



Maryland
Department of
the Environment

From OSDS to WWTP

***Nutrient Credit Implementation
in
Wastewater Discharge Permit***

***Sewer Extension Workshop
Wednesday, December 14, 2016***

Nutrient Credit

- *Offset for the additional nitrogen and phosphorus loads discharged from new or existing point sources after a Total Maximum Daily Loads (TMDL) had already been established for the receiving waters.*



Who needs nutrient credits ?

- *New point source with no Waste Load Allocation (WLA) assigned in the TMDL established for the receiving waters.*
- *Existing point source plans to discharge nutrient loads beyond its current WLA (due to expansion of capacity).*



Source of Nutrient Credits

WLA transferred from existing point sources

- a. Decommission of an existing PS with valid discharge permit.*
- b. Volunteer WLA reduction from PS with ENR in place.*

Offset Credits created from OSDS

Connection/Retirement of On Site Disposal System (OSDS).

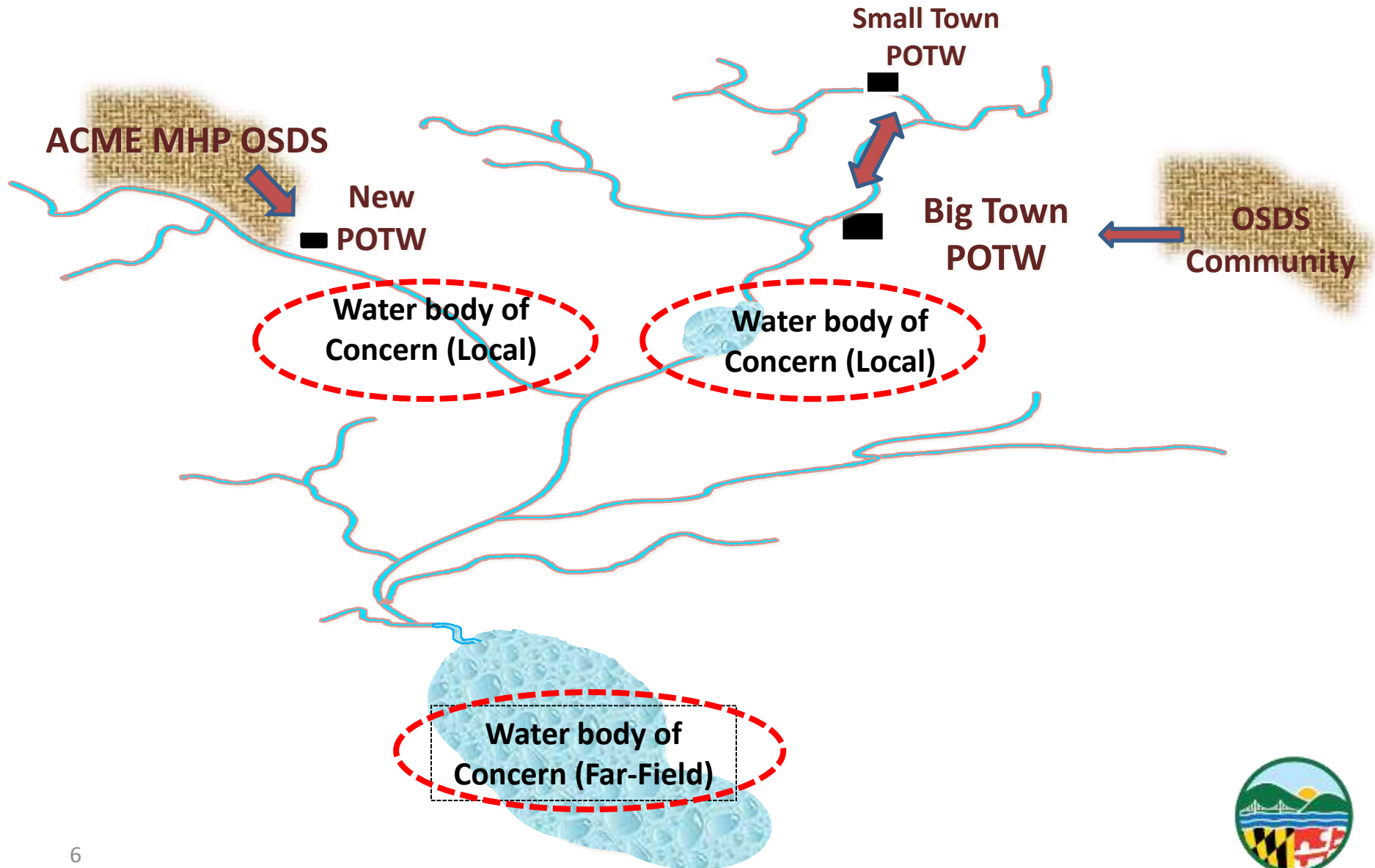


Check and Balance

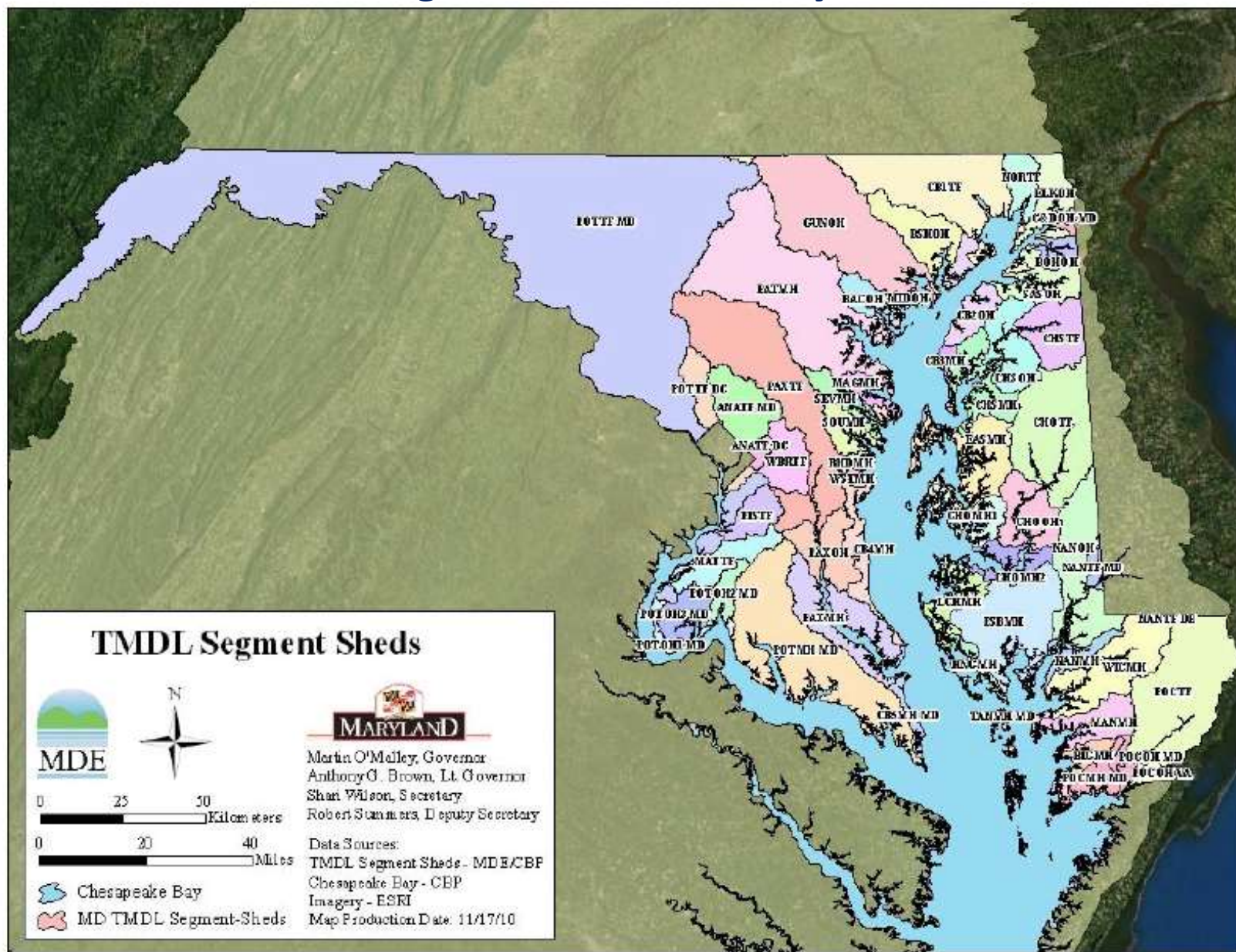
- *The implementation of the nutrient credit must be consistent with approved nutrient TMDL(s) for the receiving waters.*
- *To avoid creations of localized WQ “hot spots”, additional water quality analysis may be performed for a new discharge to determine the amount of credits applicable to the eligible facility.*



The potential water quality impact from nutrient credit transfer



MD "Segment Sheds" in Bay TMDL



Implementation of Nutrient Credit

- **Transparency:**

All credits will be registered in the NPDES discharge permits issued to the facilities involved in the generation/reception of the credits. These permits are subjected to public participation process prior to the final issuance.

- **Verifiable & Enforceable:**

All “transactions” (i.e. transfer of WLA/offset credits) will be implemented as numerical effluent limits in the discharge permits. Compliance for these limits will be verified through discharge monitoring reports (DMR) submitted by each facility as required by the permit.



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***



Information Required during the Permit Application Process

- *Approved water and sewer plan with the capacity of the new or expanded facility specified.*
- *Maps identify (1). location of the eligible OSDS units, (2).the nearby perennial stream and (3). critical area boundary.*
- *Agreements between each party involved in the WLA/Credit transfer .*
- *Work order (from DPW) and certificate (from LHD) for OSDS already connected*.*

**These documentations are required for the credit to become available for the discharge facility.*

Compliance Determination specified in the permit

“Net Loads” = Discharged Loads – Offset Credits

1. Facility with both WLA and Offset Credits

Annual “Net Loads” \leq WLA

2. Facility with Offset Credits only

Annual “Net Loads” ≤ 0



Example: Nutrient Credit Generation



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

Situation:

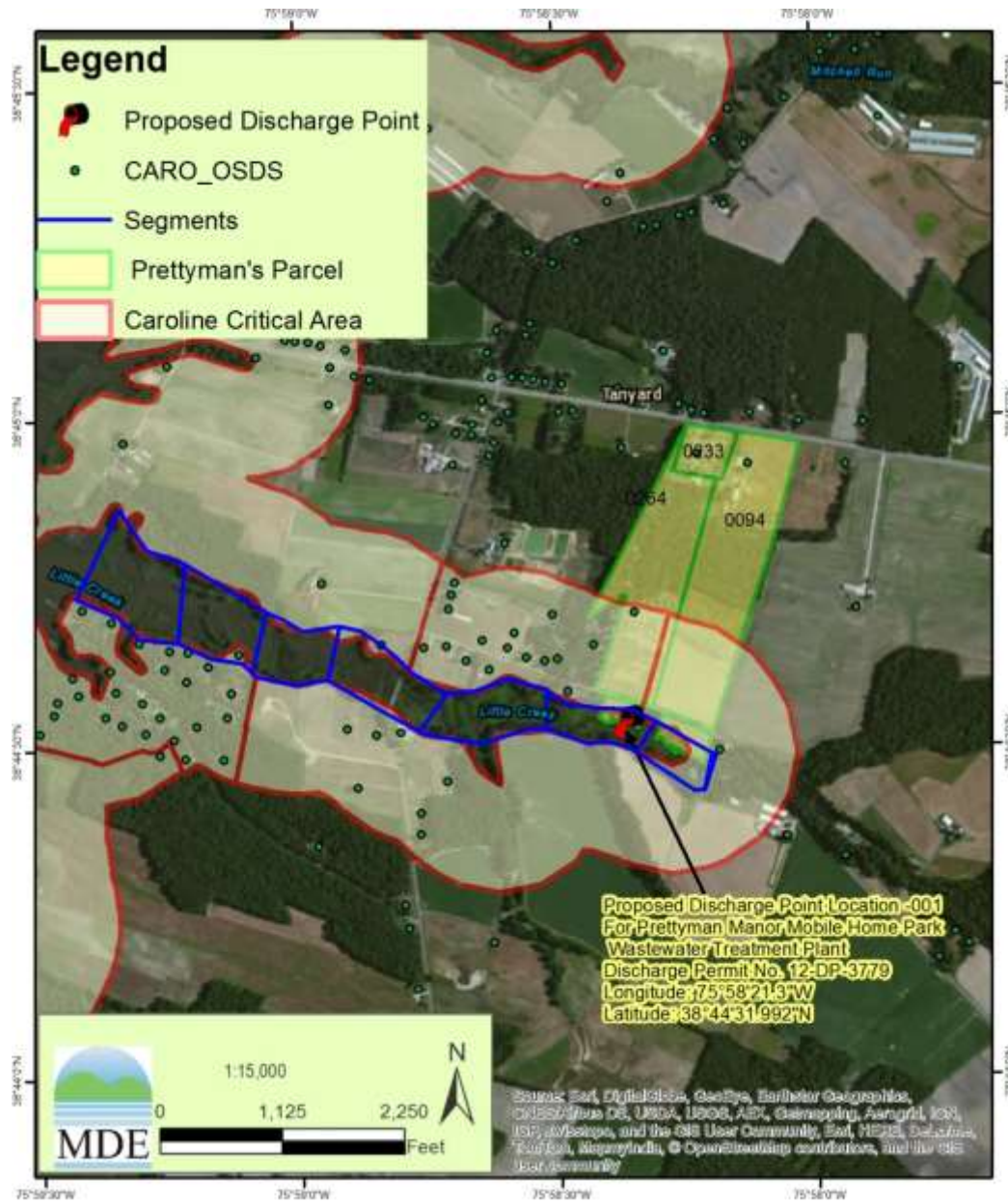
A new 20,000 gpd WWTP serving the MHP needs nutrient credits to offset its discharge in the “post” Chesapeake Bay TMDL era.

Generation of Trade Credit:

- 1. Retirement of OSDS to generate TN credit.*
- 2. Use the “surplus” TN credit to trade to TP WLA from an existing ENR facility*



Example: OSDS Credit Determination



Available Nitrogen Credit

<i>Location of Septic System</i>	<i>Nitrogen Credit (lbs/yr/Unit)</i>	<i>Number of Septic Units</i>	<i>Nitrogen Credit</i>
<i>Within 1000 ft of Critical Area</i>	9.3	76	706.8
<i>All Others</i>	3.5	5	17.5
<i>Sum</i>		<i>81</i>	<i>724.3</i>

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

Trade
TP : 18 lbs/yr

Retire
TP : 1 lbs/yr

Reduction
TP : 19 lbs/yr

Denton WWTP

TN: 9,746 lbs/yr (WLA)
TP: 731 lbs/yr (WLA)



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 (WLA)



Questions



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