November 2013
Executive Summary

Achieving a Healthy James River: Linking Local Cleanup Plans to Chesapeake Bay Water Quality Goals

The Challenge

The obligation to meet water quality goals lies in the hands of local governments, but a clear path toward meeting numerous water quality goals remains elusive.

The James River, designated by Congress as America's Founding River, has played a critical role in the development of Virginia. That critical role continues today, with the river serving as a primary source of drinking water for millions, a home for commercial and industrial facilities which utilize the river and as a contributor to our quality of life and tourism, attracting new residents and businesses.

Today, a variety of pollutants threaten the critical role that the river plays in communities throughout the watershed. These pollutants range from nutrients such as nitrogen and phosphorus, which feed algal blooms that deplete valuable oxygen supplies, to bacteria from waste, which poses a threat to human health.

Local governments are charged with addressing these pollutants and the sources that cause them. Yet, the framework developed to address these different pollutants makes it difficult for local governments to address these water quality challenges holistically and presents a significant financial challenge – with the Chesapeake Bay Cleanup potentially costing $10.5 billion for stormwater alone.

The framework that has been developed – separate cleanup plans for each pollutant – has led localities to have numerous plans for addressing water quality within their jurisdictions. This means that while a locality may have a plan to address the Chesapeake Bay Cleanup, they will also have several plans to address cleaning up local tributaries to the Chesapeake Bay, such as the James River and local streams.

Study Methodology

Cleaning up the James River and the Chesapeake Bay starts at the local level. The James River Association (JRA) has worked on the development of the Chesapeake Bay Cleanup as well as cleanup plans at the local level and wanted to determine how localities could simultaneously meet their Chesapeake Bay and local cleanup goals. While the Chesapeake Bay Cleanup specifically addresses nitrogen, phosphorus and suspended solids, local cleanup plans can address impairments for a wide variety of pollutants. To quantify areas of overlap and potential coordination, JRA contracted with the Center for Watershed Protection (CWP) to conduct a study to demonstrate how this could be accomplished with bacteria cleanup plans in three James River watershed localities.

JRA was particularly interested in cleanup plans for the Lynchburg, Williamsburg and Richmond areas. Achieving nutrient pollution goals as a part of the Chesapeake Bay Cleanup is vital to the health of the James River, but the Commonwealth of Virginia also has over 9,000 miles of streams which are impaired for bacteria. In order to compare the pollution reductions of the local bacteria cleanup plans to the pollution reductions necessary for the Chesapeake Bay Cleanup, the nutrient and sediment reductions were estimated using the practices proposed within the local cleanup plans.

Causes of Impairments in the James River

- Aldrin
- Ammonia
- Copper
- Chlorophyll a
- Dissolved Oxygen
- Enterococcus Bacteria
- Escherichia Coli
- Fecal Coliform
- Macrophytes
- Mercury in Fish Tissue
- Mirex
- Nitrogen
- PCBs in Fish Tissues
- Phosphorus

"Cleaning up the James River and the Chesapeake Bay starts at the local level."

Key Findings

Overall, this study shows that with careful planning, James River watershed localities can fully meet Chesapeake Bay Cleanup goals through implementation of local cleanup plans. Because this study focused on local bacteria cleanup plans, the results provide a good snapshot of potential nutrient reductions associated with implementation of bacteria reduction strategies and identify BMPs that can reduce both bacteria and nutrients. Given the significant cost savings that could be achieved by simultaneously addressing local water quality goals and Chesapeake Bay goals, local governments should strongly consider these benefits when undertaking water quality planning exercises.

Recommendations

1. **Integrated cleanup planning to address all local and regional pollution impairments would provide great flexibility to local governments.**
2. **Encouraging the Chesapeake Bay Program to review and approve additional practices which provide pollution reductions for multiple pollutants would allow local governments more flexibility in restoring their local waterways.**
3. **Additional data on the effectiveness of available best management practices at reducing bacteria, the most common pollutant which cleanup plans are developed for, is vital.**
4. **Local cleanup plans must provide details on what portion of the pollution load will be reduced by each recommended practice.**
5. **Water quality investments are needed to address local pollution problems and will have direct local benefits.**

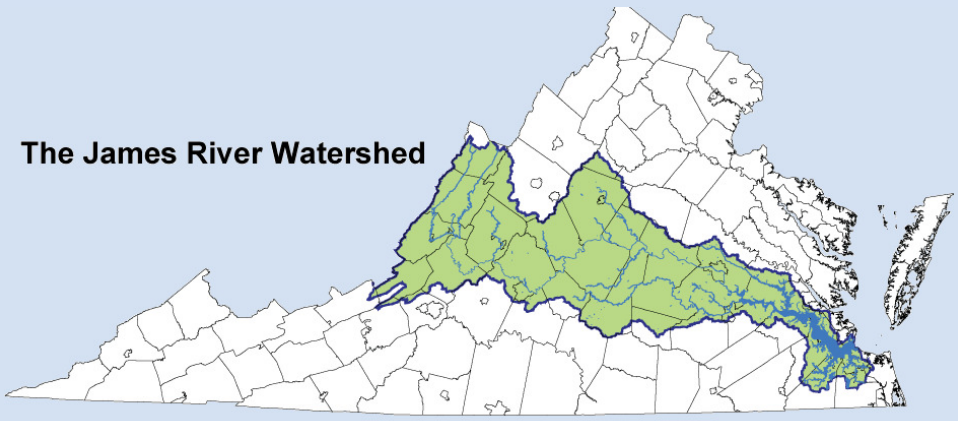
Percentage of Chesapeake Bay Pollution Targets Met Through Implementation of Local Plans

		City of Richmond	*City of Lynchburg*	*James City County*
Total Reduction for Chesapeake Bay Program Approved Practices (% of target)	Nitrogen	160%	48%	60%
	Phosphorus	122%	6%	94%
	Suspended Solids	136%	4%	139%
Total Reduction for All Practices (% of target)	Nitrogen	563%	226%	538%
	Phosphorus	591%	180%	891%
	Suspended Solids	295%	9%	139%

"Overall, this study shows that with careful planning, James River watershed localities can fully meet Chesapeake Bay Cleanup goals through implementation of local cleanup plans. "

What Citizens Can Do to Protect the James River

- Prevent pollution around the home – Join JRA's River Hero Home program.
- Take action for the river. JRA is always looking for volunteers to do everything from picking up trash to water quality monitoring to habitat restoration to advocating on the river's behalf.
- Help be the eyes and ears for JRA on the river. If you see a problem such as a fish kill or illegal dumping, please send an email to info@jrava.org and one of the James Riverkeepers will investigate it further.
- Let your elected officials know that protecting the James River should be a priority.
- Introduce someone to the James and teach them about being a good river steward. The more people are enjoying the river, the more people will care about its health.
- Strengthen our collective voice for the James River and support JRA's efforts. Become a JRA member and show your financial commitment to improving the health of the James River.



340 miles long

25% of the state

39 counties

19 cities and towns

3 million people

About the James River Association

The mission of the James River Association is to be guardian of the James River. We provide a voice for the river and take action to promote conservation and responsible stewardship of its natural resources. We achieve these goals through our core programs: Watershed Restoration; Education, Outreach; River Advocacy; and our Riverkeeper program.

About the Center for Watershed Protection

The Center for Watershed Protection, Inc. is a 501(c)(3) non-profit organization dedicated to fostering responsible land and water management through applied research, direct assistance to communities, award-winning training, and access to a network of experienced professionals. The Center is your first source for best practices in stormwater and watershed management. The Center was founded in 1992 and is headquartered in Ellicott City, Maryland. As national experts in stormwater and watersheds, our strength lies in translating science into practice and policy, providing leadership across disciplines and professions. To learn more about the Center's commitment to protect and restore our streams, rivers, lakes, wetlands and bays, go to www.cwp.org.

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The Full Report and additional resources are available at www.TheJamesRiver.org. For more information on this study, please contact Adrienne Kotula at (804) 788-8811 or akotula@jrava.org.