

**Anne Arundel County 2014 - 2015 Programmatic Two-Year Milestones  
FINAL Progress Report  
January 1, 2014 – December 31, 2015**

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
<b>Urban Stormwater</b>				
	<u>Core Urban Stormwater Strategy – Tier I</u>			
Ongoing	Implement the County’s Watershed Protection and Restoration Program (WPRP)	Fully staffed and implemented program	DPW	Implementation of the WPRP continued in 2014 and 2015. Hiring of the majority of funded positions is complete. As implementation of the program continues the County continues to assess, evaluate and reallocate staffing and funding needs. Project tracking and financial accounting policies and procedures have been developed. Design and construction of CIP restoration projects funded in FY14, FY15 and FY16 are underway. New procurement tools were developed to facilitate design and construction contracting.

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
On-going	Broaden Public Awareness and understanding of the Stormwater Remediation Fee and WPRP	Public Presentations. Outreach and education documents. Enhanced Program web site.	DPW	During 2014 WPRP developed a comprehensive web-based informational program including a dedicated webpage, Facebook page, and Twitter account to provide residents with an overview of the WPRP and fee, restoration plans, watershed assessments and educational resources regarding stormwater pollution. WPRP staff conducted sixteen (16) presentations to community groups and utilized local media outlets to promote the program and highlight accomplishments. In 2015, WPRP continued to expand its web-based informational program and social media campaign using Facebook and Twitter to provide stakeholders with an overview of the WPRP, restoration projects updates, grant opportunities, maps, and schedules, watershed assessments and educational resources regarding stormwater pollution. WPRP staff also conducted thirty-six (36) formal presentations to school-aged children, and local community and watershed organizations throughout Anne Arundel County. WPRP continued to utilize local media outlets to promote the program and highlight accomplishments.

<b>Target Date</b>	<b>Milestone</b>	<b>Deliverable</b>	<b>Lead Agency</b>	<b>Comments/Status Updates</b>
On-going	Investigate and establish public/private partnerships to leverage funding and implement WIP restoration projects	Final Framework for Implementation	DPW	WPRP initiated a grant program partnership with the Chesapeake Bay Trust in 2014 to provide funding to NGOs for restoration projects. The grant program funded seven (7) restoration projects in the first year received applications for twelve (12) projects for Year 2 funding. Additionally, DPW provided several letters of support for non-profit restoration grant applications to a variety of funders. Several of these projects were funded. Opportunities are being investigated as they arise for developing public/private partnerships focused on environmental restoration.

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
On-going	Refine the County's Stormwater BMP Database	Refined Database	DPW	<p>Corrections and updates to the County's BMP data base are being made as project managers conduct assessments of BMPs identified for retrofit, rehabilitation, enhancement, and construction. This process will continue as future WIP restoration and new development projects are constructed. Additionally, WPRP staff has been working with staff in Inspections and Permits (I&amp;P) and the Bureau of Highways (BOH) to create a unified stormwater BMP tracking system. The Stormwater BMP tracking system was enhanced in 2014 and 2015 to include construction inspections and maintenance inspections by I&amp;P. The BMP tracking system for the County will ultimately allow inspection data to be added remotely. In 2015 the County contracted to refine data capture procedures and to refine the databased structure for the County's storm drain system. During this period, the County also focused on review and clarification/coordination of existing and historic stormwater BMP data records. The database structure will be modified as necessary to remain compliant with MDE's required data base structure.</p>

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
12/2015	Identify, prioritize and establish a schedule for joint SHA/AACo implementation projects.	Prioritized list of WIP restoration projects and associated map identifying SHA projects, AACo. projects, and location of joint implementation projects. List and map accompanied by a coordinated implementation schedule	DPW	AACo and SHA continued meeting quarterly to coordinate WIP implementation projects, identify opportunities for collaborative implementation, monitor progress and allocate potential TMDL credits. Identifying restoration opportunities in the Jabez watershed was a primary focus during 2014 and 2015. SHA contracted an assessment of the watershed which was completed in 2015. Subsequently, the County and SHA began the development of a coordinated approach to restoration implementation. A boiler plate Memorandum of Understanding was drafted in 2015 between SHA and the County and will serve as a template for allocating project task responsibility and credit allocation for future projects. Restoration of the headwaters of Warehouse Creek was previously listed as a priority for implementation in the County, and a project that could be jointly executed with SHA. This project and the continued Jabez effort were the primary implementation focus of the County's work with SHA in 2015.

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
12/2015	Improve Federal, State and Local permitting process for restoration projects.	A permitting process that reduces the amount of time to secure federal, state and local permits for restoration projects.	DPW	During 2015 the County continued working with state and federal partners, as well as the Chesapeake Bay Trust, to carry out the first grant round for Maryland's Pooled Monitoring Program looking at stream restoration research. In addition, the County worked with other Maryland MS4 jurisdictions to request that MDE put processes in place to expedite restoration permitting. MDE has committed to doing so. The Corps' Regional General Permit for TMDL activities came out in early July, and the County began utilizing it in the fall of 2015.
On-going	Require new development to provide an adequate, stable outfall for stormwater discharges from their site into receiving waterways.	Continue to implement adequacy of public facilities regulations as they pertain to outfall adequacy.	OPZ	Since the adoption of the new State stormwater management regulations by Anne Arundel County in 2011, the County has required a demonstration of outfall adequacy, not just in terms of downstream flooding, but also stability. This work is in addition to the stormwater management requirements otherwise required for new development.
	<u>Core Urban Stormwater Strategy – Tier II</u>			

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
12/2015	Examine the County's current street sweeping program to determine opportunities for expanding the current program to allow monthly sweeping of all curbed roads.	Targeted street sweeping program	DPW	During 2014 the County contracted for street sweeping services. These services will augment the existing County street sweeping program and expand as the Stormwater Remediation Fee is phased in and additional revenue becomes available to encompass additional curbed County roadways. Currently, the County is targeting those curbed roads with high traffic volumes or outfalls that discharge to and/or touch a tidal or non-tidal water body within the Patapsco River watershed, the priority area given the Baltimore Harbor Trash TMDL. In 2015 the County initiated a contract to geo-locate and prioritize additional street segments for sweeping in the Patapsco watershed.
12/2015	Examine the County's current inlet cleaning program to determine opportunities for expanding the current program to allow routine cleaning of storm inlets.	Targeted inlet cleaning program	DPW	During 2014 the County's Bureau of Highways (BOH) hired two (2) vacuum truck operators and began the process of purchasing two (2) additional vacuum trucks for the inlet cleaning program. In 2015, the County began the process of purchasing one (1) replacement vacuum truck to replace one of two existing aging units. All three (3) vacuum trucks purchased for the inlet cleaning program are due to arrive in mid-2016.

<b>Target Date</b>	<b>Milestone</b>	<b>Deliverable</b>	<b>Lead Agency</b>	<b>Comments/Status Updates</b>
Ongoing	Coordinate the Bureau of Highways (BOH) rehabilitation projects with the Bureau of Engineers (BOE) WIP implementation projects to maximize opportunity for load reduction.	Convert Infrastructure Management Division's culvert and storm drain rehab data base to a geospatially referenced map.	DPW	Mapping culvert and storm drain rehabilitation projects will facilitate project coordination and implementation. Through this effort tracking and management of stormwater/storm drain assets will be further enhanced. Routine coordination meetings are held between the Capital Implementation staff and the BOH staff. BOH, Infrastructure Management Division (IMD) staff will initiate discussions regarding mapping needs and enhancements in January 2016.
12/2015	Complete hiring staff authorized in the FY14 and proposed in the FY15 budget to augment existing staff to address culvert and closed storm drain issues and closed storm drain maintenance (e.g. inlet cleaning).	Hire 10 positions in the Bureau of Highways	DPW	The majority of WPRP positions funded in the BOH have been hired. As the WPRP program reaches full implementation staffing needs are being reassessed.

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
12/2015	Engage Watershed Organizations in WIP implementation	Achieve engagement of and coordinate watershed organizations within the County in watershed implementation projects.	DPW	The Severn Riverkeeper, South River Federation, West/Rhode Riverkeeper and the Watershed Stewards Academy (WSA) are all actively engaged in restoration projects within the County. Other smaller organizations operating within the County are working to increase their capacity to conduct restoration work. WPRP staff is actively engaged in assisting NGOs new to restoration to increase their knowledge and capacity. The County's Grant Manager is working with local community organizations to help them negotiate the local permitting process as well as select viable sites for potential grant-funded projects. In addition, in FY15, the County formalized its financial relationship with the WSA.

Target Date	Milestone	Deliverable	Lead Agency	Comments/Status Updates
12/2015	Work in collaboration with watershed organizations to leverage and secure grant funding for implementation projects.	Letters of Support for grants to local watershed organizations that provide funding for restoration projects. In kind match on projects that achieve load reduction.	DPW	<p>The Dept of Public Works continued to provide letters of support to NGOs for grant applications for restoration projects. In 2014 the County's WPRP developed a new <i>Anne Arundel County Watershed Restoration Grant</i> in collaboration with the Chesapeake Bay Trust. The grant funds design and implementation costs for water quality projects proposed by NGOs, community associations and faith-based organizations. The first round of the <i>Anne Arundel County Watershed Restoration Grant Program</i> funded seven projects that should be complete by the spring of 2016. The application due date for the second round of grants was 12/3/2015. Twelve (12) applications were received and are being evaluated. More information on the grant program can be found at: <a href="http://www.cbtrust.org">www.cbtrust.org</a></p> <p>The Dept. of Public Works Watershed Protection and Restoration Program hired a Grants Manager in 2015 to assist applicants in project implementation and to assist the County in applying for grant funding for County projects. Additionally the County provided initial funding to support UMCES research on hypoxia and nutrient budgeting in the Rock Creek estuary.</p>

12/2015	Collaborate with the Anne Arundel Watershed Stewards Academy (WSA) to Train community leaders to coordinate residential restoration and stormwater outreach	150 hours of training to certify 50 master Watershed Stewards and provide continuing education to 100 additional Stewards. Convene two annual conferences to network stormwater professionals, government officials and Stewards. Provide support services and networking for 150 Stewards.	DPW/WSA	WPRP staff coordinated with the Watershed Stewards Academy (WSA) to focus the outreach and restoration efforts of Stewards in watersheds targeted for WIP implementation projects. Watershed Stewards work in areas where the County has programmed CIP implementation projects to engage communities in advance of project initiation. During 2014, twenty-three (23) Master Watershed Stewards were certified and twenty-five (25) additional candidates from WSA Class 6 completed their instruction and were working on their capstone projects. The WSA held three (3) networking meetings and offered eight (8) continuing education courses. All certification and continuing education courses were instructed by stormwater professionals or Master Watershed Stewards. As a group, the Master Watershed Stewards gave over three thousand five hundred (3,500) volunteer hours toward engaging communities in stormwater education and restoration. In the fall of 2014, WSA accepted forty-five (45) new Master Watershed Steward Candidates into the WSA Class 7 Certification Course. The Class 7 Certification Course was divided into two tracks: Riverwise Congregations and Rainscaping. The Riverwise Congregation Program, a partnership of WSA, the Alliance for the Chesapeake Bay and Interfaith Partners for the Chesapeake to engage faith communities in action for cleaner water. During 2015 twenty-seven (27) of the forty-five (45) new Master Watershed Steward
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			<p>Candidates were trained to implement and maintain stormwater projects on congregation land and provide environmental education and outreach in faith congregations throughout Anne Arundel County. During their candidate year faith based Stewards will have reached over twelve thousand (12,000) people from faith congregations with information and resources to reduce pollution, installed thirty (30) rain gardens, eighteen (18) conservation landscapes, two hundred (200) trees, forty (40) rain barrels, two (2) large areas of impervious surface removal and one (1) stormwater pond retrofit, for a total of twenty-three (23) acres of impervious surface treated. The WSA Class 7 Certification Course consisted of sixty-four (64) hours of field and classroom training for forty-five (45) Steward Candidates. WSA offered five (5) continuing education classes (Behavior Change 201, Rain Barrel Installation Workshops, Native Plant Communities and the Watershed Protection and Restoration Program Community Grant Program.) Over two hundred (200) Stewards, professionals and community leaders attended the WSA Annual Conference held February 28, 2015. In addition to continuing education classes, and the annual conference, WSA also provided networking meetings, electronic and print communications and resource connections to the one hundred and seventy (170) Master Watershed Stewards and Candidates. On February 1, 2015 the County WPRP executed a formal agreement</p>
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				<p>between the County and WSA for the WSA to provide stormwater and water quality education and outreach services for a period of five (5) years.</p>
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12/2015	The Watershed Stewards Academy will support community leaders to coordinate residential restoration and stormwater outreach.	200 rain barrels installed. 8,000 native plants and trees planted. 200,000 square feet of new residential and community restoration installed. Direct outreach and education on stormwater awareness topics to over 15,000 citizens. Tracking, maintenance and /or renovation of 50-100 of existing BMPs.	DPW/WSA	In 2014 the WSA continued cultivating community leaders to take action in their local communities to improve the health of their waterways and restore their watersheds. Watershed Stewards engaged a number of institutions throughout the County through outreach, education and hands-on-projects. In 2014, the WSA engaged seven hundred and eighty (780) community volunteers, reached over five thousand (5,000) people in on-on-one outreach on stormwater topics, installed fifty-five (55) rain barrels and nine (9) cisterns, planted over fourteen thousand (14,000) native trees and plants, created three hundred seventeen thousand, eight hundred and eighty-seven (317,887) square feet of stormwater restoration, and removed approximately thirty thousand (30,000) square feet of invasive plants. During 2015 an additional twelve (12) rain barrels capturing six thousand seven hundred and sixty-five (6,765) gallons of stormwater during each major rain event. Watershed Stewards planted two thousand five hundred and seventy-six (2,576) native trees and six thousand eight hundred and twenty-four (6,824) native plants for a total of nine thousand four hundred (9,400) native plants and trees installed in four hundred and ninety-one thousand six hundred (491,600) square feet of residential and community restoration. Stewards provided direct outreach and education to almost nine thousand (9,000) people in the County. During 2015 a restoration monitoring system was implemented and most projects from
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				2009-2014 were inspected. Stewards who helped to install projects that were determined to be in need of maintenance were contacted to attend a maintenance workshop in August.
12/2015	Develop a Clean Water Communities Certification. Work with WSA to explore ways that the WPRP can incentivize communities to achieve Clean Water Communities Certification. Augment the online resources provided by the DPW WPRP to provide greater connection between citizens, the WPRP and action to reduce stormwater originating from residential property.	Pilot the Clean Water Communities certification in two communities including the installation of 28 homeowner BMPs and promotion of two behavior change campaigns to reduce polluting behaviors in pilot communities. Expanded website and mapping resources to connect citizens with the WPRP and to incentives for individual actions to reduce stormwater.	DPW/WSA	WSA piloted its “Clean Water Communities” neighborhood certification program in the community of Hillsmere in 2014 where homeowners are being engaged in an intensive effort to reduce pollution and stormwater runoff in their neighborhood. . Through the “Clean Water Communities” program in Hillsmere, nine (9) cisterns and seven (7) rain gardens across ten (10) properties were installed to prevent two hundred and one thousand four hundred and five (201,405) gallons of runoff from entering Duvall Creek each year. This is equivalent to a 20% reduction in runoff across twenty (20) residential parcels in close proximity to each other. During 2015 The Clean Water Communities Program was piloted in Linthicum including site assessment, design and installation of projects to reduce runoff by 20% across ten (10) parcels in two (2) target areas. Several web-based tools were developed to assist Stewards and communities in the installation of rainscaping projects. These tools include: (1) Runoff Calculator, a planning level tool designed to simulate the runoff reduced through the implementation of rainscaping projects, (2) Conservation Landscape Design Tool, (3) WSA Rainscaping Guidebook – 2 versions (Homowners and Contractors). A

				Behavior Change Handbook was completed in Summer 2014, and two additional behavior change campaigns were created; a Pet Waste campaign and a Clean Lawn Care Program designed to assist lawn care companies and their customers in reducing harmful chemicals were created and piloted.
<b>Wastewater Source Sector</b>				
12/2015	Start-up and optimize new ENR facilities (e.g., Broadneck WRF, etc.) upon completion of construction.	Conditional Acceptance for contracts	DPW	In progress. Maryland City WRF complete as of January 2015. Broadwater, Patuxent, and Annapolis WRFs are operational and in performance phase. Cox Creek, Broadneck and Mayo WRFs are under construction.
12/2016	Maintain progress on Cox Creek WRF ENR construction project.	Ongoing construction work	DPW	In progress. Project was initiated in 2013 and is ongoing with completion slated for the end of 2016.
12/2016	Explore utilizing performance below pollution load caps as a way to extend the County's compliance schedule for other pollution sectors.	Nutrient trading framework	DPW	In progress. DPW staff are serving on MDE's nutrient trading work group, convened in early 2016.
<b>Septic Source Sector</b>				
	<u>Large CIP Program</u>			
12/2015	Determine long term funding methods to pay for connection of existing OSDS to public sewer and cluster treatment systems.	Financial Plan for implementing program	DPW	In progress. Preliminary discussions have been held within the County. New Contract X764249 has been opened for an OSDS Conversion Program Manager. Financial Planning will be a core competency. It is anticipated that the contract will be underway in 2016.

12/2015	Develop mechanisms and policies to achieve funding.	Formal establishment of revised rates or fee structures via legislative action by County Council	Budget Office	In progress. Formal recommendations will be developed after the program approach and financial plan have been determined. New Contract X764249 has been opened for an OSDS Conversion Program Manager to assist with this work effort. It is anticipated that the contract will be underway in 2016.
12/2015	Modify the County Code and administrative procedures as needed to provide authorization for the program.	Legislative code changes	Law Office	Proposed legislation and/or administrative procedures will be developed after key program elements have been finalized. It is anticipated that these discussions will be ongoing in 2016.
12/2014	Develop a tracking and reporting system to follow the progress of OSDS conversion and upgrades.	Reporting forms and transmittals. Database sharing as needed.	DPW	Complete. The County applied for and received a Chesapeake Bay Trust Watershed Assistance Grant to support this effort.
12/2015	Determine staffing requirements and pursue position authorization within the Dept. of Public Work, Dept. of Inspections & Permits, and Office of Planning & Zoning to support the expected workload.	Requests of position authorization.	Multiple agencies	In progress. As the number of contracts and estimated costs per year are more fully developed, County departments will project the staffing necessary to support the program.

12/2015	Develop scope descriptions and tasks for workload to be delegated using staff augmentation contracts.	Procurement of contract(s) for management of specific portions of the program.	DPW	The Department of Public Works will finalize its staffing and management plan once the program funding levels have been established. Staff augmentation contracts will be developed as part of this process. The County has opened a new contract, Contract X764249, for on OSDS Conversion Program Manager. Program Management will be a core competency. Additionally, the Utility Finance unit in the DPW hired a BRF administrative position
12/2015	Review and clarify legal and administrative policies to connect existing OSDS to public sewer and cluster treatment systems.	Internal legal brief(s)	Law Office	This review of current policies will be conducted once the overall program implementation approach has been determined.
12/2015	Review and clarify permitting requirements to connect existing OSDS to public sewer and cluster treatment systems.	Internal memorandum	DPW & OPZ	Complete. Review and clarification of permitting requirements was to occur in tandem with development of the septic tracking and reporting system. No changes to the permitting process were identified during the project.
12/2015	Develop Countywide Public Relations Strategy.	Written strategy for engaging the public and providing timely and accurate information.	DPW	In progress. It is anticipated that this strategy will be developed as part of the staffing and management plan and may or may not draw on outside resources. The County has opened a new contract, Contract X764249, for an OSDS Conversion Program Manager. Public relations will be a core competency.

12/2015	Develop new requirements and boundaries for the proposed Cluster Treatment Areas for incorporation into the Water and Sewer Master Plan.	Updated Master Plan areas as needed.	DPW & OPZ	In progress. Cluster areas have been identified, but specific boundaries still need further development.
12/2015	Pursue new legislation that authorizes mandatory participation by residents and businesses on septic systems for connection to the public sewer system where recommended to achieve TN pollutant reduction.	Proposed legislation as needed	Law Office	Proposed legislation and/or administrative procedures will be developed after key program aspects have been finalized. The County has opened a new contract, Contract X764249, for an OSDS Conversion Program Manager. Public and Environmental Policy will be a core competency. Mandatory participation may not be required.
12/2015	The Dept. of Public Works and the Health Department will work collaboratively to develop technical standards for new cluster systems capable of nitrogen removal.	Standard specifications and details as needed	DPW	On Hold. DPW and Health Dept. initiated regular meetings during the latter half of 2013. These meetings continued in 2015. During those meetings it was determined that the use of cluster systems may be limited and therefore the development of formal standard designs may be unnecessary.
12/2016	Pursue new State legislation to allow communities to use a Special Community Benefit District (SCBD) to cover community costs for septic to sewer conversions	Proposed legislation as needed	County Administration	The County Administration has introduced legislation to the Maryland General Assembly during the 2016 session to allow a broader use of SCBD funds.
<b>Septics Source Sector – Cont'd</b>				
	<u>Small CIP Program</u>			

12/2015	Determine whether the program will be voluntary-only or a combination of mandatory and voluntary, and develop the necessary administrative procedures or legislation.	Small CIP Program Implementation Plan	DPW & Law Office	Proposed legislation and/or administrative procedures will be developed after key program aspects have been finalized. The County has opened a new contract, Contract X764249 for an OSDS Conversion Program Manager. Public and Environmental Policy will be a core competency. Mandatory participation may not be required. It is anticipated that this contract will be underway in 2016.
12/2015	Determine how costs will be shared by existing homeowners.	Small CIP Program Implementation Plan	DPW – facilitate	In progress. Discussions in 2014 and 2015 focused on the County’s existing petition process and its suitability to the septic conversion program. Discussions will continue into 2016 on how to modify or develop a new process to facilitate septic connections.
12/2015	Consider the issue of equity between homeowners connected through the large CIP Program and those connected through the small CIP Program. In general, connections through the Small CIP Program are expected to be lower cost projects.	N/A – will be incorporated into the program fee structure	DPW – facilitate	See status of previous milestone. Further program development may draw on outside resources to facilitate.
12/2054	Explore incentive systems for individual homeowners to increase interest in voluntary participation.	Summarize options in internal memorandum	Various	In progress. The Department of Public Works and the Health Department held meetings in 2014 to discuss BRF funding possibilities. DPW and the Health Dept. met with MDE to discuss funding possibilities for one sample area.

12/2015	Develop a system in coordination with the Department of Health for identifying and prioritizing areas to determine upcoming projects to be performed each year.	Finalized Prioritization System	DPW	In progress. In 2015 the County received a grant from the Chesapeake Bay Trust Watershed Assistance Grant Program through MDE to develop a prioritization system. A contract has been opened, Contract X764250, to develop the prioritization system. It is anticipated that this work will be completed in 2016.
N/A	Develop a public outreach program to notify neighborhoods of upcoming projects.	N/A – Will be incorporated into the public relations strategy	DPW	In progress. The County has opened a new contract, Contract X764249, for an OSDS Conversion Program Manager. Public Relations will be a core competency.
12/2015	Determine an annual funding level for the program implementation.	Set yearly appropriation level for contract(s).	DPW	In progress. The initial Small CIP Program development task is complete. An appropriation level will be established as the program moves forward to implementation. The County has opened a contract, Contract X764249, for an OSDS Conversion Program Manager. Financial planning will be a core competency.
12/2015	Determine staffing requirements within the Dept. of Public Works and the Health Dept. to support the program.	Requests for positions where determined necessary	Various	Staffing requirements will be directly related to the decisions regarding the annual program funding level.
<b>Septics Source Sector – Cont'd</b>				
	<u>Private Sector Facilitated Upgrades</u>			

12/2015	Develop new policies and procedures to minimize construction of new systems in management areas designated as high priority for conversion to point source treatment. These new policies will be developed in accordance with Senate Bill 236 (Sustainable Growth and Agricultural Preservation Act of 2012	Published guidance regarding requirements for new development in accordance with Growth Tiers.	DPW/OPZ	The County's Growth Tiers were certified in 2013. Information on the Tiers is posted on the County's web site. Initial meetings have been conducted to address components of the Water and Sewer Master Plan. Now that the County's Growth Tiers have been developed further progress on this milestone will be made.
12/2015	Develop new policies to further reduce nutrient loading from future OSDS.	Internal meetings to review additional policies to encourage additional OSDS load reduction	DPW/OPZ	In progress. The County has received inquiries regarding connection credits to be provided to developers. Further discussions will be held in 2016.
<b>Septic Source Sector – Cont'd</b>				
	<u>OSDS Nitrogen Reducing Units</u>			

On-going	Provide educational materials to the public on septic system maintenance	Educational materials; DVDs, septic system records, scheduled maintenance folders and brochures.	Health Dept.	Continue to educate Anne Arundel County residents and businesses on proper maintenance of an on-site sewage disposal system. Continue to recommend septic tank inspections and pump-outs be conducted by a licensed liquid waste hauler once every three years. Annually distribute four hundred and fifty (450) copies of educational materials in the form of DVDs, records, file folders, and brochures to County residents and businesses to meet the Septic System Maintenance requirement goals. Nine hundred and twenty-six (926) copies of educational materials were distributed to County residents and businesses in 2014 and 2015.
On-going	Enforcement of Property Maintenance Code requirements	Enforcement of identified Code violations involving improper maintenance of septic systems.	Health Dept.	Continue to enforce the requirements of the Anne Arundel County Property Maintenance Code. The Anne Arundel County Property Maintenance Code (PMC) requires that property owners maintain their septic systems in a safe, sanitary and functional condition. Where a violation is identified, Anne Arundel County enforces the requirements of the Maintenance Code including the issuance of notices, citations, and civil fines. One hundred and seventy-seven (177) cases of violations of the Anne Arundel County PMC were enforced involving overflowing or failing OSDS during 2014 and 2015.

On-going	Maintain accurate inventory of developed accounts served by on-site disposal systems.	Accounts with accurate septic system information.	Health Dept.	Continue to develop and perform quarterly updates to accurately assess the inventory of developed accounts served by on-site sewage disposal systems. This inventory is critical to the assessment of the State's Bay Restoration Fund, and to ensure accurate accounting of nitrogen reducing units and Best Available Technology for tracking purposes. The Department of Health conducted quarterly assessments of the inventory and provided the listing of developed properties with OSDS and number of users of each OSDS to the Office of Finance for billing purposes.
On-going	Work with private sector firms to encourage innovative and lower cost solutions to on-site septic treatment.	Coordinate with MDE and local agencies to make Anne Arundel County a testing ground for innovative OSDS technologies	DPW/Health Dept.	Anne Arundel County is currently coordinating with Elm Street Developers to pilot a local BAT OSDS technology in the County in parallel with the testing of the technology by the National Science Foundation (NSF).

For Submittal to MDE

**ANNE ARUNDEL COUNTY GOVERNEMENT**

Chesapeake Bay TMDL

**2-Year Implementation Milestones**

FINAL Progress Report

Progress Achieved from July 1, 2013 – June 30, 2015

Submitted by:  
Anne Arundel County  
Department of Public Works  
Annapolis, MD

## MILESTONES

### WASTEWATER SOURCE SECTOR

#### 2014 – 2015 IMPLEMENTATION MILESTONES

### WASTEWATER SOURCE SECTOR

#### Major Municipal WWTPs (ENR Upgrades)

##### 2014 – 2015 Implementation Milestones

##### ENR Project Implementation

*STATUS: Complete ongoing construction projects in accordance with the schedules below:*

FACILITY	COMPLETION DATE
Annapolis WRF	Operational June 2015
Broadneck WRF	2016 – Schedule under review
Broadwater WRF	Operational June 2015
Cox Creek WRF – Phase I	Complete
Cox Creek WRF – Phase II	January 2017
Maryland City WRF	Complete
Mayo WRF	January 2017
Patuxent WRF	Complete

### SEPTIC SOURCE SECTOR

#### Implementation of Anne Arundel County's Onsite Sewage Disposal System (OSDS) Strategic Plan

##### 2014 – 2015 Implementation Milestones (Large CIP Program)

Approximately every three weeks DPW holds internal coordination meetings to review progress on the overall program. Agenda topics vary depending on ongoing activities. New tasks or activities that are identified as being required to support an aspect of the program are assigned a tracking number based on calendar year and entered into a log. Due dates are loosely assigned and tasks are generally completed based on the dependence of other tasks.

A copy of the Task List as of January 2016 is provided as supplemental information in *Appendix A*. More detailed descriptions can be provided if necessary. The list reflects when tasks are identified and added to the list rather than the completion date. As such all dates provided are to be construed as approximations.

- Determine core features of program such as funding and participation through interdepartmental discussions and with direction and action by the Council and Administration as needed.

*STATUS: During 2013, the Department of Public Works (DPW) identified four (4) separate tasks related to the development of local policy, two (2) of which are now completed. During 2014, DPW identified thirty-six (36) separate tasks related to the development of local policy, twenty-six (26) of which are now completed. In 2015, sixteen (16) new tasks were identified related to local policy, eight (8) of which were completed.*

- Consistent with program features, evaluate the potential for increased staffing in project management, public relations, and other areas either through direct hiring or staff augmentation contracts.

*STATUS: Formal recommendations will be developed after the program approach and financial plan have been determined.*

- Consistent with program funding, initiate designs for capital projects within the Priority Management Areas.

*STATUS: Formal recommendations will be developed after the program approach and financial plan have been determined.*

- Refine sewer extension and cluster treatment system preliminary plans and cost estimates based upon site specific engineering studies. Update costing information as appropriate with recent bid prices.

*STATUS: DPW has developed conceptual layouts and cost estimates for approximately one hundred and forty (140) separate projects that could be included in the Large CIP Program. Individual tasks have been completed in-house and through the use of consultants under Open End contracts. DPW has closed out seven (7) of eleven (11) separate tasks opened in 2013 related to the Large CIP program layouts and cost estimates. DPW completed nineteen (19) of thirty-one (31) separate tasks opened in 2014 related to the Large CIP Program layouts and cost estimates. In 2015, three (3) additional tasks were identified related to the Large CIP Program and cost estimates.*

*These estimates are preliminary and work is still in progress on updating and reconciling information. In addition, it is not anticipated that all projects identified will be taken through to construction.*

- Submit to MDE a strategic plan defining the areas and projects to be included in the Large CIP Program.

*STATUS: Submission of a strategic plan is expected during calendar year 2016. The County has initiated a new contract, X764249 – “OSDS Strategic Plan”. This contract will retain the services of a program management team with expertise in multiple areas including: engineering and construction, financial planning, public and environmental policy, public relations, and program management.*

- Submit budget requests to support design and construction contracts within the Priority Management Areas.

*STATUS: The County completed the following studies related to providing public sewer to areas currently served by septic systems.*

- *Contract X764237 – Mid-size Sewer Extensions*
- *Contract X764235 – Annapolis Sewer Extension*
- *Contract X764233 – Bodkin Point Septic Conversions*

*Budgeting for design and construction contracts will be dependent upon the final program approach, identification of funding needs, and determination of which areas will be given the highest priority.*

- For the Broadneck Sewer Service Area, prepare an overall schedule for the design and construction of the sewer system expansion to facilitate a systematic and logical progression for retirement of septic systems.

*STATUS: The County completed the following studies related to the Broadneck Sewer Service Area:*

- *Contract X764234 – Lower Broadneck Extensions Phase I*
- *Contract X764238 – Lower Broadneck Extensions Phase II*
- *Contract X764240 – Large CIP Implementation Plan*

#### 2014 – 2015 Implementation Milestones (Small CIP Program)

- Connect existing OSDS to public sewer through existing sewer connection contract depending on current contract funding.

*STATUS: The County re-issued a blanket order contract for water and sewer house connections. This contract provides a method for providing connection where existing sewer abuts property but connections were not made as part of a previous capital project.*

- Create a new Project in budget to fund small extension and connection work.

*STATUS: Creation of new project series in the Capital Budget will be done once program funding is established. The County completed Contract X764239 – “Small CIP Program Plan” to develop layouts for areas not included in the Large CIP layouts. The County has also opened a second contract, X764246 – “Small CIP Program Plan – Phase 2” to be completed in 2015. Information from these contracts will be used to establish the basis for the annual funding level.*

- Determine core features of program such as funding and participation through interdepartmental discussions and with direction and action by the Council and Administration as needed.

*STATUS: DPW held multiple meetings with counterparts in the Health Department to share information regarding the OSDS inventory; review the current connection process and discuss potential projects. During 2014 DPW identified eighteen (18) separate tasks related to the development of the Small CIP Program, eight (8) of which were completed. During 2015, one additional task was identified. Discussions with the new administration regarding the program are anticipated in calendar year 2016 and will be part of the work to be accomplished through the OSDS Strategic Plan contract.*

- Create a prioritization list for identifying projects and potential construction contracts.

*STATUS: Creation of a comprehensive prioritized list will be done once program features are finalized. The County has opened a new contract, X764250 – HDPA Prioritization, to develop a prioritization ranking of Health Department Problem Areas. This contract is expected to be completed in 2016.*

#### 2014 – 2015 Implementation Milestones (Private Sector Facilitated Upgrades)

- Amend and revise the Master Plan for Water and Sewer to identify areas developed on septic systems that will be connected to the public system.

*STATUS: The 2013 Anne Arundel County Master Plan for Water Supply and Sewerage Systems expanded the Sewer Service Area boundaries to include areas on septic that were identified to be connected to public sewer. Also, the sewer timing categories of some areas identified to be connected to public sewer were changed from “No Planned Service” to “Future Service”; and from “Future Service” to “Planned Service”.*

- Perform outreach to the development community explaining potential program changes.

*STATUS: This is a joint effort between the DPW and the Health Department. Two (2) meetings were held after June 2014 to discuss community engagement. The OSDS Program Management team will assist the County in developing outreach efforts to build upon the Health Department’s current efforts.*

#### 2014 – 2015 Implementation Milestones (Septic Conversion to Public WRF)

- Connect twenty (20) septic systems to public WRF

*STATUS: Achievement of this milestone was exceeded. A total of sixty-six (66) septic systems were converted during this milestone period. Forty-three (43) septic systems were connected to public sewer during FY14 and twenty-three (23) septic systems were connected to public sewer during FY15.*

#### 2014– 2015 Milestones (OSDS Nitrogen Reducing Units)

- Implement the requirements of C.O.M.A.R. 26.04.02

Code of Maryland Regulations C.O.M.A.R. 26.04.02 established new requirements for on-site sewage disposal systems within the Chesapeake Bay Watershed. Effective January 1, 2013, a Best Available Technology (BAT) nitrogen-reducing unit (NRU) is required in place of a septic tank where a building addition, upgrade or new on-site sewage disposal system installation is made. The requirements apply to permit applications for septic tanks, drain fields, drywells, sand mound systems, pressure dosed beds and any other type of on-site sewage disposal system on a property located within the Chesapeake Bay Watershed. Repairs or replacement of septic systems outside the Critical Area are not required to comply with the new regulation.

*STATUS: In progress. The Department of Health continues to implement the requirements of COMAR 26.04.02 for Best Available Technology (BAT) where a building addition, upgrade or new OSDS is made in the County. Three hundred and six (306 BAT) systems were installed in the County during FY14 and three hundred and sixty (360) were installed in F15. Of the six hundred and sixty-six (666) BAT systems installed, four*

*hundred and sixty-six (466) were installed using BRF funding. Additionally, four (4) “non BAT” engineered nitrogen reducing systems were constructed in FY14.*

- Implement the Bay Restoration (Septic) Fund Program

Anne Arundel County will continue to administer a Bay Restoration (Septic) Fund program. The program is supported by a State grant from the Maryland Water Quality Financing Administration of the Maryland Department of the Environment (MDE) and is subject to the Maryland Board of Public Works approval. Anne Arundel County is required to implement the Bay Restoration (Septic) Fund program consistent with the program implementation guidance issued by MDE. The Bay Restoration (Septic) Fund provides up to 100% funding to property owners to cover part or all of the cost for the nitrogen-reducing unit. Applications are prioritized based on the guidance given from MDE, with repair of failing systems in the Critical Area given the highest priority for funding. A geographic information system (GIS) is used to determine the location of the property in proximity to the Chesapeake Bay Critical Area. The County utilizes only third party verified BAT approved units for grant eligibility. BAT units are approved based on their capability of reducing total nitrogen from an on-site sewage disposal system by 50%. MDE evaluates and establishes a list of nitrogen-reducing units approved as Best Available Technology (BAT) for nitrogen removal. Grant awards include the purchase and installation cost of a BAT unit and a 5 year service contract. Qualified expenses are made by Anne Arundel County as a reimbursable cost from MDE based on the grant award letter. Currently the uses of Bay Restoration Funds have been expanded and are available to support sewer connection projects where public sewer abuts a property or is in a utility easement immediately abutting a property. Grants are limited to \$10,000 per household with priority given to properties in Critical and Priority Funding Areas within Existing Sewer Service Areas of the County.

*STATUS: In progress. The Department of Health continues to administer the Bay Restoration Septic grant program (BRF) that provides funding to projects that reduce the amount of nitrogen discharged from on-site sewage disposal systems (OSDS) to the Chesapeake Bay. During FY14, the Department of Health provided grants for one hundred and ninety-three (193) best available technology (BAT) systems and in FY15 provided two hundred and seventy-three (273) grants for BAT systems. Additionally of the sixty-six (66) septic systems connected to public sewer fifty-eight (58) were funded through the BRF program.*

- Implement the Requirements of the Groundwater Protection Plan

The County Dept. of Health will continue to implement the requirements of the Groundwater Protection Plan as found in Appendix D of the County's Master Water and Sewer Plan. This Plan documents and summarizes policies and programs regarding on-site sewage disposal systems and the protection of groundwater where public sewer is not available. Nitrogen-reducing technology is utilized on properties for the repair of failing on-site sewage disposal systems, limited home additions, and new construction outside

the Critical Area where variances to lot size, number of replacement systems, or change in the size of the on-site disposal system is necessary.

*STATUS: In progress. The Department of Health continues to implement the requirements of the Groundwater Protection Plan in assuring nitrogen-reducing technology is utilized for existing development using OSDS and where recommended for building permit approval.*

## **URBAN STORMWATER SOURCE SECTOR**

### **Core Urban Stormwater Strategy – Tier I**

#### 2014 – 2015 Implementation Milestones (Stream Restoration)

- FY 14 39,364 linear feet of stream restoration programmed
- FY 15 63,304 linear feet of stream restoration programmed

*STATUS: Feasibility assessments and design contracts were initiated for stream restoration projects programmed in FY14 and FY15. During FY14 eighteen thousand six hundred (18,600) linear feet of stream restoration was under design and in FY15 seventy-six thousand nine hundred and seven (76,907) linear feet of stream restoration were under design. Construction of these projects is estimated to be complete in FY19. Proposed construction schedules may be delayed if State and Federal permit requirements are extensive. Stream restoration projects programmed in FY16 have been assigned to project managers for the initiation of feasibility assessments.*

*The following project totaling five hundred (500) linear feet was completed in 2014-2015:*

*Sands Road Bridge stream restoration – 500 linear feet*

*In addition, the following shoreline restoration projects totaling two thousand seven hundred and forty (2,740) linear feet were completed in 2014-2015:*

*Camp Woodlands Living Shoreline – 500 linear feet  
Pines on the Severn Living Shoreline – 440 linear feet  
Arundel-On-The-Bay Living Shoreline – 300 linear feet  
Popham Creek Living Shoreline – 415 linear feet  
YMCA Camp Letts Living Shoreline – 960 linear feet  
Bear Neck Creek Living Shoreline – 125 linear feet*

*The following projects identified in the 2014-2015 2-Year Implementation Milestone Interim Progress Report submitted to MDE January 30, 2015 as under design are either under construction or pending construction in FY2016*

*Cowhide Branch – 4,500 linear feet  
Dividing Creek – 830 linear feet  
Duvall Creek Water Quality Retrofit -780 linear feet  
Granite Baptist Church North & South Fork Restoration – 1,585 linear feet  
Kingsberry Drive Stream Restoration – 1,100 linear feet  
Mill Creek at College Parkway – 2,000 linear feet  
Old Mill In-stream Weir - 365 linear feet  
Old Mill Stream Restoration – 1,100 linear feet  
Shipley's Choice Dam Rehab. – 3,100 linear feet\*  
Sloop, Eli & Long Cove Retrofit – 750 linear feet  
Warehouse Creek Headwaters – 1,000 linear feet*

*\* In response to comments received from permitting agencies the stream restoration component of the Shipley's Choice Dam Rehab project has been deterred to a future date.)*

#### 2014 – 2015 Implementation Milestones (Stormwater Pipe Outfall Retrofits)

- FY 14 174 outfalls programmed for water quality enhancement
- FY 15 253 outfalls programmed for water quality enhancement

*STATUS: Feasibility assessments and design contracts were initiated for the outfall retrofit projects programmed in FY14 and FY15. Six (6) outfalls were under design in FY14 and forty-six (46) outfalls were under design in FY15. Construction of these projects is estimated to be complete in FY19. Proposed construction schedules may be delayed if State and Federal permit requirements are extensive. Outfall retrofit projects programmed in FY16 have been assigned to project managers. Those projects managers are in the process of initiating contracts for feasibility assessments. The following projects were constructed in FY14 and FY15. (Note: acres managed are total acres)*

*Buena Vista Outfall Restoration Phase 2  
Forest Drive Outfall Restoration  
Haskell Drive Outfall Restoration  
Olde Severna Park Outfall  
Olde Severna Park Outfall Birch Court  
Southdown Shores Rd. Outfall Stabilization  
Old Bay Ridge Abandoned RR Embankment  
Denington Lane Outfall*

*The following projects listed as “under design” in the County’s 2014 – 2015 2-Year Implementation Milestone Interim Progress Report submitted to MDE January 30, 2015 are under design, in permitting or are pending construction in FY16:*

*Barrensdale Outfall Restoration  
Bay Green Drive Culvert Repair  
Breitwert Ave. Storm Drain Improvement  
Buttonwood Trail Outfall Restoration  
Dividing Creek Outfall Restoration  
Knollwood Road Outfall  
Pinewood Road Storm Drain Outfall Enhancement  
Shipleigh Road Outfall*

2014 – 2015 Implementation Milestones (Pre 2002 Stormwater Management Pond Retrofits)

- FY 14 78 pond retrofits programmed
- FY 15 50 pond retrofits programmed

*STATUS:*

*FY14 Eight (8) Stormwater Pond Retrofits constructed*

*Brittingham Section 3 (AA002478)  
Brittingham II (AA000024)  
Earleigh Heights Road (AA004022)  
Kilmarnock Woods (AA000045)  
Berrywood Acres (AA000013)  
Collington off Jones Station (AA000652)  
Mansion House Manor (AA000819)  
Woodbridge Forest (AA000887)*

*FY15 Twelve (12) Stormwater Pond Retrofits constructed*

*B&A Trail Phase III (AA001788)  
Berywood West (AA000647)  
Brittingham I (AA000022)  
Severndale Ground Storage Tank (AA002630)  
Grace Property Lots 1-5 (AA004181)  
Raintree Sec. I (AA000839)  
Westridge Addition (AA003631)  
Weathersfield (AA000884)*

*Old Annapolis Neck (AA001526)*  
*Western District Police Station (AA004447)*  
*Chelsea Beach (AA000662)*  
*Coxby's Estates Section 3 (AA004096)*

*Feasibility assessments and design contracts have been initiated for the remaining pond retrofit projects programmed in FY14. The pond retrofit projects programmed in FY15 have been assigned to project managers. Those project managers are in the process of initiating contracts for feasibility assessments. The following projects were listed as "under design" in the County's 2012 – 2013 2-Year Implementation Milestone Report. These projects are continuing through the design and permitting process*

*209<sup>th</sup> Street Pond Retrofit*  
*Concorde Circle Dry Pond Retrofit*  
*Hospital Drive SWM Retrofit Ponds 2 & 3*  
*Marabook SWM Retrofit*  
*Oakleaf Villa SWM Retrofit*  
*Old County Road SWM/BMP*  
*Valentine Creek SWM Retrofit*  
*Windswept SWM Pond*

## **Core Urban Stormwater Strategy – Tier II**

### 2014 – 2015 Implementation Milestones (Street Sweeping)

- Implement monthly street sweeping of up to 266 miles of curbed County roads.

*STATUS: Between July 1, 2013 and June 30, 2014 two hundred and seventy-five (275) curb miles of streets were swept, with two hundred and seventy eight (278) arterial, major collector and roads in business districts targeted for quarterly sweeping. Between July 1, 2014 and June 30, 2015 two thousand eight hundred ninety five (2,895) curb miles were swept with one hundred and one (161) arterial, industrial/business park, and NPDES priority area streets targeted for monthly sweeping. Select County parking lots were also included in twice monthly sweeping in support of facility specific stormwater pollution prevention plans.*

### 2014 – 2015 Implementation Milestones (Inlet Cleaning)

- Hand clean up to 16,000 inlets yearly.

*STATUS: Between July 1, 2013 – June 30, 2014 the County cleaned and removed debris from fifteen thousand eight hundred and four (15,804) catch basins, inlets and outlet structures. Between July 1, 2014 and June 30, 2015 the County cleaned and removed debris from seventeen thousand one hundred and sixty-seven (17,167) catch basins, inlets and outlet structures.*

- Machine clean up to 1,200 inlets yearly.

*STATUS: Between July 1, 2013 June 30 2014, the County cleaned a total of one thousand one hundred and sixty five (1,165) structures with a vacuum truck sewer vacuum. Between July 1, 2014 – June 30, 2015 the County cleaned a total of one thousand five hundred and ninety one (1,591) structures with a vacuum truck sewer vacuum.*

#### 2014 – 2015 Implementation Milestones (Tree Planting)

- Implement reforestation on sixty (60) acres.

*STATUS: During FY14 the County's Forestry Program planted 1.55 acres on four (4) projects. Eighteen (18) acres of forested land were purchased and permanently protected. The County purchased the Simmons tract in Churchton consisting of 21.12 acres in the Critical Area which will be reforested in the future.*

*Street tree plantings completed in spring 2015 included: Galesville, Davidsonville and Pasadena. Street trees will be planted in Arnold and Severna Park during the spring of 2016.*

*Maintenance of 6.9 acres of reforestation projects to control invasives occurred in FY15.*

*During this reporting period the County developed a new grant program, the Anne Arundel County Forestry and Greening Program." This grant program is administered by the Chesapeake Bay Trust and provides funding for forestry and greening projects in Anne Arundel County. The goal of this program is to implement cost-effective reforestation and greening projects in the County to increase tree canopy, implement demonstration-scale buffer projects and/or reforest or afforest parcels of land. The deadline for the first round of applications for this grant was March 5, 2015. Applications are due March 4, 2016 for the second round of grant funding.*

#### 2014 – 2015 Implementation Milestones (Stormwater to the Maximum Extent Practicable)

- Provide stormwater treatment to the maximum extent practical on seventy-six (76) acres of publically owned land and facilities.

*STATUS: The following three (3) projects were completed on publicly owned property during this reporting period:*

*Londontowne Public House – SPSC system – 4.8 acres treated*

*Anne Arundel Community College, Resources Management Building – Rain Garden – 0.25 acres treated*

*Cape St. Claire Fire Station – SPSC – 0.85 acres treated*

*The following projects were listed as “under design” in the County’s 2012 – 2013 2-Year Implementation Milestone Report:*

*Brooklyn Park LID and Rain Garden. The feasibility assessment of this project determined that this project would not be cost effective and therefore will not move forward.*

*Century Towne Road ESD. This project has been re-programmed for design in FY16.*

*Old Mill Community Association Bio-retention Facility. A concept plan for this project was developed as part of the Patapsco Tidal Watershed Assessment. Design has not been completed to date.*

#### 2014 – 2015 Implementation Milestones (Watershed Stewards Academy (WSA) and Watershed Organization Implementation)

- The Anne Arundel Watershed Stewards Academy will install two hundred (200) rain barrels.

*STATUS: During FY14 the Watershed Stewards installed fifty-five (55) rain barrels and nine (9) cisterns which capture over five thousand (5,000) gallons of water during each major rain event. During FY15 an additional one hundred and twenty-three (123) rain barrels capturing six thousand seven hundred and sixty-five (6,765) gallons of stormwater during each major rain event.*

- The Anne Arundel Watershed Stewards Academy will plant eight thousand (8,000) native plants and trees.

*STATUS: The Anne Arundel County Stewards Academy exceeded the goal of planting eight thousand (8,000) native plants and trees during this milestone period. During FY14 Watershed Stewards planted over fourteen thousand (14,000) native trees and*

*plants. In FY15 an additional two thousand five hundred and seventy-six (2,576) native trees and six thousand eight hundred and twenty-four (6,824) native plants were planted.*

- The Anne Arundel Watershed Stewards Academy will install 200,000 square feet of new residential and community restoration.

*STATUS: The Anne Arundel Watershed Stewards Academy far exceeded the goal of installing two hundred thousand square feet of new residential and community restoration during this milestone period. During FY14 Watershed Stewards installed three hundred and seventeen thousand eight hundred and eighty-seven (317,887) square feet of residential and community restoration. During FY15 Stewards installed an additional four hundred and ninety-one thousand six hundred (491,600) square feet of residential and commercial restoration totaling eight hundred and nine thousand four hundred and eighty-seven (809,487) square feet or 18.6 acres.*

- The watershed organizations operating in Anne Arundel County will:
  - Restore approximately 14,353 linear feet of stream
  - Construct 1,615 linear feet of living shoreline
  - Create 10,500 square feet of tidal marsh/living shoreline
  - Treat 30 acres with bio-retention systems
  - Construct 11,200 square feet bio-retention in Critical Area
  - Restore 4.75 acres of wetlands
  - Retrofit 1 SWM pond
  - Reforest 1.5 acres

*STATUS:*

*West/Rhode Riverkeeper:*

*YMCA Camp Letts – Three hundred (300) trees on two (2) acres of horse pasture were planted to create a forested buffer in the fall of 2014. In FY15 a nine hundred and sixty (960) linear foot living shoreline was also constructed at Camp Letts.*

*Carrie Weedon Science Center – creation of a wetland garden in FY14/*

*Avalon Shores – construction anticipated in 2016 pending permit approval.*

*Harwood Transmission ROW – construction anticipated in 2016 pending permit approval.*

*Holly Hill Community Park –Contract initiated in FY15 to design a submerged gravel wetland to treat approximately six (6) acres of medium density residential area Construction date to be determined.*

*South River Federation:*

*Arundel on the Bay – Conversion of five hundred (500) feet of roadside ditches to bio-retention swales and restoration of three hundred (300) linear feet of living shoreline was completed in FY14.*

*Camp Woodlands – Creation of five hundred (500) linear feet of living shoreline and removal of ninety (90) linear feet of bulkhead was completed in FY14. Installed rain barrels, a rain garden and bio-retention and planted forty (40) native plants in the uplands in FY14. Stabilization of an eroded gully on site was completed in FY15 using funding from the Anne Arundel County Watershed Restoration Grant program.*

*Church Creek Headwaters north of RT 665 –Two thousand (2,000) linear feet of stream restoration completed in FY15.*

*Poplar Point – SPSC and wetland creation - completed in FY14*

*Subaru Annapolis -3 rain gardens created FY14*

*The Preserve at Broad Creek - Retrofit of SWM pond and SPSC was completed in FY15.*

2014 – 2015 Implementation Milestones (Other)

- Remove 4,000 sq.ft. of impervious surface

*STATUS: During this reporting period the County removed a total of 4,163 square feet of impervious surface. This impervious surface was removed as part of the Pekin Road Bridge Demolition Project. Asphalt pavement was removed from both the east and west sides of the bridge and replaced with sod. This area totaled 3,623 square feet. The bridge deck, covered in asphalt pavement, over Rock Creek was removed. This area totaled 468 square feet. The east abutment was removed and a new abutment was*

*constructed that resulted in an additional reduction of 72 square feet of impervious cover.*