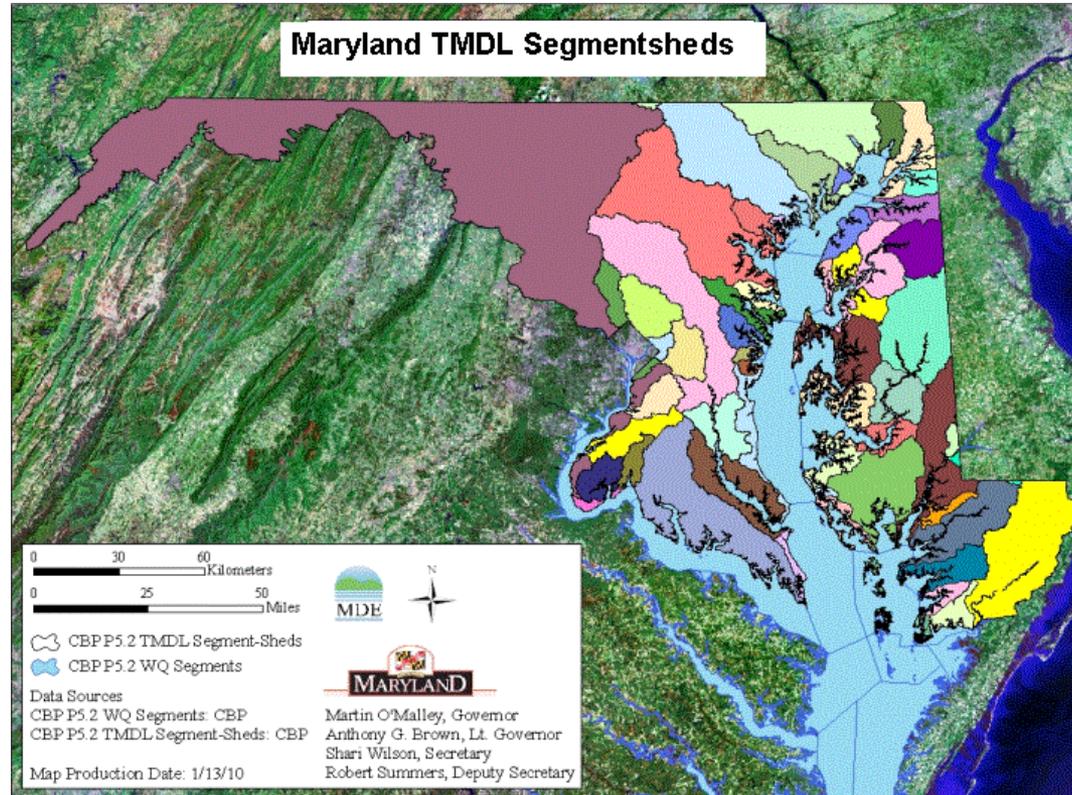


Phase II WIP Development



Regional Kick-off Meetings
January/February 2011

Phase II: Bottom Line

To avoid getting lost in the details...

... lets boil it down to the basics:

- **Allocations:** For the major source sectors
- **2-Year Milestone Commitments for 2012 & 2013:**
 - Implementation Actions
 - Program Development Actions
- **2017 Interim Strategy:** Plausible actions for achieving 70% of the Final Target by 2017.
 - Implementation Actions
 - Program Development Actions

Break it Down by Sector

- **Agriculture:** Expanding & Adding Programs
- **Municipal Wastewater:**
 - Major ENR upgrades
 - Minor Upgrades? Some have been proposed.
- **Stormwater:**
 - Phase I & II MS4s: Target has been set in Phase I WIP
 - Opportunities for alternative reductions in near term
- **Septic Systems:**
 - An approach has been proposed in Phase I WIP
 - Consider alternative reductions
- **Other:** Industrial sources, Atmospheric...

Basic Expectations of WIP

- **Interim & Final Target Loads**
- **Strategies to Meet Targets**
 - Strategy Narrative
 - Load Reduction Analysis (& Gap Analysis)
 - Cost Estimate & Strategy to Address Funding Gap
 - Schedule for “Program Development” (Including Funding)
- **Contingency Strategies**
- **Tracking, Reporting and Verification**
- **Accounting for Growth in Loads**
- **Capacity Analysis & 2-Year Milestones**

Overview of Phase II Process

- Set up Local Teams
- Spring Activities before Numbers are Available*
- Orientation to Load Analysis Tools
- Assess Revised Phase I Allocations & Strategies
- Discuss & Refine Strategies and Target Loads
 - Reach Consensus, Use State Default or Hybrid
- Validate Revised Strategies via EPA Models
- Finish Writing Phase II Document
- Finalize 2-yr Milestones by end of 2011
- Public Review & Revise WIP (likely to fall into 2012)

* Described in Next Slide

Let's Get Tangible

**New Numbers are not Ready until Late Spring...
... but there is Plenty to be Done.**

Winter/Spring WIP Development Activities:

- Get Oriented (Study the Background Materials)
- Form Local Teams (Identify Local Primary Contacts)
- Local Governments: Setup Internal Coordination
- Determine “Current Capacity” for Implementation
- Begin Developing 2-Year Milestones
- Describe Tracking & Reporting (Current & Aspirations)
- Start WIP Report Documentation
- Prepare for Analyzing “the Numbers”
- Prepare for Trading and Offsetting Future Loads

Phase I Interim Targets

Nitrogen Reductions by 2017

Source	Reduction (lbs)	Primary Strategy
Agriculture	1,100,000	Many Practices
Wastewater	5,651,000	ENR Upgrades
Stormwater	448,000	Retrofit 20% - 30% of Developed land w/o Stormwater Controls
Septic Systems	290,000	Upgrade about 60% of systems in the Critical Area

Current Capacity Assessment

- Predict the pace of implementation in the future
- Based on "current resources" (capacity)
- Worksheets to Standardize Information Request:

Section I: Point Source Implementation Plan

WWTP	Water Shed		Permitted Flow MGD	Current Avg Daily Flow MGD	Existing Limits		Strategies/Plans	Barriers/Solutions	Tech Assistance Needed	New Initiatives	Tracking & Monitoring	Stakeholder Roles in Implementations
	Town - T	County - C			Nitrogen	Phosphorus						
Millington	T	C	Upper Chester	0.105								
Worton		C	Middle Chester (Morgan Creek)	0.15								
Kennedyville		C	Middle Chester (Morgan Creek)	0.05								
Tolchester		C	Still Pond-Fairlee	0.265								
Chestertown	T		Middle Chester	0.9								
Betterton	T		Cassatras River	0.2								

Section II D: Watershed Restoration and Education Programs

Current Programs Implementing the Strategy:

The following table is adapted from "A Users Guide to Watershed Planning in Maryland" which provides a framework for how programs and policies could be aligned to protect and restore watersheds. In addition, this format also mirrors an approach outlined in Maryland Department of the Environment's recently released TMDL Implementation Guidance. For more information http://www.mde.state.md.us/Programs/WaterPrograms/TMDL/TMDL_implementation_2006_guidance_document.asp

Watershed Protection Tool	Maryland's Stormwater Management Program 2009 Urban Acres Restored and Planned as reported in National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Annual Reports												
	Permitted Jurisdictions			County and Municipal Baseline Impervious Acres				Chesapeake Bay Program Urban Acres (Impervious and Pervious)			Budget (Thousands)		
	County Municipality	Permit Issuance	Total Land Area (Acres)	Untreated Impervious Area (Acres) ¹	Restored	Percent Restored	Restoration Required Thru Current Permit Term (Acres)	Restoration Required Thru Current Permit Term %	Total Urban Land in County ²	Equivalent Urban Watershed Acres Restored ^{3*}	Equivalent Urban Watershed Acres Restoration Permit Requirement	Operating	Capital
Stormwater Management for new development	Allegany	11/8/2004	265,477	45,172	1,094	2.4%	4,517	10%	130,081	5,414	22,356	\$9,894	\$7,217
	Baltimore	1/3/2005	51,418	23,373	1,659	7.1%	4,675	20%	48,407	8,210	23,135	\$9,442	\$3,491
	Baltimore	6/15/2005	280,060	31,090	6,616	21.3%	3,109	10%	158,831	32,743	15,387	\$7,646	\$8,879
	Baltimore	7/5/2001	324,552	25,800	1,007	3.9%	0	0%	155,518	4,983	0	\$7,933	\$6,021
	Baltimore	10/13/2004	311,680	35,712	661	1.9%	3,571	10%	153,107	3,271	17,674	\$24,415	\$17,816
	Baltimore	7/14/2005	289,280	11,344	669	5.9%	1,134	10%	71,451	3,308	5,614	\$344	\$2,776
	Baltimore	7/31/2002	289,011	2,607	45	1.7%	0	0%	47,225	223	0	\$355	\$472
	Baltimore	3/11/2002	424,141	6,725	729	10.8%	0	0%	87,435	3,608	0	\$643	\$247
	Baltimore	11/1/2004	286,490	8,308	256	3.1%	831	10%	74,393	1,267	4,112	\$1,300	\$1,600
	Baltimore	6/20/2005	160,640	11,704	255	2.2%	1,170	10%	72,459	1,262	5,792	\$3,049	\$2,682
Maintenance of existing stormwater infrastructure	Baltimore	10/21/2005	incorporated	20,720	302	1.5%	414	2%	incorporated	1,494	2,051	\$2,865	\$2,865
	Total:		2,682,748	201,835	13,292	6.6%	19,422	9.6%	998,907	65,784	96,122	\$67,886	\$54,065

storm drain clean outs, etc

Example: Stormwater

- Phase I MS4 Jurisdiction Retrofit Goals

Maryland's Stormwater Management Program
2009 Urban Acres Restored and Planned
as reported in
National Pollutant Discharge Elimination System (NPDES)
Municipal Separate Storm Sewer System Annual Reports

Permitted Jurisdictions			County and Municipal Baseline Impervious Acres					Chesapeake Bay Program Urban Acres (Impervious and Pervious)			Budget (Thousands)	
County Municipality	Permit Issuance	Total Land Area (Acres)	Untreated Impervious Area (Acres) ¹	Restored	Percent Restored	Restoration Required Thru Current Permit Term (Acres)	Restoration Required Thru Current Permit Term %	Total Urban Land in County ²	Equivalent Urban Watershed Acres Restored ^{3,4}	Equivalent Urban Watershed Acres Restoration Permit Requirement	Operating	Capital
Anne Arundel	11/8/2004	265,477	45,177	1,094	2.4%	4,517	10%	130,081	5,414	22,356	\$9,894	\$7,217
Baltimore City	1/3/2005	51,418	23,378	1,659	7.1%	4,675	20%	48,407	8,210	23,135	\$9,442	\$3,491
Baltimore Co.	6/15/2005	280,060	31,090	6,616	21.3%	3,109	10%	158,831	32,743	15,387	\$7,646	\$8,879
Montgomery	7/5/2001	324,552	25,840	1,007	3.9%	0	0%	155,518	4,983	0	\$7,933	\$6,021
Prince George's	10/13/2004	311,680	35,712	661	1.9%	3,571	10%	153,107	3,271	17,674	\$24,415	\$17,816
Carroll	7/14/2005	289,280	11,344	669	5.9%	1,134	10%	71,451	3,308	5,614	\$344	\$2,776
Charles	7/31/2002	289,011	2,647	45	1.7%	0	0%	47,225	223	0	\$355	\$472
Frederick	3/11/2002	424,141	6,745	729	10.8%	0	0%	87,435	3,608	0	\$643	\$247
Harford	11/1/2004	286,490	8,308	256	3.1%	831	10%	74,393	1,267	4,112	\$1,300	\$1,600
Howard	6/20/2005	160,640	11,704	255	2.2%	1,170	10%	72,459	1,262	5,792	\$3,049	\$2,682
Wicomico	10/21/2005	incorporated	20,720	302	1.5%	414	2%	incorporated	1,494	2,051	\$2,865	\$2,865
Total:		2,682,748	201,835	13,292	6.6%	19,422	9.6%	998,907	65,784	96,122	\$67,886	\$54,065

Current Capacity: Stormwater

Example Estimate: Average Annual Pace of Implementation

2007 622 acres
 2008 930 acres
 2009 + 712 acres
 Total 2,274 acres / 3 yrs =
 ~ **758 ac/year**

Permitted Jurisdiction	
County Municipality	Permit Issuance
Anne Arundel	11/8/2004
Baltimore City	1/3/2005
Baltimore Co.	6/15/2005
Montgomery	7/5/2001
Prince George's	10/13/2004
Carroll	7/14/2005
Charles	7/31/2002
Fredricks	3/11/2002
Harford	11/1/2004
Howard	6/20/2005
St. Mary's	10/21/2005
Total:	

Other Considerations:

- Current Capital Budget
- Status of Projects in the Pipeline
- Local Knowledge

Urban Acres (Equivalent Urban Watershed Acres Restoration Permit Requirement)	Budget (Thousands)	
	Operating	Capital
22,356	\$9,894	\$7,217
23,135	\$9,442	\$3,491
15,387	\$7,646	\$8,879
0	\$7,933	\$6,021
17,674	\$24,415	\$17,816
5,614	\$344	\$2,776
0	\$355	\$472
0	\$643	\$247
4,112	\$1,300	\$1,600
5,792	\$3,049	\$2,682
2,051	\$2,865	\$2,865
96,122	\$67,886	\$54,065

2-Year Milestone: Stormwater

**Example Estimate:
Average Annual Pace of Implementation**

2007 622 acres
 2008 930 acres
 2009 + 712 acres
 Total 2,274 acres / 3 yrs =
~ 758 ac/year

Initial Estimate of 2-Year Milestone

Permitted Jurisdiction	
County Municipality	Permit Issuance
Allegany	11/8/2004
Baltimore City	1/3/2005
Chesapeake Bay	6/15/2005
Frederick	7/5/2005
Prince Georges	10/13/2004
St. Johns	7/14/2005
Talbot	7/31/2002
Washington	3/11/2002
Worcester	11/1/2004
Howard	6/20/2005
Prince Georges	10/21/2005
Total:	

Other Considerations:

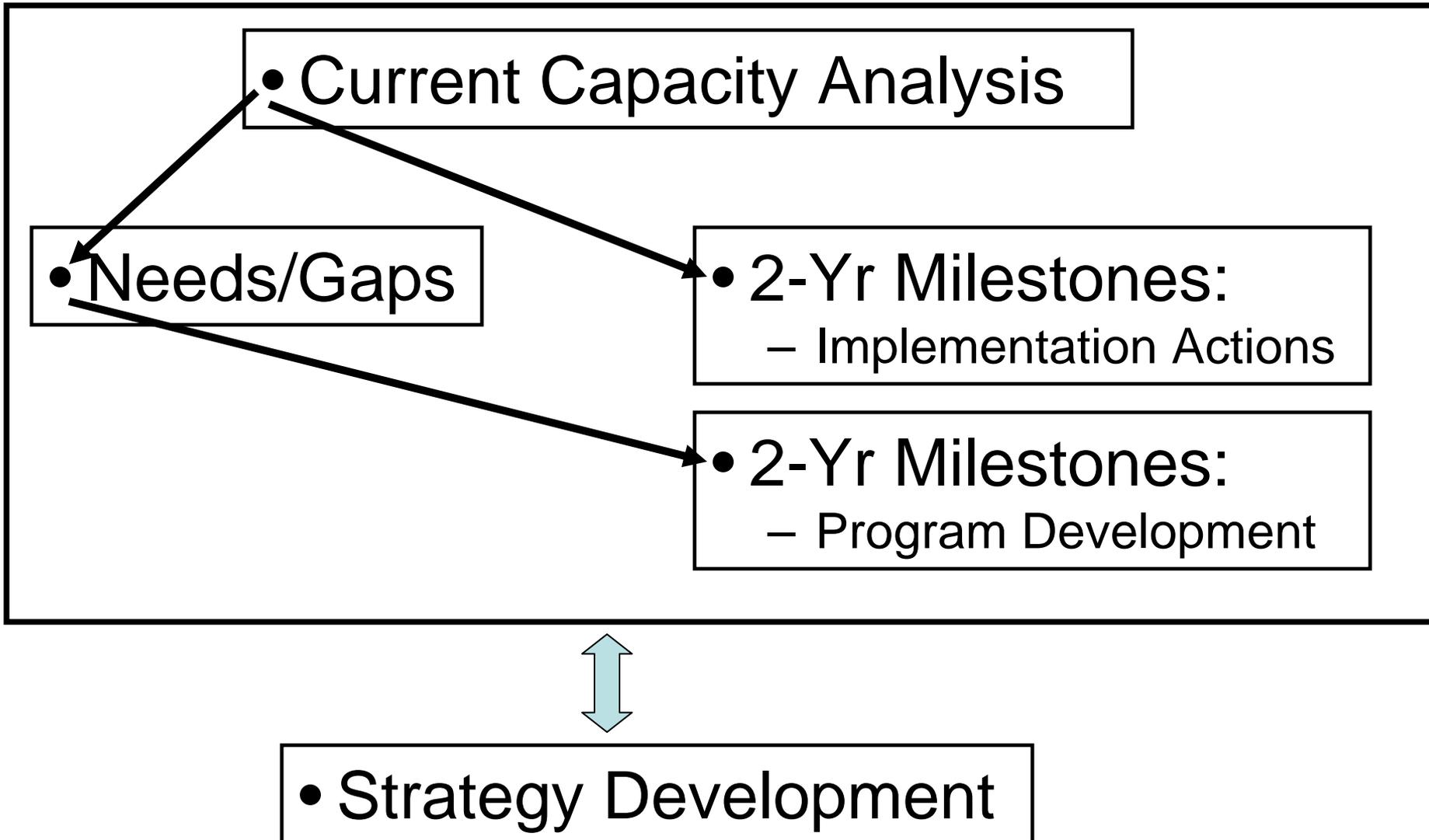
- Current Capital Budget
- Status of Projects in the Pipeline
- Local Knowledge

Equivalent Urban Watershed Acres Restoration Permit Requirement	Budget (Thousands)	
	Operating	Capital
22,356	\$9,894	\$7,217
23,135	\$9,442	\$3,491
15,387	\$7,646	\$8,879
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5,614	\$344	\$2,776
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0	\$643	\$247
4,112	\$1,300	\$1,600
5,792	\$3,049	\$2,682
2,051	\$2,865	\$2,865
96,122	\$67,886	\$54,065

- **Legal & Regulatory**
- **Financial**
- **Staffing**
- **Technical**
- **Programmatic**

- **Narratives:**
 - Current Programs
 - Identify Barriers, Needs, Gaps

Connecting the Dots



- **Coordinate Local Team Meetings:**
 - Schedule Meeting, Set Agenda, Etc.
- **Facilitate Meeting Discussions**
- **Explain and Guide the Process:**
 - Timelines, Goals, Outcomes/Products
- **Liaison is NOT a WIP Expert:**
 - Coordinate Between Local Team & State Agencies:
 - Seek answers to local questions
 - Bring in subject area experts
 - Facilitate other State & federal technical assistance

Table of Contents

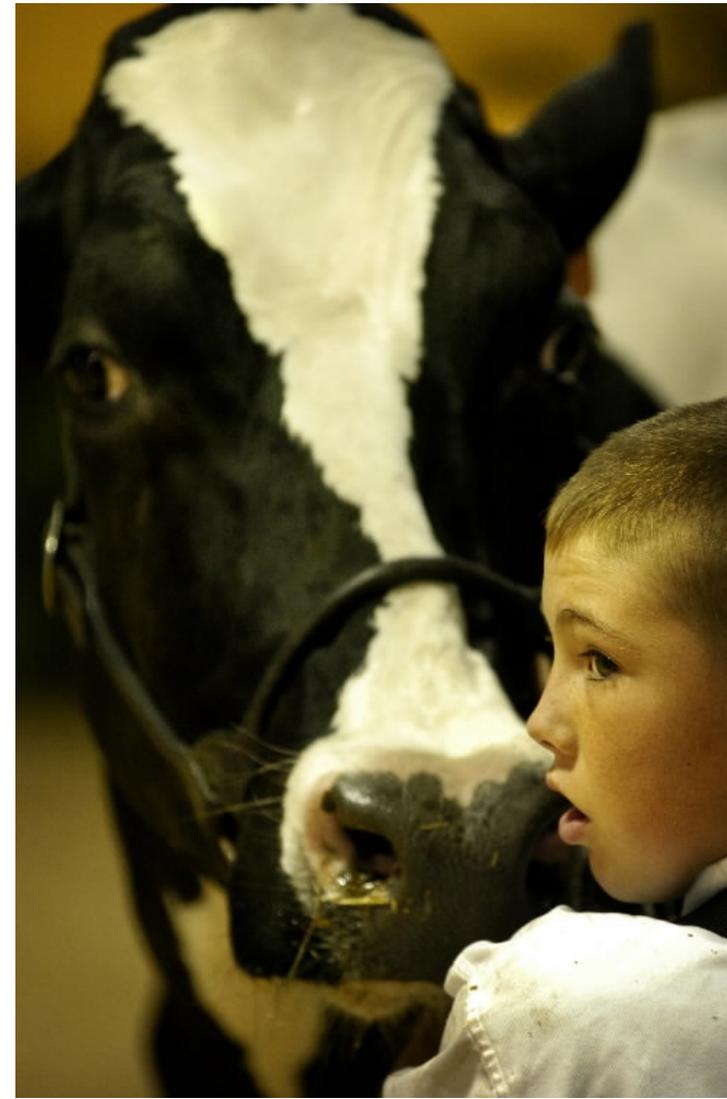
1. **Background & Introduction to Phase II WIP**
2. **Schedule and Deliverables**
3. **Document Template and Guidance**
4. **Maps**
5. **Frequently Asked Questions (FAQ)**
6. **Available State Resources**
7. **Technical:**
 - a. Phase I Allocations
 - b. BMP Analysis Tools (under development)
 - c. Bay Model Information, e.g., Input Deck Fact Sheet

- 1. Basic Expectations**
- 2. Overview of the WIP Development Process**
- 3. 2-Year Milestones Overview**
- 4. Initial Schedule**
- 5. Key Technical Focus & Outcome of Phase II**
- 6. Background Documents:**
 - A. Bay TMDL – Executive Summary
 - B. Phase I WIP - Executive Summary
 - C. EPA Expectations Letter (Summary and web link)
 - D. EPA Consequences Letter (Summary and web link)

Next Steps

Month	Activities
Jan/Feb	<ul style="list-style-type: none"> •Form Local Team •Study Introductory Material •<u>Info. Request</u> for “Current Capacity”
March	<ul style="list-style-type: none"> •Next Local Team Meetings: <ul style="list-style-type: none"> – Affirm Local Team Composition – Follow-up Introductory Materials – Initial Responses to <u>Info. Request</u> – Start Documenting Tracking Systems

A Word on Agriculture



Agriculture's Role in WIPII

Resource Conservation Operations

John Rhoderick

RCO Program Manager

Maryland Dept. of Agriculture



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MARYLAND
DEPARTMENT OF
NATURAL RESOURCES



MDP



MDE

Agriculture's Role in WIPII

- Development & Implementation of Agricultural Component of WIPII
- Assist County Government in Development & Implementation of the Urban Component
 - E & S and Environmental Site Design
- Work with planning office on Smart Growth policy
 - Trading & Offsets



Development & Implementation of Agricultural Component of WIPII

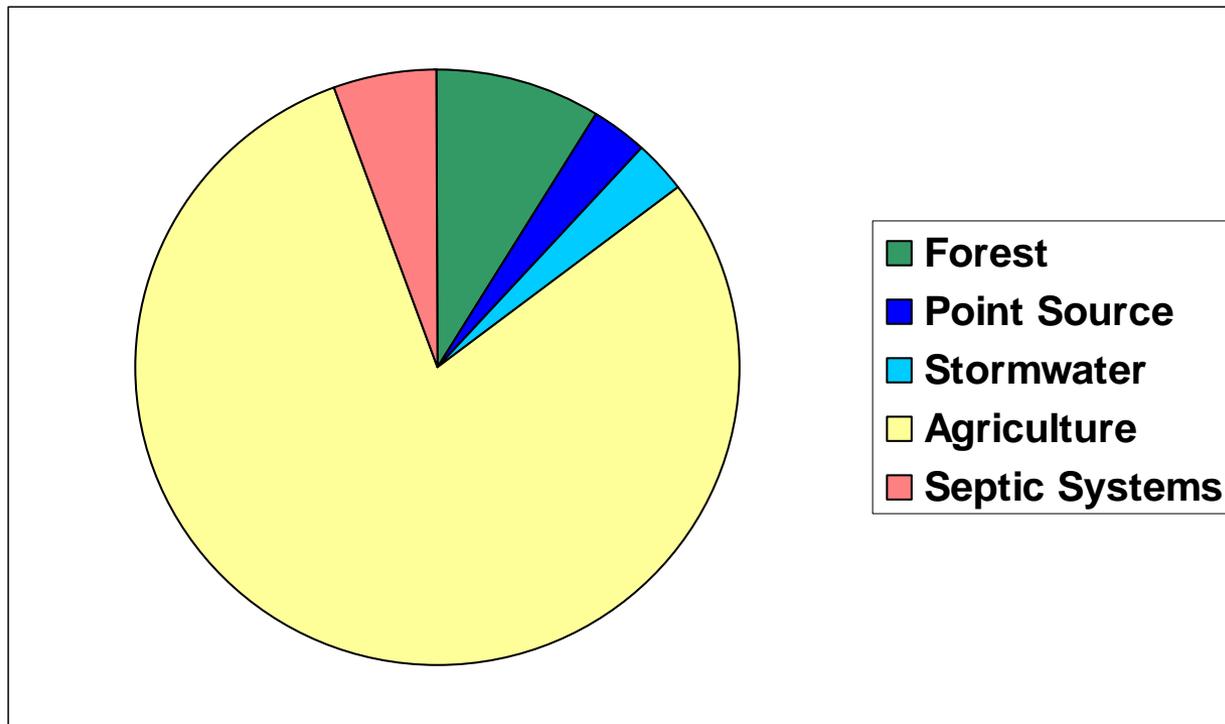
- SCD assigned county load allocation for agriculture
- Develop 2 year implementation goals
- Utilize ag workgroups
- Report plan back to county
- Already developed in MOUs for 2009 & 2012
- Tracked & reported through Conservation Tracker



- Participants
 - SCD
 - Natural Resources Conservation Service
 - UMD Extension
 - Agribusiness
 - Farm Service Agency
 - Farm Bureau
 - Farmers
 - County Agricultural/Environmental Planner
 - NGOs



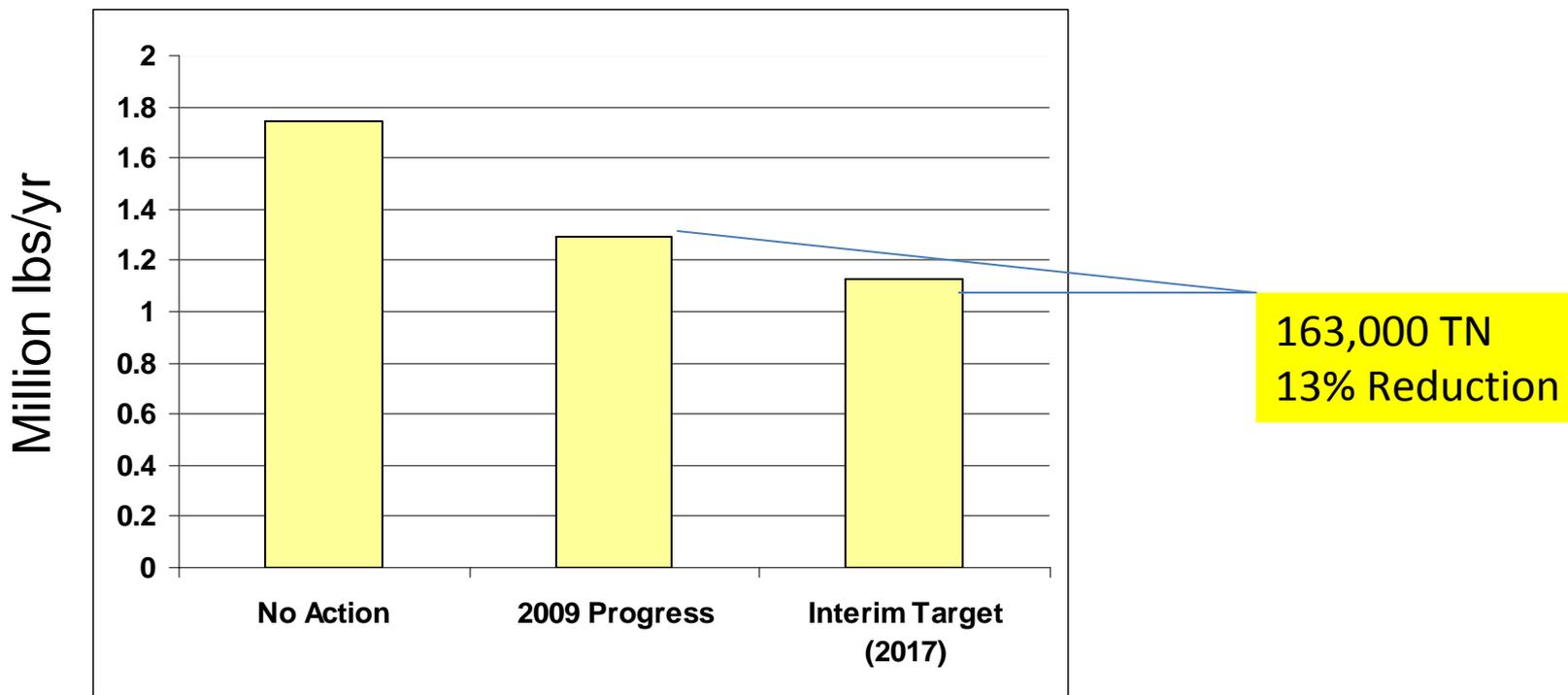
EXAMPLE: Caroline County – Nitrogen by Sector in 2009



Numbers are subject to change via EPA model refinement in early summer 2011



EXAMPLE: Caroline County – Nitrogen from Agricultural Sector



Numbers are subject to change via EPA model refinement in early summer 2011

Choptank				Lbs N/unit	Lbs P/unit	Lbs N/yr	Lbs P/yr
313	Waste Storage Structure Livestock	45	ST	531	101	23895	4545
313	Waste Storage Structure Poultry	139	ST	210	42	29190	5838
382	Fencing	163	AC	6.79	0.91	1108	149
	Stream protection w/o fencing	40	AC	3.4	0.46	136	18
390	Riparian Herbaceous Cover	3748.7	AC	17.06	0.82	63953	3074
391	Riparian Forest Buffer	139.8	AC	28.72	1.94	4015	271
	Water Control Structure	29	ST	45		1305	
	Retirement of HEL	375.3	AC	9.55	0.03	3584	11
	Animal Composting Facility	96	ST	210	42	20160	4032
	Heavy Use Area	60	ST	220		13200	0
558	Roof Runoff Structure	11	NO	69	13	759	143
644	Wetland Wildlife Habitat Management	282.5	AC	28.72	1.94	8113	548
	SCWQ Plans	35239.6	AC	0.62	0.07	21849	2467
340	Cover Crop Acres	15248.6	AC	9.48	0.13	144556	1982
Total watershed nutrient reductions						335823	23078

Marshyhope				Lbs N/unit	Lbs P/unit	Lbs N/yr	Lbs P/yr
313	Waste Storage Structure Livestock	4	ST	531	101	2124	404
313	Waste Storage Structure Poultry	58	ST	210	42	12180	2436
382	Fencing	30	AC	6.79	0.91	206	28
	Animal Composting Facility	40	ST	210	42	8400	1680
390	Riparian Herbaceous Cover	580.8	AC	17.06	0.82	9908	476
391	Riparian Forest Buffer	5.4	AC	28.72	1.94	155	10
	Water Control Structure	2	ST	45		90	
	Heavy Use Area	8	AC	220		1760	0
558	Roof Runoff Structure	3	NO	69	13	207	39
644	Wetland Wildlife Habitat Management	24.2	AC	28.72	1.94	695	47
390	Retirement of HEL	33	AC	9.55	0.03	315	1
340	Cover Crop Acres	3176.5	AC	9.48	0.13	30113	413
	SCWQ Plans	8227.5	AC	0.62	0.07	5101	576
Total watershed nutrient reductions						71255	6110

Chester				Lbs N/unit	Lbs P/unit	Lbs N/yr	Lbs P/yr
	SCWQ Plans	51.3	AC	0.62	0.07	32	4
340	Cover Crop Acres	114.07	AC	9.48	0.13	1081	15
Total watershed nutrient reductions						1113	18

Nutrient Management Plan acres		89839	AC	3.11	0.3	279399	26952
--------------------------------	--	-------	----	------	-----	--------	-------

						Lbs N/yr	Lbs P/yr
Total County nutrient reductions						687591	29207

Agricultural Reduction Summary Table 9/16/10

BMP	Units	2020	N Red*	P Red*	Notes
Conservation Tillage	acres	2,000	9,220	2,260	ability to track
Nutrient Mgmt Plan Compliance	acres	10,000	31,000	2,700	
Manure Transport Alt Use Out of Watershed	tons/yr	500	6,000		
Soil Conservation & Water Quality Plans	acres/yr	15,000	9,300	1,050	additional staff person
Traditional Cover Crops - Private	acres/yr	10,500	93,660		
Commodity Cover Crops	acres/yr	1,000	2,880		
Water Control Structures	structures	10	600		
Poultry Waste Structures	structures	5	1,050		
Livestock Waste Structures	structures	5	2,655		
Runoff Control Systems	systems	5	345		
Wetland Restoration - Private	acres	1000	28,720	1,940	dependent on cost share NRCS Wetland Reserve Program(WRP)
Heavy Use Pad	operation	25	5,500		
Phytase Enhancement		32%			
TOTAL			190,930	7,950	
* based on CBP 4.3 model reductions					



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Assist County in the Development & Implementation of Urban Component (SCD Role)

- Districts delegated E & S review
- Expanded role to provide pre-construction conferences
- New stormwater regulation require Environmental Site Design



Work with Planning Office on Smart Growth Policy

- Districts provide counties, municipalities and the developers the access to farmers and landowners willing to trade and have offsets
- Districts provide verification and inspection of offsets
- Developers will need permanent offsets that require easements
- District funding to develop and implement program

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MDP: Jason Dubow – 410 767-3370
JDubow@mdp.state.md.us