

Chesapeake Bay TMDL and Maryland's Watershed Implementation Plan



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TMDL Background

- TMDL = Total Maximum Daily Load. The maximum amount of a pollutant that can be allowed to enter a water body without violating water quality standards (WQS).
- Court Settlement 1998: Chesapeake Bay TMDLs must be completed by December 2010
- Agreement by Executive Council in 2000 to clean up Bay to meet WQS or implement a TMDL by 2010.
- EPA led a Watershed-wide TMDL Development Process involving all jurisdictions
- Region is entire Bay drainage up to and including NY, WV, DE, in addition to PA, VA, DC and MD.



What is a Watershed Implementation Plan ?

- Sets specific nutrient and sediment goals (allocations) for each source sector (sewage treatment plants, urban runoff, agricultural runoff, etc.) and each sub-watershed in the Bay.
- Describes how those allocations will be achieved in each sector (e.g., major sewage treatment plants will be upgraded to achieve Enhanced Nutrient Removal).
- Describes how the impacts of growth and development will be offset
- Sets 2-year Milestone Goals for each sector to ensure TMDL is achieved on schedule
- Provides “Reasonable Assurance” that TMDL can be achieved

Phased Approach

- **Phase I Plans - 2010**

- Nutrient and sediment target loads by sector and impaired segment
- State-wide strategy and Milestones for meeting those loads in each sector

- **Phase II Plans – 2011**

- TMDL allocations may be modified in Phase II to address technical issues identified in Phase I
- Loads divided by smaller geographic areas (County/watershed segment)
- Determine local contributions and responsibilities to reduce pollutant loads
- Detailed strategy to meet 2017 Milestone of 70% of final goal

- **Phase III Plans – 2017**

- Modification of TMDL and allocations, if necessary
- Identify additional/modified controls needed to meet final target loads

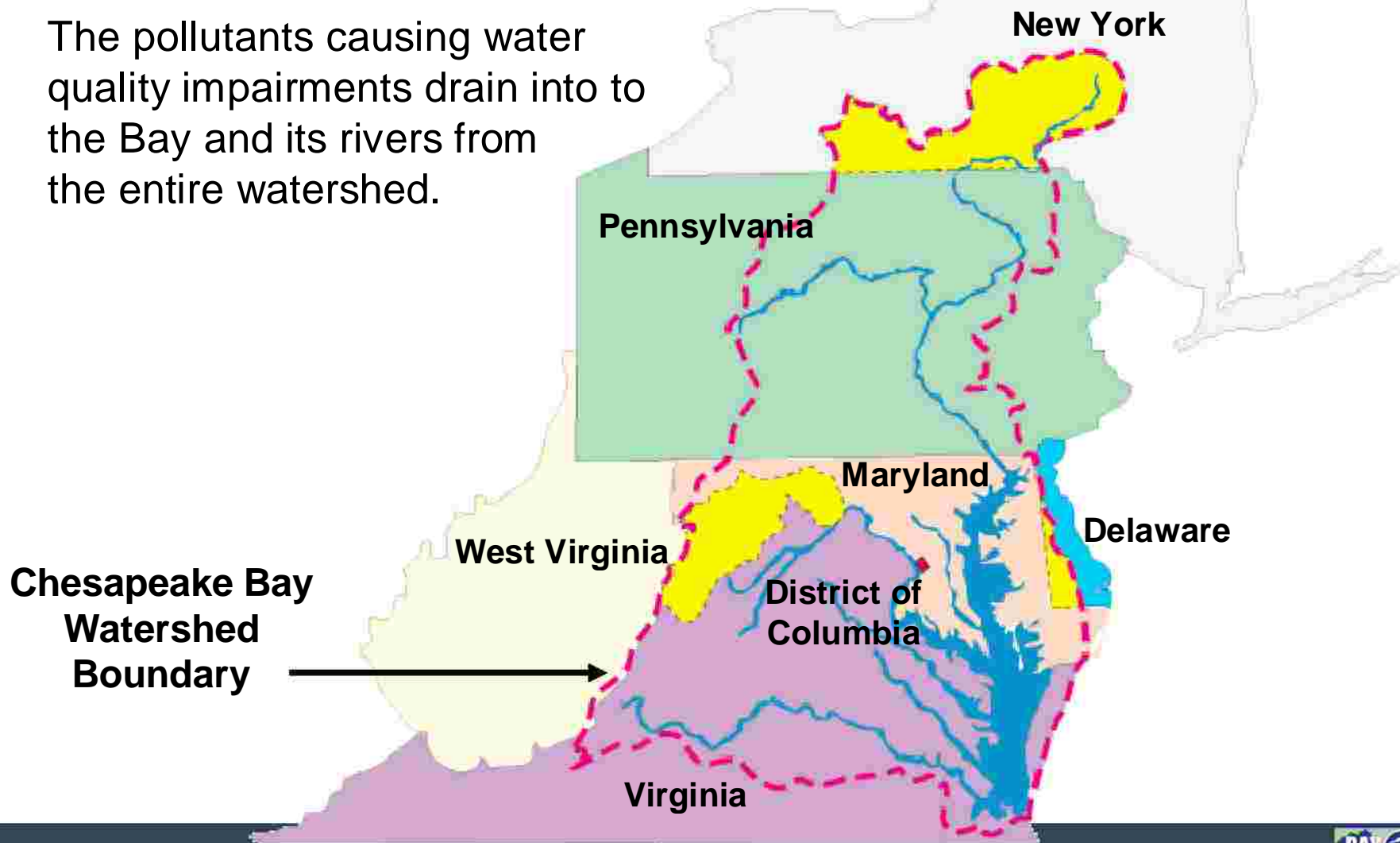
Schedule

| | |
|------------------------------------|---|
| September 1, 2010 | ↪ Draft Phase I Plan submitted to EPA |
| September 24 – November 8, 2010 | ↪ Public Comment Period for Final Draft TMDL Closes (EPA) |
| December 31, 2010 | ↪ Final TMDL and Phase I Plans Approved and Published |
| Late Fall, 2011* | ↪ Draft Phase II Plans submitted to EPA |
| Early, 2012* | ↪ Final Phase II Plans submitted to EPA |
| January 2017 | ↪ Plan updates with detailed 2018 - 2025 (2020) actions and controls |

*EPA Proposed Revised Due Dates

Watershed-wide Pollution Reductions are Needed

The pollutants causing water quality impairments drain into to the Bay and its rivers from the entire watershed.





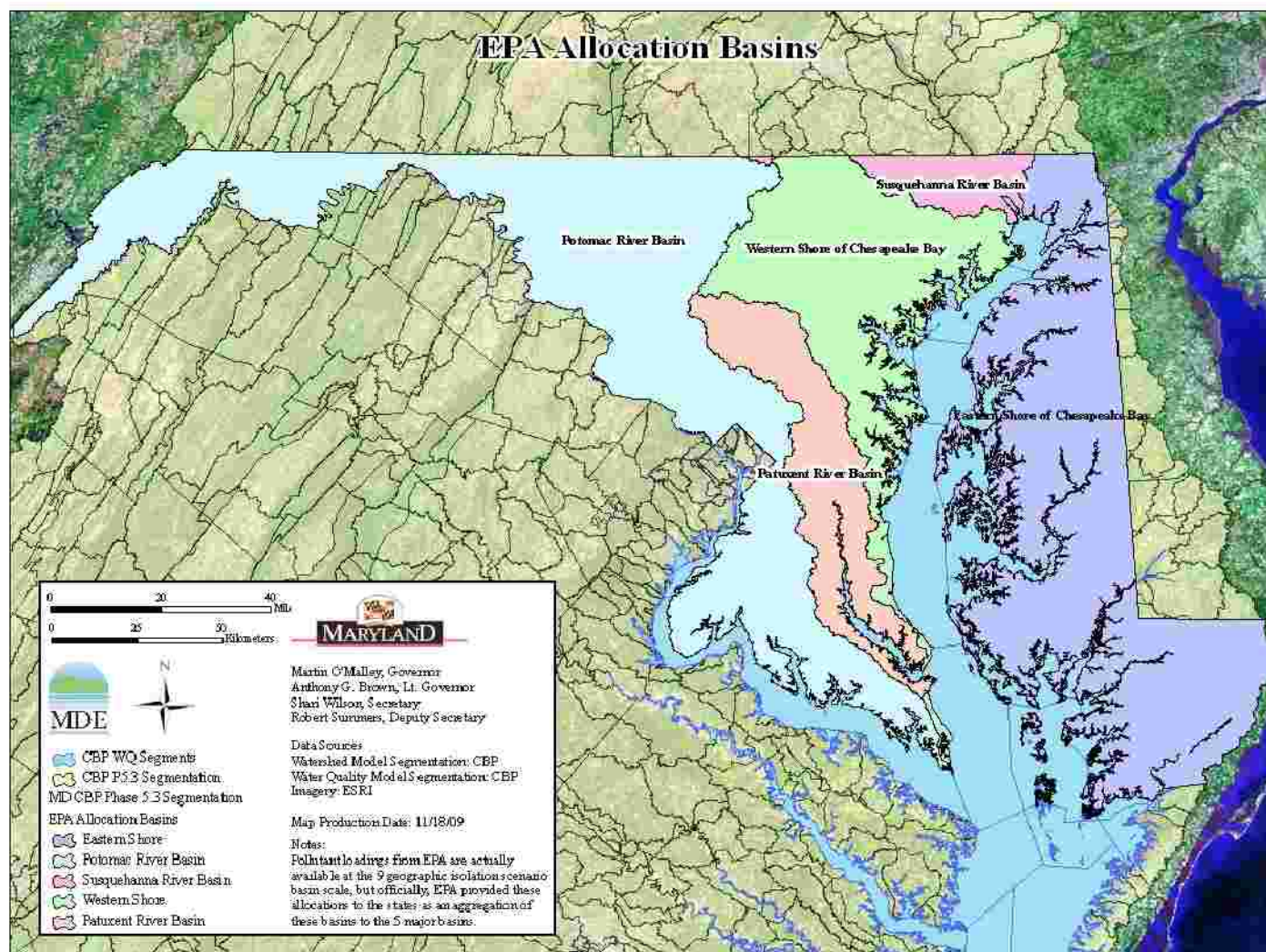
EPA Announces Jurisdiction Allocations July 1, 2010

| Jurisdiction | Nitrogen | Phosphorus |
|---------------------|-----------------|-------------------|
| Maryland | 39.09 | 2.72 |
| New York | 8.23 | 0.52 |
| Pennsylvania | 76.77 | 2.74 |
| DC | 2.32 | 0.12 |
| West Virginia | 4.68 | 0.75 |
| Delaware | 2.95 | 0.26 |
| Virginia | 53.40 | 5.41 |
| TOTAL | 187.4 | 12.52 |

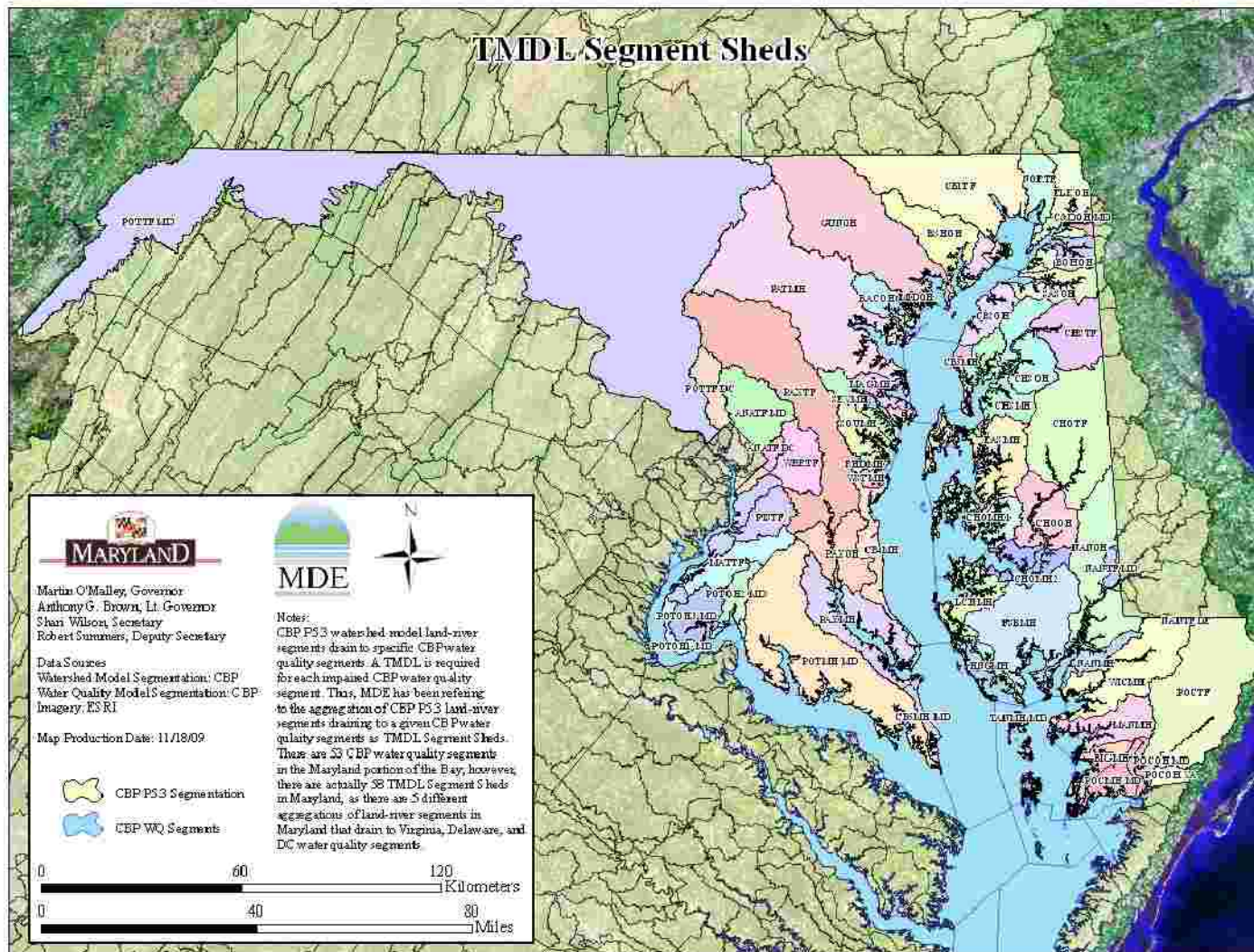
Note: Atmospheric deposition is an additional 15.7 million lbs for N



EPA Assigned Initial Nutrient Target Loads to Five Maryland Major Basins



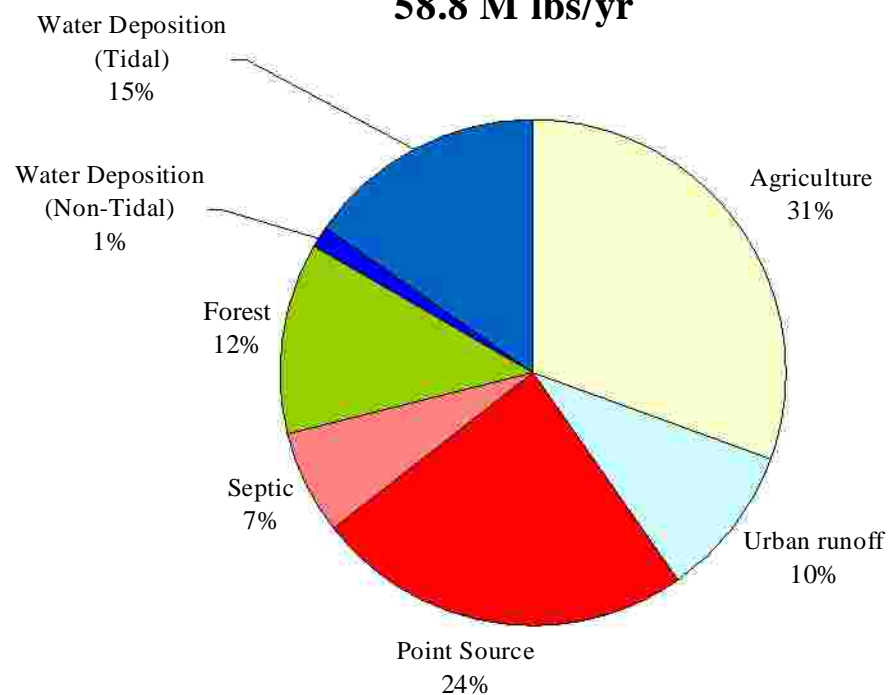
Maryland must distribute 5 basin target loads to 58 MD Bay TMDL Segmentsheds*



*Specific geographic land area that drains to a Bay water quality segment

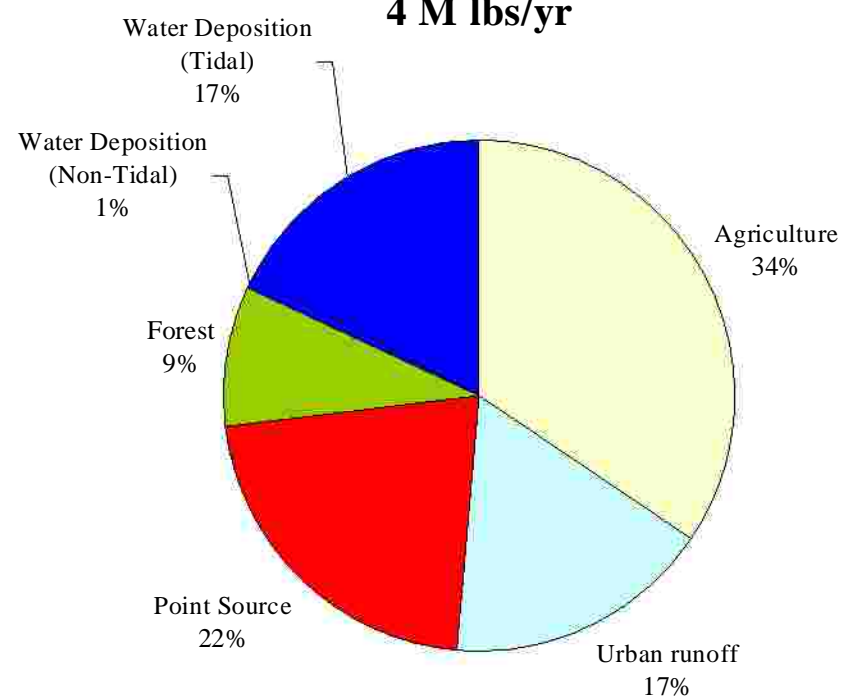
2009 Maryland N and P Sources

Total Nitrogen
58.8 M lbs/yr



Urban/Suburban Sources = 41% of N

Total Phosphorus
4 M lbs/yr



Urban/Suburban Sources = 39% of P

Allocation Process

- Principles for Setting Target Loads:
 - 1) Wastewater Cap Strategy
 - in place since 2003
 - 2) Equity Among Nonpoint Source Sectors
 - Equal % reduction in load
 - 3) Credit for Past Reductions
 - 4) Most Effective Basins Reduce More
 - Most Efficient & Equitable





Atmospheric deposition

- Federal programs will meet initial allocations
 - Federal Power plant and clean cars requirements will achieve an 80% reduction in NOx emissions
- Additional controls pushed by the OTC States
 - Power plants, On-Road Tailpipe Standards, Industrial, Commercial and Institutional (ICI) Boilers, Cement Kilns, Marine Engines, Locomotives
- Maryland Air Programs
 - Healthy Air Act of 2006, Regional Greenhouse Gas Initiative, Clean Cars legislation of 2007,
- Transportation Initiatives
 - Truck Stop Electrification, Diesel Retrofits, Anti-idling programs, Clean State vehicles, Park-and-ride
- Energy Initiatives
 - 15% energy use reduction by 2015, Renewable Portfolio Standard



Wastewater Treatment Plants

- The majority of Maryland's 67 targeted wastewater treatment plants have been upgraded with the Biological Nutrient Removal (BNR) technology.
 - Since 1985 N & P load reduced 58% & 74%
- With Bay Restoration Fund grants, Enhanced Nutrient Removal (ENR) upgrades of major sewage treatment plants are currently underway.
 - When completed, N load will be reduced by over 70%
- Continued financing through Bay Restoration Fund will require fee increase from \$2.50 to \$5.00 per month by FY 2013



Urban/Suburban Stormwater

- Stormwater Management Act of 2007
 - Environmental Site Design on new and redeveloped land since May, 2010
- Municipal Stormwater Permits
 - Control stormwater from existing urban/suburban land
 - Will require local stormwater utilities or other funding
- General Construction Permit
 - 2010 Erosion and Sediment Control Standards

Septic Systems

- Bay Restoration Fund – voluntary upgrades with priority on failing systems in the Critical Area
- Legally required for all new and replacement systems in the Critical Area
- Cost of new home on sewer is roughly equal to new home on septic with advanced nitrogen removal

Managing Growth

- EPA expects Watershed Implementation Plan to include provisions for maintaining the TMDL allocations into the future.
- Allocation can be set aside for growth (e.g. allowing WWTPs to grow to design capacity)
- Nutrient loads from new growth can be offset through nutrient trading

Agriculture

- Expanded cover crops
- Improved nutrient management
- Best management practice implementation
- Stream buffers
- Concentrated Animal Feeding Operations (CAFOs)
- Stream fencing
- P-index revision
- Manure/litter transport
- Alternative uses for organic sources
- Increased technical assistance

Goal of Phase II

- Refinement of Phase I.
 - Finalize **local** allocations and refine strategies.
 - Provide greater geographic resolution for allocations.
- Increased emphasis on cost and cost effectiveness.
 - Develop more cost effective and lower cost strategies.
 - Develop funding approaches.
 - Trading/offsets
- Assign responsibility for load reductions.
- Respond to model changes.

“County Scale”

- For Phase II we will work at the “County Scale”
- This does not mean only County government, but will include:
 - Municipalities
 - Major facilities, e.g., airports.
 - Federal Facilities
 - Soil Conservation Districts
 - State Highways
 - Businesses
 - Citizens

Who gets allocations?

- Any entity that generates significant loads and has authority or is required to control them. Examples:
 - Local governments: wastewater, stormwater, septics.
 - Soil Conservation Districts: agriculture.
 - State Highways: stormwater
 - Federal Facilities: stormwater, wastewater
 - Other major facilities, e.g., airports, parks, etc.
 - Commercial/Industrial discharges

Critical Next Steps

- State:
 - Identify county, municipal, SCD contacts.
 - Identify liaison to each county.
 - Provide training
- Local: Identify lead staff in each local Department and organize a coordination structure.
- Meetings scheduled in January and February for elected officials and staff.
- Draft a preliminary work plan and begin work with interim allocations until final allocations are available.
- State to provide technical assistance.

Critical Next Steps

- Workplan for 2011-2013 milestones.
- “Infrastructure” priorities:
 - Funding
 - Staffing: Admin and Technical
 - Tracking and Reporting
- Sector priorities: Air Emissions, Wastewater, Stormwater, Septics, Agriculture
- Geographic priorities
- Begin development of growth offset policy, working with State agencies and local governments.



Need More Information?

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