



TMDL and Chesapeake Bay Strategy impact on Act 537 planning

Jenifer Fields, P.E.

PA DEP

Southeast Regional Office

Nutrient Criteria Update



- DEP is developing nutrient criteria
- Draft criteria projected 2010
- In stream goals expected to be stringent ('crystal ball' range ≤ 0.1 mg/l TP, TN- investigating the need for criteria)
- Final criteria expected 2012

The Planning Process



- Forecasts sewage disposal needs
- Analyzes sewage disposal options considering watershed conditions (streams, soils, groundwater, geology), water quality criteria, existing treatment capacity/need for expansion, costs, etc
- Project/plan for 5-20 years

The difference between Bay/Lake and Stream protection for nutrients

- Bays and Lakes operate under a pounds/day criteria. Maximum loads are established and allocated to the sources. (think of a pie- the quantity is fixed)
- Stream maximum load can be based on a water column *concentration* (mg/l). (concentration is fixed, although an associated load is assigned by TMDL).

Meaning...

- This difference means that new/expanded discharges may be possible for **stream** TMDLs if the new discharge is below criteria (generally a concentration) and implementation of load reductions in watershed have been met.
- New Bay/Lake discharges need to find a piece of the pie or have no additional load.
- Facilities that are impacted by the Bay strategy and the need to reduce nutrients *may also be* impacted by nutrient criteria for local stream impairments.

Planning Details

- Bay-537 Plans need to address where the piece of the pie is coming from for new/expanded discharges
- Stream-For facilities facing local impairments, 537 plans need to detail how treatment technology will achieve in-stream criteria/TMDL loads in addition to Bay requirements.

New and Important 537 planning requirements in CB

- need to consider trading as a viable alternative for compliance with cap loads, under Subchapter D of Chapter 71, and therefore it needs to be evaluated.
- Applications for PENNVEST funding for wastewater projects in CB Watershed must include as part of the alternatives analysis, a nutrient trading alternative.

What is Nutrient Trading?

- Nutrient and sediment trading is an approach to improve water quality using market mechanisms to produce nutrient reductions at lower costs.
- It is a voluntary program for point or nonpoint sources that exceed their environmental obligations to generate credits that may be traded to others who are seeking nutrient reduction credits.
- Market mechanisms can provide for an efficient and effective means of solving environmental challenges.
- The Department recognizes the many benefits of this approach, including flexibility for the regulated community in meeting legal requirements, especially when done on a watershed basis.

New or Expanding Load Options

- New Point Source:
 - Zero Net Load – Options:
 - Land Application of Effluent With Crop Uptake-may be more cost competitive with stream discharge requirements
 - Recycle and Reuse of Effluent
 - Load Offsets
 - Purchasing Credits (Trading)
- New On-lot Systems:
 - No New Requirements
- Connection to Existing Point Source:
 - No New Requirements
 - Point Source Decision Whether It Can Meet Its Cap Loads

Nutrient Criteria Impact

- Nutrient criteria could trump existing TMDLs and replace the need for creating new point source nutrient related TMDLs
- The level of technology necessary to achieve new nutrient criteria will produce highly treated effluent- consider reuse options



Nutrient Criteria Impact (con't)

- For facilities facing expansion/upgrade/replacement now, consider technology necessary to achieve ultimate nutrient criteria.