



The Anacostia Project

Partnering to Protect the Chesapeake Bay

Twenty-four Engineers Without Borders-UMCP students have responded to an environmental challenge in Prince George's County, Maryland. These students have partnered with a disadvantaged community to improve their quality of life through the implementation of an environmentally and economically sustainable engineering solution. The project undertaken is the design and construction of a bioretention facility at Tanglewood Park in the Town of Edmonston.

Project Background:

The project seeks to accomplish two broad aims:

- First, to improve the health of the Anacostia Watershed by decreasing the amount of pollutants carried into its tributaries by stormwater runoff from the many impervious surfaces that drain into its waters.
- Second, to slow the flow of stormwater runoff in Edmonston in order help address the issue of flash flows of stormwater that contribute to the flooding problems and sewer system overflows that Edmonston has had to deal with for many years.

We propose that the project is needed for three reasons:

- A majority of the pollutants that make the Anacostia River so unhealthy originate from non-point sources. Unlike highly industrialized areas where, for example, a factory's waste can be identified as the primary source of a river's pollution, the pollution in the Anacostia originates from everywhere – impervious surfaces such as roads make up more than 50% of some regions of the watershed's tributary area, thus there is very little natural filtration that occurs before the polluted stormwater runoff is sent directly into the Anacostia. Improving the quality of the stormwater from Edmonston would be one step towards a cleaner river. The hope is that this community's efforts will be recognized by other communities in the Anacostia Watershed who will follow Edmonston's example in being environmentally responsible.
- The Edmonston Pumping Station (designed to mitigate flooding in the town) is not an adequate long-term solution to the high volumes of storm water that have historically flooded Edmonston. A sustainable solution is needed to provide a lasting solution.
- Edmonston's residents and its local government do not have the funds to undertake this solution, thus any help that can be provided by this project is more than they could do alone.

The project will improve conditions by implementing low-impact development forms of stormwater management, specifically bioretention facilities and rain gardens in Edmonston. This will filter out many of the pollutants in the stormwater before sending it into the Anacostia River. Additionally, it will help slow the flow of runoff from impervious surfaces which should help to decrease the volume of stormwater in Edmonston and thus decrease the likelihood of flooding and property damage to this community.

Project Status:

The team has devoted five months to the development of this project. The project will be implemented starting on May 22, 2009. Anticipated completion will be Saturday, May 30, 2009. A commissioning ceremony is scheduled for 10:30 AM on May 30th in which the site will be formally turned over to the community of Edmonston for lifelong maintenance and care.

The students involved with this project have been in close collaboration throughout the project development and design process with the Town of Edmonston, the government of Prince George's County, and Maryland Park and Planning. To this effect, these students have designed a project that the community wants, while meeting all engineering standards and complying with all permitting requirements.

With substantial in-kind support from Prince George's County government, the team will be responsible for the cost of materials only. Funding from the Chesapeake Bay Trust has been sought, with the guidance of the Prince George's County Government. Additional funding from the University of Maryland's Student Government Association has been obtained. The remainder of the project cost will be supported by Maryland's local chapter of Engineers Without Borders.

Benefits of the Project:

This is a service project in which UMD students have used classroom knowledge to be good citizens in their own backyard. The project utilizes green engineering solutions to improve the environment, an emphasis of the university. Students have also been required to teach themselves topics not taught in the classroom, an important lesson in life-long learning. Students, then, are important beneficiaries of this work.

The Town of Edmonston is a beneficiary because this project addresses pollution and the historical waste water management problems in the town. In addition, this will be a demonstration project for other Anacostia communities willing to work to improve our environment.

The university outreach benefits are also important, since we have selected a community which has little opportunity for interaction with the university. A partnership has been formed with Bladensburg High School in Bladensburg, Prince George's County, Maryland on this project as well as with local residents from the Town of Edmonston.