

Chapter 8. Implementation

This chapter summarizes the recommended strategies from Chapters 4, 5, and 6 that address sewage discharges, trash and pollutants in stormwater runoff. Table 7.1 presents each recommendation, the major pollutants targeted, lead entity and timeframe. Strategies with a short-term timeframe are associated with a 2020 milestone, while long-term strategies are linked to 2030 or 2040 milestones. Some strategies will be implemented immediately and are ongoing – these are noted as short and long-term in Table 8.1. As described in Chapters 5 and 6, to allow for the City and County to “ramp-up” their personnel and funding solutions there is a two-year delay for implementation of the major operating and capital programs. Therefore, full-scale implementation of trash reduction and stormwater management practices will not begin until 2014.

Table 8.1. Summary of Strategies to Make Baltimore Harbor Fishable and Swimmable				
Strategy	Pollutants Addressed	Lead Organization or Entity	Timeframe	
Chapter 3. Sewage Solutions	Implement a public education campaign to encourage proper disposal of domestic waste, proper connection of household drains, and disposal of pet waste	Bacteria, nutrients, various others	City- Department of Public Works (DPW), County -Department of Environmental Protection and Sustainability (DEPS)/Waterfront Partnership/Local non-profits	Short and long term
	Eliminate illegal connections through improved enforcement	Bacteria, nutrients	City- DPW, Department of Housing and Community Development (HCD) County – DEPS and Department of Public Works (DPW)	Short term
	Improve screening and monitoring for sewage discharges and leaking septic systems	Bacteria, nutrients	City – DPW County – DEPS, DPW	Short term
	Establish water quality benchmarks for stormwater outfalls	Bacteria, nutrients	City – DPW County – DEPS, DPW	Short term
	Increase the success rate of tracking sewage discharges to find the source	Bacteria, nutrients	City – DPW County – DEPS, DPW	Short term
	Increase capacity to quickly and permanently correct sewer leaks	Bacteria, nutrients	City – DPW County – DEPS, DPW	Short term

Table 8.1. Summary of Strategies to Make Baltimore Harbor Fishable and Swimmable				
Strategy	Pollutants Addressed	Lead Organization or Entity	Timeframe	
	Increase coordination and tracking across programs	Bacteria, nutrients	City – DPW County – DEPS, DPW	Short and long term
	Establish Harbor monitoring and public notification systems	Bacteria	City – DPW, Health Department County – DEPS Local non-profits	Short term
Chapter 4. Trash Solutions	Develop a public outreach plan to reduce trash and litter and increase enforcement of existing litter and trash disposal regulations	Trash, nutrients	City – DPW (Solid Waste, Surface Water) County – DEPS, DPW (Solid Waste) Waterfront Partnership Local non-profits	Short and long term
	Support new legislation aimed at eliminating plastic bags and bottles	Trash	City – Mayors Office, DPW, Sustainability County – Executive Office, DEPS Waterfront Partnership Local non-profits	Short term
	Conduct a trash survey to identify high trash generation areas for targeting management actions and outreach	Trash, nutrients	City – DPW (Solid Waste and Surface Water) County – DEPS, DPW (Solid Waste)	Short term
	Install green infrastructure and other volume control stormwater management practices to capture trash from stormwater runoff	Trash, nutrients, bacteria, various others	City – DPW County - DEPS	Short and long term
	Increase implementation of practices that prevent trash from entering storm drains	Trash, nutrients	City – DPW County - DEPS	Short and long term
	Increase practices that capture trash at storm drain outfalls and waterways	Trash, nutrients	City – DPW County - DEPS	Short term

Table 8.1. Summary of Strategies to Make Baltimore Harbor Fishable and Swimmable

Strategy		Pollutants Addressed	Lead Organization or Entity	Timeframe
Chapter 5. Stormwater Solutions	Reduce stormwater pollution through redevelopment	Nutrients, sediment, trash, bacteria, various others	City –DPW, Planning, Sustainability, HCD County – DEPS, Planning	Long term
	Utilize vacant properties to provide stormwater management as part of an offset and banking program	Nutrients, sediment, trash, bacteria, various others	City –DPW, Planning, Sustainability, HCD County – DEPS, Planning	Long term
	Develop plans that identify cleaning and greening actions for all City and County neighborhoods	Nutrients, sediment, trash, bacteria, various others	Neighborhoods/City/County/Local non-profits, Corporate and other sponsors	Short term
	Install green infrastructure practices in neighborhoods as stormwater retrofits	Nutrients, sediment, trash, bacteria, various others	City – DPW, Department of Transportation County - DEPS , Department of Transportation	Short and long term
	Plant trees on public and private lands	Nutrients, sediment	City – DPW, Recreation and Parks County – DEPS, Recreation and Parks Local non-profits, community organizations, citizens	Short and long term
	Implement a public education campaign for residents and businesses to encourage reduction of stormwater pollution	Nutrients, sediment, trash, bacteria, various others	City – DPW, Sustainability County - DEPS Local non-profits Corporate sponsors	Long term
	Provide incentives for retrofitting existing stormwater practices on private land	Nutrients, sediment, trash, bacteria, various others	City - DPW County - DEPS	Long term
	Implement pilot projects to demonstrate and test innovative stormwater practices	Nutrients, sediment, trash, bacteria, various others	City -DPW County – DEPS Waterfront Partnership/Corporate sponsors/Local non-profits	Short term
	Restore stream channels degraded by runoff	Sediment, nutrients	City - DPW County -DEPS	Short term

Table 8.1. Summary of Strategies to Make Baltimore Harbor Fishable and Swimmable				
Strategy		Pollutants Addressed	Lead Organization or Entity	Timeframe
	Ensure proper crediting for alternative or innovative approaches to reduce urban stormwater pollution	Nutrients, sediment, trash, bacteria, various others	City -DPW County - DEPS State - MDE EPA - Chesapeake Bay Program	Short term
	Establish a tax rebate for homeowner installation of stormwater management practices on their properties	Nutrients, sediment, trash, bacteria, various others	City – DPW, Department of Finance County – DEPS, Department of Finance	Long term

Chapter 7 presented six alternatives for funding implementation of this plan. The City and County can evaluate these alternatives to determine the most appropriate mix of strategies to pursue in the near term and long term given the recommended implementation schedule. For example, a stormwater utility is the most viable option for funding implementation of green infrastructure practices; but it may not be realistic to get a utility established for at least a few years. Therefore, other funding sources such as establishing a solid waste management enterprise fund may be needed to fund trash reduction strategies until more resources are available to devote to addressing stormwater programs. In addition to the funding strategies described in Chapter 7, various grants and loans are available (e.g., federal grants, private foundation funds), especially for the actions where non-profits play a key role.

Table 8.2 summarizes the estimated pollutant reductions achieved with implementation of this plan. Appendix D describes the assumptions used to develop these estimates.

Pollutant	Pounds Reduced (City and County total)
Total Nitrogen	120,000
Total Phosphorus	19,300
Total Suspended Solids	3,510,000
Trash	427,000

Tracking Progress of Plan Implementation

This plan outlines a strategy for making the Harbor fishable and swimmable and the resulting strategies will be implemented by various departments within the City and County or by local non-profits. To keep track of this complex web of actions over its almost 30-year timeframe will require a system for accountability. Three additional recommendations are described below that relate to tracking progress of plan implementation.

Integrate plan into Baltimore Watershed Agreement

The Baltimore Watershed Agreement (BWA, see Chapter 3 for background) would be a perfect “home” for the implementation phase of the Healthy Harbor Plan especially given that the BWA will be renewed in 2012. The new agreement will have new commitments and appointees to the Committee of Principals. Given the higher standards of accountability expected of the municipal separate storm sewer permits (MS4) permits and watershed implementation plans (WIPs), care will have to be taken to assure that the Committee of Principals is actively engaged and that the milestones of the BWA are tracked as part of an open process which would lend itself to a forum such as Harbor Stat (see below). Given the commitment of the Waterfront Partnership to developing this plan, it is recommended that they have a representative appointed to the Committee of Principals. In addition, it is recommended the leadership of the Baltimore Watershed Agreement be strengthened so that it acts more like a regional planning authority. This would include the establishment of an oversight committee that would coordinate between the City and County Consent Decrees for the elimination of sanitary sewer overflows (SSOs).

Create Harbor Stat to track quarterly progress

The City and County should develop an open process where project milestones can be tracked and adjustments made to assure that the goals of this plan as well as the MS4 permits and WIPs are met. Quarterly meetings are probably sufficient. The City has been very successful in tracking departmental projects and programs through City-Stat. The State of Maryland used this approach to develop Bay Stat, which would be a good model to follow. Having quarterly meetings with invited stakeholders will help to assure interagency coordination. Because of the enormity of the task, the City should also track day-to-day milestones through the existing monthly City-Stat process. Baltimore County should consider a similar tracking and accountability process.

One of the first steps in developing Harbor Stat is to establish trackable indicators. Potential indicators to be tracked include the programs and projects described in Table 8.1. The City and County may have other programs that need to be tracked as required by the MS4 permits. The design and construction phases of projects are complicated, involving dozens of steps (e.g., permitting, surveying, easements). To be mired down at this level of detail would defeat the purpose of Harbor Stat. Instead, basic tracking metrics could include the list of projects, key milestones (e.g., 90 percent design, permitting), schedule and estimated benefits. Harbor Stat should track these metrics for the following elements:

- projects
- programs (e.g., stormwater utility)
- elimination of illicit discharges and SSOs

Ultimately, water quality data should be tracked as part of this process; however, it is probably sufficient to track this annually or bi-annually.

Develop phase II Harbor Restoration Plan

The Healthy Harbor Plan limited its scope to the entire Northwest Branch and part of the Middle Branch upstream from the Hanover Street Bridge. The plan is also limited to addressing bacteria, trash, sediment and nutrients. It is not intended to address fish advisories, toxic sediments and other related issues.

The Harbor “proper” is a much larger body of water that extends to Key Bridge and with a watershed area that includes part of Carroll, Anne Arundel County, and Howard County. All four counties (and Baltimore City) will have to address sediment and nutrient total maximum daily loads (TMDLs) under the WIPs. However, the narrow focus of the WIPs does not address all of the issues identified by the stakeholder community. The MS4 permits will address some of these issues over time, but the current regulatory drivers necessitate that the City and County will concentrate their resources on eliminating trash, bacteria and sediment impairments. The City and County and other stakeholders should engage the public and identify the issues not being addressed by the MS4 permits and WIPs. It is likely that there may be synergies between the actions recommended by this plan and the broader Harbor issues. A Phase II Harbor Restoration Plan should be developed under the Baltimore Watershed Agreement and could be a new commitment when the agreement is renewed in 2012.

Conclusion

Local governments across the Chesapeake Bay Watershed are asking how meeting their local TMDLs and other requirements will help them to meet the Chesapeake Bay TMDL. They are trying to get a handle on how much, if any, additional effort will be needed, but the differences in scale, pollutants of interest, and pollutant removal efficiencies used to calculate reductions make it challenging to answer this question. The Healthy Harbor Plan takes a unique approach to cleaning up the Harbor in that it integrates these and other regulatory requirements and channels the ongoing efforts to meet these requirements towards a common and recognizable end goal: a swimmable, fishable Harbor. The process used here can be adopted by other communities.

The Healthy Harbor Plan provides a roadmap for cleaning up Baltimore Harbor and its watersheds to improve the quality of life for all who live, work and play there. Implementation of all the strategies described in this plan will certainly be costly, but the approach, which involves integration of multiple programs and addresses multiple pollutants, will not only result in a swimmable, fishable Harbor but will also allow the City and County to meet their MS4 and TMDL requirements and improve their communities. The value of a Harbor and tributary streams that are safe and enjoyable for recreational activities, as well as clean and green neighborhoods, cannot be overstated. In addition, there is great potential for tremendous cost savings through behavioral change and actions by individuals.

Baltimore City and Baltimore County have spent considerable effort over the past two decades addressing the environmental mandates of the Clean Water Act, and the Healthy Harbor Plan makes use of this data. While this plan does not replace the need for each jurisdiction to develop WIPs and implement MS4 permits, which apply to land outside of the Harbor drainage, the groundwork and path for restoration of the Harbor have been established. The City and County can now lead the way for other Chesapeake Bay communities by showing their commitment to cleaning the Harbor and by fostering the necessary support from residents, businesses and other stakeholders to do their part so that each and every resident and visitor has the opportunity to fully enjoy and use the Harbor and its tributary streams.