

December 8, 2011
Anacostia Management Committee
Watershed Implementation Plan
Phase II
(WIP-II)
for Bay TMDL (Nutrients & Sediments)



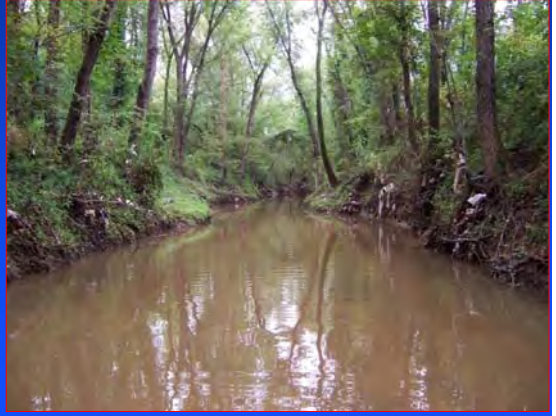
WIP Mandate

- **The Bay water quality does not meet water quality standards despite three decades of voluntary efforts to do so.**
- **Consequently, EPA and the States have agreed to a regulatory approach that includes a Bay-wide TMDL, and develop subsequent implementation plans.**



WIP-II: County Responsibilities

- Develop the WIP to meet TMDL requirements and send to MDE and EPA for approval
- After the WIP is approved, the County must implement it.



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Key Outcomes of WIP Phase II

Will determine at local level:

- Needed Strategies and BMPs
- Who's responsible for how much implementation
- Implementation costs to each source sector & Financial Plan
- How much growth / development can fit, where, & at what cost



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WIP-II County Team Meetings / Public Information Forums

- The County Team has met 7 times so far; at least once per month.
- Public Information Forums have been held three times.
- February 2012: Public review and comment.
- Mar. – July 2012: The Plan is completed; send to the Council for budget/funding approval.



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WIP-II Time Frame

- The State gave county-wide allocations to the County on September 14, 2011.
- The County needs to submit the draft WIP-II Plan and milestones by November 18, 2011 and can be revised later. Per MDE, when the MS4 Permit is issued, we will have one year to finalize and revise the WIP.
- Complete 70% of required pollution reduction by 2017 and 100% by 2020.



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Net Load Reductions, WIP-I vs. -II

Units: (lb/year)	2009	2017 Target	2020 Target	Net Reduction 2009 - 2020
Urban (Total Nitrogen)	529,971	493,518	477,896	52,075
Urban (Total Phosphorus)	111,689	87,011	76,434	35,255

Increase of total urban TN reduction goal significantly from WIP-I to WIP-II (4 times)

(Source EPA – Chesapeake Bay Program; Model 5.3.0)

(Received June 2011)

Close

(Received September 2011)

Units: (lb/year)	2009	2017 Target	2020 Target	Net Reduction 2009 - 2020	Non-Federal
Urban (Total Nitrogen)	887,737	735,785	670,662	217,075	203,423
Urban (Total Phosphorus)	110,975	83,499	71,724	39,251	37,384

(Source MDE – Based Chesapeake Bay Program; Model update 5.3.2)

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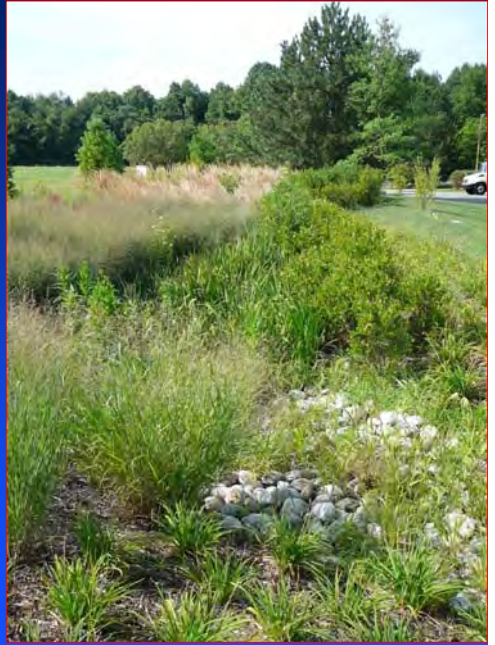
TN reduction is about **180,000 lbs/yr** after remove Federal, State, SHA, Bowie, and industrial areas

Urban TN increased by 4 Times

- MDE’s explanation is that the “rural” residential areas (1- ac, 2-ac, 5-ac lots, etc) were changed from “forest” to “Urban” sector in the new Bay Model (Version 5.3.2).
- The County requested to divide the urban land uses into more categories (commercial, industrial, high density residential, median density residential, low density residential, etc) similar to what agricultural land has. This way, our urban load will be significantly reduced.

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Proposed County WIP-II Strategies



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County's WIP-II Strategies Agriculture

- SCD is working with MDA to develop strategies. Agriculture strategies will be watershed based instead of county based.
- Provide technical assistance to landowners to implement best management practices (BMPs) that maximize the reduction of nitrogen (N) and phosphorus (P) on farms.
- Develop soil conservation & water quality plans (SCWQPs) on all farms in the County. Update existing conservation plans that are 10 years or older to current standards. SCWQPs address soil erosion and water quality concerns and provide landowners with solutions that reduce soil erosion and nutrients runoff.

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County's WIP-II Strategies

Septics

- Introduce revised County Regulations (Subtitle 22) that will include maintenance requirements for systems and guidance for nutrient reduction systems.
- Using BRF funds, continue replacing failing septic systems in the critical area using BAT systems.
 - ◆ Only expected that two failing systems will be upgraded each year.
 - ◆ Possibly more if the Governor's septic systems initiatives are implemented through legislation next year.
- Develop a methods to track septic systems that are connected to an WWTP and septic pump-outs.

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County's WIP-II Strategies

Wastewater

- Wastewater and other permitted dischargers will follow their current permit and the current county Water and Sewer Plan.



**Washington Suburban
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County's WIP-II Strategies

Urban (now to 2017)

- County Phase I MS4 - Retrofit of 30% of untreated impervious land by 2017.
- MS4 Phase II (Municipalities) - Retrofit of 20% of untreated impervious land by 2017.
- Urban Nutrient Management Law – Continue the regulation of fertilizer applications on commercially managed lawns.
- The County believes that the load allocation for the urban sector estimated by the Bay Model 5.3.2 is higher than the actual load; so will not implement 100%.

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Retrofit 30% Untreated Impervious Areas— 2017 Strategy (Draft)

Current to 2017	TN reduction	TP reduction
County impervious	23,316	4,405
Muni. impervious	5,149	961
Total impervious	28,465	5,365
County pervious	49,442	3,876
Muni. pervious	5,554	432
Total pervious	54,996	4,308
TOTAL	83,461	9,673
Target (70% of load reduction goal)	124,895	22,568

BMP Type	Impervious area (acres)	Estimated pervious area (acres)	Cost per Imp acre (\$/acre)	Estimated cost
County				
Bioretention area	305	1,728	\$100,000	\$30,500,000
Filtering practices	379	2,148	\$100,000	\$37,900,000
Infiltration practices	1,124	6,369	\$100,000	\$112,400,000
Filtration ponds	725	4,108	\$35,000	\$25,375,000
Welland restoration	251	199	\$82,669	\$20,750,000
Stream restoration	645	3,655	\$55,764	\$35,968,000
Forest buffer	484	939	\$11,763	\$5,693,273
Pond retrofit	1,222	3,477	\$15,712	\$19,200,000
Urban nutrient management	1,000	11,108	Minimal	\$100,000
Impervious disconnect	975	0	\$30,000	\$29,235,000
Sum for County	7,109	33,732	\$44,610	\$317,121,273
Target (30% Untreated Impervious Areas)	7,109			
Municipal				
Bioretention area	75	175	\$100,000	\$7,500,000
Filtering practices	89	208	\$100,000	\$8,900,000
Infiltration practices	329	768	\$100,000	\$32,900,000
Filtration ponds	216	504	\$35,000	\$7,560,000
Urban nutrient management	111	1,232	Minimal	Included above
Impervious disconnect	108	0	\$30,000	\$3,240,000
Sum for Municipal minus Bowie	928	2,886	\$64,765	\$60,100,000
Target (20% Untreated impervious Areas)	928			

- Target loads include County MS4, Municipal MS4, unregulated areas, and construction. Does not include Bowie.
- Reductions calculated by MAST and are delivered loads.
- Assumed treated pervious area.
- 29% LID Practices
- Total cost ~ \$380,000,000

2017–2020 Completion Strategy (Draft)

TOTAL reductions— current to 2020	TN reduction	TP reduction
County impervious	45,992	8,593
Muni. impervious	10,914	2,053
Total impervious	56,906	10,646
County pervious	89,309	6,988
Muni. pervious	11,079	870
Total pervious	100,388	7,859
TOTAL (current to 2020)	157,294 (88% of goal)	18,504 (57% of goal)
Target (100% of load reduction goal)	178,421	32,240

Additional BMPs and costs from 2017 through 2020				
BMP Type	Impervious area (acres)	Estimated pervious area (acres)	Cost per Imp acre (\$/acre)	Estimated cost
County				
Bioretention area	691	3,916	\$85,000	\$58,735,000
Filtering practices	275	1,558	\$85,000	\$23,375,000
Infiltration practices	675	3,825	\$85,000	\$57,375,000
Filtration ponds	1,265	7,168	\$35,000	\$44,275,000
Welland restoration	502	398	\$82,669	\$41,500,000
Stream restoration	1,290	7,310	\$55,764	\$71,936,000
Forest buffer	484	2,743	\$11,763	\$5,693,273
Impervious disconnect	975	0	\$30,000	\$29,235,000
Sum for County	6,157	26,918		\$332,124,273
Municipal				
Bioretention area	165	385	\$85,000	\$14,025,000
Filtering practices	85	198	\$85,000	\$7,225,000
Infiltration practices	216	504	\$85,000	\$18,360,000
Filtration ponds	716	1,671	\$35,000	\$25,060,000
Impervious disconnect	108	0	\$30,000	\$3,240,000
Sum for Municipal minus Bowie	1,290	2,758		\$67,910,000

- Target loads include County MS4, Municipal MS4, unregulated areas, and construction. Does not include Bowie.
- Reductions calculated by MAST and are delivered loads.
- Assumed treated pervious area.
- **28% LID Practices**
- **Total cost ~ \$400,000,000**

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Meeting Load Reduction Gaps (2017 to 2020)

- The County will work with MDE to ensure the Bay Model reflects the latest updates in land use, BMP number and efficiencies.
- Coordinate with MDE/EPA to increase the urban land use categories in Bay Model to reduce the County's current load allocations.
- The County will engage University of Maryland to research the most cost-effective BMPs technologies
- Provide MDE with the County monitoring data for calibrating the Bay Model

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New Developments (Growth)

- BMPs required by the current SWM Ordinate do not meet the TMDL load reduction goals.
- The State is developing a “Growth Plan” to guide how this issue can be addressed (Offset Policy).
- The State’s Offset Policy will be issued in January, 2011.
- Developers will be responsible for the “gap”.
- The Final Offset Policy will become effective in 2013.

Proposed Funding Strategy

Bonds

Stormwater
Taxes/Fees

WIP
Funding

Grants

Stormwater Tax					
Year	FY 2012	FY 2013	FY 2014	FY 2015	Fy 2016
Revenue	\$48,321,700	\$46,253,979	\$48,807,219	\$51,576,513	\$55,904,048
Expenditure	\$53,390,900	\$60,188,024	\$54,778,967	\$68,726,192	\$77,892,564
Fund needs	\$5,069,200	\$13,934,045	\$5,971,748	\$17,149,679	\$21,988,516
Tax Increase (cents)	from surplus	1.741	0.746	2.144	2.749

Grants/Cost Sharing

- EPA: LID Projects.
- COE: Paint Branch Stream Restoration Project.
- COE: Western Branch Wetland Projects.
- COE: Section 510 Projects
- MDNR: NW Branch Stream Restoration Project.
- MDE: Seven (7) Urban Restoration Projects.
- SHA: Seven (7) Stewardship Projects.
- NFWF: LID and Wetland Improvement Proj.
- COE: Stream Restoration Projects and Wetland Creation Projects.
- 19 ■ SHA: Five (5) Green Highway Projects.

WIP Phase II Report

- County Team narrative
 - Statement of commitment
 - Identify team and team's efforts
- Table of county scale loads for current, 2017, and 2020
- Table of stormwater loads
- Proposed implementation strategies
- Description of tracking, verification, and reporting methods
- Opt: Discrepancies between local and CBP model data



WIP-II Plan Submittals

- 50% of the MD Counties have submitted the “completed” packages before the deadline. MDE is still accepting information (before December 15 deadline to EPA).
- MDE is required to submit a State-wide Plan that meets the 100% load reduction goals.
- At this moment, MDE is not sure whether EPA and/or MDE will provide formal comments to the Counties for their Plans.

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Questions and Answers



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