



Facts About...

MARYLAND POLICY FOR NUTRIENT CAP MANAGEMENT/TRADING –PHASE I

Maryland's water quality standards for the Chesapeake Bay require significant reductions in the amount of nutrients, mainly nitrogen and phosphorus, that reach the Bay. Excess levels of these nutrients are the primary cause of poor water quality in the Bay. Reducing these pollutants has been a major focus of the State of Maryland as well as the other Chesapeake Bay watershed jurisdictions, including Pennsylvania, Virginia, West Virginia, Delaware, New York, and the District of Columbia.

Through the Chesapeake Bay Program, each state has agreed to reduce its contribution of nutrients to the Bay to a specific number of pounds. Each state's plan for reducing nutrient loads is referred to as its "Tributary Strategy." Maryland's "roadmap" for restoring Bay health is detailed in the Tributary Strategies Statewide Implementation Plan.

Maryland has made tremendous progress in nutrient reduction by upgrading the technology of wastewater treatment plants (WWTPs) to Biological Nutrient Removal or Enhanced Nutrient Removal (BNR and ENR respectively). In addition, a host of Best Management Practices (BMPs) have been implemented to address nonpoint source pollution.

After the nutrient reductions are achieved, however, they must be maintained or water quality in the Bay will decline again. The Bay States, including Maryland, face development pressure due to population and economic growth. Development results in increased sewage flows and runoff from impervious surfaces. Intensification of animal agriculture also contributes to the increase in nutrient loads. Maryland has developed this Policy for Nutrient Cap Management and Trading (the Policy) as one tool for accommodating growth while maintaining the nutrient caps.

The following "frequently asked questions" explain the concepts and issues related to the Policy, as well as the Policy itself.

What is the purpose of the Nutrient Cap Management and Trading Policy?

The Maryland Department of the Environment (MDE) through a public process has developed a Policy for Nutrient Cap Management and Trading (Policy) for point sources. It is a creative and innovative approach to managing point sources nutrient load caps. One aspect of Maryland's approach is unique. Other states allow trading in lieu of upgrading a WWTP. In Maryland, upgrade of major WWTPs is required and the Bay Restoration Fund (BRF) was instituted to fully fund these upgrades. Trading is not available as a substitute for the upgrades. Nutrient reductions achieved through the upgrades must be maintained to meet Bay water quality goals. The Policy addresses both the need to achieve early nutrient load reductions from point sources through ENR upgrades and the need to address new or increased point source nutrient loads associated with a growing population. The need to address planned growth is met through various environmentally sensitive offset/trading options and requirements outlined in the Policy.

What is a nutrient cap for a WWTP?

A nutrient cap is an annual limit on pounds of nitrogen or phosphorus, which a WWTP or other point source can legally discharge.

Why is nutrient cap or limit needed?

Capping or limiting the amount of nutrients reaching the Bay from WWTPs is necessary in order to improve water quality in the Bay and to maintain the Bay's health and living resources – a major challenge.

Why is maintaining the point source nutrient cap a challenge?

There are many effective nutrient reduction measures already in effect, such as state of the art WWTP upgrades with BNR and ENR technologies and implementation of nonpoint source BMPs. However, population and economic growth pressures in Maryland and other Bay States affect our ability to maintain reduced nutrient levels achieved by implementing these practices. Maintaining reduced nutrient levels and nutrient caps in the face of growth requires new approaches to existing policies and programs.

What are new approaches to nutrient cap management?

U.S. Environmental Protection Agency (EPA) supports nutrient trading as a tool that may be used to maintain reduced nutrient levels and nutrient caps. EPA stated that “market-based approaches such as water quality trading provides greater flexibility and have the potential to achieve water quality and environmental benefits greater than would otherwise be achieved under more traditional regulatory approaches.”

Nationally, EPA supports trading to achieve early reductions and progress towards water quality standards. Specific to the Chesapeake Bay Program, U.S. EPA Region III has also publicly supported point source nutrient trading Policy and Guidelines in Pennsylvania and regulations in Virginia. Maryland has now released its Policy.

How was the Policy developed?

MDE used a public process to develop a new approach to maintaining point source nutrient caps and for trading/offsetting new or increased point source nutrient loads associated with growing population. To obtain broad public input, a preliminary discussion draft “Approach for Managing Nutrient Caps for Point Sources in Maryland’s Chesapeake Bay Watershed” was presented to stakeholders on April 17, 2006. Following the initial meeting, MDE conducted “listening sessions” and accepted public comments through October 11, 2007. Among the stakeholders who participated in discussions leading to the establishment of this Policy were the Maryland Association of Municipal Wastewater Agencies (MAMWA), the Waterkeepers Alliance, the Maryland State Builders Association and the National Association of Homebuilders, the Chesapeake Bay Foundation, representatives from the Maryland’s Tributary teams, and the Maryland Departments of Agriculture (MDA), Natural Resources (DNR) and Planning (MDP).

The Maryland Policy for Nutrient Cap Management/Trading - Phase I reflects the Department’s concerted effort to address the many diverse comments, views and suggestions received during public outreach.



What does Phase I of the Policy accomplish?

The Policy is being issued in two phases. Phase I outlines an approach for trading between point sources and trading involving the removal of onsite sewage disposal systems (OSDSs) commonly known as septic systems. It establishes definitions, key principles, and fundamentals that are applicable to trading programs involving both point sources and nonpoint sources. During Phase I MDE proposes to manage the nutrient caps by creating options for trading/offsetting nutrient loads from new or expanding dischargers.

What will Phase II of the Policy accomplish?

The next phase, Phase II of the Policy will address point source to nonpoint trading/offsets. The MDA Nutrient Trading Advisory Committee is currently developing Phase II.

Does the Policy replace existing requirements?

The Policy is intended to supplement existing requirements. Nothing in the Policy reduces or replaces existing regulatory requirements. The Policy does not preclude the development of specific trading policies/guidelines for pollutants other than nutrients (nitrogen and phosphorus).

What are the key goals and purpose of the Nutrient Cap Management/Trading Policy?

This Policy is intended to support watershed stakeholders interested in participating in nutrient trading opportunities. The key goals and purposes of the Policy are to:

1. offset new or increased discharges in order to maintain levels of water quality that support all designated uses;
2. establish economic incentives for reductions from all sources within a watershed;
3. achieve greater environmental benefits than through the existing regulatory programs.

What is nutrient trading?

Nutrient trading is a market-based approach to achieving water quality standards in which a point source purchases pollutant reduction credits from another point source or a nonpoint source in the applicable trading region that are then used to meet the point source's pollutant discharge obligations.

To be creditable to the point source purchaser, the credits must reflect an actual, pollutant load differential below the credit seller's baseline. Under certain circumstances, a point source buyer may have to purchase more than one pound of pollutant reduction to equal a pound discharged at its outfall.

What is a baseline?

Baseline refers to the pollutant control requirements that apply to buyers and sellers as specified in this Policy.

What is nutrient reduction?

Nutrient reduction is the difference in nutrient discharges to surface waters achieved by activities such as best management practices or technical upgrades, compared to the applicable baseline after meeting eligibility requirements.

Who can participate in nutrient trading?

Point sources, nonpoint sources or third parties can participate in trading to facilitate compliance with regulatory requirements and for the purpose of securing long-term improvements in water quality, subject to applicable laws.

What is a Point Source?

A point source is a source permitted to discharge to surface water from a specific outlet, such as a sewage treatment plant or industrial facility. The permits for point sources are issued under the National Pollution Discharge Elimination System (NPDES) provisions of the federal Clean Water Act.

What is New Point Source?

A new point source is a point source with no waste load allocation in the Tributary Strategy.

What is Nonpoint Source?

A nonpoint source is a source of pollution that is not a point source. It originates from diffuse pollution sources (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet). Pollutants from non-point sources are generally carried off the land by stormwater. Common nonpoint sources are agriculture, forestry, urban, mining, construction, dams, channels, land disposal, saltwater intrusion, and city streets.

What is an onsite sewage disposal system (OSDS)?

An OSDS is any system that disposes of sewage effluent beneath the soil surface. A common example is a septic system.

What is a third party?

A third party is any entity that is not a buyer or seller in the trade. A third party can be a state agency, conservation district, private entity, or other organization or person. Third parties could assist in facilitating credit exchanges and verifying Best Management Practices (BMPs).

What is a credit or pollutant reduction credit?

A credit is a measured or estimated unit of pollutant reduction per unit of time. Credits are expressed as pounds per year of nitrogen or phosphorus that is delivered to the Chesapeake Bay. Credits are valid for one calendar year and must be applied in the year they are generated.

How can credits be generated?

A point source seller can generate credit by controlling its discharge beyond what is needed to meet its baseline through controlling its flow and/or its discharge concentrations. A buyer compensates a seller for creating the excess load reductions that are then converted into credits by using trading ratios.

Who are buyers?

Buyers are anticipated to be new and expanding point sources that need to acquire credits to achieve their baselines once they have met their minimum requirements outlined in the Policy. Third parties, with the approval of MDE, can also buy credits.

Who are sellers?

Point Sources and nonpoint sources (once Phase II is established) that met their baseline requirements can enter the trading market to sell credits.

What are the mechanisms for offsetting new or increased nutrient loads?

There are a number of options outlined in the Policy for Nutrient Cap Management and Trading for point sources, including: improving treatment levels, maintaining existing flow at less than the design flow, reducing wastewater discharges or making equivalent load reductions, i.e. offsets in other areas.

What is an offset?

An offset is either an offsite treatment implemented by a regulated point source for the purposes of meeting its permit limit or a load reduction that are acquired by a new or expanding point source from other point or nonpoint sources. Offset can also be obtained by an expanding WWTP that has ENR through the transfer of flow from an OSDS to an ENR facility. In other words, reducing loadings in one area such as at either another point or nonpoint source or connection of an OSDS to an ENR facility, negate the loading increases that result from expansion.

What is a nonpoint source discharge credit?

Nonpoint sources can generate credits through a variety of possible mechanisms. Baseline nonpoint source reduction requirements, to be defined in Phase II of this trading policy, must be met before offset credits can be generated. As with point source discharge credits, nonpoint source discharge credits are based on delivered loads, hence Chesapeake Bay watershed model delivery factors are applied to edge-of-field loads.

What are delivery loads?

Delivery loads are the pounds of pollutants actually delivered to surface water, which can be less than the original amount because of the pollutant's travel over land or in water (or both). Credits will take account of this phenomenon by using delivery ratios or discount factors. Delivery ratios are based on information from applicable and accepted data sources, such as the Chesapeake Bay Program.

Could trading/offsets be used instead of an upgrade to ENR to meet point source nutrient cap?

In order to achieve nutrient load reductions as quickly as possible from point sources, all significant WWTPs that have been identified by MDE in the Tributary Strategies Statewide Implementation Plan, are required to upgrade to ENR and trading will not be available for these facilities as a substitute for the upgrades. However, the acquisition of credits may be allowed prior to the completion of a scheduled and permitted ENR upgrades of a discharger.

What is the Tributary Strategy Statewide Implementation Plan?

To meet the Chesapeake 2000 Agreement goal of restoring water quality in the Chesapeake Bay and its tributaries all Bay jurisdictions have agreed to reduce nutrient loads from all sources and to limit, or “cap” nutrient loads reaching the Bay. The Tributary Strategy Statewide Implementation Plan (http://www.dnr.state.md.us/bay/tribstrat/implementation_plan.html) provides a potential road map for point and nonpoint sources to meet the Chesapeake 2000 Agreement goal.

What is Maryland’s Point Source Strategy?

Maryland’s Point Source Strategy incorporates nutrient load caps for point sources and requires: (1) upgrade of significant WWTPs to state of the art ENR technology and (2) maintenance of the nutrient load caps for all point sources by fully offsetting load increases from any new or expanded discharges.

In addition, Point Source Strategy calls for a trading/offsets and load reallocation policy as a tool for addressing growth and maintaining nutrient load caps for point sources.

How will the point sources maintain nutrient load caps?

To accommodate population growth, all new dischargers and existing dischargers of any size that want to grow beyond their Tributary Strategy nutrient loading caps must find a mechanism to offset increased nutrient loads.

How will point source trades be implemented?

Point source trades will be implemented and enforced via NPDES permits. The permit limits will serve as the baseline for generating credits for use in trading. The permits will also provide the vehicle for enforcement of the trade condition. The use of the discharge permit program will ensure that credits are real, accountable, reliable, and enforceable.

Where can trades occur?

Geographical boundaries for trading are based on three large watersheds or “trading regions”: Potomac; Patuxent; and Eastern Shore and Western Shore Tributary, which includes the Susquehanna watershed. Pollutant reductions for trading purposes will be calculated within these defined regions and delivery factors will apply. Interstate trading within these regions is not precluded by this Policy.



What are the options for offsetting new or increased loads/generating credits?

Options include, but are not limited to:

- upgrading an existing minor to Biological Nutrient Removal (BNR) or ENR;
- retiring an existing minor WWTP after connecting its flow to BNR or ENR facility;
- retiring existing (as of effective date of this Policy) onsite sewage disposal systems (OSDS) by connecting to an ENR facility;
- land treatment with nutrient management;
- implementing nonpoint source practices; and
- water reuse.

ENR facilities may generate point sources discharge credits by optimizing treatment operation or maintaining existing flow at less than the design flow upon which the wasteload allocations is based.

What is the duration of a trade?

One purpose of this Policy is to accommodate new or expanded discharges. Therefore, credits acquired for this purpose must be certain and reliable for an extended time period. A new or expanding point source discharger submitting a trading proposal must demonstrate that it has secured credits for as long a period as is feasible. At a minimum, point sources must have secured the contractual right to credits for two (2) full permit terms. In addition, the facility must submit a plan showing how it intends to acquire the necessary credits for at least 10 years beyond the two permit terms for a total planning horizon of 20 years. At each subsequent NPDES permit renewal, the facility must demonstrate the securing of credits for the coming ten-year permit period, and update its plan for acquiring them over the subsequent 10-year horizon.

Will nutrient trading impair or violate local water quality standards?

In 2001, the Chesapeake Bay Program published nutrient trading principles and guidelines that were endorsed by the Bay Program partners. The first of these principals is that “Trades must not impair water quality or violate water quality standards or criteria, or adversely impact living resources and habitat.” Maryland’s approach of implementing trading through permits will ensure that trades do not create local water quality impairments. Permits will contain conditions that achieve all State water quality standards for the local receiving waters and for the Chesapeake Bay. All permits are issued via public process.

How will the public be informed about trades?

Trading will be implemented in a way that provides stakeholders and the general public with access to information related to the trading program including the trading policy and guidelines, appendixes, credit generation opportunities, trades effected, and other relevant information via the department’s website, press releases and public outreach opportunities. Point source trades will be implemented and enforced via NPDES permits, which includes a public participation process. The Department will state in the public notice when any conditions allowing trading have been included in the draft permit. **Additionally, when a specific trade is proposed and a permit modification is required, a public notice will be published**



detailing the planned trade. These conditions **and/or modification** will be subject to the normal public comment process and period (usually 30 days), along with all other conditions of the permit.

What is the timeline for Phase II - Point source to Nonpoint trading/offsets?

Phase II of Maryland's Guideline will address point source to nonpoint trading/offsets. MDA's Nutrient Trading Advisory Committee is charged with guiding the development and implementation of the Phase II "strawman" policy. The Committee met from November 2007 through March 2008. Based on the discussions and comments received, MDA developed the "strawman" guideline and presented it to the Committee in March 2008. The follow-up schedule involves a larger stakeholder input process during the spring of 2008, with the final guideline in the summer of 2008. MDA will assist with a specific initiative directed to the agricultural community to address issues of interest to farmers. Concurrently, MDA will be developing a web-based application tool to facilitate nonpoint source agricultural trading.

