



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
1/12/2005

Dr. Richard Eskin, Director
Technical and Regulatory Services Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 540
Baltimore, Maryland 21230-1718

Dear Dr. Eskin:

The Environmental Protection Agency (EPA) Region III is pleased to approve the report, "Total Maximum Daily Load [TMDL] of Nitrogen and Phosphorus for the Northeast River in Cecil County, Maryland." The TMDL report was submitted to EPA for final review on January 28, 2004. The TMDL was established and submitted in accordance with Section 303(d)(1)(c) and (2) of the Clean Water Act to address impairments of water quality as identified in Maryland's Section 303(d) list. The Northeast River was identified on the State of Maryland's 1996 Section 303(d) list for water quality-limited segments as being impaired by nutrients due to signs of eutrophication, expressed as high chlorophyll *a* levels, suspended sediments, lead, and zinc. An additional listing of biological impacts was added for the non-tidal portion in the 2002 303 (d) list. The TMDLs described in this document were developed to address localized water quality impairments identified within the watershed, specifically excessive nutrient enrichment in the Northeast River. The suspended sediments, lead, zinc and biological impairments in this watershed will be addressed by MDE in separate TMDL document(s).

The TMDL analysis identifies the current loading, relates the current loading to the applicable water quality standard, and identifies the necessary reductions for a total maximum daily load that will achieve the applicable water quality standard. It also identifies individual waste load and load allocations to the maximum extent supported by the available data.

In accordance with Federal regulations at 40 CFR §130.7, a TMDL must comply with the following requirements: (1) designed to attain and maintain the applicable water quality standards, (2) include a total allowable loading and as appropriate, wasteload allocations (WLAs) for point sources and load allocations for nonpoint sources, (3) consider the impacts of background pollutant contributions, (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated), (5) consider seasonal variations, (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and in-stream water quality), (7) consider reasonable assurance that the TMDL can be met, and (8) be subject to public participation. The enclosure to this letter describes how the TN and TP TMDL for the Northeast River satisfies each of these requirements.



Following the approval of this TMDL, Maryland shall incorporate the TMDL into the Water Quality Management Plan pursuant to 40 CFR § 130.7(d)(2). As you know, all new or revised National Pollutant Discharge Elimination System permits must be consistent with the TMDL Waste Load Allocation pursuant to 40 CFR § 122.44 (d)(1)(vii)(B). Please submit all such permits to EPA for review as per EPA's letter dated October 1, 1998.

If you have any questions or comments concerning this letter, please do not hesitate to contact Ms. Susan Sciarratta at (215) 814-5733.

Sincerely,

/s/

Jon M. Capacasa, Director
Water Protection Division

Enclosure

cc: Melissa Chatham, MDE-TARSA



Decision Rationale

Total Maximum Daily Load of Nutrients for Northeast River, Cecil County, Maryland

I. Introduction

The Clean Water Act (CWA) requires a Total Maximum Daily Load (TMDL) to be developed for those water bodies identified as impaired by the state where technology-based and other controls will not provide for attainment of water quality standards. A TMDL is a determination of the amount of a pollutant from point, nonpoint, and natural background sources, including a margin of safety, that may be discharged to a water quality-limited water body.

This document sets forth the United States Environmental Protection Agency's (USEPA's) rationale for approving the TMDL for nutrients in the Northeast River watershed. EPA is approving this TMDL because the TMDL provides reliable information as to the current load, the relationship of the current load to the applicable water quality standard, the reductions necessary for a total maximum daily load that will achieve the applicable water quality standard, a breakdown of wasteload and load allocations to the maximum extent supported by the available data, and other information that satisfies the requirements of 40 C.F.R.. Part 130.

The TMDL was established to address the impairment of water quality, caused by nutrients due to signs of eutrophication, as first identified in Maryland's 1996 Section 303(d) list for water quality-limited segments. The Maryland Department of the Environment (MDE) submitted the report, "Total Maximum Daily Load of Nitrogen and Phosphorus for the Northeast River in Cecil County, Maryland," dated January 7, 2004 to USEPA for final review on January 8, 2004. This TMDL addresses one segment, the Northeast River, on Maryland's Section 303(d) list.

USEPA's rationale is based on the TMDL Report, information contained in the Appendices to the report, and the Comment Response Document. USEPA's review determined that the TMDL meets the following eight regulatory requirements pursuant to 40 CFR Part 130.

- 1) The TMDLs are designed to implement applicable water quality standards.
- 2) The TMDLs include a total allowable load as well as individual waste load allocations and load allocations.
- 3) The TMDLs consider the impacts of background pollutant contributions.
- 4) The TMDLs consider the critical environmental conditions.
- 5) The TMDLs consider seasonal environmental variations.
- 6) The TMDLs include a margin of safety.
- 7) There is reasonable assurance that the TMDLs can be met.
- 8) The TMDLs have been subject to public participation.

Table 1 summarizes the TMDL for Northeast River as determined by MDE. There are

three permitted point sources that discharge nutrients to the Northeast River watershed; the Northeast River Wastewater Treatment Plant (WWTP) - permit number MD0052027, the Morning Cheer WWTP - permit number MD0052299, and Cecil County small (Phase II) municipal separate storm sewer system (MS4). Cecil County is a jurisdiction with municipal stormwater discharges to the Northeast River that was considered as a point source of nutrient loads from urban sources during storm events. Cecil County has submitted a Notice of Intent for permit coverage under General NPDES Permit No. MDR055500 for Discharges from Small MS4 as indicated at the following MDE website:

http://www.mde.state.md.us/Programs/WaterPrograms/SedimentandStormwater/storm_gen_permit.asp

Table 1 - Northeast River Nutrient TMDL Summary

Parameter	Rate	TMDL	Wasteload Allocation (WLA)	Load Allocation (LA)	Future Allocation	Margin Of Safety (MOS)
Nitrogen						
critical low flow (May 1-Oct 31)	lbs/month	6,365	4,316	1,886	102	61
average annual flow	lbs/year	168,344	84,268	74,749	5,829	3,498
Phosphorus						
critical low flow (May 1-Oct 31)	lbs/month	673	550	113	6	4
average annual flow	lbs/year	12,110	7,906	3,763	276	165

The TMDL is a written plan and analysis established to ensure that a waterbody will attain and maintain water quality standards. The TMDL is a scientifically-based strategy which considers current and foreseeable conditions, the best available data, and accounts for uncertainty with the inclusion of a “margin of safety” (MOS) value. Conditions, available data, and the understanding of the natural processes can change more than what was anticipated by the MOS. The option is always available to refine the TMDLs for re-submittal to USEPA for approval.

II. Summary

The Northeast River watershed (basin code 02-13-06-08) is located in Cecil County in the extreme reaches of the Maryland portion of the Chesapeake Bay watershed. The land use in the Northeast River watershed is predominately forest/herbaceous with significant amounts of mixed agriculture and some development. There are three point sources in the watershed, the Northeast River WWTP, the Morning Cheer WWTP and the Cecil County Phase II, MS4. Additional information about the Northeast River watershed is included in Section 2.1 of the TMDL Report. Figures 1 through 3 of the TMDL report show the location of the Northeast River and land uses in the watershed.

Northeast River was identified on the State of Maryland's 1996 Section 303(d) list for water quality-limited segments as being impaired by nutrients due to signs of eutrophication, expressed as high chlorophyll *a* levels, suspended sediments, lead, and zinc. An additional listing of biological impacts was added for the non-tidal portion in the 2002 303 (d) list. This TMDL addresses the nutrient listing of the Northeast River watershed.

The water quality impairments of Northeast River consist of a violation of Maryland's general narrative standard applicable to the designated use of the water in Maryland's regulations as a result of excess nutrient enrichment of the Northeast River system. The Maryland water quality standards Surface Water Use Designation [Code of Maryland Regulations (COMAR 26.08.02.070)] for Northeast River is Use I -water contact recreation, fishing, and protection of aquatic life and wildlife. Maryland currently has numeric water quality criteria [Code of Maryland Regulations (COMAR 26.08.02.03-3)] where dissolved oxygen (DO) may not be less than 5 mg/l at any time for the Use I designation, and while these criteria did not appear to be in exceedance from the 1999 data set, the high concentrations of Chlorophyll *a* suggest the possibility of low DO. Under the Code of Maryland Regulations (COMAR), "all waters of this State shall, wherever attainable, be protected for the basic uses of water contact recreation, fishing, protection of aquatic life and wildlife, and agricultural and industrial water supply." The TMDL analysis indicates that nitrogen and phosphorus loadings have resulted in Chlorophyll *a* levels above 50 ug/l, which can be associated with excessive eutrophication that results in excess algal blooms. Excessive algal growth can lead to violations of the numeric DO criteria, associated fish kills, and the violation of various narrative criteria associated with nuisances, such as odors, and impedance of direct contact use and the loss of habitat for the growth and propagation of aquatic life and wildlife.

The CWA Section 303(d) and its implementing regulations require that TMDLs be developed for waterbodies identified as impaired by the state where technology-based and other required controls do not provide for attainment of the water quality standards. The TMDL submitted by MDE is designed to attain acceptable loadings of nitrogen and phosphorus into the Northeast River in order to attain the narrative water quality criteria and support the Use I designation. Refer to Table 1 above for a summary of allowable loads.

III. Discussion of Regulatory Conditions

USEPA finds that MDE has provided sufficient information to meet all of the eight basic requirements for establishing a nutrient TMDL for Northeast River using the information available at the time. This approval is outlined below according to the eight regulatory requirements, with qualifications as appropriate.

1) *The TMDLs are designed to implement applicable water quality standards*

Water Quality Standards consist of three components: designated and existing uses; narrative and/or numerical water quality criteria necessary to support those uses; and an anti-degradation statement. The Maryland water quality standards Surface Water Use Designation [Code of Maryland Regulations (COMAR 26.08.02.070] for Northeast River is Use I - water contact recreation, fishing, and protection of aquatic life and wildlife. Maryland has a general water quality criteria that prohibit pollution of waters of the State by any material in amounts sufficient to create nuisance or interfere with designated uses (COMAR 26.08.02.03B(2)). Nutrient enrichment of the Northeast River system during critical low flow period, as reflected in Chlorophyll *a* level greater than 50 ug/l in the poorly flushed tidal embayment have led to violations of this standard. The TMDL analysis indicates that nitrogen and phosphorus loadings from non-point sources (NPS) have resulted in Chlorophyll *a* concentrations above the desired level of 50 ug/l; including occasional exceedances in the upper reaches of the River. While there are point source contributions, they are less than NPS contributions in the Northeast River.

Maryland currently has numeric water quality criteria [Code of Maryland Regulations (COMAR 26.08.02.03-3] where dissolved oxygen (DO) may not be less than 5 mg/l at any time for the Use I designation. DO concentrations were not observed to be below the minimum criteria of 5.0 mg/l in samples collected in 1999, however, the high concentrations of Chlorophyll *a* suggest the possibility of low DO concentrations from diurnal variations in oxygen due to algal respiration during non-daylight hours.

The TMDLs overall objective is to reduce nitrogen and phosphorus loads to levels that are expected to result in meeting water quality criteria associated with eutrophication that support the Use I designation of the river. Specifically, reduction in the phosphorus and nitrogen loads is intended to control excessive algal growth. Excessive algal growth can result in violations of the numeric DO criteria, associated fish kills, and the violation of various narrative criteria associated with nuisances, such as odors, and impedance of direct contact use and the loss of habitat for the growth and propagation of aquatic life and wildlife.

2) *The TMDLs include a total allowable load as well as individual waste load allocations and load allocations.*

Total Allowable Load

USEPA regulations at 40 CFR 130.2(i) state that the total allowable load shall be the sum of individual waste load allocations for point sources, load allocations for nonpoint sources, and natural background concentrations. The TMDL for nitrogen and phosphorus for the Northeast

River is consistent with 40 CFR 130.2(i) because the total load provided by MDE equals the sum of the wasteload allocations for point sources and the land-based load allocations for nonpoint sources. Pursuant to 40 CFR 130.6 and 130.7(d)(2), this TMDL and supporting documentation should be incorporated into Maryland's current water quality management plan. See Table 1 for a summary of allowable loads.

Waste Load Allocations

TMDLs are being established for both low flow and average annual flow conditions in the Northeast River. Excessive algal growth can occur during critical low flow conditions (i.e. summer months,) when the river is poorly flushed. During this critical time, there can be water quality problems associated with excessive nutrient enrichment as a result of sunlight and warm water temperatures. Since this critical condition is considered only for part of the year, the units for loading during low flow conditions are expressed on a monthly basis rather than yearly.

The watershed contains three point sources; the Northeast River WWTP, the Morning Cheer WWTP and the Cecil County Phase II MS4. The TMDL provides point source waste load allocations of 4,316 lbs/month for Total Nitrogen (TN) and 550 lbs/month for Total Phosphorus (TP) for Summer Low Flow conditions and 84,268 lbs/year TN and 7,906 lbs/year TP for Average Annual conditions. The WWTP source waste load allocations for the summer low flow and average annual conditions represent the maximum load associated with approved water and sewer plan flows. For the Northeast WWTP, concentrations were set to achieve water quality goals to a maximum of TN of 8 mg/l and TP of 1 mg/l. While the Morning Cheer WWTP, with minor discharge of 0.055 mgd, is assumed to have concentrations for TN and TP the same as the current plant concentrations with no additional treatment. Annual waste load allocations for Cecil County Phase II MS4 are based on the observed 1999 data collected by MDE. The load for average annual condition for the MS4 was computed as the product of the observed concentrations and estimated average flow. Since there was not enough data to assess the load for this point source under the critical low flow condition for the MS4, it was considered as part of the NPS load allocation for the critical low flow condition.

Maryland provided a future allocation in the TMDL to account for any potential future point source allocation. The future allocation comprises 5% of the TMDL. EPA concurs with Maryland's approach to establish a future allocation given the lack of information about potential existing and future point sources.

Load Allocations

Maryland provided adequate land use and loading data in the TMDL report, but was unable to distribute the total load allocation to specific land use categories for the low flow

TMDL allocation in the TMDL report as there are insufficient data available. Maryland included a load allocation in the TMDL of 1,886 lbs/month TN and 113 lbs/month TP for the summer, critical low flow condition and 74,749 lbs/yr TN and 3,763 TP for the average annual flow. The summer, critical low flow condition includes the urban stormwater loads from Cecil County MS4. This gross load allocation is presented in Table 1. NPS source loading rates represent a cumulative impact from all sources, including naturally occurring and human-induced sources.

According to Federal regulations at 40 CFR 130.2(g), load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loadings should be distinguished.

Allocations Scenarios

The TMDL calls for an overall 44% TN and 42% TP reduction in NPS loading to Northeast River during the low flow baseline scenario, whose loads were derived from nutrient concentrations observed in 1999. The balance of the total allowable for summer low flow load include the waste load allocations for the point sources, 5% FA and 3% MOS summer low flow condition.

NPS nitrogen and phosphorus for average annual conditions were estimated from MDE observed data calling for an overall 48% reduction in nitrogen and phosphorus NPS loads in all subwatersheds. The NPS loads assumed in the model account for both natural and human-induced components. The balance of the total allowable load for the average annual flow conditions include point source waste load allocations, 5% FA and 3% MOS. As refinement of this TMDL and implementation of the TMDL proceeds, Maryland may find that other combinations of allocations are more feasible and/or cost effective. However, any subsequent changes in the TMDLs must conform to gross waste load and load allocations and must ensure that the biological, chemical, and physical integrity of the waterbody is preserved.

Federal regulations at 40 CFR 122.44(d)(1)(vii)(B) require that, for an NPDES permit for an individual point source, the effluent limitations must be consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the state and approved by USEPA. USEPA has authority to object to the issuance of an NPDES permit that is inconsistent with wasteload allocations established for that point source. To ensure consistency with these TMDLs, if an NPDES permit is issued for a point source that discharges one or more of the pollutants of concern in the Northeast River watershed, any deviation from the wasteload allocation and future allocation established in the TMDL Report, and described herein for a point source must be documented in the permit Fact Sheet and made available for public review along with the proposed draft permit and the Notice of Tentative Decision. The documentation should: 1) demonstrate that the loading change is consistent with the goals of the TMDL and will implement the applicable water quality standards, 2) demonstrate that the changes embrace the assumptions and methodology of these TMDLs and Technical Memorandum, and, 3) describe

that portion of the total allowable loading determined in the State's approved TMDL report that remains for any other point sources (and future growth where included in the original TMDL) not yet issued a permit under the TMDL. It is also expected that Maryland will provide this Fact Sheet for review and comment to each point source included in the TMDL analysis as well as any local and State agency with jurisdiction over land uses for which load allocation changes may be impacted. It is also expected that MDE will require periodic monitoring of the point source(s) for nitrogen and phosphorus, through the NPDES permit process, in order to monitor and determine compliance with the TMDL wasteload and future allocations.

In addition, USEPA regulations and program guidance provides for effluent trading. Federal regulations at 40 CFR 130.2(i) state: "if Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations may be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs." The state may trade between point sources and nonpoint sources identified in this TMDL as long as three general conditions are met: 1) the total allowable load to the waterbody is not exceeded; 2) the trading of loads from one source to another continues to properly implement the applicable water quality standards and embraces the assumptions and methodology of this TMDL; and, 3) the trading results in enforceable controls for each source. Final control plans and loads should be identified in a publicly available planning document, such as the state's water quality management plan (see 40 CFR 130.6 and 130.7(d)(2)). These final plans must be consistent with the goals of the approved TMDL.

Based on the foregoing, USEPA has determined that this TMDL is consistent with the regulations and requirements of 40 CFR Section 130. Pursuant to 40 CFR 130.6 and 130.7(d)(2), this TMDL and the supporting documentation should be incorporated into Maryland's current water quality management plan.

3) *The TMDLs consider the impacts of background pollutant contributions.*

The nutrient limits for point sources, reflected in the TMDL analysis, are designed to protect local water quality. It is likely, however, that future Chesapeake Bay Agreement nutrient reduction goals will entail more ambitious point source nutrient limits to protect water quality of the bay. Low flow NPS loads were derived from the August 1999 data multiplied by the estimated critical low flows and account for both "natural" and human induced components and cannot be separated into specific source categories. Annual average loads were estimated by averaging all the 1999 MDE surveys. Because the loads are based on observed concentrations to calibrate the model and estimate the annual average flow scenario, they reflect natural and human sources, including atmospheric deposition, septic tanks, urban development, agriculture, and forestland.

4) *The TMDLs consider critical environmental conditions.*

USEPA regulations at 40 CFR 130.7(c)(1) require TMDLs to account for critical conditions for stream flow, loading, and water quality parameters. The intent of the regulations

is to ensure that 1) the TMDLs are protective of human health, and 2) the water quality of the waterbodies is protected during the times when they are most vulnerable.

Critical conditions are defined as those that violate applicable water quality criteria – in this case, the minimum DO concentration of 5.0 mg/l would not be assured . The TMDL addresses the critical value for this parameter, by assigning TN and TP TMDLs for point source and NPS which would maintain the minimum DO concentration throughout the Northeast River System. It is expected that the critical condition for nutrient enrichment that would lead to not meeting the minimum DO water quality criteria occurs during low flow conditions. Consequently, the TMDL has allocations accounting for the low flow critical condition in addition to the average annual flow condition.

5) *The TMDLs consider seasonal environmental variations.*

USEPA regulations at 40 CFR 130.7(c)(1) require TMDLs to account for critical conditions for stream flow, loading, and water quality parameters. The intent of the regulations is to ensure that 1) the TMDLs are protective of human health, and 2) the water quality of the waterbodies is protected during the times when they are most vulnerable.

Seasonal variations involve changes in flow as a result of hydrologic and climatological patterns. In the continental United States, seasonally high flow normally occurs during the colder period of winter and in early spring due to snowmelt and spring rain, while seasonally low flow typically occurs during the warmer summer and early fall drought periods.¹

The nutrient TMDL analyses presented consist of an assessment of low flow loading conditions and a projected loading for average annual flow condition. The low flow TMDL analysis investigates the critical conditions under which symptoms of eutrophication are typically most acute, that is, in late summer when flows are low, leading to poor flushing of the system, and when sunlight and temperatures are most conducive to excessive algal growth.

In addition, the concentrations of nitrogen and phosphorus are modeled in their speciated forms. The dissolved forms of nutrients are more readily available for biological processes such as algae growth, which affect chlorophyll *a* levels and DO concentrations. The ratios of total nutrients to dissolved nutrients used in the model scenarios represent normalized values that have been measured in the field. These ratios are not expected to vary within a particular flow regime. Thus, a total nutrient value obtained from these model scenarios, under a particular flow regime, is expected to be protective of the water quality criteria in Northeast River.

6) *The TMDL includes a margin of safety*

¹ USEPA, 1997. Technical Guidance Manual for Developing Total Maximum Daily Loads, Book 2, Part 1, Section 2.3.3 USEPA 823-B-97-002.

The requirement for a margin of safety (MOS) is intended to add a level of conservatism to the modeling process in order to account for uncertainty. Based on USEPA guidance, the MOS can be achieved through two approaches. One approach is to reserve a portion of the loading capacity as a separate term, and the other approach is to incorporate the MOS as conservative assumptions used in the TMDL analysis.

Both of the above-mentioned approaches were used to develop the MOS for these TMDLs. Following the first approach, the reserved load allocated to the MOS was computed as 5% of the NPS loads for nitrogen and phosphorus minus the Future Allocation (FA). For the low flow TMDL, this MOS represents 3% of the total NPS loads. Similarly, 5% of the total NPS loads and a 3% of the total NPS loads represent the FA and the MOS in the average annual TMDL.

For the second approach, in addition to the assigned MOS term above, additional safety factors are built into the TMDL modeling process through use of conservative assumptions. See the TMDL for a more in depth discussion.

7) *There is reasonable assurance that the TMDL can be met.*

USEPA requires that there be a reasonable assurance that the TMDL can be implemented. Wasteload allocations, as applicable, will be implemented through the NPDES permit process. According to 40 CFR 122.44(d)(1)(vii)(B), the effluent limitations for an NPDES permit must be consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the state and approved by USEPA. Furthermore, USEPA has the authority to object to issuance of an NPDES permit that is inconsistent with wasteload allocations established for that point source.

In addition, Maryland has several well-established programs that will be drawn upon, including Maryland's Tributary Strategies for Nutrient Reductions developed in accordance with the Chesapeake Bay Agreement. Also, Maryland's Water Quality Improvement Act of 1999 requires that nutrient management plans be implemented for all agricultural lands throughout Maryland. Finally, Maryland has adopted a watershed cycling strategy, which will assure that routine future monitoring and TMDL evaluations are conducted.

In addition to the above measures, EPA Regions 4 and 6 have indicated that reductions in atmospheric contributions will be accomplished over time through existing and proposed Clean Air Act regulatory controls that will ensure significant reduction in airborne nutrient loading on a nationwide basis by reducing atmospheric emissions. Additionally, the following actions taken by EPA and the State of Maryland are also underway to assure the reduction of air deposition:

- To date, EPA has promulgated approximately 100 New Source Performance Standards under Section 111 of the Clean Air Act (CAA), of which about ten directly control nitrogen oxide (NO_x) emissions;

- Because NOx is a precursor to ozone, Maryland and other states must apply similar requirements to major stationary sources of NOx emissions, including application of reasonably available control technology;
- The CAA Acid Rain Program specifies a two-part strategy to reduce NOx emissions from coal-fired electric power plants. EPA estimates that this program has resulted in 40% reductions in NOx emission rates from large utility boilers, and additional controls are expected over the next several years:
- In 1994, Maryland and other states signed a Memorandum of Understanding to achieve regional emission reductions of NOx (a.k.a. “OTC NOx Budget Program”). The agreement calls for the adoption of regulations to reduce NOx emissions in 1999 and further reduce emissions in 2003:
- In 1998, EPA issued the “NOx SIP Call” which assigns a cap on summertime NOx emissions to be achieved by 2007;
- In 1999, EPA announced new limits for tailpipe emissions of NOx. These standards would require a 77% emissions reduction in cars over the next ten years;
- The proposed Clear Skies Act of 2003, aimed at power plants, estimates to reduce NOx emissions from Maryland sources by 70% by 2020, and 77% reductions in total NOx emissions in Maryland from 2000 levels. The estimated NOx deposition to the Chesapeake Bay watershed would be reduced up to 20%;
- Maryland and the other Chesapeake Bay states have agreed to incorporate nitrogen reductions resulting from the Clear Skies legislation as part of the overall plan to reduce nutrient loadings to the Bay.

The EPA expects to see reduced emissions as a number of regulations are implemented to control sulfur dioxide and nitrous oxides emissions. These controls for atmospheric emissions are expected to be implemented in phases.

8) *The TMDL has been subject to public participation.*

MDE provided an opportunity for public review of and comment on the nitrogen and phosphorus TMDL for the Northeast River. The public review and comment period was open from November 5, 2003 to December 4, 2003. MDE received comments from the USEPA and Cecil County Department of Public Works.

On March 15, 2003, EPA initiated consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7(c) of the Endangered Species Act, regarding certain federal agency actions by EPA Region III regarding the nitrogen and phosphorous for the Northeast River in Maryland. On April 21, 2004, EPA received concurrence from the National Marine Fisheries Service that our action in approving this TMDL is not likely to adversely affect endangered species and their critical habitat. On June 26, 2003, EPA initiated informal consultation with U.S. Fish and Wildlife Service (FWS) also pursuant to Section 7(c) of the Endangered Species Act, regarding certain federal agency actions by EPA Region III regarding

Maryland TMDL. EPA received consultation from FWS on March 8, 2004.