

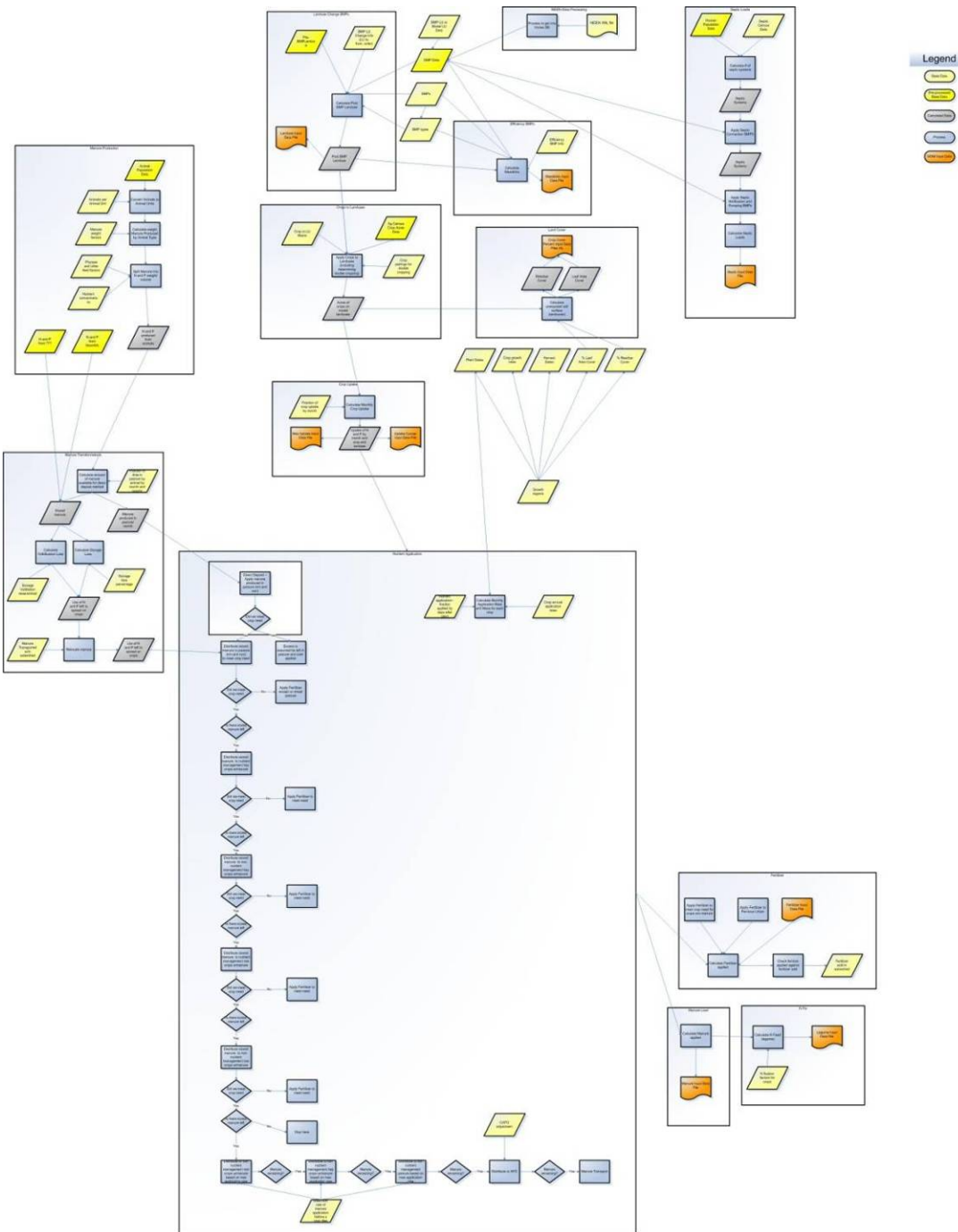
Attachment D2

Target Load Distribution

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Scenario Builder

A database program that generates inputs for the Phase 5 Chesapeake Bay Watershed Model



Snapshot:

Land Use Acreage
BMPs
Fertilizer
Manure
Atmospheric Deposition
Point Sources
Septic Loads

- BMP Type and location (NEIEN/State supplied)
- Land acres
- Remote Sensing, NASS Crop land Data layer
- Crop acres
- Yield
- Animal Numbers (Ag Census or state supplied)
- Land applied biosolids
- Septic system (#s)

Inputs

Parameters

(Changeable by user)

- BMP types and efficiencies
- Land use change (BMPs, others)
- RUSLE2 Data: % Leaf area and residue cover
- Plant and Harvest dates
- Best potential yield
- Animal factors (weight, phytase feed, manure amount and composition)
- Crop application rates and timing
- Plant nutrient uptake
- Time in pasture
- Storage loss
- Volatilization
- Animal manure to crops
- N fixation
- Septic delivery factors

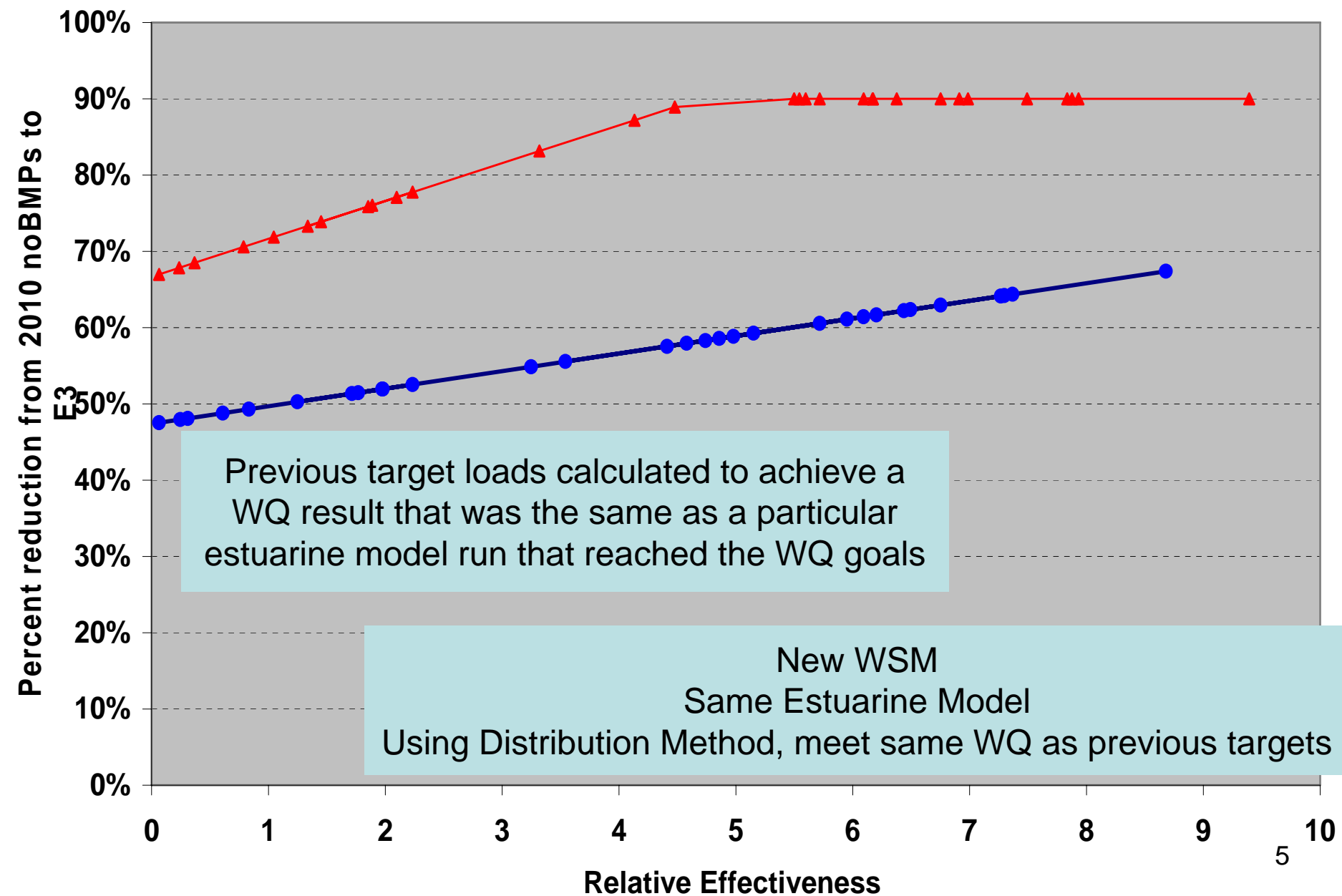
- BMPs, # and location
- Land use
- % Bare soil, available to erode
- Nutrient uptake
- Manure and chemical fertilizer (lb/segment)
- N fixation (lb/segment)
- Septic loads

Outputs

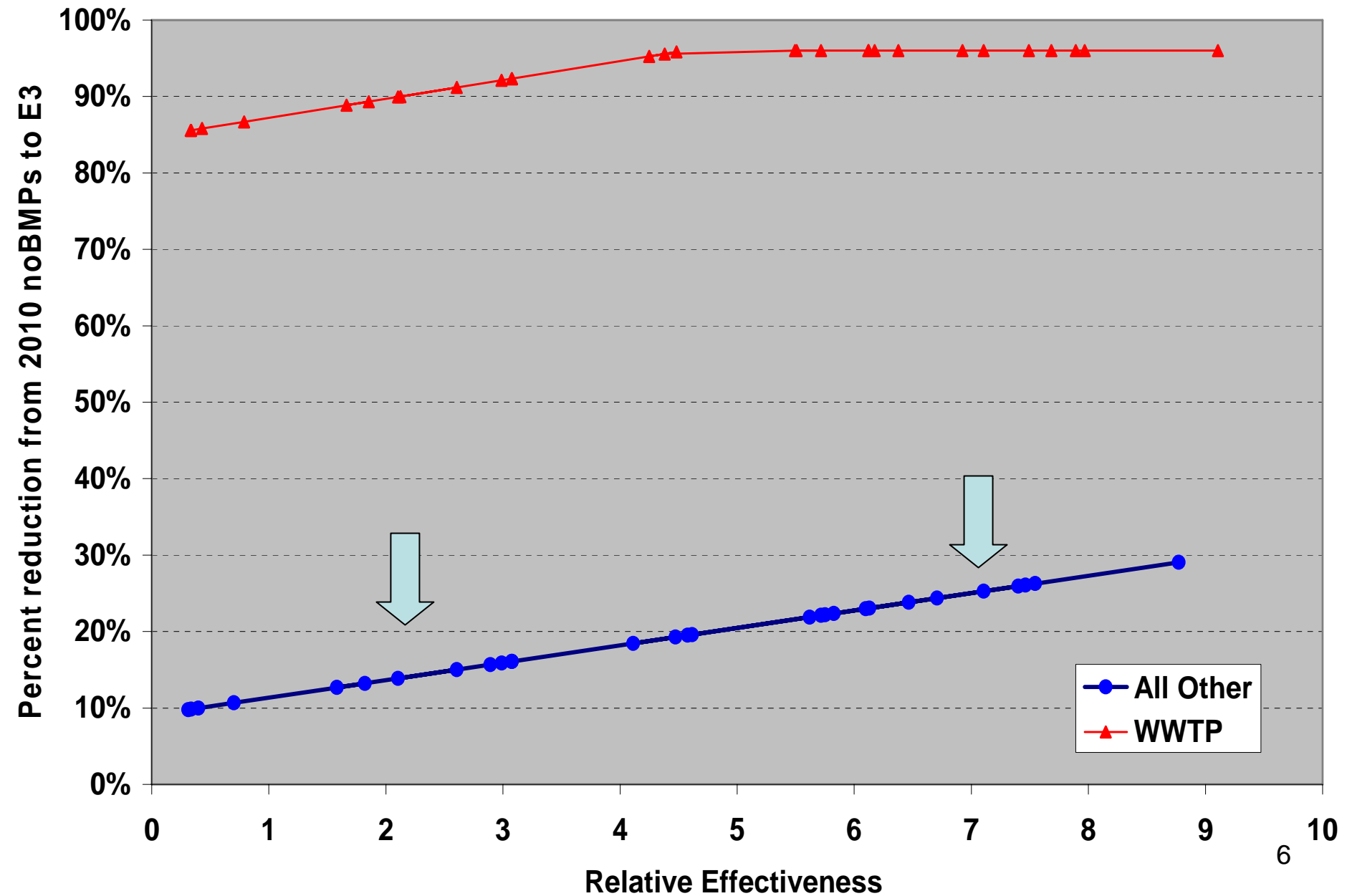
Scenario Builder Planned Enhancements

- **Version 2.2a: System Maintenance and Documentation Release**
 - System documentation updated
- **Version 2.3: Septic and Atmospheric Deposition**
 - Add these are two new sub-systems
- **Version 2.4: BMP Descriptions and Other BMP Files**
 - Accessory BMP files that the model needs to process BMP data from Scenario Builder.
 - Input the Phase 5.3 watershed model outputs
- **Version 2.5: Improve Animal Waste Management System BMPs and Dead Birds**
 - Both are being addressed by BMPs now—will be addressed more accurately
- **Version 2.6: Wastewater Sub System**
 - Will automate input data generation over 3,000 facilities
- **Version 3: NEIEN Exchange**
 - Conversion of NEIEN BMP exchange data into Scenario Builder formats.
- **Version 4: Data Products**
 - Developing reports or other data products that will stream-line the process for states, locals and other partners/stakeholders to request information
- **Version 5: User Interface**
 - Evolution of version 2.2 User Interface for running “what if” scenarios

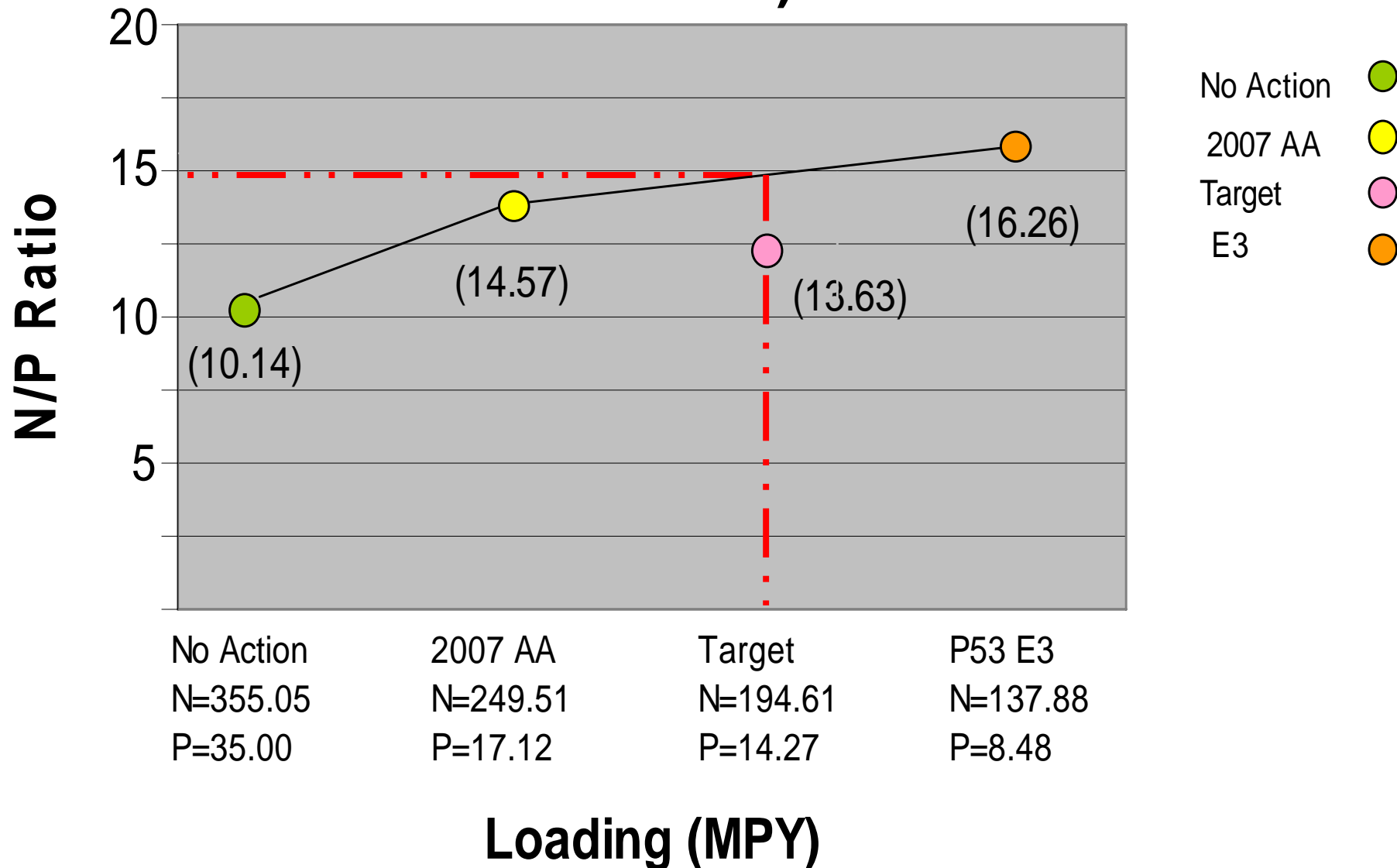
TN, p5.3, goal=200, WWTP = 4.5-8 mg/l, other: max=min+20%,



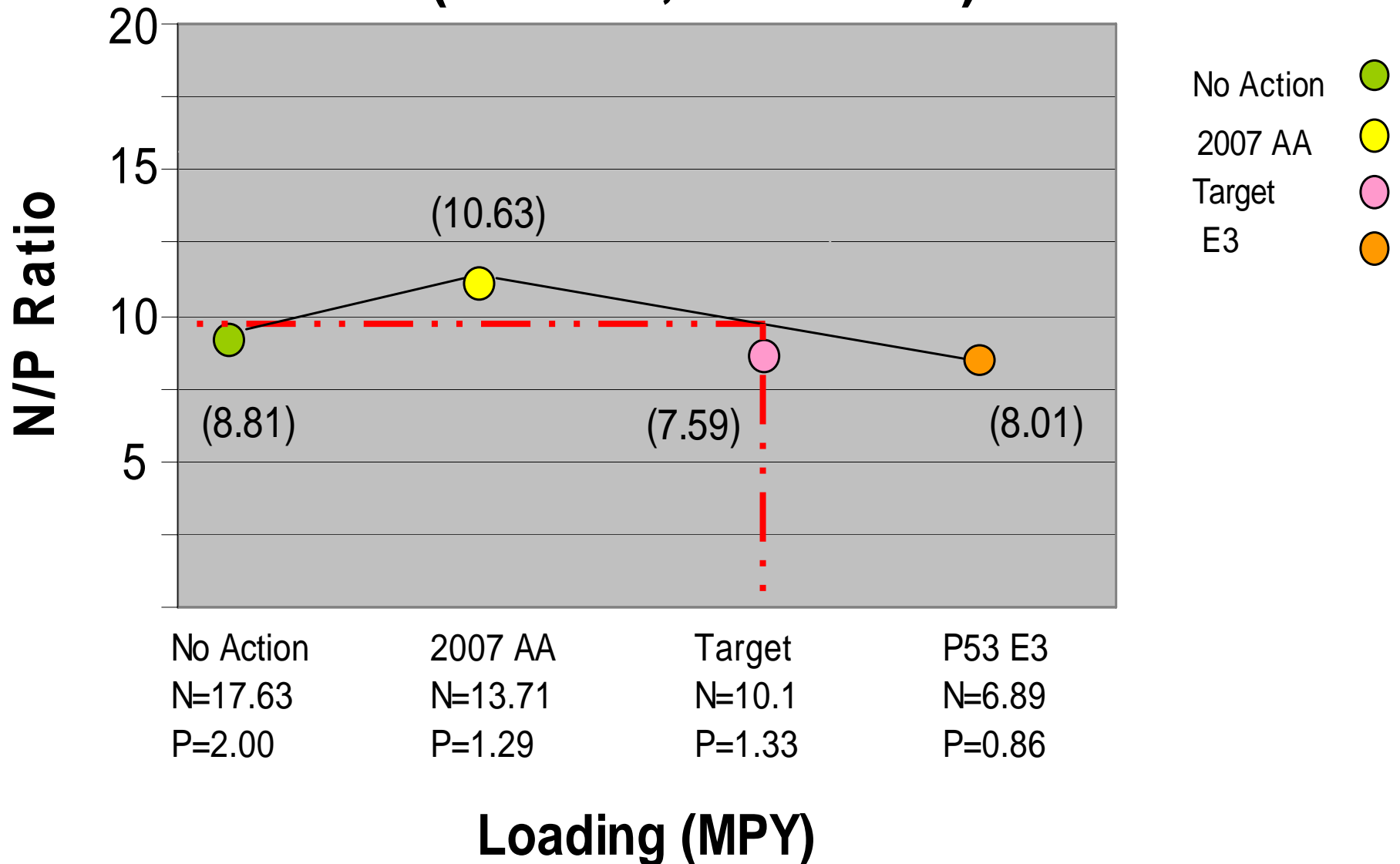
TP, p5.3, goal=15, WWTP = .22 - .54 mg/l, other: max=min+20%,



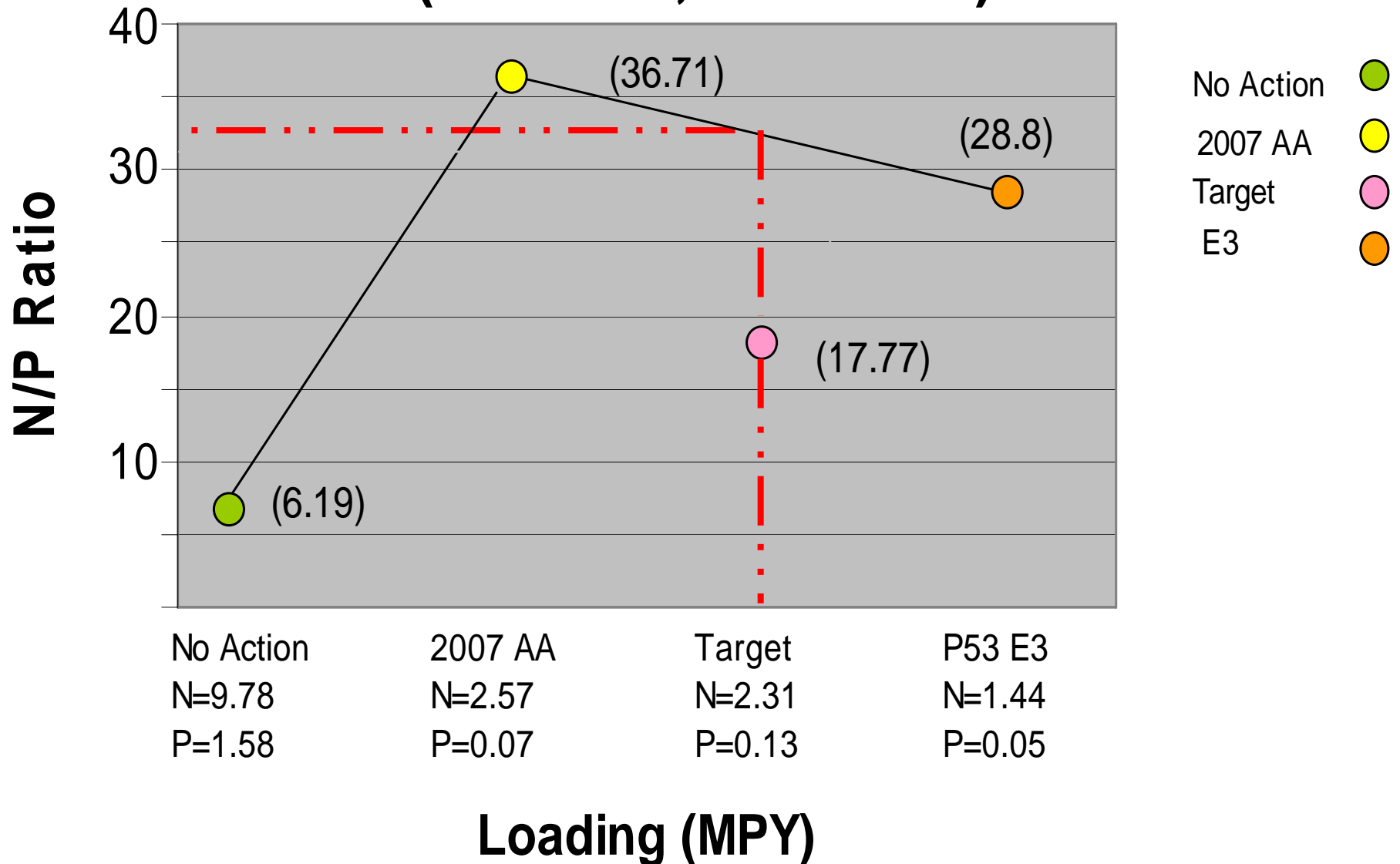
Nitrogen and Phosphorus Ratio (Baywide, Phase 5.3)




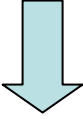
Nitrogen and Phosphorus Ratio (MD Esh, Phase 5.3)



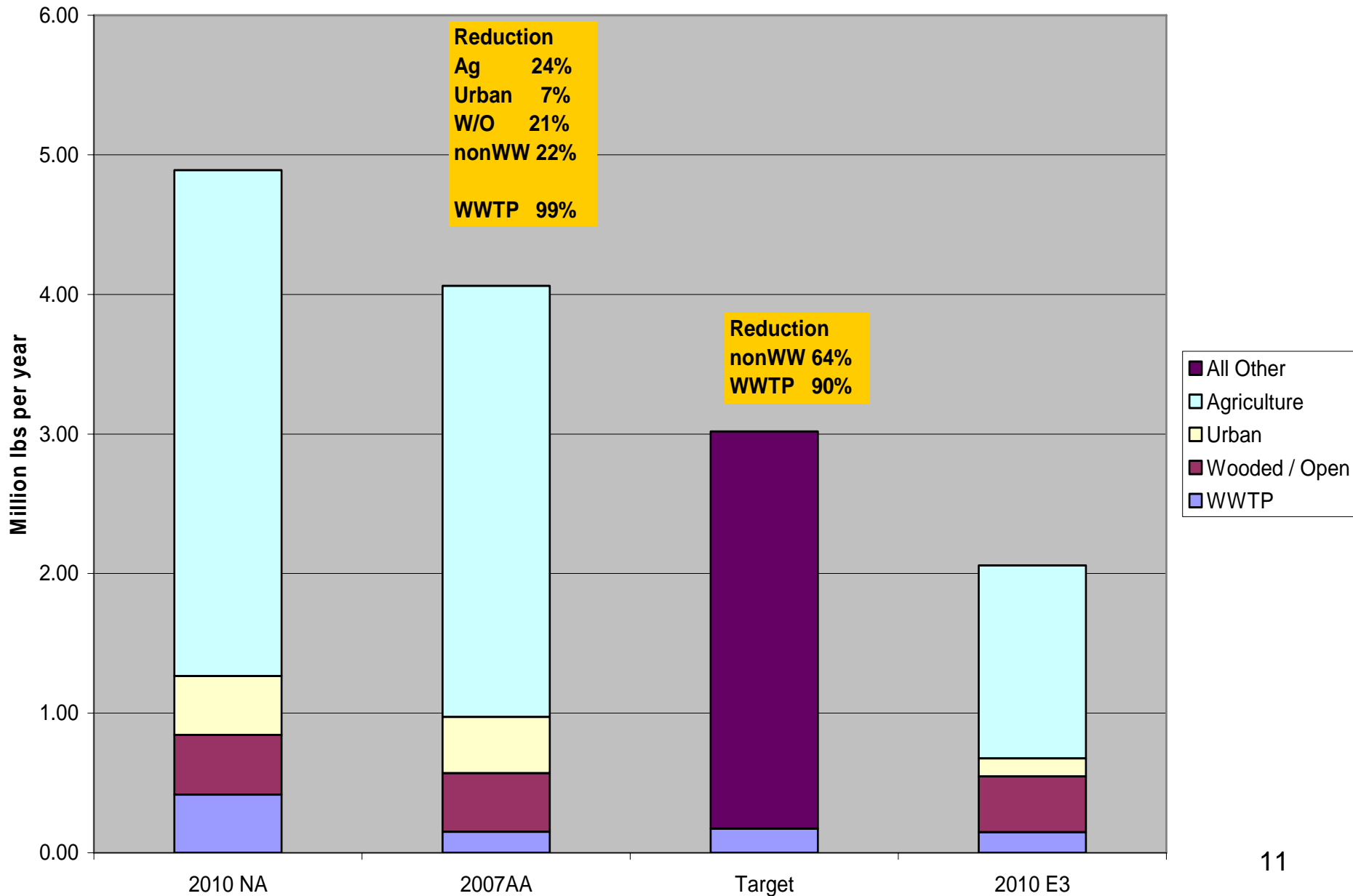
Nitrogen and Phosphorus Ratio (DC Potm, Phase 5.3)



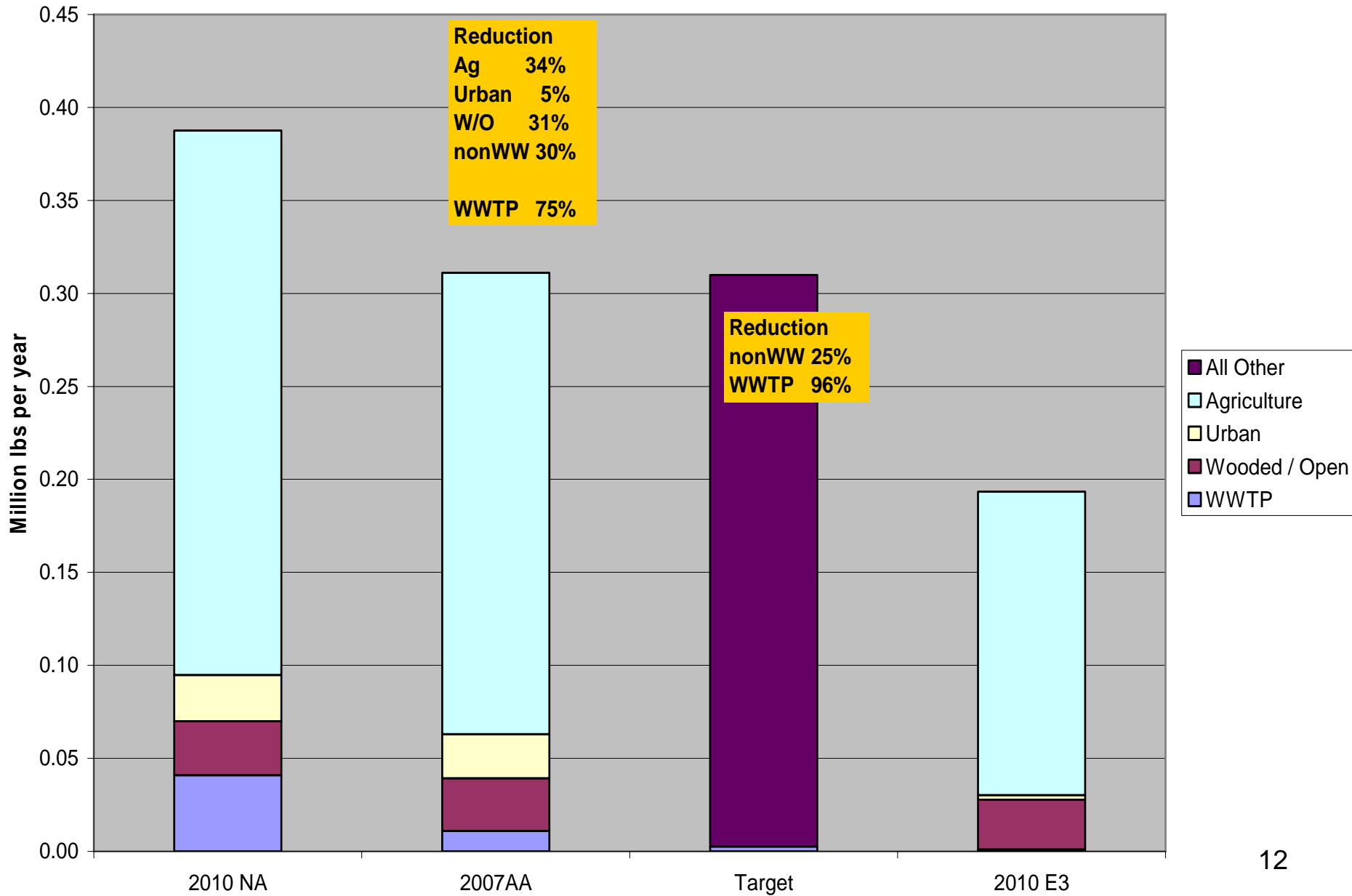
Scenarios Completed

- 2010 No Action
 - Biosolids left out 
 - Fertilizer applications in NY, MD low
- 2007
- E3
 - N-based NM
 - No user-specified manure transport 

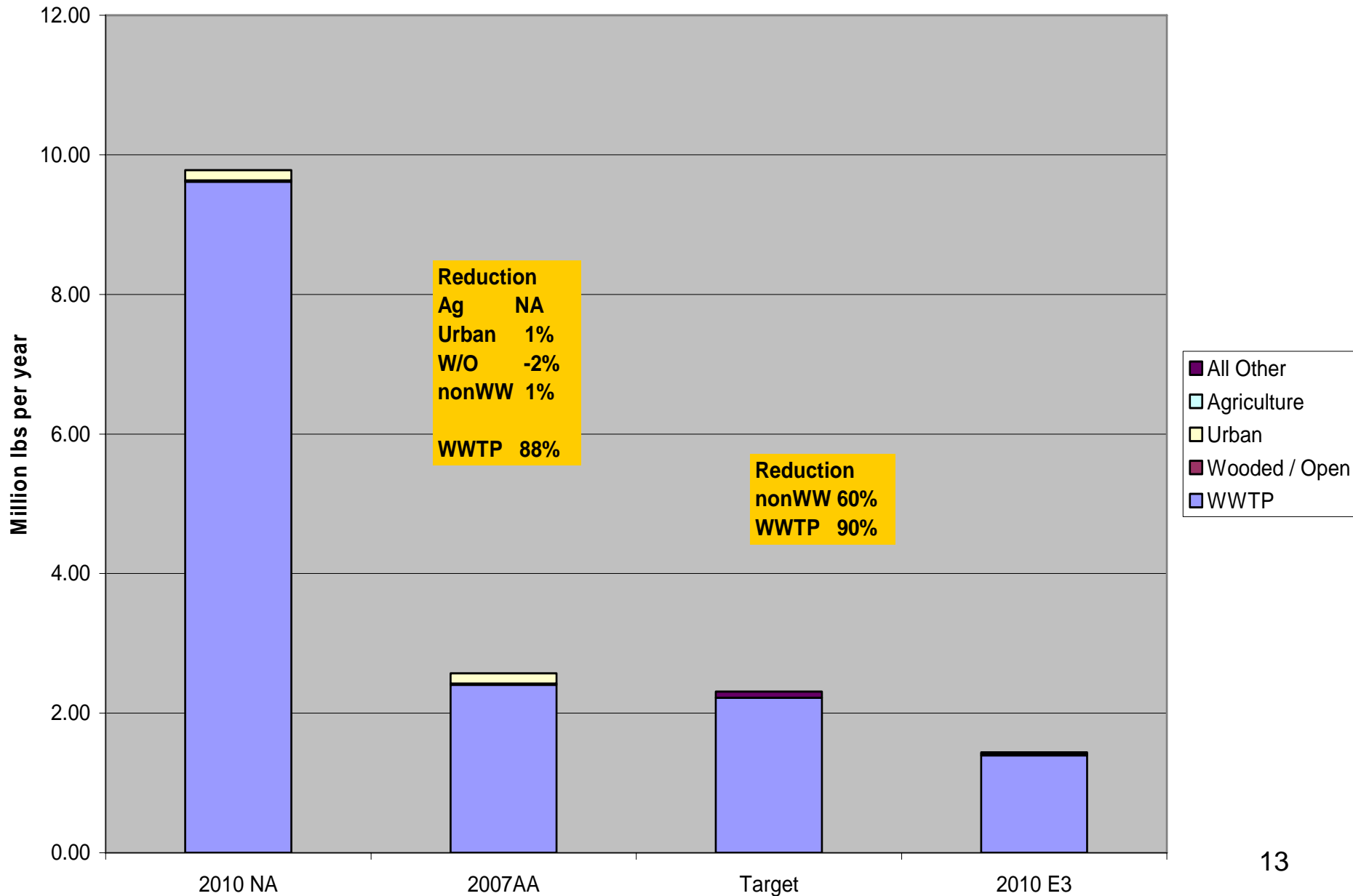
TN Eastern Shore Delaware



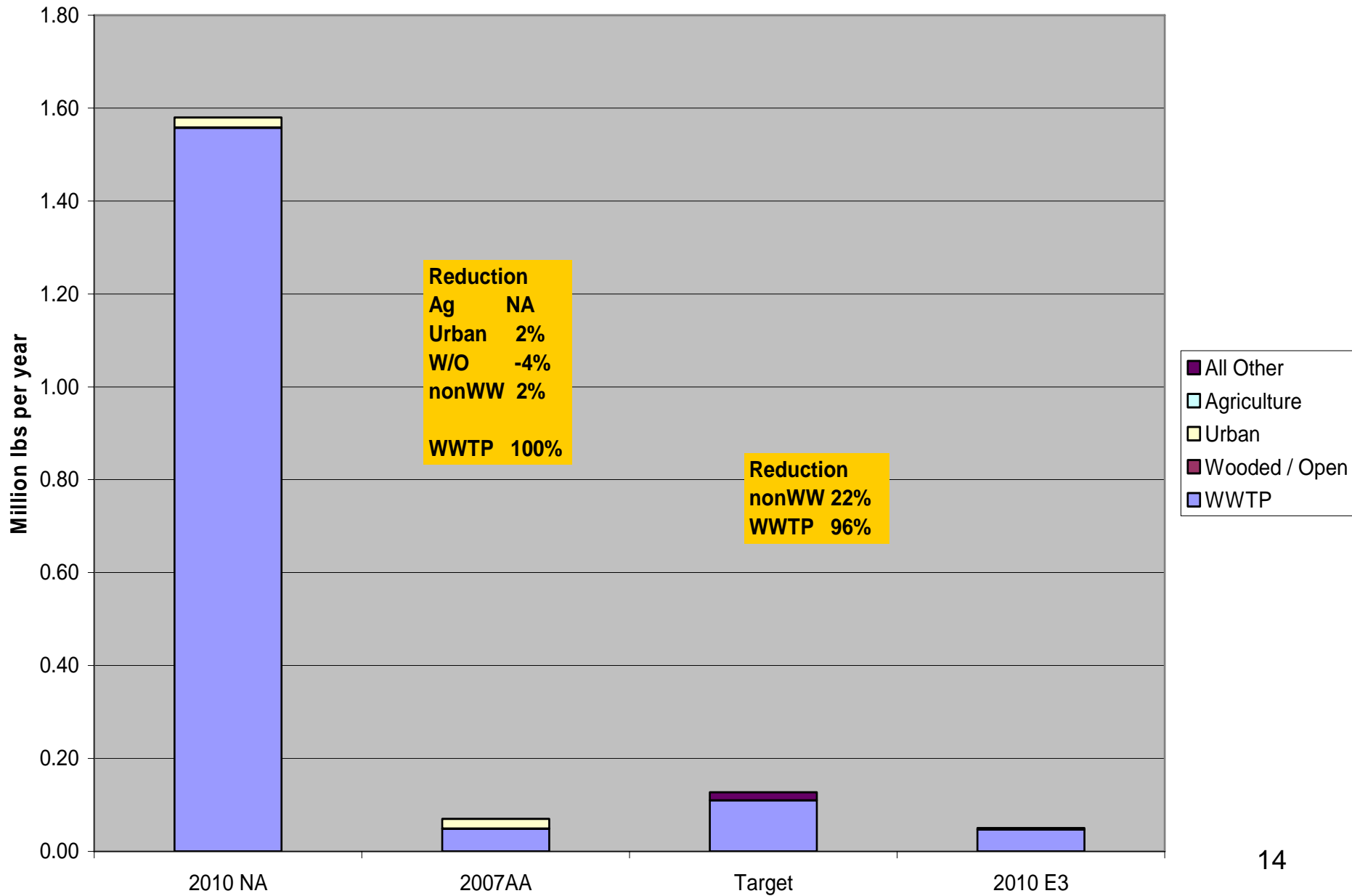
TP Eastern Shore Delaware



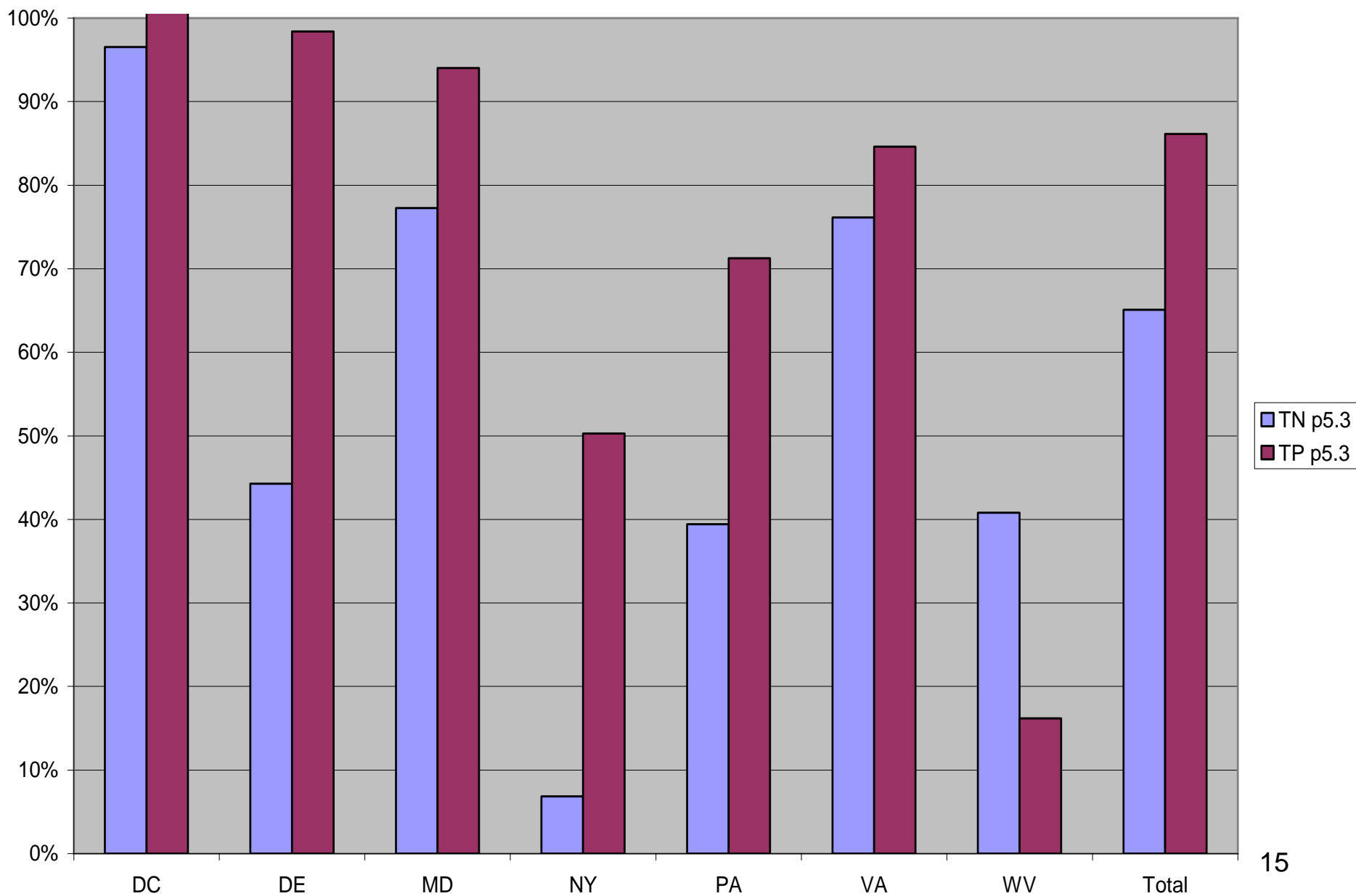
TN Potomac DC



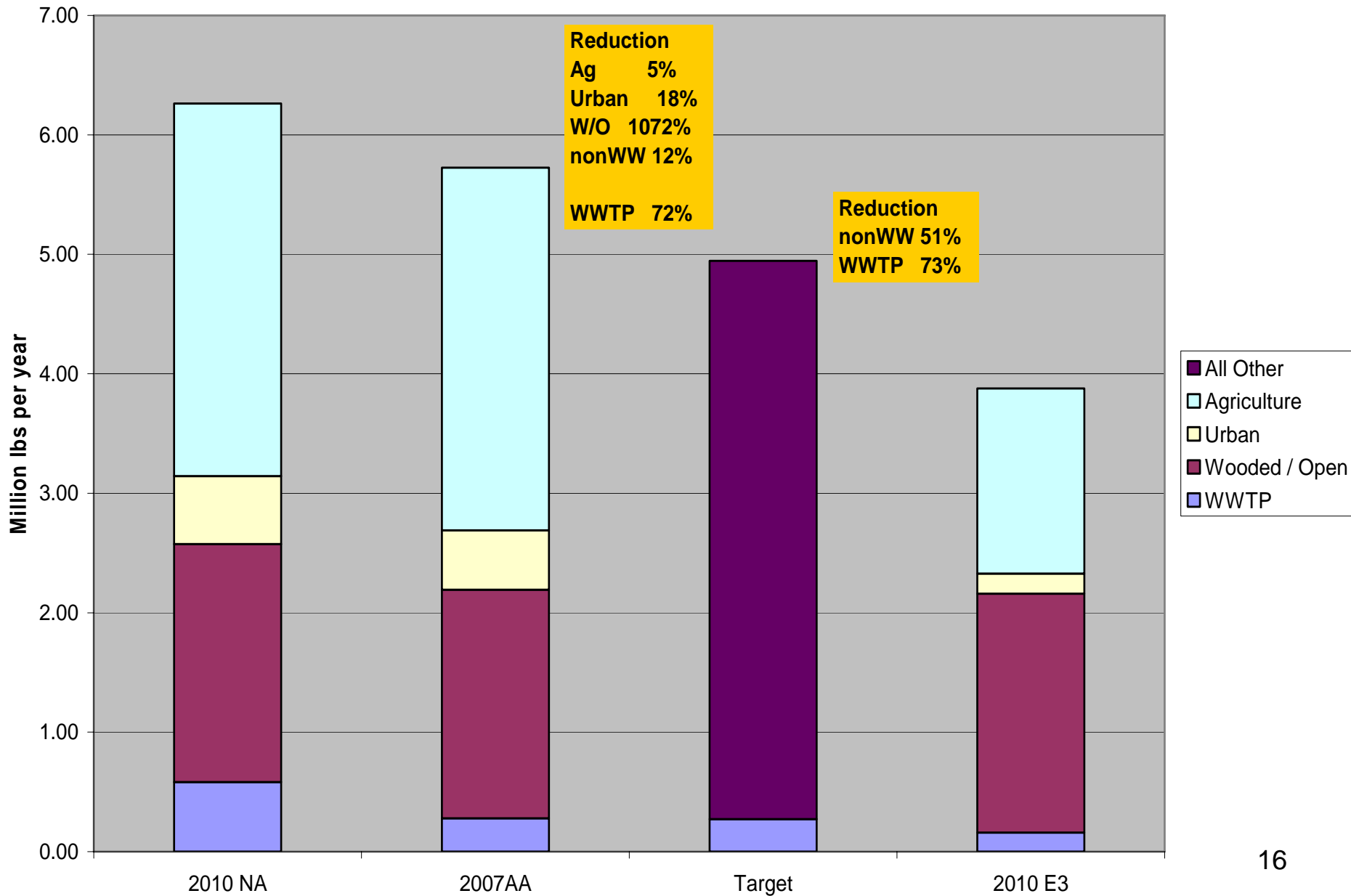
TP Potomac DC



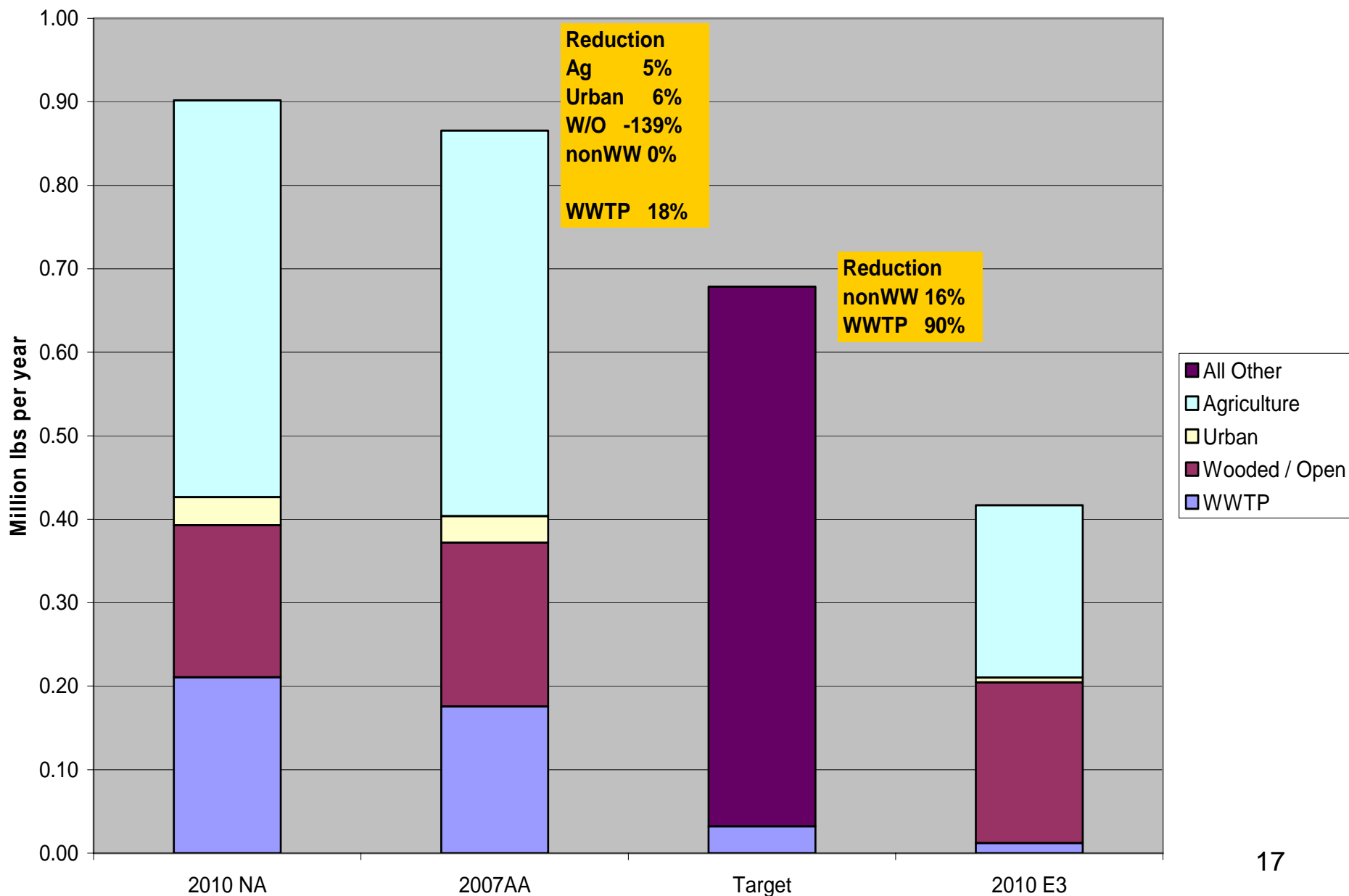
Percent of Target Reached from No Action



TN West Virginia



TP West Virginia



Proposed Plan

- Check and re-Check Scenarios
- Generate watershed and estuarine scenarios in the neighborhood of attainment
- Use the scenarios to determine appropriate N and P overall and basin-jurisdiction loads using the previous methodology
- The WWTP line includes CSOs. Should be moved to the 'all other' line?

Scenario List

- We have
 - 1985 (1985 and allocation air)
 - 2007 (2007 and allocation air)
 - 2010 No Action (not final)
 - 2010 E3 with N-based NM (not final)
 - VA EPIL (not final)
 - 1985 No Action
 - 1985 E3
- Next Up
 - 2010 E3 with P-based NM
 - Trib Strategy
 - 2008
 - 2009