

**Project Overview**  
**Low Impact Development Guidelines**  
**Arthur Capper Hope IV Community**  
**Washington, D.C.**

**Introduction**

The District of Columbia Office of Planning Anacostia Waterfront Initiative, The Low Impact Development Center, Inc. (LIDC), and the Metropolitan Washington Council of Governments (MWCOC) received a grant from the Chesapeake Bay Small Watersheds Grant Program through the National Fish and Wildlife Foundation to develop Low Impact Development (LID) design guidelines for the Arthur Capper Hope VI project in Southeast Washington, D.C. The Hope VI program is a United States Housing and Urban Development (HUD) redevelopment initiative that is designed to revitalize large urban areas with a mix of commercial, office, and residential uses. This project is located in the area across from the Navy Yard and runs from M Street to Interstate 395 and from 2nd Street S.E. to 10th Street S.E. and encompasses approximately 120 acres.

Two separate project reports are the deliverables for this grant. The first report is the design guidelines for the development. This also includes appendices of strategies and techniques for LID that are being developed as part of a separate project for USEPA. The second is a water quality model of the potential effectiveness of these strategies and techniques at managing stormwater and reducing pollutant loads to the Anacostia River. The results of these efforts are summarized below.

**Executive Summary**

The goal of this grant has two (2) purposes. First, demonstrate to the developer the feasibility of incorporating sustainable development strategies into the planning and engineering of the community. For this project, sustainable development techniques are defined as site and building design features that will be extremely effective at reducing pollutant loads to the Anacostia River while at the same time being capable reducing construction costs, public and private maintenance costs, and can enhance the appearance and economic value of the properties. The second goal is to provide the Department of Planning with a “framework” of strategies and techniques that can be negotiated and incorporated into the zoning and site design approval process for the community and determine the feasibility of having a large-scale water feature that can be incorporated into a central community park for the development.

A two step process was used to achieve the project goals. The first step was to develop a set of design templates for each land use that can be applied at the block level. These templates are conceptual in nature, but demonstrate how LID techniques could be incorporated into the design of the streetscape, site, and building plans. The second step was to demonstrate the potential effectiveness of these techniques at achieving water quality objectives. This was done by developing and running a water quality model that incorporates these techniques. A

complete description of the above efforts is included in the design report. Described below is a summary of the results of the design strategies and their potential effect on water quality.

- LID design techniques are compatible with the community development and can be incorporated into the design of each of the proposed land uses.
- There is a significant opportunity when the streets are being reconstructed to disconnect the stormwater flows from the combined sewer system. This could potentially help reduce the number of overflow events in the system because of the large-drainage area that is associated with the disconnected drainage area.
- There is a sufficient amount of stormwater that can be diverted from the existing drainage patterns to the proposed park area to support a large-scale water feature. Filtering of the stormwater through a wetland or other treatment system may be required for the water to be used in the park.
- The results of the modeling show that the LID features can have a significant effect on improving water quality of runoff from the western portion of the development. The model shows that even if the LID features provide a small and conservative amount of storage and filtering, approximately 20 inches of rainfall can be fully treated by a retention area (minimal or no discharge) while the remaining rainfall could receive partial treatment. Data on the removal efficiencies from LID studies indicates that this level of treatment could remove a significant volume of pollutant loads. A more detailed modeling effort would be required to accurately characterize the potential load reductions.
- The LID features would not only have a significant effect on water quality, but would greatly enhance the appearance and economic sustainability of the development.