

# **FINAL Phase II Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL July 2, 2012**

## **Section III: Allegany County**

### **1.0 Overview**

Allegany County, along with a small portion of Garrett County to the west, makes up Maryland's westernmost contributing drainage area to the Potomac River Basin of the Chesapeake Bay. Allegany County is unique to Maryland for its mountainous terrain and vast forested land cover (75%). Although Allegany County's contribution of sediment and nutrients to the Chesapeake Bay is small relative to other counties due to land use and distance from the Bay, we are committed to pursue the goals set forth below to improve water quality both in our local streams and in the Chesapeake Bay.

The Allegany County Bay TMDL/WIP Committee (Committee) was formed under the leadership of the County's Planning Services Department with strong support from the County's Public Works and GIS offices. Members of the core Committee also represent the Cities of Cumberland and Frostburg – Engineering and Planning Divisions, as well as the Allegany Soil Conservation District. The broader Committee also represents five small municipalities including the Towns of Barton, Midland, Lonaconing, Westernport, and Luke, as well as the Allegany County Health Department, Maryland Department of Natural Resources – Forestry Service (DNR-FS), Maryland State Highway Administration (SHA) District 6, Maryland Bureau of Mines (BOM), Maryland Abandoned Mine Lands (AML) Division, The Nature Conservancy, Frostburg State University, Allegany College of Maryland, and a number of private minor wastewater treatment plant operators. The core Committee began meeting on a monthly basis in September 2010. The broader Committee was gradually organized and most members stated above have been participating on some level since spring 2011.

Allegany County's general approach to meeting reduction targets is described below.

#### **1.1 Wastewater**

To meet the State's broad strategy, implementation of ENR upgrades to the three (3) major wastewater treatment plants (WWTP) in Allegany County was completed in 2010.

Elimination of combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) in Allegany County is ongoing and represents some of the most effective nutrient and sediment reduction strategies in the upper reaches of the Potomac River Basin.

The City of Cumberland is working towards storage of 85% of the average annual overflow, which will then continue to be treated through the enhanced nutrient removal (ENR)-upgraded WWTP. This project is to be completed by 2023 per judicial consent order. The 20+ year program is estimated to cost \$75 million.

The City of Frostburg is working towards separation of the storm drains from the sanitary sewer in order to eliminate overflows. This effort is upwards of 40% complete and is to be completed by 2023 per judicial consent order. The 20+ year program is estimated to cost \$25 million.

The Allegany County Department of Public Works - Utilities Division and the LaVale Sanitary District are working towards elimination of SSOs by 2023 per judicial consent order. These projects include inflow and infiltration investigations and subsequent collection system and interceptor rehabilitations and replacements, removal of illicit connections, point repairs, etc. Depending on outcomes of investigations, total program costs are expected to be tens of millions of dollars.

## **1.2 Septic**

Septic systems serve a modest 15% of Allegany County's population and are sparsely scattered throughout the rural areas of the county. It is acknowledged by the State and the County that the upper reaches of the Potomac River basin are the least effective target for reductions in this sector. More importantly, based on MAST modeling and analysis performed, in order to meet phosphorus reduction goals in the urban sector for Allegany County, the corresponding nitrogen reductions will result in a surplus that will meet nitrogen reduction targets in the septic sector.

## **1.3 Urban**

Allegany County's current capacity to reduce nutrients and sediments in the urban sector may be considered somewhat unique for reasons listed below.

### **1.3.1 Urban Non-Regulated**

The low population of Allegany County does not warrant regulation under the State's MS4 program; therefore, most projects identified as completed in the last five years were not pursued under an established program with a secure funding source. Nonetheless, some significant reductions are documented through projects that have been independently pursued and voluntarily implemented. Compilation of the aforementioned data recognized a current pace of implementation that has become the basis for future goals. In particular:

#### *1.3.1.1 Urban Tree Planting*

Allegany County's vast (75%) forested land cover and the local objective to conserve and enhance this land use is a unique and strategic component of our plan. The Allegany County Bay TMDL/WIP Committee has developed a close working relationship with DNR-FS to learn more about ongoing tree-planting efforts throughout the County. DNR-FS possesses data on all trees purchased/planted in Allegany County. The County worked closely with DNR-FS to determine appropriate selection of BMPs to account for all tree planting activities.

Urban tree planting is currently being implemented at a rate of approximately five (5) acres per year on non-regulated, pervious developed lands. This has been accomplished through various partnerships between DNR-FS, Maryland State Highway Administration (SHA), Rocky Gap State Park, State Forests in Allegany County, Dans Mountain Wildlife Management Area, Warrior Mountain Wildlife Management Area, and Billmeyer Wildlife Management Area.

Urban tree plantings are also being achieved within the limits of the City of Cumberland; however, it is uncertain at this time how these reductions can be appropriately credited in MAST due to the existing combined sewer system and the CSO elimination plan of capture and treatment. See Section 5.2.

#### *1.3.1.2 Stream (Forest) Buffers*

In the last five (5) years, approximately 90 acres of urban stream buffers have been planted in Allegany County. This total was not accomplished through one single program. DNR-FS provided detailed descriptions of all programs in which buffers have been planted in the past or may continue to be planted in the future, specifically:

##### *1.3.1.2.1 Backyard Buffers*

DNR-FS provides sixty (60) bundles of twenty-five (25) trees each to homeowners who own properties with streams that are currently not buffered. These trees are provided free of charge to homeowners. This \$2,000 per year budgeted program has been in place since 2010 and is estimated to account for three (3) acres per year of urban stream buffers. Allegany County plans to evaluate the ongoing effectiveness of this program each time milestones are proposed and adjust as needed depending on data received from DNR-FS.

##### *1.3.1.2.2 Special Rivers*

DNR-FS receives long term grants funded by the EPA in the program directed toward developed stream buffers and stewardship on private lands. The program is responsible for approximately 3,000 linear feet of buffer per year (approximately five (5) acres total area per year). In total, the grant funding is approximately \$16,000 per year and has been in place since 2005. It should be noted there was a 32-acre buffer planting in 2010, which helped contribute to the approximately 90 acres total stream buffers planted in the last five (5) years. However, discussion with DNR-FS resulted in a predicted future implementation average of approximately five (5) acres per year.

Allegany County predicts eight (8) acres per year of stream buffers in the future and this figure comes from the combined total of the Backyard Buffers program and the Special Rivers program. Another program that has contributed to the approximately 90 acre total since 2005 is the Forest Brigade and Natural Filters program. This program pairs DNR-FS with inmates from local correctional facilities to plant trees at a rate of approximately sixteen (16) to twenty (20)

acres per year. However, funding for this program is no longer available and it is not predicted to continue into the future.

#### *1.3.1.3 Stormwater Retrofits*

A review of current capacity identified a number of stormwater retrofit projects that have been completed in the last five years or are currently underway. This includes a 100-acre retrofit currently underway in the City of Frostburg, which is designed to capture and treat stormwater from a recently-separated section of combined sewer, as well as a 78-acre retrofit on the Allegany College of Maryland campus in Cumberland. An additional 11+ acres have been retrofitted with rain gardens installed on several public school properties and the Frostburg State University campus. These projects were funded by MDE, EPA, CBT and SCD grants and administered by the Allegany SCD.

These projects represent voluntary efforts to improve water quality in the Potomac River Basin and a general initiative for environmental stewardship in Allegany County. Although the Allegany County MAST scenario shows that reduction targets can be met without future stormwater retrofit projects, these types of projects will continue to be evaluated and pursued on an as-needed basis, as resources are available.

#### *1.3.1.4 Impervious Area Reductions*

Allegany County currently administers a Flood Buyout Program that results in impervious area reductions in the floodplain. In the last five (5) years, Allegany County has purchased and demolished 28 homes in the floodplain, resulting in approximately three (3) acres of impervious area reduction. Once structures are demolished, these properties are stabilized with vegetation and remain undeveloped. These projects represent only a modest reduction in the MAST model; however, they do represent an established initiative for environmental stewardship and an opportunity to build capacity for nutrient and sediment reductions as resources and funding become available.

Impervious area reductions are also being achieved within the limits of the City of Cumberland; however, it is uncertain at this time how these reductions can be appropriately credited in MAST due to the existing combined sewer system and the CSO elimination plan of capture and treat. See Section 5.2.

#### *1.3.1.5 Stream Restoration*

In the last five (5) years, upwards of 7,500 linear feet of stream restoration projects have been implemented in urban (non-agriculture) areas of Allegany County. These projects were administered by both the Allegany SCD and Allegany County Department of Public Works (DPW) with grant funding from MDE and NRCS. These are necessary projects in response to significant flooding events that cause channel degradation. Allegany County recognizes the

increased efficiency for this BMP that is the result of a Chesapeake Bay Program expert panel evaluation in 2011. These projects will continue to be pursued on an as-needed basis and implemented as funding becomes available.

### 1.3.2 Extractive

One type of land use unique to both Allegany and Garrett Counties is extractive (land mined for coal). Active coal mining is regulated under the State's Bureau of Mines (BOM) Division, while reclamation of abandoned mine lands (lands mined prior to 1977) falls under the Abandoned Mine Land (AML) Division. Both BOM and AML are local MDE offices located in the City of Frostburg that have participated in the Committee's efforts to establish a current pace of implementation.

Reclamation (reforestation) of extractive lands is a key strategy in achieving nutrient load reductions from the western region of the Potomac River Basin. The most significant reduction strategy identified in the Allegany County current capacity analysis is reclamation of extractive lands. According to MAST, extractive lands make up approximately 4,500 acres in Allegany County, including both active and abandoned mine lands that have not yet been reforested. Data provided by the BOM and AML Divisions indicates an average of 93 acres of extractive lands that have been reforested per year for the last five (5) years. This strategy is primarily implemented by the coal companies who are actively mining and reclaiming the lands disturbed by those activities. According to BOM, these companies are required to re-stabilize as part of their post-mining obligations; however, they have the option to restore to forest, pasture, commercial, or other undeveloped land uses. Reforestation is the preferred strategy for nutrient and sediment reduction and this current pace of 93 acres per year shows that this sector is already implementing practices that result in significant reductions. The AML Division of MDE is also implementing this strategy on abandoned mine sites that were mined prior to the 1977 establishment of regulations for reclamation. Coordination with BOM and AML has indicated that continued implementation of this strategy is projected at the current average pace of 93 acres per year.

## **2.0 Phase II WIP Strategies**

MAST modeling efforts have shown that a continuation of the current pace of implementation, as established by the current capacity analysis, actually results in a surplus of nutrient reductions to meet the 2017 Interim and 2025 Final Targets. Therefore, the Committee had the opportunity to evaluate the current capacity through a more realistic lens of difficult economic times. The pace of implementation described below for each strategy represents a more financially realistic scenario than continuing the pace established in the current capacity analysis. More importantly, the pace of implementation for strategies described below, as modeled in the MAST scenarios [Allegany\\_2017\\_Urban\\_Non-Federal\\_20120625](#) and [Allegany\\_2025\\_Urban\\_Non-](#)

[Federal\\_20120625](#), submitted in conjunction with this Final Phase II WIP, fully meets both the 2017 Interim and 2025 Final Targets, respectively, as set forth by MDE.

Continuation of current strategies at the pace of implementation described below would achieve 88% of reductions required for nitrogen and 74% of reductions required for phosphorus by 2017. In order to achieve the remaining reductions required and to offset any current strategies identified that prove unable to continue implementation at the pace identified, sub-committees will be established, as indicated in our 2013 Milestones, to evaluate the best opportunities for building capacity of existing strategies. Additionally, Allegany County will evaluate two additional strategies: 1) the feasibility to establish an education and outreach program for urban nutrient management; and 2) the feasibility to establish a qualifying street sweeping program. Finally, Allegany County will see an additional significant reduction due to CSO/SSO elimination projects (see Section 5.1).

The following strategies have been identified as preferred strategies for Allegany County.

## **2.1 Urban Tree Plantings**

DNR-FS will continue to pursue implementation of five (5) acres per year of tree plantings on both private and public lands. Furthermore, opportunities will be pursued to increase urban tree planting capacity. Urban tree planting credits will also be pursued for projects completed in the City of Cumberland (combined sewer land).

## **2.2 Urban Stream (Forest) Buffers**

DNR-FS will continue to pursue implementation of eight (8) acres per year of stream buffer plantings on both private and public lands. Furthermore, opportunities will be pursued to increase urban stream buffer capacity.

## **2.3 Stormwater Retrofits**

Allegany SCD, in partnership with the City of Frostburg, will pursue funding to complete the 100-acre stormwater retrofit project in Frostburg. This project will treat stormwater that has recently been separated from the combined sewer system. Allegany SCD with partners will also continue to pursue small-scale retrofit projects such as rain gardens at a minimum pace of 1.5 acres per year, as shown in current MAST scenario. Additional retrofit projects to address future separated sections of combined sewer may be considered, as well, but are not reflected in the current MAST scenario.

## **2.4 Impervious Area Reductions**

Allegany County will continue to pursue funding to administer the Flood Buyout Program at a current pace of implementation of 5-6 homes or 0.6 acres per year of impervious area reduction.

Impervious area reduction credits will also be pursued for projects completed in the City of Cumberland (combined sewer land).

## **2.5 Stream Restoration**

Allegany SCD, in partnership with Allegany County, will continue to pursue funding for stream restoration projects on an as-needed basis. The current pace of implementation (1,500 linear feet per year) is based on average restoration length per year for the past five (5) years. Based on research done to date, the Committee has found that a more realistic goal for the future is 800 linear feet per year, which combined with other strategies in the current MAST scenario, would meet the final target.

## **2.6 Abandoned Mine Reclamation**

The BOM and AML Divisions of MDE will continue to pursue implementation at the current pace of 93 acres per year (average). The current MAST scenario reflects a lesser pace of 75 acres per year, which combined with other strategies, meets the final target.

## **2.7 Urban Nutrient Management**

Allegany County, in partnership with relevant stakeholders, will pursue implementation of a qualifying urban nutrient management education and outreach program in Allegany County. The current MAST scenario reflects application of the urban nutrient management strategy on 54% of the total non-regulated pervious developed land in Allegany County. This translates to better fertilizer management on approximately 5,700 acres of residential and commercial lawns, golf courses, public parks, etc. The Committee is optimistic about this strategy because it prevents unnecessary application of nutrients into the watershed that are then very costly to remove.

## **2.8 Street Sweeping**

Although this strategy is not included in the current MAST scenario, Allegany County is prepared to consider implementation of a qualifying street sweeping program. This strategy will be pursued as a backup plan in the event that resources are not available to continue implementation of other current strategies.

## **3.0 2012-2013 Milestones**

### **3.1 Urban Tree Plantings and Stream (Forest) Buffers**

Both implementation and programmatic milestones are identified for these strategies. First, continue to pursue a current pace of implementation of five (5) acres per year for urban tree plantings and eight (8) acres per year for stream buffers. Next, establish a sub-committee of relevant stakeholders (e.g. DNR-FS, TNC, SCD, local watershed groups and jurisdictions, and the local Appalachian Laboratory of the University of Maryland Center for Environmental

Science) and evaluate opportunities to expand urban tree planting and stream buffer capacity to improve water quality outcomes. Perform a review and analysis of currently available data to identify riparian zones and other non-forested lands and determine how much and specifically where reforestation is needed or practical.

### **3.2 Stormwater Retrofits**

Both implementation and programmatic milestones are identified for this strategy. First, continue to pursue funding to complete the 100-acre Frostburg retrofit that is currently underway but not fully funded. Also, continue to pursue small-scale retrofits such as rain gardens on 1.5 acres per year. Next, although additional large-scale retrofits are not included in the current MAST scenario, establish a sub-committee of relevant stakeholders (e.g. Allegany County Departments of Public Works and Community Services, Allegany SCD and City of Frostburg) and identify target areas for stormwater retrofits that will focus on restoring local streams. Initiate an information gathering phase to include attending workshops and trainings to evaluate the cost-effectiveness and identify potential funding sources for this strategy. This strategy will be pursued as a backup plan in the event that resources are not available to continue implementation of other current strategies.

### **3.3 Impervious Area Reductions**

Both implementation and programmatic milestones are identified for this strategy. First, continue to pursue funding through the Flood Buyout Program and, when funding is available, administer a current pace of implementation of 5-6 homes or 0.6 acres per year of impervious area reduction. Next, establish a sub-committee of relevant stakeholders (e.g., Allegany County and Cities' staff and elected officials, smaller municipality elected officials) and identify target areas for impervious area reductions, as well as additional funding sources for buyouts and demolition.

### **3.4 Stream Restoration**

Allegany SCD will continue to partner with Allegany County DPW to pursue funding and administer urban stream restoration projects on 800 linear feet per year, as included in the current MAST scenario. To that end, a county-wide field evaluation of current stream conditions will be performed and a priority list organized so that funding for the most cost-effective projects can be pursued.

### **3.5 Abandoned Mine Reclamation**

Both implementation and programmatic milestones are identified for this strategy. First, BOM and AML Divisions of MDE will continue to implement at least 75 acres per year on average, as included in the current MAST scenario. Next, establish a sub-committee of relevant



stakeholders (e.g. BOM, AML, DNR-FS, TNC, etc.) and evaluate need and opportunities to build on capacity.

### **3.6 Urban Nutrient Management**

A programmatic milestone is identified for this strategy. Allegany County staff will monitor the State's initiative to reduce applications of fertilizers (nutrients) on residential, commercial, and institutional lawns, recreational fields and golf courses and gain a better understanding of the level of education and outreach required to implement this strategy. Allegany County will work with the State and the Chesapeake Bay Program (CBP) to learn more about implementation of this strategy.

### **3.7 Street Sweeping**

A programmatic milestone is identified for this strategy. Allegany County DPW staff will perform a cost/benefit analysis to evaluate the feasibility of establishing a qualifying street sweeping program, as needed, to provide a backup plan in the event other strategies prove infeasible. If results are favorable, Allegany County will partner with smaller jurisdictions within the county to share ideas for implementation.

## **4.0 Implementation Tracking, Verification and Reporting**

Allegany County has developed a beta version of a GIS-based BMP tracking system. The system leverages Allegany County's existing GIS infrastructure including ArcGIS for Server and the enterprise geodatabase. By coupling those resources with Esri's ArcGIS.com resources, which are open to the public and free to use, Allegany County has provided an easy-to-use map interface to track implemented BMP's in a spatial context.

Allegany County's geography encompasses two cities and five towns that will need to participate in the BMP tracking system, in addition to the Board of Education, higher education institutions, and possibly state agencies that do not presently track their BMP implementation in a digital database. The BMP Tracker will not replace any existing tracking system used by various organizations; instead it will just capture data that would not otherwise have been recorded. Furthermore, the beta BMP Tracker has been designed to facilitate multiple users of the systems with various technological abilities. The work flow to use the BMP Tracker is simple:

The user will visit the public-facing Allegany County Bay TMDL/WIP II Committee website: <https://sites.google.com/site/alleganycountytmdl/>. A webpage is dedicated to the BMP Tracker: <https://sites.google.com/site/alleganycountytmdl/bmptracker>. The map with the implemented BMP's can be viewed and identified from this site, but not edited. If the user intends to "log" a new BMP, he/she clicks a link to the BMP Tracker: <http://bit.ly/qn00yO>, a saved map on ArcGIS.com (the user will need to sign up for an ArcGIS.com account and request access to the Allegany BMP Tracker Group to have permissions to access the map). Once logged into the

BMP Tracker map successfully, the user will have the ability to add new BMP's to the map as well as query and edit existing BMP's. When a BMP has been added, the user will also enter required tabular information about the BMP. Some of these fields have been configured to have drop-down menus to facilitate data entry and database integrity. On the back-end, the BMP data is stored in the enterprise geodatabase as feature classes and can be exported as GIS or spreadsheet files for reporting purposes.

## **5.0 Data Concerns/Discrepancies**

### **5.1 Reduction Credits for CSO/SSO Elimination Projects**

Allegany County would like to take the opportunity to reiterate the significant nutrient reductions that will be realized through our costly CSO/SSO elimination projects that will be completed by 2023.

Our current understanding of how this may be credited in the Bay watershed model is as follows:

The MAST model does not currently provide for a best management practice (BMP) to address CSO/SSO eliminations; however, recent conversations with MDE Science Services Administration staff have indicated that MAST will be equipped for this in the near future. Due to a lack of understanding by the Committee, to date, as to how the CSO/SSO elimination projects would be credited, the current MAST scenario for Allegany County meets both 2017 Interim and 2025 Final Targets without recognizing the anticipated CSO/SSO reductions of 31,000 pounds per year for nitrogen and 8,000 pounds per year of phosphorus. However, the Committee does plan to report those reductions as they are achieved. Consequently, the current MAST scenario, if achieved along with the ongoing CSO/SSO elimination projects, would result in more nutrient reduction than required for Allegany County.

### **5.2 Reduction Credits for BMPs Implemented on Combined Sewer Lands**

The Committee wishes to document that sediment and nutrient reduction strategies are being implemented on lands contributing to combined sewers. There does not appear to be an opportunity for these reductions to be recognized in MAST since loadings for combined sewer lands are at a baseline of "zero". The Committee disagrees with this model assumption. Implementation of impervious area reductions and urban tree plantings on lands that contribute to the combined sewer will result in a net reduction of point source discharge and a net increase in filtered groundwater recharge. The Committee requests the ability to have these reductions recognized by the MAST model.