Department of the Environment

Nutrient Trading Implementation
in
NPDES Municipal Discharge Permits

Maryland Nutrient Trading Advisory Committee Meeting

January 21, 2016

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Type of Trades Implemented in the Permits

Point Source vs. Point Sources

(WLA transfer between existing point sources)

Point Source vs. On-Site Disposal System (OSDS)
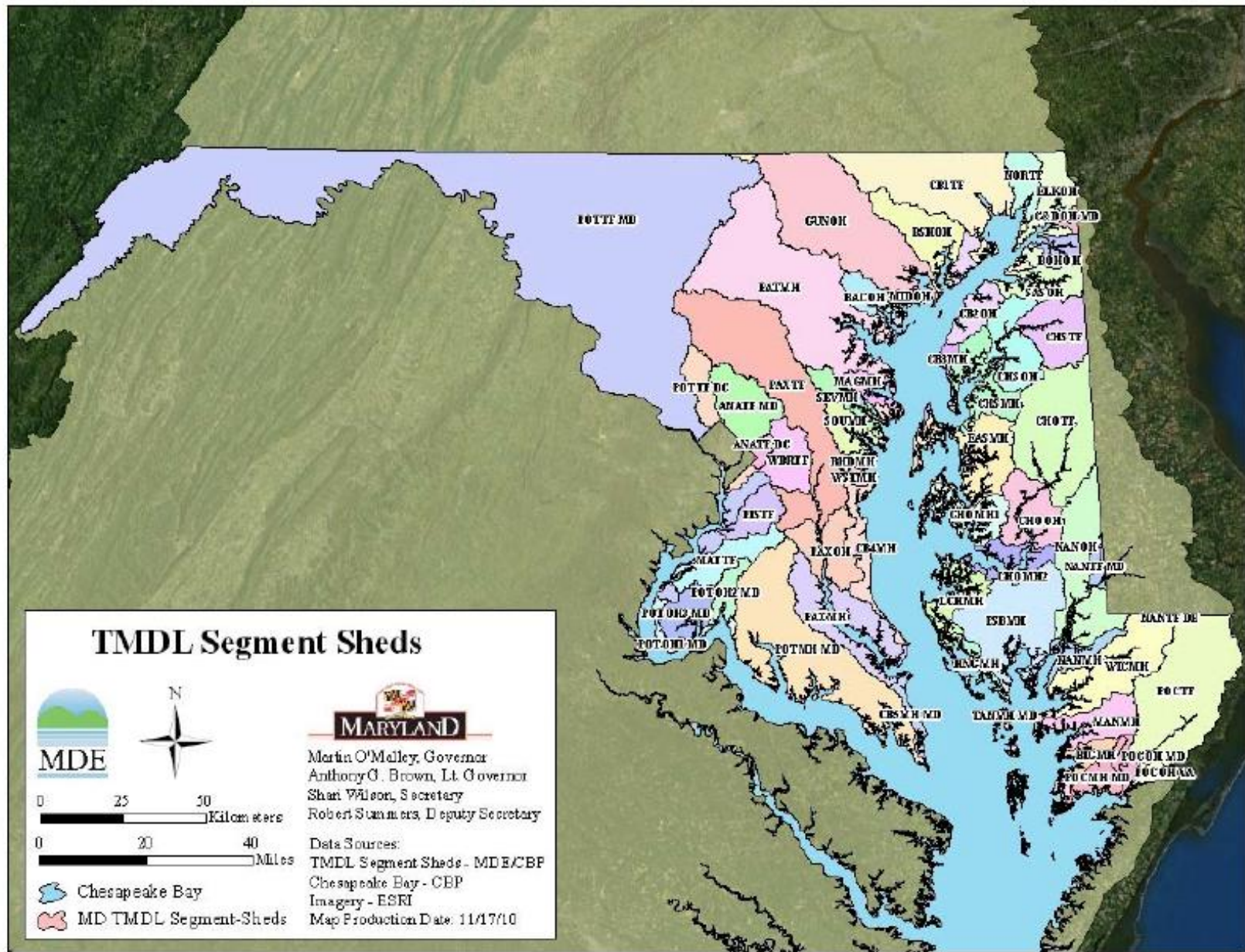
(Swapping PS WLA with offset credit from OSDS retirements)

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Essential Principles Applied
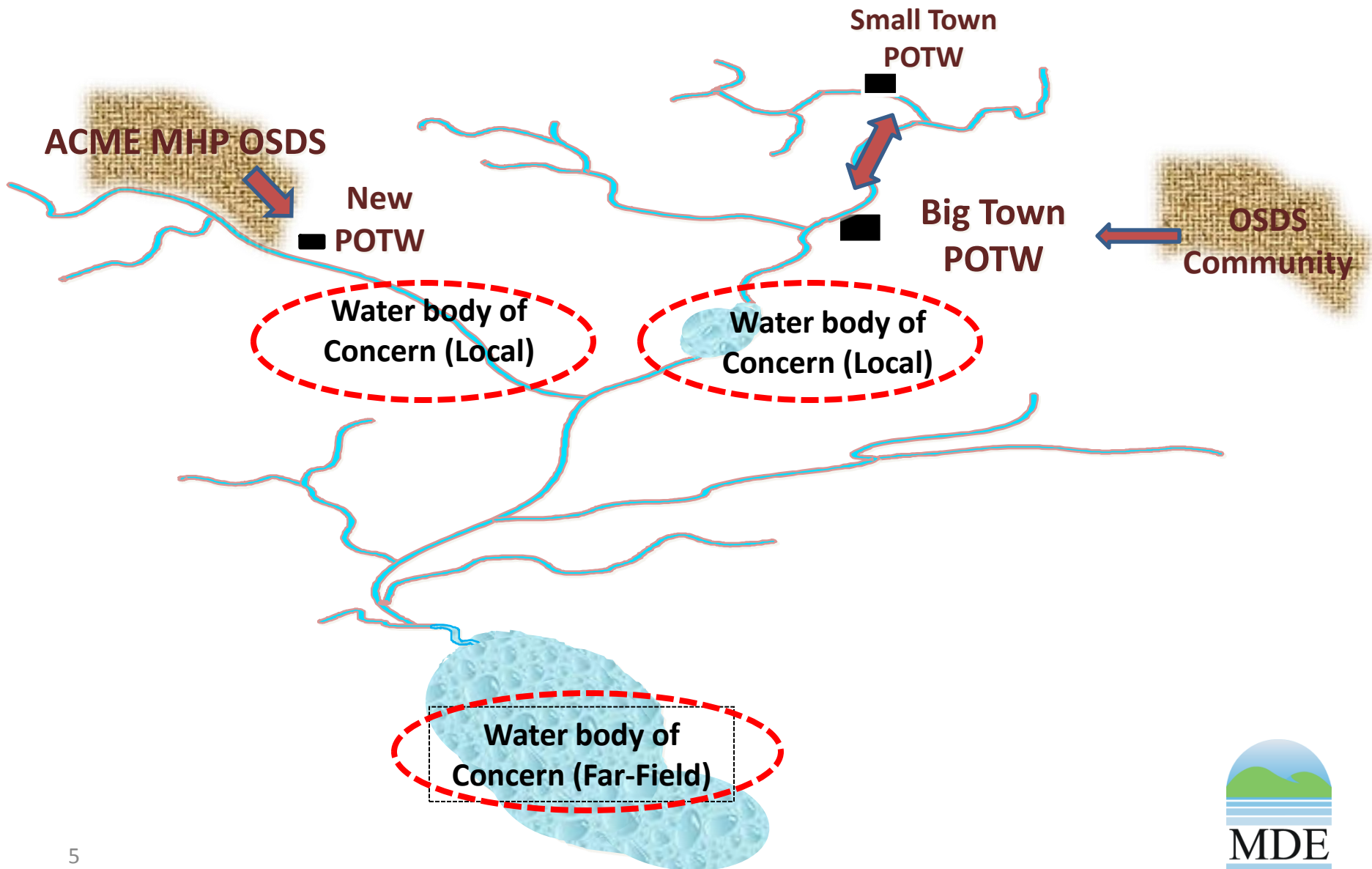## During Review and Evaluation of Trade Proposal

- The "supplier" of nutrient WLA or credit has to meet baseline criteria specified in the MD PS nutrient trading policy.

- All trades made must be in consistent with approved TMDLs (within model segment involved).

- To avoid creations of local water quality "Hot Spots", additional water quality analysis will be performed to examine discharge from "new" or "expanded" facility involved in the trade

- All trades must go through public participation process before implemented in the NPDES discharge permits.

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MD "Segment Sheds" in Bay TMDL

The scope of water quality impact involved for trading proposal

Examples of Trade Implemented

Example: Point Source to Point Source Trade
Trade between existing point sources in Anne Arundel County

Motivation:
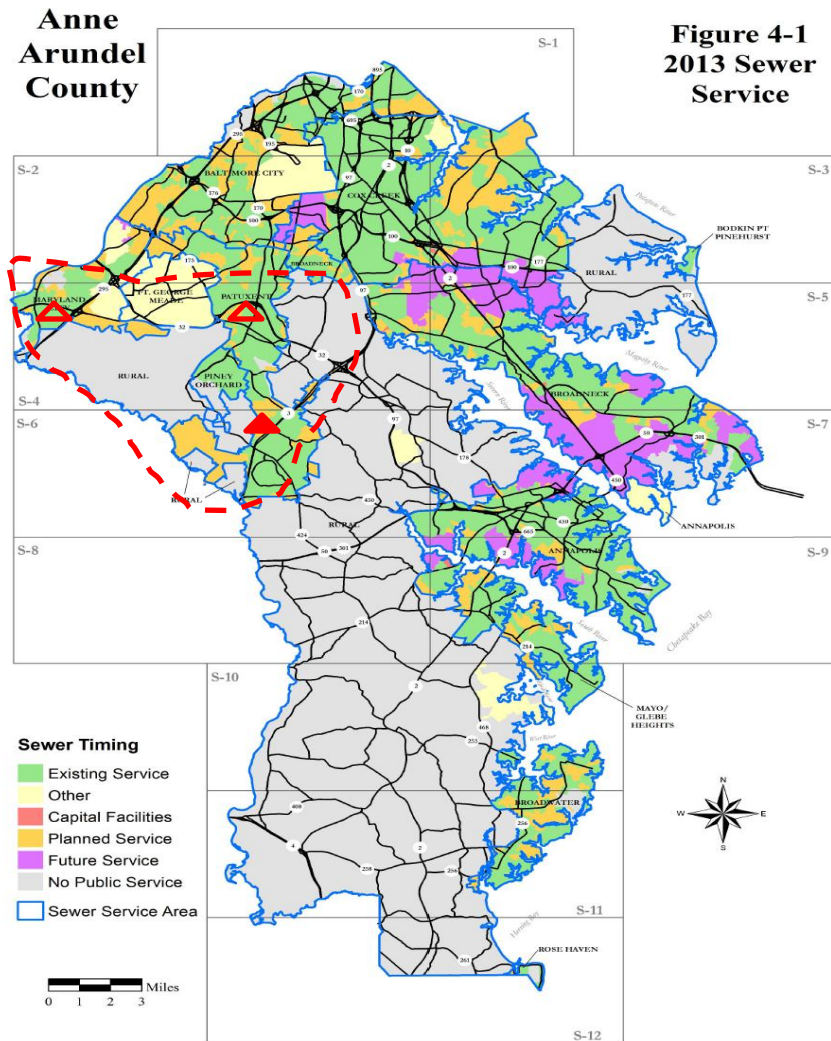Realignment/expansion of future sewage service areas

Generation of Trade Credit:
Retirement /Reduction of surface discharge capacity from existing ENR facility

Example: Trade between existing PS in Anne Arundel County

Anne Arundel County

Figure 4-1
2013 Sewer Service

Sewer Timing
- Existing Service
- Other
- Capital Facilities
- Planned Service
- Future Service
- No Public Service
- Sewer Service Area

Example: Point Source to Point Source Trade
WLA transfer between existing PS in Anne Arundel County

Piney Orchard WWTP

Nutrient Bubble MD City WWTP Patuxent WWTP

TN :14,619 lbs/yr
TP: 1,096 lbs/yr

Reduction
TN : 6,091 lbs/yr
TP: 457 lbs/yr

Trade
TN : 5,786 lbs/yr
TP: 434 lbs/yr

Retire
TN : 305 lbs/yr
TP: 23 lbs/yr

TN :121,764 lbs/yr
TP: 9,132 lbs/yr

Before

After

Piney Orchard WWTP

TN :8,528 lbs/yr
TP: 639 lbs/yr

Nutrient Bubble MD City WWTP Patuxent WWTP

TN :127,550 lbs/yr
TP: 9,566 lbs/yr

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Example: Point Source vs. On-Site Disposal System (OSDS) Trade between Prettyman MHP and Denton WWTP

Motivation:

A new surface discharge facility need nutrient credits to offset its discharge in the "post" Chesapeake Bay TMDL era.

Generation of Trade Credit:

Retirement of OSDS and use the "surplus" TN credit to trade to TP from an existing ENR facility

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TN credit criteria for OSDS retirement

OSDS Credit for TN based on delivery factor assumed in Chesapeake Bay Model (phase 5.3.2)

1. Within "**Critical Area**": **9.3** lbs/yr/household
2. Within 1000 ft of perennial surface water: **5.8** lbs/yr/household
3. All others: **3.5** lbs/yr/household

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Prettyman MHP OSDS Credit Determination

Example: Point Source vs. On-Site Disposal System (OSDS) Trade between Prettyman MHP and Denton WWTP

Prettyman MHP

TN: 724 lbs/yr

(Offset Credit)

Reduction
TN : 263 lbs/yr

Trade
TN : 250 lbs/yr

Retire
TN : 13 lbs/yr

Denton WWTP

TN:9,746 lbs/yr (WLA)

TP: 731 lbs/yr(WLA)

Trade
TP : 18 lbs/yr

Reduction
TP : 19 lbs/yr

Retire
TP : 1 lbs/yr

Before

After

Prettyman MHP

TN : 461 lbs/yr (Offset Credit)

TP: 18 lbs/yr (WLA)

Denton WWTP

TN :9,746 lbs/yr (WLA)

TN :   250 lbs/yr (Offset Credit)

TP: 712 lbs/yr

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Implementation of Nutrient Trading

- **Transparency:**

All trades are registered in the NPDES discharge permits associated with facility involved in the trade. These permits are subjected to public participation process prior to the final issuance.

- **Verifiable & Enforceable:**

 All "transactions" in the trade (in the form of WLA or offset credits) are implemented as effluent numerical limits in the NPDES discharge permits. Compliance for these limits are verified through discharge monitoring reports (DMR) submitted by each facility as required by the NPDES permit.

Example : Compliance Determination specified in the permit

"Net Loads" = Discharged Loads – Offset Credits

1. Facility with both WLA and Offset Credits

Annual "Net Loads" ≤ WLA

2. Facility with Offset Credits only

Annual "Net Loads" ≤ 0

Questions

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