



**Chesapeake Bay Program**

*A Watershed Partnership*

# Backgrounder

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On June 28, 2000, the Chesapeake Executive Council signed *Chesapeake 2000* – a new and far-reaching agreement that now guides Maryland, Pennsylvania, Virginia, the District of Columbia, the Chesapeake Bay Commission and the U.S. Environmental Protection Agency in their combined efforts to restore and protect the Chesapeake Bay.

As part of that agreement, Bay Program partners agreed to work with the headwaters states of Delaware, New York and West Virginia to develop a new process for setting and achieving nutrients and sediment load reductions necessary to restore Bay water quality.

This process requires Bay Program partners to continue to build on previous nitrogen and phosphorus reduction goals, but instead of measuring improvement against broad percentage reduction goals, they must now establish and meet specific water quality standards based on the needs of the Bay's plants and animals.

## Chesapeake Bay Water Quality Protection and Restoration: An Innovative Approach

This new approach to improving Bay water quality incorporates elements traditionally found in the regulatory TMDL process, such as criteria, standards and load allocations, but has been developed and applied through a cooperative process involving six states, the District of Columbia, local governments and involved citizens. For the first time, Delaware, New York and West Virginia are formally partnering with EPA, Maryland, Pennsylvania, Virginia and the District to improve water quality throughout the Bay watershed.

### Regulations Guiding Bay Water Quality

In 1998, the Chesapeake Bay and many of its tidal tributaries were added to the list of impaired waters, thus requiring the development of a TMDL to comply with the Clean Water Act. A TMDL is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. It is calculated by totaling all the allowable loads of a single pollutant entering a body of water from all contributing point and nonpoint sources.

TMDLs also allocate the amount each pollutant source is allowed to release while still attaining water quality standards set by individual states and approved by EPA. These allocations are then regulated through enforcement of permit limits, principally directed at point source dischargers and the implementation of Best Management Practices (BMPs) for nonpoint sources.

### Chesapeake Bay Impairments and TMDLs

The Chesapeake Bay's main water quality impairment is its low dissolved oxygen (DO). Current state water quality standards require 5 mg/L of dissolved oxygen throughout all of the Bay's waters – from deeper waters near the Bay's mouth to the shallows at the head of the Bay. Even though the 5 mg/L standard is baywide, scientists believe natural conditions dictate that in some sections of the Bay, such as the deep channel, Bay waters cannot achieve the current 5 mg/L standard. Additionally, scientists believe other areas, such as prime spawning areas, require higher levels of dissolved oxygen to sustain life. In addition to dissolved oxygen, other Chesapeake Bay impairments include reduced light conditions and too much algae.

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The Chesapeake Bay Program is restoring the Bay through a partnership among the U.S. Environmental Protection Agency representing the federal government, the State of Maryland, the Commonwealth of Pennsylvania, the Commonwealth of Virginia, the District of Columbia, the Chesapeake Bay Commission, and participating citizen advisory groups.



## The Transition to New Water Quality Criteria

Because conditions throughout the Bay differ based on depth, salinity and season, a uniform Baywide standard does not take into account the varying needs of different plants and animals. As a result, current state water quality standards need to be revised to account for the natural variability in conditions found throughout the Bay. The Bay criteria the Chesapeake Bay Program has proposed differ from one region of the Bay to another, as determined by the plants and animals residing in that area. The Bay Program also proposes that the new standards also remain constant for similar habitats across all jurisdictions.

The new water quality standards that will be based on three criteria: dissolved oxygen, water clarity and chlorophyll *a*. All plants and animals in the Bay need oxygen to live. Water clarity is a measure of the amount of sunlight that penetrates the Bay's waters and reaches the leaves of underwater bay grasses. All plants, even those underwater, need light to live and produce oxygen for other Bay creatures. Chlorophyll *a* is used to measure the abundance and variety of microscopic plants or algae that form the base of the food chain. Excessive nutrients can stimulate nuisance algae blooms resulting in reduced water clarity, reduced amount of fish food and depleted oxygen levels in deeper water.

### A "Parallel" TMDL

In a standard regulatory approach, TMDLs would need to be completed for the Chesapeake Bay and its tributaries by 2011. TMDLs require a very specific implementation plan, with "reasonable assurances" (e.g. enforceable permit limits) that load allocations will be achieved. Under the TMDL framework, new, innovative or untried solutions are not likely to be approved as part of the implementation plan.

However, due to the success of the Bay Program partnership over the past two decades, Bay Program partners have agreed to develop and carry out a cooperative approach to remove water quality impairments by 2010. This cooperative approach will allow the states and the District of Columbia more flexibility on how to reduce pollutant loads. Maryland, Pennsylvania, Virginia, New York, Delaware, West Virginia and the District of Columbia are jointly developing the new water quality criteria, designated uses and cap load allocations needed to restore Bay water quality.

The cooperative process for removing the Bay from the impaired waters list includes load allocations to sources — point, nonpoint and atmospheric — just as a TMDL would. The states and the District of Columbia determined those allocations which are based on local tidal water quality as well as meeting the new Bay criteria. Each tributary basin has been given a load allocation based on each river's effect on the Bay's water quality.

In order to coordinate the regulatory TMDL framework with the Bay Program's cooperative, consensus-based approach, this process will incorporate local tributary regulatory TMDLs within the larger, basinwide cooperative framework.

Like TMDLs, the states and the District will have to describe a plan for the implementation of load allocations. However, unlike traditional TMDLs, the Bay Program process will allow innovative, new methods to be tried as part of the implementation and will involve significant local stakeholder involvement through the tributary strategy process.

For additional information about restoring Chesapeake Bay water quality, visit [www.chesapeakebay.net](http://www.chesapeakebay.net).