

# Watershed 263 Project Baltimore, Maryland

*“[By] maintaining and increasing the number of trees in our communities...we are making sure our children and grandchildren grow up in neighborhoods that are healthy, picturesque and welcoming.”*

-Martin O'Malley, Mayor, Baltimore, Maryland



## Project Overview

The Watershed 263 project (WS263) comprises a long-term effort to utilize urban forestry to improve water quality, revitalize inner-city neighborhoods and enhance quality of life in these communities. The project is a joint effort of Baltimore City Department of Public Works and Parks and People Foundation. Within Watershed 263 are eight outstanding projects that reflect the effort of extensive partnerships among the City of Baltimore, Parks & People Foundation, Baltimore Ecosystem Study, U.S. Forest Service (USFS), Maryland Port Administration and others. Results of the projects include increased tree cover, maintenance of trees along a “greenway,” cleaner vacant lots and tree wells, and asphalt removal and greening at local schools. These projects translate into greater community awareness and stewardship, improved water quality and environmental conditions, enhanced community parks and open spaces, community revitalization, increased economic development, healthier communities, and numerous educational and recreational opportunities, among other benefits.

### Project at a Glance

**Project Partners:** Parks & People Foundation (lead partner and award-winner), Baltimore City Department of Public Works, Watershed 263 Council, Baltimore Ecosystem Study, U.S. Forest Service, and numerous other organizations

**Location:** Baltimore, MD, encompassing 355 storm drains, collectively referred to as Watershed 263. The stormshed area spans 12 Baltimore neighborhoods, nine of which are affected by the award-winning project

**Award Category:** Large-city winner

**Timeframe:** Jan. 1, 2004 – Dec. 31, 2005

**Size and scope:** 800 trees, 930 acre storm drain

**Total cost of project:** \$226,250

### Outstanding Accomplishments

- Planting and maintenance of 800 trees.
- Restoration of four schoolyards and 200 vacant lots.
- Removal of three acres of asphalt.
- Ongoing collaborative effort to establish a six-mile “greenway” connecting parks, schools, trails and business districts.
- Landscaping of major streets.
- Establishment of a Watershed 263 Community Stakeholder Council to monitor the project and set priorities.
- Forty public education workshops.
- Establishment of a Watershed Ecology Center; and broad-based education and outreach activities.
- Monitoring of storm drains to measure water quality improvements.

## Watershed 263 - Project Description

### Pre-existing Conditions

Baltimore's urban forest lags behind other urban forests throughout the U.S. with regard to water quality, terrestrial and aquatic habitat, and open space for recreation. The city's storm water contains high levels of trash, bacteria, heavy metals, nutrients and other pollutants. The open space within WS263 is fragmented and therefore does not support a healthy ecosystem. The existing tree cover represents 5.9% of the land area (compared with the city-wide average of 20%) while 75% of the area is impervious surface. Of the 5,500 existing trees, many are old or considered to be "junk-trees" and will need to be replaced within a decade. Few new trees have been planted in the area in thirty years.

**Land use breakdown:** Of the 930 acre watershed area, 145 acres are public land. Twenty-five small parks total 46 acres of land and public schools comprise approximately 27 acres.

**Quality of Life:** A survey of residents in the WS263 area indicated that quality of life is regarded as low. Fourteen percent were unable to see a tree from their home, only 38.1% said that public services were adequate to support quality of life, and almost three-quarters said they would move away from their neighborhood if given the opportunity.

**Water quality:** During nineteen monitored storms, water quality exceeded EPA criteria for copper 90% of the time, lead 80% of the time and zinc 25% of the time. Concentrations of nitrate during low flow periods were high and comparable to agricultural watersheds in the region.

**Soil quality:** The soils of WS263 are contaminated, particularly in vacant lots. Of plots sampled, approximately 17% had lead concentrations exceeding EPA guidelines.

**Tree species:** The WS263 tree canopy is comprised largely of invasive species, rather than managed trees.

### Project Goals

- Implement forestry plan and restoration projects to affect environmental, community health and quality of life outcomes.
- Create additional pervious surfaces to improve water quality.
- Improve resource management outcomes by better coordinating existing public expenditures.
- Facilitate transfer of project methods and results.

Participation, education and research objectives include:

- **Participation:** Strengthen partnerships to sustain watershed restoration efforts; build capacity and create useful planning; develop monitoring and implementation tools; and train community and education leaders to foster sustainability and improve the effective use of community volunteers.
- **Education:** Empower youth as leaders through mentoring, after school education, and youth organizations; and develop workforce skills and career opportunities.
- **Research:** Quantify the effectiveness of best management practices to moderate storm flows and pollutant loads, and measure resulting environmental and quality of life outcomes.

### Project Components

Project activities include: planting trees, reducing litter by greening vacant lots, creating bio-filtration systems, cleaning streets and alleys, creating and beautifying green spaces, improving parks, greening schoolyards including asphalt removal, increasing recycling, and supporting community stewardship and involvement. Over 800 trees have been planted, comprising 20 species, 72% of which are native. In addition, the project team developed a proposal for a six-mile greenway to promote walkability and bikeability in the area and to link and improve existing and new green spaces.

**Outreach:** The project engaged 15 local youth to conduct a "green infrastructure survey," examining tree health and conditions in vacant lots. Subsequently, 40 community meetings were held, followed by two large community forums which brought together over 100 residents and 39 representatives of interested agencies and organizations to discuss relevant community issues and set project priorities.

Meeting participants developed installation schedules for each of the eight projects. A WS263 Community Stakeholder Council was formed to oversee progress and set priorities. In addition, participants helped develop a framework for strategic greening of the watershed, a water quality management plan, and ideas for an awards and recognition program for superior volunteer efforts. Community feedback, media recognition and requests to speak about the project serve as confirmation that outreach efforts were and still are successful.

### Funding

U.S. Forest Service; Maryland Forest Service; Baltimore City Public Works; Maryland Port Administration; Baltimore City Planning; Chesapeake Bay Trust; National Fish and Wildlife Foundation; Rauch Foundation; Campbell Foundation for the Environment; NOAA, EPA and Parks & People Foundation. Several new funders are committed for 2006 and beyond.



## Watershed 263 - Benefits



### Environmental Benefits

**Canopy Restoration:** Planted 800 trees, maintained existing trees, and increased city awareness and attention to tree canopy and impervious surfaces. Helped establish an Urban Tree Canopy goal to double Baltimore's tree canopy over the next thirty years.

**Air Quality:** Worked with the MD Department of the Environment to create a provision that incorporates new trees into the State Air Quality Implementation Plan to reduce ozone and improve general air quality.

**Greenway Connectivity:** Proposed an urban "One Park Greenway," a six-mile system that connects historical parks, schoolyards, open space fragments, commercial areas and the expansive Gwynns Falls Trail. The greenway promotes healthy ecosystem functioning as well as walkability.

**Energy Conservation:** Worked with Baltimore Gas and Electric Company to identify optimal places for new trees to reduce heating and cooling needs.

**Heat Island Reduction:** Removed over three acres of asphalt at four schoolyards (two more acres have been removed since).

**Stormwater:** Created bio-retention facilities, increased pervious surface area, restored vacant lots, and increased street cleaning and water quality monitoring.

### Community and Economic Benefits

**Community greening projects:** Parks & People Foundation has distributed small grants to community groups wishing to undertake projects that reflect specific community priorities.

**Community gathering space:** The project has created several gathering spots and community gardens.

**Safety:** Drug dealing has been reduced at specific public venues and the Western Police District has committed to actively patrol the proposed greenway.

**Access to green space for low-income residents:** WS263 is home to primarily low-income residents. The project team offers tours of the watershed and of Carroll Park with the intention of increasing familiarity with the area and encouraging residents to use the park.

**Real estate value:** The project partners determined that increasing tree cover (up to an optimal level of 20%) directly improves neighborhood desirability.

**Resident involvement and satisfaction:** Hundreds of volunteers from church, school and academic groups have volunteered for the project and contributed significantly to project ideas and implementation. Residents feel a sense of accomplishment, empowerment, and pride after finishing a greening project.



**Economic vitality:** Increased tree cover has improved the appearance of local business districts, making them more attractive for shoppers.

**Employment:** The youth Green Teams have helped to train residents for employment in the project, and many people have subsequently taken skilled jobs. The City Forestry Division has started hiring Green Team members from the watershed area trained through the two youth programs.

**Education:** The project leads a training program for teachers to incorporate greening activities, including paper recycling, into school curricula. An after-school environmental education program, KidsGrow, takes place at two schools within the watershed where it involves 120 students per year. A City summer program for elementary school kids—SuperKids Camp—has utilized the educational materials developed for WS263. A Watershed Ecology Center has been created, providing a central source of environmental information to adults and kids. In addition, garden projects and trees have been planted at all 11 schools in the watershed with the help of many students. The project partners developed educational materials including tree care door hangers describing the benefits of trees, a Visual Glossary that explains techniques for initiating and implementing forestry projects, an ongoing project newsletter, event fliers, and a DVD about the project and the efforts of students.

## Watershed 263 - Looking Ahead

### Project Monitoring and Evaluation

The Baltimore Department of Public Works, USFS and Baltimore Ecosystem Study are monitoring recent efforts and conducting research on an interdisciplinary basis covering water quality, biophysical, social and demographic aspects in WS263, as well as other Baltimore watershed areas, to provide data and findings on changes over time due to the greening projects.

### Project Maintenance

The project is included in the updated City Comprehensive Master Plan, and the City and State have approved the Water Quality Management Strategy. The water quality management and greening framework components of the project will receive funding (\$300,000 per year) from City Public Works and Planning, with targeted funds available for storm-water management and critical area mitigation. In addition, the project has been designated as both an “Environmental Benefits District” and a Community Development “Priority Place,” making it eligible to receive targeted funds from Maryland Department of the Environment (MDE) and the Maryland Department of Housing and Community Development. Local residents will remain involved as the Watershed 263 Community Stakeholder Council continues to increase its knowledge about and capacity for urban forestry and water quality initiatives.

### Challenges Faced

The primary challenge for WS263 was availability of staff time and the staff skill level for community organizing. To overcome this, project partners identified residents with exceptional organizing skills and created a community network, bringing these residents together as the Watershed 263 Stakeholder Council. In addition, Parks & People Foundation created a senior staff position focused on community organizing. Another barrier was the mistrust of outside agencies within certain neighborhoods. The project team took great care to address the neighborhood-specific concerns in order to establish trust and involve residents in the project.

### Innovation Applied

WS263 was unique in its ecosystem restoration method—attending to one expansive ultra-urban watershed and applying lessons learned to other watersheds in Baltimore and other cities. Its leverage of public-private partnerships towards meeting common goals maximized the exchange of information and collaboration. The Center for Watershed Protection and Parks & People Foundation are working to implement innovative monitoring techniques to track and demonstrate the effectiveness of urban forestry techniques.

## Contacts

### Parks & People Foundation

Guy W. Hager, Director  
Great Parks, Clean Streams, and  
Green Communities  
(410)-448-5663  
guy.hager@parksandpeople.org  
www.parksandpeople.org



### USDA Forest Service and Baltimore Ecosystem Study

Richard Pouyat, Forest Researcher  
Northern Research Station  
(410)-455-8014  
rpouyat@fs.fed.us  
<http://www.fs.fed.us/ne/>



### Baltimore City Department of Public Works

William Stack, Manager  
Water Quality Management Section  
(410)-396-0732  
bill.stack@baltimorecity.gov  
<http://www.ci.baltimore.md.us/government/>



Morgan Grove, Forest Researcher  
Northern Research Station  
(802)-951-6771  
mgrove@fs.fed.us  
<http://www.beslter.org/index.html>

