

# Baltimore Watershed Agreement

March 2010

# Phase 1 Action Plan Progress Report



BALTIMORE  
WATERSHED AGREEMENT



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**“Ecologically, that ability to live in community is absolutely vital. In nature, as in the Bible, there can be no flourishing apart from mutual flourishing.”**

– *“Finding Common Ground: Interfaith Gathering on Improving Baltimore’s Waterways,” a speech by George W. Fisher at the Faith-based NGO roundtable, September 23, 2009.*



**INTRODUCTION**

Baltimore County, Baltimore City, and NGOs have taken steps towards implementing the Baltimore Watershed Agreement Phase 1 Action Plan (BWAAP) since its adoption in 2009. The BWAAP Executive Summary on pages 6 and 7 lists the background, goals, and actions from the Action Plan as an introduction to this Progress Report.

This Progress Report presents progress made to date by the County, City, and NGOs. Actions which have either been completed or have progressed are described in the report. Some actions have both a short-term action and related ongoing efforts (e.g. annual meetings). The category of progress for each action is identified with one of the following symbols:

-  = **Action complete**
-  = **Progress made (towards completion of the action)**
-  = **Primary measure of the action is complete with on-going efforts**



At the end of the document, a final list shows actions which have not been completed within the proposed BWAAP timeframe and provides their extended due dates. Any action not explicitly referenced in this document has not been initiated. These actions have due dates that are further out and will be pursued accordingly.



## TOPIC AREAS OVER-ARCHING GOALS

### Development & Redevelopment

Protect existing natural & water resources & meet objectives of the Clean Water Act



### Community Greening

Achieve urban tree canopy & stream buffer goals & maximize vegetated areas



**Maximizing pervious surface area and including vegetated areas in parking lots improves water quality by slowing, retaining and infiltrating stormwater. It also provides shade and improves aesthetics.**

The Baltimore Watershed Agreement (BWA) was executed in 2002 to formalize the joint commitments and vision of Baltimore City and Baltimore County to address pollution problems in the region's watersheds. Baltimore City and Baltimore County agreed to improve cooperative, inter-agency management of environmental resources. In December 2006, leaders from Baltimore City and Baltimore County signed the second regional watershed agreement, emphasizing the value and importance of cooperation in addressing water quality and regional watershed issues while highlighting progress.

A Committee of Principals, established to oversee the development of specific actions aimed at water quality improvement, created five workgroups organized by topic area to set and refine goals for the shared City and County watersheds by October 2007. The five topic areas include Development and Redevelopment, Community Greening, Stormwater, Public Health and Trash.

The Phase 1 Action Plan reflects agreed upon goals and high-priority, short-term actions for Baltimore City and Baltimore County to pursue. The plan is organized by common categories (Implementation, Policy & Regulation, Planning & Collaboration, Education and Outreach & Awareness) which cross all five topic areas, and includes actions specific to each topic area. Two areas of concern identified by the Committee of Principals and the topic committees, sustainable communities and environmental justice, are woven into the Plan actions. Each action specifies a lead agency and measure of success within the 2009-2012 Phase 1 timeframe. Future phases are also planned and will include new actions as well as follow-up actions based on Phase 1 results. Phase 1 organization and action summaries include:

#### 1. IMPLEMENTATION

- Create "Baltimore Watershed Agreement Workgroup" to provide oversight for Action Plan Implementation
- BWA workgroup to develop framework for assessment of Action Plan implementation
- Assess adequacy of existing staffing and funding and research what other cities have done to fund watershed management actions

#### 2. POLICY & REGULATION

- Integrate BWA goals and actions into City and County policies and programs
- Ensure that new laws and regulations support the BWA
- Improve regulations to minimize impacts to trees during development and redevelopment
- Strengthen laws and enforcement to meet trash reduction goal
- Ensure environmental justice in the implementation of these environmental initiatives



### Stormwater

Achieve pollutant reductions & hydrological control to meet water quality standards in streams and tidal waters by 2020



### Public Health

Eliminate bacteria-related water quality impairments in the tributary streams to the Harbor and Back River



### Trash

Eliminate trash-related water quality impairments in the Harbor, Back River and tributary streams.

## 3. PLANNING & COLLABORATION

- Create a “Planning Workgroup” to ensure comprehensive watershed planning processes
- Share mapping layers and make them available on-line to promote environmental site design, environmental justice and synergies
- Use mapping as a planning tool to protect water quality, address environmental justice and identify synergies
- Develop and implement a training program for all developers, design professionals, plan reviewers and site inspectors

## 4. EDUCATION

- Ensure that BWA actions are incorporated into school curricula
- Expand water quality education in school curricula to cover the impacts of water quality on public health
- Increase the number of schools achieving green school status

## 5. OUTREACH & AWARENESS

- Establish and conduct joint public relations efforts
- Establish a BWA web-based program to disseminate and update information
- Expand grassroots efforts by increasing government and NGO partnerships
- Create a branded awareness campaign
- Organize, advertise and conduct one-day awareness blitz programs

## 6. DEVELOPMENT & REDEVELOPMENT

- Estimate per capita impervious cover and establish targets for reduction
- Coordinate and strengthen development review through the use of water quality related GIS overlays
- Determine the effectiveness of environmental site design efforts to date
- Form partnerships to identify and implement innovative stormwater treatment design in capital projects

## 7. COMMUNITY GREENING

- Develop inter-agency City and County greening policies where appropriate
- Measure the condition of and develop sustainability indicators for urban tree canopies
- Develop and improve Urban Tree Management programs, including effective inventory methods, and conduct urban tree inventories
- Continue collaboration on programs to increase tree planting
- Continue to collaborate on research with others as appropriate in support of City and County urban and community forest management programs
- Implement streetscaping that incorporates stormwater management as appropriate

## 8. STORMWATER

- Create a cross-jurisdictional “Stormwater Workgroup” to work with MDE on the development and long-term coordination of new MS4 permits and stormwater regulations
- Develop and coordinate joint research and monitoring of new technologies and environmental site design

- Develop a joint planning-level strategy to address Total Maximum Daily Loads (TMDLs)
- Continue pilot-scale testing of new technologies and encourage NGO participation
- Use school “greening” and parking lot retrofits as model opportunities for water quality improvements

## 9. PUBLIC HEALTH

- Evaluate efforts and determine success indicators for watershed-based bacteria monitoring
- Develop a program for tracking, prioritizing and eliminating sources of domestic waste water in area waterways
- Develop a reporting protocol to be used by agencies and the public for awareness and reporting on water quality indicators
- Expand public health awareness campaign to better inform public of water quality effects on public health

## 10. TRASH

- Evaluate efforts and determine success measures for watershed-based trash monitoring
- Expand littering and trash awareness campaigns
- Continue pilot-scale testing of new technologies working with Department of the Environment and NGOs
- Determine adequacy of inlet cleaning and street sweeping routes and frequency, based on determined effectiveness

# 1. IMPLEMENTATION

**Goal: Ensure that there is a reliable framework to assess and report progress on the implementation of actions identified under the Baltimore Watershed Agreement.**

ACTION	PROGRESS
<p><b>Action 1.1</b> </p> <p>Create a cross-jurisdictional, multi-agency Baltimore Watershed Agreement workgroup (BWA Workgroup) that is responsible for overseeing implementation of the Baltimore Watershed Agreement Action Plan. The BWA workgroup will ensure effective coordination, communication, and dissemination of information across departments, offices, and stakeholder groups.</p> <p><b>Lead Agency:</b> Committee of Principals to appoint BWA workgroup members</p> <p><b>Measure:</b> BWA workgroup established</p>	<p> <b>Completed by Original Due Date:</b> <b>July 2009</b></p> <p>The BWA workgroup has been established and has met twice: in July 2009 and November 2009. The next meeting is scheduled for March/April 2010. The BWA workgroup plans to meet quarterly to plan for implementation of the BWAAP.</p>
<p><b>Action 1.2</b> </p> <p>Develop a workplan that provides the framework for assessment of the Action Plan implementation, identifies necessary steps within the timeline to carry out action items, identifies data gaps, articulates the methods and frequency of providing progress reports and the timelines and metrics for later phase action plan implementation.</p> <p><b>Lead Agency:</b> BWA workgroup</p> <p><b>Measure:</b> Develop strategy and timeline; Present Phase 1 Action Plan Progress Report at Baltimore Watersheds Conference</p>	<p> <b>Completed by Original Due Date:</b> <b>March 2009</b></p> <p>The Actions have been organized into a timeline according to the original due dates listed in the BWAAP. Actions with multiple due dates are also indicated.</p> <p>This Progress Report is the completion of Action 1.2.</p>
<p><b>Action 1.3</b> </p> <p>BWA Workgroup to assess adequacy of existing staffing and funding resources needed to meet water quality and stormwater goals with costs broken out by the five topic areas. Research actions by peer communities to meet stormwater and clean water funding needs. Identify and quantify areas of deficit, gaps, efficiencies, and synergy.</p> <p><b>Lead Agency:</b> BWA workgroup, City DPW, City Office of Budget and Finance and DEPRM (with input from all relevant agencies)</p> <p><b>Measure:</b> Assessment completed</p>	<p> <b>Progress Made, Original Due Date:</b> <b>July 2010</b></p> <p>Biohabitats is under contract with Baltimore County to assess existing County staffing and funding by July 2010. Baltimore City has nearly completed assessing the funding and feasibility of implementing a stormwater utility.</p>

## 2. POLICY & REGULATION

**Goal: Ensure that all existing and new policies, laws and regulations relevant to water quality support Phase 1 Action Plan goals and actions.**

ACTION	PROGRESS
<p><b>Action 2.1</b> </p> <p>Integrate Baltimore Watershed Agreement Phase 1 Action Plan actions with City and County Sustainability policies and programs.</p> <p><b>Lead Agency:</b> City and County Offices of Sustainability</p> <p><b>Measure:</b> Compile list of policies and programs and initiate integration</p>	<p> <b>Completed by Revised Due Date: February 2010</b></p> <p>A list of policies and programs from the County's and City's Sustainability efforts is compiled in relation to the BWAAP. The City's Sustainability Plan references the BWAAP and contains goals and strategies related to all sections of the Action Plan (<a href="http://www.baltimorecity.gov/Government/AgenciesDepartments/Planning/OfficeofSustainability.aspx">www.baltimorecity.gov/Government/AgenciesDepartments/Planning/OfficeofSustainability.aspx</a>). The County's 2020 Comprehensive Plan will integrate sustainability as a central theme. The County Operations Sustainability Strategy overlaps with many of the BWAAP Actions, especially related to Policy &amp; Regulation, Education, Outreach and Awareness, and Community Greening.</p>
<p><b>Action 2.2</b> </p> <p>Ensure that new laws and regulations (i.e., local stormwater ordinances) relevant to water quality support these agreement goals and actions.</p> <p><b>Lead Agency:</b> Committee of Principals</p> <p><b>Measure:</b> Process established; Review ongoing</p>	<p> <b>Progress Made, Revised Due Date: September 2010</b></p> <p>Stormwater Management Ordinances have been submitted by both jurisdictions. Both are either updating their stormwater manual or using the State stormwater manual.</p> <p>In Baltimore County, proposed laws and regulations are reviewed by pertinent agencies. Baltimore County DEPRM reviews those related to water quality. The department's mission is consistent with the goals and actions in the BWAAP and therefore inherently ensures that new laws support the BWAAP. The next step is to develop a collaborative tracking system to review comments on proposed laws and regulations. This system would then be presented to the Committee of Principals for approval.</p>
<p><b>Action 2.5</b> </p> <p>Develop policies which ensure that environmental justice indicators are taken into consideration during major planning efforts (see action 3.1).</p> <p><b>Lead Agency:</b> BWA workgroup and Committee of Principals</p> <p><b>Measure:</b> Draft initial policies; Revise and update annually</p>	<p> <b>Progress Made, Revised Due Date: December 2010</b></p> <p>Biohabitats has completed a draft analysis of environmental justice indicators and assessment methods. The BWA workgroup is in the process of reviewing this draft. Once revisions to the draft are made based on reviewer comments, this analysis will be used to draft initial policies.</p> <p>The draft Baltimore County 2020 Master Plan will have a section on environmental justice and specifically call out the inclusion of environmental justice considerations in the development of Small Watershed Action Plans.</p>

### 3. PLANNING & COLLABORATION

**Goal: Improve watershed planning efforts through collaboration across jurisdictions and among agencies. Better integrate watershed plans into planning and zoning processes, review and permitting, enforcement and implementation.**

ACTION	PROGRESS
<p><b>Action 3.1</b> </p> <p>Create a cross-jurisdictional workgroup to ensure that watershed planning processes are more comprehensive. Include reviews and input from key agencies, stakeholders and citizens. Initiate a schedule of semi-annual coordination meetings. Integrate watershed management planning into comprehensive plans consistent with the water resources element of House Bill 1141.</p> <p><b>Lead Agency:</b> City DPW and DEPRM, City Planning and Community Conservation and County Planning</p> <p><b>Measure:</b> Workgroup formed and meetings initiated</p>	<p> <b>Completed by Revised Due Date: October 2009</b></p> <p>The Planning Workgroup was formed and initiated their first meeting on October 21, 2009. Topics discussed at the meeting include:</p> <ul style="list-style-type: none"> <li>• Integrating and standardizing GIS data between the City and County (Action 3.2)</li> <li>• Redevelopment benefits and challenges of meeting stormwater regulations</li> <li>• Green building policies</li> <li>• Transit Oriented Development (TOD) and its ability to improve air and water quality</li> <li>• Model redevelopment study project</li> <li>• Watershed restoration plans</li> </ul> <p>Baltimore County has initiated a Small Watershed Action Plan in the Upper Gwynns Falls that has an expanded Steering Committee with representatives from a variety of Baltimore County agencies. Additional representatives from MDE, SHA, and US Fish and Wildlife Service have been invited to attend and will, at a minimum, be provided the opportunity to comment. The development of Small Watershed Action Plans are being incorporated into the draft Baltimore County Water Resources Element (House Bill 1141) and into the draft Baltimore County 2020 Master Plan; both of which will be available for public comment in the Spring of 2010.</p> <p>The Baltimore City Planning Department and DPW have completed the state-mandated Water Resources Element (<a href="http://www.baltimorecity.gov/Government/AgenciesDepartments/Planning/Comprehensive-MasterPlan/WaterResourcesElement.aspx">www.baltimorecity.gov/Government/AgenciesDepartments/Planning/Comprehensive-MasterPlan/WaterResourcesElement.aspx</a>).</p>

### 4. EDUCATION

**Goal: Better integrate watershed-based water quality education and greening initiatives into school curricula and maximize school participation in the Maryland Green School Awards Program.**



ACTION	PROGRESS
<p><b>Action 4.1</b> </p> <p>Collaborate with the City and County Departments of Education to ensure integration of Baltimore Watershed Agreement actions into curricula and facilities planning of County and City schools.</p> <p><b>Lead Agency:</b> BWA workgroup, City Department of Education and DEPRM</p> <p><b>Measure:</b> Hold initial biannual meeting</p>	<p> <b>Progress Made, Revised Due Date: July 2010</b></p> <p>The BWA workgroup has identified key players in curricula planning. This list will be used to begin scheduling an initial biannual meeting.</p>

## 5. OUTREACH & AWARENESS

**Goal: Establish and conduct an effective and coordinated joint City and County public awareness campaign covering development/redevelopment, greening, stormwater, public health and trash, emphasizing water quality.**

ACTION	PROGRESS
<p><b>Action 5.1</b> </p> <p>Establish and conduct joint public relations efforts to coordinate between Sustainability Offices, City and County agencies, and watershed organizations.</p> <p><b>Lead Agency:</b> City Communications and Policy Office and DEPRM with County Office of Communications</p> <p><b>Measure:</b> Initiate efforts</p>	<p> <b>Progress Made, Revised Due Date: December 2010</b></p> <p>The City and County have met to coordinate initiating a public awareness campaign which mirrors the City's Cleaner Greener efforts. This similar messaging would allow for joint outreach within shared watersheds.</p>
<p><b>Action 5.2</b> </p> <p>Establish a web-based program to disseminate and update all information regarding the Action Plan including status, progress, and successes.</p> <p><b>Lead Agency:</b> DEPRM, Offices of Information Technology and Applicable City and County Agencies</p> <p><b>Measure:</b> Complete website; Establish ongoing update schedule</p>	<p> <b>Completed by Original Due Date: September 2009 &amp; Ongoing</b></p> <p>The County has dedicated a website to the Baltimore Watershed Agreement which they will continue to update at:</p> <p><a href="http://www.baltimorecountymd.gov/Agencies/environment/watershedagreement/index.html">www.baltimorecountymd.gov/Agencies/environment/watershedagreement/index.html</a></p> <p>A calendar of upcoming events related to the BWA is posted at:</p> <p><a href="http://www.baltimorecountymd.gov/MeetingsandEvents/watersheds">www.baltimorecountymd.gov/MeetingsandEvents/watersheds</a></p> <p>The City Planning Department's Water Resource Element website has a link to the County's BWA website at:</p> <p><a href="http://www.baltimorecity.gov/GovernmentAgenciesDepartments/Planning/ComprehensiveMasterPlan/WaterResourcesElement.aspx">www.baltimorecity.gov/GovernmentAgenciesDepartments/Planning/ComprehensiveMasterPlan/WaterResourcesElement.aspx</a></p>
<p><b>Action 5.3</b> </p> <p>Expand local efforts by further involving environmental, community and faith based organizations in outreach programs focused on greening activities. Increase and strengthen government and NGO partnerships.</p> <p><b>Lead Agency:</b> City Communications and Policy Office, DEPRM with NGOs and Applicable City and County Agencies</p> <p><b>Measure:</b> Hold first annual roundtable discussion; Ongoing annually</p>	<p> <b>Completed by Revised Due Date: September 2009 &amp; Ongoing</b></p> <p>The first roundtable, a gathering of faith-based NGO groups, was held on September 23, 2009. "Finding Common Ground" was convened at the Cathedral of the Incarnation in Baltimore. The half-day meeting drew 50 people from around the Baltimore region, representing a variety of faiths, civic organizations, and local governments. The meeting has led to the development of a "covenant" document which is intended to be presented to and adopted by a large group of interfaith leaders in the Spring of 2010.</p>
<p><b>Action 5.4</b> </p> <p>Create a branded awareness campaign building upon the City's Cleaner Greener initiative, that crosses jurisdictions and watersheds.</p> <p><b>Lead Agency:</b> Consultants working with City DPW, DEPRM, City Communications and Policy Office and County Office of Communications</p> <p><b>Measure:</b> Complete campaign by July 2010; Roll out from July 2010 to July 2012</p>	<p> <b>Progress Made, Original Due Date: July 2010 &amp; Ongoing</b></p> <p>Baltimore County has designed billboards to mimic the "Cleaner Greener campaign" developed by Baltimore City. Plans are underway to post these when funds become available.</p>

## 6. DEVELOPMENT & REDEVELOPMENT

**Goal:** Ensure that the policies and practices that govern development and redevelopment are protective of existing natural and water resources, meeting the objectives of the Clean Water Act.

### ACTION

#### Action 6.1

Develop per capita impervious cover estimates and establish targets for reducing per capita impervious cover.

Lead Agency: DEPRM and City DPW

Measure: Establish targets; Ongoing tracking

### PROGRESS

 **Progress Made, Revised Due Date:  
March 2010**

The County and City have both completed analyses to determine per capita impervious cover estimates. Both are working towards setting reduction targets.



**ONE TREE CAN MAKE A DIFFERENCE.  
WHERE WILL YOU PLANT YOURS?**



Did you know that two large trees provide enough oxygen for a family of four? What's more, trees can absorb 50 percent of urban noise and remove 701 metric tons of pollutants from the air. Trees make a difference in our neighborhoods and in our city. Join TreeBaltimore as we work to grow Baltimore's tree canopy over the next 30 years.

Visit [treebaltimore.baltimorecity.gov](http://treebaltimore.baltimorecity.gov)  
to learn how to get your free or  
reduced-price tree and plant it today!

City of Baltimore  
Recreation & Parks



Funding for this Public Service Advertisement is made possible by Baltimore TreeTrust and a grant from Sappl Ideas that Matter.

### TreeBaltimore Ad

As reported in Action 7.4, Baltimore City promoted tree planting by residents on private property through TreeBaltimore by placing this ad on buses, bus shelters, and magazines in October of 2009. The ad will be posted again in April of 2010 to work towards increasing the number of residential trees planted by 10% by December of 2010.

## 7. COMMUNITY GREENING

**Goal: Achieve City and County urban tree canopy and stream buffer goals and maximize vegetated areas as appropriate to improve water quality.**

ACTION	PROGRESS
<p><b>Action 7.2</b> </p> <p>Continue to measure the condition and functional benefits of the City and County urban tree canopies based on initial studies using the Urban Forest Effects (UFORE) model. Collaboratively develop watershed-based indicators of urban canopy sustainability.</p> <p><b>Lead Agency:</b> City Parks and Recreation and DEPRM</p> <p><b>Measure:</b> Develop measures and indicators</p>	<p> <b>Progress Made, Original Due Date: December 2010</b></p> <p>Forest and tree canopy for Baltimore County and Baltimore City were classified in 2009 by the USDA Forest Service in cooperation with the University of Vermont Spatial Analysis Laboratory using County and City LiDAR data as well as 2007 National Agricultural Imagery Project leaf-on orthophotography.</p> <p>The analysis determined that the County-wide canopy cover was 49.2% and that canopy cover within the Urban-Rural Demarcation Line was 38.4%. For the City, analysis determined that canopy cover was 27.4%. Both the County and the City contracted with the Forest Service to assess the urban tree canopy using the Urban Forest Effects (UFORE) model. Results for the County, completed in 2009, estimated a total of 6.76 million trees within the URDL with a replacement value of \$6.3 billion. For the City, the estimated number of trees is 2.8 million with a replacement value of \$3.4 billion.</p>
<p><b>Action 7.4</b> </p> <p>Continue collaboration with watershed organizations and citizens on programs for increasing tree planting. Provide education and incentives for homeowners to plant trees in residential yards as in the Growing Home Campaign and Tree Baltimore. Encourage community associations to plant trees on public lands and community open spaces through programs such as Tree-Mendous Maryland.</p> <p><b>Lead Agency:</b> City Parks and Recreation and DEPRM</p> <p><b>Measure:</b> Increase number of residential trees planted by 10%</p>	<p> <b>Progress Made, Original Due Date: December 2010</b></p> <p>In Baltimore City, 3,391 residential trees were planted in 2009 through giveaways, the TreeNeighborhood Program, the GrowingHome Campaign, and Marylanders Plant Trees. In the Fall of 2009, TreeBaltimore launched a new ad campaign (shown on page 12) which will be posted again in April of 2010.</p> <p>In Baltimore County, 1,263 residential trees were planted in 2009 through the Growing Home Campaign and MD DNR Tree-Mendous Maryland Program, and the County's Big Trees Sale.</p>
<p><b>Action 7.6</b> </p> <p>Implement streetscapes (e.g., street trees, planting beds, and other vegetative cover) on City and County road and other capital improvement projects, as appropriate. Incorporate stormwater management to the maximum extent practicable.</p> <p><b>Lead Agency:</b> BCRP, City DOT, City DPW and DEPRM</p> <p><b>Measure:</b> Document and map projects annually starting in 2009</p>	<p> <b>Completed by Original Due Date: December 2009 &amp; On-going</b></p> <p>County and City projects are documented. Mapping is available upon request.</p> <p>County streetscape projects completed in 2009 include:</p> <ul style="list-style-type: none"> <li>• Hammonds Ferry Rd. - 10 new trees</li> <li>• MD 147 (Harford Rd.) - 165 new trees</li> <li>• Merritt Blvd. - 101 new trees, lawns replaced with perennial planting</li> </ul> <p>County projects to be completed in 2010:</p> <ul style="list-style-type: none"> <li>• Washington Ave. - 37 new trees, stormwater planters, and stormwater sand filter</li> </ul> <p>City streetscape projects in the design phase in 2009 - 2010 (City plants 1800 street trees annually):</p> <ul style="list-style-type: none"> <li>• Pennsylvania Ave. Beautification - 220 trees to be planted</li> <li>• Saratoga Street Streetscaping - 70 trees to be planted</li> <li>• Russell St. Gateway - 80 trees to be planted, perennial beds</li> <li>• Key Hwy. Trail &amp; Landscape Project - 140 trees to be planted, shrubs, perennial beds</li> <li>• Little Italy Eastern Ave. to Madison St. - 16 trees to be planted</li> </ul>

## 8. STORMWATER

**Goal: Achieve the necessary pollutant reductions and hydrological control to meet water quality standards in City and County streams and tidal waters by 2020.**



Thomas Jefferson ES/MS

### ACTION

### PROGRESS

#### Action 8.1

Create a cross-jurisdictional “Stormwater Workgroup.” Initiate a schedule of semi-annual meetings and meet jointly with MDE on the development and long-term coordination of new MS4 permits.

**Lead Agency:** City DPW and DEPRM

**Measure:** Stormwater workgroup created and meeting schedule established

 **Completed by Original Due Date: July 2009 & On-going**

City DPW and County DEPRM have established a stormwater workgroup and meeting schedule. The workgroup has met regarding stormwater ordinances. Both the City and County have met with MDE separately about MS4 permits and hope to have a joint meeting with MDE when permits are issued. The new term of the local MS4 permits offers an opportunity to enhance Baltimore City and County collaboration efforts. The issuance of the new permits has been delayed by MDE but every effort will be made to coordinate the permit language, timing, and reporting of NPDES progress.

#### Action 8.5

Use school “greening” and parking lot retrofits as model opportunities for water quality improvements through impervious cover reduction, greening and innovative stormwater management demonstration projects.

**Lead Agency:** City DPW, County DPW and DEPRM

**Measure:** Initiate two school water quality improvement projects per year from 2009-2012

 **Completed by Original Due Date: 2009 & On-going**

County projects completed in 2009:

- Park School - 2 rain gardens, buffers
- New Town HS - 26 trees planted
- Sudbrook MS - 26 trees planted
- Thomas Jefferson ES/MS - rain garden treating a 2-acre drainage area
- Arbutus ES - tree planting

City projects completed in 2009:

- Matthew A. Henson ES - 0.95 acres of impervious surface removal, increased tree canopy
- Baltimore Montessori Public Charter ES (Mildred Monroe) - 0.39 acres of impervious surface removal, increased tree canopy

## 9. PUBLIC HEALTH

**Goal: Eliminate bacteria related water quality impairments as defined by the Clean Water Act by 2020 in the tributary streams to the Harbor and Back River.**



### ACTION

### PROGRESS

#### Action 9.1

Evaluate watershed-based bacteria monitoring efforts. Determine measures of success in light of pending TMDL mandates. Develop consistent indicators, sampling and analytical methodology among city, county and MDE monitoring programs.

**Lead Agency:** City DPW, City Health Department and DEPRM

**Measure:** Monitoring methodology established

 **Progress Made, Revised Due Date: April 2010**

Baltimore County DEPRM and Baltimore City DPW have coordinated efforts on bacterial monitoring methods and sampling strategy. The same sampling method and bacterial analysis method will be used by both jurisdictions. The Quality Assurance Project Plan is currently being developed jointly, with sampling to begin in the Spring of 2010.

## 10. TRASH

**Goal: Eliminate trash-related water quality impairments as defined by the Clean Water Act by 2020 in the Harbor, Back River and tributary streams.**



ACTION	PROGRESS
<p><b>Action 10.1</b> </p> <p>Evaluate watershed-based trash monitoring efforts. Determine measures of success in light of pending TMDL mandates. Develop consistent methodology among city, county and MDE monitoring programs. Develop a cross-jurisdictional program for tracking, prioritizing and eliminating sources of trash in area waterways. Develop a method for determining trash generation rates by land cover with MDE in order to develop TMDL and monitor improvement.</p> <p><b>Lead Agency:</b> City DPW, DEPRM and MDE</p> <p><b>Measure:</b> Create a recommendation document based on this evaluation</p>	<p> <b>Progress Made, Revised Due Date:</b> <b>April 2010</b></p> <p>Baltimore City DPW and Baltimore County DEPRM have met with MDE twice regarding the trash monitoring program to gain insight into the data needs of MDE for development of the Baltimore Harbor Trash TMDL. The two jurisdictions have also met twice to discuss the development of a joint strategy for trash monitoring. Based on these four meetings a trash monitoring program is currently under development with a projected completion date for the Quality Assurance Project Plan set for April 2010. Monitoring is anticipated to begin in May 2010.</p>
<p><b>Action 10.2</b> </p> <p>Expand littering and trash awareness campaigns. Inform the public on ways in which they can report trash sources for enforcement actions.</p> <p><b>Lead Agency:</b> City DPW and DEPRM</p> <p><b>Measure:</b> Expand campaign and establish reporting system</p>	<p> <b>Progress Made, Revised Due Date:</b> <b>March 2010</b></p> <p>Baltimore County has designed billboards to mimic the “Cleaner Greener campaign” developed by Baltimore City. Plans are underway to post these when funds become available. As part of implementing Cleaner Greener, Baltimore City began Single Stream Recycling in 2009. Baltimore County started Single Stream Recycling in February 2010.</p> <p>In addition, volunteers from the Back River community, in partnership with DEPRM, have organized two successful volunteer-based clean-ups to remove trash and debris from the shorelines and mud flat areas of Back River. More than 400 volunteers participated and removed over ten tons of debris and over 800 tires. These events helped to highlight the trash problem in the waterway and to educate the community about proper disposal.</p>
<p><b>Action 10.3</b> </p> <p>Continue pilot-scale testing of new technologies working with MDE and NGOs. Encourage participation of NGOs in demonstration projects. Implement new trash reduction and removal technology pilot projects in each of the four major watersheds (Gwynns Falls, Jones Falls, Back River, and Baltimore Harbor) to determine the best suite of implementation practices.</p> <p><b>Lead Agency:</b> City DPW, County DPW, DEPRM and MDE</p> <p><b>Measure:</b> Present and document results of pilot scale projects</p>	<p> <b>Progress Made, Original Due Date:</b> <b>January 2011</b></p> <p>Baltimore City continues to evaluate the trash paddle wheel which was first located at the confluence of the Jones Falls with the Baltimore Harbor and now relocated to Canton. Baltimore County is installing a two-tiered trash boom that will trap the incoming floatables from the Back River tributary streams.</p>

## ACTIONS WITH EXTENDED DEADLINES

ACTION	REVISED DUE DATE
<p><b>Action 9.2</b> </p> <p>Develop a cross-jurisdictional program for tracking, prioritizing and eliminating sources of domestic waste water in area waterways. Fully coordinate with consent decree actions being undertaken by the City and County.</p> <p><b>Lead Agency:</b> City DPW, City Health Department and DEPRM</p> <p><b>Measure:</b> Create a recommendation document based on this evaluation</p>	<p><b>December 2010</b></p>
<p><b>Action 9.3</b> </p> <p>Develop a two-way reporting protocol between agencies and the public, in order to enhance awareness and improve reporting on water quality indicators, especially pertaining to bacteria. Inform the public of ways in which they can report problems related to bacteria and other forms of contamination. Provide a reporting method by which the public can track any remedial actions taken.</p> <p><b>Lead Agency:</b> City DPW, City Health Department and DEPRM</p> <p><b>Measure:</b> Establish reporting system</p>	<p><b>December 2010</b></p>
<p><b>Action 9.4</b> </p> <p>Expand public health awareness campaigns. Inform the public of ways in which water quality can affect public health.</p> <p><b>Lead Agency:</b> City DPW, City Health Department and DEPRM</p> <p><b>Measure:</b> Expand awareness campaign</p>	<p><b>December 2010</b></p>

**Any action not explicitly referenced in this document has not been initiated. Those actions have due dates that are further in the future and will be pursued accordingly.**



