

MAST Training Webinar for Federal Partners

(Maryland's Assessment and Scenario Tool)

— August 16, 2011 —



Overview of Today's Webinar

- Introduction: (30 min)
 - Brief background of Phase WIP process
 - Define local area targets
 - Explanation of the process for setting local targets
 - Developing strategies
 - Schedule
- MAST Presentation (45 min)
 - About MAST
 - Application: On-line MAST Demonstration
 - Hands-on MAST Training Sessions: Synopsis
 - Training Date
 - Summary & Next Steps
- Q & A Session (30 min)



Introduction

Lee Currey, MDE

- Brief background of Phase WIP process
- Define local area targets
- Explanation of the process for setting local targets
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- Schedule



Watershed Implementation Plans

Three-Phased Planning Process:

- Phase I Plans – 2010 -- DONE
 - Statewide strategies for reducing loads in each source sector
 - Starting Point for Phase II Plans
- Phase II Plans – 2011/12 à 2017
 - Refined EPA Watershed Model Results
 - Divide loads by smaller geographic areas
 - More detailed strategy to meet 2017 Interim Target - 70% of full implementation
 - 2-Year Milestone actions for 2012-2013
- Phase III Plans – 2017 - 2020
 - Modification of TMDL and allocations, if necessary
 - Identify changes needed to meet Final Target loads (100% of implementation).



Basic Expectations of WIP

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

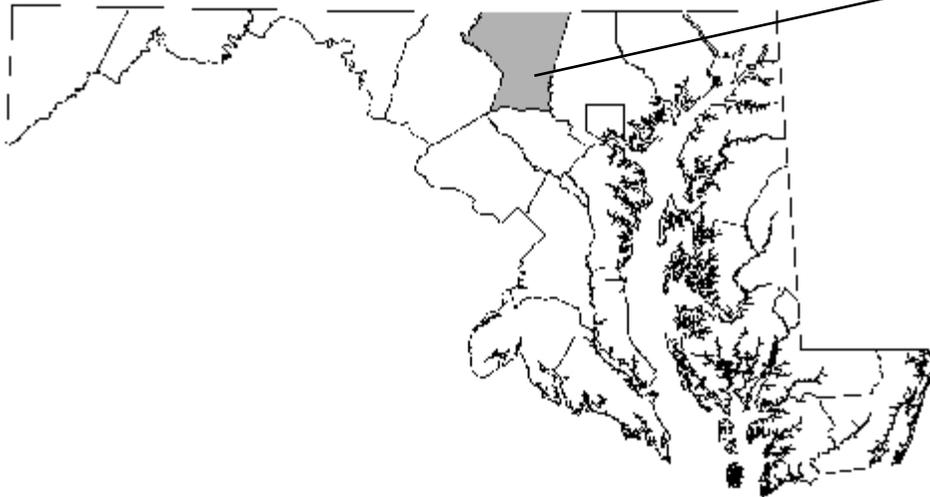
EPA's Expectations for Federal Partners

- Work with State
 - In the development of their Phase II WIP
 - To set implementation levels for federal lands and facilities to meet TMDL allocations and local area targets
- Commit to actions necessary to reach interim and final targets
- Demonstrate sufficient resources in place to enable implementation and provide each agency's share of reductions
- Federal 2-year milestones should support implementation of State's WIP and their 2-year milestones
- Federal reduction goals for State's WIP will help inform FFIPs (or prior FFIP can provide input for WIP)

What is “Local Area”?

- In Maryland, “local area” = land and loads within geographic boundaries of 23 Counties and Baltimore City (WIP Teams)

EXAMPLE OF LOCAL TARGET TABLE:



Total Nitrogen (million lbs/year)					
Source Sector	2010 Progress	2017 Allocation	% Reduction	final Allocation	% Reduction
UrbanReg					
UrbanNonReg					
Agriculture					
CAFO					
Septic					
Forest					
Air					
WWTP & CSO					
Total					

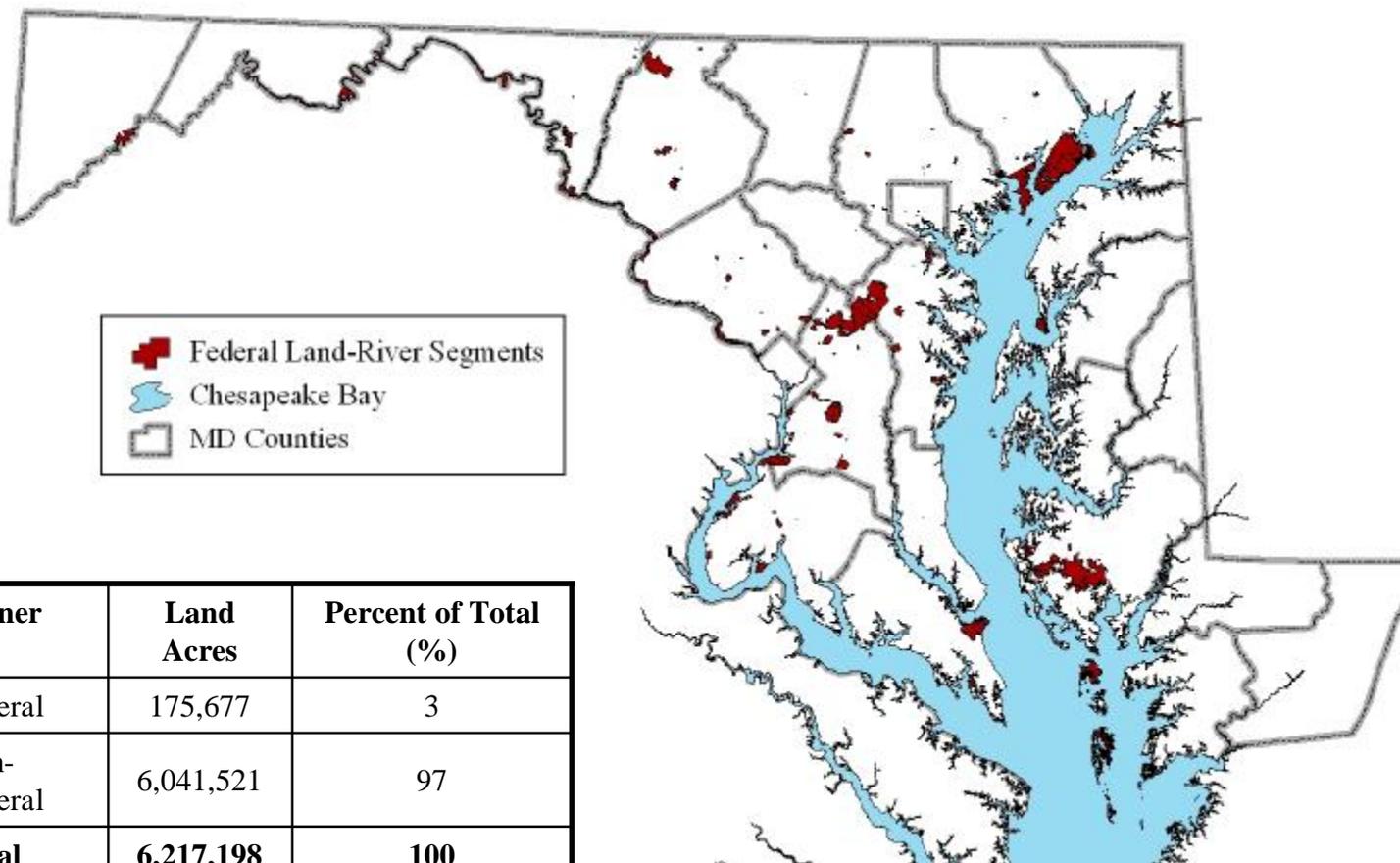
Load Reduction Analysis

- What is required?
 - Current Condition
 - Local Area Loading Targets
 - Best Management Practices to Meet Targets

Current Condition

- EPA CBP P5.3.2 Watershed Model
 - Federal Lands
 - Included, but aggregated in model
 - MD working to disaggregate by federal ownership
 - Nutrient and Sediment Source Loading Analysis
 - Current conditions
 - Disaggregating loads

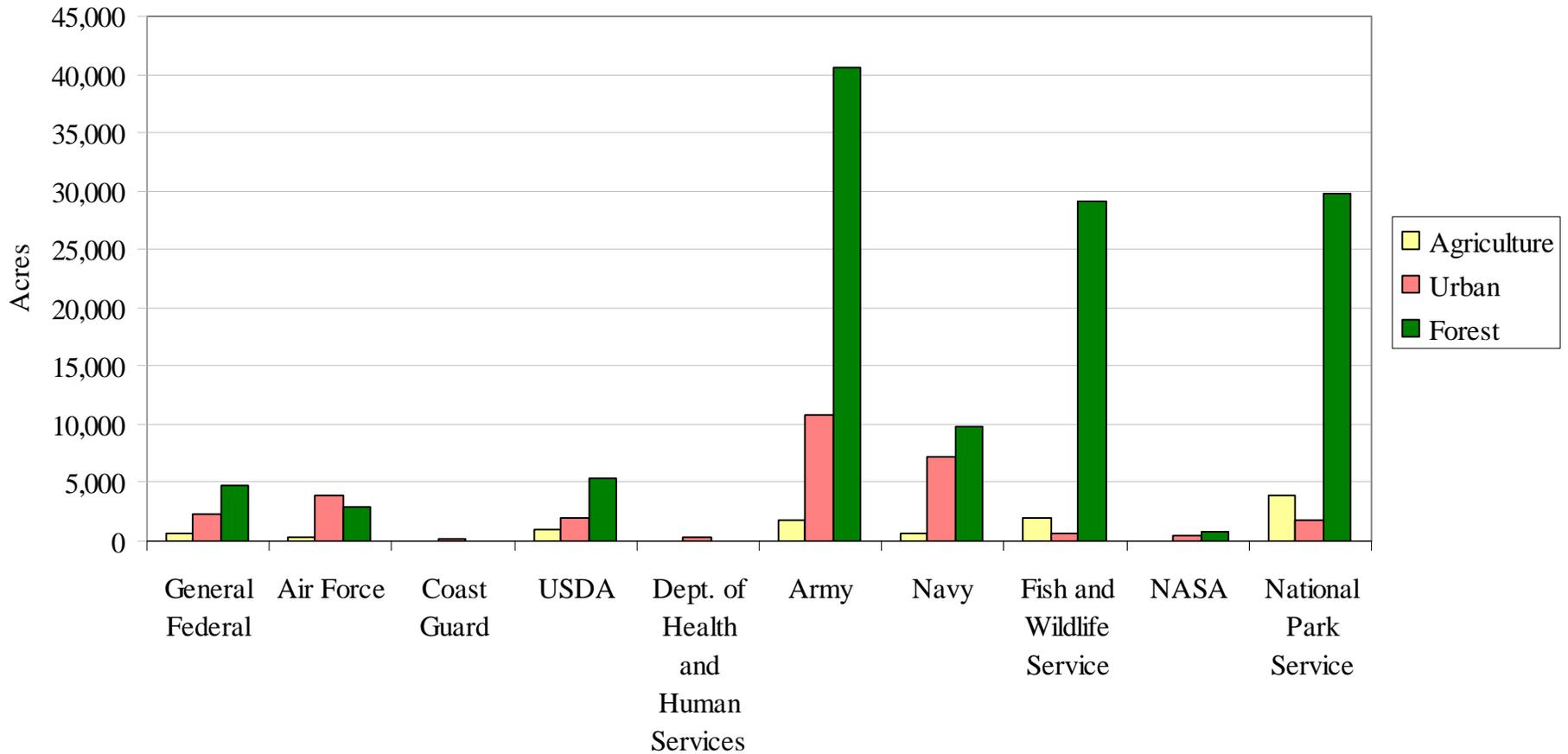
Federal Lands in Maryland



Owner	Land Acres	Percent of Total (%)
Federal	175,677	3
Non-Federal	6,041,521	97
Total	6,217,198	100

From EPA Phase 5.3.2 2009 Progress land use

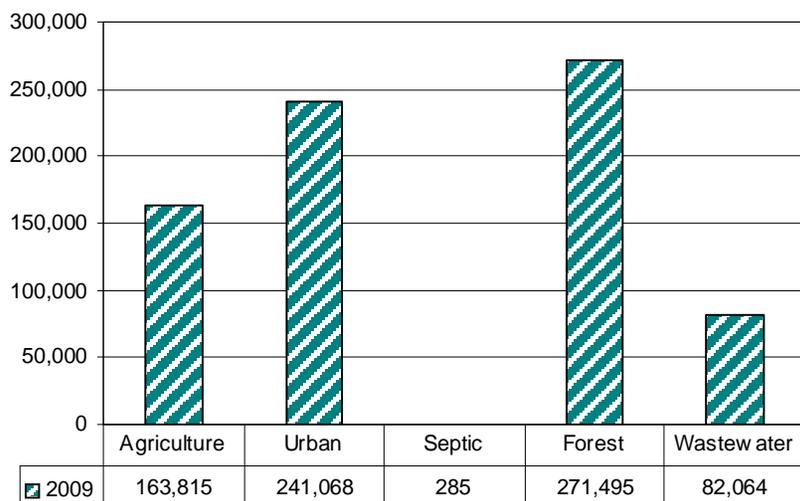
Federal Land Use Acres



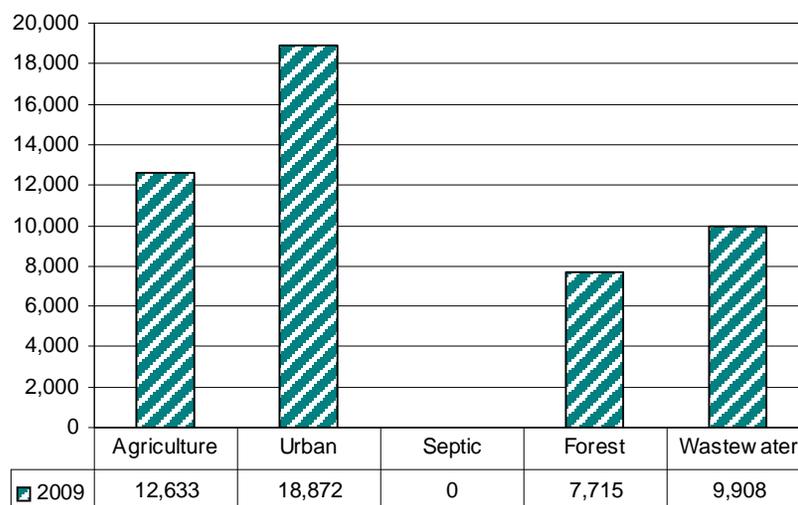
From EPA Phase 5.3.2 2009 Progress land use

Federal Delivered Loads

**Federal Lands in Maryland -
2009 Total Nitrogen Loads (lb/yr, delivered)**



**Federal Lands in Maryland -
2009 Total Phosphorus Loads (lb/yr, delivered)**

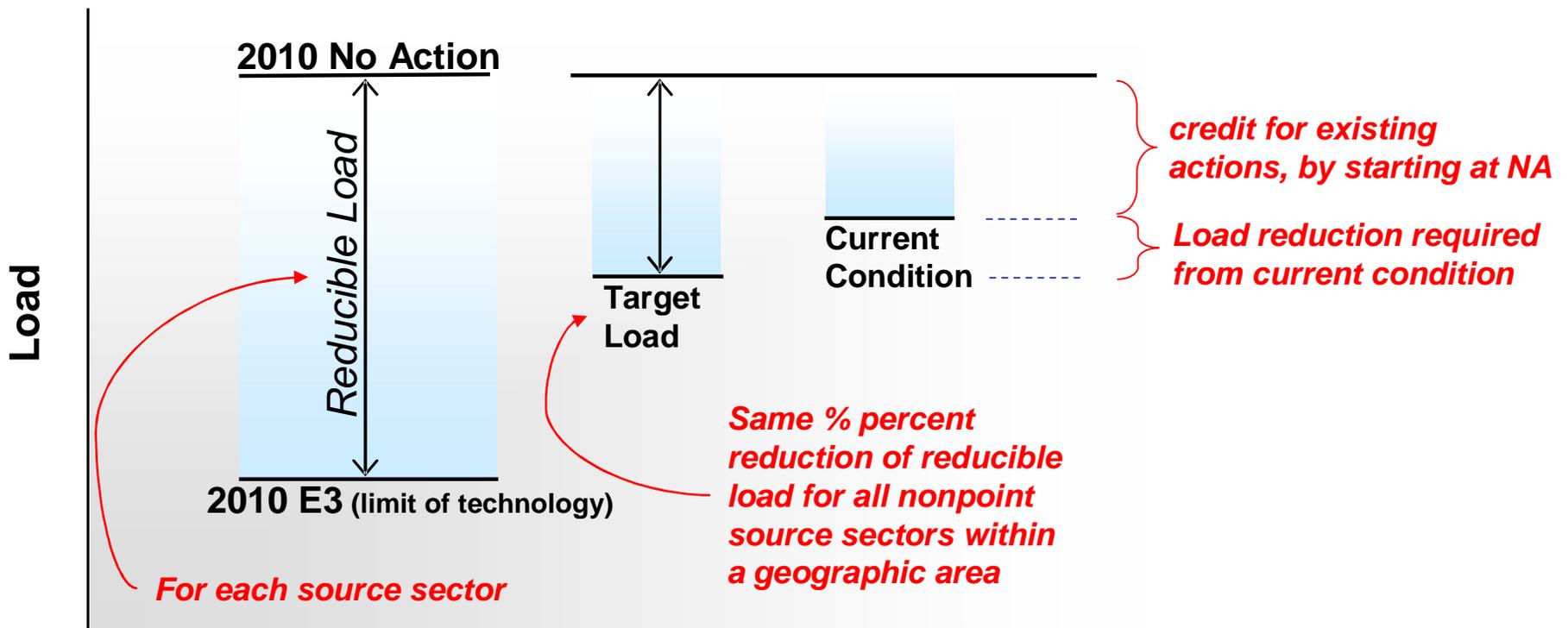


Setting Local Area Targets

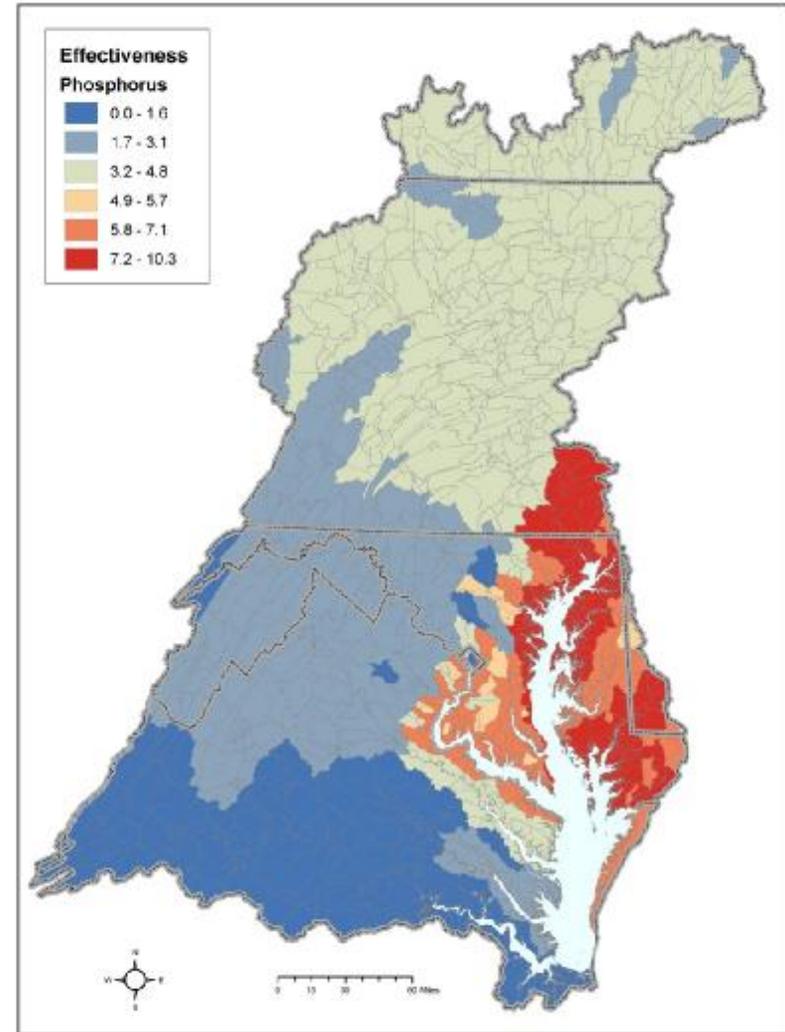
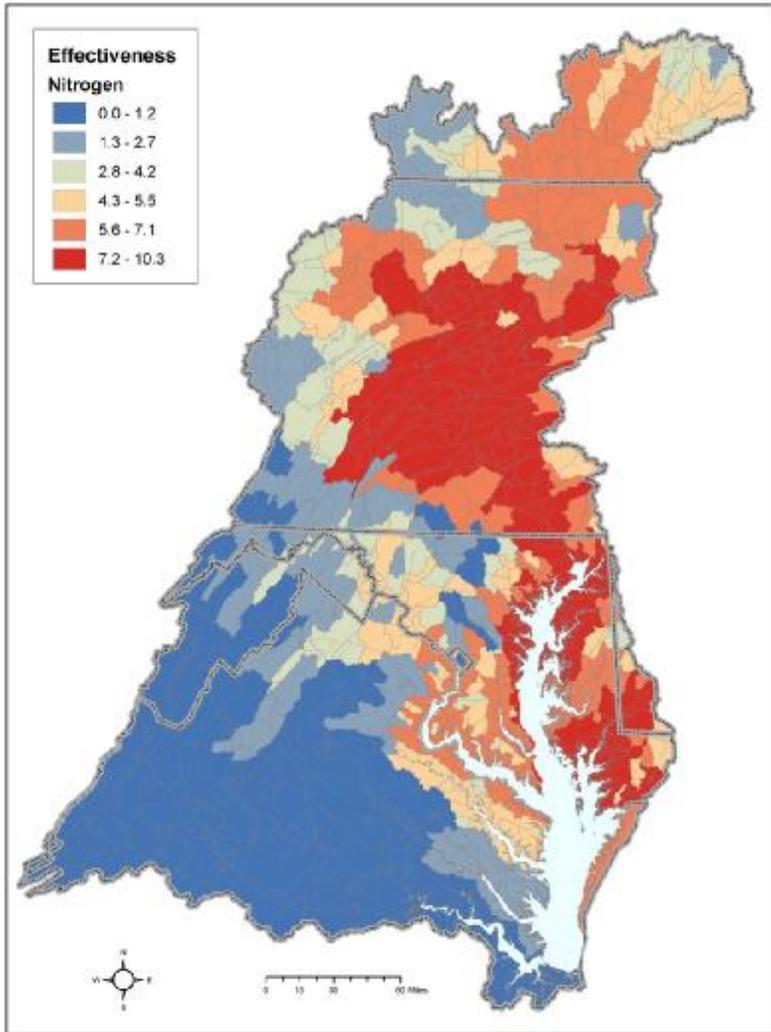
How are the final allocations determined?

- Same process that is applied to non-federal
- Meet water quality standards in all Bay segments
- Point Source allocations
 - determined by State policy
- Nonpoint Source
 - Principles: **Equity, Credit, and Relative Effectiveness**
 - Equal levels of effort among nonpoint source sectors
 - Credit given for reduction practices reported to date
 - Consideration of geographic proximity and relative impacts of local area load reductions on Bay water quality
- Public participation and review of allocation process during Phase I WIP

Details: Urban, Ag, Septic Loads



Relative Effect of a Pound of Pollution on Bay Water Quality



Local Area Load Summary

- Include Edge of Stream (EOS) and Delivered (DEL) Load
- Specific to a county geographic extent (WIP team)



- By Source sector and federal agency where possible

Total Nitrogen (million lbs/year)					
Source Sector	2010 Progress	2017 Target	% Reduction	2020 Target	% Reduction
UrbanReg					
UrbanNonReg					
Agriculture					
CAFO					
Septic					
Forest					
Air					
WWTP & CSO					
Total					

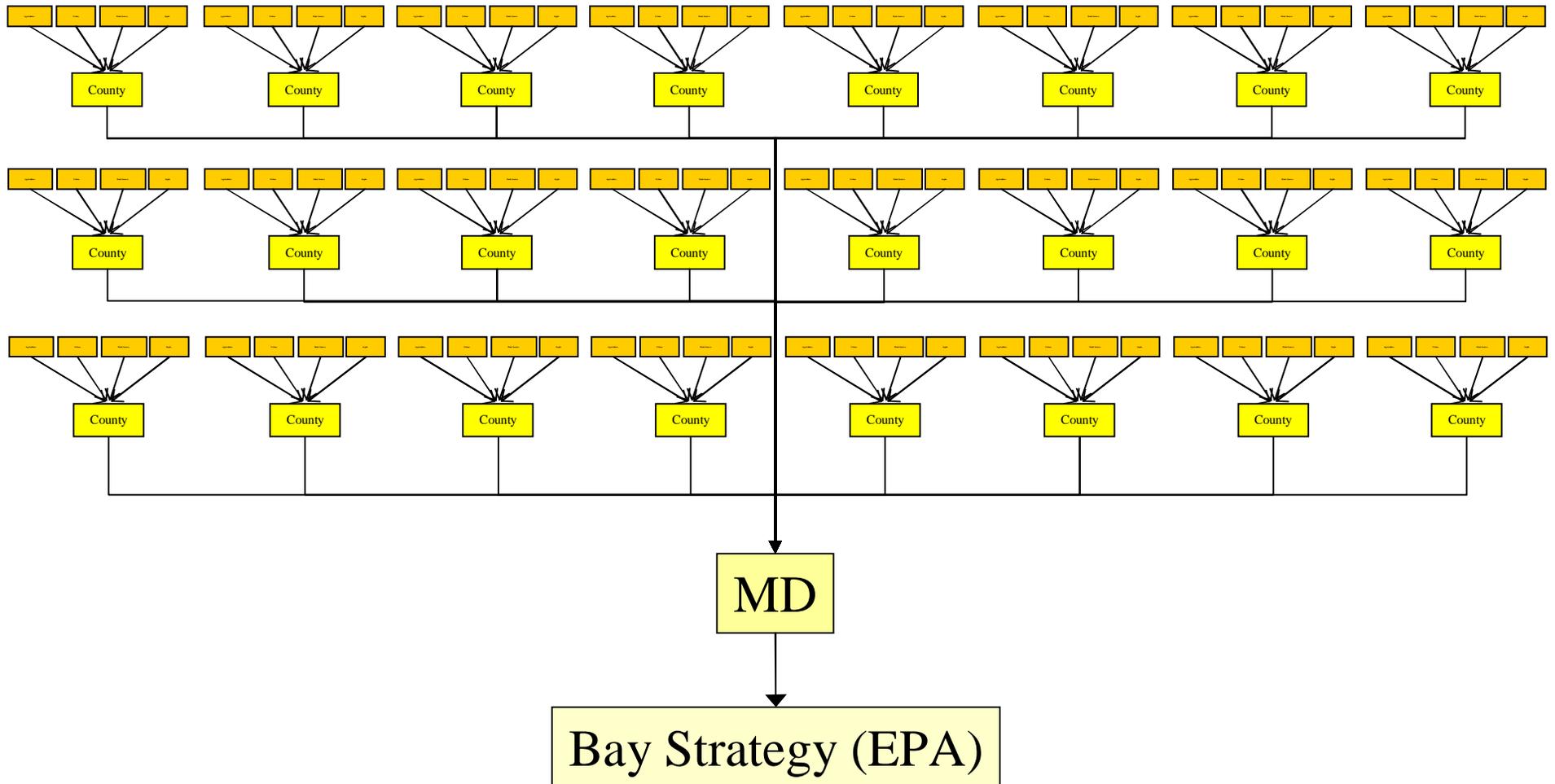
Load Reduction Strategy

- Identifies the Best Management Practices that are planned to be implemented?
- To what extent will they be implemented?
- When will implementation take place?
(Time line = Milestones)
- How will it be funded?

Tool for Developing Strategies

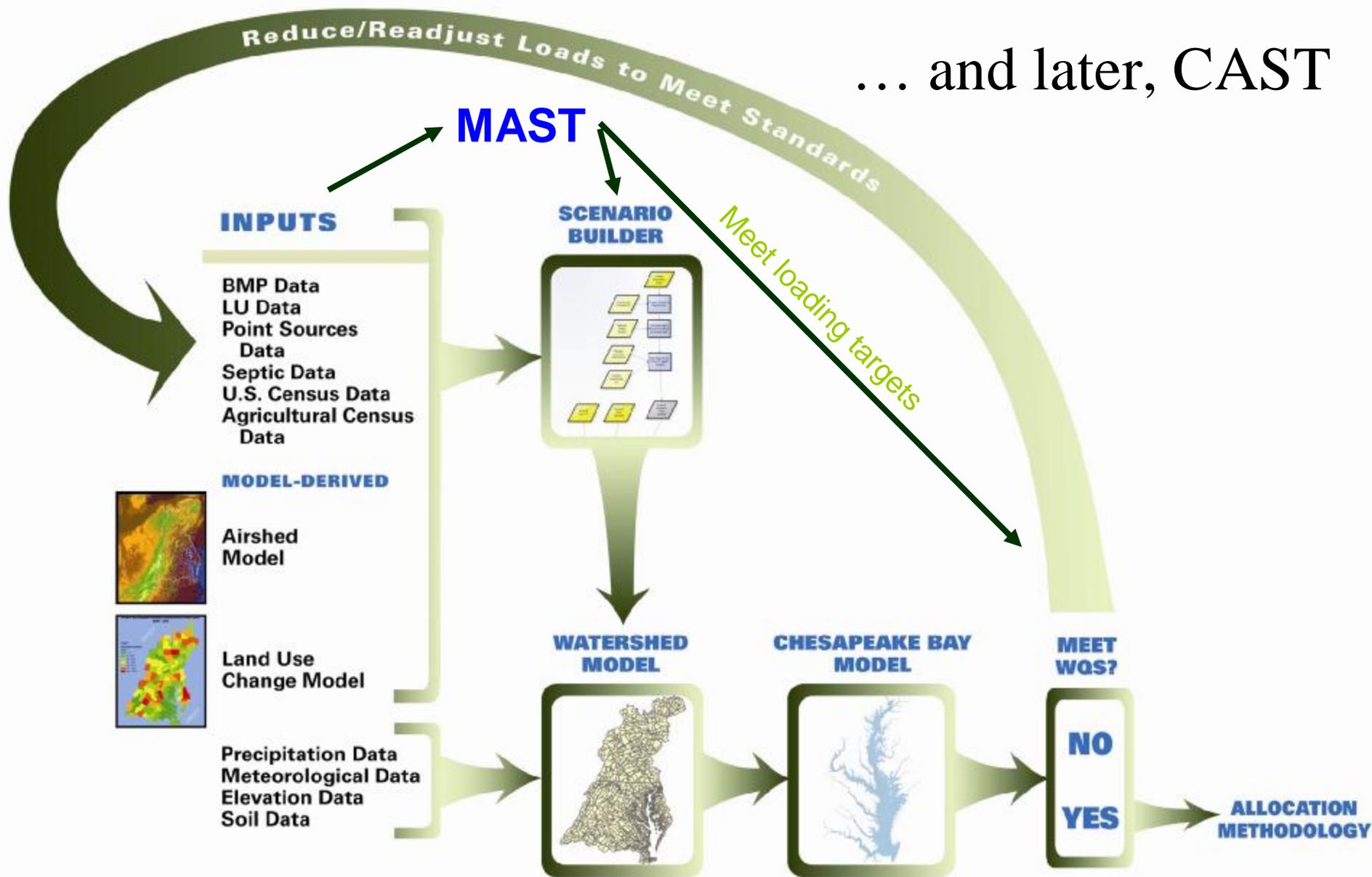
- What is needed?
 - Integration with EPA modeling system
 - Consistent with EPA Phase 5.3.2 and WIP Phase II
 - Consistent process for WIP teams
 - Accessible and transparent
 - Available/approved load reduction practices with efficiencies
 - Loading targets
 - Consistent input scale
- Solution
 - Maryland Assessment and Scenario Tool (MAST)
 - Available online

Need for a Consistent Process

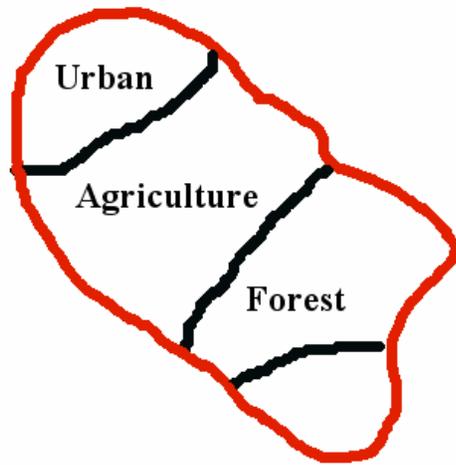


Chesapeake Bay Partnership Models

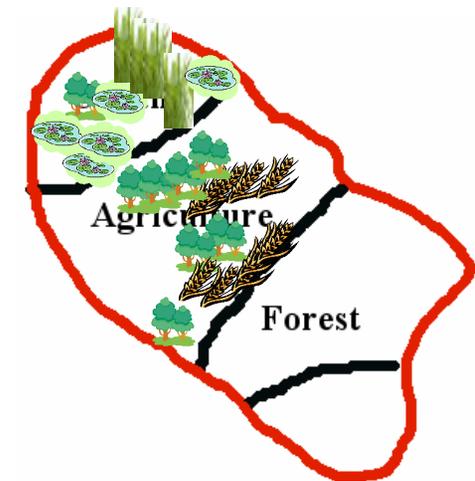
... and later, CAST



Load Reduction Strategies – Geographic Scale for WIP



Landuse	BMP	%
Urban	Filtering Practices	10%
Urban	Tree Planting	15%
Urban	Wet Ponds	5%
Crop	Forest Buffer	8%
Crop	Cover Crops	30%



✓ Local Area Planning

✗ Project Site Planning

- Phase II WIP expectation is local area or watershed planning and not project site level analysis
- Commitment to a level of effort
- Provides flexibility for implementation

Developing the FFIP

- Communication
 - Start by working together with your other Federal Agencies within each county and across State
 - County WIP team
- Remember the three phase process
 - Develop Federal Strategies to meet Federal targets
 - Document existing practices that may not be reported
- Incorporate Federal Strategies within the County WIP Plan (MAST)
 - Will need to work together to submit one federal scenario

Developing a Scenario

- Use MAST to
 - Answer questions
 - *What strategies are most effective?*
 - *Did I meet my allocation?*
 - Document decisions
 - Provide federal input deck
- Timeline: State will compile Local Team Scenarios in mid-October for draft input deck runs in Bay Model by Nov. 1

Schedule

- **Mid-August:** MDE provides county-scale allocations.
- **Nov. 1, 2011:** Preliminary **2012-2013 milestone commitments** submitted to EPA for scenario analysis by (MDE needs Sept. 30).
- **December 15, 2011: Draft Phase II WIPs, including,** submitted to EPA (MDE needs Nov. 15)
 - Draft model input deck by mid October

MAST Presentation

Olivia Devereux

Interstate Commission on the Potomac River Basin

- About MAST
- Application: On-line Demonstration

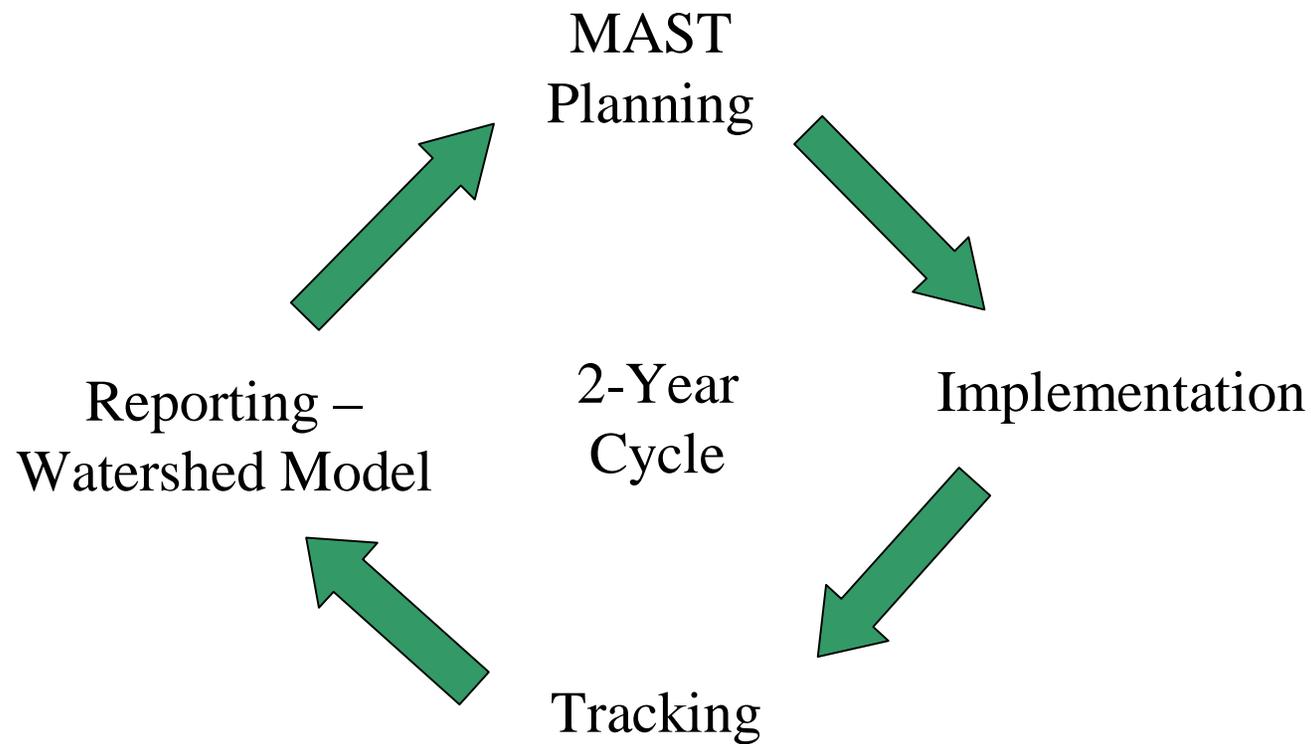
MAST CAN ANSWER:

- Did I meet the allocations?
- Am I hitting the targeted load?
- Which BMPs or combination of BMPs give the greatest load reductions?

YOU NEED TO KNOW:

- Which BMPs to use
- Target load

An Adaptive Process



MAST CAN...

- Serve as a data management system
- Is Replicable, Consistent, and Transparent
- Facilitate an adaptive process, scenario development is iterative
- Facilitate your involvement
- Inform all stakeholders of the implications of decisions

MAST OUTPUTS

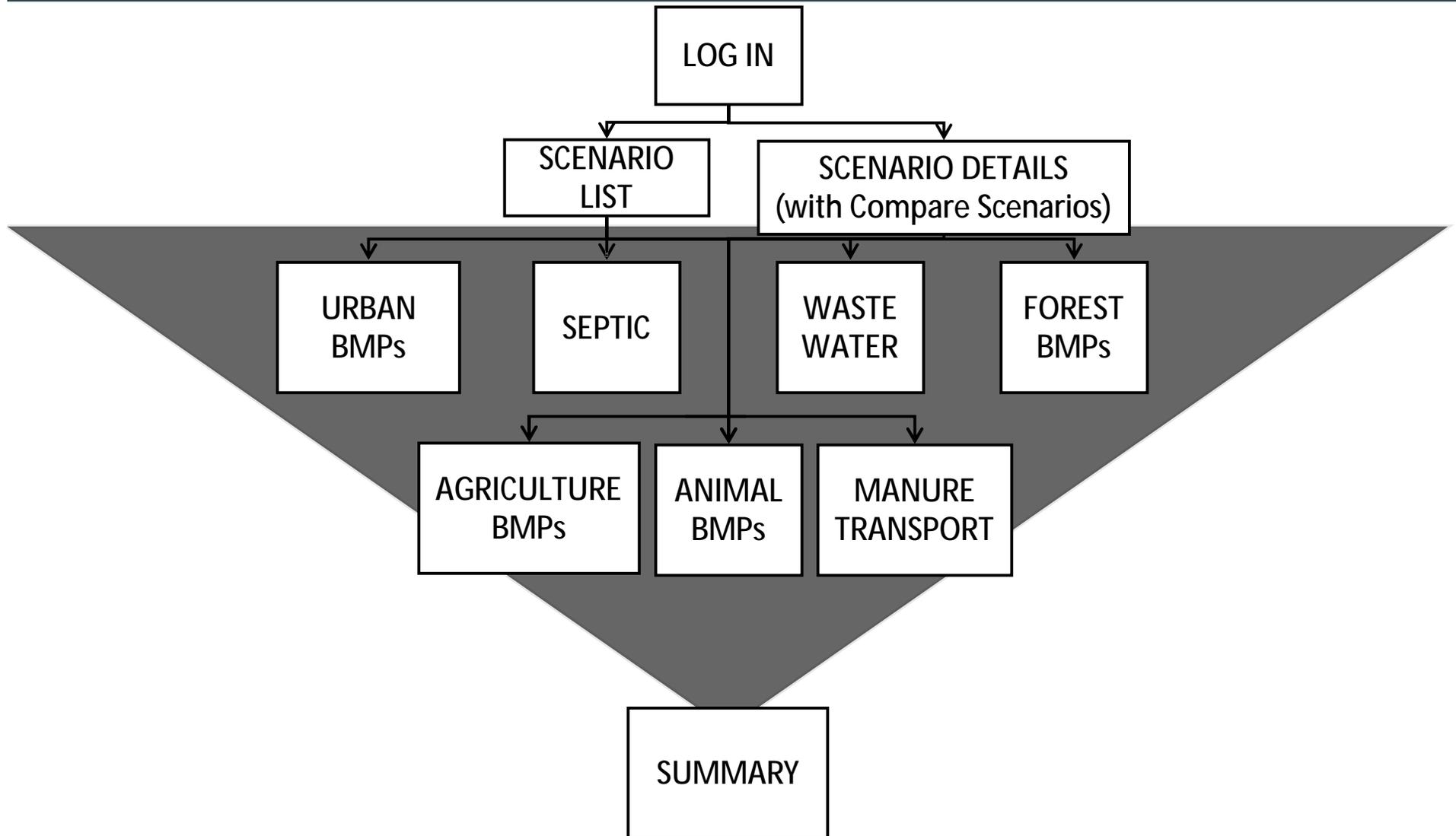
- Land use acres available
- Changes in the acres of each land use
- BMPs submitted
 - Lists the BMPs in your scenario
 - Shows your notes for each BMP. The notes field is your justification.
 - Shows which BMPs it was not possible to credit
- Loads for each land use
 - Edge of stream (EOS)
 - Delivered to the Chesapeake Bay (DEL)
- Inputs to the Chesapeake Bay Program's Scenario Builder

MAST can accommodate many simultaneous users

- On line
- Private log in
- Private and public scenarios

- **What do I need to know to use it?**
 - Chesapeake Bay Program vocabulary
 - Land Use names
 - BMP names
 - Geographic areas
 - Initial idea of which BMPs you want to implement
 - MAST will help you refine BMP choice
- **What don't I need to know?**
 - Calculations and formulas

DATA INPUT SEQUENCE





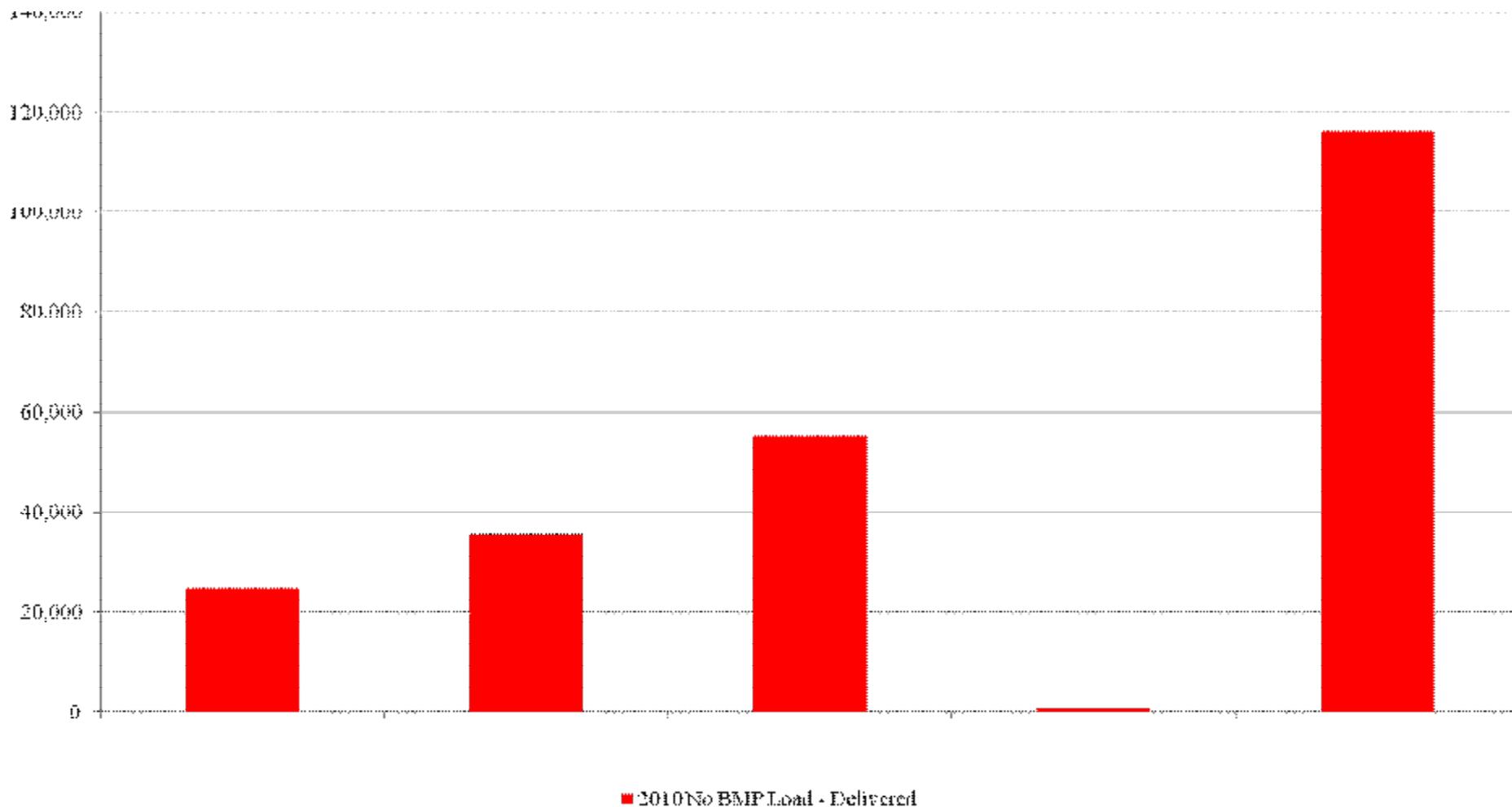
Application

An On-line MAST Demonstration

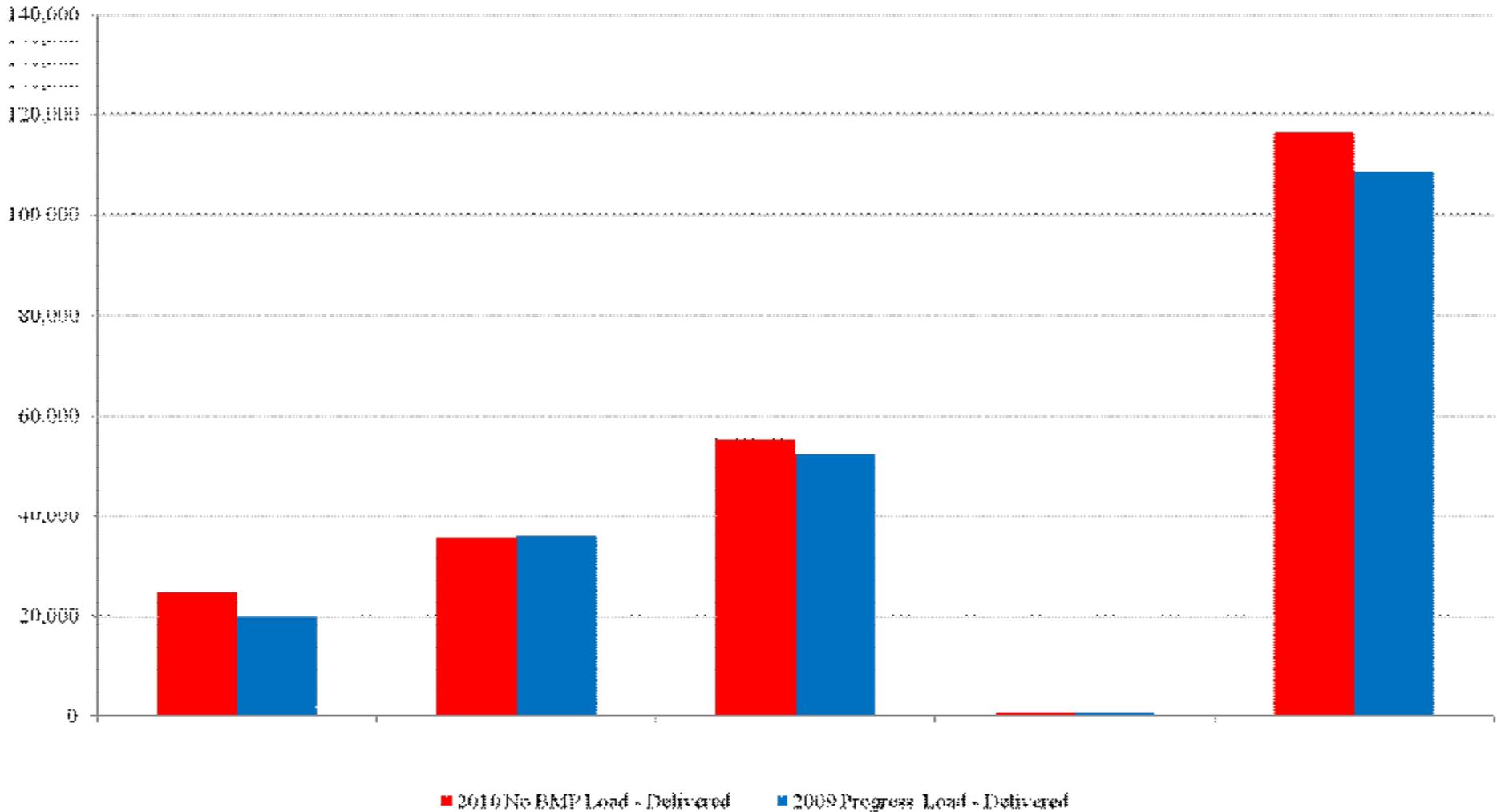
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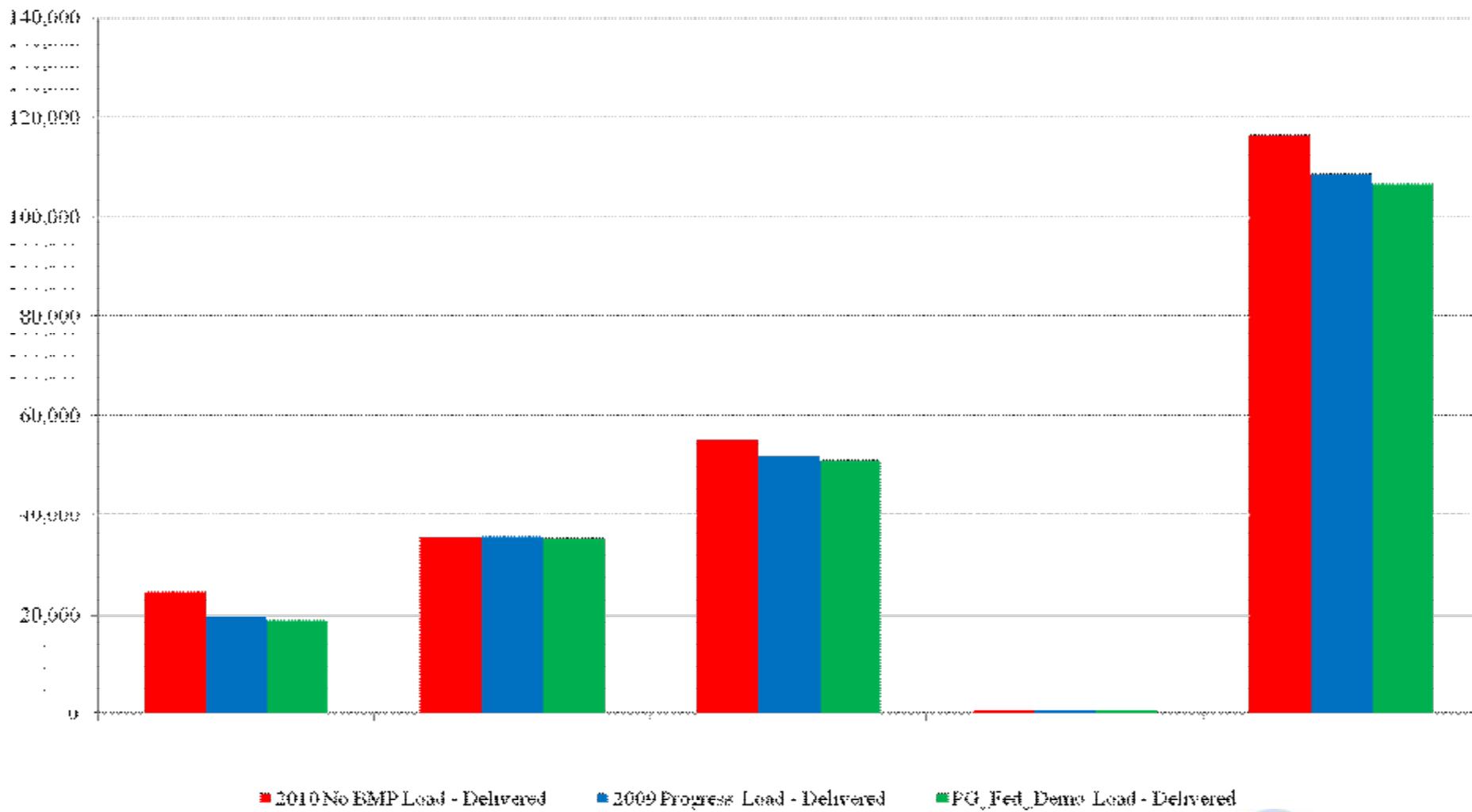
Scenario Results



Scenario Results



Scenario Results





MORE INFORMATION AT IN-PERSON TRAININGS

- Tips to maximize reductions
 - BMP Calculation Sequence and Groups
- BMP Definitions
- Chesapeake Bay Program Land Use Definitions
- Relative effectiveness maps



Hands-on MAST Training Synopsis

- What will be covered?
 - More details on MAST inputs and output
 - Hands-on instruction: How to use the on-line tool to input BMPs to build a reduction strategy
 - Training Materials and MAST Users Guide
- Objectives
 - Understanding how to use MAST to facilitate federal agency component of local area strategy development for Phase II WIP
 - Understanding how MAST relates to Bay Model (Strategies are common language)



Federal Training Session

- Location: MDE – Montgomery Park
- Date and Time: August 24th, 9:45 am to 2:30 pm
- Register by COB August 18
- Contact: Any questions regarding registering, call Nan Lyon at 410-537-3325 or email nlyon@mde.state.md.us



Q
Questions & Answers
A