

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 projects 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

209th 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.