



Connecticut Department of Environmental Protection

Gina McCarthy, Commissioner



Branford, Connecticut Wastewater Treatment Facility*

Report of the Nitrogen Credit Advisory Board To the Joint Standing Environmental Committee Of the General Assembly

May 19, 2006

79 Elm Street
Hartford, CT 06106-5127

**REPORT OF THE NITROGEN CREDIT ADVISORY BOARD
FOR THE CALENDAR YEAR 2005**

**TO THE JOINT STANDING ENVIRONMENT COMMITTEE
OF THE GENERAL ASSEMBLY**

Concerning the

NITROGEN CREDIT EXCHANGE PROGRAM

**As required by
Sections 22a-521 through 527
Connecticut General Statutes**

May 19, 2006

**Report to the Joint Standing Environment Committee of the General Assembly
Concerning the Nitrogen Credit Exchange Program**

**As required by
Sections 22a-521 through 527 of the Connecticut General Statutes**

This report has been prepared by the Nitrogen Credit Advisory Board and is respectfully submitted to the Joint Standing Environment Committee of the General Assembly pursuant to the requirements of Sections 22a-521 through 527 CGS. Section 22a-523 requires that the Nitrogen Credit Advisory Board submit to the Joint Standing Environment Committee of the General Assembly a report that addresses issues associated with the implementation of the Nitrogen Credit Exchange Program.

*Cover photograph courtesy of Earth Tech, Inc.

MAJOR PROGRAM HIGHLIGHTS

- **The Total Maximum Daily Load (TMDL) for nitrogen discharged into Long Island Sound requires Connecticut to reduce nitrogen from 79 municipal treatment facilities by 64% by 2014.**

- **The TMDL requires an interim step in 2009 to 75% of the reduction required in 2014 from the above 79 wastewater treatment facilities.**

- **In order to meet Connecticut's obligation of the TMDL, it is necessary to adequately fund the Clean Water Fund (CWF) to allow nitrogen removal projects to be built in a timely manner.**

- **There is presently a 410 million dollar backlog of necessary projects to be funded through the CWF for nitrogen removal by 2009.**

Executive Summary

This report covers the progress of the Nitrogen Credit Exchange and the activities of the Nitrogen Credit Advisory Board in calendar year 2005. The Nitrogen Credit Advisory Board achieved a number of important milestones in 2005. The 2004 annual report was issued in December 2004 and did not include all information through the end of the year. A brief summary of the 2004-trading year is included as an appendix of this report. This report provides a summary of the major actions of the Board and identifies important issues. Highlights of the report are as follows:

- The single most critical factor relative to the continued success of the program is the availability of Clean Water Fund financing to support nitrogen removal projects. Requests from municipalities for financing to support nitrogen removal construction projects in the fiscal years 2006 and 2007 exceed the approved priority list funding availability by \$410 million dollars. This demand is the result of a large number of nitrogen removal projects completing design that are ready to be bid for construction. The nitrogen removal projects will need to be constructed in a timely manner in order to ensure compliance with the General Permit for Nitrogen Discharges and the Total Maximum Daily Load (TMDL) for Long Island Sound. The 2006-07 Clean Water Fund budget as approved by the General Assembly and Governor is inadequate to support progress in meeting the requirements of the TMDL. The adequacy of the Clean Water Fund financing section of the report addresses this significant funding shortfall in detail.
- All 79 municipalities regulated under the General Permit for Nitrogen Discharges cooperated fully in implementing the program.
- The nitrogen general permit limit for 2005 was 13,434 equalized pounds per day. Connecticut sewage treatment facilities discharged an average of 14,930 equalized pounds of nitrogen per day during 2005 or 1496 equalized pounds per day greater than the permit limit. **This is the first year of the program where more nitrogen was discharged than required in the permit. A discussion of the ramifications of exceeding the permit is provided in the General Permit section of the report.**

- Jewett City is the only new facility completing an upgrade for nitrogen removal in 2005.
- In 2005, the project facilities funded by the Clean Water Fund removed 3,521,724 equalized pounds of nitrogen at a combined capital, operation and maintenance cost of \$7,430,145.
- The Nitrogen Credit Advisory Board recommended a value of \$2.11 per equalized pound of nitrogen in 2005. This is an increase of 21 cents over the cost of a credit in 2004 (\$1.90).
- 51 wastewater treatment plants purchased credits and 28 wastewater treatment plants sold credits in 2005.
- The Department re-issued the General Permit for Nitrogen Discharges on December 21, 2005. The reissued permit extends the effective period for five years and provides new discharge limits for the years 2006-2010.
- Department of Environmental Protection (Department) staff spoke at several national conferences in 2005 and presented papers on Connecticut's Nitrogen Trading program. The Connecticut nitrogen removal program continues to be considered a national model of a creative approach to watershed based permitting and nutrient credit trading.
- Department staff inspected all of the 79 sewage treatment facilities covered under the general permit at least once during 2005. Only minor discrepancies or problems affecting monitoring data quality were discovered during the inspections. The discrepancies were resolved in cooperation with the municipal officials responsible for operation of the facilities and no formal enforcement actions were required.
- Distressed communities have received priority for additional funding provided by the federal Long Island Sound Restoration Act of 2000 for planning and design of nitrogen removal treatment upgrades. A total of \$9,820,000 in federal support has been received to date. These funds have been used to provide additional grant dollars to distressed communities for planning and design of nitrogen removal projects. Attachment G provides a listing of distressed community planning and design grants to date that are active.
- One Nitrogen Credit Advisory Board position is unfilled pending appointment.

Background

Long Island Sound's (LIS) most pressing water quality problem is caused by over enrichment of nutrients, specifically nitrogen, that leads to greatly reduced levels of dissolved oxygen in the bottom waters of western LIS. The overload of nitrogen fuels excessive growth of algae, which eventually dies, sinks to the bottom and decays. During decay, oxygen is consumed and falls to levels well below those allowable in State Water Quality Standards. Low oxygen levels, or "hypoxia" typically occur during the July through September period. These conditions are inadequate to support healthy populations of fish and shellfish because they disrupt the feeding, growth and reproduction of nearly all forms of aquatic life. Primary sources of nitrogen include municipal wastewater treatment plant discharges, atmospheric deposition and runoff from urban, suburban and agricultural areas.

The federal Clean Water Act requires that the State establish Total Maximum Daily Loads (TMDLs) for all waterbodies that do not meet minimum State Water Quality Standards, such as Long Island Sound. The TMDL establishes the maximum loading for nitrogen Long Island Sound can assimilate without causing impaired water quality, apportions that maximum loading among sources, and lays out a plan to achieve the loading reductions necessary to meet Water Quality Standards. Once the State establishes a TMDL, federal law requires that the TMDL be reviewed and approved by the federal Environmental Protection Agency (EPA). In April 2001, EPA approved Connecticut and New York's jointly submitted TMDL to address the impairment to Long Island Sound water quality that results from excessive nitrogen loading. In this TMDL, discharges from sewage treatment plants (STPs), storm water runoff and atmospheric deposition, the primary sources of nitrogen enrichment in LIS, are targeted for control. The TMDL requires the two states by, 2014, to achieve a 58.5% collective reduction of nitrogen loading from point discharges and urban and agricultural runoff sources to LIS from an established baseline. A 64% reduction goal was set for Connecticut STPs through a wasteload allocation process. Nitrogen "trading" was identified as a mechanism for cost-effectively attaining the aggregate goal for Connecticut STPs. Public Act 01-180, codified in the Connecticut General Statutes in Sections 22a-521 through 527, established a Nitrogen Credit Exchange (NCE) overseen by a Nitrogen Credit Advisory Board (NCAB), and authorized issuance of a Nitrogen General Permit (NGP). Collectively, the NGP, the NCE and the NCAB form the foundation for the nitrogen-trading program instituted by Connecticut in 2002.

A summary of the nitrogen credit exchange program's progress in achieving the total maximum daily load. (Section 22a-523(c)(1))

Appointment of Board Members

Section 22a-523 provides for a Nitrogen Credit Advisory Board comprised of 12 members. The General Assembly and Governor are responsible for appointing nine of the members. One position on the Board is currently vacant pending appointment by the Majority Leader of the Senate. A list of appointees identifying the appointing authority and length of term is provided as Attachment A.

The General Permit for Nitrogen Discharges

The Department of Environmental Protection issued a General Permit for Nitrogen Discharges on January 1, 2002 that regulates the discharge of total nitrogen from each of 79 publicly owned STP's in Connecticut. This General Permit for Nitrogen Discharges was re-issued on December 21, 2005 for a period of 5 years until December 31, 2010. A copy of the general permit is included as Attachment B of the report. The General Permit for Nitrogen Discharges includes requirements that will insure compliance with the Total Maximum Daily Load (TMDL) for nitrogen discharged into Long Island Sound.

The General Permit for Nitrogen Discharges was re-issued one year ahead of the original five-year permit expiration date (December 31, 2006). The early re-issuance of the permit was necessary to maintain the balance between the number of credits exchanged between municipal buyers and sellers of nitrogen credits so that the program will be as close to revenue neutral as possible. Due to the limited availability of Clean Water Funds, the pace of new treatment facility construction for nitrogen removal has been substantially less than was projected when the original permit was issued in 2002. The permit includes an upward adjustment for the year 2006 based on an updated projection of expected performance.

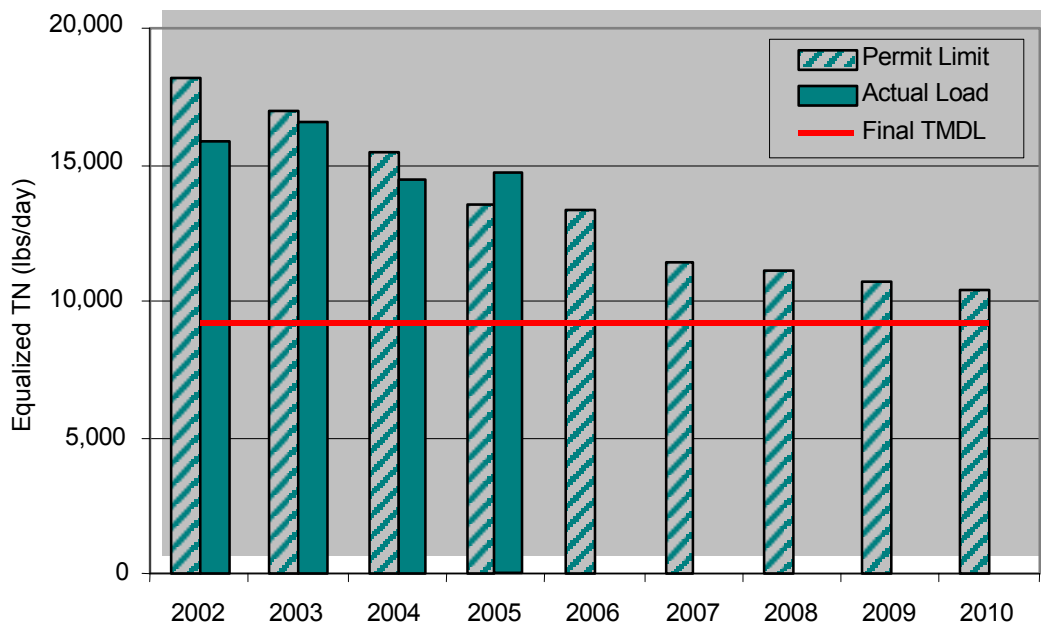
The General Permit establishes annual nitrogen limits for each municipal sewage treatment plant based on the expectation that the cumulative amount of nitrogen discharged from all of Connecticut's publicly owned STPs will decrease annually as nitrogen treatment projects are completed. The NCE provides an incentive for facilities to complete nitrogen treatment projects while allowing facilities that elect to defer project construction to remain in compliance with the General Permit by purchasing nitrogen credits. The Nitrogen General Permit includes monitoring and reporting protocols to insure proper accounting of nitrogen credits and debits among STPs. For each participating facility, the Nitrogen General Permit also establishes an "equalization factor" that relates each facility's geographic location to its relative impact to oxygen levels in Western Long Island Sound where the impact of excess nitrogen is most severe. The equalization factor is used to convert nitrogen loadings that are measured "end-of-

All 79 municipal STPs regulated under the general permit have been complying with discharge monitoring requirements of the permit.

Progress in removing nitrogen by STPs during 2005 was hampered by weather conditions that were adverse to nitrogen removal. Rainfall totals for the year were approximately 25% higher than average. The higher rainfall in the winter and spring of 2005, in combination with a colder late winter and spring, resulted in higher levels of nitrogen being discharged during the first half of 2005. The previous year's (2004) weather was warmer and dryer and resulted in higher nitrogen removal levels than expected. In the second half of 2005 rainfall totals and temperatures returned to normal levels with the exception of October in which a record of 15 inches of rainfall occurred. The high rainfall in October adversely affected removal during the month. The aggregate total of nitrogen discharged for the year is over the permit limit set for 2005. This is the first year since the program inception that the limit has been exceeded.

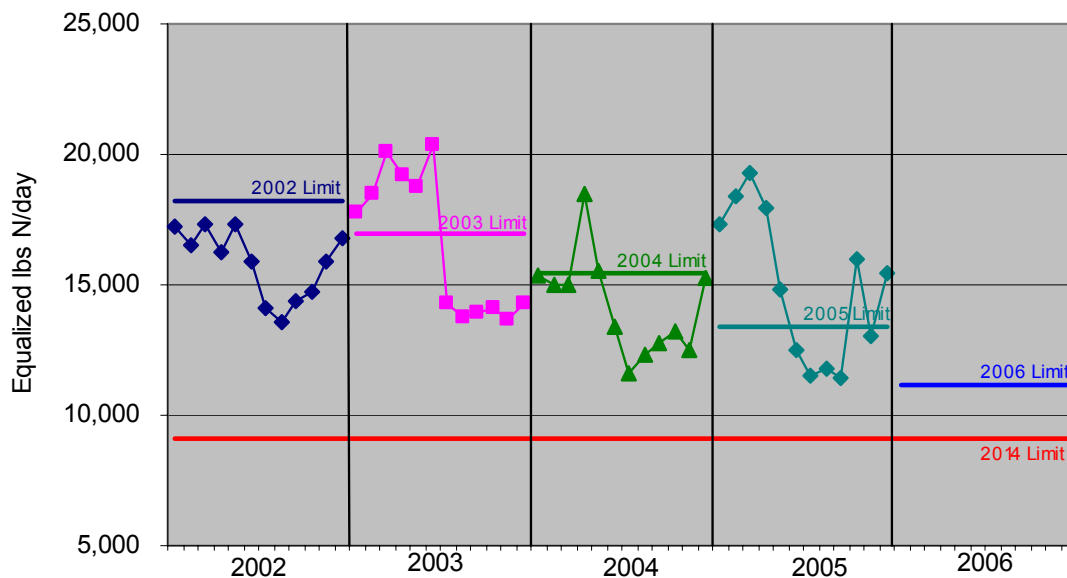
The aggregate nitrogen permit limit for 2005 was 13,434 equalized pounds per day. Treatment plant performance for 2005 was 14,930 equalized pounds per day or 1,496 equalized pounds per day in excess of the 2005 General Permit limit. Figure 1 shows the overall equalized nitrogen discharged over the years 2002-2005 and the permit limits for the future years 2006-2010. The red line in Figure 1 represents the 64% nitrogen reduction limit that is to be met by 2014.

Figure 1 -- Annual Progress (2002-2005) and Future Limits Necessary to Meet the TMDL for Long Island Sound



Data reported for the 2005 averaged 14,930 equalized pounds per day of total nitrogen discharged to Long Island Sound. It is important to note that the general permit was based on the anticipated increase in the ability of Connecticut STPs to remove additional nitrogen as more nitrogen removal upgrade projects become operational. Nitrogen removal upgrade projects have not, however, received funding through the Clean Water Fund to the levels necessary to complete projects at the rate originally assumed. The ability to achieve further progress towards meeting a continually decreasing permit limit, which decreases each year, becomes more difficult as projects are delayed or not built at all due to a lack of funding assistance.

Figure 2
 Monthly Average Total Nitrogen Loading to Long Island Sound from all 79 facilities
 years 2002-2005



The final waste load allocation (WLA) limit for nitrogen is 9,166 equalized pounds per day to be achieved by 2014 (red line Fig. 2 above). The General Permit establishes aggregate limits for the years 2002-2010 in equalized pounds per day. The month-to-month variability of nitrogen loads discharged is the result of cold winter temperatures and months with higher than normal rainfall. Wastewater treatment facilities utilize biological nitrogen removal processes that are impacted by colder temperatures and excessive rainfall resulting in high infiltration rates. The wastewater treatment facilities that have been reconstructed specifically for nitrogen removal, perform significantly

better in the adverse weather conditions. This is the result of new design standards that have been implemented in the nitrogen removal projects.

The performance of individual facilities during 2005 is provided as Attachment C, *Total Nitrogen Balance Sheets*.

In order to achieve the future limits in the General Permit it is necessary that additional wastewater nitrogen removal projects in Connecticut be completed every year. In 2005 one additional facility, Jewett City was completed for a total of 31 facilities that will be providing either full or partial nitrogen treatment out of 79 facilities that are part of the General Permit for Nitrogen Discharges. The effect of the additional nitrogen removal at these facilities on the aggregate loading to Long Island Sound is reflected in Figure 1. Figure 1 also shows the projected aggregate removal for the year 2005 as required in the general permit. The existing nitrogen removal projects did not meet the reduction targets in 2005 due to a wetter colder year and a limited number of nitrogen removal projects completing construction and operational in those years. A number of facilities removing nitrogen have limited capacity to operate in high flow conditions. The high flow conditions typically occur in the late winter or early spring when wastewater temperatures are at the coldest further limiting nitrogen removal performance. This trend can be reversed if projects are funded and completed in future years that implement the new nitrogen removal process design standards to reach the necessary removal required by the general permit.

Nitrogen Trading

The Nitrogen Credit Advisory Board proposes an annual value for equalized nitrogen credits to the Commissioner of Department of Environmental Protection. The Board is directed to derive this value by dividing the total annual project cost by the reduction in equalized pounds of nitrogen. The statute identifies the total project cost as: 1) capital expenditures for construction of nitrogen removal facilities and 2) ongoing operation and maintenance costs for nitrogen removal treatment.

Cost of an equalized credit is derived by the following formula:

$$\text{Capital Costs} + \text{Operational Costs} / \text{Total amount of nitrogen reduced from project facilities} = \text{The value of an equalized credit}$$

A “Nitrogen Removal Project” is defined as any alteration of the physical structure of a wastewater treatment facility specifically to remove nitrogen that was financed by the Clean Water Fund. A “Project Facility” is defined as any facility that was fully operational on January 1 of the trading year. Under this definition, 30 facilities were considered to be Project Facilities during 2005 (see Attachment D). “Capital Cost” was

established by the Board as the annual Clean Water Fund repayment amount associated with construction of nitrogen treatment facilities as set forth in the loan agreement between the municipality and DEP. Financing derived from grants to municipalities was

not considered to be a capital cost. Using this procedure, the Board established the annual capital cost for nitrogen treatment in 2005 at \$2,785,929. This figure represents the annual interest and repayment of principal on the 2% loans for nitrogen removal processes. Operation and maintenance costs were estimated by means of a survey sent to all Project Facilities. Department staff reviewed all survey data for consistency and reasonableness and an estimate of \$4,644,216 was adopted by the Board as the annual operation and maintenance costs for nitrogen removal in 2005. Combining capital and operation and maintenance cost yielded a total cost for nitrogen removal in 2005 of \$7,430,145 (see Attachment D).

Reduction in equalized credits

The reduction in equalized pounds of nitrogen was calculated by subtracting the actual end-of-pipe pounds of nitrogen discharged by each of the Project Facilities from the “baseline” loading established for the facility in the TMDL for Long Island Sound. The baseline loading represents the loading of nitrogen each facility would have discharged if no nitrogen treatment were provided. Load reductions for each facility were multiplied by the equalization factor for that facility (converting the pounds reduced to equalized pounds reduced) and the statewide reduction calculated by summing the equalized pounds reduced for all Project Facilities. Using this procedure, a total of 3,521,724 equalized pounds of nitrogen were reduced by Project Facilities in 2005.

In January 2006, the Board formally submitted a recommendation to the Commissioner that she establish the value of an equalized nitrogen credit at \$2.11 for trading in 2005 based on dividing the Total Project Cost of \$7,430,145 by 3,521,724 pounds of equalized nitrogen removed. The Commissioner accepted this recommendation and issued a draft ruling pursuant to section 22a-527. No municipality petitioned for a review of the Commissioner’s draft ruling during the statutory 15-day review period and the draft ruling became final establishing the value of an equalized nitrogen credit at \$2.11 for 2005.

In 2005 a total of 50 facilities were required to purchase credits in order to remain in compliance with the General Permit. Municipalities purchasing credits contributed a total of \$2,467,757 with individual municipal payment ranging between \$513,382 and \$116. 28 facilities received payments totaling \$1,315,392 from the sale of Nitrogen Credits. One facility, (Newtown) had a zero balance in that their performance was exactly the permit requirement. The range of dollars received from facilities selling credits was from \$655 to \$279,102.

The Performance of Connecticut Facilities in 2005

Less nitrogen was removed than projected. As a result, for 2005 the value of a nitrogen credit has increase to \$2.11 from \$1.90 in 2004. The higher value of a credit, plus the lower permit limit in 2005, resulted in a greater cost to purchase credits for municipalities. Overall, in 2005 payments from credit purchasers are greater than monies paid out to sellers. This will be the first year that the limit in the general permit has been exceeded. As discussed, one reason was that the colder and wetter winter and spring have adversely affected overall treatment plant performance. Many treatment plants operated near or over the design capacity during this time period. The higher than average rainfall directly contributed to increased flows at the treatment plants from infiltration and inflow. This was especially true with older treatment facilities with limited capacity to remove nitrogen in the colder months. The second is the limited Clean Water Financing funds have delayed the start of construction of a number of improvement projects as only one new project was completed for 2005. This situation has created a backlog of municipalities that have nitrogen removal projects designed and awaiting Clean Water Fund financing. The adequacy of funding section of this report will further discuss this problem.

(An itemized accounting of the final balances for individual municipalities is provided in Attachment E.)

Outreach and Training

Department staff members presented papers on the Connecticut nitrogen trading program at several national conferences in 2005 including the Water Environment Federation Technical Conference (WEFTEC) held in Washington D.C. and the Oregon Association of Clean Water Agencies Annual Conference. The Connecticut Nitrogen Trading program has been of interest to a number of other states that have invited Connecticut DEP staff to speak in their states. The Commonwealth of Virginia is presently developing a nutrient trading program for Chesapeake Bay that is utilizing many of the elements of the Connecticut program.

Data Quality

Department staff inspected all 79 of the municipal facilities regulated under the General Permit at least once during 2004 and 2005. Inspections consisted of a comprehensive evaluation of all aspects of the facility's operation and monitoring procedures and included:

Onsite inspections: verification of calibration of flow meters, inspection of the proper functioning of flow proportional samplers, sample location points and equipment that is

used to remove nitrogen. Documentation: inspection checklists were filled out with the superintendent of the facility in order to determine if there were any problems encountered.

Review of analytical results and Nutrient Analysis Reports (NAR): The analytical results were reviewed to determine consistency with data reported on the NAR's. The bench sheets provided by the labs were examined to determine if they were consistent with sampling analysis methodology and preservation under EPA regulations.

Collection and analysis of split samples: Composite samples of treated final effluent were split between the Department of Public Health (DPH) lab and labs used by the municipalities. If the results were not similar, another composite sample was taken and samples were split between DPH, Stamford Regional lab and the lab used by the municipality.

Any discrepancies or problems that might affect the quality of the data used to support the Trading Program were investigated and resolved in cooperation with municipal officials responsible for the facilities operation and maintenance.

The adequacy of the Clean Water Fund financing pursuant to section 22a-477 of the general statutes, as amended by this act, to support the nitrogen credit exchange program and the total maximum daily load (Section 22a-523(c)(2).

The Connecticut Clean Water Fund was created in July 1986 and is set forth in sections 22a-475 through 22a-483 of the Connecticut General Statutes. The Clean Water Fund program provides financial aid through grants and low interest loans to municipalities for the planning, design and construction of municipal wastewater treatment facilities. Nitrogen removal process improvements at municipal treatment facilities are eligible for a 30% Clean Water Fund grant and a low interest loan for the remainder of the cost. The Clean Water Fund is administered by the Department of Environmental Protection and the Office of the Treasurer. The Clean Water Fund is financed through a combination State of Connecticut general obligation bonds and US EPA federal grant funding for the grant portion of the financing and State of Connecticut Clean Water Fund revenue bonds for the low interest loan portion. The combination of state revolving loans and grants is the basis of a financial assistance program that municipalities rely on in order to construct nitrogen removal projects and is vital to continued progress in reducing nitrogen loadings into Long Island Sound. In past years the Clean Water Fund has been able to fund the requested projects in a timely manner. The limited funding of the fiscal years 2006-2007 Clean Water Fund has created a significant backlog of municipalities that are willing to move forward with nitrogen removal projects that are necessary to achieve the water quality goal required by the TMDL for Long Island Sound.

Nitrogen Removal Projects

To date a total of 31 nitrogen removal construction projects at municipal wastewater treatment plants have been completed. Eleven projects involved major construction of facilities designed to achieve maximum nitrogen removal to meet the long-term nitrogen reduction goal of 4 mg/l for the facility. The remaining 20 projects involved retrofits of

existing facilities that are designed to reduce levels to 8 mg/l for total nitrogen discharged. There are six nitrogen removal projects currently under construction with four designed for the long-term goal of 4 mg/l. A complete list of nitrogen removal projects that have been completed or currently approved for funding by the Clean Water Fund is provided as Attachment F.

Year-to-year variation in the aggregate statewide nitrogen loading to Long Island Sound is expected to be significant due to the influence of weather conditions and ongoing construction activities on treatment efficiency. Variability has been particularly high in the early years of the trading program as wastewater treatment plant operators gain experience in operating the more sophisticated treatment technologies needed for nitrogen removal under a variety of operational conditions. However, as additional facilities install nitrogen removal treatment technology, the potential to remove greater amounts of nitrogen in all weather conditions is achieved and a long-term downward trend in loading to Long Island Sound is anticipated.

The availability of Clean Water Funds is the most critical factor controlling the number of facilities that are constructed to upgrade treatment to remove nitrogen. Presently, the projected demand for Clean Water Fund financing to support construction projects is significantly more than the amount available.

There are presently 29 municipal treatment facilities in Connecticut covered under the general permit that have a nitrogen removal project under design and waiting to be funded by the Clean Water Fund. The fiscal years 2006-07 priority list proposes to partially fund 12 projects with estimated project costs of 107 million dollars. 17 additional projects and the non-funded portion of 3 projects (Milford, Stratford and Meriden) estimated at 410 million dollars will not be reachable within the two fiscal years due to Clean Water Fund bonding limitations. Construction of the additional projects referenced above presently non-reachable for funding will be necessary in order for Connecticut to meet the August 2009 nitrogen removal TMDL requirements. Figure 3 shows the progress (red bars) through the end of 2005 of nitrogen removed from the 79 facilities covered under the general permit. The yellow bars are the new permit limits (2006-2014) and the green line is the TMDL requirement. This is the approved US EPA TMDL requirement that the 79 municipal facilities must remain under in order not to collectively violate the TMDL. As shown in Figure 3, if facilities can meet permit limits,

compliance with the TMDL limit is possible. The present level of construction funding will not reduce the collective load of nitrogen to meet the 2009 or 2014 TMDL requirements.

Projects that are in design today will require two to three years in order to complete construction and achieve nitrogen removal operation. Given that the 2009 TMDL nitrogen reduction limit is less than four years away it is imperative that the 17 projects ready to proceed be funded in the next 12 to 18 months. Compliance with the TMDL will require nitrogen removal projects to move forward into construction in a continual progression. A delay in the construction process of new nitrogen removal facilities will result in the aggregate nitrogen loading for the 79 municipal facilities in Connecticut to violate the TMDL for Long Island Sound in 2009 when significant reductions take effect.

The Connecticut nitrogen removal program was developed and approved on the basis that a number of new projects would be built each year to ensure the aggregate discharge from the 79 facilities would remain under the general permit limit. This was the case in the first 3 years of the program 2002-2004. 2005 is the first year that Connecticut's 79 municipality facilities exceeded the General Permit for Nitrogen Discharges. Maintaining the needed flow of capital in the form of grants and loans to municipalities for nitrogen removal infrastructure projects is critical to the success of this program.

Nitrogen removal facility planning has been very successful to date. It is anticipated that by the end of 2006, 75 out of 79 municipal treatment facilities covered under the general permit will have completed a detailed nitrogen removal engineering study. The studies will result in the evaluation of each facility's potential to cost effectively remove nitrogen. They will also provide detailed construction cost estimates for each facility which will be used to forecast the level of Clean Water Fund financing necessary in order to reach the limits in the General Permit for Nitrogen Discharges and TMDL for Long Island Sound.

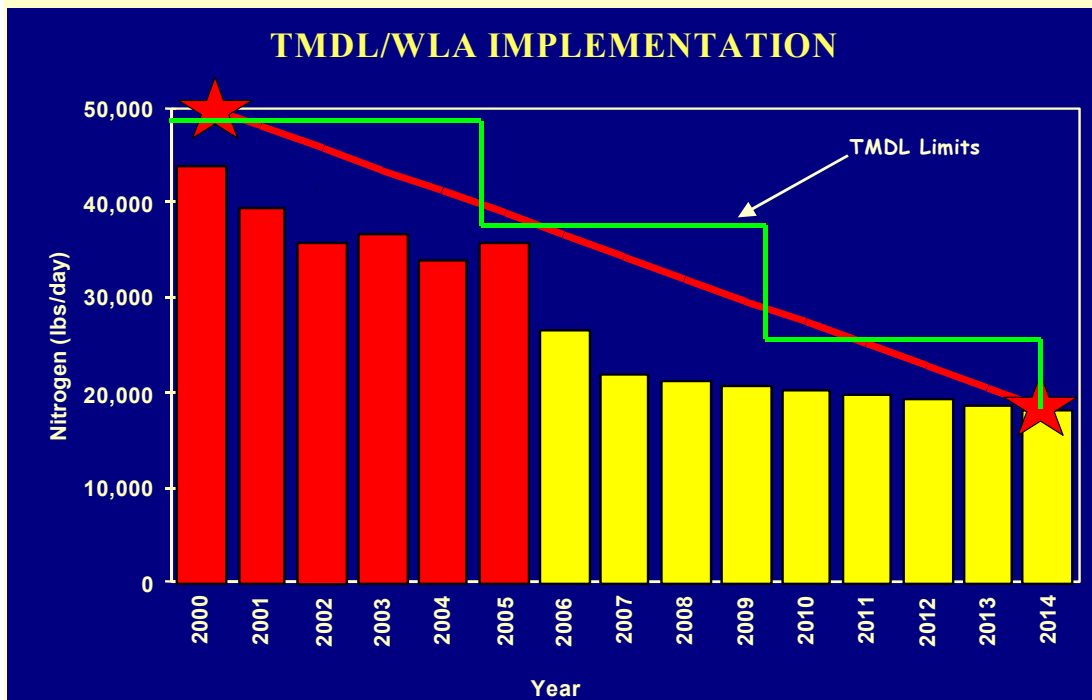


Figure 3. Actual Nitrogen Removal (years 2000-2005, red bars) Future permit limits (years 2006-2014, yellow bars) and the TMDL requirement for Long Island Sound (green line).

Clean Water Fund Financial Challenges

The most significant challenge to the nitrogen removal program in Connecticut has been the 2006-07 capital budgets effect on project construction. After the August 2005 State Bond Commission meeting, the Clean Water Fund had a carry-over of previously authorized funds of 2.8 million dollars. This is the lowest carry-over balance since the inception of the Clean Water Fund program in 1987. The budget provides 20 million dollars per year in new general obligation bond authorization for FY06 and FY07. At this funding level, only one in five projects ready to proceed will be funded in FY06, and only one in seven projects ready to proceed will be funded in FY07. This limitation on available funding has a significant negative impact on the state's ability to continue with nitrogen removal projects for improvement to Long Island Sound.

The history of general obligation bonding authorizations is shown graphically in figure below. From its inception in 1987 through 2002, the average annual general obligation bond authorization has been 47.9 million dollars. From 2003 to 2007, however, the average annual general obligation bond authorization has been negative 7.6

million dollars due to recissions of 18 million dollars in FY03 and 60 million dollars in FY04, and no general obligation bond authorization in FY05.

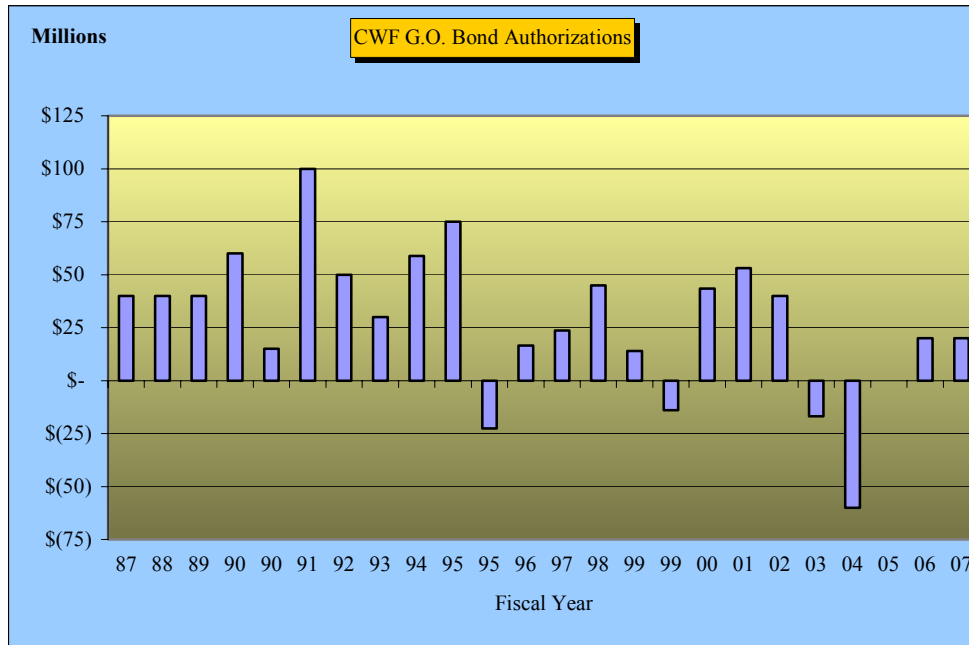


Figure 4

Compounding this funding crisis, changes in the Clean Water Fund statutes since 2001 have increased the utilization of general obligation bonds on several categories of projects. Grants on nitrogen removal projects went from 20% to 30%, grants on small community projects went from 20% to 25%, the incremental cost of treatment plant expansions for future growth is now grant-eligible (incremental costs for future growth were previously eligible only for loan assistance), design costs are eligible for 20% grants of the actual costs (previously grant eligibility was determined by a federal cost curve), and the “sunset” provision that eliminated CWF grant assistance as of FY06 was eliminated.

The Department, in conjunction with the Office of the State Treasurer, the Office of Policy and Management, and all Connecticut municipalities, are committed to assess the viability of the current program and reach a consensus for the future of the program. Questions which need to be addressed include, but are not limited to:

- What long-term commitment can the state make to funding the grant portion of the program?
- Should grant percentages for eligible project costs be reduced?
- Should grants be eliminated totally?

- Should the loan interest rate be altered from the current 2% to either a higher or lower fixed rate or some variable rate? If variable, what criteria should be used to determine such a rate?
- Should the term of the loan be altered from the current 20 years?

Maintaining progress on water quality projects in the face of increasing needs, rising fuel and materials costs, and inflation will require either a stable funding source or a fundamental change in the method of funding water quality projects. Over the next year, the Department will be engaging stakeholders in a discussion to address these questions within the context of the long-term goals of the state and Federal Clean Water Acts.

Recommendations for changes to the program including but not limited to: (A) Exchanging nitrogen credits with entities outside the state; (B) expanding the general permit for nitrogen discharges and the nitrogen credit exchange program to include additional point and non-point sources; and (C) exchange transactions executed outside of the nitrogen credit exchange program (Section 22a-523(c)(3).

The Nitrogen Credit Advisory Board is exploring potential expansion of the credit exchange program to include additional point (private and industrial) and non-point sources.

Identification of any other issues that need to be resolved (Sec 22a-523(c)(4).

Ensuring proper funding levels is critical to continuing our commitment to water infrastructure needs. Funding shortfalls will result in individual projects being delayed or abandoned, threatening the effectiveness and progress of our efforts to improve the water quality of Long Island Sound. Connecticut is required under federal law to meet the nitrogen limits set forth in the TMDL for Long Island Sound. Without adequate funding of capital improvement projects the nitrogen reduction commitments for Connecticut will not be achievable exposing the State to potential judicial intervention.

Recommendations relating to the use of federal funding to assist distressed municipalities in the planning, design and construction of nitrogen removal facilities in implementing the provisions of this act (Sec 22a-523(c)(5).

The Long Island Sound Restoration Act of 2000 created an authorization of additional federal funds for upgrading of wastewater treatment facilities to protect Long Island Sound. While the original FY 01 appropriation was the only one specifically targeted to distressed municipalities, the Department of Environmental Protection has chosen to use additional appropriations exclusively for distressed communities. U.S. EPA through the Long Island Sound Restoration Act awarded Connecticut \$1.58 million in FY 01, \$2 million in FY 02, \$1.71 million in FY03, \$2.48 million for FY 2004 and \$1,984,000 in

FY 05. A total of 20 distressed municipalities have been awarded planning grants and design grants have been provided to date. A total of \$9.82 million dollars to date has been awarded to Connecticut to assist distressed municipalities with planning and design of nitrogen removal projects. In Attachment G is a list of active distressed municipality or community grants for design or planning of nitrogen removal projects. The design projects utilizing the additional distressed city funds have allowed a number of our fiscally limited communities to design nitrogen removal projects. A number of distressed communities now are willing to make the commitment to proceed to construct nitrogen removal projects if there are Clean Water Fund resources available to them. The distressed communities are our most needy communities and additional Clean Water Funding is crucial to their ability to improve water quality.

The planning projects provide an important first step in evaluating a wastewater treatment facility's ability to remove nitrogen and identify options to a municipality for complying with the General Permit. The federal funds will be used to augment the existing state Clean Water Fund grant such that 100% of the cost of planning is funded. Priority will be given to any distressed community, as defined by the Commissioner of Economic and Community Development. The increased design grants will be available on first come first served basis to facilitate the movement of treatment plant projects in distressed municipalities from the planning to the design phase of improvements. The Nitrogen Credit Advisory Board has endorsed the DEP's targeting of funding to assist distressed communities for planning and design of upgraded nitrogen treatment as both necessary and effective in helping the State achieve long-term water quality goals for Long Island Sound through the Nitrogen Credit Exchange Program. Attachment G provides a list of active 2005 design grants.

Summary

This report provides a summary of the major actions and financial requirements that the Nitrogen Credit Advisory Board deems necessary to achieve progress in this important program in reducing nitrogen loads to Long Island Sound. The continued success of this program will only be possible through adequate funding through the Clean Water Fund to construct new projects and development and application of innovative techniques to meet the ambitious nutrient goals.

Respectfully submitted,

Betsey Wingfield, Chairman
Nitrogen Credit Advisory Board

Attachments:

- A List of Appointees to Nitrogen Credit Advisory Board
- B General Permit for Nitrogen Discharges (January 1, 2006 – December 31, 2010)
- C Total Nitrogen Balance Sheet – Monthly Averages by Plant 2005
- D LIS Total annual project costs 2005
- E Nitrogen Credit Exchange Final Balance - 2005
- F Nitrogen Removal Projects Financed by CWF to date
- G 2005 Active Distressed City Grants
- H 2004 Nitrogen Trading Year Summary

ATTACHMENT A

LIST OF APPOINTEES

	Name	Appointing Authority	Term
1.	Jeanette Brown WPCF Harbor View Ave. Stamford, CT 06902 Phone: 203-977-5809	Sen. Jepsen Majority Leader of the Senate	3 years
2.	John Mengacci Under Secretary Office of Policy Management 450 Capitol Avenue Hartford, CT 06106 Phone: (860) 418-6374	Marc Ryan, Secretary OPM	No specific term
3.	Robert Moore The MDC. PO Box 800 555 Main St. Hartford, CT 06142-0800 Phone: 278-7850	Sen. Sullivan President of Senate	3 year
4.	Betsey Wingfield Bureau Chief DEP 79 Elm Street Hartford, CT 06016 Phone: (860) 424-3704	Commissioner Environment Protection	No specific term
5.	Sharon Dixon-Peay Office of the Treasurer 55 Elm Street Hartford, CT 06106 Phone: 860-702-3134	Denise Nappier Treasurer's Office	No specific term
6.	Astrid T. Hanzalek 31 Abraham Terrace Suffield, CT 06078 Phone: 860-668-2739	Rep. Ward, House Minority Leader	3 years

- | | | | |
|-----|--|--|---------|
| 7. | Brian Armet
Executive Director
Mattabassett District
245 Main Street
Cromwell, CT 06416
Phone: 860-635-5550 | Rep. Pudlin
Majority Leader
of the House | 3 years |
| 8. | Richard Cellar
83 Lawrence Road
Fairfield, CT 06824-3039
Phone: 203-255-5017 | Sen. DeLucca
Minority Leader
of the Senate | 3 year |
| 9. | Carl Almquist
Town of Groton WPCA
134 Groton Long Point Road
Groton, CT 06340-4873
Phone: 860-448-4083 | Governor Rell | 3 years |
| 10. | Bruce Joslin
AnoxKaldnes, Inc.
58 Weybosset Street
4 th Floor
Providence, RI 02903
Phone: 401-270-3898 | Rep James Amen
Majority Leader
of the House | 3 years |
| 11. | William Norton, Director
City of West Haven WPCA
355 Main Street
West Haven, CT 06516
203-937-3500 | Speaker of the House | 3 years |
| 12. | VACANT
Towns less than 20,000
Population | Sen. Martin Looney
Majority Leader
of the Senate | 3 years |

General Permit for Nitrogen Discharges

Table of Contents

Section 1.	Authority	1
Section 2.	Definitions	1
Section 3.	Authorization Under This General Permit	3
	(a) Eligible Activities or Discharges.....	3
	(b) Geographic Area.....	3
	(c) Effective Date and Expiration Date.....	3
	(d) Effective Date of Authorization.....	3
Section 4.	Conditions of this General Permit	3
	(a) Discharge Limits.....	3
	(b) Compliance During Term of Permit.....	4
	(c) Operation of Nitrogen Removal Process Equipment.....	4
	(d) Monitoring Requirements.....	4
	(e) Reporting Requirements.....	5
	(f) Record Keeping Requirements.....	5
	(g) Duty to Correct and Report Violations.....	6
	(h) Duty to Provide Information.....	6
	(i) Certification of Documents.....	6
	(j) Date of Filing.....	6
	(k) False Statements.....	7
	(l) Correction of Inaccuracies.....	7
	(m) Other Applicable Law.....	7
	(n) Other Rights.....	7
Section 5.	Commissioner’s Powers	7
	(a) Abatement of Violations.....	7
	(b) General Permit Revocation, Suspension, or Modification....	8
Appendix 1	Annual Discharge Limits	9

General Permit for Nitrogen Discharges

Section 1. Authority

This general permit is issued under the authority of *Sections 22a-521 through 527 and Chapter 446k* of the Connecticut General Statutes.

Section 2. Definitions

As used in this general permit, and as defined or modified from Section *22a-521 of the Connecticut General Statutes*:

“Annual mass loading of total nitrogen” (expressed in pounds per day) means the sum of monthly mass loading of total nitrogen for each month from January through December divided by 12 and rounded to the nearest whole number.

“Authorized activity” means any activity authorized by this general permit.

“CFR” means Code of Federal Regulations.

“Commissioner” means Commissioner as defined by Section 22a-2(b) of the General Statutes.

“Daily composite” means a composite sample taken over a full operating day consisting of grab samples collected at equal intervals of no more than sixty (60) minutes and combined proportionally to flow; or, a composite sample continuously collected over a full operating day proportional to flow.

“Daily mass loading of total nitrogen” (expressed in pounds per day) means the total nitrogen concentration (expressed in mg/L to the nearest 0.1 mg/L) multiplied by the daily flow volume (expressed as MGD, to the nearest 0.1 MGD for facilities with a design capacity of 1.0 MGD or greater and to the nearest 0.01 MGD for facilities with a design capacity of less than 1.0 MGD) multiplied by 8.34 and rounded to the nearest whole number to convert to pounds per day units.

“Department” means the Department of Environmental Protection.

“Discharge Monitoring Report” or *“DMR”* means a report form provided or approved by the Commissioner for use by a permittee to submit discharge monitoring data to the Department relating to compliance with limits and conditions established in the individual permit for a facility.

“Equivalency factor” means a ratio of the unit response of dissolved oxygen to nitrogen in Long Island Sound for each POTW based on the geographic location of the specific POTW's discharge point divided by the unit response of the geographic area with the highest impact.

"Equivalent nitrogen credit" means a nitrogen credit multiplied by the equivalency factor.

"Individual permit" means a permit issued to a named permittee under Section 22a-430-4 of the Regulations of Connecticut State Agencies.

"Monthly mass loading of total nitrogen" (expressed in pounds per day) means the sum of the daily mass loading of total nitrogen for each monitored day during the month divided by the number of monitoring days during the month and rounded to the nearest whole number.

"Monthly Operating Report" or *"MOR"* means a report form provided or approved by the Commissioner for use by a permittee in submitting data to the Department related to the operation of a facility.

"Municipality" means municipality as defined by Section 22a-423 of the Connecticut General Statutes.

"Nitrogen Analysis Report" or *"NAR"* means a report form provided or approved by the Commissioner for use by a permittee in submitting monitoring data to the Department related to the discharge of nitrogen from a facility.

"Nitrogen credit" means the difference between the annual mass loading of total nitrogen specified for a POTW in the general permit for treated nitrogen discharges and the monitored annual mass loading of total nitrogen discharged by that POTW expressed as pounds of nitrogen per day.

"Nitrogen credit exchange program" means the program within the Department established pursuant to **Section 22a-524 of the Connecticut General Statutes**.

"Nitrogen Wasteload Allocation" means a total load of nitrogen assigned to a discharger expressed in pounds per day of total nitrogen discharged.

"Permittee" means a municipality or person discharging nitrogen as authorized by the general permit.

"Person" means person as defined by Section 22a-423 of the Connecticut General Statutes.

"Publicly Owned Treatment Works" or *"POTW"* means a system used for the collection, treatment or disposal of sewage from one or more parcels of land and that discharges to the waters of the state and is owned by a municipality of the state.

"TMDL" means the Total Maximum Daily Load analysis to achieve water quality standards for dissolved oxygen in Long Island Sound as established by the Department and as approved by the United States Environmental Protection Agency on April 3, 2001.

"Total nitrogen" means the total of the concentrations of ammonia nitrogen, organic nitrogen, nitrite nitrogen, and nitrate nitrogen expressed as milligrams of nitrogen per liter.

Section 3. Authorization Under This General Permit

(a) *Eligible Activities or Discharges*

This general permit authorizes the discharge of total nitrogen from the POTWs listed in Appendix 1, provided the activities are conducted in accordance with this general permit.

This general permit does not authorize any discharge of water, substance or material into the waters of the state other than the one specified in this section. Any person or municipality which initiates, creates, originates or maintains such a discharge must first apply for and obtain authorization under Section 22a-430 of the General Statutes.

(b) *Geographic Area*

This general permit applies throughout the State of Connecticut.

(c) *Effective Date and Expiration Date of this General Permit*

This general permit is effective on ***January 1, 2006, and expires on December 31, 2010.***

(d) *Effective Date of Authorization*

An activity is authorized by this general permit on the date the general permit is issued.

Section 4. Conditions of this General Permit

A permittee shall conduct activities authorized by this general permit in accordance with the following conditions:

(a) *Discharge Limits*

- (1) Annual discharge limits applicable to each POTW are set forth in Appendix 1, which is incorporated herein in its entirety, as part of this general permit.
- (2) Each permittee shall limit the discharge of nitrogen to the annual discharge limits set forth in Appendix 1, except as set forth in paragraph (b)(1)(b) of this Section.

(b) *Compliance During Term of Permit*

- (1) A permittee shall be in compliance with its annual discharge limits of this general permit if:
 - (a) the POTW's annual mass loading of total nitrogen is less than or equal to the discharge limit set forth in Appendix 1; or,

- (b) the permittee has secured state-owned equivalent nitrogen credits equal to the amount the POTW exceeded the annual discharge limit set forth in Appendix 1 in accordance with the Nitrogen Credit Exchange Program and ***Sections 22a-521 through 527 of the Connecticut General Statutes.***
- (2) A permittee shall be out of compliance with the annual discharge limits of the general permit and subject to the enforcement provisions of chapter 446k of the Connecticut General Statutes if:
 - (a) the POTW's annual mass loading of total nitrogen is greater than the discharge limit set forth in Appendix 1; and
 - (b) the permittee fails to secure sufficient state-owned equivalent nitrogen credits in a timely manner in accordance with the Nitrogen Credit Exchange Program and ***Sections 22a-521 through 527 of the Connecticut General Statutes.***
- (c) *Operation of Nitrogen Removal Process Equipment*

The permittee shall not bypass or fail to operate any of the approved nitrogen removal equipment or processes without the written approval of the Commissioner. The permittee shall operate all necessary equipment to optimize nitrogen removal so as to reduce nitrogen discharges to the maximum extent practicable. This includes but is not limited to all recycle pumping systems, aeration equipment, aeration tank cycling, mixing equipment, anoxic basins, chemical feed systems or any other process equipment necessary for the optimal removal of nitrogen.

- (d) *Monitoring Requirements*

- (1) Effective upon issuance of this general permit, the permittee shall monitor total nitrogen in the final effluent in accordance with the following frequency:
 - (a) POTWs with a design flow rate specified in the individual permit for the facility of less than 10,000,000 gallons per day shall monitor the final effluent at a minimum frequency of weekly.
 - (b) POTWs with a design flow rate specified in the individual permit for the facility equal to or greater than 10,000,000 gallons per day shall monitor the final effluent at a minimum frequency of twice per week.
- (2) Monitoring requirements shall commence on January 1, **2006**.
- (3) Final effluent and monitoring location shall be identical to that used to determine compliance with final effluent limitations and

monitoring conditions established in the individual permit for the facility.

- (4) All samples analyzed to determine compliance with limits on total nitrogen shall be daily composite samples unless otherwise approved in writing by the Commissioner.
- (5) Chemical analyses to determine compliance with effluent limits and conditions established in this general permit shall be performed using the methods approved in or pursuant to 40 CFR 136 unless an alternative method has been approved in writing pursuant to 40 CFR 136.4.
- (6) The permittee shall measure average daily volume of flow of wastewater received by the facility at the main flow meter as set forth in the individual permit for the facility.
- (7) In the event of a flow meter malfunction on a day when a sample for total nitrogen analysis is collected, the permittee shall utilize the arithmetic average of the 7 highest daily flows measured during the previous 30-day period to calculate the total daily nitrogen loading unless an alternative procedure has been agreed to by the Commissioner.

(e) *Reporting Requirements*

The results of chemical analyses for the total nitrogen in all samples collected during the month and the average daily flow volume of effluent for each day during the month shall be entered on the Monthly Operating Reports (MOR) and Nitrogen Analysis Reports (NAR) and reported to the Department. Results must also be entered in Discharge Monitoring Reports (DMR) as a calculated monthly mass loading of total nitrogen. The MOR, NAR and DMR must be received at the following address by the 15th day of the month following the month samples are collected.

ATTN: Municipal Wastewater Monitoring Coordinator
Connecticut Department of Environmental Protection
Bureau of Water Management, Planning and Standards Division
79 Elm Street
Hartford, CT 06106-5127

(f) *Record Keeping Requirements*

The permittee shall retain copies of all reports required by this general permit, and records of all data used to compile these reports for a period of at least five years from the date of the report submission to the Department.

(g) *Duty to Correct and Report Violations*

Upon learning of a violation of a condition of this general permit, including any failure of flow monitoring equipment, the permittee shall immediately take all reasonable action to determine the cause of such violation, correct such violation and mitigate its results, prevent further such violation, and report in writing such violation and such corrective action to the Commissioner within five (5) days of the permittee learning of such violation. Such report shall be certified in accordance with subsection 4(i) of this general permit.

(h) *Duty to Provide Information*

If the Commissioner requests any information pertinent to the authorized activity or to compliance with this general permit, the permittee shall provide such information in writing within thirty (30) days of such request. Such information shall be certified in accordance with subsection 4(i) of this general permit.

(i) *Certification of Documents*

Any document, including but not limited to any notice, which is submitted to the Commissioner under this general permit shall be signed by, as applicable, the permittee in accordance with Section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute.”

(j) *Date of Filing*

For purposes of this general permit, the date of filing with the Commissioner of any document is the date such document is received by the Commissioner. The word “day” as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day thereafter.

(k) *False Statements*

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with Section 22a-6, under Section 53a-157b of the General Statutes.

(l) *Correction of Inaccuracies*

Within fifteen days after the date a permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, such permittee shall correct the inaccurate or misleading information or supply the omitted information in writing to the Commissioner. Such information shall be certified in accordance with subsection 4(i) of this general permit.

(m) *Other Applicable Law*

Nothing in this general permit shall relieve the permittee of the obligation to comply with any applicable federal, state and local law, including but not limited to the obligation to obtain and comply with any authorizations required by such law. In the event a POTW is subject to a more stringent nitrogen limitation than set forth in this general permit, the Permittee shall comply with that more stringent limitation and may not purchase or transfer nitrogen credits to comply with that additional limitation.

(n) *Other Rights*

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or activity affected by such general permit. In conducting any discharge authorized hereunder, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state.

Section 5. Commissioner's Powers

(a) *Abatement of Violations*

The Commissioner may take any action provided by law to abate a violation of this general permit, including the commencement of proceedings to collect penalties for such violation. The Commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with Sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the Commissioner by law.

(b) *General Permit Revocation, Suspension, or Modification*

The Commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify it to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment or to implement the 15 year TMDL.

Issued: 12/21/05

/s/ Gina McCarthy

Gina McCarthy
Commissioner

APPENDIX A

ANNUAL DISCHARGE LIMITS FOR TOTAL NITROGEN

Zone	Publicly Owned Treatment Works	Equivalency Factor	TOTAL NITROGEN (POUNDS/DAY)					
			2006	2007	2008	2009	2010	2014
1	JEWETT CITY WPCF	0.17	22	19	19	18	18	15
1	GROTON CITY WPCF	0.18	144	124	120	117	113	99
1	GROTON TOWN WPCF	0.18	223	191	186	180	175	153
1	KILLINGLY WPCF	0.14	191	163	159	154	150	131
1	LEDYARD WPC	0.18	11	9	9	9	8	7
1	MONTVILLE WPCF	0.18	171	147	143	139	135	118
1	NEW LONDON WPCF	0.18	561	481	468	454	441	386
1	NORWICH WPCF	0.18	292	250	243	236	229	201
1	STONINGTON PAWCATUCK WPCF	0.17	35	30	29	28	28	24
1	PLAINFIELD NORTH WPCF	0.14	50	43	42	40	39	34
1	PLAINFIELD VILLAGE WPCF	0.14	35	30	29	28	27	24
1	PUTNAM WPCF	0.14	77	66	64	62	60	53
1	SPRAGUE WPCF	0.16	11	9	9	9	8	7
1	STAFFORD SPRINGS WPCF	0.15	87	75	73	70	68	60
1	STONINGTON BOROUGH WPCF	0.18	20	17	16	16	15	14
1	STONINGTON MYSTIC WPCF	0.18	39	34	33	32	31	27
1	THOMPSON WPCF	0.14	15	13	12	12	12	10
1	UCONN WPCF	0.15	64	55	53	52	50	44
1	WINDHAM WPCF	0.15	183	157	152	148	143	125
2	BRISTOL WPCF	0.18	579	497	483	469	455	398
2	CANTON WPCF	0.18	35	30	29	28	28	24
2	EAST HAMPTON WPCF	0.20	79	67	65	64	62	54
2	EAST HARTFORD WPCF	0.19	425	365	354	344	334	292
2	EAST WINDSOR WPCF	0.19	87	74	72	70	68	59
2	ENFIELD WPCF	0.19	405	347	338	328	318	278
2	FARMINGTON WPCF	0.18	258	221	215	209	203	178
2	GLASTONBURY WPCF	0.20	142	122	119	115	112	98
2	HARTFORD WPCF	0.20	3456	2964	2881	2798	2714	2377
2	MANCHESTER WPCF	0.19	454	389	378	367	356	312
2	MATTABASSET WPCF	0.20	1213	1040	1011	982	952	834
2	MIDDLETOWN WPCF	0.20	323	277	269	261	253	222
2	PLAINVILLE WPCF	0.18	147	126	123	119	115	101
2	PLYMOUTH WPCF	0.18	61	52	50	49	48	42
2	WINDSOR POQUONOCK WPCF	0.19	142	122	119	115	112	98
2	PORTLAND WPCF	0.20	46	39	38	37	36	31
2	ROCKY HILL WPCF	0.20	419	359	349	339	329	288
2	SIMSBURY WPCF	0.18	156	133	130	126	122	107
2	SOUTH WINDSOR WPCF	0.19	153	132	128	124	120	106

Zone	Publicly Owned Treatment Works	Equivalency Factor	TOTAL NITROGEN (POUNDS/DAY)					
			2006	2007	2008	2009	2010	2014
2	SUFFIELD WPCF	0.19	65	56	54	52	51	45
2	VERNON WPCF	0.19	268	229	223	217	210	184
2	WINDSOR LOCKS WPCF	0.19	96	82	80	77	75	66
2	WINSTED WPCF	0.18	93	80	77	75	73	64
3	BRANFORD WPCF	0.60	279	239	233	226	219	192
3	CHESHIRE WPCF	0.49	149	128	124	121	117	103
3	MERIDEN WPCF	0.49	653	560	544	528	513	449
3	NEW HAVEN EAST WPCF	0.60	2279	1954	1900	1845	1790	1568
3	NORTH HAVEN WPCF	0.60	230	197	192	186	180	158
3	SOUTHINGTON WPCF	0.49	296	254	246	239	232	204
3	WALLINGFORD WPCF	0.60	391	335	326	317	307	269
3	WEST HAVEN WPCF	0.60	513	440	428	415	403	353
4	ANSONIA WPCF	0.67	167	143	139	135	131	115
4	BEACON FALLS WPCF	0.67	18	15	15	14	14	12
4	DANBURY WPCF	0.46	643	551	536	520	505	442
4	DERBY WPCF	0.67	104	89	86	84	81	71
4	LITCHFIELD WPCF	0.35	34	29	28	27	27	24
4	MILFORD BEAVER BROOK WPCF	0.67	137	117	114	111	108	94
4	MILFORD HOUSATONIC WPCF	0.67	448	384	373	363	352	307
4	NAUGATUCK TREATMENT Co.	0.60	358	307	299	290	281	246
4	NEW MILFORD WPCF	0.46	35	30	29	28	28	28
4	NEWTOWN WPCF	0.46	24	20	20	19	19	42
4	NORFOLK WPCF	0.35	16	14	13	13	13	11
4	NORTH CANAAN WPCF	0.35	19	16	16	15	15	13
4	SALISBURY WPCF	0.35	31	26	26	25	24	21
4	SEYMOUR WPCF	0.67	89	76	74	72	70	61
4	SHELTON WPCF	0.67	154	132	128	125	121	106
4	SOUTHBURY TR. SCHOOL WPCF	0.46	22	19	18	18	17	15
4	STRATFORD WPCF	0.67	517	443	431	418	406	356
4	THOMASTON WPCF	0.60	61	52	50	49	48	42
4	TORRINGTON WPCF	0.60	361	309	301	292	283	248
4	WATERBURY WPCF	0.60	1468	1259	1224	1188	1153	1049
5	BRIDGEPORT EAST WPCF	0.85	526	451	438	426	413	362
5	BRIDGEPORT WEST WPCF	0.85	1514	1298	1262	1225	1189	1041
5	FAIRFIELD WPCF	0.85	591	507	492	478	464	406
5	WESTPORT WPCF	0.85	126	108	105	102	99	87
6	GREENWICH WPCF	1.00	697	598	581	564	547	479
6	NEW CANAAN WPCF	1.00	93	80	77	75	73	64
6	NORWALK WPCF	1.00	1044	895	870	845	820	718
6	RIDGEFIELD SOUTH ST. WPCF	1.00	42	36	35	34	33	29
6	STAMFORD WPCF	1.00	1346	1154	1122	1090	1057	926

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2005

	<u>Limit '05</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
ZONE: 1													
GROTON CITY WPCF	146	97	124	167	96	161	132	212	120	97	102	139	135
GROTON TOWN WPCF	226	456	488	541	526	502	431	351	390	320	472	414	432
JEWETT CITY WPCF	23	15	13	21	16	15	7	4	4	7	18	20	15
KILLINGLY WPCF	193	222	227	181	251	210	206	118	113	120	150	156	173
LEDYARD WPC	11	4	4	4	3	7	4	3	4	4	5	7	7
MONTVILLE WPCF	174	147	153	113	59	101	77	76	92	77	108	53	51
P NEW LONDON WPCF	568	461	571	809	781	428	255	217	281	284	364	283	477
NORWICH WPCF	295	698	937	814	849	845	936	636	735	595	533	647	749
PLAINFIELD NORTH WPCF	50	90	140	122	125	103	72	61	60	65	73	86	88
PLAINFIELD VILLAGE	35	57	74	75	62	73	26	30	18	38	45	41	46
PUTNAM WPCF	78	187	207	205	193	198	169	156	170	187	235	193	220
SPRAGUE WPCF	11	8	12	13	12	14	12	7	18	12	10	15	21
STAFFORD SPRINGS WPCF	88	137	114	133	162	115	144	146	123	131	157	110	103
STONINGTON BOROUGH	20	48	50	61	63	47	41	42	65	47	46	37	22
STONINGTON MYSTIC WPCF	40	33	39	39	66	46	44	58	55	43	59	45	52
STONINGTON PAWCATUCK	35	28	20	42	41	35	32	22	26	24	29	26	35
THOMPSON WPCF	15	22	41	49	30	45	36	35	36	29	26	26	22
P UCONN WPCF	64	186	101	88	38	63	30	20	24	66	55	67	45
WINDHAM WPCF	185	165	199	224	271	204	131	113	152	108	124	159	135
ZONE: 2													
P BRISTOL WPCF	586	803	724	581	630	518	396	426	528	342	637	509	715
CANTON WPCF	35	83	95	100	126	143	84	101	95	102	104	104	133
P EAST HAMPTON WPCF	80	151	108	79	94	46	41	104	72	75	92	63	92
EAST HARTFORD WPCF	430	731	774	827	996	827	785	714	660	600	968	1056	703
P EAST WINDSOR WPCF	88	38	60	57	36	54	48	25	22	24	64	68	40
ENFIELD WPCF	410	364	508	908	929	667	734	317	459	511	437	291	292
FARMINGTON WPCF	261	469	377	494	332	323	394	382	518	407	353	319	405
GLASTONBURY WPCF	144	254	183	199	211	288	323	145	163	177	205	208	208
HARTFORD WPCF	3498	7539	8011	6870	7990	7558	6197	5227	5916	6308	6731	6453	7172
MANCHESTER WPCF	459	898	830	811	701	684	700	656	766	716	750	888	859
MATTABASSETT WPCF	1227	1446	1680	2369	1620	1458	1180	1127	1026	1020	1373	1216	1386
MIDDLETOWN WPCF	306	553	615	1029	627	457	261	282	228	234	495	578	473

P = Project Facility

Report Date: 3/7/2006

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2005

	<u>Limit '05</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
PLAINVILLE WPCF	149	346	341	328	329	279	208	201	159	242	321	330	339
PLYMOUTH WPCF	61	113	87	84	72	103	52	73	52	55	66	71	84
P PORTLAND WPCF	46	45	36	32	45	26	30	21	16	12	40	45	42
ROCKY HILL WPCF	424	1093	943	1214	1060	839	710	668	933	855	1034	758	915
SIMSBURY WPCF	157	384	359	386	332	362	358	291	436	410	439	323	334
SOUTH WINDSOR WPCF	155	327	317	327	314	298	331	362	329	412	346	449	272
SUFFIELD WPCF	66	56	55	75	43	74	70	32	60	107	76	76	144
VERNON WPCF	271	551	515	660	550	463	440	384	397	351	521	485	543
P WINDSOR LOCKS WPCF	97	101	114	198	257	229	112	67	84	87	200	157	110
WINDSOR POQUONOCK	144	450	451	428	455	569	491	409	483	468	512	414	478
WINSTED WPCF	94	213	211	176	177	161	232	247	228	230	215	176	208
ZONE: 3													
P BRANFORD WPCF	283	78	97	218	177	107	105	124	128	68	219	117	177
CHESHIRE WPCF	151	508	456	504	486	483	426	449	454	466	495	530	508
MERIDEN WPCF	661	1107	735	885	877	564	532	581	659	474	1494	621	843
P NEW HAVEN EAST WPCF	2307	1603	1778	1895	2050	2106	1493	1392	1556	1325	1768	1342	2128
NORTH HAVEN WPCF	233	658	521	752	550	412	364	492	407	151	351	169	259
SOUTHINGTON WPCF	299	742	674	1062	665	731	807	646	688	751	832	699	751
WALLINGFORD WPCF	396	827	762	1346	870	642	466	361	433	291	545	531	807
P WEST HAVEN WPCF	519	644	526	615	586	550	734	425	498	351	897	673	718
ZONE: 4													
ANSONIA WPCF	169	300	411	401	484	355	242	187	163	179	204	223	291
BEACON FALLS WPCF	18	41	44	55	52	47	44	36	34	44	31	33	40
DANBURY WPCF	651	1547	1701	1620	1550	1820	1906	1880	1799	1691	1622	2049	2008
P DERBY WPCF	105	63	54	76	67	70	37	40	49	48	73	57	72
P LITCHFIELD WPCF	34	57	61	75	61	63	56	18	19	19	56	39	67
P MILFORD BEAVER BROOK	139	140	121	130	129	108	92	139	103	105	137	136	181
P MILFORD HOUSATONIC	453	495	435	681	569	544	456	352	267	267	568	470	647
NAUGATUCK TREATMENT	363	469	360	383	344	262	230	278	209	141	231	208	233
NEW MILFORD WPCF	41	84	108	139	87	53	60	100	61	70	92	87	145
P NEWTOWN WPCF	24	51	30	26	25	23	16	10	6	13	29	27	36
NORFOLK WPCF	16	17	19	22	15	12	11	11	13	15	26	43	36
NORTH CANAAN WPCF	19	27	24	28	32	27	28	24	23	19	51	55	30

P = Project Facility

Report Date: 3/7/2006

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2005

	<u>Limit '05</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
SALISBURY WPCF	31	28	28	24	33	24	19	21	16	26	40	44	33
P SEYMOUR WPCF	90	43	78	142	122	78	69	46	51	44	40	41	73
SHELTON WPCF	156	440	541	521	603	524	484	436	456	419	526	506	557
SOUTHBURY TR. SCHOOL	22	21	22	18	21	15	10	11	7	6	13	11	12
P STRATFORD WPCF	523	578	588	686	921	388	337	454	383	369	827	491	448
P THOMASTON WPCF	61	74	42	49	47	49	44	46	19	24	43	63	39
TORRINGTON WPCF	365	302	335	321	331	227	134	191	167	153	331	296	260
P WATERBURY WPCF	1486	1414	972	761	1312	1194	1054	1055	760	460	728	694	1172
ZONE: 5													
P BRIDGEPORT EAST WPCF	532	694	1163	838	554	563	382	292	154	129	410	213	247
P BRIDGEPORT WEST WPCF	1532	1848	2836	2471	1851	1650	1092	814	825	1048	1826	1037	1469
P FAIRFIELD WPCF	598	395	308	316	463	260	298	410	314	291	590	477	477
P WESTPORT WPCF	128	172	154	190	224	136	136	77	120	92	220	150	102
ZONE: 6													
P GREENWICH WPCF	705	489	527	634	756	514	458	505	444	471	684	610	577
P NEW CANAAN WPCF	94	32	27	62	45	17	20	21	19	17	45	33	25
P NORWALK WPCF	1057	984	1224	1107	1321	697	614	496	672	677	755	566	697
P RIDGEFIELD SOUTH ST.	43	44	23	23	35	28	60	18	17	19	92	32	31
P STAMFORD WPCF	1362	2248	2198	2209	1466	1040	694	847	1050	1411	1292	1115	1448
End-Of-Pipe Total		39,327	40,882	43,214	41,343	36,011	30,971	27,849	29,156	28,138	36,766	32,043	36,409
Equalized Total		17,301	18,354	19,156	17,918	14,802	12,478	11,538	11,763	11,421	15,938	13,044	15,436
End-Of-Pipe Permit = 27,111													
End-Of-Pipe Avg. = 35,176													
Equalized Permit = 13,434													
Equalized Avg. = 14,929													

P = Project Facility

Report Date: 3/7/2006

Total Annual Project Costs - 2005

Project Facilities	Total Annual Capital Cost	Total Annual O&M Cost	Total Annual Project Cost
BRANFORD WPCF	\$168,661	\$245,606	\$414,267
BRIDGEPORT EAST WPCF	\$51,755	\$323,762	\$375,517
BRIDGEPORT WEST WPCF	\$155,266	\$581,495	\$736,761
BRISTOL WPCF	\$28,759	\$57,964	\$86,723
DERBY WPCF	\$31,785	\$59,306	\$91,091
EAST HAMPTON WPCF	\$30,144	\$69,733	\$99,877
EAST WINDSOR WPCF	\$61,136	\$21,127	\$82,263
FAIRFIELD WPCF	\$514,885	\$307,788	\$822,673
GREENWICH WPCF	\$0	\$103,707	\$103,707
JEWETT CITY WPCF *	\$67,300	\$51,881	\$119,181
LEDYARD WPCF	\$18,062	\$12,500	\$30,562
LITCHFIELD WPCF	\$45,829	\$38,484	\$84,313
MILFORD BEAVER BROOK WPCF	\$9,074	\$54,980	\$64,054
MILFORD HOUSATONIC WPCF	\$0	\$166,235	\$166,235
NEW CANAAN WPCF	\$56,656	\$37,808	\$94,464
NEW HAVEN EAST WPCF	\$151,122	\$454,259	\$605,381
NEW LONDON WPCF	\$54,978	\$179,038	\$234,016
NEWTOWN WPCF	\$72,954	\$85,001	\$157,955
NORWALK WPCF	\$276,853	\$251,636	\$528,489
PORTLAND WPCF	\$44,740	\$35,250	\$79,990
RIDGEFIELD SOUTH ST. WPCF	\$0	\$29,385	\$29,385
SEYMOUR WPCF	\$14,654	\$42,775	\$57,429
STAMFORD WPCF	\$52,773	\$377,069	\$429,842
STRATFORD WPCF	\$0	\$318,819	\$318,819
THOMASTON WPCF	\$56,408	\$41,064	\$97,472
UCONN WPCF	\$0	\$30,000	\$30,000
WATERBURY WPCF	\$737,935	\$314,730	\$1,052,665
WEST HAVEN WPCF	\$0	\$225,853	\$225,853
WESTPORT WPCF	\$0	\$15,000	\$15,000
WINDSOR LOCKS WPCF	\$84,200	\$111,961	\$196,161
TOTAL	\$2,785,929	\$4,644,216	\$7,430,145

* New Project for Year 2005

LIS Total Nitrogen Credit Exchange

Final Balance - 2005

SELLING Credits

<u>Facility Name</u>	
NEW HAVEN EAST WPCF	\$279,102
WATERBURY WPCF	\$240,749
NORWALK WPCF	\$184,066
FAIRFIELD WPCF	\$140,745
GREENWICH WPCF	\$114,752
BRANFORD WPCF	\$68,389
TORRINGTON WPCF	\$51,292
NEW CANAAN WPCF	\$49,290
BRIDGEPORT EAST WPCF	\$40,587
NAUGATUCK TREATMENT Co.	\$38,816
DERBY WPCF	\$23,736
NEW LONDON WPCF	\$18,576
MONTVILLE WPCF	\$11,367
SEYMOUR WPCF	\$10,836
THOMASTON WPCF	\$7,393
EAST WINDSOR WPCF	\$6,292
MILFORD BEAVER BROOK WPCF	\$6,192
RIDGEFIELD SOUTH ST. WPCF	\$6,161
SOUTHBURY TR. SCHOOL WPCF	\$2,834
BRISTOL WPCF	\$2,634
WINDHAM WPCF	\$2,310
PORTLAND WPCF	\$2,002
GROTON CITY WPCF	\$1,941
KILLINGLY WPCF	\$1,725
JEWETT CITY WPCF	\$1,309
LEDYARD WPCF	\$832
SALISBURY WPCF	\$809
STONINGTON PAWCATUCK WPCF	\$655
NEWTOWN WPCF	\$0
TOTAL	\$1,315,392

BUYING Credits

<u>Facility Name</u>	
HARTFORD WPCF	\$513,382
DANBURY WPCF	\$395,010
SHELTON WPCF	\$178,020
SOUTHINGTON WPCF	\$171,705
CHESHIRE WPCF	\$124,156
WALLINGFORD WPCF	\$120,605
NORTH HAVEN WPCF	\$88,259
ROCKY HILL WPCF	\$76,245
NORWICH WPCF	\$62,798
ANSONIA WPCF	\$60,888
EAST HARTFORD WPCF	\$54,581
WINDSOR POQUONOCK WPCF	\$47,264
MANCHESTER WPCF	\$45,801
MERIDEN WPCF	\$45,285
STAMFORD WPCF	\$43,128
WEST HAVEN WPCF	\$37,891
VERNON WPCF	\$31,753
GROTON TOWN WPCF	\$30,221
SIMSBURY WPCF	\$29,250
MATTABASSETT WPCF	\$27,879
MIDDLETOWN WPCF	\$27,725
SOUTH WINDSOR WPCF	\$27,071
BRIDGEPORT WEST WPCF	\$20,948
FARMINGTON WPCF	\$18,992
PLAINVILLE WPCF	\$18,853
ENFIELD WPCF	\$18,291
NEW MILFORD WPCF	\$17,713
WINSTED WPCF	\$15,526
MILFORD HOUSATONIC WPCF	\$13,416
WESTPORT WPCF	\$13,093
PUTNAM WPCF	\$12,399
BEACON FALLS WPCF	\$12,384
GLASTONBURY WPCF	\$10,782
CANTON WPCF	\$9,843
STRATFORD WPCF	\$8,256
WINDSOR LOCKS WPCF	\$6,731
STAFFORD SPRINGS WPCF	\$4,967
PLAINFIELD NORTH WPCF	\$4,313
LITCHFIELD WPCF	\$4,043
STONINGTON BOROUGH WPCF	\$3,743
NORTH CANAAN WPCF	\$3,235
THOMPSON WPCF	\$2,495
PLYMOUTH WPCF	\$2,079
PLAINFIELD VILLAGE WPCF	\$1,509
STONINGTON MYSTIC WPCF	\$1,109
NORFOLK WPCF	\$1,078
SUFFIELD WPCF	\$878
EAST HAMPTON WPCF	\$770
SPRAGUE WPCF	\$246
UCONN WPCF	\$116

Difference: **Selling - Buying = \$1,151,333**

TOTAL \$2,466,725

Nitrogen Removal Projects Financed by the Clean Water Fund

City/Town	Total Project Cost	Nitrogen Cost Portion	*Loan Portion to Towns	Year Project Placed in Service	Pounds of TN Reduced by Project
Seymour	\$9,800,000	\$250,000	\$200,000	1993	91
East Windsor	\$10,000,000	\$1,000,000	\$800,000	1996	110
Fairfield (1)	\$4,700,000	\$4,700,000	\$1,605,500	1996	389
Greenwich	\$500,000	\$500,000	\$0	1996	630
Milford Beaver Brook	\$1,000,000	\$1,000,000	\$200,000	1996	124
Milford Housatonic	\$650,000	\$650,000	\$0	1996	297
Norwalk (1)	\$1,100,000	\$1,100,000	\$0	1996	943
Ridgefield South Street	\$200,000	\$200,000	\$0	1996	51
Stratford	\$800,000	\$800,000	\$0	1996	467
Univ. of Connecticut	\$12,000,000	\$1,058,500	\$0	1996	65
West Haven	\$750,000	\$750,000	\$0	1996	338
Westport (1)	\$400,000	\$400,000	\$0	1996	114
Ledyard	\$3,500,000	\$350,000	\$280,000	1997	11
New Haven	\$8,200,000	\$8,200,000	\$3,360,000	1997	2,339
Newtown	\$12,000,000	\$1,058,504	\$846,803	1997	28
Stamford (1)	\$3,500,000	\$3,500,000	\$960,000	1997	556
Derby	\$2,762,275	\$677,150	\$474,005	2000	106
New Canaan	\$14,000,000	\$1,234,921	\$864,445	2000	111
Norwalk (2)	\$56,000,000	\$5,537,645	\$3,876,352	2000	256
Waterbury	\$120,000,000	\$17,359,005	\$12,151,304	2000	1823
East Hampton	\$689,725	\$689,725	\$482,808	2001	62
Thomaston	\$9,313,158	\$1,163,896	\$814,727	2001	69
New London	\$3,068,637	\$2,668,637	\$2,032,981	2002	576
Portland	\$5,200,000	\$1,046,750	\$732,725	2002	47
Branford	\$21,542,414	\$3,157,876	\$2,210,513	2003	390
Fairfield (2)	\$40,550,961	\$12,046,352	\$8,432,446	2003	318
Windsor Locks	\$2,348,678	\$1,841,252	\$1,288,876	2003	100
Bridgeport East	\$2,089,800	\$2,089,800	\$1,462,860	2004	540
Bridgeport West	\$2,375,150	\$2,375,150	\$1,312,605	2004	1544
Bristol	\$583,700	\$583,700	\$408,590	2004	575
Enfield	\$2,390,000	\$1,757,000	\$1,229,900	2004	430
Litchfield	\$4,000,000	\$1,000,000	\$700,000	2004	32
Jewett City	\$10,000,000	\$1,500,000	\$750,000	2005	27
Stamford (2)	\$97,223,000	\$59,500,000	\$42,000,000	2006	1320
North Haven	\$999,800	\$999,800	\$699,860	2006	350
Wallingford	\$2,275,800	\$2,275,800	\$1,593,060	2006	250
East Hartford (MDC)	\$1,965,000	\$1,965,000	\$1,375,500	2007	400
Cheshire	\$5,775,351	\$5,775,351	\$4,044,266	2007	450
Simsbury	\$21,231,000	\$4,181,000	\$2,926,700	2007	275
Shelton	\$21,641,786	\$4,293,447	\$3,004,413	2008	385
Westport (2)	\$37,131,028	\$8,253,604	\$5,777,523	2008	65

Attachment G

**Active Design Distressed Communities Grant - Loan Status Report
March 9, 2006**

GRANTEE	CWF PROJECT NO.	TOTAL PROJECT COST	100% DISTRESSED COMMUNITY ELIGIBLE	50% STATE	50% FEDERAL
WINDHAM	551-D	\$1,999,000.00	\$1,979,000.00	\$989,500.00	\$989,500.00
STRATFORD	366-D	\$3,426,972.00	\$3,426,972.00	\$1,713,486.00	\$1,713,486.00
BRISTOL	464-D	\$58,500.00	\$58,500.00	\$29,250.00	\$29,250.00
GROTON	386-D	\$930,000.00	\$930,000.00	\$465,000.00	\$465,000.00
WINSTED	553-D	\$88,400.00	\$88,400.00	\$44,200.00	\$44,200.00
MDC	508-D	\$55,000.00	\$55,000.00	\$27,500.00	\$27,500.00
PLAINVILLE	542-D	\$1,906,650.00	\$1,906,650.00	\$953,325.00	\$953,325.00
MERIDEN	382-D	\$1,979,467.00	\$1,979,467.00	\$989,733.50	\$989,733.50
ANSONIA	554-D	\$2,398,794.00	\$2,398,794.00	\$1,199,397.00	\$1,199,397.00
TOTALS		\$12,842,783.00	\$12,822,783.00	\$6,411,391.50	\$6,411,391.50

Long Island Sound Federal Grant Funds

Total FY 02 Funds	\$2,000,000
Total FY 03 Funds	\$1,716,768
Total FY 04 Funds	\$2,430,830
Total FY 05 Funds	\$2,050,307

TOTALS \$8,197,905

State Funds

State Match FY 02/03	\$3,788,300
State Match FY 04	\$2,359,298
State Match FY 05	\$2,050,307

TOTALS \$8,197,905

FY 02 also funded three planning grants for Mattabassett, Windsor Locks and Thompson totaling \$163,845 Federal & \$163,845 State.
 FY 04 also funded a planning grant for Stafford totaling \$9,750 Federal & \$9,750 State.
 If funds are available, West Haven CWF 549-D may receive funding estimated \$1,600,000 Federal & \$1,600,000 State.

Attachment H

2004 Nitrogen Trading Year Summary

The 2004 Annual Report of the Nitrogen Credit Advisory Board only reported the first seven months of the 2004 annual nitrogen data in the report. The report was published in December 2004 before the entire year's data were available. 2004 the fourth year of the program was an exceptionally good year for nitrogen removal in Connecticut. All 79 facilities covered under the General Permit for Nitrogen Discharges fully participated in the Nitrogen Credit Exchange program. The total 2004 permitted nitrogen load was 15,444 equalized pounds per day in the General Permit for Nitrogen Discharges. The annual average for 2004 from the 79 permitted sewage treatment plants (STPs) was 14,182 or 1,262 pounds per day less than the permit requirements. This resulted in 460,630 pounds nitrogen removed below the 2004 permit for the year.

The cost of a credit for 2004 was \$1.90. This represented a decrease from the \$2.14 cost of a credit in 2003. The reason for the cost of a credit decreasing by 24 cents was that more nitrogen was removed in 2004 and the aggregate effluent flow from the STPs decreased. The annual total precipitation was less than average for the year in 2004. The lower precipitation helped to reduce the overall effluent flow and increased treatment plant nitrogen removal efficiency. Conversely, higher than normal precipitation will increase the amount of infiltration and inflow or diluted sewage entering the treatment facility. In many of the older treatment facilities in Connecticut the capacity to treat is flow limited and nitrogen removal efficiency drops as flow increases.

Five new project facilities (Bridgeport East, Bridgeport West, Bristol, Enfield and Litchfield) completed construction and became fully operational during 2004. The five upgraded facilities added significant new nitrogen removal capacity in 2004. These facilities were included as project facilities utilized in the calculation of the cost of a credit of nitrogen.

The 2004 year ended with 35 facilities selling \$2,659,804 in nitrogen credits and 44 facilities purchasing \$1,786,736 of nitrogen credits. A total listing of the final balance of nitrogen credit purchases and sales is attached. This resulted in \$873,068 in excess nitrogen credits from the over performance or high nitrogen removal purchased by the State of Connecticut. A summary of the 2004 monthly averages of nitrogen discharged in pounds per day for all 79 facilities for the entire 2004 year is attached to this summary.