesthetics and community livability by providing recreational and wildlife areas. Studies show that property values are higher when trees and other vegetation are present.
- *Cost Savings* - Green infrastructure may save capital costs associated with digging big tunnels and centralized stormwater ponds, operations and maintenance expenses for treatment plants, pumping stations, pipes, and other hard infrastructure; energy costs for pumping water around; cost of treatment during wet weather; and costs of repairing the damage caused by stormwater and sewage pollution, such as streambank restoration.