

**SOMERSET COUNTY**  
**WATERSHED IMPLEMENTATION PLAN**  
**PHASE II**

**July 2, 2012**

## SECTION III: LOCAL AREA PHASE II WIP CONTRIBUTION

### SOMERSET COUNTY

#### 1. Introduction

The Maryland Department of the Environment (MDE) submitted a statewide Phase II Watershed Implementation Plan (WIP) to the EPA as of March 31, 2012. This is the second step of a three step process to address the amounts of nutrients and sediments that can enter the Chesapeake Bay by the year 2025. The State's Phase I WIP was accepted by the EPA in December of 2010.

Each county was tasked by MDE with developing strategies to identify how each county would address these pollutants at a local level, and the county strategies would be included as part of the statewide WIP. Somerset County provided a draft of local strategies on November 18, 2011, and this effort seeks to further refine that original draft.

The targets assigned to Somerset County by the five sectors (Agriculture, Forest, Urban, Septic and Wastewater) are summarized below.

<b>SECTOR</b>	<b>2009 Nitrogen Load</b>	<b>2009 Phosphorus Load</b>	<b>2017 Nitrogen Allocation</b>	<b>2017 Phosphorus Allocation</b>	<b>2025 Nitrogen Target</b>	<b>2025 Phosphorus Target</b>
<b>Agriculture</b>	1,122,744	103,061	1,084,102	107,025	1,058,340	109,668
<b>Forest</b>	216,600	6,486	218,473	6,525	219,723	6,551
<b>Urban</b>	111,143	7,457	88,748	5,200	73,817	3,695
<b>Septic</b>	54,247	0	41,481	0	32,970	0
<b>Wastewater</b>	36,213	1,964	42,638	2,855	46,921	3,449
<b>Total</b>	1,538,947	118,968	1,475,442	121,605	1,431,771	123,363

## 2. Overview of the Local Team's Process

Somerset County's Local Team consisted of representation from a variety of interests. Membership was open to anyone who expressed an interest in participating. As listed below, included were representatives from the County's Planning Department; Roads Department; local Health Department; Soil Conservation District; Somerset Sanitary District; County Planning Commission; the Town of Princess Anne and the City of Crisfield; and initially, members also represented the University of Maryland Eastern Shore; Eastern Correctional Institute; and Maryland Environmental Services. Other organizations that were included on the County's notification list and were invited to attend included the Chesapeake Bay Foundation; the Lower Shore Land Trust; and the Delmarva Poultry Institute. The Local Team's liaison was a staff member from the Maryland Department of Planning, who facilitated the dissemination of information from MDE to the Local Team.

The Local Team's membership was as follows:

Keith Lackie (State Liaison)	Maryland Department of Planning
Gary Pusey	Somerset County Dept. of Technical & Community Services
Tom Lawton	Somerset County Dept. of Technical & Community Services
Bob Cadwallader	Somerset County Dept. of Technical & Community Services
Robert Spery	Somerset County Dept. of Technical & Community Services
Doug Taylor	Somerset County Roads Department
Mike McIntyre	Somerset Health Department
Nelson Brice	USDA Natural Resources Conservation Service
Larry Fykes	Somerset Soil Conservation District
Robin Street	Somerset Sanitary District Commission
Earl Ludy	Somerset Sanitary District Commission
Robert Fitzgerald	Somerset County Planning Commission
Tracy Grangier	Town of Princess Anne
Harold Frock	City of Crisfield

Leon Bivens

University of Maryland Eastern Shore

Dave Aalders

Eastern Correctional Institute

Duane Wilding

Maryland Environmental Services

The first meeting was held in April 2011 and meetings continued on a monthly basis until a draft Plan was submitted to MDE on November 18, 2011. A subsequent meeting was held in April 2012 to discuss finalizing the draft for submittal to MDE prior to July 2, 2012. (Note: This date was subsequently extended by MDE to July 16, 2012.)

Of the five sectors identified (Agriculture, Urban, Septic, Forest and Wastewater), the Local Team was focused on reducing pollutant loads from the Urban and Septic sectors, as Agriculture was being addressed by a separate team proceeding on its own track, and the 2017 and 2025 target loads for both Forest and Wastewater for Somerset were not being exceeded in Somerset County.

Using the Maryland Assessment Scenario Tool (MAST), various scenarios were developed in an attempt to achieve the pollutant loads for 2017 and 2025 for the Urban and Septic sectors. It should be noted that the scenarios identified will be heavily dependent on funding coming from either the State or Federal level, as the County does not have the financial or staffing resources to implement these scenarios independently.

As will be noted in the strategies described below, the Septic sector target is being met with a combination of septic system upgrades and a pumping program, although the costs of implementation are beyond the ability of Somerset County to fund, meaning funding will have to come from some other source (such as the State or Federal government). A similar situation exists with the Urban sector. Somerset County does not support “trading” from the Wastewater sector, which does have excess capacity, to help offset the Urban deficit, since trading within Somerset County was not permitted with the Agriculture sector’s excess capacity, and the excess capacity associated with the Wastewater sector will be dedicated to serving any potential future development in the County.

### **3. Somerset County Phase II WIP Strategies**

#### **Septic**

Data provided by EPA indicates that, in 2009, 54,247 lbs. of nitrogen entered the Chesapeake Bay watershed from septic systems in Somerset County. The target for 2017 is to reduce this amount to 41,481 lbs. and to 32,970 lbs. in 2025. These figures represent a decrease of 24% and 39%, respectively, from 2009 levels.

Three options are available in MAST pertaining to Septic that will potentially reduce pollutant loads for 2017 and 2025. These include (1) replacing or utilizing septic systems with additional nitrogen removal capabilities than traditional septic systems; (2) pumping existing septic systems on a regular schedule; and (3) connecting existing septic systems to public sewer.

According to MAST, there are 5,453 septic systems in Somerset County. A total of 2,332 systems are located within the Chesapeake Bay Critical Area; 533 systems are outside of the Critical Area but within 1,000' of a perennial stream; and 2,588 systems are located outside of the Critical Area and not within 1,000' of a perennial stream.

### Septic Denitrification

Between June of 2008 and July 1, 2010, a total of 574 traditional systems in Somerset County were replaced with systems utilizing Nutrient Removal Technology/Best Available Technology (BAT). These were funded through the Bay Restoration Fund (BRF) and resulted in an average of about 23 systems per month (or 275 per year). During FY 2011 (July 1, 2010 – June 30, 2011) a total of 22 additional systems were installed in the County, again using BRF funds in the amount of \$265,000 (approximately \$12,000 per system). So far in FY 2012, 12 systems have been installed. Funding for FY 2012 is \$334,000, so it can be estimated that 27 BAT systems will be installed this year. If the entire reporting period is used (June of 2008 through October of 2011), the average number of systems installed in Somerset County was 15 per month, or 180 per year.

If future funding levels remain the same as for FY 2011 and FY 2012, the number of systems installed would be drastically reduced (to about 30 systems per year). During the 2012 Maryland General Assembly session, legislation was passed to increase the BRF fees to \$60, doubling the previous fee. It is unclear at this time if the extra funds will be allocated to BAT systems or instead, if the extra funds will be dedicated to wastewater treatment plants. The installation of BAT systems in Somerset County is heavily dependent on BRF funding, so it is hoped that this fee increase will lead to an increase in funding for BAT systems. In addition, the installation of BAT systems is the most practical way for Somerset County to meet the 2017 and 2025 nitrogen targets for septic systems.

In order to meet the pollutant targets for Septic, for the MAST scenario, a drastic increase in the number of BAT systems will need to be installed in Somerset County. By 2017, 70% of the systems in the Critical Area should be BAT systems, along with 20% of all other systems in the County. By 2025, 100% of the systems in the Critical Area would need to be BAT systems, in addition to 25% of systems outside the Critical Area but within 1,000' of a perennial stream, and 50% of all other systems in

the County. For these scenarios to be realized, an increase in State funding will be necessary. A more conservative approach was utilized for the two-year milestones, as it seems more likely that funding for FY 2013 will be similar to that of FY 2012.

To achieve the 2017 target would result in an estimated cost of approximately \$27 million and to achieve the 2025 target would cost an estimated \$45 million.

### Septic System Pumping

Septic systems can achieve nutrient reductions through frequent maintenance and pumping. On average, septic tanks need to be pumped every three to five years to maintain effectiveness. Requiring septic tanks to be pumped is not currently regulated, nor is there any system in place to track pumping.

From a cost standpoint, septic pumping can be an attractive option as opposed to replacement of a traditional system with a BAT system. Therefore, Somerset is proposing that a septic system pumping program be established utilizing BRF funding. In the MAST scenario for 2017, it was estimated that one-half of the County's septic systems in the Critical Area would be pumped on a three year schedule, along with 20% of the systems outside of the Critical Area but within 1,000' of a perennial stream and 25% of the systems outside of the Critical Area and not within 1,000' of a perennial stream. To meet the 2025 target, these percentages would need to be increased to 100% (Critical Area); 25% (outside the Critical Area but within 1,000' of a perennial stream); and 50% (outside of the Critical Area and not within 1,000' of a perennial stream). At an average cost of \$250 per pumping, this initiative would cost approximately \$960,000 total to the year 2017, and \$1.4 million total to the year 2025.

### Connecting Septic Systems to Public Sewer

Connecting septic systems to public sewer is the most effective way to reduce nutrients from entering the Chesapeake Bay watershed. The City of Crisfield owns its wastewater treatment plant, and the other public plants in the County are operated by the Somerset Sanitary District Commission.

Since 2006, 194 septic systems have been connected to public sewer in the County. However, the Sanitary District Commission has indicated that no additional hookups for septic systems are anticipated in the future, as available treatment plant capacity is planned to be dedicated to servicing new development. As a result, other than taking into account the benefits of connecting the 194 systems since 2006, no other connections were incorporated into MAST.

### Urban (Non-Regulated Urban Runoff)

Data provided by EPA indicates that, in 2009, 111,143 lbs. of nitrogen entered the Chesapeake Bay watershed from non-regulated urban runoff in Somerset County. The target for 2017 is to reduce this amount to 88,748 lbs. and to 73,817 lbs. in 2025. These figures represent a decrease of 20% and 34%, respectively, from 2009 levels.

A number of options are available for pollutant reductions in the Urban sector through MAST. Most of these pertain to alternative methods of stormwater management than have previously been utilized in the County. The Town of Princess Anne identified several measures it will be undertaking, including tree planting; street sweeping; installing bio-retention ponds and grass swales in the town's park, along with shoreline stabilization and wetland restoration. These initiatives were entered into MAST.

Somerset has included the following strategies to be pursued (for specific acreage figures, please see the MAST Input Deck, submitted separately):

#### Under Nonregulated Pervious Developed Land Use Group –

- Bioretention/Rain Gardens
- Bioswale
- Forest Conservation
- Urban Filtering Practices
- Wet Ponds and Wetlands

#### Under Nonregulated Impervious Land Use Group –

- Impervious Urban Surface Reduction
- Urban Stream Restoration; Shoreline Erosion Control

#### Under Regulated Pervious Developed Land Use Group –

- Urban Forest Buffers
- Urban Nutrient Management

#### Under Urban Lands – Unregulated –

- Dry Detention Ponds and Hydrodynamic Structures

#### Under Construction – All –

- Erosion and Sediment Control

#### Under Extractive – All –

- Erosion and Sediment Control on Extractive

As documented in MAST, the 2017 and 2025 targets will be met. It should be pointed out that achieving the targets will be dependent on funding assistance from either the State or Federal government, as the County does not currently have the resources available to fully implement the proposed BMPs. Using the cost estimates prepared by Dennis King and Patrick Hagan at the University of Maryland Center for Environmental Science for the MAST BMPs, the average annual cost to implement these strategies would be approximately \$70 million. For comparison purposes, the County's approved FY 2013 budget is almost \$36 million.

In cooperation with the Center for Watershed Protection, the County has been approved for a grant from the National Fish & Wildlife Foundation to identify specific public and institutional lands within the County (and more specifically, within the municipalities of Princess Anne and Crisfield) where stormwater management retrofit opportunities exist. In the County, the grant would be utilized to identify properties that could potentially be used for wetland restoration areas or for tree planting.

In addition, the grant will provide write-ups for all feasible projects; estimate implementation costs for assessed projects; provide the expected nutrient load reduction for each project; and identify potential funding sources for each project.

#### **4. Local Area 2012-2013 Milestones**

The period covered for the milestones is July 1, 2011 – June 30, 2013. It should be noted that one year of this two-year period has already passed, and the County recently adopted its budget for FY 2013 that takes effect on July 1, 2012. The FY 2013 budget was particularly challenging for the County due to the slowing of the economy and a decrease in revenues, combined with an increase in certain obligations. As a result, dedicated funding to pursue significant programs during this first two-year period is limited. The milestones for this report pertain only to the Septic and Urban sectors for the reasons noted earlier in this Plan.

##### Implementation Actions

- a.) Number of septic upgrades: 50
  - # in Critical Area: 50
  - # within 1,000 ft. of a stream: 0
  - # in other areas: 0

Discussion: The number of septic upgrades was based on BRF funding available in FY 2011 and 2012, and assuming that funding will remain comparable in FY 2013. In FY 2011 and FY 2012, it is anticipated that approximately

50 systems will be installed. Therefore, for FY 2012 and FY 2013 a similar number will be installed.

b.) Bioretention Pond: 0.08 ac.

Discussion: The Town of Princess Anne is planning to install a 0.08 acre bio-retention pond in a city-owned park during this 2-year period.

c.) Street Sweeping: 11,375 ft. of curb/year

Discussion: The Town of Princess Anne implements a regular street sweeping program that is expected to continue.

#### Programmatic Actions

- a.) Through a grant obtained from the National Fish and Wildlife Foundation, Inc., receive assistance from the Center for Watershed Protection to identify stormwater management retrofit projects, wetland restoration areas, sites for tree planting and other strategies that will help meet the County's Urban target for 2025. This analysis will include an estimate of costs needed to implement the identified projects to assist with future budgetary planning by the County.
- b.) Develop tracking and reporting systems for future Implementation actions related to septic system upgrades and Urban BMPs being proposed.
- c.) Develop the framework for a County-wide program of septic system pumping, including a tracking system, public outreach and education, and explore funding mechanisms.

### **5. Area Implementation Tracking, Verification and Reporting Methods**

Septic upgrades are tracked by the local Health Department (for Somerset County, those systems upgraded using BRF funding were previously administered by the Worcester County Health Department, but in FY 2013 the Somerset County Health Department will be administering the program). BAT systems installed without using BRF funding are tracked by the Somerset Health Department. A method to track septic system pumping will need to be developed before it is implemented beginning in FY 2014. Tracking for the Urban strategies would be handled through the regular inspections required by the County's Stormwater Management Ordinance.