



**Chesapeake Bay TMDL
Watershed Implementation Plan – Phase II
Northern Virginia Regional Planning Commission**

May 16, 2011



Agenda

- Welcome and Introductions
- Review of Phase I WIP
- Virginia's Process for Phase II
- Discussion of local goals
- Community Conservation Information
- Discussion of "local" and "local strategies"

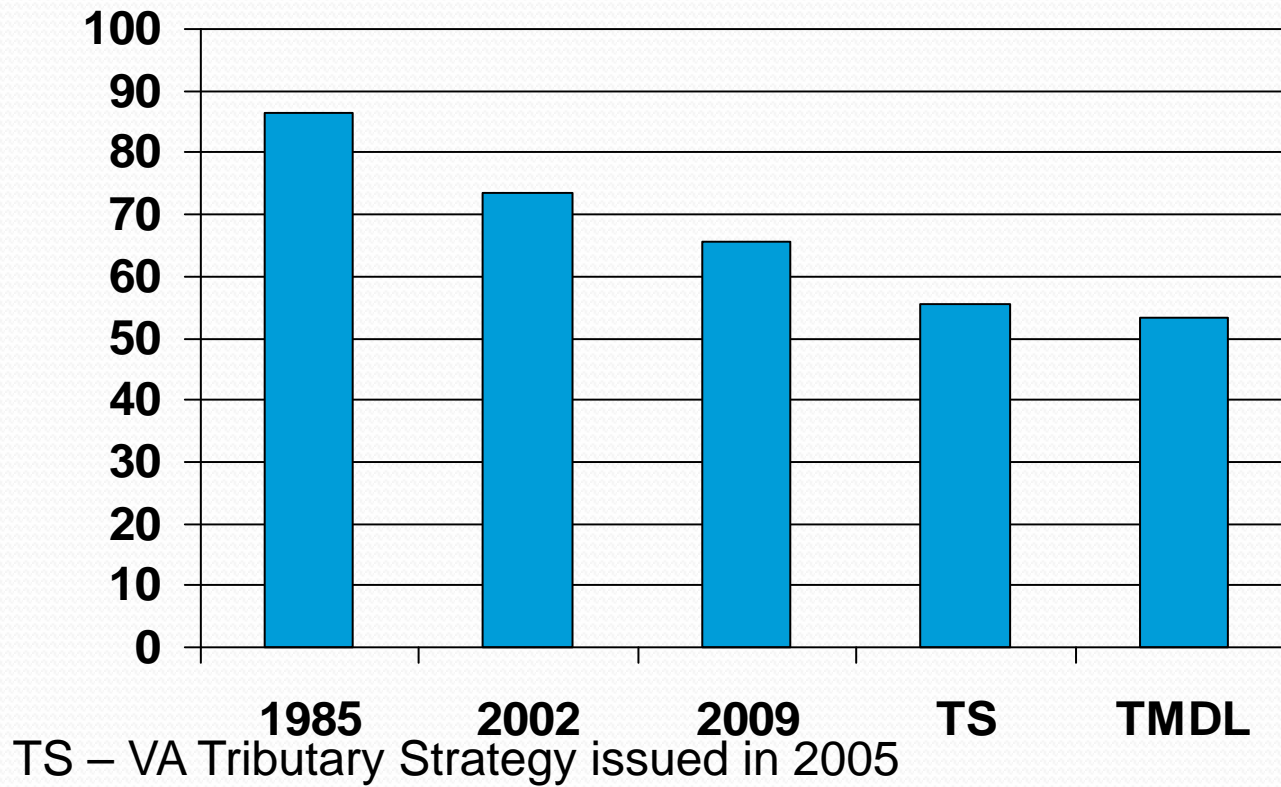


Chesapeake Bay Program History

- 1980 Chesapeake Bay Commission
- 1983 Chesapeake Bay Agreement
- 1987 Chesapeake Bay Agreement
 - 40% nutrient reduction
- 1992 Amended to develop Tributary strategies
- 2000 Chesapeake Bay 2000
 - meet water quality standards
- 2005 New Tributary strategies were released
- 2010 Chesapeake Bay TMDL and Virginia's Phase I WIP

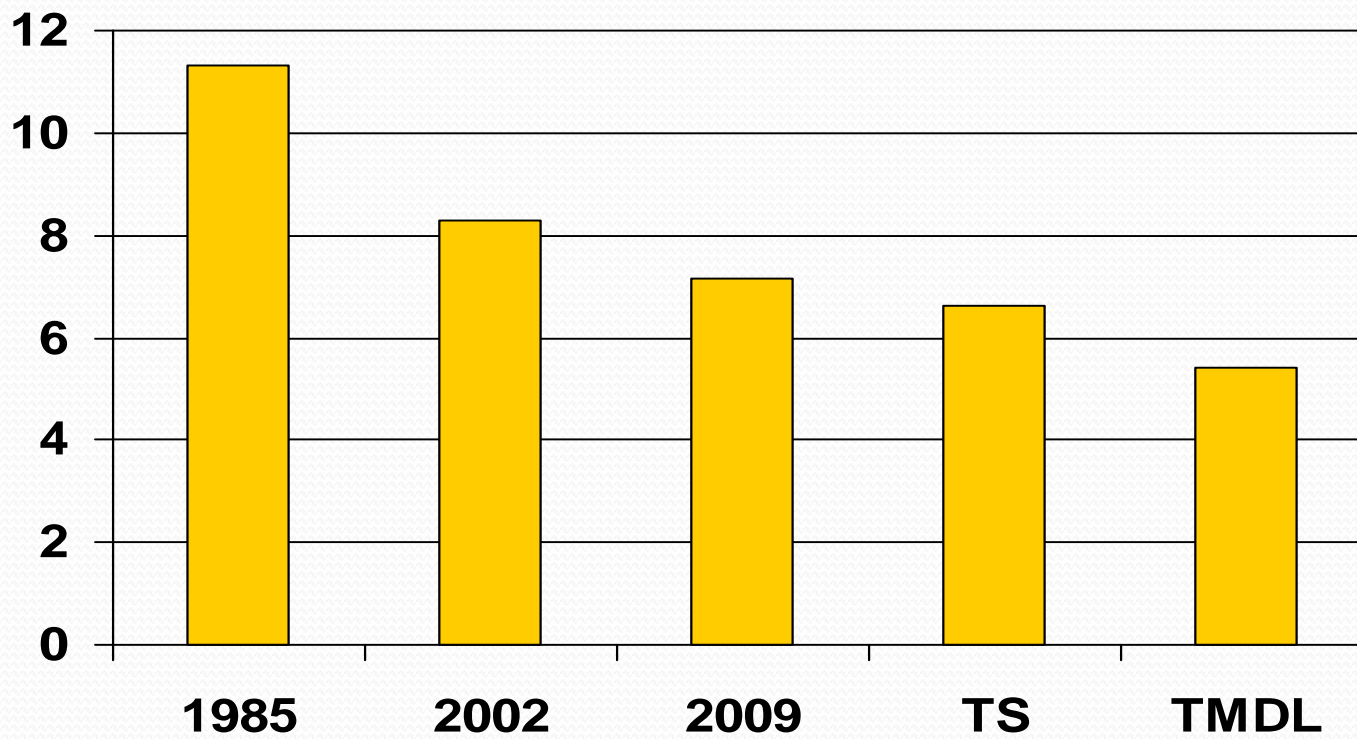
Virginia Nitrogen Loads

[million lbs/yr]



Virginia Phosphorus Loads

[million lbs/yr]



TS – VA Tributary Strategy issued in 2005

What is the relationship with Local TMDLs?

TMDLs are established when water quality standards are violated. The Chesapeake Bay TMDL addresses nutrient and sediment violations.

Where local TMDLs and the Bay TMDL overlap, the most stringent one will take precedence.





Phase I Review

Virginia's Priorities

- Allow flexibility in implementation to ensure cost-effective practices are given priority
- Want on the ground water quality improvements
- Recognize economic impacts of the TMDL and the need for federal funding as well as reductions from federal facilities
- Developed to meet EPA deadlines and requirements
- Reserve the right to modify the plan and adapt as necessary
- The plan includes regulatory programs that are currently place



Phase I Review

Virginia's Watershed Implementation Plan: Overview

- Submitted 27 Nov 2010
- Accepted By EPA 29 Dec 2010
- Meets 2017 target loads for all basins through management actions, plus use of existing nutrient credits achieve those target loads.
- Proposes a broad expansion of the existing nutrient credit exchange.
- Includes plan for the James River for additional study of the current chlorophyll standard.
- Expected Revisions to the 2025 allocations in 2017.



Phase I Review

Expand Nutrient Credit Exchange

Legislative Findings and Purpose – [§62.1-44.19:12]

- Meeting cap allocations cost-effectively and as soon as possible
- Accommodating continued growth and economic development
- Providing foundation for establishing market-based incentives to help achieve non-point source reduction goals

Next Steps:

- Major programmatic undertaking for Commonwealth
- Will require General Assembly action
- Conduct legislature-sanctioned study during 2011
- Proposal for consideration during 2012 session of General Assembly



Phase I Review

James River Strategy

- Conduct scientific study to determine the most appropriate chlorophyll criteria for the tidal James River
- Concurrently, begin pollution reduction actions during Phase II of TMDL Implementation to achieve the 60% reduction target by 2017
- Initiate rulemaking under the Virginia Administrative Process Act to amend water quality standards, as needed
- Amend TMDL allocations for the James River Basin, as needed, in response to revised water quality standards
- Implements necessary management actions during Phase III to achieve TMDL allocations prior to 2025



Phase I Review

Virginia's Watershed Implementation Plan: Wastewater Proposals

- Will meet allocations through Watershed General Permit that establishes nutrient caps for all significant discharges and ability to trade
- Propose additional reductions of 2.6 million lbs of N and 200,000 lbs of P in the James basin and 42,500 lbs of P in the York
- Propose new facilities under 1000 gpd must offset entire nutrient load.
- Propose offsets for nutrient loads from small dischargers expanding to less than 40,000 gallons per day



Phase I Review

Virginia's Watershed Implementation Plan: Onsite/Septic Proposals

- New or replacement systems in the Chesapeake Bay watershed utilize nitrogen reducing technology and implementation of new regulations for alternative systems that are currently under development
- Establishing a tax credit or other financial incentive for the upgrade or replacement of existing conventional systems with systems that have nitrogen removal technologies
- The plan proposes requiring septic pumpouts in areas outside those governed by the Chesapeake Bay Preservation Act which currently requires pumpouts every 5 years



Phase I Review

Virginia's Watershed Implementation Plan: Agriculture/Forestry Proposals

- Extensive implementation of resource management plans on agricultural acres which could result in implementation of these practices:
 - nutrient management plans
 - livestock exclusion from streams
 - 35' stream buffers
 - soil conservation
 - other practices accepted by the Bay model
- Vastly improved accounting of voluntary practices
- Improved implementation of forestry water quality BMP requirements



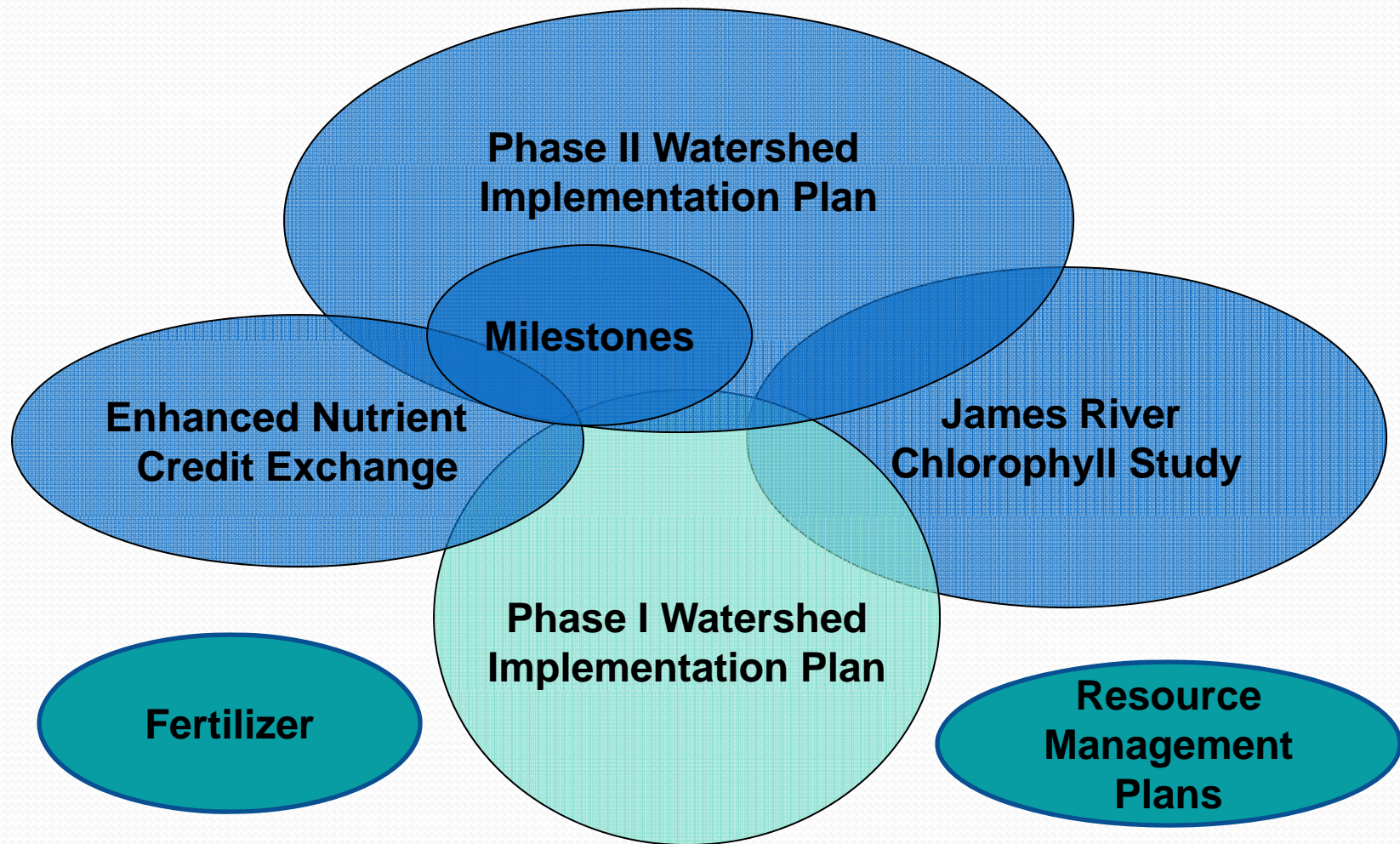
Phase I Review

Virginia's Watershed Implementation Plan: Urban/Suburban Stormwater Proposals

- Urban nutrient management plans on golf courses, municipally owned lands.
- Restrictions on do-it-yourself non-agricultural lawn and turf fertilizers including “P ban”
- 20% phosphorus reduction standard for areas being redeveloped.
- Stormwater *retrofits* on existing developed lands to reduce nitrogen, phosphorus and sediment.
- For new development, post development loads cannot exceed allowed loads of previous land uses

Virginia's Chesapeake Bay TMDL

Planning Components





Phase II WIP and Milestones Project Schedule

- Draft Local Goals to Localities - 06/01/2011
- EPA Delivers Phase 5.3.2 Model – 07/1/2011
- Final Local Goals to Localities - 08/01/2011
- Local Conservation Strategies – 11/01/2011
- Preliminary 2012-2013 Milestones to EPA - 11/01/2011
- Draft Phase II WIP to EPA - 12/01/2011
- Final 2012-2013 Milestones to EPA - 01/03/2012
- Final Phase II WIP to EPA – 03/30/2012
- Expected in 2017:
 - EPA model revisions (Phase 6)
 - States develop and submit Phase III WIPS
 - Adjust allocations according to progress on state plans
 - Modifications of the TMDL allocations by Dec 2017



Virginia's Phase II Approach 2012 – 2013 Milestone Development

- Evaluate Phase I WIP actions
- Evaluate 2011 milestone actions and contingencies
- Identify new State programs (Fertilizer control, Enhanced Nutrient Credit Exchange Program, etc.)
- Develop 2012-2013 Actions
- SAG review of preliminary milestones
- Gubernatorial review of preliminary milestones
- Submit preliminary milestones to EPA (11/01/2011)
- Identify resource requirements to achieve implementation goals
- Submit final milestones to EPA (1/03/2012)

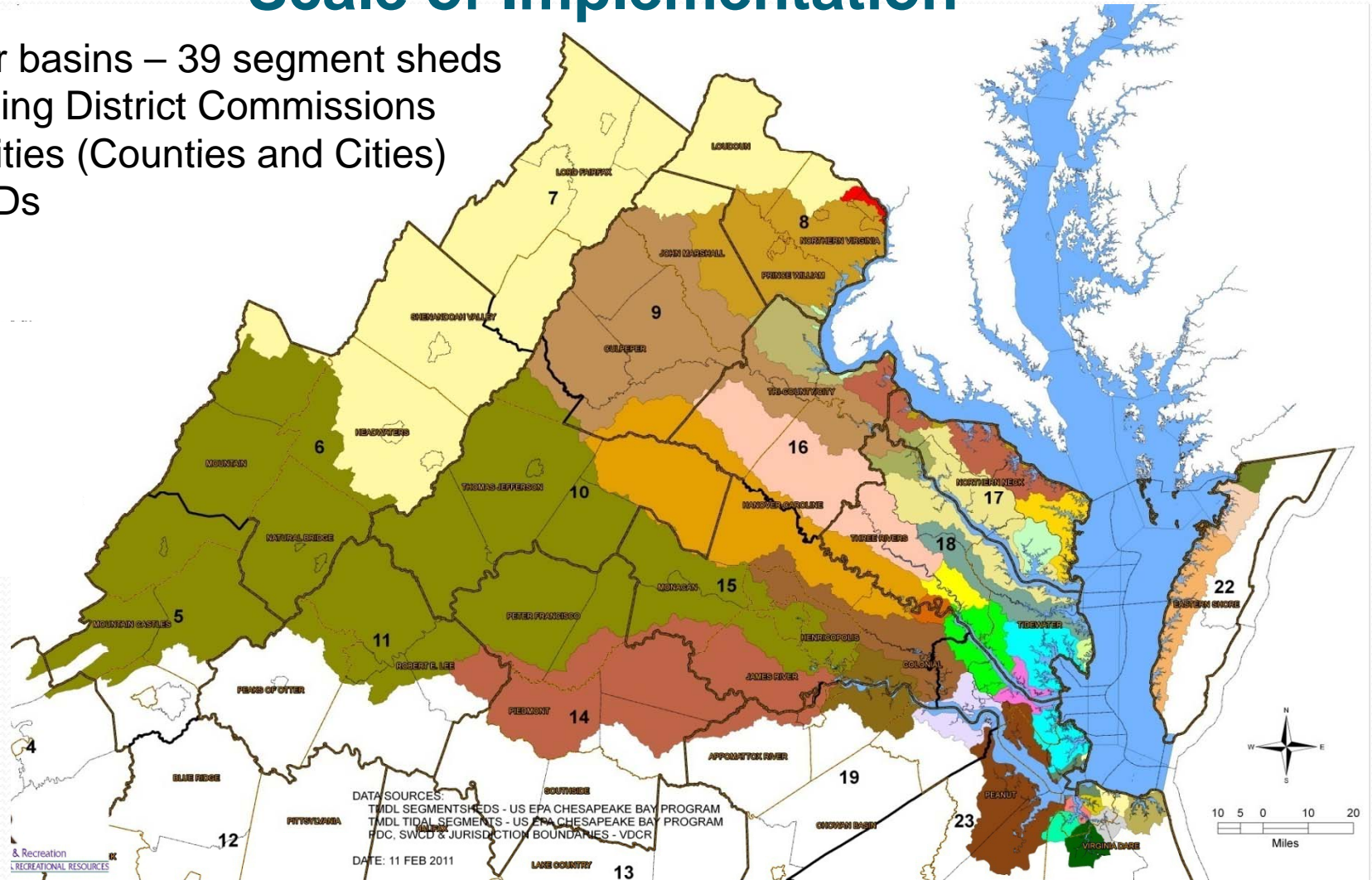


Requirements for Phase II

- Further divide final Bay TMDL allocations for 39 segment sheds into local area targets
- Work with local elected officials, staff, conservation districts, watershed associations and citizens to identify strategies to be implemented to reduce delivered loads to the Bay
- Provide additional detail on programs, technologies, and practices to implement by 2017
- Include updates resulting from revisions to the Bay Watershed Model
- Include specific programs and practices in the first 2-year milestones (2012-2013)

Scale of Implementation

- Five Major basins – 39 segment sheds
- 16 Planning District Commissions
- 96 Localities (Counties and Cities)
- 32 SWCDs





Phase II Objectives

- Focus on strategies that reduce nutrient and sediment loads to improve the quality of local waters and the Chesapeake Bay
- Convey relationship between Chesapeake Bay restoration and the benefits to local waters and local partners (making implementation locally relevant)
- Establish local targets or goals (subdivided allocations) as a tool for use by the local governments and planning district commissions to identify conservation actions and track progress
- Utilize local goals to facilitate engagement and partnership with local stakeholders to advance a better understanding of the local contribution to and responsibility for reducing pollutant loads
- Use Community Conservation Information to inventory existing practices and determine the extent to which these practices can be enhanced to meet local goals and local conservation objectives.



Virginia's WIP II Process

- Assigned Phase II to Lead and Project Manager
- Established Inter-Departmental Phase II Team - DCR, DEQ, DOF, VDACS, VDH
- Convene Phase II Stakeholder Advisory Group
- Develop Local Goals (TMDL & model data)
- Local Engagement and Outreach
 - 16 Planning District Commissions
 - 96 Localities
 - 32 SWCDs
 - NGOs and Federal facilities/lands
- Develop Community Conservation Information (locality scale)



Virginia's Phase II Approach

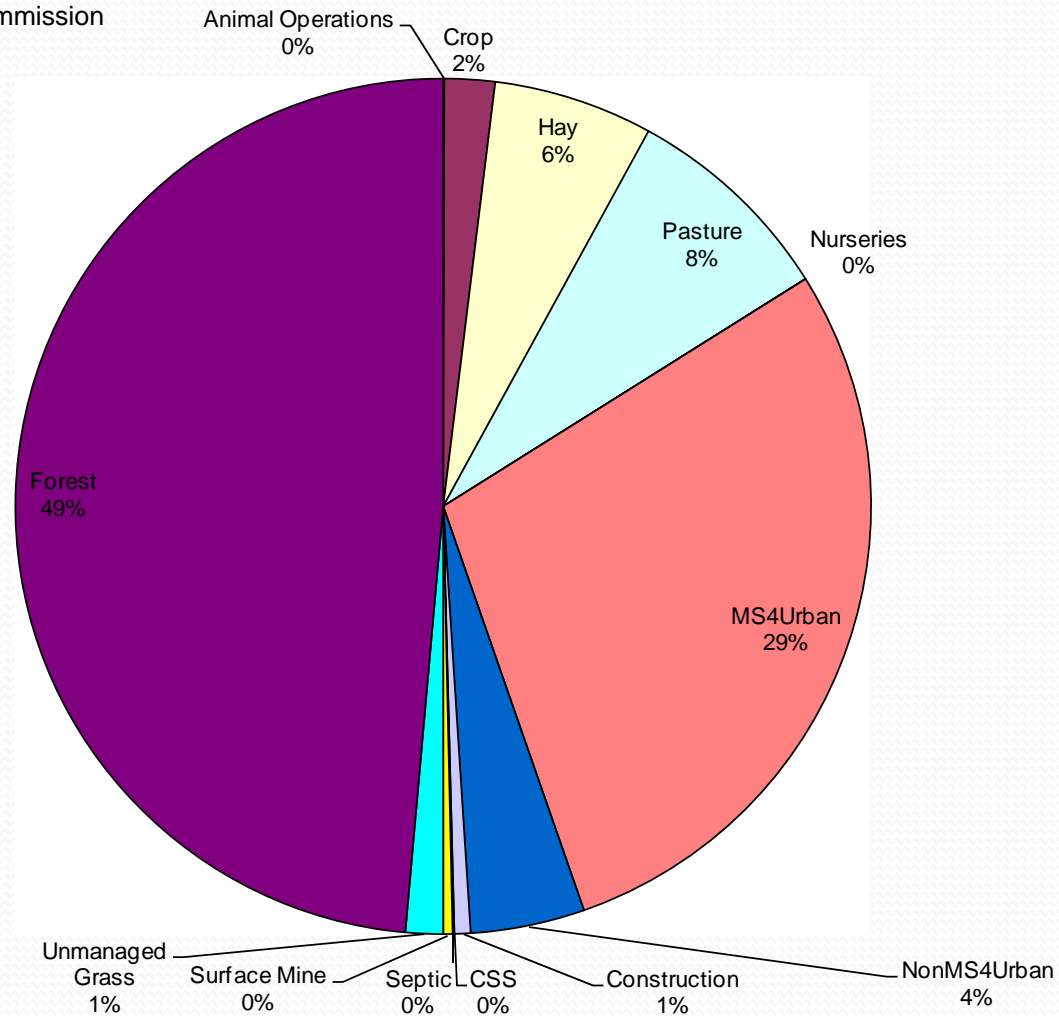
Local Goal Loads and Model Output Data

- Utilize the Bay Model outputs to distribute the source-segment Bay TMDL allocations and WIP I BMPs to the local scale
 - Land Use / Land Cover
 - All segment loads aggregated to a single local goal for each pollutant
 - BMPs accounted for in the model
 - 2009 Progress BMPs
 - WIP I BMPs
 - BMPs scenario to meet Goal Load
- The local reduction goals and associated BMPs will be the starting point for localities to work from during the Phase II WIP development process
- Data will be revised upon EPA completion of the Phase 5.3.2 model (July/August)
- Absent any input from localities, these data will be used as the default values for the Phase II WIP

Virginia's Phase II Approach Model Land Use/Land Cover

LU/LC (acres)

Northern Virginia Regional Commission



Virginia's Phase II Approach

Local Goal Loads and Reductions

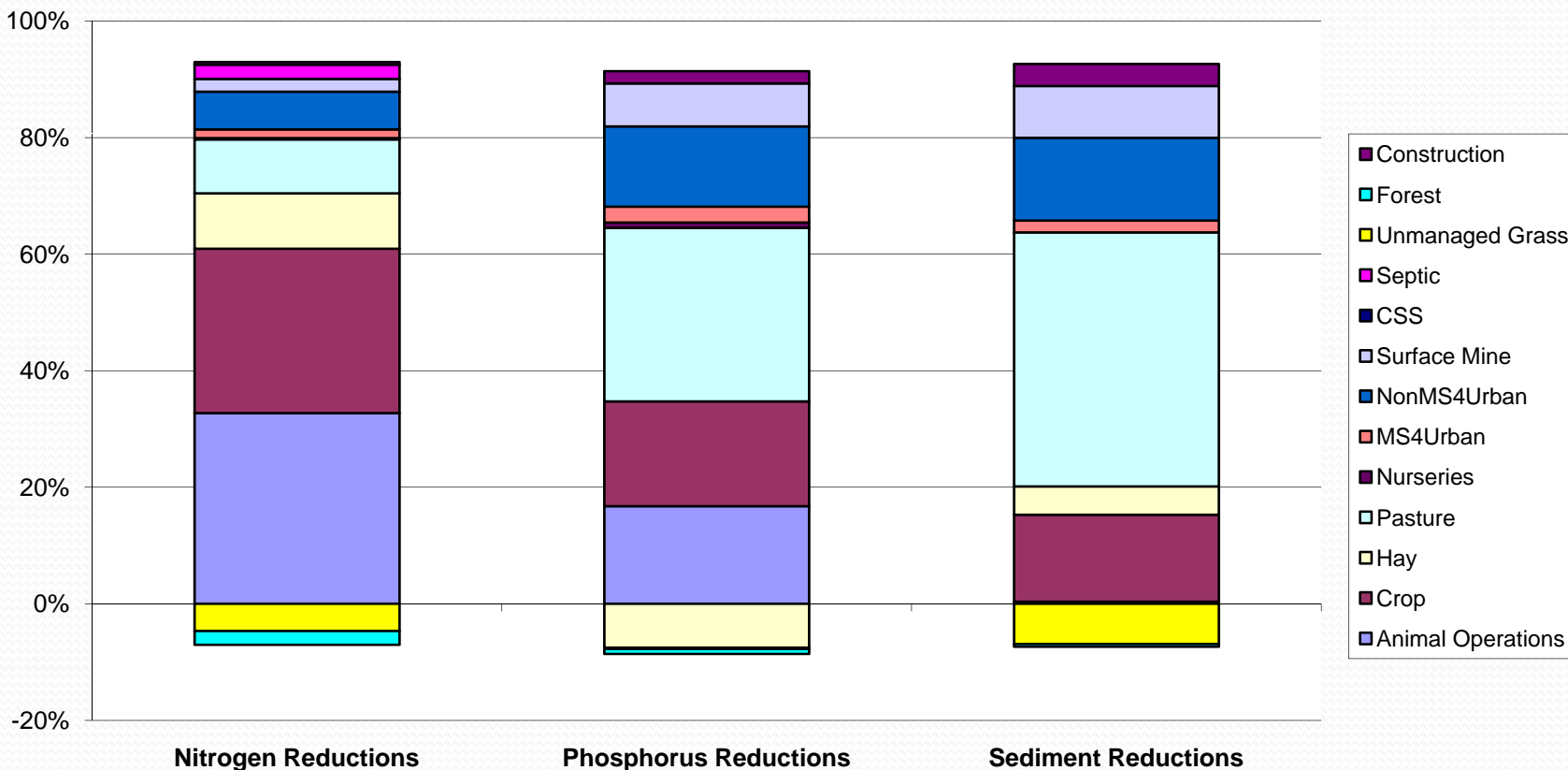
PDC	Northern Virginia													
County_City	(All)													
SWCD	(All)													
Major Basin	(All)													
Cbseg	(All)													
Data														
Subsource	LU/LC (acres)	2009 Nitrogen Load	2025 Nitrogen Goal Load	Nitrogen Reduction Goal	Nitrogen Reduction %	2009 Phosphorus Load	2025 Phosphorus Goal Load	Phosphorus Reduction Goal	Phosphorus Reduction %	2009 Sediment Load	2025 Sediment Goal Load	Sediment Reduction Goal	Sediment Reduction %	
Animal Operations	342	549,322	136,553	(412,769)	-75%	24,186	6,027	(18,159)	-75%	604,085	375,020	(229,065)	-38%	
Crop	16,152	422,979	300,943	(122,036)	-29%	34,273	26,596	(7,677)	-22%	16,011,162	11,167,765	(4,843,397)	-30%	
Hay	51,146	1,014,043	850,937	(163,106)	-16%	17,711	44,072	26,361	149%	20,042,143	17,155,527	(2,886,616)	-14%	
Pasture	68,794	795,903	686,873	(109,030)	-14%	101,649	69,517	(32,132)	-32%	18,479,416	11,002,671	(7,476,745)	-40%	
Nurseries	14	5,513	1,584	(3,929)	-71%	1,812	520	(1,292)	-71%	36,539	36,539	-	0%	
MS4Urban	242,502	2,417,171	2,271,461	(145,710)	-6%	201,630	182,201	(19,429)	-10%	101,093,850	88,179,584	(12,914,266)	-13%	
NonMS4Urban	36,595	632,787	504,561	(128,226)	-20%	89,628	57,517	(32,111)	-36%	73,567,339	43,068,502	(30,498,837)	-41%	
Construction	5,159	177,899	132,781	(45,118)	-25%	42,646	25,675	(16,971)	-40%	52,732,764	31,639,778	(21,092,986)	-40%	
CSS	535	-	-	-	0%	-	-	-	0%	-	-	-	0%	
Septic	-	223,392	206,967	(16,425)	-7%	-	-	-	0%	-	-	-	0%	
Surface Mine	2,973	45,556	2,312	(43,244)	-95%	11,227	570	(10,657)	-95%	8,240,989	418,533	(7,822,456)	-95%	
Unmanaged Grass	12,023	84,509	128,394	43,885	52%	348	529	181	52%	4,668,154	6,995,743	2,327,589	50%	
Forest	412,236	1,831,213	1,870,741	39,528	2%	58,175	59,367	1,192	2%	23,299,874	23,601,356	301,482	1%	
Grand Total	848,471	8,200,287	7,094,107	(1,106,180)	-13%	583,285	472,591	(110,694)	-19%	318,776,315	233,641,018	(85,135,297)	-27%	

Goal Load = Best available model representation of the TMDL
Reduction Goal = Goal Load - Modeled 2009 Progress
Reduction % = Reduction Goal / Modeled 2009 Progress

Virginia's Phase II Approach

Reductions Goals

Reduction Goals by Source Sector



Virginia's Phase II Approach

BMPs and Implementation Goals

BMPs	Data			
	2009 Progress BMPs	2025 WIP I Proposed BMPs	New BMPs Proposed by 2025	2017 BMPs 60%
AWMS (Systems)	30	341	311	187
MortalityComp (Systems)	-	3	3	2
BarnRunoffCont (Systems)	65	341	276	166
PastFence(Linft)	703,384	6,005,926	5,302,542	3,181,525
OSWnoFence	18	-	-	-
PrecRotGrazing	11,831	36,592	24,761	14,856
CaptureReuse (Acres Treated)	-	15	15	9
ConPlan	35,739	115,674	79,935	47,961
AgNutMan	6,692	59,116	52,423	31,454
CoverCrop	1,558	4,815	3,258	1,955
ContinuousNT	1	3,829	3,828	2,297
NonUrbStrmRest (Linft)	-	5,906	5,906	3,544
WaterContStruc (Acres Treated)	-	-	-	-
WetlandRestore	-	216	216	130
GrassBuffers	1,912	4,714	2,803	1,682
ForestBuffers	511	697	187	112
Land Retirement to hyo	17,364	8,544	-	-
Tree Planting	2,050	6,706	4,655	2,793
ForHarvestBMP	500	3,902	3,402	2,041
Septic Connections (systems)	-	385	385	231
Septic Denitrification (systems)	-	4,638	4,638	2,783
Septic Pumpouts (systems)	7,606	3,368	-	-
StreetSweep	237	7,535	7,298	4,379
UrbanNutMan	13,511	20,586	7,075	4,245
EandS	6,946	6,255	-	-
Impervious Urban Surface Reduction	2	6,282	6,279	3,768
UrbStrmRest (linft)	-	18,022	18,022	10,813
ExtDryPonds (Acres Treated)	68,345	34,774	-	-
DryPonds (Acres Treated)	29,156	16,500	-	-
WetPondWetland (Acres Treated)	61,536	40,832	-	-
Infiltration (Acres Treated)	550	10,107	9,557	5,734
Filtration (Acres Treated)	2,105	10,649	8,543	5,126



Virginia's Phase II Approach Community Conservation Information

- A suggested process for local engagement and strategy development
- Provides EPA model data at local scale
- Accommodates desire to use locally generated data
- Mechanism by which to reconcile local data with model
- Includes a tool for localities to evaluate scenarios



Virginia's Phase II Approach Community Conservation Information

- **Baseline Data**
 - Goal loads and model outputs for localities
 - Locally available data (land use, BMPs on the ground, etc.)
- **Resource Assessment**
 - Local conditions
 - Incorporate local data into assessment tool
 - Source identification
- **Existing Program Evaluation**
- **Conservation Strategies**
 - 2017 Implementation goals
 - 2025 Strategies
- **Identify additional resources and programs required to achieve implementation goals**
 - Estimate costs of local implementation



Virginia's Phase II Approach Local Engagement & Outreach Process

- Provide local goals and model output data
- Desired local deliverables
 - Current BMPs
 - Update progress in current model
 - Land Use / Land Cover
 - Work with EPA for use in Phase 6 model
 - 2017/2025 BMP Scenarios
 - Strategies to implement BMP scenarios
 - Resource needs
- Provide assessment tool for evaluation of scenarios
- Ongoing support and technical assistance

Virginia's Phase II Approach

Questions/Discussion

