**Scope of Work for Economic Analysis of Benefits**
**Associated Watershed Restoration Efforts**

## Background:

The Anacostia River and watershed are among the most polluted in the nation. The watershed's problems include:

- Urban and suburban stormwater runoff throughout the watershed: Approximately 64 percent of its impervious surfaces have no stormwater controls. The force of the stormwater flows generated erodes tributary streambanks badly and the USGS has stated that the Anacostia has 10 times more sediment pollution than of any other studied Chesapeake Bay tributary. Stormwater also brings tons of trash into the Anacostia's waters.

- The combined sewer system: The system discharges a mixture of stormwater and sewage from 15 outfalls into the River during moderate to heavy storms and lack of updates in the sewage collection system results in sewer leaks.

Additional problems include bottom sediments that are contaminated with toxic chemicals, loss of wetlands and other habitats due to urbanization, and illegal dumping.

The Anacostia Watershed Restoration Partnership (AWRP) joined with the District of Columbia, Montgomery County, Prince George's County, the District of Columbia, the State of Maryland and the Metropolitan Washington Council of Governments, and worked extensively with the Army Corps of Engineers as it developed a Comprehensive Watershed Restoration Plan (the Plan) for the Anacostia Watershed (http://anacostia.net/maps/ARP_plan.html). The Plan includes a spatial GIS database of restoration projects. Eight restoration strategies were identified: stormwater retrofits, stream restoration, wetland creation and restoration, fish blockage removal, riparian reforestation/meadow creation/street trees/invasive management, trash reduction, toxic remediation, and parkland acquisition. The plan identified 3018 specific potential projects relating to these strategies.

The municipal sanitary storm sewer systems (MS4s) in the watershed (the District of Columbia, Montgomery County and Prince George's County) are working to implement many of these projects as part of their dedicated stewardship of the waters and in response to Clean Water Act requirements. These MS4-permitted jurisdictions are required to undertake extensive stormwater retrofits. The Maryland counties are required to restore 30% of their impervious surface under the conditions of their permits (10% under their previous permits and 20% under their current permits). The District of Columbia's new MS4 permit requires many retrofits including:

- Requiring a minimum of 350,000 square feet of green roofs on District properties;
- Planting at least 4,150 trees annually and developing a green landscaping incentives program; and

Developing a stormwater retrofit strategy, and implementing retrofits over 18 million square feet of drainage of impervious surfaces;

Benefits resulting from implementation of green retrofits, including the projects in the Plan, and the Clean Rivers project may include, but are not limited to: reduced flash flooding, savings on infrastructure repair, cleaner water, green jobs, recreational amenities, aesthetic enhancements, heat island mitigation, reduced trash, and enhanced wildlife habitat. Additional ecosystem service benefits may include energy conservation and carbon sequestration, and associated socioeconomic benefits such as increased property values and related reductions in property foreclosures; reductions in poverty associated with job creation; decreased morbidity associated with excessive heat and reduced crime.

As noted above, a portion of the District of Columbia is served by a combined sewer system. Approximately one-third of the system is combined, mostly in the downtown and older parts of the city. In dry weather, the system delivers wastewater to the Blue Plains Wastewater Treatment Plant. In wet weather, rain water also enters the system, and if the conveyance capacity of the system is exceeded, the excess flow spills into the waterways of the District of Columbia. This discharge is called Combined Sewer Overflow (CSO). There are 15 permitted CSO outfalls that flow to the Anacostia.

DC Water is currently engaged in implementing a Long Term Control Plan (LTCP) - called the Clean Rivers Project. The Anacostia watershed portion of the Clean Rivers Project is scheduled to be completed by 2018. The benefits of the plan are significant. When fully implemented, combined sewer overflows will be reduced by a projected 98 percent on the Anacostia River, resulting in improved water quality and a significant reduction in trash in the water.

The cost of implementing the infrastructure improvements and restoration described above is close to $5 billion. While these investments are supported by the stewards of the river and are required by the Clean Water Act's mandates that our Nation's waters should be clean and usable by its citizens, the investments that will made by local jurisdictions and utilities will generate a heavy tax and utility fee burden on tax and rate payers. But there is also reason to believe that these investments will generate substantial economic benefits to the region. The purpose of this project is to estimate the economic benefits of the investments.

**Objectives:**

The Metropolitan Council of Governments (MWCOG), on behalf of AWRP is seeking contractor support to quantify the ecosystem service and socioeconomic benefits of implementation of various scenarios for retrofitting the Anacostia River watershed with green infrastructure and other types of restoration provided in the Plan and with completing the Clean Rivers project. This effort will be coordinated with the AWRP through a workgroup consisting of members from MWCOG, NOAA, DC Water, the Chesapeake Bay Trust (CBT), and others. The contractor would be responsible for the following tasks:

**Phase 1: (Deadline for Completion: 3-4 Months after Contract Issuance)**

(1) Review of existing datasets to evaluate the baseline level of a proposed set of ecosystem services (and associated monetary values, where appropriate) of the Anacostia River and its tributaries, associated riparian parklands, and other relevant aspects of the watershed.

MWCOG will provide GIS maps of the watershed and other relevant data that it possesses regarding the watershed's condition. The contractor will coordinate with the Workgroup in selecting a set of ecosystem services and collecting the datasets because MWCOG, the AWRP, and its members may have some of this data or be able to obtain it more quickly and easily than the contractor. These datasets may be from the Anacostia watershed or from similar urban watersheds;

(2) Evaluate the data available and published literature and provide the workgroup with an evaluation of what types of ecosystem services and other economic benefits are associated with green retrofits of the watershed AND can be quantified using existing data and published literature;

(3) Based on the regulatory requirements, the Clean Rivers Project, and the Plan, propose approximately 3-5 scenarios that can be evaluated in comparison to the background condition and provide this information to the workgroup.

**Phase 2 (Contingent on Workgroup's Decision that Economic Value of All or Some Subset of Green Retrofits Can be Sufficiently Quantified, Deadline for Completion: 12 Months After Contract Issuance)**

(1) Development of projected ecosystem service benefits and the monetary values that would result from the implementation of green retrofits using a variety of scenarios as determined in Phase 1:

This evaluation may represent a mix of broad-scale ecosystem service benefits, as well as small-scale focused evaluation of specific restoration projects (e.g., case studies of completed restoration such as the impact on housing values from a "Green Street" storm water retrofit project). Spatial representation of benefits through the watershed using GIS should be considered but at a minimum the benefits to be derived in each of the local jurisdictions in the watershed (the District of Columbia, Montgomery County, and Prince George's County) shall be evaluated;

(2) Draft a report summarizing the impacts of proposed retrofit scenarios upon selected ecosystem services;

(3) Assist in dissemination of results to potential stakeholders, including a description of the methodology and assumptions, the published sources cited and relied on, and the limits of the methodology.

A similar evaluation performed for the City of Philadelphia (see Attachment II) may serve as a template for the type of activities proposed in this work plan. The contractor, however, should develop a work plan that will result in a credible quantification of the economic benefits of implementing green retrofits in the Anacostia watershed and implementing the Clean Rivers project, given the project budget resources. The work would begin in XX and run through XX.

Throughout the project, the contractor will coordinate with Workgroup partners to ensure that its members concur with the selected ecosystem services and methodologies proposed.

A scoping meeting is recommended to help further develop the scope and level of effort for this project. Additional partners who may be able to provide resources or data to leverage with the project may include the Department of Housing and Urban Development, DC Water and Sewer Authority, and EPA/Chesapeake Bay.

**Tentative Dates Associated With This Project:**

Issuance of RFQ by the MWCOG: November 30, 2011

Deadline for Responses to RFQ by Potential Providers to MWCOG: December 17, 2011

Copies of Responses to Members of Workgroup for Evaluation Along with Scoring System: December 23, 2011

Workgroup Members Return Scoring Evaluations to MWCOG: January 7, 2012

Interview with Two (?) Top Respondents: Second week of January(?)

Issuance of Contract (if all goes well): End of January(?)