BUILDING THE TOOLS TO LINK URBAN DEMAND FOR WATER QUALITY CREDITS
WITH AGRICULTURAL SUPPLIERS
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MARYLAND DEPARTMENT OF AGRICULTURE

CHESAPEAKE BAY NUTRIENT TRACKING/TRACKING TOOL
or CBNTT

- Maryland Agricultural Nonpoint Source Program utilizes a web-based trading application to calculate eligibility as well as nitrogen, phosphorus, and sediment credit potential from agricultural sources.
- Original tool based on World Resources Institute (WRI) NutrientNet platform as modified to reflect the Chesapeake Bay Watershed Model land use loads, calculations, and BMP efficiencies.
- Maryland tool revised to incorporate USDA/NRCS Nutrient Tracking Tool (NTT).
- WRI used the Maryland version to create a new multi-state platform, the CBNTT, that incorporates state-specific tools for MD, VA, and PA.

BASELINE AND CREDIT CALCULATION EXAMPLE

<table>
<thead>
<tr>
<th>Source</th>
<th>Total N Load</th>
<th>Total P Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manure Applied</td>
<td>15 lb/AC</td>
<td>1 lb/AC</td>
</tr>
<tr>
<td>Crop Application</td>
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</tr>
<tr>
<td>Conservation Practice</td>
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</tr>
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<td>Grassed Buffers</td>
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<tr>
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</tr>
<tr>
<td>Water Control Structure</td>
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Please Read This Notice before Using the Maryland Nutrient Tracking Tool.

As of May 5, 2016, the Maryland Nutrient Tracking Program launched its home version of a state tool. The Maryland Nutrient Tracking Tool (MD-NTT), which partners with the Maryland Department of Agriculture (MDA) and the Texas Institute for Applied Freundlich Research (TIAF), fuels the Maryland trading platform by developing a new complementary calculation tool to estimate and offset nutrient, sediment, and yield credits. The tool incorporates ex-urban offset tool and enhancements provided by USDA/NRCS Conservation Innovation Grants and an EPA Clean Water Act Section 319(h) Grant.

NUTRIENT TRACKING TOOL (NTT)

- NTT was created by USDA from APEX to provide user-friendly access to environmental outcomes, such as changes in nutrients, sediment, and yields at the field scale.
- NTT calculates the change in N, P, sediment, and yield based upon an initial condition and the adoption of agronomic conservation practices.
- Agronomic options include application methods and type of fertilizer, planting method, harvesting method, cover crops, tillage, irrigation, drainage, etc.
- NTT applies parameters (weather, evapotranspiration, crop growth models, temperature, slope, soils) to inputs.

NUTRIENT OFFSET PROCESS

- Expand the existing agricultural credit assessment and trading platform by developing a new complementary calculation tool to provide the capabilities to estimate credit and offset needs in the stormwater sector.
- Modify the registry, marketplace, and administrative modules to meet programmatic changes, facilitate the ease of market participation for sellers and buyers, provide a transparent and accessible tracking and accounting system for credits and offsets, and generate reports for state entities and EPA.

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ACCOUNTING FOR GROWTH (AFG)

AFG policies address any increase in Maryland’s pollution load from population growth or new development.

1. Strategic allotment of nutrient loads to large wastewater treatment plants upgraded to best available technology.
2. Requirement that all other new loads must be offset by securing credits.

The AFG Concept

Buyers
- Calculate pre and post-development nutrient loads from the development parcel.
- Mitigate load on site to maximum extent possible.
- Require developer to offset 100% of the post-development load.
- Allow trading with other sectors to offset post-development load.

REFERENCES

- Anne Arundel County Pollution Loading Examples (2013).

ACKNOWLEDGMENTS

- Funding support for the development of the Maryland platform, the CBNTT, and the new urban offset tool and enhancements has been provided by USDA/NRCS Conservation Innovation Grants and an EPA Clean Water Act Section 319(h) Grant.
- Collaborative partners include the World Resources Institute, the Texas Institute for Applied Research, and the Maryland Department of the Environment.