

Managing Anacostia River Storm Water

Prince George's County, Maryland



UNIVERSITY OF MARYLAND

Engineers Without Borders™-USA (EWB-USA) is a non-profit organization established in 2000 to partner with developing communities worldwide in order to improve their quality of life.

Background:

The Anacostia Watershed encompasses 176 square miles of land in Prince George's and Montgomery County, MD and part of Washington DC. The river's 8 miles of tributaries make up one of 10 sub-watersheds that drain into the Chesapeake Bay in Maryland. Of the 10 sub-watersheds, the Anacostia Watershed is the most densely populated, and the most polluted. A combination of non-point source pollution from the runoff of roads, parking lots and other impervious surfaces, combined with sewer overflows from high volume rain events make this watershed unsafe for swimming and nearly uninhabitable for fish and other wildlife.

The small town of Edmonston is located in Prince George's County, MD and is split down the middle by the Northeast Branch of the Anacostia. It has a population of approximately 1500 residents, of which a large portion are recent immigrants. Edmonston is located in the lowlands of the Anacostia and has faced flooding problems in recent years due to the large quantities of runoff water from heavy storms. These floods have caused damage to many homes and have forced residents to evacuate.



The Need:

A majority of the pollutants that make the Anacostia River unhealthy originate from "non-point sources". Pollutants contributing to the condition of the river include oil, grease, gasoline, hydrocarbons, phosphorous, nitrogen, suspended solids, and trash. Impervious surfaces such as roads make up more than 50% of some regions in the watershed, thus there is very little natural filtration that occurs before polluted storm water runoff flows directly into the Anacostia. Impervious surfaces also allow runoff water to flow faster, increasing the area's susceptibility to flash floods. The Edmonston Pumping Station provides a short-term solution to the problems of storm flooding of Edmonston, but the community needs a sustainable solution. Contributing to the ongoing efforts to improve the quality of storm water and water flow in Edmonston is one step toward a cleaner river.

The EWB-USA UMCP Response:

Engineers Without Borders students at the University of Maryland, College Park, in cooperation with the Town of Edmonston and Prince George's County, have assessed the need to improve the Anacostia Watershed's environmental health. Students worked closely with officials from Edmonston and Prince George's County Department of Environmental Resources to determine how and where EWB-UMCP volunteer resources could best be applied. It was agreed that EWB-UMCP would propose a solution to improve the present state of the Anacostia and provide an effective model for community clean-up efforts.

Students, Edmonston officials, and Prince George's County officials identified Tanglewood Park as an ideal location to implement an appro-

priate engineered solution to address the area's needs. A bioretention facility was selected as the most feasible design option to filter and treat runoff water naturally from the park's community center and parking lot. The project is scheduled to be implemented in May, 2009.

Crossing Borders at Home:

With a local project, EWB-UMCP recognizes that it is important to help solve problems not only abroad, but also in Maryland's own backyard. This project has created a partnership between many local offices and organizations throughout Maryland, including the Town of Edmonston, UMCP Facilities Management, the Anacostia Watershed Restoration Partnership, the Anacostia Watershed Society, Prince George's County Department of Environmental Resources, and the Maryland-National Capital Park and Planning Commission.

One goal of this project is to extend EWB-UMCP's roots in its own community to bring together local organizations and community members in order to solve pressing and immediate local problems. In keeping with that, this project has created a partnership between EWB students and the residents of Edmonston who have committed to work with EWB students on the project implementation.

Moving Forward:

Many organizations are working towards restoring the Anacostia Watershed to a healthy ecosystem, but a coordinated community effort is needed in order to completely revitalize the Anacostia. This project aims to serve as a model of environmental responsibility for other communities in the Anacostia Watershed area.