

**KENT COUNTY, MD
Phase II WIP Strategies**

INTRODUCTION

The Kent County Total Maximum Daily Load Committee was formed in November 2006 by appointment of the County Commissioners of Kent. The purpose of this committee was to develop a tributary basin plan that included an estimate of specific best management practices to be included in the State's Chesapeake Bay Tributary Strategies Implementation Plan. The Kent TMDL Committee completed a Draft Basin Tributary Strategy Implementation Plan in March 2008. The Commissioners reconstituted that committee in 2011 in order to draft the following Phase II WIP Strategies and all corresponding documents including a Capacity Analysis, Tracking Mechanisms, Two-Year Milestones, and MAST Scenarios. The TMDL Committee has met monthly since March 2011 in order to develop local implementation strategies and discuss their cost to the County. In addition County staff has spoken at public meetings held by local watershed organizations and town councils in order to update and seek input from the community at large as to the progress of local WIP development.

The Kent County Total Maximum Daily Load Committee is comprised of the following members:

Wayne Morris	Department of Public Works, committee chairman
Teresa Bartley	US Aberdeen Proving Ground, DPW--Environmental Division
Teri Batchelor	MD DNR Forest Service
John Beskid	Kent County Department of Environmental Health
Joseph Blizzard	Kent Soil and Water Conservation District
Rick Council	Town of Galena
Jamie Brunkow	Sassafras River Association
Moira Croghan	Sassafras River Association
Briggs Cunningham	Washington College Center for the Environment and Society
Allen Davis	Kent County Farm Bureau
Kees DeMooy	Town of Chestertown
Isabel Junkin	Chester River Association
Bernard Kohl	Angelica Nurseries
Rosalie Kuechler	Town of Rock Hall
Kip Matthews	Town of Betterton
Nancy Metcalf	Kent Soil and Water Conservation District
Karen Miller	Kent Soil and Water Conservation District
Amy Moredock	Department of Planning, Housing, and Zoning (MAST liaison)
Gail Owing	Department of Planning, Housing, and Zoning
Amy Owsley	Eastern Shore Land Conservancy
Bob Parks	Chester River Association
Bernadette Van Pelt	Department of Tourism and Economic Development
Steve Walls	Town of Millington
James Wright	Kent County Department of Public Works (MAST liaison)
Elaine Deitz	Maryland Department of the Environment liaison
Heather Fleming	Maryland Department of the Environment liaison

BEST MANAGEMENT PRACTICE REDUCTION STRATEGIES

This section summarizes the BMP reduction strategies for the Interim Target (2017) and Final Target (2020). The narrative descriptions of the implementation strategies which follow remain *preliminary* in nature as Kent County continues to struggle to provide a schedule of key actions and funding approaches

for the nearest-term 2017 Strategy. These strategies reflect a local perspective on how Kent County, including its 5 municipalities, will attempt to achieve the load reduction goals established for it.

It must be understood that while the County takes its role in pollutant load reduction to the Chesapeake Bay extremely seriously, we are keenly aware of the fact that significant gaps exist in all source sectors in the Kent County model. The County would further like to acknowledge its concerns regarding the Bay Model and the caps set for this jurisdiction. Kent County is not an MS4 County and is rural in nature and development pattern. As a result, the County and its towns would be facing unrealistic staffing challenges in order to develop many of the tracking mechanisms that larger, MS4 counties already have in place. Not only do we note staffing concerns relative to data generation, tracking, and reporting, but we also note serious funding concerns for both area residents and local governments which will be required to implement the best management practices noted below. This is a County with an impeccable stewardship track record and passion to continue those practices which have garnered that reputation. Suffice to say that we are deeply disheartened by the fact that the Model has set unrealistic goals which we can neither achieve with our citizenry or with realistic cost estimates. In other words, there is clearly insufficient funding available at a local, state, and federal level to meet the cost projections affiliated with this initiative.

The strategies that follow will be revised in the future as part of an adaptive management process.

POINT SOURCES

1. Major Municipal Wastewater Treatment Plant (WWTP)

The town of Chestertown owns and operates the county’s only major wastewater treatment facility that serves the town and areas outside town limits along MD Routes 291 and 289. The system serves approximately 5,400 people with a design flow of 900,000 gallons per day (gpd) with an average daily flow of 667,000 gpd. The Chestertown WWTP was upgraded to Enhanced Nitrogen Removal (ENR) brought online in 2008.

- 2013 Programmatic Milestones: 5 failing septic systems have been connected to this facility to date.
- 2017 Implementation Milestones: The County has recently completed a collection system expansion project which provides wastewater collection service to 15 properties with failing septic systems in the Lovers Lane-Quaker Neck area adjacent to the Town of Chestertown. The sewage collected from these properties is treated at the Chestertown ENR WWTP through a wastewater treatment service agreement. An additional 10 failing systems will be connected by 2017.
- 2020 Implementation Milestone: No further connections outside of town limits to the Chestertown plant are anticipated or planned.

2. Minor Municipal WWTPs

The remaining 4 municipalities and the County Department of Water and Wastewater operate minor plants.

Betterton

- 2013 Programmatic Milestones: The town has adequate sewage treatment flow capacity to accommodate an additional 490 equivalent dwelling units (EDUs). The plant currently serves over 800 people with 329 connections. However, according to MDE, the town is currently exceeding

and is projected to exceed the minimum EDUs of hydraulic, nitrogen and phosphorus limit analysis. The limiting factor for the town, according to MDE, is its phosphorus loading. While not regulated by MDE, the town reports these rates to the state on a monthly basis. Betterton is currently exploring funding for upgrades to their system and beginning engineering studies for upgrades.

- 2017 Implementation Milestones: Once funding has been secured, the town will enlist contractual support for design and construction in order to upgrade their facility.
- 2020 Implementation Milestone: No septic system connections to the Betterton plant are anticipated or planned.

Galena

- 2013 Programmatic Milestones: Galena's plant services provided within town boundaries are expected to easily accommodate the town's growth projection of 102 people or 44 additional households. To reach the town build-out capacity of 438 additional people or 188 additional households, treatment capacity would have to reach approximately 95,000 gpd. The permitted flow is 60,000 gpd. The system has an average daily flow of 48,000 gpd with a design capacity of 80,000 gpd following an upgrade in 1992.

According to MDE figures, the town currently exceeds and is projected to exceed loading rates for nitrogen and phosphorus. The current MDE analysis reveals the town exceeds its nutrient load capacity and the 2030 projection also reveals an overage. The limiting factor is phosphorus. While not regulated by MDE, the town reports these rates to the state on a monthly basis. ENR design is currently being finalized. The town is exploring additional funding for upgrades to their systems.

- 2017 Implementation Milestones: Once funding has been secured, construction will begin in order to upgrade their facility. In addition to WWTP upgrade to ENR, a portion of the existing lagoon system will be converted to wetland in order to treat approximately 40 acres of impervious surfaces.
- 2020 Implementation Milestone: While there have been inquiries to run a sewer line to Georgetown, no septic system connections or wastewater hookups located outside of the town limits are anticipated or planned at this time.

Kennedyville (County WWTP):

- 2013 Implementation Milestones: Extensively upgraded in 2007, the system is a two-tank sequential batch reactor capable of meeting ENR permit levels. The system is preceded by influent pump station with a fine-screen removal system and discharges into Morgan Creek with UV disinfection. The Kennedyville plant is currently meeting its loading rate limit. The MDE 2030 projections reveal the availability of additional EDUs with the hydraulic system onsite determined to be the plant's limiting factor.

Millington:

- 2013 Programmatic Milestones: Millington WWTP is an ENR-capable facility but is not an advanced WWTP. Projected infill and development of the town's growth areas reveals that the town expects to grow beyond its sewerage capacity by 2015 with a proposed 266 EDUs by 2015 and 457 EDUs by 2030. According to MDE 2030 projections, it is anticipated that the town will

exceed loading rates for nutrients. While not regulated by MDE, the town reports these rates to the state on a monthly basis.

An engineering study and permit application for increased capacity will be undertaken when the plant reaches 75 percent capacity; in the meantime, the town will undertake a feasibility study to explore operational or mechanical solutions to come into compliance with the annual loading rate.

The County has recently completed a collection system expansion project which provides wastewater collection service to 37 properties with failing septic systems in the Chesterville Forest area. The sewage collected from these properties is treated at the Millington ENR capable WWTP through wastewater treatment service agreement. Approximately 3 failing systems have been connected to date.

- 2017 Implementation Milestones: The County will continue to hook the remaining 34 failing systems in the Chesterville Forest Area. In addition, once the feasibility study is completed, the Town of Millington will proceed with necessary upgrade to their facility.
- 2020 Implementation Milestone: It is anticipated that all 37 properties with failing septic systems in the Chesterville Forest area will be hooked up to the Millington WWTP at this time. No further septic system connections to the plant are anticipated or planned.

Rock Hall:

- 2013 Programmatic Milestones: Rock Hall WWTP is an ENR-capable facility but is not an advanced WWTP. The system serves a total of 4,291 people and 1,716 connections (2,713 people with 1,085 connections within the Town limits and 1,578 people with 631 connections in the county). The plant's design capacity is 505,000 gpd with an average daily flow of 230,000 gpd.

According to MDE figures, the town currently exceeds and is projected to exceed nutrient loading rates. The current MDE analysis reveals the town exceeds its nutrient load capacity and the 2030 projection also reveals an overage. The limiting factor is nitrogen. While currently not regulated by MDE, the town reports these rates to the state on a monthly basis. The town will undertake a feasibility study to explore operational or mechanical solutions to come into compliance with the annual loading rate. Potential upgrades and/or expansion of this system may place the town within the parameters of meeting ENR technology.

The County has provided wastewater collection service to 43 properties with failing septic systems in the Allens Lane area. Of the 43 properties 28 have been connected. The sewage collected from these properties is treated at the Rock Hall WWTP through wastewater treatment agreement. The County has recently completed a collection system expansion project which provides wastewater collection service to 9 properties with failing septic systems in the Lovers Lane-Edesville area. The sewage collected from these properties is treated at the Rock Hall WWTP through wastewater treatment agreement. Approximately 3 failing system has been connected to date.

- 2017 Implementation Milestones: The County will continue to hook the remaining 20 failing systems in the area.
- 2020 Implementation Milestone: It is anticipated that all 20 properties with failing septic systems will be hooked up to the Rock Hall WWTP at this time. No further septic system connections to the plant are anticipated or planned.

Tolchester (County WWTP):

- 2013 Implementation Milestones: The Tolchester WWTP is an ENR-capable facility but is not an advanced WWTP. The plant has over 274 connections serving approximately 685 people. According to MDE 2030 projections, the facility is projected to exceed loading rates for nutrients. The limiting factor is phosphorus. While not regulated by MDE, the County reports these rates to the state on a monthly basis. The Department of Water and Wastewater will undertake a feasibility study to explore operational or mechanical solutions to come into compliance with the annual loading rate.

Worton (County WWTP):

- 2013 Implementation Milestones: The Worton lagoon treatment system was upgraded to a membrane biological reactor plant in 2010 and is operating at ENR capacity. The upgrade at the facility includes an effluent land application system which allows effluent to be sprayed on agricultural land six months out of the year instead of discharging to the Morgnec Branch. This allows the remaining nutrients to be utilized by the crops and reduce nutrient loading on the Chester River.

According to MDE, the facility currently exceeds loading rates for nutrients; MDE also reports 2030 projections set to exceed loading rates for nutrients. The limiting factor is phosphorus. While not regulated by MDE, the County reports these rates to the state on a monthly basis. Additional upgrades to the system will be required based on the growth projections noted above.

NONPOINT SOURCES

1. Septic Systems

A. Continue upgrade of new and failing septic systems in and out the Critical Area

- 2013 Programmatic Milestones: The County implemented a local Bay Restoration Fund program in 2006 which was run by the Kent County Department of Water and Wastewater, Department of Planning, Housing, and Zoning, and Department of Environmental Health. Since that time, approximately 120 best available technology BAT systems have been installed in Kent County within the Critical Area (7%).
- 2017 Programmatic Milestones: It is anticipated that 30 systems located within the critical area will be upgraded to BAT annually through mandates or voluntary participation in 2010 Trust fund grant program in Middle Chester River Watershed (with the assistance of the Chester River Association). Therefore, 180 BAT systems will be installed in the Critical Area by 2017 (11%).

The County further seeks to entice property owners located outside of the Critical Area to upgrade their septic systems, whether they are failing systems or required to upgrade due to expansion. To meet the Model requirements to report systems located in the Critical Area, outside the Critical Area but within 1000 feet of perennial streams, and outside 1000 feet of perennial streams, staff will have to locate all systems and identify their locations in accordance with these tracking perimeters. Further, during permit intake, this information will have to be discerned and tracked for reporting purposes. A mechanism for generating and capturing this data will have to occur at great cost.

- 2020 Programmatic Milestones: By 2020, it is anticipated that a total of 270 BAT systems will be installed in the Critical Area (16%).

In addition, the County will explore incentives and seek funding to incentivize upgrades to BAT on all systems located in the Critical Area. The County will apply the same incentives to upgrade systems both outside of the Critical Area within 1000 feet and outside 1000 feet of perennial streams. In conjunction with tracking in accordance with Model parameters, additional staff will be required if all septic systems (or at least a dramatic increase in percentage) in the County are to be encouraged to upgrade to BAT.

Currently, the County works closely with the Department of Environmental Health, Chester River Association, and Sassafras River Association on the implementation of the BRF program and the Local Implementation Programs (Trust Fund). We are in the midst of implementing septic upgrades in the Middle Chester River in accordance with a 2010 Trust Fund grant and are in dialogue with the Middle Chester Partnership to expand that program in the next round of funding. In addition, the County has supported the Sassafras River Association's 2012 Trust Fund application to implement a similar septic upgrade to BAT program in the Sassafras River watershed. That application was not funded, but the County remains committed to the eventual implementation of a grant program in that watershed.

Also, the County has supported local watershed group National Fish and Wildlife Federation Chesapeake Bay Stewardship Fund proposals to implement septic upgrade incentives.

B. Septic hookups to ENR plants

- 2013 Programmatic Milestones: 5 failing septic systems have been connected to the Chestertown WWTP to date (this plant is the only major facility in the County and was upgraded to ENR in 2008).
- 2017 Implementation Milestones: The County has recently completed a collection system expansion project which provides wastewater collection service to 15 properties with failing septic systems in the Lovers Lane-Quaker Neck area adjacent to the Town of Chestertown. The sewage collected from these properties is treated at the Chestertown ENR WWTP through a wastewater treatment service agreement. An additional 10 failing systems will be connected by 2017.
- 2020 Implementation Milestone: No further connections to the Chestertown plant are anticipated or planned. It should be noted that all connections are subject to funding and consistency with Priority Funding Area requirements, as well as with the Kent County Comprehensive Plan and Water and Sewer Plan.

C. Septic System Pump outs

Approximately 827 tanks per year are pumped and the septage received at the Worton Septage Receiving Station.

- 2013 Programmatic Milestones: The County anticipates at continued rate of approximately 20% of all septic tanks pumped annually. The County will seek funding to incentivize a rate increase to 30% of all systems annually and will continue to support the CRA and SRA's outreach and educational initiatives to encourage septic pumping.

Again, we would note that to meet the Model requirement to report systems located in the Critical Area, outside the Critical Area but within 1000 feet of perennial streams, and outside 1000 feet of perennial streams, staff will have to locate all systems and identify their locations in accordance

with these tracking perimeters. Further, during septage pumping, this information will have to be discerned for reporting purposes. A mechanism for generating and capturing this data will have to occur at great cost.

2. Formal and Standard Stormwater Management Plan Review

Kent County reviews a wide variety of best management practices affiliated with both standard and formal stormwater management plans, in addition to bmps associated with Critical Area 10% water quality improvement requirements. The County reviews these plans for projects located both in the 5 municipalities and in the county. While recent years have seen a reduction in plan review, the complexity of these plans has increased. Kent County is not an MS4 County and, therefore, has no formal tracking mechanism for plans which are not formal. The milestones noted below capture current practices which are reviewed but also anticipate additional data collection, reporting practices, and programmatic changes which will involve intense staff time to develop. In all likelihood, additional staff will be required.

We would like to express our concerns regarding the Model's inability to process load reduction from the installation of rain barrels. This bmp is accepted and acknowledged as a viable stormwater management option in both the MDE Stormwater Management guidelines and the Critical Area Commission water quality guidelines.

- 2013 Programmatic Milestones: The County and its 5 municipalities anticipate a reduced pace of growth based on recent development trends in the near-future. As a result we expect to continue on our current pace of plan review for the following stormwater management bmps (see the Two-Year Milestones and the MAST Scenarios for complete detail regarding these measures): bioretention/rain gardens, dry detention ponds and hydrodynamic structures, urban infiltration practices with sand/vegetation and no underdrains, wet ponds and wetlands, urban filtering practices, so on. In addition the county continues to review buffer enhancement plans, stream restoration projects, shoreline erosion control, bioswales, street sweeping initiatives, so on. The County will include rain barrels in their data collection.
- 2017 Programmatic Milestones: The County and towns will develop revised standard stormwater management and sediment control plans which clearly identify best management practices and outline installation of these practices for inspection purposes. Our inspectors will then record and track the bmps. This, of course, will place a workload onto local staff that ultimately would result in the creation of/need for additional staff for data collection, inspection, data entry, and follow up relative to required maintenance. Chestertown (which already implements a street sweeping program which covers 87.44 acres annually) will investigate leasing/renting out the town street sweeping vehicle to the other 4 municipalities. In addition, the County will look into the feasibility of implementing a street sweeping program on all county roads (county road mileage totals 272 miles with an average width of pavement of 18 feet).

The County will inventory all opportunities for stormwater management retrofits on County properties. Town of Chestertown has identified in its Comprehensive Plan several of their shopping centers and town parking areas as redevelopment sites (totaling over 13 acres of stormwater management redevelopment).

The County will also work with communities, villages, and homeowner associations interested in retrofits for stormwater management/stream restoration to seek funding from a Chesapeake Bay Trust Watershed Assistance Grant or National Fish and Wildlife Foundation grant to implement retrofit specific to drainage area.

- 2020 Programmatic Milestones: The County will consider strengthening the requirement for implementing standard stormwater management plans which are more restrictive than the current regulations.

3. Urban Tree Canopy/Tree Planting

In addition to County and town forest conservation and Critical Area afforestation requirements, there are a variety of initiatives that are focused on increased canopy cover both in a forested environment and in an urban, street tree environment. We would like to express our concerns regarding the Model's inability to process load reductions from the planting of individual trees and groupings of trees which do not meet the criteria to be considered a forest. This bmp is accepted and acknowledged as a viable sediment control and water quality practice. We track such plantings through subdivision roadside tree plantings, Urban street tree plantings, Critical Area tree plantings, and tree plantings outside of the Critical Area.

- 2013 Programmatic Milestones: The County will continue to implement the Forest Conservation and Critical Area afforestation programs which are on a current pace of realizing approximately 50 acres per year. In addition, the Towns of Chestertown and Millington have plans to implement afforestation practices on town land and/or town right of ways.
- 2017 Programmatic Milestones: Each municipality has received an Urban Canopy inventory, through a grant administered by Washington College, located in Chestertown. The study documented existing canopy in each town and set percentage increases. The 5 municipalities, some of which are enrolled in the Tree City program, have committed to the goal of a 40% urban street tree canopy in their towns. These plantings will be tracked with an anticipated goal that the Model will be amended to accept this load reduction credit.

4. Wetland Restoration

- 2013 Programmatic Milestones: The County is a current partner in several wetlands restoration projects with local watershed organizations. These initiatives occur mainly on agricultural land and these bmps are captured in the agricultural section of the WIP.
- 2017 Programmatic Milestones: In addition to the Galena WWTP upgrade to ENR, a portion of the existing lagoon system will be converted to wetland in order to treat approximately 40 acres of mixed use land (agricultural land and roadways).

5. Streamside Forest Buffers

- 2013 Programmatic Milestones: In addition to Buffer Enhancement Plan requirements established by the Critical Area program, the county and towns will continue to seek funding to implement stream buffer plantings on county/town land adjacent to creeks, streams, and rivers. Chestertown has identified two stream restoration projects and funding is currently being sought for one of those projects.
- 2017 Programmatic Milestones: The Town of Chestertown is developing a restoration plan at the head of Radcliffe Cliff which is planned to treat a major intersection and shopping center located in the town. Total linear feet of restoration is 1238 and treated area is approximately 123 acres (37 acres of which is impervious surface). Funding is being sought through a Chesapeake Bay Trust grant program.

The County will support a stream restoration project on Mill Creek in Chesapeake Landing subdivision. This project is being spearheaded by a citizen watershed organization comprised of members of the Chesapeake Landing Community Association. Funding will be sought via Local Implementation Grant, Chesapeake Bay Trust Watershed Assistance Grant, or National Fish and Wildlife Foundation Wildlife and Habitat Conservation Charter Grant.

- 2020 Programmatic Milestones: The Town of Chestertown will seek funding to implement stream restoration and tree plantings at the Nicholson site (corner of bypass and High Street) which is the future location of the trail head for the rails to trails project.

KENT COUNTY, MD
Implementation Action Milestones for 2012 - 2013

STORMWATER MANAGEMENT RETROFITS

1) Equivalent acres of stormwater retrofits:

Betterton:

- rain gardens (residential and community garden installed at town hall)
- rain barrels (residential and community rain barrel installed)
- living shorelines
- formal and standard swm plans (approximately 0.32 acres was treated so far in 2011 under the new ESD to the MEP guidelines)
- 10% rule plans for projects located in the Chesapeake Bay Critical Area Intense Development Areas

Chestertown:

- street sweeping
- rain gardens (residential and community garden installed at Wilmer Park)
- rain barrels (residential and community rain barrel installed at town hall and public works facilities)
- living shorelines (residential and community project installed at Wilmer Park)
- formal and standard swm plans (approximately 3.98 acres was treated so far in 2011 under the new ESD to the MEP guidelines)
- 10% rule plans for projects located in the Chesapeake Bay Critical Area Intense Development Areas

Galena:

- formal and standard swm plans (see attached spreadsheet for acreage)

Millington:

- The town partnered with CRA to participate in a Chesapeake Bay Foundation grant program which resulted in the construction of 17 rain barrels at a local workshop and the installation of 1 rain garden in front of Millington town hall.
- rain gardens (residential and community garden installed at town hall and park)
- rain barrels (residential and community rain barrel installed at town hall)
- living shorelines
- formal and standard swm plans
- 10% rule plans for projects located in the Chesapeake Bay Critical Area Intense Development Areas

Rock Hall:

- rain barrels
- living shorelines (residential and community project installed at town beach)
- formal and standard swm plans (approximately 1.37 acres was treated so far in 2011 under the new ESD to the MEP guidelines)
- 10% rule plans for projects located in the Chesapeake Bay Critical Area Intense Development Areas

- wetlands restoration project on town property

Kent County:

- rain gardens
- rain barrels
- living shorelines (residential and community project installed at Turner’s Creek)
- formal and standard swm plans (approximately 12.781 acres was treated so far in 2011 under the new ESD to the MEP guidelines)
- 10% rule plans for projects located in the Chesapeake Bay Critical Area Intense Development Areas
- wetland retention pond at Radcliffe Creek School
- SRA rain barrel initiative (75 barrels installed) and turf management initiative

SEPTIC SYSTEM UPGRADES

2) Number of septic upgrades:

- In critical area:
Approximately 120 BAT systems have been installed in Kent County.
- Within 1,000 feet of a stream:
Systems installed within 1000 feet of a tidal waterway are located in the Critical Area and noted above; areas located within 1000 feet of blue line streams or perennial streams are not tracked as such.
- In other areas: 0
Septic upgrades to nitrogen removal (BAT) occur only in mandatory cases where there are no other alternatives; otherwise, the cost is a major factor in nitrogen removing septic system implementation.

WASTEWATER TREATMENT PLANT DATA

3) Number of septic systems connected to an advanced WWTP:

Overall approximately 104 (county) properties with failing septic systems have been or are in the process of being connected to either ENR or ENR capable WWTPs in Kent County. Of the 104 systems, 37 have been connected to WWTPs. It is anticipated that half of the remaining 67 systems will connect to WWTPS by 2013. It should be noted that all connections are subject to funding and consistency with Priority Funding Area requirements.

Betterton:

- Betterton is currently not planning to hook up septic systems located outside of or adjacent to their town boundaries.

Chestertown:

- The County has recently completed a collection system expansion project which provides wastewater collection service to 15 properties with failing septic systems in the Lovers Lane-Quaker Neck area. The sewage collected from these properties is treated at the Chestertown

ENR WWTP through a wastewater treatment service agreement. Approximately 5 failing systems have been connected to date.

Galena:

- Galena is currently not planning to hook up septic systems located outside of or adjacent to their town boundaries.

Millington:

- The County has recently completed a collection system expansion project which provides wastewater collection service to 37 properties with failing septic systems in the Chesterville Forest area. The sewage collected from these properties is treated at the Millington ENR capable WWTP through wastewater treatment service agreement. Approximately 3 failing systems have been connected to date.

Rock Hall:

- The County has provided wastewater collection service to 43 properties with failing septic systems in the Allens Lane area. Of the 43 properties 28 have been connected. The sewage collected from these properties is treated at the Rock Hall WWTP through wastewater treatment agreement.
- The County has recently completed a collection system expansion project which provides wastewater collection service to 9 properties with failing septic systems in the Lovers Lane-Edesville area. The sewage collected from these properties is treated at the Rock Hall WWTP through wastewater treatment agreement. Approximately 1 failing system has been connected to date.

Kent County:

- The Worton lagoon treatment system was upgraded to a membrane biological reactor plant in 2010 and is operating at ENR capacity. The upgrade at the facility includes an effluent land application system which allows effluent to be sprayed on agricultural land six months out of the year instead of discharging to the Morgnec Branch. This allows the remaining nutrients to be utilized by the crops and reduce nutrient loading on the Chester River.
- Kennedyville and Tolchester are ENR-capable facilities operating within permitted limits.

4) Key Implementation steps for any WWTP Upgrades:

Betterton:

- Betterton is currently exploring funding for upgrades to their system and beginning engineering studies for upgrades.

Chestertown:

- Chestertown was upgraded and brought online in 2008.

Galena:

- ENR design is currently being finalized. The town is exploring additional funding for upgrades to their systems.

Millington:

- Millington WWTP is an ENR-capable facility but is not an advanced WWTP.

Rock Hall:

- Rock Hall WWTP is an ENR-capable facility but is not an advanced WWTP.

Kent County:

- Worton has also been upgraded to and is operating at ENR.
- Kennedyville, Tolchester, and Millington are ENR-capable facilities but are not advanced WWTPs.

OTHER BEST MANAGEMENT PRACTICES

5) Other:

Kent County:

- Buffer Management and Enhancement Plans
- Forest Stewardship Plans: approximately 25 acres of afforestation on nonagricultural land since 2006.
- Urban Canopy and street tree implementation;
- Critical Area afforestation;
- noncritical area afforestation;
- living shorelines
- 45 shrubs and trees planted in Millington along a county ditch in the critical area.

KENT COUNTY, MD
Program Enhancement Milestones for 2012 - 2013

STORMWATER MANAGEMENT RETROFIT ENHANCEMENTS

1) Stormwater retrofit program enhancements for 2012 & 2013:

Betterton:

- Inventory properties within the town limits for possible retrofit/restoration.
- Urban canopy planting of approximately 19 trees within the town to occur on public land.

Chestertown:

- Continue street sweeping initiative which covers approximately 87.44 acres per year (47.5lbs/acre/year for TN, 10.68lbs/acre/year for TP, and 10lbs/acre/year for TSS).
- Investigate leasing/renting out the town street sweeping vehicle to the other 4 municipalities.
- The Town of Chestertown is developing a restoration plan at the head of Radcliffe Cliff which is planned to treat a major intersection and shopping center located in the town. Total linear feet of restoration is 1238 and treated area is approximately 123 acres (37 acres of which is impervious surface). Funding is being sought through a Chesapeake Bay Trust grant program. Baseline stream restoration credit is 0.02lb/linear foot/year of total nitrogen; 0.0035lb/linear foot/year for total phosphorus; and 2.55lbs/linear foot/year for total suspended solids.
- Wilmer Park projects include a 450 linear foot living shoreline and a .36 acre wetlands restoration.
- Remembrance Park is a linear park located adjacent to a tributary of the Chester River which will incorporate the following bmps: an approximate 750 foot stream restoration which will incorporate tree and grass planting. Approximately 1,199 square feet of porous pavers will also be installed plus 6,503 sq. ft. of pervious walkways.
- Nicholson site (corner of bypass and High Street) to become trail head for the rails to trails with stream restoration, tree plantings).
- At three town parks, 5,000 square feet of rain gardens have been installed, treating a total area of approximately 3.5 acres.
- Rolling Road: 35 feet of open area adjacent to a walking path (.6 mile) which may be enhanced with tree plantings. Total reforestation area is 3 acres.
- The Rails to Trails path which is approximately 2.32 miles (with a 66-foot right of way) of trail will be treated for swm with bioswales and enhanced with tree plantings. Total area treated is 16.9 ac.
- Town of Chestertown has identified in its Comprehensive Plan Kent Plaza and Dollar General/WIN Plaza as redevelopment sites to include: porous pavers, tree islands, and grass swales.

Galena:

- A retrofit to the WWTP will be implemented in 2013. A portion of the existing Galena lagoon will be converted into a wetland which will capture approximately 40 acres of mixed use land (agricultural land and roadways).

Millington:

- The town participated in a Chesapeake Bay Foundation grant program which will result in the construction of 10 rain barrels at a workshop (in addition to the 17 already constructed) and the installation of 3 rain gardens in 2012. Potential sites are at the town hall, fire hall, elementary school, and Methodist church adjacent to existing public ditch (pda).

- Existing pda recently cleaned and erosion problems corrected. CRA collaborated with the Town to plant trees and shrubs adjacent to ditch.

Kent County:

- Two wetland restoration ponds at a cost of \$33,000.00 each to be constructed by Ducks Unlimited in the Middle Chester River Watershed in 2012 (funded by the 2010 Local Implementation Grant program).
- Identify additional swm ponds in the county and towns which may qualify for retrofits and seek funding through the MD Local Implementation Grant, Chesapeake Bay Trust Watershed Assistance Grant, or National Fish and Wildlife Foundation Wildlife and Habitat Conservation Charter Grant.
- Stream restoration project on Mill Creek in Chesapeake Landing subdivision. Funding streams will be sought via Local Implementation Grant, Chesapeake Bay Trust Watershed Assistance Grant, or National Fish and Wildlife Foundation Wildlife and Habitat Conservation Charter Grant.
- Work with communities/villages interested in retrofits for stormwater management/stream restoration to seek funding from a Chesapeake Bay Trust Watershed Assistance Grant or National Fish and Wildlife Foundation grant to implement retrofit specific to drainage area.
- Inventory county-owned and community association land for opportunities for retrofits and restoration.
- By 2013 the County will generate a new standard and formal stormwater management plan forms which identify best management practices to be installed. The County will also generate a track and reporting mechanism of best management practice installation.

2) Septic system program enhancements for 2012 & 2013:

- Installation of BAT to systems in the Middle Chester River Watershed through the 2010 Trust Fund Program.
- Approximately 30 systems will be installed in the Critical Area by 2013.
- Outreach and education to properties inside and outside of the Critical Area.

3) Programmatic steps needed to assure septic systems connected to an advanced WWTP for 2012 & 2013:

- Housing Improvement Funding will be utilized to connect homesteads where property owners meet the income requirements in the Chesterville Forest area.
- It should be noted that all connections are subject to funding and consistency with Priority Funding Area requirements.

4) Key programmatic actions to enable WWTP Upgrades for 2012 & 2013:

- Betterton engineering studies to be finalized and plans for implementation to be developed.
- Galena WWTP design, construction, and planned completion by the end 2013.
- Kent County and the Town of Rock Hall will look into supplementing the cost of ENR upgrades by installing solar energy systems on land adjacent to WWTPs and using any excess power generated by their systems to offset the energy being consumed through their other meters.

5) Other:

Betterton:

- Betterton will continue to implement funding from Maryland Urban Community Forestry Council for Urban Canopy planting in 2012 and 2013.
- Further Urban Canopy and street tree implementation funding to be sought through the CBT Community Greening Grant Program;
- Buffer Management and Enhancement Plans;
- Forest Stewardship Planting Plans;
- Critical Area afforestation; and
- noncritical area afforestation;

Chestertown:

- Urban Canopy and street tree implementation funding to be sought through the CBT Community Greening Grant Program;
- Buffer Management and Enhancement Plans;
- Forest Stewardship Planting Plans;
- Critical Area afforestation; and
- noncritical area afforestation.

Galena:

- Urban Canopy and street tree implementation funding to be sought through the CBT Community Greening Grant Program.

Millington:

- Urban Canopy and street tree implementation funding to be sought through the CBT Community Greening Grant Program;
- Buffer Management and Enhancement Plans;
- Forest Stewardship Planting Plans;
- Critical Area afforestation; and
- noncritical area afforestation.

Rock Hall:

- Urban Canopy and street tree implementation funding to be sought through the CBT Community Greening Grant Program;
- Buffer Management and Enhancement Plans;
- Forest Stewardship Planting Plans;
- Critical Area afforestation; and
- noncritical area afforestation.

Kent County:

- Forest Stewardship Planting Plans (approximately 25 acres of new plantings can be expected in the next two years);
- Develop a tracking mechanism for: Buffer Management and Enhancement Plans; Critical Area afforestation; noncritical area afforestation; and other best management practice and provide that template to the municipalities.
- CRA is planning on planting about 150 trees and shrubs on marginal farmland that currently just has sod on it, not in cropland, in order to create buffers.