

Patuxent River Policy Plan Implementation 2010-2014

Background

Section 5-809 of the State Finance and Procurement Article requires the Maryland Department of Planning (MDP) to submit a report to the General Assembly on the implementation of the Patuxent River Policy Plan (the Plan) and the status of the Patuxent River and its watershed. The report must include specific recommendations from MDP concerning implementation of the Policy Plan and must be presented to the Patuxent River Commission (PRC), a legislatively created commission of local governments and other representative stakeholders within the watershed, for feedback. The PRC provided feedback on the draft report at its November 2014 meeting; the report has been updated to incorporate their comments.

This report provides an overview of the efforts by state and local governments within the watershed to restore the Patuxent River and implement the Plan, and the work of the PRC during this time period to support those efforts. The Plan in effect during this reporting period is still the 1997 Policy Plan Update, which served as an addendum to the 1984 Policy Plan (Appendix A lists the goals from the 1984 Policy Plan, along with the programmatic guidelines from the 1997 Policy Plan Update).

Throughout 2014, MDP has reviewed the department's administration of the PRC and has worked to reinvigorate the Commission and the Patuxent River restoration effort as a whole. This has included amendment of the Patuxent River Policy Plan by all 8 local governments represented on the PRC and proposed for adoption by the Maryland General Assembly in 2015, development of Annual Action Plans for the PRC, establishment of workgroup meetings between regular PRC meetings, and redoubling PRC focus on local and state responsibilities for actions to implement the Policy Plan.

Status of the Patuxent River and its Watershed

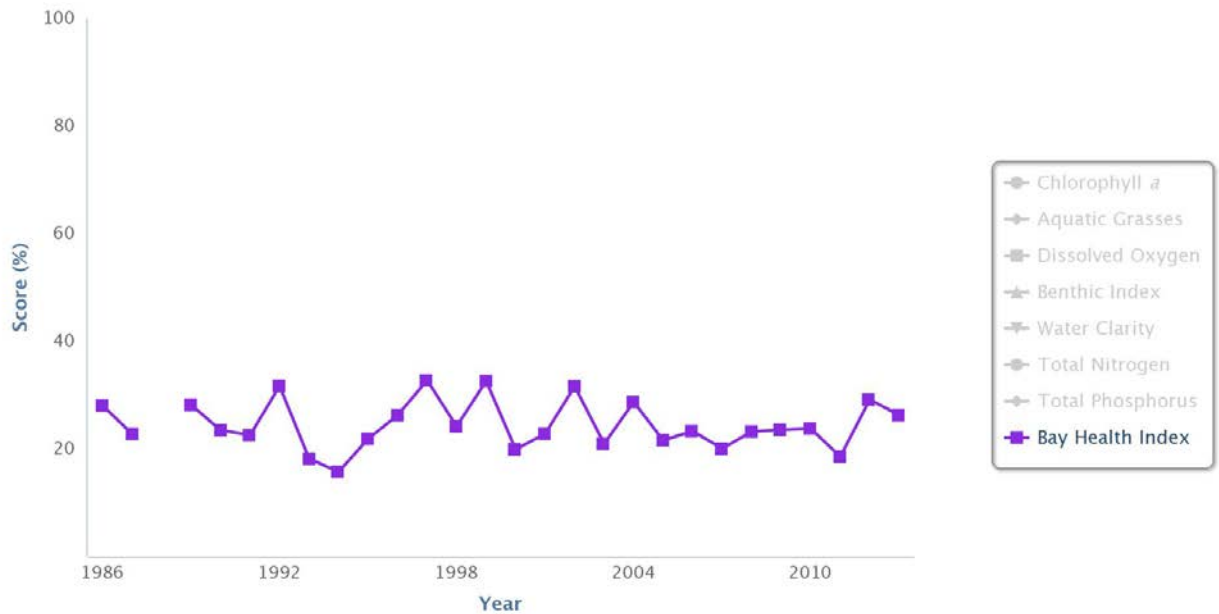


Figure 1. Patuxent River Bay Health Index. Chesapeake Bay Report Card. University of Maryland Center for Environmental Science¹.

The health of the tidal Patuxent River is roughly the same today as it was in 1986, as measured by a Bay Health Index (see Figure 1), which consolidates several water quality and habitat measures. Some measures, including dissolved oxygen, total nitrogen, and total phosphorus, have improved modestly over time. Other indicators, including chlorophyll *a*, aquatic grasses, benthic index, and water clarity show little progress or have gotten worse. In combination, the reduced ecological health of the Patuxent River depicted by these indicators is tied to population growth and development in the watershed: between 1973 and 2010, population doubled while development increased from 68,000 acres to 230,000 acres.

On the other hand, actions by state and local government within the watershed to reduce nitrogen, phosphorus and sediment to the Patuxent River (see Figures 2, 3 and 4) have at least prevented additional decline in the health of the river even as population and development have increased. Moving forward, restoration efforts must be increased further to account for impacts from additional growth as well as to begin meaningful ecological improvements.

¹ http://ian.umces.edu/ecocheck/report-cards/chesapeake-bay/2013/summaries/patuxent_river/

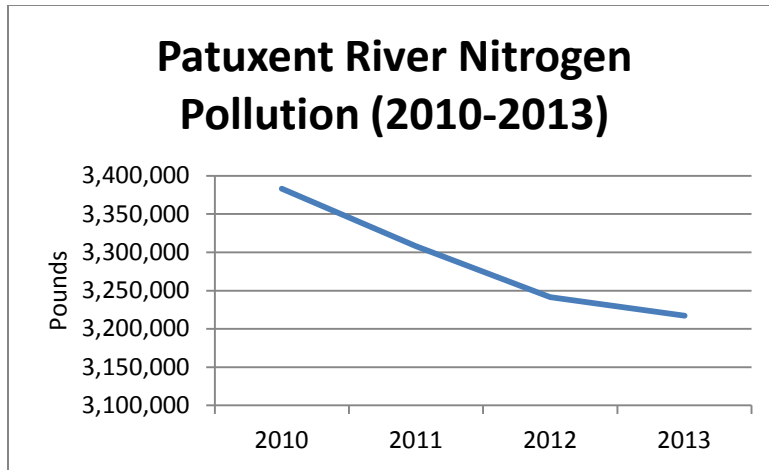


Figure 2. Patuxent River Nitrogen Pollution (2010-2013)²

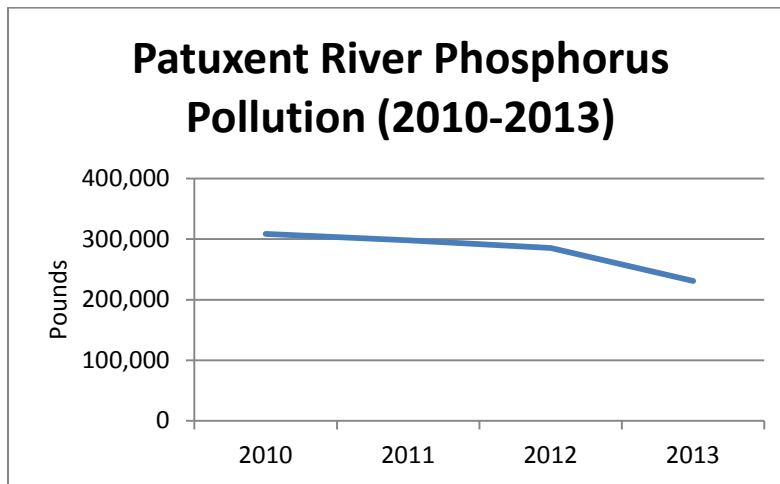


Figure 3. Patuxent River Phosphorus Pollution (2010-2013)³

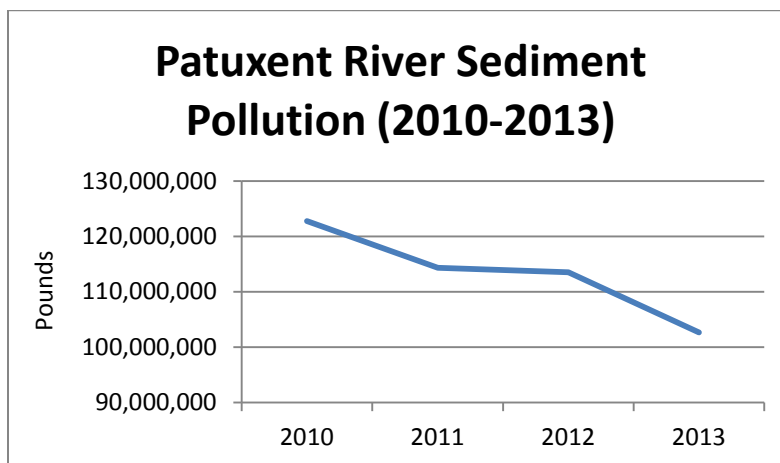


Figure 4. Patuxent River Sediment Pollution (2010-2013)⁴

² Data source: EPA Phase 5.3.2 Watershed Model.

³ Ibid.

Implementation of the Patuxent River Policy Plan 2010-2014

Between 2010 and 2014, to implement the 1997 Patuxent River Policy Plan, local and state governments within the watershed focused on the following issues:

- Chesapeake Bay TMDL & Watershed Implementation Plans (WIPs)
- Municipal Separate Storm Sewer System (MS4) permits
- Patuxent River Policy Plan update
- Other Important Issues

In addition, local government plans and other efforts implemented in support of the Policy Plan are reported in Appendix B.

Chesapeake Bay TMDL & WIPs

During the past 5 years, activity by local and state governments to implement the 1997 Patuxent River Policy Plan has focused on the development of local and state WIPs and two-year WIP milestone goals in addition to monitoring ongoing issues on the river. Although the WIPs focus on achieving the Bay TMDL, the increased implementation of nutrient and sediment reduction activities will benefit the Patuxent River as well⁵.

The WIPs outline the nutrient and sediment reduction activities that the jurisdictions will undertake to help reach the Bay TMDL by 2025. Maryland completed its Phase I WIP in December 2010, and its Phase II WIP in March 2012⁶. The seven counties in the Patuxent watershed (Montgomery, Howard, Prince George's, Anne Arundel, Charles, Calvert, and St. Mary's) completed local Phase II WIPs in 2011 (and many were updated in 2012 and 2013)⁷.

To ensure steady progress towards reaching the Bay TMDL, local and state governments were required to identify two-year milestone goals for nutrient and sediment reduction actions, whether programmatic actions or best management practice (BMP) implementation⁸.

The PRC organized a public meeting in November 2010 to discuss development of the state's draft Phase II WIP, given the plan's importance in outlining local responsibilities in comparison to the Phase I WIP. Approximately 85 Patuxent watershed stakeholders were invited. In addition to an overview from MDE, the public meeting included presentations of two pilot

⁴ Ibid.

⁵ There are several local Patuxent River TMDLs (e.g., Sediment in the Patuxent River Upper Watershed, Howard, Anne Arundel, and Prince George's Counties, Maryland). These are listed in Table 1 in the *2015 Patuxent River Policy Plan Update* – see <http://planning.maryland.gov/PDF/OurWork/PRC/PRC-policy-plan-adopted-2014-0514.pdf>

⁶ Maryland's Phase II WIP is available on the Maryland Department of Environment (MDE) website at: http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Pages/FINAL_PhaseII_WIPDocument_Main.aspx

⁷ The local Phase II WIPs are available on the MDE website at: <http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Pages/WIPPhaseIICountyDocuments.aspx>

⁸ 2012-2013 milestones are available on the MDE website at: http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Pages/MD_Milestone_Goals_2012-2013.aspx

Phase II WIPs in Caroline and Anne Arundel Counties, as well as breakout sessions on data needs, resource needs, and coordination.

By scheduling presentations from the Chesapeake Bay Foundation (on S. 1816, the Chesapeake Clean Water and Ecosystem Restoration Act) and MDE (on the Chesapeake Bay TMDL development process), in January and April of 2010, respectively, the PRC provided an important forum for the local governments within the Patuxent watershed to request information on federal and state expectations for local restoration commitments.

PRC meetings in 2011 provided opportunities for the exchange of ideas and approaches in support of local Phase II WIPs. In March 2011, Montgomery County presented its approach for creating the stormwater section of the county's Phase II WIP, which included forming a workgroup that tackled issues relating to permit requirements, watersheds, local TMDLs, timelines, and strategy.

In 2011-2012, the PRC sought and obtained technical assistance from the state for the local governments working on Phase II WIPs. In response to a PRC letter to the Governor for funding to facilitate an intergovernmental, coordinated effort on the Phase II WIPs among the Patuxent River watershed counties, MDE was able to allocate a portion of U.S. Environmental Protection Agency (EPA) funds in support of an analysis to obtain, review and improve local septic system and impervious surface data used in the Chesapeake Bay Model. Doing so provided a clearer picture of the amount of nutrient reductions needed from the stormwater and septic system sectors for each county within the Patuxent watershed.

In 2013, PRC jurisdictions learned how to use the Stormwater Management and Restoration Tracker (SMART) program, which was piloted in Howard, St. Mary's, and Talbot Counties to ensure counties receive credit for homeowner BMP implementation within their Phase II WIPs, and to provide additional motivation for local property owners⁹. The SMART tool tracks and certifies 20 different pollution control practices that property owners can implement on their properties. To become SMART Certified, landowners first report their practices on the SMART tool website. Next, a SMART Team member arranges a site visit to certify the stormwater practice.

Municipal Separate Storm Sewer System (MS4) permits

Five counties (Montgomery, Howard, Prince George's, Anne Arundel and Charles) within the Patuxent watershed must implement Phase I MS4 permits to reduce the hydrologic, temperature, nutrient and sediment impacts from stormwater runoff. Stormwater runoff is the biggest contributor of pollution (33% of nitrogen, 38% of phosphorus, and 52% of sediment in 2013)¹⁰ to the Patuxent River. Current Phase I MS4 permits require restoration of 20% of uncontrolled impervious surfaces based on watershed assessments during the permit cycle. As reported in county annual reports of MS4 permit implementation, the five counties completed extensive efforts to meet the restoration requirements.

⁹ <http://www.extension.umd.edu/watershed/smart-tool>

¹⁰ Data source: EPA Phase 5.3.2 Watershed Model

In 2014, the PRC sought to ensure sufficient funding for MS4 permit implementation. In January, the five counties with Phase I MS4 permits discussed their estimated cost for MS4 stormwater permit implementation and existing or proposed stormwater management fees (enabled under House Bill 987 in April of 2012). The discussion demonstrated that in the majority of the counties there is a disparity between expected revenues and the cost of permit implementation. In February, the PRC sent a letter to the Maryland General Assembly encouraging the retention of enabling legislation for local stormwater management fees.

The City of Laurel is covered under a statewide general Phase II MS4 permit for smaller municipal separate storm sewer systems. During the 2010-2014 time period, in response to citizen concerns, the city investigated the possibility of a stream stabilization study to reduce sedimentation of Laurel Lakes and has considered dredging as a remedial action. The sedimentation is so severe that an island has formed in one of the lakes where there has not historically been an island.

Patuxent River Policy Plan Update

The PRC is required by state law to evaluate and periodically update the Patuxent River Policy Plan, which directs the efforts of local jurisdictions, state agencies and community representatives in river restoration. The original 1984 Policy Plan was last updated in 1997. Although many of the previous plan recommendations have been implemented or become the subject of national and state regulations, the Patuxent River remains in poor ecological condition and needs renewed interest to support its restoration.

Beginning in September of 2012 MDP and the PRC initiated a review and update of the Policy Plan to reinvigorate the Patuxent River restoration effort and to reflect the new regulatory requirements to restore the Chesapeake Bay. Throughout 2013 and 2014 the PRC and MDP staff worked on the creation of a draft Patuxent River Policy Plan. A final draft was developed in late 2013 that included overarching goals for preservation, advocacy, and creating excitement among stakeholders, and strategies for supporting those goals. This effort set the stage for public outreach and local government adoption of the Plan update in 2014, with proposed Maryland General Assembly adoption of the Plan update during the 2015 legislative session.

Other Important Issues

Other important issues addressed by state and/or local governments in support of the Patuxent Policy Plan included improving state soil erosion and sediment control standards, support for the Captain John Smith Chesapeake National Historic Trail, improving local sewage spill notification efforts, and tracking of hickory shad (*Alosa mediocris*) restoration efforts.

Between 2008 and 2010, due to concerns that state soil erosion and sediment control standards appeared to be insufficient to prevent sedimentation to the Patuxent River, the PRC convened forums among river stakeholders and local and state government. In January 2010, as a result of the forums, the PRC submitted a letter to the Governor's Office expressing concern regarding enforcement of existing soil erosion, sediment control, and stormwater management laws and regulations. The PRC asked that MDE "place a high priority on its responsibility for reviewing local programs and providing the necessary guidance to achieve the maximum benefit from these important water quality efforts... [and] publicize its review findings and the

subsequent follow up actions to both elected officials and public interest groups who would support and encourage the necessary corrective actions.”

In response to the letter, the PRC received a formal reply from Governor O’Malley that noted MDE was taking action through improvement in the content and issuance of National Pollutant Discharge Elimination System (NPDES) General Permits, updates of the State’s Standards and Specifications for Soil Erosion and Sediment Control, implementation of the Stormwater Management Act of 2007, and upgrades of municipal stormwater permits for the largest jurisdictions and the State Highway Administration.

After an April 2014 storm led to a sewage spill overflow at the Western Branch wastewater treatment plant, PRC members raised concerns about whether requirements for notifying residents and stakeholders of sewage spills were adequate. In response, the PRC established a workgroup to analyze current state requirements and implementation, and to identify possible legislative or administrative changes that could improve notification. The workgroup includes state and local government representatives, the Washington Suburban Sanitary Commission, and environmental advocates.

In June 2011, the National Park Service (NPS) finalized its interpretive plan for the *Captain John Smith Chesapeake National Historic Trail*, which includes the Patuxent River¹¹. Soon after, the PRC discussed the plan with the Tri-County Council of Southern Maryland to encourage local and state land preservation and tourism efforts that will protect and highlight the trail in perpetuity. Two state agencies, Maryland Department of Natural Resources (DNR), and the Maryland Historical Trust, participate on the Trail’s Advisory Council to coordinate with local governments to achieve this goal within the Patuxent River. Calvert County promotes the trail and allows water access and support services to the trail at several County sites, including along the Patuxent.

As described in the Maryland DNR report, *Hickory Shad restoration in three Maryland rivers*¹² (March 2013), for the past 15 years DNR Fisheries Service has stocked hickory shad in the Patuxent River to restore the population. DNR conducted monitoring in 2012 to continue to assess whether or not the adult hickory shad spawning population within the Patuxent River can support itself, at or above current levels, without the assistance of additional hatchery contributions. The report noted that if the pattern for current abundance and age of the hickory shad continues over the next few years, then the Patuxent River will be deemed to have a self-sustaining hickory shad population. DNR will continue to conduct monitoring in the future to determine if this goal has been reached.

¹¹ http://www.smithtrail.net/files/CAJO_Interpretive_draft.pdf

¹² http://dnr2.maryland.gov/fisheries/Documents/F-57-R-13_Hickory_Shad_report.pdf

MDP Recommendations

To facilitate implementation of the Patuxent River Policy Plan, MDP recommends the following:

1. To reinvigorate Patuxent River restoration efforts, the Maryland General Assembly should adopt by joint resolution the 2015 Patuxent River Policy Plan Update.
2. The PRC should adopt an annual action plan that identifies tasks for each of the draft Plan goals so that the PRC can facilitate local and state progress on particular issues.
3. State and local government should continue to make implementation of stormwater measures a top priority, given that urban stormwater runoff is the greatest source of pollution to the Patuxent River.
4. State and local governments should develop and implement interjurisdictional watershed plans to achieve each of the local TMDLs established for the mainstem and tributaries to the Patuxent River.
5. State and local tourism offices should coordinate a watershed-wide effort to promote recreation and tourism centered on the Patuxent River.
6. PRC should work with State and local stakeholders to develop communications strategies around the most salient issues within the Patuxent River watershed including fish and shellfish health, and recreational opportunities to better engage citizens and local leaders in increased restoration efforts.

Appendix A: Overview of Patuxent River Policy Plan

The Patuxent River Policy Plan currently in place is the 1997 Policy Plan Update, which served as an addendum to the 1984 Policy Plan. This Appendix lists the goals and recommendations from the 1984 Policy Plan, along with the programmatic guidelines from the 1997 Policy Plan Update.

1997 Patuxent Policy Plan Update Programmatic Guidelines

1. Implement a comprehensive watershed management approach to control all sources of pollution and resource degradation.
2. Continue to restore, improve, and protect the habitat function of aquatic and terrestrial living resources.
3. Concentrate new development in and around existing developed areas and population centers while protecting the rural landscape and agricultural economy.
4. Enhance the environmental quality and community design in new and existing communities.
5. Develop a sense of stewardship for the Patuxent River and its watershed through increased public education and participation programs.
6. Provide sufficient funding and staff to support continued programs, policies, and projects to meet the ten recommendations of the Plan.

1984 Patuxent Policy Plan Goals

1. To restore water quality in the Patuxent River to acceptable pre-development levels as defined by dissolved oxygen content and turbidity;
2. To view the river as an integrated system from the headwaters to the Chesapeake Bay for management purposes;
3. To promote a continuous buffer along the river to protect water quality, prevent flood damage to human life and property, preserve wildlife habitats, and provide an open space and recreation resource;
4. To restore and improve the potential for recreational uses of the river including boating, sports, fishing, crabbing, swimming, and aesthetic pleasure;
5. To restore the catch of desired species of fin and shellfish in the river;
6. To protect and enhance the use of the river for fish spawning;
7. To establish and maintain river flow volumes that support the multiple uses of the river;
8. To maintain research capability to identify the key environmental needs of important aquatic species;

9. To preserve and enhance important wildlife habitats throughout the watershed;
10. To protect and enhance the scenic quality of the river;
11. To protect and manage valuable natural resources within the watershed including prime agricultural and forest lands, aquifer recharge areas, and potential sand and gravel extraction sites;
12. To protect the economic and social needs of both upper and estuarine jurisdictions within the watershed;
13. To promote land use patterns and practices that will accommodate growth while protecting water quality goals;
14. To prohibit or regulate the use of hazardous and toxic materials and wastes to ensure that they will not harm the river;
15. To protect valuable cultural resources within the watershed including historic sites and areas that are architecturally unique or picturesque;
16. To determine state funding targets for research, Program Open Space, sewage facility construction and rural and urban non-point source programs;
17. To assure that each county shall be responsible for the cost of mitigating or preventing environmental problems within its jurisdiction.
18. To promote coordinated planning for basin-wide issues requiring interjurisdictional action;
19. To promote the protection of the environmental integrity of the areas surrounding the reservoirs to protect and enhance the water quality of the Rocky Gorge and Triadelphia Reservoirs; and
20. To protect the environmental quality of aquifer recharge areas.

Appendix B: Local Government Implementation of the Patuxent Policy Plan

In addition to Bay TMDL and Phase I MS4 stormwater permit implementation, local governments represented on the PRC undertook the following actions to, in part, implement the Patuxent Policy Plan between 2010 and 2014. These include projects, reports and planning documents that have been approved or are on-going.

Prince George's County

From 2010 to 2014, Functional Master Plans adopted included the Water Resources Element (6/15/2010), Historic Sites and Districts Plan (6/8/2010), and Priority Preservation Area (7/10/2012).

Master and Sector Plans adopted during this time period included the Subregion 4 Master Plan and Sectional Map Amendment which includes a portion of the Patuxent watershed (6/1/2010); Subregion 1 Master Plan and Sectional Map Amendment, the majority of which is within the Patuxent watershed (6/23/2010); the Bowie MARC Master Plan and Sectional Map Amendment that is entirely within Patuxent watershed (1/26/2010); and the Glenn Dale-Seabrook-Lanham Sector Plan and Sectional Map Amendment, a portion of which is within Patuxent watershed (3/26/2010). In 2014 the county adopted its updated land use plan, Plan Prince George's 2035, that focuses on smart growth principles and transit oriented development. The updated land use plan incorporated their Sustainable Growth and Agricultural Preservation Act of 2012 Tiers Map, that was approved by the County Council in 2012 (11/20/12). The county also updated its Chesapeake Bay Critical Area boundaries countywide in 2014. This mapping update included the Critical Area along the Patuxent River.

City of Laurel

The City's Unified Land Development Code Open Space (R-OS) Zone extends along the Patuxent River within the City of Laurel and includes four main goals: a minimum setback for buildings along the Patuxent River; preserve existing natural vegetation; introduce vegetation where needed to help control erosion; and encourage the use of innovative designs and structure which increase storm water infiltration and water runoff quality.

The purpose of the R-OS zone is to implement the water quality and environmental protection goals of the Patuxent Policy Plan and Addendum, and other established natural resource programs and policies for streams and their streamside environments within the City's Patuxent River Watershed and other designated streams or water bodies.

Development of land within these areas will require the application of Best Management Practices in conjunction and approval of site and landscape plans by the City Planning Commission. Particular attention shall be directed towards the preservation of slopes and to areas containing wetlands or unique plant or wildlife habitats.

Howard County

Howard County planning documents approved between 2010 and 2014 include the Water Resources Element (April 2010), PlanHoward 2030 (February 2013), Comprehensive Zoning Plan (October 2013), Growth Tiers Amendment to PlanHoward 2030 (April 2013), Phase II WIP (Nov 2011, revised July 2012), Howard County Land Preservation and Recreation Plan (October 2012) and 2011 Master Plan for Water and Sewer Amendment.

Other Implementation Actions include the addition of ENR to Little Patuxent Water Reclamation Plant (Fall 2011), implementation of a Watershed Protection Fee in 2013 and purchase of permanent Agricultural Land Preservation Easements on 11 properties for a total of 1,246.65 acres in the Patuxent River watershed..

Montgomery County

In July 2010, Montgomery County approved and adopted a Water Resources Functional Plan to comply with House Bill 1141. In September 2012, Montgomery County adopted a Growth Tiers Map. In December 2012, the County approved and adopted the Burtonsville Crossroads Neighborhood Plan. The plan, which amends the 1997 Fairland Master Plan, establishes a vision to transform the existing crossroads into a complete community and provides recommendations for land use, transportation, environment and design that will enable the US29/MD198 commercial crossroads area to thrive. The plan focuses on improving the street network, adding an open space system and recreational opportunities, identifying new residential opportunities, and protecting the sensitive tributary headwaters of the Patuxent River. Key recommendations in the Burtonsville plan that help protect the environment and water quality in the Patuxent River watershed include acquisition of open space by the State and M-NCPPC for parkland, and the use of Rural Cluster (RC) zoning with impervious surface limits in sensitive headwater areas.

Between 1/2010 and 12/2014, a total of about 16 acres of parkland in the Patuxent River watershed within Montgomery County were added to the M-NCPPC park system. Also, under the Department of Parks Weed Warrior Program, which coordinates volunteer efforts to remove invasive plants from natural areas, a total of 335 person-hours within the Patuxent watershed were logged.

Montgomery County also continued its extensive efforts to protect the Patuxent drinking water reservoirs (Triadelphia and Rocky Gorge). This included developing plans to implement local phosphorus and sediment TMDLs for the reservoirs (including cost estimates), a reforestation project of the Oaks Landfill in Laytonsville, and stream valley buffers covering about 8 acres along Reddy Branch and the mainstem of the Hawlings River.

In addition, 100 acres of agricultural land in the watershed were protected under permanent agricultural easements under the County's Building Lot Termination (BLT) program. The

County's BLT program is designed to enhance the effectiveness of the County's Transfer of Development Rights (TDR) program, by further increasing the protection of agricultural land through extinguishing remaining development rights on agricultural properties.

St. Mary's County

The Comprehensive Zoning Ordinance (CZO) implements regulatory protection for sensitive areas including streams, wetlands, floodplains steep slopes, erodible soils, and forest interior dwelling species and habitats of rare, threatened and endangered species, and applies limits on impervious cover, and development impacts with 1000 feet of tidal waters and wetlands.

2013 Stormwater Management, Grading and Sediment Control Ordinance requires use of environmental site design to the maximum extent possible (ESD-MEP) and use of low impact BMPs to provide maximum infiltration and provide both water quality and quantity controls.

CZO regulatory protection includes 100 foot buffers from tidal waters, perennial streams and wetlands of state concern, and 50 foot buffers from nontidal wetlands, intermittent streams and floodplain.

Retrofits opportunities to add water quality BMPs to installed stormwater quantity BMPs were identified in the Phase II Watershed Implementation Plan submitted in 2012 and funding for implementation of the identified sites is in place and first round retrofits is in progress.

The 2010 Comprehensive Plan and Growth Area master plans recommend increased development potential in the Patuxent watershed growth centers of Lexington Park, Hollywood, Charlotte Hall, New Market and Mechanicsville, but also downsized Mechanicsville to protect sensitive headwater areas in the Patuxent Watershed. Growth since 2012 is occurring in areas with sewer to due ongoing limits on major development on septic systems pending adoption of TIER maps by the County.

In accordance with the St. Mary's County 2012 Land Preservation, Parks, and Recreation Plan, the county continues to seek new and manage existing tracts of recreational and passive parks and open space to serve residents and provide increased access to the Patuxent River.

Rural development has been significantly curtailed in rural areas through the county's TDR program. Adopted 2012 CZO regulations limit impact of development on rural farm and forest lands to preserve rural character and resources in the county. The Huntersville Rural Legacy area was expanded in 2011. County, Rural Legacy, and Department of Defense's Readiness and Environmental Protection Integration (REPI) Program funds were used in 2010, 2012 and 2013 to protect forest and agricultural lands in the Patuxent River watershed.

Anne Arundel County

In compliance with the Anne Arundel County's NPDES MS4 Permit requirement to conduct watershed assessments in all of its major watersheds, the County initiated an assessment of the

Little Patuxent River Watershed in 2011 and completed the field data collection in 2013. The final report was completed during the summer of 2014. The watershed assessment for Anne Arundel County's portion of the Middle Patuxent is scheduled to begin during the spring of 2015.

In 2013, Anne Arundel County created a Watershed Protection and Restoration Special Revenue Fund and Program. The first stormwater remediation fee bills went out in July of 2013, and the Watershed Protection and Restoration Program was created within the County's Department of Public Works to implement the County's required stormwater strategies.

In 2010 the County revised its Storm Water Management Practices and Procedures manual that manages new development runoff in response to the adoption of the ordinance concerning Floodplain Management, Erosion and Sediment Control, and Stormwater Management. The manual evaluates the environmental impact of building so a project can be designated to allow rainwater to percolate into the ground instead of rushing into failing waterways for new developments.

The County's Master Plan for Water Supply and Sewerage Systems was updated in 2013. The revision to the Master Plan included text changes that updated all information based on current land use, zoning, population, and flow projections; updated information on on-site disposal systems (OSDS) and strategies for reducing nutrient loads based on the OSDS Evaluation Study; updated information regarding NPDES limitations, TMDLs, Enhanced Nutrient Removal requirements, and the impact on the County's long range treatment capacity; and updated financial data and Capital Improvement Program items. The revision also included map changes that updated service categories, sewer service areas, and water pressure zone boundaries to reflect areas that are now served; moved some areas from the Future and No Public Service categories to the Planned Service category to allow extension of public utilities where appropriate; expanded the Annapolis and Cox Creek Sewer Service Areas to include adjacent communities on septic systems that are in designated OSDS management areas; and updated all facility and pipe information on the water and sewer maps.

The Office of Planning and Zoning adopted Growth Tiers administratively on June 17, 2013.

Charles County

For the period 2010 to 2014 Charles County adopted several codes and implemented plans and practices which support of the Patuxent River Policy Plan: the Charles County Stormwater Management Ordinance (August 2010); Water Resources Element (May 2011); the Benedict Waterfront Village Revitalization Plan which enhances community access to the Patuxent River (January 2012); update to the Charles County Critical Area Program to implement the State's new buffer, density, reforestation and shoreline erosion control regulations within 1,000 feet of tidal waters (June 2012); the Watershed Protection and Restoration Program (June 2013); the

Sustainable Growth and Agricultural Preservation Act of 2012 Tiers Map (April 2014); and the Purchase of Development Rights Program (November 2014).

In addition to adopting codes and plans, Charles County has been implementing plans and practices that also support the Patuxent River Policy Plan: the Charles County Phase II Watershed Implementation Plan Strategy (February 2013) which is implemented in 2-year phases, of which the first 2012-2013 phase is complete and the next phase underway; use of Bay Restoration Fund grants for installation of nitrogen removal technology on septic systems (ongoing); initiation of Septic System Reimbursement Program to encourage citizens to pump their septic tanks on a regular basis (July 2014); activities to meet the County's 20% impervious restoration requirement under the Phase I NPDES stormwater permit (ongoing); continuing the study of options for connecting the Benedict community to public sanitary sewer (ongoing); installing bio-retention facilities, a historic information sign, and a new waterfront boardwalk in the Benedict Community to revitalize and encourage community access to the Patuxent River (August 2014); funding the rehabilitation of the Maxwell Hall historic home near the Patuxent River for public access (2014); and coordinating the County's March from Benedict events for the State's 200th Anniversary Celebration of the War of 1812 at Benedict and nearby Maxwell Hall historic site (August 2014).