



## Green City, Clean Waters Partnership Agreement

City of Philadelphia and U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) and the City of Philadelphia (City) are joining in a partnership to advance green infrastructure (GI) for urban wet weather pollution control. This partnership demonstrates EPA's strong support for sustainable storm water management yielding multiple benefits for community livability and other urban environment improvements.

EPA recognizes that the City of Philadelphia is leading in the development of green approaches to control urban storm water. Philadelphia's Green City, Clean Waters program is pioneering a broad multi-decade investment in green storm water management practices that reduces sewer overflows to the City's waterways and enhances communities and the overall urban environment.

Green infrastructure methods intercept rain water at the source, retaining and allowing it to flow into the ground, and allowing soil and plants to recycle it back to the atmosphere, rather than becoming storm water that runs off and can trigger sewer overflows and pollute our waterways. These methods can take a variety of forms, including vegetated roofs, increased park and open space, porous pavement, sidewalk and curbside plantings, tree boxes, and many others.

This partnership assures EPA's firm commitment to encourage and support Philadelphia's adoption of green infrastructure to improve both water quality and the sustainability of its neighborhoods. It may also serve as a model for other municipalities seeking more sustainable solutions for urban wet weather pollution control and advances EPA's efforts to support Integrated Planning approaches to meet wet weather pollution control obligations under the Clean Water Act. This Letter Agreement identifies discrete green infrastructure projects that the City will begin to implement in the short term and builds upon the Commonwealth of Pennsylvania (Commonwealth) and the City's Consent Order and Agreement that was executed on June 1, 2011.

### **PARTNERSHIP ACTIONS AND AGREEMENTS**

#### **Early Implementation Actions**

EPA and the City will collaborate on advancing state-of-the-art, higher performing green infrastructure projects in selected areas which are key components of the City's first 5-year Implementation Plan. This includes a project at a City school for greening school grounds linked to its science curriculum, adjacent Green Streets development, and a Next Generation Big Green Block development project which includes community and business engagement in an environmental justice (EJ) area to extend the application of higher performing green designs. The Storm Water Management Enhancement District (SMED) concept linked to business improvement districts will be fostered through these Projects as well.

This early work may result in determining the applicability and effectiveness of piloting national examples of GI technologies in Philadelphia, and will be used to identify barriers to full implementation as well as an additional means for evaluating performance to inform future design. The EPA will assist the City by providing information about innovative GI concepts from around the country. These concepts will include a mix of small-scale project designs such as tree trench designs, cistern designs, planters (flow-thru or sidewalk), living wall designs, and new inlet designs. They may also include, medium scale projects such as green alleys, green parks and recreation centers, and open space and vacant lands, and larger scale projects, such as the City's proposed storm water management enhancement districts.

### **Demonstration Projects & Research**

The City will identify additional specific sub-watershed GI demonstration projects in selected locations, including in EJ communities, to show the early benefits to neighborhood livability through innovative green approaches. The City will use these demonstration projects to document the cost-effectiveness and enhanced performance of GI practices for highly urbanized communities. EPA will provide technical consultation and guidance from the Office of Research and Development (ORD), to work in concert with academic institutions and other partners, on effective approaches for monitoring effectiveness and evaluating the benefits of these projects to inform the City's long term control plan (LTCP). An outcome of this joint effort will include the development of a long-term monitoring and evaluation strategy that can be used to adaptively refine the City's LTCP.

### *Green Design Expertise and Next Generation Techniques*

*a. Green Design Challenge* – By late spring 2012, the City, with EPA input, will announce the details of a Green Design Challenge (Challenge) which will engage the private sector, nongovernmental organizations, academia, and other interested parties, in the use of decentralized, small-scale landscape features and low impact development (LID) management for greening specified sites. The Challenge will help promote greater storm water management performance, reduced maintenance and cost-effectiveness consistent with the Green City, Clean Waters program. The challenge will be used to accelerate the pace and feasible scale of green infrastructure implementation.

*b. Green Streets* - EPA will work with the City to identify, and facilitate the use of, green streets design and implementation expertise from industry, county, and municipal experts who have demonstrated in-field experience. EPA will also assist in identifying key experts, technical assistance and other training resources derived from EPA's recent Green Streets/Green Jobs/Green Towns Forum. The City is developing a manual of standards and protocols for the incorporation of GI into street design. EPA will participate in the review process of this Green Streets Manual.

*c. Next Generation Techniques* - EPA also will assist in convening a collaborative effort of private and public organizations (including university networks) to assist in advancing next generation green techniques and designs. EPA and the City will explore prospects for a designated demonstration and research site location to study and evaluate GI approaches, advance next generation green techniques and improve cost efficiency.

### **Streamlining and Integration of Green Infrastructure**

EPA and the City will work to streamline the process of implementing the Green City, Clean Waters program, including the formation of an EPA "Green Team" composed of division-level management from EPA Region 3, EPA's Office of Enforcement and Compliance Assurance (OECA) and Office of Water (OW) to address policy concerns and other measures needed to ensure successful integration of GI on a large scale. The City will continue to increase intra-municipal cooperation in the areas of transportation, watershed management, waste water management, zoning, local codes, and ordinances with a goal of improving GI implementation. By April, 2012 the City will evaluate how it will integrate the efforts of the Implementation and Adaptive Management (IAMP) with this Agreement.

## Water Quality Studies

EPA will collaborate with the City as the City assesses the water quality benefits and impacts of the Green City, Clean Waters program. Pursuant to the June 1, 2011 Consent Order and Agreement, the City will conduct monitoring and modeling studies of the tidal and non-tidal river reaches in the region and continue to support water quality modeling and vessel research. The City will undertake a 4-year comprehensive water quality assessment of bacteria and dissolved oxygen in the upper sections of the Delaware Estuary. EPA will partner with the City in these studies by offering some of the required research vessel time and technical assistance of modeling experts in ORD and Regional offices, as they are available. EPA will work closely with the City and the Commonwealth to review the outputs of those monitoring and modeling studies and to determine if the studies indicate a need for refinements to the Green City, Clean Waters program. If adjustments are needed, EPA will work closely with the Commonwealth and the City to review such needs and to develop a timetable for accomplishing water quality standards.

## Ongoing Communication and Coordination

Representatives of the City and EPA will meet periodically to assess the goals and commitments of this Partnership Agreement to evaluate and assure progress. EPA and the City will identify key individuals that will be responsible to advancing this Agreement. Other partners in the success of this effort such as non-governmental organizations may be engaged from time to time to assist and help assess progress.

It is the intent of both parties to work diligently to implement the Partnership Agreement. The commitment to ensure that the Green City, Clean Waters program meets the requirements of the Clean Water Act and is legally authorized and protected is acknowledged by both parties. Within the next several months, EPA and the City of Philadelphia will develop a federal Administrative Order on Consent (AOC). The AOC will build upon the current plans and obligations of the City for early implementation of green infrastructure and serve as a necessary next step to further define and protect the innovative practices being advanced by the City of Philadelphia in the long term plan to improve water quality. Should either party determine that it is unable to continue participation in the Agreement, that party may terminate the Agreement by notifying the other in writing. The parties have voluntarily entered into this Agreement and therefore this does not modify the legal rights or obligations of either party.

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