The Board of County Commissioners for St. Mary's County recognizes the scope of the work and implementation effort necessary to meet the federally mandated TMDL but continues to have significant concern regarding the cost projected for many of the WIP implementation options. The Board also recognizes the difficulty of implementing new projects and programs with such significant budgetary implications at a time of serious budget shortfalls for the local, state and federal governments. Board members continue to have concerns about the science used to develop the model estimates and loads, particularly regarding the septic load contribution. Based on the Board members concerns:

- This report (narrative and supporting attachments) is being submitted to MDE without the Board of County Commissioners formally adopting this Local Phase II WIP developed to date and contained herein.
- No formal approval by the Board of County Commissioners or commitment for funding beyond the existing CIP is implied or to be inferred by MDE from receipt of this submission. Current commitments are indicated in Table A-1 in Attachment A.
- To the extent that County resources and funding allow, the Board and county agencies will work to continue to refine of strategies, establish future WIP 2 year milestones, and to implement projects and programs necessary to achieve water quality improvements in the Chesapeake Bay. Potential strategies for future analysis are indicated in Table A-2 in Attachment A.

ST MARY'S LOCAL TEAM –WATERSHED IMPLEMENTATION PLAN DEVELOPMENT PROCESS

1. **OVERVIEW OF LOCAL TEAM'S PROCESS AND PARTICIPANTS**
   a. **Summary of the Team's work and County commitment to meet the Phase II WIP goals:**

      The St. Mary's County WIP partners included the agencies, organizations and facilities represented by the individuals who served on the WIP Team noted below. The Team members met monthly to understand and document local capacity and programs and to develop the recommendation and commitment outlined in c. below. Cooperation among WIP partners has been long established within St. Mary's County via the ongoing land use planning and development approval processes. Cooperation focused on water quality issues is also strong among the partners as a result of cooperative efforts to implement the Tributary Strategies, to develop a watershed restoration actions strategy (WRAS) for Breton Bay and for the St Mary's River watershed, to partner with the Army Corps of Engineers for development of a St. Mary's Feasibility study, the ongoing work on the St. Mary's River Project, and finally as a result of preparation for development of an NPDES permit required now that the county has exceeded a population of 100,000. Those many cooperative efforts have informed the WIP Phase II development effort. The County anticipates that similar cooperation will continue through WIP implementation to achieve Phase II WIP goals. The St Mary's County Department of Land Use and Growth Management had the lead responsibility for development of Phase II WIP and for assuring that the various agencies and organizations partnering in the WIP process are participating in the development of the local strategies and in achieving the milestones. The Department of Public Works and Transportation, Soil Conservation District and Metropolitan Commission will have principal responsibilities for overseeing implementation of the county strategy. The four principal County agencies/organizations and the other participating agencies, organizations and facilities have committed to tracking and reporting implementation efforts for the two year milestones.

St. Mary's County's Phase II WIP Team Participants (Principal Team members*):

DeAnn Adler	Town Planner, Town of Leonardtown
Christine Bergmark	Director, Southern Maryland Agricultural Development Commission
Daryl Calvano*	Director, St. Mary's County (SMCo) Health Department Division of Environmental Health Services (SMHD)
John Groeger*	Deputy Director, St. Mary's County (SMCo) Dept. of Public Works and Transportation (DPWT)
Robert Elwood*	President, Potomac River Association
Dan Ichniowski*	Assistant Director, St. Mary's County Metropolitan Commission (MetCom)
Mario Maningas	Industrial Wastewater Program Manager, NAVFAC Washington, Public Works Dept, Environmental Division
Charles (Chip) Jackson	Associate Vice-President, St. Mary's College of Maryland
Cindy Jones	Commissioner, SMCo Board of County Commissioners
Tom Koviak*	Soil Conservation Planner, Maryland Department of Agriculture
Bob Lewis*	Executive Director, St Mary's River Watershed Association
Ling Li, PE	Project Engineer, Maryland State Highway Administration (SHA)
Tracy Maningas*	Stormwater Program Manager, PNAS
Laschelle McKay	Town Administrator, Town of Leonardtown
Jacki Meiser*	Director, MetCom
Oliver Miranda	District Conservationist, Natural Resources Conservation Service (NRCS)
Luke Mowbray*	Facilities Planner/Sustainability Coordinator, St. Mary's College
Mark Muir	Forester, MDNR Forestry Service
Karuna Pujara	Chief, Highway Hydraulics Division. SHA
Donna Sasscer*	Agricultural Specialist, SMCo Department of Economic and Community development (DECD)
Sheryl Skrabacz*	Environmental Health Officer, SMHD
Jackie Smith*	Natural Resources Specialist, Naval Air Station Patuxent River (PNAS)
Jackie Takacs*	Watershed Restoration Specialist, Maryland Sea Grant Extension Program, University of Maryland
Sue Veith*	Environmental Planner, SMCo Department of Land Use and Growth Management (DLUGM) -- Local WIP Coordinator
Bruce Young*	District Manager, Soil Conservation District

As was noted in the November Draft, the Board of County Commissioners asked that the WIP team and commissioners begin to meet to work on specific issues in order to prepare a formal submission as requested for June 2012. Beginning in January 2012 the WIP team began to meet monthly with the St. Mary's County Board of County Commissioners to discuss the strategies proposed for each Sector in detail. Background material, supporting documentation on pollution source sectors, scientific information documenting the need and justification for the required reductions, and information on the specific cost implications and needs identified for funding, programs and policies. The results of those meetings are reflected in this narrative and in a refinement of the draft Table of Proposed Strategies: In general the Board has further narrowed the options from the table based on additional analysis.

- The commitment of the Board remains for accomplishing work based on prior budget, programs and projects that support the County efforts to meet the 2017 Interim Goals. Some refinement and expansion of the budget, programs and projects was approved in the FY 2013 to Fy2018 budget.
- In a number of areas the Board feels that additional study and information is necessary before they can make a commitment to funding the full range of implementation identified by the team as necessary to meet the WIP reduction Goals. Funding for the anticipated additional studies and consultant services is being provided so that work can begin in FY 2013.

b. The County's approach to meeting reduction targets:

The Team completed analysis of current capacity and implementation levels, identified areas of accomplishment as well as gaps in programs, policies, assessment of needs and potential enhancement of programs, staffing and revenue sources and areas where data gathering and monitoring need to be improved. The Team approached WIP Phase II planning with the following assumptions (listed in no particular order).

- Agricultural strategies might be enhanced and achieve greater than targeted reductions as a means in part to offset growth and urban sector goals by establishing the means for redevelopment and for new development help offset the costs for additional Ag sector reductions. Given the revised Agricultural sector loads, this may not be possible in the near term, although the team still considers conversion of areas that are marginal for agriculture to be converted to forest cover as a BMP that changes land use and also treats agricultural runoff.
- New development and redevelopment can and must achieve minimal increase in loads via use of ESD and innovative SWM, tree conservation and where necessary the implementation of offsetting BMPs—an option discussed by the Team is developing a private sector program to implement BMPs on "Plain Sect" (Amish and Mennonite) lands since those owners will not accept government funds and financing.
- Capital facilities projects and planning in anticipation of NPDES permitting requirements programs and data needs will proceed since these activities and projects support Phase II WIP implementation.
- Existing Capital Projects for sewer and water services are under way and credited in the Wastewater sector load cap. Credit for innovative projects beyond ENR that reduce effluent quantity and nutrient loading is needed. The analysis and discussion regarding septic sector that has occurred since the November submission reveals three findings:
  - Existing projects, budgets and plans for ENR upgrade of WWTP facilities and for future plant expansion address only current approvals and projected growth and provide no capacity to address WIP load reductions.
  - There is no current plan and no funding available to accommodate the increase in WWTP capacity necessary to address the connection of the number of onsite sewage disposal systems (OSDS) needed to meet the Septic Sector load reduction.
  - Even if funding became available on July 1, 2012, the design and construction necessary to provide the needed capacity for the needed OSDS connection could not occur in a time frame that would allow the county to implement the recommended the 2017 Interim Load reduction.
- The Navy at Patuxent River Air Station and Webster Field are taking steps via changes in land management and to WWTP infrastructure to meet Phase II WIP goals. They have developed milestones for 2012 that are included as Attachment B.
- Use of existing funds to leverage grants and other funds will be needed to finance BMPs. Of particular interest is use of FCA and CA fee-s-in-lieu monies to achieve larger scale reforestation efforts, to enhance urban tree coverage.

c. Accomplishments

The quantifiable accomplishments are noted under the 2010-2011 heading in Attachment A: STRATEGY TABLES for St Mary's County Phase II WIP for June 2012 Submission.

d. Challenges

The more significant challenges to meeting the County Load Allocations that have been identified include:

- **The funding necessary to address septic sector loads does not exist.** The County analyzed the level of funding that will be necessary to achieve the needed load reduction through various combinations of septic denitrifcation retrofits, connection to existing sewer, expansion of sewer

capacity to allow connection of septic to sewer outside of current service areas, septic pumping (at OSDS owner expense) and offsets from stormwater retrofits. The least expensive combination is well over $176 million dollars, and the costs to individual sewer service customers and to individual OSDS owners is unaffordable, will be politically difficult to fund through cost sharing among all OSDS owners, and beyond any ability of the County to fund without significant funding assistance from State or Federal sources.

- The Board has committed funding and has directed staff to procure consultant services to develop local funding options.
- The county, State and federal agencies need to consider how to finance WIP implementation projects in a manner that distributes costs across the broader community and does not overly burden small sectors of the population for the costs that benefit the wider community.
- State and/or Federal funding assistance seems necessary to meet the load reduction goal by 2025.

- St. Mary's is not yet regulated under an MS 4 Phase I permit and the State Highway administration has proposed no action to address BMP's currently needed for loads generated on approximately 2,000 acres of State owned ROW with estimated 1,250 acres of IS coverage. SHA did commit to working with the county to address specific projects and problem as they are identified.
- The lack of State staffing to speed up the incorporation of the Bay TMDL into existing NPDES permits which will delay the County's ability to begin the application process for our required permit has been identified as an issue by the team. The County has establish an FY2013 Capital Improvement Budget project (identifying fund needs through 2018) to provide the basic planning and implementation necessary to implement the federally mandated Phase I National Pollution Discharge Elimination System permit and the Phase II Chesapeake Bay Watershed Implementation Plan. The Phase II WIP 2012-2013 Milestone includes work necessary to the development of an MS4 Phase I permit for the County as well as to implement pilot projects that will inform the development of the permit as well as achieving reductions necessary to meet the Urban sector load reductions or offsets for the Septic sector.
- The University of Maryland has begun a grant funded project to develop an online tool for landowners to do self reporting of BMPs with a follow-up verification process to comprehensively to track and verify installation and maintenance of homeowner/private BMPs. St. Mary's County's is cooperating with the University of Maryland and is a pilot location for testing the tool.
- Amish and Mennonite landowners do not participate in government funded programs that require them to be the recipients of the funding and there is the need to develop an alternative funding model to gain their participation. A structural change to funding programs to allow third parties to receive funding either as a pass through agency or to allow the third party to be paid directly by State or federal agencies for onsite implementation is recommended.

2. COUNTY PHASE II WIP STRATEGY:

The team met on 5/22/2012 with the St. Mary's County Board of County Commissioners to present and discuss submission of a Final Local Strategy. The Commissioners were provided with Attachment A: STRATEGY TABLES for St Mary's County Phase II WIP for June 2012 Submission which refines the range of actions/strategies/projects previously submitted for meeting the TMDL load goals. The table identifies costs where available and whether an action that supports the WIP is already in the County's Capital Improvement Program (CIP) or in an operating budget. The Board consented to the Team transmitting this revised table to the State as the St. Mary's County Final WIP Phase II submission. There should be a clear understanding the table is divided into two sections:

- **Table A-1: Proposed Implementation through 2017 based on existing commitments** which are items currently implemented via existing programs, policies, regulations or projects or is included in an approved budget or capital improvement program.

- **Table A-2: Implementation Options to Consider for future Milestones** which are items not currently in any budget plan or capital improvement program and which are provided only as information in order for MDE to be informed of the full range of options the county is considering Items .
  - The Board required that the team clearly state that the county intends to further narrow the options from the table once additional analysis is performed in order to develop our final plan for our June 2012 submission.
  - The Board asked that the WIP team and commissioners begin to meet monthly to work on specific issues in order to prepare a formal submission as requested for June 2012.

a. Proposed 2012-2013 Milestones:

- Continue to implement existing CIP projects and to fund existing operational programs that support achieving reductions necessary to meet the load allocations for the county;
- Perform future planning/capacity analysis/cost benefit analysis to evaluate capacity and needs for county programs and infrastructure;
- Investigate funding options necessary to fund future implementation efforts;
- Continuing to prepare for NPDES permit. Initiate a SWM pilot project program to inform our implementation strategy and future NPDES permit development;
- Identify the appropriate tracking measures and monitoring procedures and data entry where these are currently inadequate to institutionalize the assurance of implementation and that information necessary to demonstrate WIP milestone compliance is available;
- Work with other counties and organizations to identify common needs and concerns that may be better addressed through statewide or regional efforts/programs; and
- Coordinate with the State Highway Administration to address SWM, erosion and maintenance issues for their facilities within the county.

b. Interim strategies to achieve load reductions are identified by sector in <u>Attachment A: STRATEGY TABLES for St Mary's County Phase II WIP for June 2012 Submission.</u>

The table identifies two categories of strategies:

- <u>Proposed Implementation through 2017</u> These strategies are identified because of the availability of funding in the short term. When possible the proposed year for implementation is noted in the table. During the development of the Final WIP the available funding may be reprogrammed and programs tailored to better meet load reduction targets
- <u>Implementation Options to Consider for future Milestones</u>. These include a myriad of options identified for which a cost benefit analysis will be required prior to selecting the strategies necessary to close the anticipated load reduction shortfall after implementation of existing commitments to programs and projects. A majority of the identified options address the identified shortfall in meeting septic sector load reductions. The options may also be considered to address urban sector load reductions and future reductions necessary to accommodate growth.

c. Description of local area tracking, verification, and reporting methods.

The team documented tracking and reporting currently performed is in accordance with state requirements—

- Notice of Completion forms completed by DPWT and submitted to MDE for stormwater management BMPs. Maintenance agreements for privately-owned SWM facilities are required. Period inspections are performed on facilities to assure proper maintenance and operation. Additional documentation regarding bonding and enforcement provisions is needed. *Gap analysis: While the presumption is that tracking, monitoring, and reporting performed by jurisdictions that operate outside county control is performed, information regarding these efforts will be needed by the local jurisdiction to assure all responsible*

parties are meeting their share of the necessary implementation. The assignment of loads to agencies and jurisdictions outside county control is needed and given that there is no county means to compel compliance, compliance needs to track at a State or federal level. Of particular concern are local colleges, Leonardtown, State and Federal facilities.

- DPWT, SCD, and MDE maintain records for grading permits, sediment and erosion control during construction.
- SCD, NRCS, and Department of Agriculture maintain records of Soil Conservation and Water Quality Plan (SCWQP), and implementation of nutrient management BMPs and other agricultural BMPS. Spot checks are performed to assure SCWQP implementation. *Gap analysis: There is also a need to address tracking for landowners in the agricultural sector who do not participate in any government programs so that no data on their agricultural practices is available.*
- Annual Reports to Maryland Department of Planning (MDP) identifying development applications and approvals, tracking of development in and out of PFAs and land use change. *Gap analysis: There appears to be a need for MDP to establish clear and consistent reporting formats to standardize the information submitted by each jurisdiction and from year to year to facilitate analysis and comparison of data and demonstrate progress.*
- Permits are maintained in DLUGM files for Forest Conservation afforestation & reforestation, Critical Area limits of disturbance, afforestation, mitigation, and Buffer establishment; Timber harvests, tidal and non-tidal wetlands impacts, mitigation; Shore erosion control (living shorelines and structural BMPs), Forest interior dwelling species (FIDS)habitat loss and mitigation. *Gap analysis: Incorporation of appropriate entry standards and field into digital permit tracking systems appears to be needed and would facilitate tracking and reporting of implementation progress. Having the state define specific data needs for reporting would facilitate this process and help standardize the information submitted by each jurisdiction and from year to year to facilitate analysis and comparison of data and demonstrate progress.*
- DLUGM submits requests for amendments to the Comprehensive Water and Sewer Plan (CWSP) to MDE for approval of expansion of water and sewer service areas. EDU letters issued authorizing connection in served areas. MetCom tests, approves and maintains public infrastructure and bills for service. *Gap analysis: In order to meet Septic Sector loads and to address possible "PlanMD" guidance and to meet any potential rural septic restriction, the Priority Funding Area guidance/restrictions for funding sewer outside of designated growth areas will need to be revised.*
- DLUGM maintains periodically updated GIS data layers for forest coverage and impervious surface coverage (determined from available aerial photography), lands permanently protected via fee-simple acquisition, various easement programs (MALPF, MET, MHT, Rural Legacy, etc.), land conservation via transfer of development rights (TDRs), and mandatory open space conservation required for subdivision approval and sensitive areas. *Gap analysis: There is a disconnect between local land use and resource data and the Bay Program data. Of note is the discrepancy between the stream coverage identified at the state/federal level and at the local level. (For example, during a Breton Bay WRAS stream survey, DNR estimated and budgeted for 70 miles of perennial stream but the field stream survey team walked and documented more than 150 miles of stream in the watershed.) Also of note is the discrepancy between numbers of OSDS in the Bay Model and from local data and the fact that using County GIS stream layers it appears that well over 90% of all OSDS are within 1000' of a stream and tidal shorelines not 50% as identified by the Bay Program.*
- Reconciliation of discrepancies between State, CBP Bay Model, and local area data (e.g., land use/land cover information, BMPs DRAFT State of MD is needed to assure accurate crediting of implementation. Of particular concern is the need to separately account for state owned lands and load allocations: *Gap analysis: SHA: estimated 2,000 acres with approx 1,250 acres of IS; MD State Parks and resource lands: estimated 4,545 acres with approx. 80 acres of IS*

d. Use of existing plans, regulations and programs.

A number of local watershed plans, environmental and water quality regulations and programs exist that are not currently quantified and credited in the Bay Model as contributing to nutrient or sediment reductions, The citizen participation in the development and implementation of many of these programs and support for regulations and enforcement to protect sensitive areas demonstrates that the County has the support of its citizens' for efforts to maintain watershed health and biodiversity and improve water quality conditions both locally and in the Bay.

Land Conservation Programs/Funding:

Rural Legacy Program

MALPF & ALPD easements

MET easements

MHT easements

Nature Conservancy easements

Patuxent Tidewater Land Trust easements

Open Space Conservation funding:

- POS
- Federal grants for habitat conservation
- Military encroachment programs to limit development encroachment around Naval Facilities

TDR fee in lieu provisions in the CZO

Recording tax dedication

Programs/Organizations with Funding (Match potential):

Forest: Forest Conservation planting or fee-in-lieu
Critical Area planting or fee-in-lieu
FIDS Mitigation planting or fee-in-lieu

Septic: Chesapeake Bay Restoration (CBR) Fund
Owner financing, and installation

Sewer: CIP
CBR Fund
Developer financing& installation &dedication

SWM retrofits:

- CIP
- Developer financing& installation & dedication
- CA 10% Rule regulations
- Grants to SMRW/CWP--SMR WRAS implementation projects

Wetlands/streams restoration/mitigation: State Highway projects
DPWT projects
Developer financing& installation

Oysters/SAV:

- Restoration projects funded via grants and state programs

Plans:

ACOE St. Mary's Feasibility Study (work products include recommendations for SWM retrofits, Oyster and SAV restoration)

Hilton Run Watershed Plan

Patuxent River Policy Plan

St Mary's River WRAS and implementation projects (in process)

Wicomico Scenic River Management Plan

McIntosh Run Conservancy Partnership

Breton Bay WRAS

Comprehensive Plan Water resources Element

Comprehensive water and sewer plan

Land Preservation, Parks and Recreation Plan

Comprehensive Zoning Ordinance (CZO) regulations:

50% undeveloped open space in major subdivisions with provisions for open space reductions in exchange for increased affordable and workforce housing.

80% conservation of Prime Farm soils in rural developments

CZO TDR & Clustering requirements (projected land conservation 84,000 acres in addition to current 34,000 acres of land conserved countywide including requirements for

- Minimum developed open space & landscaping requirements
- Sensitive Areas[1] preservation
- Environmental Site design standards for new development and for redevelopment

[1] Tidal wetlands plus 100-foot Buffer; Perennial Streams in and out of CA plus 100-foot buffer; Intermittent 50' Buffer; Non-tidal wetlands plus 25' buffer; steep slopes greater than 15% in CA; steep slopes greater than 25% outside of CA; Highly erodible soils >15% slope; hydric soils within 200 feet of wetlands and streams; floodplains plus 50' Buffer for new development.

Attachment A: STRATEGY TABLES for St Mary's County Phase II Watershed Implementation Plan

Table A-1: Proposed Implementation through 2017 based on existing commitments

Sector	Strategy	Description NP = Nothing planned	Units	2010-2011	2012-2017	Total	Estimated Cost	In a CIP or Budget	Supported by adopted plans, policies, programs
Point Sources	Major WWTPs	Upgrade Marlay-Taylor Wastewater Treatment Plant to Maryland's Enhanced Nutrient Removal (ENR) standards (Status: in design, to be online in 2014, operational at 4 mgl for 6 mg/day (Currently 8 mgl for 4 mg/day).	plants		1	1	$36,087,500	☑	☑
Point Sources	Major WWTPs	Marlay-Taylor Wastewater Treatment Plant: Methane Power Co-generation and Digester Upgrade FY10 upgrade to use methane to produce electricity to produce enough rejected heat to supply the digesters heating requirements).	plants	1		1	$3,943,000	☑	☑
Point Sources	Major WWTPs	Water Reuse of 10-12 million gallons of treated effluent for: 350 acres of irrigation on ag land, 9-11M gallons for golf course irrigation 0.25M gallons for cooling towers and industrial testing processes Off-site irrigation for parks, athletic fields, fire protection systems, and dual plumbed buildings.	Millions of gallons reduced for effluent at average 6 mgl for Nitrogen		11	11	$4,095,000	☑	☑
Point Sources	Major WWTP	Upgrade Leonardtown's WWTP to Maryland's ENR Standards (Status: In design phase, to be online in June, 2014. Current permit 4 mg/L for 680,000 gpd plant. Design to ENR standards of 3 mg/L.)	Plant		1	1	$6,000,000	☑	☑
Point Sources	Major WWTP	Expansion of Leonardtown's WWTP from 0.75 mgd to 0.94 mgd (Status: construction begins Sept. 2013, completion Sept 2015)	Plant		1		$16,400,000	☑	☑
Point Sources	Major or Minor WWTPs: Sewer system expansion to serve planned service areas	Accommodate limited growth (including possible connection of OSDS to sewer)	systems		1	1	$1,789,000	☑	☑

Table A-1: Proposed Implementation through 2017 based on existing commitments									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Point Sources	Major or Minor WWTPs: Sewer system expansion to serve planned service areas	FY 2015-FDR Boulevard Sewer main (32 EDU's)	systems		1	1	$37,000	☑	☑
Point Sources	New Large Minor Municipal WWTPs (0.1-0.5 MGD)	Leonardtown spray irrigation (status: Tentative project 0.3 mg) Note: In CIP for future possibility of land application or water re-use system - No current plans to build before 2017 (8/30/2011 BCC meeting)				1		☑	☑
Point Sources	New Large Minor Municipal WWTPs (0.1-0.5 MGD)	St Clements Shores WWTP (spray irrigation) FY 2015 capital project for expansion of existing system to serve failed systems only (149 EDU's)	plants			1	See connection of failed septic systems	☑	☑
Point Sources	Major or Minor WWTPs: Sewer system expansion to serve planned service areas	ENR Retrofits at Webster Field minor Federal WWTP: (Status: Permit for 45,000g/day actual discharge 50% of permitted; average discharge for 2007 thru 2011 222 lbs/yr P & 1380 lbs/yr N, Discharges to St. Mary's River, Pretreatment installed waiting final permit criteria)	plants	1		1	Completed	☑	☑
Point Sources	Major or Minor WWTPs: Sewer system expansion to serve planned service areas	FY 2014-Hollywood Town Center	expansion			1	$1,789,000	☑	☑
Point Sources	Federal facilities - minor	ENR Retrofits at Webster Field minor Federal WWTP	plants	1		1	Complete	☑	☑
Septic	Existing level of effort: Continue Upgrade of expanded, failing and new Septic Systems in the Critical Area 125 since 2007 in CA and 6 since 2007 out of CA	Retrofit 60 septic systems per year through 2017 with current program using best available technology	systems	55 retrofit CA 2 retrofit non-CA	360 retrofit	537 Retrofit	Annual cost: $684,000 Total cost: $5,472,000 (BFR Grant program average cost/BAT installed $11,400,)	☑	☑

Table A-1: Proposed Implementation through 2017 based on existing commitments									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Septic	Septic hookups to ENR plants: Connect failing septic systems to Wastewater Treatment Plants with advanced nutrient removal technologies.	FY2010-Oliver Drive (5 homes)	systems	5		5	$558,000	☑	☑
Septic	Programmatic changes:	Programmatic changes necessary to enable potential connection of OSDS to sewer in rural areas: 1) Change CWSP policy and add a category designation to allow rural sewer for WIP purposes in the absence of septic failures; 2) Revision of PFA funding restrictions.	Program changes		2	2	Consider as part of regularly scheduled CWSP update process	☑	☑
Urban Stormwater	Existing Urban Nutrient Management Law Fertilizer applications regulated on commercial/institutional property through Maryland's Nutrient Management Law. Work with public land managers to develop lower input management strategies for lawns and mowed areas on public lands	4,722 acres including: County parks, public landings, museums, schools and county owned facilities: 2,343 acres managed in 103 locations including 116 athletic fields, multi purpose fields and practice areas: (1,370 acres parkland; 973 acres county-owned facilities and school property) PNAS: (1,421 acres of managed turf, 389 acres of Ag leases) Webster Field: (307 acres of managed turf, 130 acres of Ag leases)CSM (12 acres estimated) SM Hospital (20 acres estimated) Governmental Center complex (62 acres estimated) Fairgrounds (38 acres estimated) Establish landscape and maintenance standard for landscape contracts to reduce frequency and intensity of maintenance and allow natural regeneration of diverse native vegetation in low maintenance areas.	acres (annual)			3,000	Net reduction in expense for all property managers/owners. Nutrient management and conversion to lower input maintenance strategies are expected to result in savings of up to 50% per acre: Per County Parks' data: Average cost for mowing is $408 per acre; Average cost for maintenance of fields and multipurpose areas is $52 per acre.	☑	☑

Table A-1: Proposed Implementation through 2017 based on existing commitments									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Urban Stormwater	Existing Urban Nutrient Management Law:	SM College of MD, Golf Courses (Winpisinger, Wicomico, Breton Bay, Pax River) VFD and rescue Squads (acres TBD)	acres (annual)			TBD	Nutrient management and conversion to lower input maintenance strategies are expected to result in savings of up to 50% per acre:	☑	☑
Urban Stormwater	Removal of Impervious Surfaces	County: Regulatory requirements for reduced impervious surfaces (or add equivalent SWM) to achieve 20% reduction in lot coverage.	square feet			TBD	I.S. reduction for redevelopment projects paid for as a part of each project. No new cost to County	☑	☑
Urban Stormwater	Removal of Impervious Surfaces	Leonardtown: Port of Leonardtown 3 ac. Public Park - Removal of impervious asphalt and replacement with pervious surface.	square feet	67,611 s.f.		67,611 s.f.	Completed at cost of $4,000,000	☑	☑
Urban Stormwater	Removal of Impervious Surfaces	Leonardtown: Washington St. Public Parking Lot - Removal of impervious asphalt and replacement with pervious pavers.	square feet	8,000 s.f.		8,000 s.f.	$3,000,000	☑	☑
Urban Stormwater	Street Sweeping	Leonardtown: Contracts regularly scheduled street sweeping over all Town streets. Some areas are swept daily & some are done bi-weekly.	Miles	10	10	10	$27,810 annually	☑	☑
Urban Stormwater	Prepare for required MS4 Phase I permit: Prepare for required MS4 Phase I permit:	St. Mary's' County is required to develop MS4 Phase II Permit based on 2010 population of 105,151. Permit will require Nutrient and Sediment reductions equivalent to stormwater treatment on 20% of the impervious surface that does not have adequate stormwater controls. While development of the County's permit is not anticipated in MDE's work plan until at 2015, St. Mary's County has been and will continue to prepare for permit development through CIP	Development of NPDES permit by 2017					☑	☑
		Analyze and recommend funding mechanisms (e.g. stormwater utility, public private partnerships, grants, low cost loan programs)	Planning and analysis				$50,000	☑	☑

Table A-1: Proposed Implementation through 2017 based on existing commitments									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
		Identify potential retrofit sites and implement pilot projects. Funding for pilot projects and NPDES related planning and analysis approved in 2013 -2018 CIP	Analysis and pilot projects		9 pilot projects	15 pilot projects	$7,093,325 in CIP thru FY 2018 $774,000 Operational Budget	☑	☑
		Procure consultant services for WIP related project identification, cost benefit analysis, and milestone development	Planning and analysis				$50,000	☑	☑
Urban Stormwater	Enhanced Urban Nutrient Management State mandated modification of lawn fertilizer formulation to eliminate phosphorus to the extent practicable and requires the use of slow release nitrogen fertilizers on lawns and managed turf. **GIS estimated area in lawns: 50,217 acres**	Provide improved management on 20,000 ac. of lawn Work with Environmental organizations/agencies to implement homeowner education programs to promote "BayWise"- type lawn management practices.	acres (annual)		14,000	20,000	1. Ongoing effort: Existing Extension Service Master Gardeners & watershed organizations working on this issue.	☑	☑
							2. In process to develop a local Watershed Stewardship Academy to train volunteers to assist landowners in development. Coordinated by UMD Maryland Sea Grant Extension Program Watershed Restoration Specialist	☑	☑
							3. In process to develop an online system to track homeowner actions. Funded through grant to UMD Maryland Sea Grant Extension Program	☑	☑

Table A-1: Proposed Implementation through 2017 based on existing commitments									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Natural Filters on Public and Private Land	Tree Planting--Municipal	Port of Leonardtown 3 ac. Public Park - located adjacent to McIntosh Run. Planted approx. 1 ac. of new trees and other landscaping.	acres	1			$10,000	☑	☑
Natural Filters on Public and Private Land	Grassland	Restore 45 acres of Grassland on public land. Grass planted next to waterways filter and take up nutrients coming off the land, stabilize the soil and provide wildlife habitat.	acres	45		45	$20,000	☑	☑
OTHER	Keep/strengthen regulations re: environmental Buffers: Retain existing 100' perennial and 50' intermittent stream buffers, 25' wetland, buffer and 50 foot floodplain buffers plus the provide for expansion for steep slopes, and hydric and highly erodible soils per 2010 CZO.	These buffers based in scientific recommendations for minimum buffers have been determined to provide environmental services that protect water quality, minimize sedimentation, and protect property from hazards (onsite and downstream flooding, and onsite erosion) and minimize SWM facility construction and O&M, and minimize stream degradation that would require future capital expense for retrofits.					$0 cost to retain regulation currently in place.	☑	☑
OTHER	Mining operations	Abandoned mine reclamation: (assumed 50%of active mine acres will be reclaimed under permits issued)	acres			250	Required operating cost for mine approval--No cost to jurisdiction	☑	☑

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Agriculture	Streamside Forest Buffers	Retire marginal crop and pasture land and use GIS data to target restoration			280	400	$52,000 per year	☐	☑
Agriculture	Vegetative Environmental Buffers	Retire marginal crop and pasture land and use GIS data to target restoration			140	200	$26,000 per year	☐	☑
Point Sources	New Large Minor Municipal WWTPs (0.1-0.5 MGD)	Charlotte Hall/ New Market Sewer (status: FY2015 capital project for Biolac Waste water treatment system and rapid infiltration basins postponed pending development of a Master Plan for Charlotte Hall/New Market area)	plants		1	1	$5,332,500	☐	☑
Point Sources	Major Industrial	Continue Retrofits and Optimization at Major Industrial Treatment Plants to meet the Tributary Strategy load cap.	plants				TBD	☐	☐
Point Sources	Minor Industrial	Identify loading targets and issue schedules in permits by 2017 for reductions of approximately 23.5%, representing approximately 143,000 lbs/yr reduction, for minor industrial sources	plants				TBD	☐	☐
Point Sources	Upgrade Large Minor Municipal WWTPs (0.1-0.5 MGD)	Point Lookout WWTP--NP	plants				See connection of failed septic systems	☐	☐
		Wicomico Shores WWTP (spray irrigation)-- NP	plants				--	☐	☐
		Charlotte Hall Veteran Home (large scale septic) --NP	plants				--	☐	☑
		Airedele Road (large scale mound)-- NP	plants				--	☐	☑
		Forest Farm (large scale mound)-- NP	plants				--	☐	☐
		Charlotte Hall: Burch system-- NP	plants				--	☐	☑
Point Sources	Upgrade Private WWTPs	Charlotte Hall: Burroughs system--NP	plants				--	☐	☑
		Charlotte Hall: WaWa system--NP	plants				--	☐	☑

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Septic	Existing level of effort: Continue requirement for BAT for new Septic Systems in the Critical Area Projected growth rate for new OSDS in CA:	100 new systems from 1/07 to 6/11	Avg. 28 new DU in CA/year 1/07 to 6/11	Avg. 28 DU/ year (based on new 100 DU in CA 1/07 to 6/11)	176 new	252 New	Annual cost: $319,200 Total cost: $2,006.400	☑ N/A individual landowner expense	☑
Septic	Increased level of effort due to regulatory change: Require new and expanded, Septic Systems in nutrient impaired watersheds to upgrade to BAT	2012 regulatory proposal by MDE: Outside the Critical Area the 2011 impact would have been 131 homes and 14 renovations requiring septic upgrade	systems				Annual cost: $ Total cost: $ (BFR Grant program average cost/BAT installed $11,400)	☑	☑
Septic	Septic hookups to ENR plants: Connect failing septic systems to Wastewater Treatment Plants with advanced nutrient removal technologies.	FY2016-St Clement Shores vicinity (149 homes) FY2017-Holly Gaf Sewer (152 homes, 70 failed)			149 70	149 70	$2,554,500 $1,714,500	☑	☑
Septic	Septic Hookups to ENR Plants--Leonardtown	Only 4 septic systems remain within town limits. All other residences are connected to Leonardtown WWTP -- NP			4		--	☐	☐

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Septic	Additional effort to upgrade remaining Critical Area OSDS's to BAT	In FY13, assess options to phase in requirement to retrofit all septic systems in the Critical Area (the land within 1000 feet of tidal waters) using best available technology. Assess viability of tax credits, income based criteria for grant eligibility and other means to facilitate upgrades. (BAT upgrade of additional 3,862 systems in Critical Area for a total of 5,605 systems. Note: SMCo has 7,929 parcels in the CA outside sewer service areas. The 5,605 MAST estimate for CA OSDS's appears to be low. Developed parcels estimated at 6,610. Projection accounts for existing retrofits and sewer connection noted in the above strategies	systems		2,860	3,862	Annual cost: $4,890,600 $44,026,800 total cost	☐	☐
Septic	Non-CA OSDS within 1000' of streams to BAT	Programmatic change. In FY13, assess options to phase in requirement to retrofit existing OSDS on land within 1000 feet of perennial streams mapped by MDNR using best available technology. Assess viability of tax credits, income based criteria for grant eligibility and other means to facilitate upgrades.	systems		3, 976	5,537	Annual cost: $7,013,500 Total cost: $63,121,800	☐	☐
Septic	OSDS retrofit program for densely developed areas outside sewer service areas.	Potential areas for comprehensive projects to retrofit existing OSDS in areas inside of PFA's and/or inside of designated Growth Areas. Potential areas include:							
		Lexington Park: Town Creek/ Esperanza/ Leverings and vicinity	1290 OSDS				$14,706,000	☐	☐
		Leonardtown: Society Hill and vicinity	786 OSDS				$8,960,400	☐	☐
		Hollywood: Scotch Neck/ Blackstone Farm and vicinity	346 OSDS				$3,944,400	☐	☐
		Piney Point to Callaway: 249 Corridor/ Callaway	409 OSDS				$4,662,600	☐	☐

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Septic	OSDS retrofit program for densely developed areas outside sewer service areas.	Potential areas for comprehensive projects to retrofit existing OSDS in areas outside of PFA's and/or outside of designated Growth Areas. Potential areas include:							
		Coltons Point and vicinity	232 OSDS				$2,644,800	☐	☐
		Country Lakes and Vicinity	1159 OSDS				$13,212,600	☐	☐
		Golden Beach and Vicinity	1444 OSDS				$16,461,600	☐	☐
		Hollywood Shores and Vicinity	302 OSDS				$4,867,800	☐	☐
		Millpoint Shores and Longview Beach	472 OSDS				$4,867,800	☐	☐
		Sandgates and Vicinity	390 OSDS				$4,446,000	☐	☐
		Scotland and Rodo Beaches	110 OSDS				$1,254,000	☐	☐
Septic	OPTION FOR FURTHER ANALYSIS: Connect existing of OSDS's within Growth Areas and adjacent to existing sewer infrastructure	Potential areas for comprehensive projects to retrofit existing OSDS in areas inside of PFA's and/or inside of designated Growth Areas. Potential areas include:							
		Lexington Park: Town Creek/ Esperanza/ Leverings and vicinity	1290 OSDS				$27,440,968	☐	☑
		Leonardtown: Society Hill and vicinity	786 OSDS				$39,307,772	☐	☑
		Hollywood: Scotch Neck/ Blackistone Farm and vicinity	346 OSDS				$6,823,029	☐	☑
		Piney Point to Callaway: 249 Corridor/ Callaway	409 OSDS				$29,911,157	☐	☑
Septic	OPTION FOR FURTHER ANALYSIS: Expanded Sewerage Systems including new rural sewer planned service areas	Investigate feasibility of providing sewer in areas with concentrated existing development, may include connection to nearby existing system infrastructure or development of new land application systems. May require expansion of existing system capacity to receive additional EDU's and provide for limited infill on undeveloped existing lots in the service areas Potential areas include:							
		Coltons Point and vicinity	232 OSDS				$9,392,536	☐	☐
		Country Lakes and Vicinity	1159 OSDS				$50,667,939	☐	☐
		Golden Beach and Vicinity	1444 OSDS				$48,556,335	☐	☐
		Hollywood Shores and Vicinity	302 OSDS				$10,851,702	☐	☐
		Millpoint Shores and Longview Beach	472 OSDS				$13,695,003	☐	☐
		Sandgates and Vicinity	390 OSDS				$12.864.682	☐	☐
		Scotland and Rodo Beaches	110 OSDS				$4,182,785	☐	☐

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Septic	OPTION FOR FURTHER ANALYSIS: Implement Growth Area Connection policy and program	As sewer is extended within Growth Areas require adjacent development on OSDS to connect to sewer. Update and clarify connection and service charge policy to: 1) Mandate connection to sewer as sewer infrastructure becomes available in the vicinity of new and existing development CWSP; and 2) Assure contribution to capital costs for all properties in areas designated for sewer service. OR 3) Alternatively, consider comprehensive connection program to connect up to 707 CA units and 2,306 Non-CA units on existing SDS's in NPS & S6-D categories to sewer in those GA areas that have reasonable access to existing sewer infrastructure	Programmatic change		1 1	 3,013 OSDS	-- -- TBD based on areas selected-	N/A N/A ☐	☑ ☑ ☐
Septic	OPTION FOR FURTHER ANALYSIS: Require all development that receives a waiver or exemption of sewer connection within a planned sewer service area to install new BAT OSDS's or to retrofit existing systems to BAT	Proposed 2012 MDE regulation re: installation of BAT for new and expanded OSDS outside the Critical Area in impaired watersheds addresses this requirement	Programmatic change				--	N/A	☐
Urban Stormwater	Prepare for required MS4 Phase I permit:	Develop and phase in implementation programs likely to be required under the permit that can assist now in meeting TMDL load reductions.	Programmatic changes and pilot projects				--	☐	☑

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Urban Stormwater	Prepare for required MS4 Phase I permit:	Implement nutrient and sediment reductions to achieve stormwater treatment : Work with SHA to address loads originating on SHA property. In preparation recommend working with SCS and interns (St. Mary's College of MD, College of Southern MD, other higher education institutions) to ID those eroded/undercut SHA "Flume" locations that are contributing large sediment loads to streams	Offset or reduce 20% of the impervious surface that does not have adequate stormwater controls.				--	☐	☑
Urban Stormwater	Regenerative Stormwater Conveyance	Implement stream restoration and connection to the flood plain to mimic natural stream conditions and provide a nutrient and sediment reduction.	Linear feet		500	500	$400,000 Complete pilot projects totaling 500 lf @ $800/lf (AA Co. data) Encourage SHA to use for "Flume" repair, formally ID sites and estimate linear miles/feet. (Prior analysis estimated at least 30 sites with significant erosion issues due to runoff from State-owned roads.)	☐	☑
Urban Stormwater	Regenerative Stormwater Conveyance	Consider adoption of regulations similar to AA County for use of Step Pool Conveyance Systems for SWM	Program change			1		☐	☑
Urban Stormwater	Street Sweeping	County Urban Roads: 1076 acres in DD roads—assume urban sections and 10% sweeping monthly ($754/acre annual cost)	acres	20 (estimated)	180	180	$135,720 FY 2012-13 ($814,320 over 6 years)	☐	☐
Urban Stormwater	Street Sweeping	County Rural Roads: County roads with curb and gutter estimated 198 miles @ avg. 30'wide pavement swept monthly @ $450/ac /year	acres	0	0	0		☐	☐

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Natural Filters on Public and Private Land	Use currently collected fees and fines collected to fund natural filters on public or Private land	Programmatic decision: Policy decision and Program development is needed regarding use of locally collected* mitigation fees, environmental fines and fees-in-lieu funds : 1) Continue use of funds** for land conservation to protect existing forest (Strategy limits forest loss but provides no new nutrient reduction toward meeting WIP goal) 2) Establish and promote new formal rural residential and urban tree canopy programs OR forest mitigation banks with a goal to convert 10% of existing turf or fallow land to forest cover. (Strategy increases forest cover and provides new nutrient reduction toward meeting WIP goal) 3) Establish mitigation bank for targeted habitat and forest restoration (Strategy increases forest cover and provides new nutrient reduction toward meeting WIP goal) * $35,000 is the average annual amount collected via existing local programs: FCA, CA, & FIDS mitigation and fee–in-lieu funds ** All available FCA funds used for land conservation in FY12 Other funding sources include Maryland's Ecosystem Enhancement Program, Program Chesapeake and Atlantic Coastal Bays 2010 Trust Fund, Transportation Enhancement Program and Corporate Wetlands Restoration Partnership and county planting funds.	Program Change		1		TBD		

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
Natural Filters on Public and Private Land	Streamside Forest Buffers	Strengthen regulations to prioritize planting of stream and waterway buffers.	Program Change					☐	☑
Natural Filters on Public and Private Land	Rural Residential Tree Planting and Urban Tree Canopy: Increase rural residential tree planting and encourage forest establishment on homeowner association property including conversion of turf grass to tree covers.	Seek willing landowners to accept trees planting on private lands using available fees-in-lieu and mitigation payments received from FCA and CA permits. Est. $3,500/ acre total project cost	Acres	35	168	240	$840,000	☐	☑
Natural Filters on Public and Private Land	Wetland Restoration	Utilize wetland mitigation funding generated by development activity in targeted areas Est. $8,000/ acre total project cost	acres			10	$80,000	☑	☑
Natural Filters on Public and Private Land	Streamside Forest Buffers	Plant forest vegetation next to waterways to filter and take up nutrients coming off the land, stabilize the soil and provide wildlife habitat. Improve effectiveness of existing planting programs by first contacting land owners identified through the DNR Riparian Buffers gap analysis: 1,859 ac. of un-forested 100' stream buffer 2,361 ac. of un-forested 100' shoreline buffer Est. $3,500/ acre total project cost	acres			10	$35,000	☑	☑

Table A-2: Implementation Options to Consider for future Milestones									
Sector	**Strategy**	**Description** NP = Nothing planned	**Units**	**2010-2011**	**2012-2017**	**Total**	**Estimated Cost**	**In a CIP or Budget**	**Supported by adopted plans, policies, programs**
OTHER	Equine facilities	Manure Composting for horses other livestock: Develop a central compost facility to receive and process compost and distribute finished product	facility		1			☐	☐
OTHER	Hot spots	To be addressed as part of the future NPDES program: scrap yards, gas stations and motor vehicle service facilities, carwash facilities, fleet maintenance facilities					Regulator enhancements to require necessary nutrient, sediment and pollutant controls.	☐	☑
OTHER	Deicing: Urea does not harm aircraft or alter stream salinity like salt does but it does contribute significant nitrogen loads to streams. Calcium Magnesium Acetate (CMA) has been approved as an airport runway de-icer by the FAA and has fewer environmental impacts than salt or urea.	Patuxent River NAS Webster Field Duke Airport At present, CMA is produced from petroleum-derived acetic acid at a market price of about $700 per ton. Chloride road salts are available for $20-40/ton and material cost for urea is around $100/ton. The cost of CMA seems high compared to traditional deicers. However, when the effects of chloride salts are considered, e.g., damage to highways, bridges, concrete structures, vehicles, roadside vegetation, ground water contamination and other environmental effects with a cost range from $1000 to 2000/ton of salt. Urea has high side effect costs for the installation of BMPs to offset the nutrient inputs to waterways. In this light, the price of CMA becomes more reasonable.	Acres	639		639	639 acres =27,834,840 s.f. @ 5 lbs/1000 s.f.=139174 lbs. = 69 tons of CMA or rock salt required per application x 10 applications per year $487,109 for CMA with no side effect costs	☐	☐

CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL) MILESTONES

Approval

Chesapeake Bay Total Maximum Daily Load (TMDL) Planning Milestones for Fiscal Years 2012 and 2013.

These milestones are a requirement of the Environmental Protection Agency (EPA) Chesapeake Bay TMDL (31 Dec 2010).

9 NOV 2011

S. A. SCHMEISER
CAPT, U.S. Navy
Commanding Officer
NAS Patuxent River

Date

Nov 8 2011

H. E. MILLS
CAPT, U.S. Navy
Executive Officer
NAS Patuxent River

Date

NOV 3 2011

J. R. WATTS
CDR, CEC, U.S. Navy
Public Works Officer
NAS Patuxent River

Date

NAS Patuxent River, MD
Implementation Action and Programmatic Milestones for 2012 - 2013

AGRICULTURAL

The Maryland Department of the Agriculture (MDA) will submit the information to the Maryland Department of the Environment (MDE) on behalf of NAS Patuxent River.

STORMWATER MANAGEMENT RETROFITS

- NAS Patuxent River is working with the Navy Region to complete an installation-wide Stormwater BMP inventory and assessment.
- Continue to execute Coastal Zone consistency program.
- Continue to implement environmental site design.
- Perform Shoreline stabilization (pending funding).
- Retrofit traditional asphalt parking lot pavement with pervious pavements.

SEPTIC SYSTEM UPGRADES

- Perform a Septic system investigation to confirm the location of septic systems, confirm the systems were properly abandoned and propose solutions (removal or nutrient removal) and cost estimates for any remaining systems on the base property.

WASTEWATER TREATMENT PLANT DATA

- The Webster Field Sewer plant upgrade was completed. The system is equipped with additional nitrogen and phosphorus treatment.

PROGRAMMATIC 2-YEAR MILESTONES

- NAS Patuxent River is currently working to develop a Stormwater Management Implementation Plan (SWIP) for the entire NAS Patuxent River Complex. This plan will identify retrofit locations, additional best management practices (bmps) and the associated construction and maintenance costs.
- Continue to support applicable watershed jurisdictions Phase II WIP processes in 2012 and 2013.
- Continue to implement Low Impact Development (LID) under the Energy Independence and Security Act of 2007 (EISA) as a means to manage storm water for all construction and maintenance projects (2012).
- Continue to follow Navy LID Policy implemented in 2007.
- Continue to carry out and track the Facilities Reduction Program. (20 buildings to be demolished in upcoming FY returning footprints to pervious areas.)

PAX River Armory (24B85, Patuxent River Readiness Center)
Input to Maryland Department of Environment
Watershed Implementation Plan Phase II
DRAFT

I. PAX River Army National Guard Armory

PAX River Armory (24B85, Patuxent River Readiness Center) is located in St. Mary's County, Maryland, approximately 12 miles east of Leonardtown. The 12.4 acre facility is located on Pine Hill Run Road just south of the Naval Support Facility-Patuxent.

Land use and verification of accurate facility boundary and acreage data to be determined from future field assessment.

II. PAX River Armory Baseline Loadings November 2011:

To be determined.

III. Programmatic Two Year Milestones 2012-2013:

- **Agricultural**- Not Applicable.
- **Stormwater Management Retrofits**- To be determined.
- **Septic System Upgrades**- Not Applicable.
- **Wastewater Treatment Plant Data**- Not Applicable.
- **Accounting for Future Growth**-
  - The PAX River Armory will continue to support Maryland Department of Environment (MDE) Watershed Implementation Plan (WIP) Phase II processes in 2012 and 2013.
  - The PAX River Armory will continue to implement the Army Policy for Sustainable Design and Development (SDD), October 2010 and Low Impact Development (LID) under the Energy Independence and Security Act of 2007 (EISA) as a means to manage stormwater for all future construction and maintenance projects. Currently it is unknown if any new construction projects are scheduled through 2018.

IV. Successes:

The WIP Phase II process required collaborative involvement from MDE, the PAX River Armory and the U.S. Army Corps of Engineers to ensure pollutant load reductions as well as current and future BMP implementation levels fulfill the federal share of the needed reductions for Nitrogen, Phosphorous and Sediment pollutants. In an effort to meet WIP Phase II timelines, two year milestones and critical progress milestones in 2017 and 2020, PAX River Armory will conduct a comprehensive assessment of boundary data and land use/land cover data on the facility. Providing more accurate data will enable the facility to better assess the load runoff and appropriate BMPs for minimizing or reducing the loads.

MDE and the Services held several meetings. The meetings were helpful and productive. Going forward this federal-state-local partnership will prove to be instrumental in meeting the long term restoration plan for the

PAX River Armory (24B85, Patuxent River Readiness Center)
Input to Maryland Department of Environment
Watershed Implementation Plan Phase II
DRAFT

Chesapeake Bay as well as improve credibility and accountability for Department of Defense (DoD), a Federal agency leading by example.

V. Challenges:

- Coordination with multiple Bay jurisdictions made it difficult to apply one agency approach to meeting the required load reductions. For the Services this required additional resources in order to understand what each jurisdiction's expectations are, and these inconsistencies may result in long term load inaccuracies when determining whether TMDL goals have been met across the watershed.
- It was critical that all boundary and land use cover be verified. Facilities of this size have limited GIS data. Therefore, it took an additional amount of resources and technical capability to create shapefiles in order to verify boundaries and land use data.

VI. Inaccuracies:

To be determined.

Webster Field (24C33)
Input to Maryland Department of Environment
Watershed Implementation Plan Phase II
DRAFT

I. Webster Field

Webster Field (24C33) consists of a currently vacant 3.56 acre parcel on the Naval Air Station Patuxent Webster Field Annex. It is located in St. Mary's County, Maryland, approximately 15 miles southeast of Leonardtown. This site consists of a 3.56 acre vacant parcel in which MDARNG plans to build on in the future.

Webster Field is not an independent entity per MDE. It was included as a component of Naval Air Station Patuxent Webster Field Annex. Land use and verification of accurate facility boundary and acreage data to be determined from future field assessment.

II. Webster Field Baseline Loadings November 2011:

To be determined.

III. Programmatic Two Year Milestones 2012-2013:

- **Agricultural**- Not Applicable.
- **Stormwater Management Retrofits**- To be determined.
- **Septic System Upgrades**- Not Applicable.
- **Wastewater Treatment Plant Data**- Not Applicable.
- **Accounting for Future Growth**-
  - Webster Field will continue to support Maryland Department of Environment (MDE) Watershed Implementation Plan (WIP) Phase II processes in 2012 and 2013.
  - Webster Field will continue to implement the Army Policy for Sustainable Design and Development (SDD), October 2010 and Low Impact Development (LID) under the Energy Independence and Security Act of 2007 (EISA) as a means to manage stormwater for all future construction and maintenance projects. Currently it is unknown if any new construction projects are scheduled through 2018.

IV. Successes:

The Watershed WIP Phase II process required collaborative involvement from MDE, Webster Field and the U.S. Army Corps of Engineers to ensure pollutant load reductions as well as current and future BMP implementation levels fulfill the federal share of the needed reductions for Nitrogen, Phosphorous and Sediment pollutants. In an effort to meet WIP Phase II timelines, two year milestones and critical progress milestones in 2017 and 2020, Webster Field will conduct a comprehensive assessment of boundary data and land use/land cover data on the facility. Providing more accurate data will enable the facility to better assess the load runoff and appropriate BMPs for minimizing or reducing the loads.

Webster Field (24C33)
Input to Maryland Department of Environment
Watershed Implementation Plan Phase II
DRAFT

MDE and the Services held several meetings. The meetings were helpful and productive. Going forward this federal-state-local partnership will prove to be instrumental in meeting the long term restoration plan for the Chesapeake Bay as well as improve credibility and accountability for Department of Defense (DoD), a Federal agency leading by example.

V. Challenges:

- Coordination with multiple Bay jurisdictions made it difficult to apply one agency approach to meeting the required load reductions. For the Services this required additional resources in order to understand what each jurisdiction's expectations are, and these inconsistencies may result in long term load inaccuracies when determining whether TMDL goals have been met across the watershed.
- It was critical that all boundary and land use cover be verified. Facilities of this size have limited GIS data. Therefore, it took an additional amount of resources and technical capability to create shapefiles in order to verify boundaries and land use data.

VI. Inaccuracies:

- MDE included Webster Field as an independent entity when in fact it is a component of Naval Air Station Patuxent Webster Field Annex. Recognize there is potential for inaccuracies as MDE identified the wrong ownership for this property and when accounted for under Naval Air Station Patuxent Webster Field Annex, this could result in duplication of load reductions at Naval Air Station Patuxent Webster Field Annex. Information for this facility will be provided to the Navy- Naval Air Station Patuxent Webster Field Annex.
- Additional inaccuracies to be determined.