



Commonwealth of Virginia's Chesapeake Bay Watershed General Permit

ACWA Nutrients Permitting Workshop

December 6, 2017

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GVPDES WPTNTPDNTCBWV

or

“Nutrient Trading Regulation”

General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820-10)

Background on Chesapeake Bay Watershed



- Portions of 5 states and the District of Columbia in 2 EPA regions lie within the Basin:
 - 64,000 square miles watershed
 - 11,684 miles of shoreline
 - 200 miles long and 21 ft. deep on average
- Significant portions of Chesapeake Bay and its tidal tributaries are listed as impaired because of nitrogen, phosphorus, and sediment
- Home to 18 million people
- Agricultural land use grew by >100,000 acres between 2004 and 2014
- Largest land area per unit volume of water of any estuary in the world
- Bay states adopted tributary strategies prior to 2010 TMDL to achieve nutrient reduction goals developed by the Chesapeake Bay Program

Brief Chronology of Events in Virginia

2005

- **Tributary Strategies** establish loading goals
- **Legislation** requiring watershed general permit

2007

- **VPDES Watershed General Permit** becomes effective on January 1, 2007

2010

- **Bay TMDL** issued by EPA on December 29, 2010

2011

- **Effluent limits** in 2007 **VPDES Watershed General Permit** become effective

2012 & 2017

- **Virginia** reissues the **VPDES Watershed General Permit** on January 1, 2012

Drivers for Virginia's Approach

- General Assembly determines that adoption and utilization of a watershed general permit and market-based point source nutrient credit trading program will assist in:
 - meeting the nutrient cap load allocations cost-effectively and as soon as possible in keeping with the 2010 timeline and objectives of the Chesapeake 2000 agreement,
 - accommodating continued growth and economic development in the Chesapeake Bay watershed, and
 - providing a foundation for establishing market-based incentives to help achieve the Chesapeake Bay Program's nonpoint source reduction goals.

CB Watershed Nutrient General Permit Highlights

General permit overlays individual NPDES permits and address nutrients only

Calendar year annual TN and TP load limits

Cap & Trade Program

“Bubbling” or aggregate permits allowed

Common schedule of compliance

Point Source-to-Point Source trading for existing facilities to meet initial load cap

Point Source-to-Nonpoint Source trading reserved to accommodate new and expanding facilities

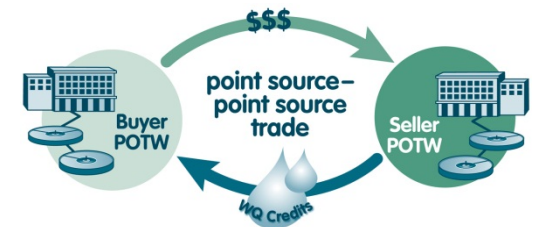
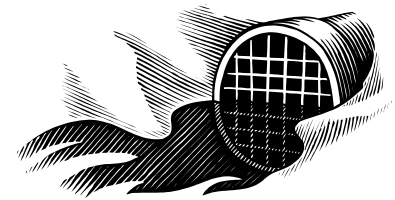
Permittees given ownership of the market

Watershed General Permit Requirements

- **Coverage**
 - Over 150 facilities
 - Significant Dischargers
 - Covers facilities in each of the 5 watersheds
- **Limits**
 - Annual mass delivered loads for nitrogen and phosphorus for all dischargers
 - Based on TMDL implementation
 - More restrictive requirements as needed to meet local TMDLs or water quality standards in individual permits
 - Compliance
 - Addresses significant existing discharges and new and expanding discharges
 - Conditions for nutrient credit transactions
- **Other permit components**
 - compliance schedules and plans
 - monitoring and reporting

Virginia's Chesapeake Bay Watershed-based General Permit

- Compliance with wasteload allocation requirements **for existing facilities** through
 - Annual mass load meets permit requirements
 - Acquisition of sufficient point source credits independently or through the Nutrient Credit Exchange Association
 - Acquisition of credits through payments to Nutrient Offset Fund if no other option available



Virginia's Chesapeake Bay Watershed-based General Permit



- New or expanding facilities offset **new or expanded discharge** through acquisition of
 - Compliance credits from one or more permitted facilities
 - Purchase of WLAs from other sources (either short term or permanent)
 - **Credits from nonpoint source best management practices**
 - Credits through payments to Nutrient Offset Fund if no other option available
 - Allocations through other means approved by Virginia DEQ on a case-by-case basis

Virginia Watershed-based Permit Benefits

- **Environmental Benefits**
 - Quicker nutrient reductions from point sources
 - Manages additional loadings from growth through offsets of loads from new or expanding facilities
 - Creates incentives for NPSs to meet load allocations
 - BMP secondary benefits (e.g., habitat restoration, carbon sink)
- **Benefits to Permittees**
 - Provides several different tools for achieving compliance
 - More cost-effective approach than treatment upgrades only
 - Allows for future growth as it eases costs and resource demands
- **Benefits to Virginia DEQ**
 - More streamlined and efficient permitting process
 - Increased stakeholder support



Point Source Compliance Trades

2011

35 facilities	246,309 lbs of TN	1.5 % of WLA
	79,128 lbs of TP	4.5 % of WLA

2016

25 facilities	388,144 lbs of TN	2.1 % of WLA
	26,737 lbs of TP	1.9 % of WLA

100 of 119 significant facilities trade as members of the Virginia Nutrient Credit Exchange Association.

Nonpoint Source Trading in VA

Originally reserved for accommodating new and expanding point sources only

Guidance adopted in January 2008

First bank approved in July 2008



Trading Nutrient Reductions from Nonpoint Source Best Management Practices in the Chesapeake Bay Watershed: Guidance for Agricultural Landowners and Your Potential Trading Partners



Practice-based Ag Baseline Requirements

- Soil Conservation Plan –
- Nutrient Management Plans –
- Cover Crops –
- Livestock Stream Exclusion w/ 35' buffer –
- 35' Riparian buffer –

2:1 uncertainty ratio
It takes a lot of land!

So Why Are There No NPS-to-PS Trades in VA?

- Economic downturn brought new WWTPs to a halt
- Expanding WWTPs able to upgrade and stay under load cap
- Adequate capacity in existing POTWs (WLAs based on 2011 design flow)
- Adequate credits available from other point sources
- It takes a lot of land – a problem of scale

Current Status of NPS Trading

- Current program consists of providing **permanent** stormwater offsets to meet Virginia's post construction P loading requirements under the Virginia Stormwater Management Program (VSMP) and limited MS4 trades to VDOT.
- 56 NPS banks with 3,800 lbs of permanent TP offsets and 24,700 lbs of permanent TN offsets on state registry. 24 applications pending.
- Many small P trades under the VSMP - associated N reductions are retired (P serves as a proxy for N reductions under VSMP)
- In the process of adopting regulations on the certification of NPS credits
- No credits generated by agricultural BMPs to date
- Much interest in credits from stream restoration and oversized urban BMPs
- Required N and P reductions in MS4 permitting program may create demand for NPS credit market

2016 Nutrient Trades

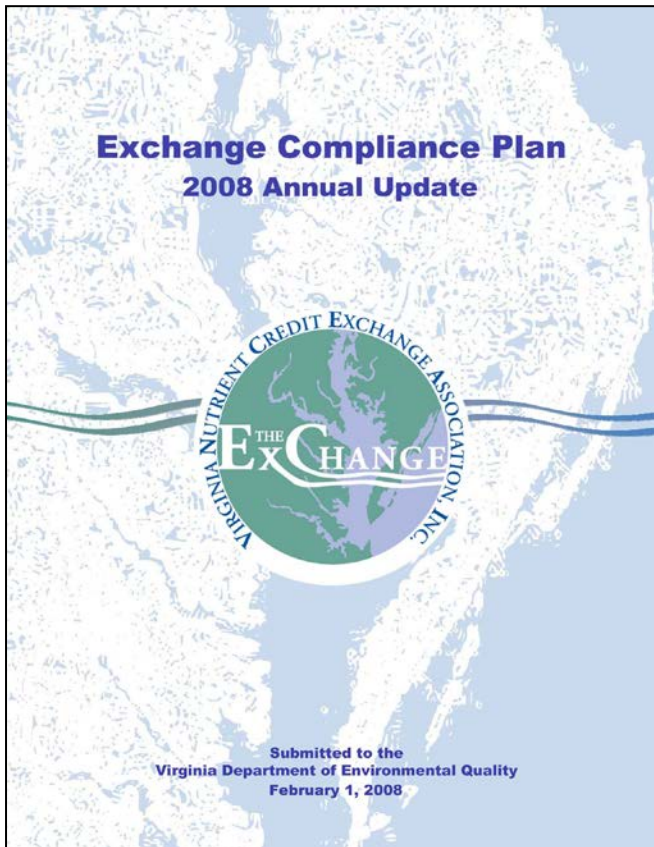
Point Source to Point Source under Watershed General Permit

- 25 facilities acquired approximately 27,000 lbs of TP and 390,000 lbs of TN credits
- Several minor WLA trades
- Approximately \$1,800,000 market value

Non-Point Source Credits Sold (Permanent Offsets)

- Approximately 900 lbs of TP with 5,400 lbs of TN retired
- Approximately \$18,000,000 market value

Primary Factors in Success of the Point Source Trading Program

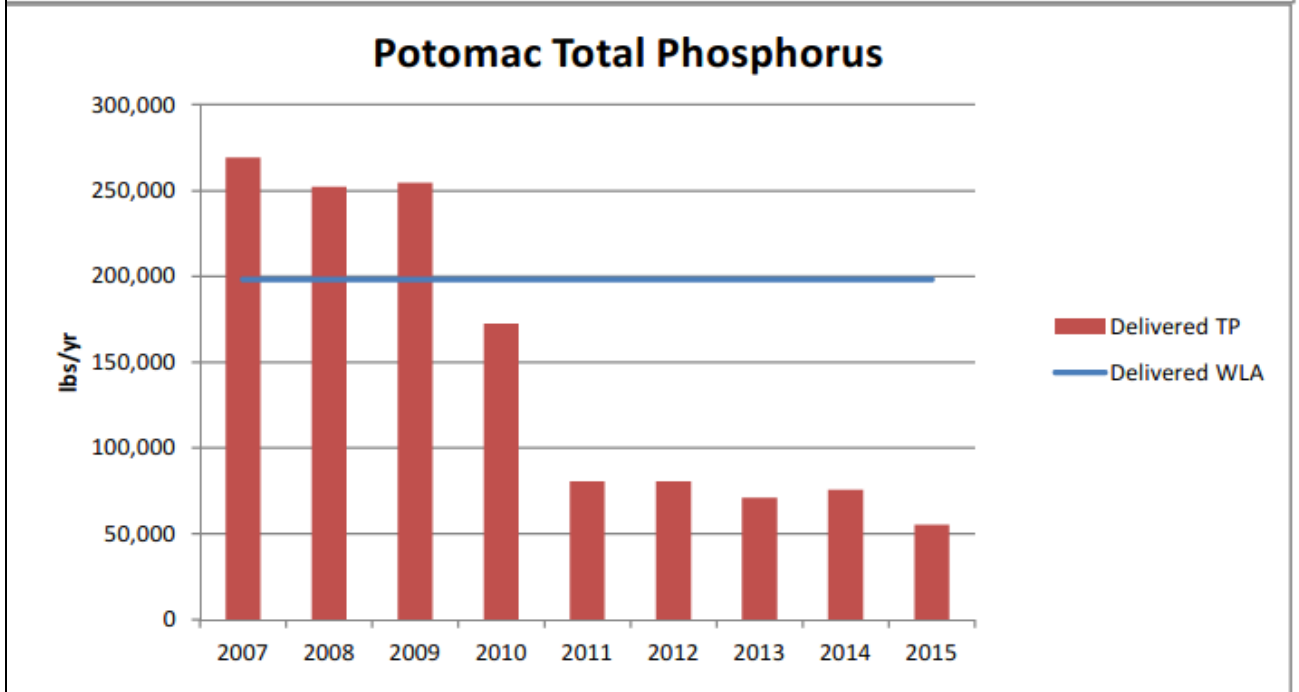
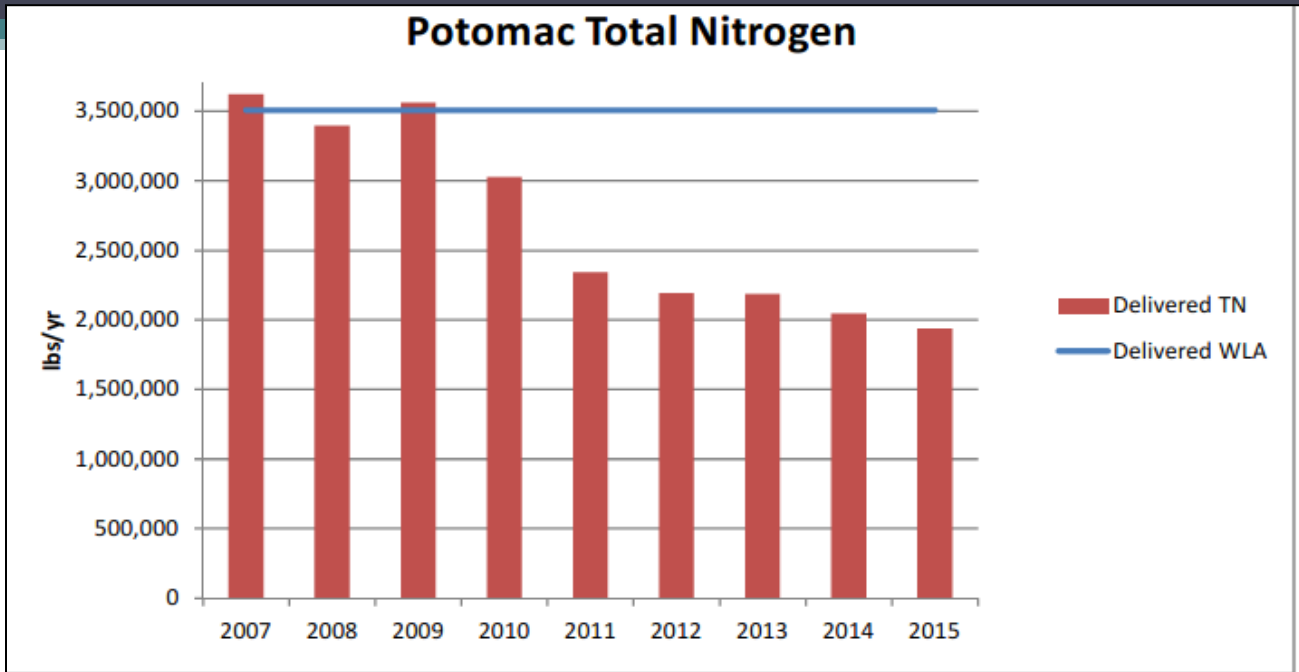


- Watershed general permit
 - Expedient – one negotiation
 - Common schedule of compliance
 - Consistent requirements
- Formation of the Virginia Nutrient Credit Exchange Association with voluntary membership
- Permittees given ownership of the market and have embraced the program

Nutrient Credit Exchange Association

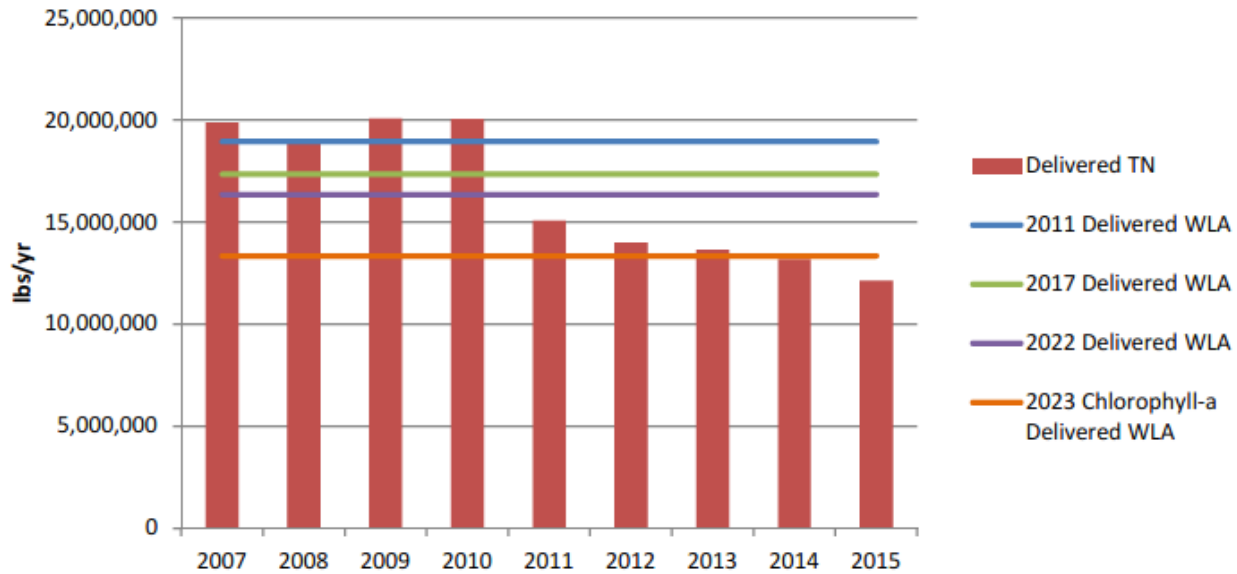
- The Nutrient Credit Exchange Association is an association of owners of 108 permitted facilities discharging nutrients in the Bay watershed.
- Voluntary membership in non-stock corporation formed to facilitate the trading program
- Benefits of Membership
 - Easy access to buyers and sellers
 - Acts as clearinghouse – buys all generated credits and offers cost-sharing from sales
 - First right to buy generated credits

Point Source Nutrient Reductions

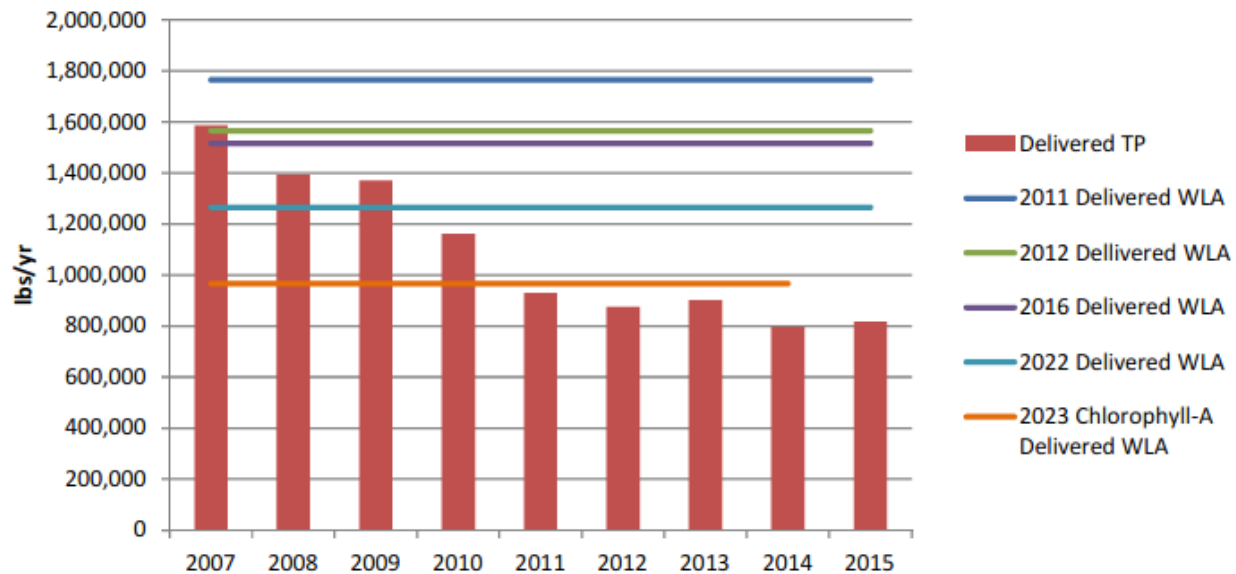


Point Source Nutrient Reductions

Statewide Total Nitrogen



Statewide Total Phosphorus



Grateful Dead-Zone: Thank You for Not Growing



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30 NOV 2017

Blog Post CBF in Maryland, CBF in Virginia

What does this mean?

The overall message is best stated by Beth McGee: "**There is scientific consensus that the dead zone is getting smaller over time, and ending earlier in the summer.** This is an indication that the [Clean Water Blueprint](#) is working. But we also know that much more needs to be done to achieve a Bay that is healthy for all living creatures."

We will always have year to year variations in the dead zone due to the weather, but the long-term trend is very encouraging. **The Chesapeake Clean Water Blueprint's ongoing programs to reduce [nutrient pollution](#) are working and we hope to keep on truckin' for smaller dead zones in years ahead.**



Questions?

