Accommodating Growth Under the TMDL: Offset Strategy

Maryland's Sustainable Growth Commission

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Scope of Presentation

- How do growth offsets fit in TMDL, WIP
- How may offset process affect development
- Important offset concepts
- Current offset policy
- Significant implementation challenges
- Potential solutions
- Timetable

Chesapeake Bay TMDL: WIP & Growth Offset Requirements

Target Load Reductions (Baseline Reductions)

- Reduce existing loads to or below 2020 targets

Growth: New/ Increased Loads

- Set 2020 targets to accommodate under nutrient caps, or
- Offset new / increased loads through compensating reductions from other sources

Maryland's Target Load Reductions under the Phase I WIP

Total Nitrogen – By Sector (Million lbs/yr)					
Sector	2009 Load	2020 Target	Reduction to Meet 2020 Target	2017 Target	Reduction to Meet 2017 Target
Urban Reg	5.1	4.1	18%	4.6	9%
Urban Non Reg	0.55	0.44	19%	0.59	-7%
Agriculture	17.7	13.7	23%	16.6	6%
CAFO	0.08	0.07	12%	0.06	20%
Septics	4.0	2.5	39%	3.0	26%
Forest	7.1	7.1	0%	7.1	0%
Air	0.69	0.69	1%	0.70	-1%
WWTP & CSO	14.1	10.5	26%	8.6	39%
Total	49.4	39.1	21%	41.3	16%

How big a challenge are growth offsets?

- Target (baseline) Load Reductions total *10.3 million lbs less of nitrogen* delivered to Bay
- WIP allocates room for growth at ENR WWTPs = permit caps (no offsets)
- 2010-2035 growth would require offset reductions of *2.32 m lbs N* (23% of total target reductions)

Exactly what are Offsets?

- Pollution management practices that reduce loads from a different source
- Must be over and above Baseline reductions to qualify as a legitimate “offset credit”

Baseline

- = target load reductions needed for all sources
- Must be met by source, possibly by watershed

Initial Challenges and Concerns: Smart Growth Issues

1. Increase costs/ time for infill / greenfield/ redevelopment?
2. Lose more agricultural/ natural resource land?
3. Further discourage smart growth?
4. Adequate supply of offsets?
5. Balanced regulatory incentives for types of development?
6. Cross purposes with smart growth?

Growth/ Offset Strategy: Objectives

- Minimize new loads to maximize economic development potential
- Ensure adequate supply of offsets
- Balance offset incentives in/out of sewered areas commensurate with loads
- Integrate land use and pollution regulatory process
- Protect resource land
- Enable LG’s to support the above

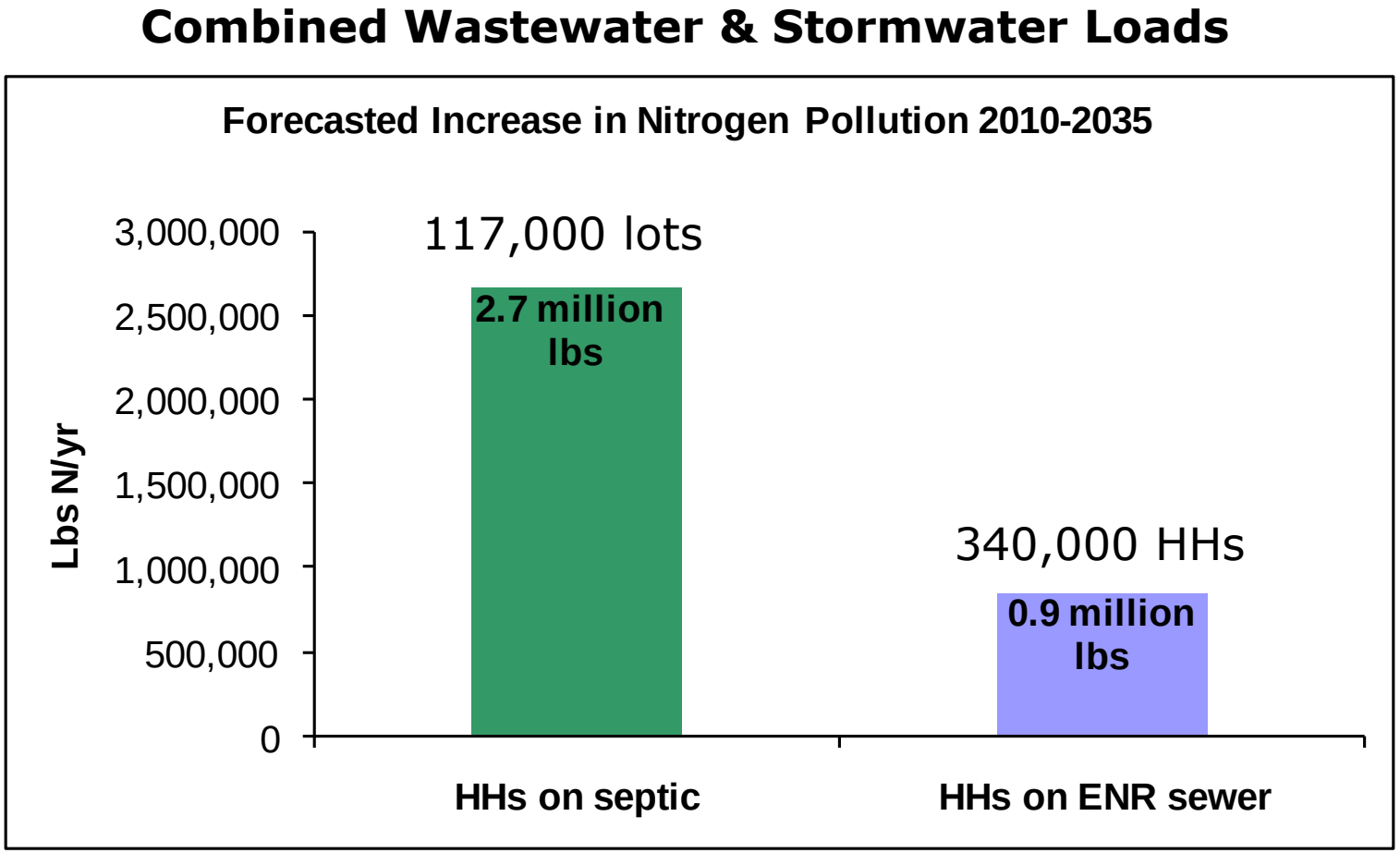
Policy: What Must be Offset, and by How Much?

- Increased point source (PS) loads beyond WWTP caps
- Increased stormwater loads, except redevelopment in Low/Mod Per Capita Loading Areas (PCLAs)
- Increased loads from on-site sewage disposal systems
- Require "net improvement offsets" in High PCLAs (offset >1 lbs per lb of increased load)

Translating Policy into Program

- Work in progress
- Bay Cabinet Work Group developing statewide program
  - Draft for stakeholders by the end of 2011
- Incorporate feedback from stakeholders in 2012
- Implement program in 2013

How Much New Pollution Loads Are Expected in Maryland?



Edge-of-stream loads

How Does One “Offset?”

- Offset generator creates an offset credit
- Offset consumer buys offset credits from a generator
- Generator = farmer, another WWTP, gov’t/ agency for stormwater or restoration, septic system upgrades, sources of innovative practice, etc.
- Consumer = developer, WWTP, the public

Possible offset transactions

- Market Based: Consumer to generator/ aggregator-broker
- Program-based: Consumer to a gov't program

Contrast: WWTP (for PS) & developer (for NPS) as consumers

How much offset capacity is there?

- Offset capacity = ∑ load reductions achievable above baseline (i.e., target load reductions)
- On a source (e.g., farm), or
- Within a watershed or established trading geographic area

So how much offset capacity is there?

A limited amount.

Based on the preceding inventory:

- In this watershed, there are 6 offset opportunities for every 10 target load reduction (baseline) opportunities
- A 5:3 ratio of baseline: offset opportunities

Contrast: meet baseline by source vs. by watershed

Per Capita Loading Area (PCLA) Concept

- EPA allows for “net improvement offsets”, which are greater than 1:1 offset ratio
- To discourage higher nutrient loading development patterns, may require net improvement offsets in such areas
- So how do PCLAs work?

PCLAs:

Organized as:

- Areas served by individual WWTPs, and
- Areas not served by public sewer

Relevant Loads:

- Wastewater & Stormwater from
- All developed residential and commercial land

Population supported:

- Residential
- Employment

Key PCLAs concepts

Differences: Size of collective:

- Development footprints
- Nutrient loads per capita population supported

For population supported by an area

It is not a measure of individual development sites

It is a collective measure of cost (nutrient) to support population in an area

What good will PCLAs do?

- Ensure that offsets account for both
  - Post-development loads of individual sites &
  - Contributions of development to higher (or lower) development patterns
- Give local governments opportunity to
  - Strategically use their offset capacity to
  - Implement their comprehensive plans
  - Maximize economic development potential
- Play a major role in fulfilling TMDL obligations

Other Challenges

- Conserve limited offset capacity, economic development potential
- Mechanisms to pay for offsets of NPS loads
- Manageable process for baseline
- Optimize program-based and market based transactions
- Workable target/offset capacity inventories

Keys to Meet Challenges – 1

- Focus growth in low PCLAs:
  - Consume less offset credit,
  - Preserve offset capacity,
  - Max economic development potential,
  - Complement state/local growth programs

Keys to Meet Challenges – 2

- Program-based offsets to apply policy
  - Ensure efficiency of process
  - Support watershed-scale approach to baseline
  - Generate & maintain workable capacity inventories
  - Integrate effectively across public objectives
  - Solve who pays for what when problems
  - Empower local government