

New York State Tributary Strategy for Chesapeake Bay Restoration
Response to Comments **September 2007**

The New York State Department of Environmental Conservation (DEC) received written public comments from seven entities on the draft *New York State Tributary Strategy for Chesapeake Bay Restoration, an interim plan based on the Chesapeake Bay Program watershed model, version 4.3* (Strategy). The draft Strategy was released for public comment on May 9, 2007 with a public comment period ending July 9, 2007. The comments and responses are organized in the following categories: tributary strategy goals, wastewater treatment plant (WWTP) approach, economic growth, and funding. The number at the end of each comment corresponds to the list of entities who provided comments, which can be found at the end of this document.

Tributary Strategy goals

Comment:

- DEC is looking for 38% reduction in nitrogen and 52% reduction in phosphorus from wastewater treatment plants. We believe this represents an undue burden on WWTPs, when we are next to last on the list of contributors of these two elements. (3)
- A significant source of nitrogen is from air emissions from beyond New York, yet New York WWTPs are responsible for removal(3)
- It has been reported that the quality of water leaving New York State into Chesapeake tributaries is such that of itself, the New York water quality does not pose a pollution risk, and if all the other contributors to the Chesapeake tributaries met New York State levels, no further action would be required. So, this draft Strategy is making New York State pay for pollution created by downstream states (3)

Response 1:

- *WWTP discharges are specifically regulated by the Clean Water Act (CWA). Accordingly, WWTP discharge permits are required to limit to a reasonable extent the discharge of pollutants which cause or contribute to a contravention of water quality standards. Although the WWTP discharge permits in New York currently comply with New York water quality standards, they all do not limit the discharge pollutants (nitrogen and phosphorus) that contribute to a contravention of water quality standards in Chesapeake Bay. The present understanding, based on the current version of the Chesapeake Bay Program (CBP) watershed model, is that New York WWTP discharges make up about 10 and 20 percent, respectively, of New York's nitrogen and phosphorus contribution to Chesapeake Bay. Other states also are reducing nutrient loads from WWTPs and other sources.*

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Consistent with the State of New York's agreement to work cooperatively to achieve nutrient reduction in its portion of the watershed, the DEC developed Strategy reduction goals for New York nutrient sources after its analysis of cost-effectiveness, shared responsibility among sources, including agriculture and atmospheric deposition, and interest also to accomplish significant reductions from such nonpoint sources. These nonpoint sources generally are not regulated by the CWA, so they are not controlled through permits but through other programs. The analysis reveals that it is not reasonable to achieve current reduction goals only from nonpoint sources and that the WWTP reduction goals and approach are reasonable.

The overall Strategy goal for WWTP discharges combined is a 38 and 52 percent reduction, respectively, for nitrogen and phosphorus. Because the largest WWTP discharge in the New York portion of the Chesapeake Bay watershed has recently completed a major capital upgrade including the best available technology for nitrogen removal, the reduction anticipated from other individual WWTPs may be less than 38 and 52 percent; and less than the application of best available treatment technology.

As described in this Strategy, the DEC will develop more specific reduction goals for individual WWTPs pending future actions of the CBP and based on the outcome of the action level - optimization Strategy step. Future CBP actions include, the release of the next version of the watershed model in 2008, the planned re-evaluation of the jurisdictional nutrient cap load allocations in 2009, and the development, if necessary, of a Chesapeake Bay watershed total maximum daily load (TMDL) in 2010/2011. TMDL development also is guided by the CWA and must identify specific load allocations for WWTP discharges and nonpoint sources.

Comment:

- Other nonpoint sources such as septic systems produce more nutrients than WWTPs, yet by requiring WWTPs to upgrade or requiring new WWTPs to incorporate nutrient removal, the added costs will act to deter either upgrades or new WWTPs. This will leave the septic sources in place(3)

Response 2:

Based on the current version of the CBP watershed model, the present understanding is that septic systems make up about four and 0 percent, respectively, of New York's nitrogen and phosphorus contribution to Chesapeake Bay. The Strategy is to address areas with improperly functioning septic systems through existing regulatory and education programs. This Strategy does not replace local priorities and oversight of residential septic systems. Because of local water quality and sanitation concerns, properly designed, constructed, operated and maintained septic systems remain important.

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New York's approach is to reserve ten percent of the wastewater Strategy goals for new and expanded WWTP discharges, in part, to accommodate potential remedial actions in areas with improperly functioning septic systems. For New York, constructing sophisticated individual household systems for total nitrogen removal is not a cost effective approach to help achieve Strategy goals.

Comment:

- Another key component of the Strategy is that the Bay model agrees with NYS assumptions on total loads and their impact to the Bay. Please provide information related to the process of modifying the strategy if these assumptions are not valid. Will modifications to the strategy undergo another comment period? (1,2)

Response 3:

Consistent with the planned release of the next version of the CBP watershed model in 2008, the CBP partnership has begun preparations to re-evaluate tributary cap load allocations throughout the Chesapeake Bay watershed. The re-evaluation is expected to be completed in 2009 and the outcomes will be publically available. It is likely that the CBP will subsequently develop a watershed wide TMDL in the 2010/2011 time frame. This TMDL would include a formal public comment period.

The new model, being more refined and calibrated to a monitoring station closer to New York, will help to reduce uncertainty of our nutrient and sediment contributions. Accordingly, the DEC expects to re-evaluate and refine this Strategy during the 2010/2011 time frame. Any substantive change to the Strategy will include public participation and a comment period.

Comment:

- Need more focus on riparian zones. (7)

Response 4:

The Strategy places a priority on riparian zones from several standpoints, primarily in agricultural best management practices, road and stream corridor education and maintenance, and through association with the DEC's Comprehensive Wildlife Conservation Strategy, <http://www.dec.ny.gov/animals/30483.html>. This strategy identifies the negative affect of riparian buffer loss on species of greatest conservation need in the Susquehanna Basin and includes management, restoration and protection of stream buffers as a priority issue.

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WWTP approach

Comment:

- In terms of the proposals for establishing limits, we are concerned that WWTPs which have made recent capital improvements may be required to achieve removal levels based on the plant as improved, without regard to the improvements that were made before you started collecting data on nitrogen and phosphorus levels. So, if a WWTP completed a capital improvement in 2001, you will require a 38% N reduction and a 52% P reduction based on that plant's 2005-2006 data. (3)

Response 5:

Past upgrades are taken into account by the use of action level thresholds. For instance, no additional nutrient optimization is suggested if a WWTP is currently performing at or below the action level thresholds of 2 mg/l phosphorus or 12 mg/l nitrogen. In addition, as described in steps three and four of the WWTP Strategy approach, the ultimate goal is to identify further individual WWTP nutrient load reductions in the most cost effective manner, after the new watershed model and re-evaluation are completed and should a TMDL ultimately become necessary. Those WWTPs removing more nutrients today typically show less promise for cost-effective major capital upgrades for additional nutrient removal.

At this time, no individual plant is required to achieve a 38 or 52 percent reduction, respectively, of nitrogen and phosphorus. To accomplish cost-effective reductions, individual goals will be plant specific and the overall goal already is helped by the fact that the largest WWTP has recently completed a major capital upgrade to remove about two-thirds of its nitrogen discharge load.

Comment:

- It appears one of the key components of the strategy is the ability of the Binghamton - Johnson City (BJC) WWTP to meet a total nitrogen limit of 4 mg/l at 35 mgd. However, their current draft permit is for 6 mg/l at 35 mgd. The TS should address the impacts if the BJC facility cannot meet 4 mg/l. (1,2)

Response 6:

The referenced modification does not alter the Strategy approach because the nitrogen limit described is an interim concentration limit. Considering the innovative application of Biological Aerated Filtration technology at this facility, the permit continues to be written to develop a final performance-based concentration limit after a post construction treatment study is completed and also to develop an associated loading limit, expressed as a 12-month rolling average. Because this is a combined sewer system,

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a two-year study is needed to evaluate performance over widely varying flow and loading conditions, and in light of ongoing sewer separation work. Consistent with the Strategy approach to develop final limits commensurate with the level of treatment provided, the text in tables 7 and 8 has been clarified with respect to future nutrient loads from this WWTP by postponing reference to specific loadings until final permit limits are developed.

Comment:

- Several facilities may be required to optimize total nitrogen and total phosphorus removal through completion of operation or minor capital improvements. There is a concern that action levels will be lowered in response to proposed optimization improvements. Please clarify the state's position regarding this matter. (1,2)

Response 7:

The Strategy approach is to cap nutrient loading commensurate with the level of treatment currently provided using action levels beginning in 2007. In 2008, the next version of the CBP watershed mode will be available. A re-evaluation the jurisdictional cap load allocations will occur in 2009. In the 2010/2011 time frame, it is likely that a total maximum daily load (TMDL) for the whole Chesapeake Bay watershed will be developed. Considering the sequence and results of these events, the DEC will develop effluent limits. In so doing the DEC also will consider the results of the nutrient action level/optimization step, which is expected to identify cost effective options for additional nutrient reduction as necessary to achieve Strategy goals. The DEC also may have to consider the results of the potential development of numeric water quality standards for nitrogen and phosphorus in flowing waters in New York. The USEPA is directing states to develop such standards.

Comment:

- Based on a recent court's decision, total maximum daily load is defined as a maximum day. However, NYSDEC tributary strategy is utilizing an annual cap load. NYSDEC should address the recent court's decision of the definition of TMDL and its impact on the strategy. (1,2)

Response 8:

The Strategy is not a TMDL. If a TMDL is developed, DEC understands, while the TMDL will need to include an expression of maximum daily loads, that permits do not have to be expressed in the same form; that the permit writer has the flexibility to express effluent limitations using a time frame appropriate to the waterbody, pollutant and the applicable water quality standard. Annual cap loads are consistent with the jurisdictions and EPA December 2004 "NPDES Permitting Approach for discharges of Nutrients in the Chesapeake Bay Watershed."

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Comment

- What is the time allowance for completion of optimization study? (1,2)
- What is the time allowance for completion of optimization improvements? (1,2)
- What is the NYSDEC's definition of minor capital improvement? Who determines if a capital improvement is minor or major? (1,2)

Response 9:

From the time a permit is modified to add the action levels, a seven-month period is allotted to complete an optimization study. To account for individual circumstances, no specific date is provided to complete optimization improvements. The goal is to have optimization completed in as timely a manner as is practicable. There is no hard and fast definition or specific dollar amount to differentiate between minor and major capital improvements. The DEC will make such determinations using a common sense approach, based upon information submitted from individual WWTPs. In general, construction of new treatment vessels or major process equipment, such as a new concrete tank for denitrification treatment or new belt press for sludge dewatering would be major capital expenses. Whereas, a chemical storage tote, chemical metering pump, clarifier baffle or new piping to allow more flexible treatment options would be considered minor capital expenses.

Comment:

- The town supports extending the phosphorus ban on household cleaning products to include automatic dishwasher detergents since this will help our treatment plants reduce their phosphorus levels. (6)

Response 10:

The DEC appreciates the expression of support. This source control also reduces energy consumption, chemical usage and sludge production that would occur from removing phosphorus at a WWTP. Reducing phosphorus levels in residential wastewater also helps to lessen phosphorus loadings from residential septic systems. The DEC is taking steps to initiate the required amendment to Environmental Conservation Law section 35-0105(2) to remove the exception for automatic dishwashing detergent from the ban on household cleansing products containing phosphorus. In any event, phosphorus-free automatic dishwashing detergent is commercially available.

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Comment:

- Expect that it will be difficult to find qualified personnel to run the upgraded plants (4)

Response 11:

WWTP operator training, including phosphorus and nitrogen removal treatment, and certification continue to be priorities of the DEC. The Strategy indicates more widespread phosphorus reduction and phosphorus removal treatment uses generally employed technologies. On the other hand, the Strategy indicates more targeted application of nitrogen removal and the DEC recognizes that nitrogen removal involves more sophisticated applications of treatment technology. The DEC will consider this Strategy in its operator training plans.

Comment

- Look for sludge disposal that does not involve dewatering, which returns centrate to plant; liquid portion of sludge is high in Nitrogen. (5)

Response 12:

This is a promising suggestion and it will be brought forward in the context of the nutrient removal optimization studies.

Economic Growth

Comments:

- Increased WWTP costs passed on to industrial users, make the costs of doing business in NY even greater. Also if industry has to provide its own treatment, such industry may choose not to locate in New York State. (3)
- Another devastating impact to the economy may occur if we are required to limit intake levels. New restrictions on industrial users can force these employers to relocate. (3)
- Industrial development is further restricted by establishing limits on actual flow not design capacity. In addition some plants, like ours, may have already developed plans for expansion. (3)
- Concerns of unfunded mandates, undue burdens on ratepayers, the potential for restricting industrial growth in NYS, and the potential for forcing industries out of NYS will be given due consideration before the draft TS becomes burdensome regulation. (3)
- You need to plan the upgrade to include future growth (4)

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Response 13:

Others areas in New York and other states have similar issues with nutrient enrichment related water quality impairments, and water quality based effluent limits are becoming more prevalent throughout the country. Within this basin in New York, discharges to

some lakes and reservoirs already have phosphorus limitations. In addition, the USEPA is actively pursuing states to develop numeric water quality nutrient criteria for streams and lakes.

The WWTP stepped approach, and recognition of future Strategy refinements based on the new watershed model and associated CBP actions, acts to alleviate undue burden on New York entities by seeking to identify cost effective solutions. Also, in some respects, efforts to protect clean water resources can attract economic growth.

The Strategy does not require WWTPs to limit industrial users, but leaves it as an option for individual facilities to consider. There may be cases where, without undue burden, industrial users could use alternative ingredients or cleansers, or divert waste streams, perhaps at a savings, that would reduce the nutrient content of their wastewater.

The action level loading is based on permitted flow, not actual flow. As is often the case in water quality limited waters, WWTPs may expand, but with added treatment to keep pollutant loadings the same. In addition, 10% of the overall WWTP Strategy goal is set aside to accommodate new discharges. While nutrient removal is not explicitly required, it is encouraged from new smaller facilities.

Comment:

- It is not equitable for some towns with capacity in their plant to be able to out compete other towns without capacity for new industries. (3)

Response 14:

The WWTP approach is to achieve reductions at the lowest cost without penalizing any individual facility. Consistent with smart growth principles encouraged in the Strategy, growth is better suited in areas where there is already investment in applicable infrastructure.

Costs/Funding

Comments:

- Requiring WWTPs to reduce the amount of nitrogen and phosphorus in their effluent is another example of unfunded mandates. This cost must be passed on to our ratepayers, creating an undue burden on many, especially those living on fixed incomes. (3)

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- We are very concerned about the cost impacts to our communities and feel that this program should have a designated funding source (full grants - not loans). Smaller communities, such as ours, are not in a financial position to outlay significant capital costs for our treatment plants. Our community's taxpayers are already taxed to death, such that people and businesses are leaving our area. Our city sits with mostly vacant stores and businesses on the main streets. Many more homes are being foreclosed upon for back taxes. It's great to consider such wonderful environmental programs, but we want to know...just WHO is going to pay for them? (1)
- We are very concerned about the cost impacts to our communities and feel that this program should have a designated funding source. Our city has recently completed a major capital project at our wastewater treatment plant which has significantly improved performance and reliability. An additional capital project (with its associated O&M costs) at this time would severely impact our residential, commercial and industrial users. (2)
- While the town recognizes the benefits of lower nitrogen and phosphorus levels for the Chesapeake Bay, we have great concern about the money that will be needed to meet these goals. We feel that there must be Federal funds made available to WWTP owners, both for additional operation and maintenance costs that will be needed the goal of 12 mg/l TN and 2.0 mg/ TP, and also for any major capital upgrades that are needed to meet the Chesapeake Bay Restoration goals. (6)
- Make funding available for capital costs, grants and loans (4)
- Our plant would require over 82% increase in operating costs per year to remove nutrients. How do you sell that to our rate payers? (4)
- 2005 costs need to increase due to steel and copper increases (4)
- Need more funding and personnel attainment strategy for implementation. (7)
- Include a Chesapeake Bay Program funding recommendation in each section and summarize funding needs in separate section. (5)

Response 15:

In the BJC example federal financial assistance for nutrient removal helped to reduce the burden on local rate payers. Such federal/state and local funding support is a model DEC emphasizes as necessary to accomplish additional major capital upgrades.

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The CWA requires WWTPs to participate where pollutants in wastewater cause or contribute to the non-attainment of water quality standards. Although New York WWTPs will incur costs by first achieving reductions through existing requirements and the action level - optimization step, having a strategy in place will facilitate state and federal financial support.

In light of the pending release of a new watershed model and planned re-evaluation of cap load allocations, it is premature to itemize specific funding needs at this point in time. For nonpoint sources we anticipate that implementation plans being developed by the Upper Susquehanna Coalition will identify funding needs and potential and realized funding sources. Nonpoint source project implementation will occur as current and potential funding sources allow. For WWTPs the DEC anticipates that the action level/treatment optimization step will identify the most cost effective opportunities for large capital upgrades, which is a necessary precursor to then identify appropriate funding sources.

Comments were received from the following entities:

1. Gale E. Wolfe, P.E., Director of Environmental Services, Chemung County Sewer District No.1, Chemung County Elmira Sewer District, Chemung County Solid Waste Management
2. Michael A. Harris, Superintendent of Public Works, City of Corning
3. Honorable Thomas M. Tammaro, Supervisor, Town of Erwin
4. Carl P. Iverson, Department of Public Works, City of Norwich
5. Philip DeGaetano, NYSDEC Division of Water (retired)
6. Honorable Carol B. Sweeney, Supervisor, Town of Owego
7. Anonymous